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R.A.F. NARRATIVE

(First Draft)

**THE R.A.F. IN MARITIME WAR
VOLUME IV**

**THE ATLANTIC AND HOME WATERS
THE OFFENSIVE PHASE
February 1943 to May 1944**

Air Historical Branch (1)
Air Ministry.

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THE R.A.F. IN MARITIME WAR

VOLUME IV

THE ATLANTIC AND HOME WATERS - THE OFFENSIVE PHASE

FEBRUARY 1943 TO MAY 1944

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CHAPTER I

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FEBRUARY to JUNE 1943

(1) Introduction

Volume III has described the growth from mid-1942 of Doenitz's efforts to locate the transatlantic convoys and to effect concentrations of U-boats around such convoys large enough to swamp the protection of escorting craft resulting, he hoped, in wholesale sinkings of merchant ships. It has also been shown that, as consistent air cover was gradually extended by the increasing numbers of medium and long range aircraft, the U-boats retired further into mid-Atlantic until even Very Long Range aircraft could only reach them on favourable occasions of weather. The fact that none of these Very Long Range aircraft were in existence at American or Canadian bases left a large gap of no air cover in mid-Atlantic. German records make it quite plain that by the end of 1942 it was air support to convoys that was feared most and the main disposition of U-boats was consequently located in this air gap.⁽¹⁾ Towards the end of 1942 the enemy reaction to the North Africa landings temporarily denuded the North Atlantic of U-boats but in January 1943, Admiral Doenitz - now C.-in-C. German Navy - was redeploying his U-boats back into the Gap in record numbers. The stage was being set for an all-out effort on his part to break the vital sea communications between America and the United Kingdom - a struggle which was to be comparable in many ways to the earlier bid by the G.A.F. in 1940 to break the Air Defence of Great Britain with the part of 'the few' now being taken by the tiny force of British V.L.R. aircraft.

Following the January decision of the Casablanca Conference that the defeat of the U-boats was to be a first charge on the resources of the Allied Nations certain detailed resolutions on measures necessary to intensify the anti-U-Boat war were adopted by the Combined Chiefs of Staff and approved by the President and the Prime Minister. Among them the following affected more particularly the Allied Air Forces:-

A.U. (43) 29
30. 1. '43

- (A) Intensified bombing of U-boat operating bases
- (B) Intensified bombing of U-boat construction yards
- (C) Provision by the U.S. and British Naval Staffs of auxiliary escort carriers for working with Atlantic convoys at the earliest practical moment.
- (D) Provision of long distance shore based air cover as a matter of urgency over the following routes.
 - (a) North Atlantic convoys (U.S. to U.K.) from both sides of the Atlantic.
 - (b) D.W.I. oil convoys between the West Indies and United Kingdom.

(1) See Volume III - Chapter XII - Sections (v), (viii), (ix) and (xiv).

(c) 'Torch' oil convoys between the West Indies and Gibraltar.

(d) United Kingdom/Freetown convoys.

(5) Greenland airfields should be developed for use by long range and very long range aircraft.

By the middle of February 1943, No. (A) was actually being implemented but with no effect on U-boat operations.⁽¹⁾ No. (B) was to come later in the war and ultimately did delay construction. Although Nos. (C) and (D) (a) had been given priority of attention for months past, positive results were painfully slow in materialising. No. (D) (d) had been established half way through January.⁽²⁾ Nos. (D) (b) and (c) make strange reading as, even if the Azores were occupied, shore based aircraft could not provide cover throughout these routes. They both fell more naturally under resolution (C) and indeed were afterwards so fulfilled. No. (E) was under examination but never became practicable.⁽³⁾

In addition to these general resolutions there were at staff level a number of more specific policy suggestions calculated to improve the chances of the ocean convoy system against the coming onslaught. Among these were proposals for a joint committee to advise on standardised anti-U-boat measures and the re-distribution of existing resources both surface and aircraft,⁽⁴⁾ proposals for the co-ordination of operational control in the northern part of the North Atlantic,⁽⁵⁾ proposals to solve the problem of early provision of the vital V.L.R. aircraft to operate from both sides of the North Atlantic⁽⁶⁾ and finally the suggestion for a unified anti-submarine command for the whole Atlantic - a logical and most desirable aim.

^{latter}
This subject had been discussed before 1943 in the Admiralty and elsewhere. For instance, Field Marshal Smuts had suggested in November 1942 the formation of an authoritative special supreme staff to supervise the A/U campaign. A similar central planning staff for agreed tactical policy, methods and development of weapons had been suggested in October 1942 by the A.O.C.-in-C., Coastal Command (Sir Philip Joubert) and Admiral A.B. Cunningham in the same month put forward a scheme for the strategic and operational control of all Atlantic convoys by a combined A/U staff. All these proposals foundered on the unwillingness of either U.S. or British authorities to surrender any sovereignty in their own strategic zones, on the undoubted risk of a serious overlapping of the functions of the Admiralty and Ministry of War Transport with the corresponding organisations in the United States, and on the impossibility of replacing the prerogative of the respective Chiefs of Staff where questions of major strategy were concerned.

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- (1) See Vol. III Chap. IX (viii)
 - (2) See Vol. III Chap. XIII - Part II (iv)
 - (3) See Vol. III Chap. XII (xi).
 - (4) Ultimately called the Allied Anti-Submarine Survey Board (See section (ii)).
 - (5) Developing into the Washington Convoy Conference (See section (iii)).
 - (6) Described in Section (vi).

A.M.
A.C.A.S. (P)
File
No. 58/2 Part I
Encls. 1, 2 & 5

However, it was thought possible to create a unified Air Command for A/U operations in the Atlantic and considerable efforts were made towards this desirable goal but even this limited objective was never achieved.⁽¹⁾

(ii) - The Allied Anti-submarine Survey Board

The first move towards a joint Anglo-American anti-U-boat Committee came from the British Chief of the Naval Staff in a memorandum which he handed to and discussed with Admiral King U.S.N.⁽²⁾ on the 21 January 1943 while they were attending the Casablanca Conference. Briefly, it stated that as the United Nations had not a sufficiency of destroyers, escort vessels and aircraft working at sea to deal adequately with the U-boat menace it was of the greatest importance that what was available should be disposed to the best advantage. Although in both the American and British Staff organisations there were officers whose duty it was to watch the situation they could act only within their own areas of responsibility. Neither organisation had sufficient knowledge of the conditions on both sides of the Atlantic to advise on global redistribution. It was suggested therefore that an advisory body be set up which would, after a study of the problems throughout the Atlantic, be in a position to make such recommendations. Such a body should include a senior naval and air officer from the U.K., Canada and the U.S.A. presided over by a flag officer.

A.H.B./
ID/12/164
Copy of Memo.
contained in
cypher
telegram No. 299
No. 299
Admty. to B.A.D.
Washington
T.O.O.1651A/3/2

Ibid
Signal
Admty. to C.N.S.
Ottawa - T.O.O.
1053A/7/2

Ibid
Cypher Telegrams
No. 605 Admty.
to B.A.D.
T.O.O. 1325A
/11/2 and reply
No. 572
T.O.O. 2053Z/
12/2

Admiral King was averse to the creation of such a formidable committee until the idea had been tried out on a smaller scale. Agreement was reached for an American flag officer and a British captain R.N. to form what was termed the Allied Anti-Submarine Survey Board. This Board was actually constituted early in February but in view of the imminence of a conference expected to be held at Washington on 1 March on the subject of the operational control in the N.W. Atlantic it was agreed by the two naval chiefs of staff that publication of the Board and its terms of reference should be deferred.

Membership of the Board was increased on 9 March by the inclusion of air representation and all members were appointed and named.⁽³⁾ The Board can be said to have started its official existence from this date. Its terms of reference were to study the organisation and disposition of allied surface and air A/U forces throughout the Atlantic

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- (1) Described in Section (v)
 - (2) Admiral Ernest J. King, U.S.N. - C.-in-C. United States Fleet and Chief of the U.S. Naval Staff - Short title Cominch.
 - (3)
 - (Rear Admiral J.C. Kauffman U.S.N.
 - Naval members - (Rear Admiral J.M. Mansfield R.N.
 - (Commander Vest U.S.N. (U.S. naval aviation)
 - Air members - (Group Capt. F.S. Canning R.A.F. (Coastal Command)

All the above officers had had considerable experience in the U-boat war.

and to make recommendations of any improvements considered feasible to Cominch and the First Sea Lord. For this purpose the Board was directed to travel round and make themselves acquainted with conditions in all areas and had freedom to arrange their own programme.

(a) The Board report on the situation in the North Atlantic

The first two reports submitted by the Board were dated 19 March. Both concerned the unsatisfactory situation in the North Atlantic. In one the Board reported that the number of surface escorts available was inadequate for the proper protection of convoys and that the air coverage was totally inadequate. No V.L.R. aircraft were based on the western side of the Atlantic and the U.S.A.A.F. Fortresses promised for Newfoundland were of insufficient range. The date of arrival for a U.S.A.A.F. Liberator squadron in this area was still indefinite, furthermore until the crews were fully trained to fly over water and in Northern Atlantic conditions their value would be limited. As there were both U.S. Navy Air and R.C.A.F. crews available who had extensive experience in ocean flying it was recommended that the requisite V.L.R. aircraft should be provided for them so as to form two squadrons not later than 1 April.

A.M.
A.C.A.S. (P)
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No. 58/5 Part I
Encl. 1361/43.

The other report stated that while the surface craft training in A/U war was excellent, the organisation of aircrews lagged far behind in America. There were no air units whose primary mission was anti-submarine and it was recommended that proper indoctrination with the aid of synthetic trainers should be a priority also that air personnel should be screened so that complete crews could be trained as a team.

ibid

Both reports were forwarded to the First Sea Lord by Cominch on 25 March with a comment that the recommendations would receive attention.

ibid

(b) Delay in readiness when A/U squadrons were transferred

On 24 April, the Board reported on the delay which always occurred in achieving operational readiness when squadrons were moved from American to British strategic zones and vice versa. They found that the two chief reasons were:-

(A) The change over in operational procedures

(B) The failure to arrange adequate spares, ground equipment and maintenance personnel at the new base.

Regarding (A) there were so many procedures in force in different areas that no squadron could operate until its personnel had received intensive instruction in the local procedure. It was, therefore, recommended that a committee should be established to draft a standard system that would meet the requirements of Allied A/U Air Forces wherever they might be. Such a committee should include representatives from the U.S. Navy and Air arms, R.A.F. Coastal Command and the R.C.A.F.

ibid
File No. 58/2
Part I.
Encl. 1659/43.

This recommendation was accepted by all parties and a committee was set up at the end of May under the chairmanship of Captain F.L. Baker U.S.N. on which were represented the U.S. Navy and Air, the U.S. Army Air, H.Q. Coastal Command and the R.C.A.F. It went into session on 3 June at St. John's Newfoundland but, after reaching agreement amongst themselves on a standard operational procedure, any chance of outside

ibid
Encl. 2065/43

ibid
Encl. R. 461

acceptance came to an end early in July with a repudiation of the proposed operational control details by the U.S. Navy Office. In a communication from Cominch dated 17 July the only acceptable alternative was a compromise whereby the operational control of mixed Allied Air Forces should be exercised as far as possible through the responsible tactic commander of the units assigned. In effect this meant the end of any possible standard combined procedure.

C.C.S. 272
6.7.'43

A.M.
A.C.A.S. (P) File
No. 58/2 Part I
Encl. R. 886

Regarding (B) the Board recommended discussion among the specialised branches concerned with aircraft equipment and airfield organisation, but nothing was put in train until, at the end of June, the head of RAFDEL in Washington suggested a special committee to study this problem. The U.S. Chiefs of Staff did not agree to a new committee but on 6 July recommended that the Standard Operational Procedure Committee should be re-convened for the purpose. On further consideration it was admitted that the matter was not within their province and the subject was referred back to the Allied A/U Survey Board on their return from visiting the Gibraltar area.

C.C.S. 272/1

A.M.
A.C.A.S. (P)
File
No. 58/2 Part I

In due course they reported at great length to the Combined Chiefs of Staff on 6 August. Their recommendations produced some criticism by Cominch to the effect that they were almost wholly confined to conditions within the U.S. Sea Frontiers. The Board replied on 28 August that their report was intended to include all operating areas in the Atlantic and Indian Ocean but that there was in the United States much misunderstanding on the subject. They quoted a recent instance concerning the transfer of U.S. squadrons to the United Kingdom in which both the consignor and consignee expected that adequate spares and ground equipment would be provided by the other. They re-iterated their belief that the principle must be accepted whereby the base of destination should provide the maximum possible logistic support. To ensure this the major operating Area Commanders must prepare, circulate and keep up to date lists showing details of base personnel, spares and ground equipment at all air bases in their areas so that the authority directing the transfer could at a glance specify the amount to be supplied by the base of destination and what would have to be sent by air transport.(1)

C.C.S. 272/2

The Combined Chiefs of Staff accepted the principle and took note that the other recommendations would be implemented in close co-operation between the U.S. and British authorities concerned but the compilation and circulation of detailed lists of spares, ground equipment etc by U.S. Frontier Commanders was successfully resisted by Cominch.

(c) The question of operational control in the Gibraltar area

At the end of June 1943, the Board visited the Moroccan Sea Frontier Headquarters at Casablanca and the A.C.H.Q. at Gibraltar to examine the question of operational control in the area westward of Gibraltar. At the suggestion of the U.S. Naval Commander in the Mediterranean (Vice Admiral H.K. Hewitt) the Board proceeded to Algiers where further discussions took place culminating in a general conference. Based on the information gained here and in the other two headquarters the Board reported on 6 July that:-

- (1) The Board further stated that it had included the Indian Ocean in the report because, in view of increasing U-boat operations there, it seemed likely that a deployment of A/U squadrons would soon be necessary.

C.O.
C.-in-C. File
S.31
Part II
Encls. 26A to 28A

- (i) The Moroccan Sea Frontier was in effect an island of U.S. responsibility wholly surrounded by the British Strategic Zone.
- (ii) The approaches to the Mediterranean were thus controlled by both the British Flag Officer Gibraltar and the U.S. Commander Moroccan Sea Frontier with the dividing line only 60 miles from the entrance.
- (iii) Because the responsibilities of these two authorities were laid down independently by the Admiralty and U.S. Navy office respectively, both operated aircraft entirely uncoordinated in each others area.
- (iv) Free French aircraft assigned to A/U duties in the area operated more or less independently of either U.S. or British control.
- (v) Consequent to the above, there was much uneconomic overlapping at some periods and serious gaps in proper air cover at others.
- (vi) There had been a variety of proposals put forward to make the existing cumbersome organisation work including an exchange of air liaison officers. The Board had examined all proposals but was convinced that none would produce a satisfactory result particularly if under pressure for action.

In view of the foregoing the Board strongly recommended that:-

1. The Moroccan Sea Frontier be abolished
2. The U.S. aircraft assigned for A/U warfare be placed under the direction of the F.O. Gibraltar for operational control by the A.O.C. Gibraltar.
3. The existing U.S. Naval facilities at Casablanca, Port Lyautey etc., be established as a Naval operating Base with headquarters at Casablanca.

ibid
Encl. 49A

This proposal was agreed to immediately by the Admiralty and Air Ministry but hung fire in the Navy Office at Washington where, in spite of efforts to induce Cominch to come to a decision, the thorny question of the operational control of U.S. aircraft was referred back in September to General Eisenhower as being the immediate supreme authority over U.S. forces in the entire theatre. Once more no firm decision resulted and all that could be arranged was a promise of co-operation in the area by the Moroccan Sea Frontier Commander.

ibid
Encls. 57A to 73A.

ibid
Encl. 75A

During September the antagonism which Cominch had frequently shown to the Board's reports and advice became more marked. Under these conditions it was felt that its continued existence served no useful purpose and on 28 September 1943 it was disbanded.

(iii) - The Washington Conference

The unsatisfactory state of air operational control in the N.W. Atlantic had been the subject of much discussion since November 1942.(1) No solution had been found and the situation

(1) See Vol. III Chap. XIII - Part I (vi)

SECRET

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A.H.B./
IIK/24/258 (1)
4 and 7 Feb.
and A.U. (43) 47
15 Feb.

was restated on a higher level early in February 1943 in memoranda circulated by the A.O.C.-in-C. Coastal Command, the Director of Naval Co-operation Air Ministry, and finally by the C.A.S., to the Cabinet A/U Warfare Committee of which the following is a precis.

Authorities involved in providing air cover to North Atlantic convoys

(A) In the N.E. Atlantic - R.A.F. Coastal Command and the Admiralty.

(B) In the N.W. Atlantic -

- (i) The Canadian Eastern Air Command - Halifax
- (ii) The Eastern Sea Frontier - U.S.N. New York
- (iii) The U.S. A/S Army Air Command - New York
- (iv) The U.S. Army Air Command in Newfoundland - Argentina
- (v) The U.S. Navy in Newfoundland - Argentina
- (vi) The U.S.N. Task Force 24 whose naval aircraft sometimes operated from Greenland.

In (A) there was already a single authority in operational control. In (B) there was no unified control of the various authorities. The air effort was not co-ordinated and resulted in duplication, lack of continuity and loss of economy in application. Only liaison appointments connected any of these authorities so that there was little exchange of intelligence or information, which led to lack of appreciation of the other's difficulties or successes. Moreover the E.A.C. Halifax was concerned with Bombers, Fighters and Army Co-operation as well as maritime types of aircraft, which meant that the A/U war did not receive undivided attention.

As a conference had been proposed between the U.S. and Canadian Naval heads to settle the question of naval escorts for North Atlantic convoys it was felt that the air aspect should also be discussed and that one single authority should be chosen for the control and co-ordination of all Allied A/U aircraft in the North Atlantic. The first step towards this ideal was taken in a meeting of the Air Ministry on 9 February between the C.A.S. (R.A.F.), the C.A.S. (R.C.A.F.) the D.O.N.C. Air Ministry and the S.A.S.O. Coastal Command at which the Canadian C.A.S. said he agreed with and would consider the formation of a Canadian Air Command analagous to Coastal Command R.A.F. whose sole function would be shipping protection.

Ibid
9 Feb. and
A.U. (43) 47

Ibid
Signal
Cominch to
Admty. and
N.S.H.Q.
T.O.O. 2013Z/2/2

As stated above, the genesis of a conference had come from the U.S. and Canadian authorities and concerned naval escort forces in the Canadian area. One proposal intended by Admiral King was to withdraw the U.S.N. Task Force 24 so as to put an end to the confusion of mixed naval forces in this area. A little later the agenda was increased to include an exploration of the whole transatlantic convoy scheme in the light of many pending recommendations from all the interested authorities and the conference was fixed for the 1 March at Washington. The paramount importance of air cover and support in any convoy scheme was recognised and this subject was

included in the final agenda proposals which were circulated by signal to all the interested authorities on the 10 February.⁽¹⁾

Ibid
Signals
Admty. to
B.A.D.
Washington
T.O.O. 1325A/
11/2
and 1326A/13/2

Now that the scope of the conference was so much greater, the interested parties stepped up the seniority of their representatives. The Admiralty nominated the V.C.N.S. - Vice Admiral Moore R.N.⁽²⁾ - and the Air Ministry put forward the chief of staff to A.O.C.-in-C. Coastal Command - Air Vice Marshal Durston⁽³⁾ - both of whom could take decisions without constant reference back to England other than in exceptional cases. The British Mission travelled by sea, arriving at Washington at the end of February.

Before the Conference met, a particular point was stressed by the C.A.S. in a personal signal to Air Vice Marshal Durston. This was to the effect that any American squadrons allocated to the protection of shipping from East Atlantic bases must be controlled and operated through the appropriate R.A.F. Command. The signal continued that there was some urgency over this question as Nos. 1 and 2 A/S Squadrons of the U.S. Army Air Force were shortly to be transferred from St. Eval (Coastal Command control) to the Casablanca area, presumably under the American senior naval officer there. He would then have these two 10 cm. A.S.V. Liberator Squadrons as well as two U.S.N. Catalina squadrons under his independent control. Recent events in this particular area had given a foretaste of uneconomic and inefficient overlapping.⁽⁴⁾

Ibid
Signal
Webber W. 203
T.O.O. 1225Z/24/
2

- (1) Proposed agenda for the Washington Conference:-
 - A. Operational control of escorts in the N.W. Atlantic including aircraft at North Atlantic shore bases.
 - B. The subject of convoys to the U.S.S.R.
 - C. Study of surface escorts available in the Atlantic
 - D. Study of necessary Atlantic convoy routes and escort requirements.
 - E. Assignment of escorts to meet the convoy requirement including both escorts now available and future deliveries.
 - F. Air support for Atlantic convoys including assignment to bases and operational control of the aircraft.

Ref: Signal - Cominch to Admty. and various addressees T.O.O. 2124A/10/2
- (2) Accompanied by Rear Admiral Mansfield (late C.O.S. to C.-in-C. Western Approaches and now British member of the Allied A/S Survey Board) - and Captain Waymouth R.N. - Admty. Signal Division.
- (3) Accompanied by Group Captain C.W. Dicken - D/S.A.S.O. Coastal Command H.Q.
- (4) This referred to a report from the A.O.C. Gibraltar to Air Ministry complaining of the unco-ordinated and haphazard flying taking place from the American Casablanca area. Five U-boats had recently been attacked off the Moroccan coast by R.A.F. aircraft controlled by the A.C.H.Q. at Gibraltar with no corresponding effort by the American air forces based in this area.

Ref: Signal A.H.Q. Gib. to A.M. No. A.547.
T.O.O. 1850Z/19/2

SECRET

9

The control should clearly be the A.O.C. Gibraltar whose area extended from Cape Finisterre to the northern boundary of the R.A.F. West Africa Command in the latitude of the Canary Islands.

The conference opened in Washington on the 1 March with Admiral King⁽¹⁾ in the chair. Sub-committees were appointed to report on the various headings in the agenda. While discussions affecting the northern part of the North Atlantic were going on, a decision on the question of operational control over aircraft in the Casablanca area was sought. This proved an intractable subject and the Washington Conference could arrive at no decision. The course of argument is given in full in section (iv).

Regarding the other items on the agenda, ten days of continual discussion, drafting and amendment followed at the end of which the following matters affecting anti-submarine aircraft had received agreement and the recommendations were adopted by the main Conference:-

1. That the United Kingdom and Canada take complete charge of Trade Convoys between the British Isles and New York and ports north thereof with the understanding that the United States is to retain strategic authority and responsibility throughout the Western Atlantic area and that all existing arrangements and agreements are to remain in effect except as specifically modified herein. Then followed details of routing, control and diversion together with procedure policy as between the Admiralty and the Canadian Naval headquarters at Ottawa.
2. Air cover for these convoys to be the responsibility of:-
 - (a) The United Kingdom, to the limit of aircraft range from bases in the United Kingdom and Iceland.
 - (b) Canada, to the limit of aircraft range from bases in Labrador, Newfoundland and Canada.
 - (c) The Commander Eastern Sea Frontier to the limit of aircraft range from bases within that Frontier in co-ordination with the Canadian A.O.C. Halifax.
3. All Allied anti-submarine aviation in the Labrador/Newfoundland/Canada area to be under the operational control of the Canadian A.O.C. Halifax who would, with the Canadian naval C.-in-C. N.W. Atlantic, operate a Combined Headquarters at Halifax. Group operational control of all Allied anti-submarine aviation in the Labrador/Newfoundland area to be exercised by an Area Combined Headquarters at St. Johns - N.F. formed by the Canadian Naval Sub-Command and Canadian A.O.C. St. Johns. The latter to have officers from the U.S. Army and Navy Air Commands concerned on his staff.
4. The exchange of operational information, control of airborne aircraft and system of communication as between the Canadian Air Command and R.A.F. Command were

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No.1843
A.C.C.1

A.H.B./
IIK/24/258 (1)
Signal V.C.N.S.
to C.N.S.
T.O.O.2251Z/6/3

(1) Admiral Ernest J. King U.S.N. - C.-in-C. United States Fleet and Chief of the U.S. Naval Staff - short title Cominch.

A.H.B./
IHK/24/26

discussed and settled by direct contact between Air Vice Marshals Anderson R.C.A.F. and Durston R.A.F. The procedure was laid down in a document entitled the Anderson/Durston Agreement and signed by the authors on 6 March.

A.H.B./
IHK/24/258 (1)
Signal V.C.N.S.
to C.N.S.
T.O.O.2201Z/10/3

5. That measures to accelerate the production of the minimum requirements of A/U aircraft be taken but limited to such action as would not interfere with production schedules. There should be no large diversion of aircraft earmarked for other theatres of war but in the North Atlantic convoy and N.W. Africa areas there was urgent need of V.L.R. aviation. The following immediate distribution was put forward which was regarded as not too inadequate.

Source	Total Existing	By 1 Apr.	By 1 May	By 1 June	By 1 July
British V.L.R. A/C from U.K./ Iceland	15	30	30	45	60
American from Newfoundland	nil	12	36	48	72
American from Morocco	nil	It was intended to build up Nos. 1 and 2 U.S.A.A.F. SQDNS. TO 12 A/C each and re- equip with V.L.R. A/C as soon as possible.			

6. That the maximum use of escort carriers was necessary to augment the scanty nature of surface escort and air cover. The Conference understood that both the United Kingdom and United States contemplated the assignment of the maximum possible number of escort carriers to convoy protection duty.

7. It was recognised that Canada had not then, or in prospect, any V.L.R. aircraft but did have about 200 crews trained in A/U flying and familiar with the conditions in the area. It appeared therefore appropriate for Canada to bring before the U.S. Joint Chiefs of Staff the question of direct allocation of V.L.R. aircraft to the R.C.A.F. (1)

8. The final paragraph in the Conference's recommendations on air support submitted as a matter of record 'that the United States policy is to avoid freezing any A/U aviation to any particular area. The general plan is to regard all A/U air units as available for shifting from time to time to areas where the need is greatest.' (2)

Ibid

- (1) This was actively taken up by both the Canadian and R.A.F. authorities particularly as neither were very impressed by the 'immediate' nature of the American contribution in para 5, observing that at least one month would elapse before each U.S. squadron became operational moreover none of the aircraft were as yet modified to V.L.R. specification. The story of the Canadian bid for direct allocation is given in Section (e).
- (2) Annexe A to the Conference Report showed that the number of A/U aircraft expected to be available by 1 July in the N.W. Atlantic and along the American Seaboard would exceed the minimum requirements in those areas by 56 V.L.R., 113 L.R. and 48 M.R. aircraft.

SECRET

11

This latter was a statement of policy which commanded universal agreement but the rub came over the interpretation of where the need was greatest and when the moves should be made. Logically this was the moment to appoint an over-all Air Commander of the Atlantic who could make these decisions unfettered by local interests or interminable argument in committees. The story of the attempts to set up a unified air command is given in Section (v).

(iv) - Operational control in the Gibraltar/Morocco area

At the time of the planning of the Torch expedition to N.W. Africa it had been laid down that the control of the R.A.F. Gibraltar should come under the Torch Air Commander temporarily from the time the assault convoys passed into the Mediterranean until the expedition had effected a secure Lodgement⁽¹⁾. Similarly it was understood in British circles that the American shorebased squadrons in the Moroccan area would only be temporarily under the operational control of the local American Naval Task Force Commander. At the Casablanca conferences in January 1943 it was not foreseen, let alone agreed to, that a permanent independent Sea Frontier was intended. This is borne out by later recapitulatory signals and correspondence as the subsequent disagreement developed.

A.H.B.
IIK/24/258(i)
Signal A.916 and
C.A.S. Files
1843 A and B
Signal AX.446
and letter of
1. 11. 43.

History of U.S.
Naval
Operations in
World War II
Vol. II
Pages 244 to
250.

However, the intention became fact on 17th February 1943 when the area was designated the Moroccan Sea Frontier⁽²⁾ and Admiral Hall U.S.N. received mission orders from Cominch to become Frontier Commander completely independent of British control and taking orders direct from Washington. He had under his control two U.S.N. Catalina squadrons - Nos. 73 and 92 - and it was the unco-ordinated flying of these aircraft which had caused the A.O.C. Gibraltar to complain on the 19 February to the Air Ministry. This in turn had resulted in the signal, mentioned earlier in section (iii), from C.A.S. to Durston stressing the need for early clarification in the Washington Conference particularly as two American Army Liberator squadrons were shortly to go to Port Lyautey⁽³⁾.

As instructed, Durston raised the question of operational control in the Gibraltar/Morocco area in the Conference and on 5 March informed C.A.S. by signal that the U.S. Navy and Army heads (Admiral King and General Marshall) regarded the existing situation as unsatisfactory. Both accepted the principle that all A/U aircraft should work under one Air Commander within his area whatever the nationality of the squadrons.⁽⁴⁾

A.H.B./
1D/12/164
Dunston to CAS
T.O.O. 0150A/
5/3

- (1) See Volume III - Chapter XII (ix) page 499.
- (2) Hitherto Admiral Hall had, since 19 November 1942, been established at Casablanca as Headquarters Sea Frontier Forces of the Western Task Force.
- (3) Nos. 1 and 2 A/S squadns - U.S.A.A.F. arrived Port Lyautey between the 9 and 14 March 1943.
- (4) A suggestion was made in Conference by V.C.N.S. that the newly constituted Allied A/S Survey Board be directed to visit the Casablanca area and make recommendations. Although agreed to immediately by the Admiralty, no action was taken by Cominch.
Ref: A.H.B. IIK/24/258 (1) - V.C.N.S. T.O.O. 2237Z/4/3 and reply T.O.O. 1745A/5/3.

SECRET

12

A sub-committee was appointed by Admiral King to make recommendations for the better organisation and control of A/U aircraft in the Gibraltar/Morocco area.

Ibid
T.O.O. 0245Z/6/3

The sub-committee recommended that:-

(A) The area be under the command of a Flag Officer subordinate to N.C.X.F. (The British Naval Commander - Torch Expeditionary Force).⁽¹⁾

(B) That this flag officer have complete responsibility for all shipping and A/U measures and should exercise operational control of all A/U forces both air and surface of all Allied Nations in the area.

Ibid
copies of
letters
between C.N.S.
and C.A.S.
8.3.'43

The last part of 'B' was immediately opposed by C.A.S. as being directly against the Air Ministry principle of ever placing air forces under the control of a local Flag Officer. In order to get some general control of the American forces working from Morocco as quickly as possible the C.N.S. appealed to C.A.S. to give in on this point and slightly gilded the pill by suggesting the word 'direction' in place of 'control'. Sooner than force an impasse and to obviate long discussion C.A.S. accepted but only on the understanding that:-

- (1) It did not form a precedent for any other area.
- (2) The relations between the A.O.C. Gibraltar and the Flag Officer Gibraltar should remain as at present.
- (3) It would not affect the question of whether the A.O.C. Gibraltar should, for administration and allocation of aircraft, come under Coastal Command.

Ibid
Admty. to
C.-in-C. Med.
T.O.O. 0207A/
9/3

The Admiralty informed N.C.X.F. (who had now become C.-in-C. Mediterranean) of the slightly amended recommendation 'B' and the conditions under which C.A.S. agreed and received C.-in-C. Mediterranean's concurrence.

Ibid
V.C.N.S. to
C.N.S.
T.O.O. 1851Z &
2005Z/8 &
1443Z/9/3

However, at the last moment the Washington Conference altered the wording in recommendation 'A' to read 'C.-in-C. Allied Expeditionary Force (General Eisenhower) in place of N.C.X.F. This change resulted from an objection by General Marshall. Ever suspicious of naval attempts to control Army Air Squadrons, he insisted on naming the Commander in-Chief when Army aircraft were concerned.⁽²⁾

Ibid
C.N.S. to C.-in-C.
Med.
T.O.O. 1128A/9/3

In the light of the new wording the decision as to who was to exercise operational direction now lay in the choice between the British Flag Officer Gibraltar and the American Flag Officer Moroccan Sea Frontier and General Eisenhower had the choosing. It was now the Admiralty who protested. An exchange of signals between C.N.S. and C.-in-C. Mediterranean showed complete agreement for insistence on the original wording.

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- (1) Both the Admiralty and N.C.X.F. (Admiral A.B. Cunningham) assumed that this flag officer would be the British Flag Officer Gibraltar.
 - (2) This re-wording was not unacceptable to the U.S. Navy department as the original naming by the sub-committee of the British N.C.X.F. was only tolerated because he was a deputy of the American Commander-in-Chief.

C.N.S. to
C.-in-C. Med.
T.O.O. 1329A/9/3
and replies
T.O.O. 1929A/9/3
and 1112A/10/3

In his directive, N.C.X.F. was responsible to the Allied C.-in-C. for Torch communications only but to the Admiralty for Sea Communications in general. Many convoys in the area were not concerned with Torch and were an Admiralty responsibility as part of the Battle of the Atlantic in an essentially British strategic zone. If the new wording was accepted the area would come ultimately under the Combined Chiefs of Staff and not the Admiralty - a state of affairs which they could not tolerate.

Ibid
Admty. to B.A.D.
Washington
T.O.O. 1053A/10/3
Reply 2117Z/10/3
and C.N.S. to
V.C.N.S.
T.O.O. 0246A/12/3

Accordingly the Admiralty instructed their Washington delegation to insist on the original wording and C.N.S. sent a personal signal to V.C.N.S. in which the reasons for refusal to accept the new wording were given in detail. After many attempts to induce the American side of the Conference to reconsider the matter, they flatly refused to alter the final wording and the sub-committee's report and recommendations were withdrawn. In their place 'The Conference decided to invite the attention of the High Command concerned to the situation that exists but to make no recommendation other than that operational control of A/U operations be co-ordinated in the area in question'. In view of this failure to agree, C.N.S. released C.A.S. from his concessions re ^{to place} placing air forces under the direction of the local flag officer.

Ibid V.C.N.S. to
C.N.S. T.O.O. 1947Z/12/3
~~11/3~~

Ibid
C.N.S. to C.-in-C
Med.
T.O.O. 0145A/13/3

Meanwhile the A.O.C.-in-C. Coastal Command⁽¹⁾ had been asking for the proper co-ordination of the Moroccan flying through the A.C.H.Q. Gibraltar. He pointed out that a precedent existed in that Admiral King at the Casablanca Conference had insisted that French naval aviation based at Dakar, and also desirous of independence, should be operationally controlled by the A.C.H.Q. Freetown. What therefore was sauce for the French goose was sauce for the American gander. The matter was of practical urgency as he wanted to withdraw British Catalinas recently sent to Gibraltar in order to reinforce No. 19 Group consequent on the withdrawal of Nos. 1 & 2 A/S Squadrons U.S.A.A.F. but could not do so until the American authorities treated the whole area as one under British co-ordinating control.

Ibid
H.Q.C.C. to
RAFDEL
T.O.O. 0948A/6/3
and C.C.
Appendices
A.H.B./IIM/A.3/
Id. APP. M.

Now that the Bay Offensive was being stepped up with the aid of 10 cm. A.S.V., he also wished to integrate A/U air operations to the west and northwest of Gibraltar with those of No. 19 Group. He therefore pressed for the restoration of the R.A.F. Gibraltar to his control as provided for in the Torch directive now that the expedition was firmly established in Algeria. However these efforts to regain his own property met with opposition from the C.-in-C. Mediterranean who claimed an over-riding control extending in the Atlantic to the limits of the Gibraltar Naval Command.⁽²⁾ Sir John Slessor's application was stifled and he was forced to rely, during the next six or seven months, on the unofficial (but none the less sincere) co-operation of the A.O.C. Gibraltar for any integrated A/U flying in the Atlantic from Gibraltar.

Ibid
C.-in-C. Med.
to Admty.
T.O.O. 1404A/13/
3 and
1303A/14/3

When forwarding the conclusions of the Washington Conference at the end of March, Admiral King in his covering

- (1) Air Marshal Sir John Slessor
- (2) These were between the latitudes of the Canary Islands and Cape Finisterre out to longitude 40°W - well to the westward of the Azores.

Ibid
Admty. to
C.-in-C, Med
T.O.O. 1323A/28/
3

remarks concurred in the placing of one officer in control of all A/U naval and air forces in the Gibraltar/Morocco area. Discussions to that end between General Eisenhower, Admiral Cunningham and Air Marshal Tedder never came to any decision and resulted in the continuation of virtually surreptitious flying from Gibraltar in support of Coastal Command's A/U plans and a perpetuation of much wasteful flying by the independent American Morocco Sea Frontier Commander who continued in independence by virtue of being the deputy of General Eisenhower via his naval commander.

O.C./S.31
Part II
Encl. 28A
and
Encls. 57A to
73A

The situation was examined in June 1943 by the Allied Anti-submarine Survey Board. They recommended the immediate abolition of the Moroccan Sea Frontier and that all American A/U aviation should come under the operational control of the A.C.H.Q. Gibraltar. This finding was agreed to by the British Chiefs of Staff and by both Air Marshal Tedder and Admiral Cunningham but was refused by the U.S. Navy Department under Admiral King.

This incongruous set-up persisted until October 1943 when the Azores were taken over by the Allies and A/U flying under control by Coastal Command started from the island of Terceira where No. 247 Group were established. The absurdity of refusing control of the R.A.F. Gibraltar to Coastal Command became even more glaring and at last the Coastal squadrons there reverted to the parent Command. The independence of the Morocco Sea Frontier, however, continued to the end of the war.

(v) - Unified Air Command for A/U operations in the Atlantic

This aim was never achieved in spite of prolonged negotiations. The subject bristled with difficulties. Apart from national susceptibilities, one of the two nations - the United States - had a major domestic problem in the discord endemic between their Army and Navy.

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Forces in World
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pages 549 and
553

Mention has been made in Volume III Chapters III and XIII of the growth of A/U aviation along the shores of the Western Atlantic and that it was the U.S. Army Air who supplied and crewed the majority of these aircraft. In order to co-ordinate their scattered units an Air A/U Command was envisaged in August 1942 by the U.S. Secretary of State for War (1) which would, analagous to Coastal Command, exercise administrative and day to day operational control of all A/U aviation but still be under the over-all operational direction of the U.S. Navy Department in Washington. Realisation of the probable resistance by Admiral King to the inclusion of U.S. Navy aviation resulted in the limitation of this Command's scope to the Army Air A/U units alone.

The Command was set up on 15 October 1942 with the title of the Army Air Force Anti-Submarine Command under Brigadier-General W.T. Larsen as commanding general with headquarters at No. 90 Church Street, New York. It was intended to operate the two Army A/U Wings(2) through Area Combined Headquarters at New York for the Eastern Sea Frontier and Miami for the Gulf

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- (1) Mr. H.L. Stimson aided by his expert A/U consultant Dr. Edward L. Bowles.
 - (2) In the autumn of 1942 these numbered 148 aircraft made up of 12-B.17 (Fortress), 14-B.18 (Digby), 35-B.25 (Mitchell), 3-B.24 (Liberator) and 32-B.34 (Ventura), A.20 (Boston) and A.29 (Hudson)

Sea Frontier. At the express wish of the Army Air an experienced R.A.F. officer was attached to headquarters as liaison adviser.⁽¹⁾ Thus initially the theoretical analogy to Coastal Command and the Admiralty was fairly close but there soon appeared important differences. Firstly, the Church Street headquarters had no operations room from which the current situation could be followed and controlled; secondly there were no U.S. Naval Staff attached nor was there any access to a U-boat Tracking Organisation; thirdly, the authority for moving Army A/U Squadrons within the United States zone was not in the hands of General Larsen but lay with the U.S. Navy Department in Washington.

Ibid
page 551

From the first, this effort to set up a single A/U Air Command even of Army Air squadrons was viewed in a lukewarm manner by Cominch. He had no intention of allowing the Army Air to participate in maritime war a moment longer than could be avoided. He had obtained a very large future allocation of Liberators under the Arnold/Towers Agreement of March 1942⁽²⁾ and planned to be able to take over all such tasks by the autumn of 1943. He was, therefore, not interested in the Army Air project of centralisation and so the new Command left undefined the nature and extent of operational control exercised by him. It also left untouched the wasteful parallel development of two land-based air forces for the same task and the differences concerning the most effective way of employing the aircraft in the A/U campaign.⁽³⁾

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War II ~~Vol~~
Volume II
pages 384 and
385

Thus by the end of 1942 there still was no single Commander of the American Air Forces whose sole responsibility it was to prosecute the air A/U warfare and to move air A/U forces as the tactical situation indicated. In fact the problem presented itself in a particularly aggravated form. Naval operational control, although not as yet having any integrated system for its exercise, persisted through all the lower-echelon commands and was bitterly resented in the Army squadrons attached to the various naval sub-commands. In this it was utterly different from the almost nominal direction exercised by the British Admiralty which left Coastal Command to develop its tactics, techniques and daily operations in complete freedom.

A.H.B./IHK/
24/258 (1)

The mere fact of some sort of anti-submarine command having been set up in America raised interest in corresponding circles in England. A report on it forwarded by Group Captain Greswell at the end of January 1943 was commented on by the Secretary of State for Air in a minute to the C.A.S. early in February suggesting that every effort should be made

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- (1) Group Captain J.H. Greswell
 - (2) The allocation was 200 Liberators by 1.7.43. Deliveries started in August 1942 and by the end of the year totalled 52. They reached 209 by 1.7.43. when Coastal Command who were fighting the Air Battle of the Atlantic still had only 61. (37 V.L.R. and 24 L.R.).
 - (3) One of these differences was fundamental. While Cominch maintained that convoy with adequate air and surface craft escort was the only way to defeat the U-boat at sea, the Army Air Command wished to use the Liberators on patrols over likely U-boat areas in so-called hunts to exhaustion unrelated to convoy movements.
- Ref: The Army Air Forces in World War II - Vol. I. Chapter 15 pages 545 and 553 and Vol. II Chapter 12 pages 379 to 383.

to obtain co-operation between this new Command and Coastal Command for ocean convoy escort and long range A/U patrols right across the Atlantic.(1)

Almost simultaneously the U.S. Joint Planners were ordered to study the problem under the following exploratory headings:-

(a) Centralisation of operational control of all A/U resources on each side of the Atlantic under one commander, the western under a U.S. Commander, the eastern under a U.K. Commander.

(b) Centralisation of strategic control under one Supreme Commander of all A/U resources in the whole Atlantic Ocean.

The Army Air Force planners recommended that all Allied A/U forces in the Atlantic should be placed under one Commander who would have no other responsibility. This over-all Commander should have a deputy for the Air and one for the Surface forces operating in the Atlantic. This scheme met consistent opposition from the U.S. Navy planners who were concerned to avoid any restriction of the Navy's right to organise its forces according to its own principles. The resultant recommendation which emerged after weeks of argument was a compromise which, in its efforts to avoid giving offence, was of little practical value and presented no solution. In England it was realised that there was nothing to be gained by pressing for closer co-operation until the U.S. domestic problem had been solved.

In mid-April, General Marshall sought to revive the flagging effort to co-ordinate all Allied A/U resources. Backed by the Secretary for War - Mr. Stimson - he laid his suggestion before the U.S. Joint Chiefs of Staff in a memorandum dated 19 April. This confined itself to air operations in the U-boat war and declared the only solution to be a unified air command applicable to the V.L.R. type of aircraft alone. At least 250 of this type, both Army and Navy crewed, should be placed under a single Air Commander who would be answerable direct to the Joint Chiefs of Staff thereby, it was hoped, avoiding questions of rival service jurisdiction. For the post of Air Commander two names were mentioned - General Kenney U.S. Army Air and Air Marshal Tedder R.A.F. - either of whom would give the new command the necessary prestige.

The gist of the negotiations which led to this fresh proposal was given to the Prime Minister by the C.A.S. in memoranda dated 18 and 21 April in which he re-emphasised that the first requirement was for the Americans to put their house in order and then only could two Air Commands for A/U operations be established one on each side of the Atlantic to be subordinate to a single supreme Air Commander. This latter could then be made responsible for organisation, procedure, tactical method, equipment and control but the allocation of resources must remain in the hands of the Combined Chiefs of Staff. Regarding the naming of the Air Commander, Air Marshal Tedder could not be spared from the Mediterranean moreover

(1) At this time the strength of the Army A/U forces was 209 aircraft divided into 19 squadrons. There were still only 20 Liberators, the majority of which were in Nos. 1 and 2 Squadrons stationed at St. Eval in Coastal Command's No. 19 Group.

A.M.
A.C.A.S. (P)
File No. 35/4

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Forces in World
War II
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Page 386.

A.H.B./
ID/12/164
Signal
RAF DEL to A.M.
T.O.O. 0300Z/10/4

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Forces in World
War II Vol. II.
Chap. 12 pages 389
and 390.

A.H.B./
ID/12/164
Signal
RAF DEL to
A.M.
T.O.O. 2346Z/
14/4

A.H.B./
ID/12/164

neither he nor General Kenney⁽¹⁾ had had any experience of anti-U-boat operations on a large scale. If such a Command was eventually established, it should be a British officer because of our absolute dependence for our life on the Atlantic trade routes and because of our vastly greater experience in anti-U-boat warfare. The obvious candidate was the existing A.O.C. in C. Coastal Command - Air Marshal Sir John Slessor.

Much the same conclusions re a supreme Air Commander had been reached independently in U.S. Government circles and both Secretary Stimson and General Arnold were in agreement. The U.S. Assistant Secretary for Air - Mr. R.A. Lovett - was therefore instructed to go over to the United Kingdom to clinch the proposal.

ibid

Meanwhile the Prime Minister asked the First Sea Lord (C.N.S.) to comment on C.A.S.'s memoranda. In his reply dated 23 April, the C.N.S. was definitely against a supreme commander, either for surface ships or aircraft on the grounds that it would be impracticable for any one man to acquire an intimate knowledge in all parts of such a huge area as the Atlantic without being, more often than not, absent from his headquarters and he was doubtful of how such a super C. in C. would function vis-a-vis the A.O.C. in C. Coastal Command. Moreover if a British officer held this post there would inevitably be friction with the Americans while the idea of any American officer was to his mind unthinkable as, apart from the lack of one with the necessary qualification, there would be an American officer interposed between the Admiralty and Coastal Command. He went on to point out that under the Washington Convoy Conference Agreement we now had the practical advantages of a unified command in the northern part of the North Atlantic and with the Kauffman/Mansfield Advisory Board a means of obtaining an intimate knowledge of conditions on both sides of the Atlantic so as to be in a position to recommend the transfer of forces from one area to another.

ibid

Similar views were held by Sir John Slessor and when in May Mr. Lovett discussed the matter with him he said that attractive as the idea of a unified air command seemed in theory it was in practice bound to antagonise the U.S. Navy Department. The better way was to work for co-operation whereby we should get most of the practicable substance of the project without bothering too much about the shadow. In a letter to the C.A.S. reporting this conversation, Sir John said that if the single Air Command did come into existence it was no good merely nominating someone who was acceptable to both sides, calling him C.-in-C. Ocean Air Command and giving him the responsibility unless he was given the powers effectively to exercise command which involved moving squadrons from A to B. He did not see Cominch agreeing to this. However it was not we who were putting the project forward but the Americans and there were very real advantages if they would really allow it to work. There was no doubt that the Atlantic north of the equator should be regarded as one battlefield from the air point of view. He suggested that if the subject continued to be seriously considered that C.A.S. should insist on the Gibraltar/Morocco situation being cleared up and that both British and American

(1) General Kenney had been fighting the Japanese in the S.W. Pacific.

squadrons operating in the Atlantic from bases in this area be in the Atlantic Command leaving Tedder and Cunningham to get on with the battle in the Mediterranean. At the moment there were three Air Forces waging three different A/U wars in that area.

Reverting to General Marshall's plan for a V.L.R. air contingent under a single head, it was fairly plain that, although not specifically mentioned, there would be a strong claim for the command to go to an Army Air officer. The U.S. Navy Department saw this and deferred any action on the proposal pending a report of their own planning. On 1 May, Cominch presented an alternative plan. He proposed to set up at once in the Navy Department an anti-submarine command to be known as the Tenth Fleet. This would have jurisdiction over all the existing A/U activities of the U.S. Fleet including all Sea Frontier Commands. Be it noted these latter contained all the operational Army A/U Air squadrons. The role of the Army A/U Air Force Command would thus be reduced to initial training and maintenance.

This plan naturally failed to meet General Marshall's approval particularly as it removed the executive command of the Army A/U V.L.R. force from the Joint Chiefs of Staff and placed it under the U.S. Navy Department. While willing to compromise on acceptance of the Tenth Fleet as the doctrinaire authority on A/U activities he requested the command of the land-based V.L.R. component to go to an Army officer observing that the majority of these aircraft both in existence and scheduled were Army supplied, crewed and maintained.(1)

This, being the very core of the controversy, immediately became the subject of lively discussion during which, on 19 May, Cominch brought into force the Tenth Fleet organisation for the exercise of unified control over U.S. anti-submarine operations in all parts of the Atlantic under U.S. strategic control. Underlying the question of control there was a deep rooted distrust felt by Cominch of any form of Army ownership of the long range shore-based aircraft which came from the basic difference in outlook between the Army conception of using these aircraft 'offensively' in searching for U-boats all over the wide ocean and the Navy principle of convoy support with any other patrols strictly related to convoy positions - a policy dubbed in Army circles as 'defensive'. Cominch put every obstacle in the way of what he felt was a misuse of Liberator strength even to the extent of opposing the allocation of Liberator re-inforcements to the Eastern Atlantic in case they should be employed on 'offensive' missions unrelated to convoy movements.(2)

- (1) In the latter part of May, the Army A/U Command had 114 operational long range aircraft, 72 of which were Liberators, 10 Fortresses and the remainder Mitchells. The Navy had in the Atlantic only 46 land-based long range aircraft - all Liberators. At this time Coastal Command had 48 Liberators of which 34 were V.L.R.
- (2) At this time (June 1943), Cominch was becoming favourable to the transfer of American Liberator squadrons to the Bay of Biscay operations partly because of the withdrawal of U-boats from the northern part of the N. Atlantic but mainly because he wished to provide additional air cover safeguard to the eastern end of the New York/Gibraltar convoy run.

Superimposed on this distrust was the fundamental discord between the U.S. Navy and Army, the active opposition of the former against any poaching on their preserves and a fixed determination to have nothing to do with any form of independent air forces.⁽¹⁾ Hence the wasteful policy initiated by Admiral King of building up a rival organisation of naval Liberators.

ibid
pages 404 and
405

As this organisation grew it became possible for Admiral King to plan for Naval Liberators to carry out long range bombing of naval targets and the problem of control of A/U aircraft expanded into a claim by the U.S. Navy department to exercise jurisdiction over all the land-based long range aircraft employed on over-water missions whether bomber or A/U in nature. This if carried to its logical conclusion threatened the separate existence of the whole Army long range bomber force. Accordingly Generals Marshall and Arnold prepared yet another plan. They were willing to recognise that the Tenth Fleet should exercise jurisdiction over all anti-U-boat forces including the air arm but they were convinced that the L.R. and V.L.R. air units must operate as a joint force under a single Air Commander who, because of the preponderance of Army material and personnel, should be an Army air officer. Their plan nominated such an officer and their proposals contained details of his status and duties within the Tenth Fleet organisation.

ibid
pages 406 and
407

Cominch objected vigorously to this plan on the grounds that, by placing all L.R. and V.L.R. aviation under an Army officer, it would shift the responsibility for the tactical and technical employment of such aircraft from naval officers familiar with the problems to an army commander who might be expected to differ radically and so bring about more disunity than ever. As it was, the long drawn out argument was affecting the whole air campaign against the U-boats. There was need to re-inforce the support given to the Africa bound convoys and the Bay of Biscay operations. The Army was well aware of the latter but was reluctant to commit any of their Liberator squadrons until the question of control had been settled.

To avoid a complete deadlock a conference was convened on 10 June to settle the question once and for all.⁽²⁾ In brief the resulting agreement was:-

1. The Army was prepared to withdraw their anti-submarine air force from all A/U operations when naval squadrons were ready to take over.
2. Army A/U Liberators would be turned over in exchange for Navy Liberators of bomber type.
3. Long range bombing was to be primarily an Army responsibility.

(1) This latter is borne out by Admiral King's attitude towards the R.A.F. Although personally friendly to Sir John Slessor, neither King nor his Tenth Fleet organisation ever acknowledged the existence of Coastal Command in the A/U war. Even when, from the autumn of 1943, several units of the Tenth Fleet were under Sir John's operational control there was no direct contact whatever between this organisation and Coastal Command.

(2) The chief personalities were Rear Admiral John S. McCain U.S.N. and Generals Arnold and Joseph T. McNarney.

However, this agreement in committee was not approved in toto by Cominch himself. He accepted the transfer of the Army's anti-submarine responsibilities but gave no indication of relinquishing his claims to control the long range bombers. This somewhat intransigent attitude caused General Marshall to send a sharply worded protest to Cominch in a memorandum dated 28 June 1943. In this he said that an impasse over this Agreement would not only worsen the bad feeling between the Army and Navy and meet with public condemnation were the facts to be published but was likely to harmfully affect the war effort. This had the desired result and on 9 July the Agreement was accepted by both the Navy and War Departments. A gradual transfer of Army A/U Squadrons followed⁽¹⁾ and on 31 August the Army Air Force Anti-U-boat Command was dissolved.

ibid

While all this was going on there had been a development on this side of the Atlantic which must be mentioned here as illustrating the expedience of some form of unified control.⁽²⁾ On the 28 March the Admiralty had submitted to the Cabinet A/U Committee a demand for 190 Lancasters to be added to the first line strength of Coastal Command for operations in the Bay of Biscay. This demand was based on a study by the Operational Research Section of the Admiralty which sought to prove that it was the only way in which the U-boat menace could be overcome.

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28 March

These aircraft could only be supplied at the expense of Bomber Command, and the Admiralty's demand was summarily rejected by the Prime Minister on the grounds that Bomber Command were, at the time, the only Allied force that was exerting any pressure upon Germany. It was also strongly opposed by the A.O. C-in-C. Coastal Command. Sir John Slessor affirmed that the British and Americans already had between them in the Atlantic area as many, if not more, long range (as distinct from V.L.R.) A/U aircraft than were required; the trouble was that many of them were in the wrong place, notably on the American Sea-board where there had been no serious threat for about nine months. The right answer was to redeploy the existing L.R. and M.R. resources, concentrating them in the area where the opportunities for kills were most fruitful. At the time that area was unquestionably the Bay of Biscay.

A.U. (43)
13th meeting
13 March

Memo to C.N.S.
and C.A.S.
4 April and
Despatch by
A.C.M. Sir John
Slessor-Part II
paras. 13 to 20

After some weeks of discussion a signal was sent to the Combined Chiefs of Staff on 21 April suggesting the transfer of 72 long range aircraft from the Western Atlantic to the Biscay area. After a further two month's argument it was agreed that two U.S. Army A/U Liberator Squadrons (total 24 aircraft) should be transferred from Newfoundland to the United Kingdom. This was far short of the 72 for which we had asked and towards the end of June Sir John Slessor flew to Washington to see Admiral King. Eventually in a signal dated 7 August the Admiralty was informed by Cominch that additional Squadrons to make up the 72 would arrive in the United Kingdom at the end of August - four months after the proposal had first been submitted. Actually the first squadron from the Western Atlantic did not get into action in the Bay of Biscay till mid-July and the re-inforcement not till September. We never did get the full 72 for which we had asked.

Signal
J.S.M. to
W.C.O. 15 June

- (1) By 6 October, naval Squadrons had replaced army Squadrons in all areas except the Morocco Sea Frontier. These too were relieved by mid-November 1943.
- (2) This development arose over the efforts to provide long range aircraft for the Bay of Biscay. The policy arguments are given in full in Chapter III (viii) which deals with the Bay Offensive.

Fortunately the existing British aircraft were able to inflict heavy casualties on the U-boats in the Bay without them but there is no doubt that all this cumbersome and lengthy procedure resulted in the loss of many opportunities for killing U-boats at the height of the Bay Offensive between March and August. Had there been some form of Unified Air Command in the Atlantic this could have been avoided.

The story of the attempts to achieve a unified air command in an area where the enemy was always a unified operating force has been narrated at length not only for the lessons which emerge but to show the climate of opinion in American circles - a climate in which all the British efforts to get L.R. and V.L.R. Liberators first for the mid Atlantic convoy support and then to prosecute the Bay of Biscay offensive were inevitably vitiated. One cannot help thinking that had there been no clash of opinion between the U.S. Navy and Army, the questions of V.L.R. aircraft, their supply, allocation, control and co-ordination would have been settled in mid-1942 and many lives, ships and cargoes saved besides effecting an earlier defeat of the U-boats at sea.

(vi) - The provision of V.L.R. aircraft for the Atlantic

In Volume III chapter XII (xi) were narrated the efforts to speed up the provision of Liberators from America for the better prosecution of the war against U-boats around the mid-Atlantic convoys and in the outer Bay of Biscay. Although the first maritime Liberators had been supplied to the R.A.F. Coastal Command as early as mid-1941, the promised flow of re-inforcements had dwindled in 1942 to a mere trickle so that by February 1943 there was still only one V.L.R. squadron (No. 120) working with the convoys in mid-Atlantic. One other squadron (No. 224) had been formed of ordinary long range Liberators which was operating in the Bay of Biscay.

The American Army Air Force had, through its Anti-submarine Command, provided its only two Liberator squadrons⁽¹⁾ also for the Bay of Biscay and operating under Coastal Command's No. 19 Group. The U.S. Navy, at this date, had taken delivery of some 70 to 80 Liberators but only 34 were operational and all were in the Pacific. None of the U.S. Army or Navy maritime Liberators were V.L.R. in performance so that early in February, when the crucial struggle in the North Atlantic was starting, there was only one Allied V.L.R. squadron available for mid-ocean convoy support.

At the Casablanca Conference in January 1943 the Combined Chiefs of Staff had issued a paper containing a report by the Combined Staff Planners giving the requirements in shore-based aircraft necessary for the defence of trade. The mid-N. Atlantic was designated the V.L.R. area and a figure of 80 V.L.R. aircraft was given as the minimum requirement for convoy escort and support in this area.

C.C.S. 160

(1) All other U.S. Army Air Liberators were of the bomber type and, apart from those scheduled for the Pacific and the U.S.S.R., were being fed into either the growing VIIIth U.S. Air Force in England or the Allied Air Force in North Africa.

It was suggested that 60 of these should come from the U.K./Iceland side and 20 from North America.

To build up the U.K./Iceland figure and to increase the number of ordinary Liberators for use in the Bay of Biscay the scheduled allocation of Liberators to the R.A.F. from American production were, under the Arnold/Evill agreement, stepped up from the previous four per month to 15 for January, 20 for February and 25 for March.⁽¹⁾ A proportion of these were to remain production line bomber type but up to a maximum of 20 in any one month were to be modified in America to G.R. standards and be fitted with 10 cm. A.S.V. On arrival in England a further moiety were to be converted to V.L.R. specification at Prestwick.

As it took two to three months for the modifications in America and a further month at Prestwick the increase in V.L.R. Liberators estimated to become operational by April was not considered adequate to meet the growing gravity of the situation in mid-Atlantic. At the 9th meeting of the Cabinet A/U warfare committee, held on 3 March, the C.N.S. said although it was anticipated that we would have a total of 40 V.L.R. Liberators by April this was not sufficient to meet requirements in view of the ocean convoy cycle being reduced to five days. The meeting invited the C.A.S. and Minister of Aircraft Production to expedite American deliveries and modification times. It also agreed that it was more important to provide V.L.R. aircraft for the mid-Atlantic convoys than ordinary Liberators fitted with 10 cm A.S.V. for the Bay of Biscay.

The urgency for V.L.R. aircraft was taken up by the British Joint Staff Mission in the Washington Convoy Conference. One of the findings by this Conference recommended an immediate deployment into the N.W. Atlantic and a suggestion was made that the Canadian authorities should request a direct allocation. This suggestion was promptly followed up by them although previous unofficial requests had been turned down by the U.S. Navy Department. In a personal signal to the British C.A.S., the Canadian C.A.S. stated that in spite of American proposals to send an Army Air squadron to Gander in April and a Navy squadron to Argentia in June, these intentions seemed to him too indefinite and much more urgent action was desirable. He had a number of experienced crews available but no V.L.R. aircraft with which to match them in order to extend his existing escort and patrols into the 'Air Gap' in mid-Atlantic. He therefore requested an immediate diversion of twenty Liberators from the R.A.F. allocation to enable him to form a V.L.R. squadron, such diversion to be at the rate of five in March, ten in April and five in May.

This request was examined in the Air Ministry together with the conclusions of a Cabinet A/U Warfare meeting of 11 March in which both American and British modification centres were invited to speed up deliveries of V.L.R. Liberators.⁽²⁾ It was agreed that the urgency of the situation warranted this diversion to the R.C.A.F. even at the expense

- (1) Thereafter the figures were to be 35 in April, 40 in May, 45 in June and subsequently.
 - (2) Resulting from these conclusions the American authorities were asked to modify the whole of the R.A.F. Liberator allocation to G.R. standards for the next three months.
- Ref: C.A.S. File No. 923 Part 2.

C.A.S. file
No. 923 Part 2.

AU (43) 39
2 Feb.

ibid

AU (43)
9th meeting

A.H.B./
ID/12/164
signal
X.797A.1002
9 March

C.A.S. File 923
Part 2.
Air Ministry
meeting 13 March

of delaying the re-equipment of two⁽¹⁾ of the Coastal Command squadrons scheduled to become V.L.R. provided that this did not affect the dates of the first two.

A.H.B./
ID/12/164
Webber W. 706
18 March

ibid
Marcus 517
19 March

ibid
Marcus 610
23 March and
Troon 107
24 March

C.A.S. File
No. 923 Part 3
Telegram No. 263
20 March

ibid
Minute P.M. to
C.A.S.
25 March

ibid
AX. 143 25 March

AU (43) 68
8 March

However, to avoid any possibility of upsetting the flow of Liberators to the R.A.F., the British C.A.S. through the medium of the R.A.F. Delegation in Washington asked General Arnold if he would make a direct allocation to the Canadians. General Arnold was favourable to this request but finally decided it would be a dangerous precedent leading possibly to a commitment for all the V.L.R. aircraft now being asked for on the American side of the Atlantic and so making the U.S. Navy Department free to divert their entire allocation of Liberators into the Pacific. General Arnold also felt strongly that as the U.S. Navy had secured a huge allocation of Liberators⁽²⁾ for the express purpose of meeting the submarine menace they should make this allocation to Canada for what was an essentially naval task. He therefore suggested that the British authorities should ask Cominch outright for these aircraft although he regarded a negative reply as a foregone conclusion. In a message to C.A.S., the RAFDEL explained that while General Arnold was obviously sincere in his desire to help, he probably would not be averse to using the British request as a lever against the U.S. Navy Department in the domestic quarrel about ownership of long range land-based aircraft. RAFDEL suggested that, to avoid an awkward showdown in Combined Chiefs of Staff Committee, the Prime Minister should broach the subject direct with the President using the latter's recent sympathetic telegram about the current North Atlantic losses and necessity for more V.L.R. aircraft as a means of approach.

The Prime Minister was, however, averse to making any kind of official complaint at Presidential level and in the Cabinet A/U Warfare Committee it was decided to make the allocation direct to Canada from the American modification centre out of the R.A.F. allowance at a rate of five aircraft in each of the months March, April and May.

Meanwhile since the beginning of March other efforts were being maintained to augment the pitifully small force of V.L.R. aircraft actually operating in mid-Atlantic. Another study of the situation by the British Chiefs of the Air and Naval Staff had been placed before the Cabinet A/U Warfare meeting on 11 March. This stated that, as nothing further could be done to produce more surface convoy escorts, the only possible solution was to provide continuous air cover either by shore-based or carrier-borne aircraft or a combination of both. Acceleration in the provision of aircraft was essential and a minimum requirement for all types of aircraft operating from British bases was given in detail. One noteworthy recommendation was that the Azores should be utilised as an air base as early as possible to provide air cover so that a more southerly routing of convoys could take place. An examination of existing establishments showed

- (1) Nos. 53 and 311 Squadron. The first two were Nos. 86 and 59 Squadrons.
 - (2) A total of 400 Liberators delivered at a rate of 20 per month rising to 40 per month by August 1943. At this date (19 March) 112 had been delivered. Just over 70 of these were operational, all in the Pacific.
- Ref: U.S.N. Aviation Statistics (A.H.B./EF2/42/110).

SECRET

24

C.A.S. File
No. 923 Part 2

that the numbers of medium range land planes and flying boats were well up to requirement. The serious short-fall was in the L.R. and V.L.R. class. Here there was a total of 94 instead of the 150 deemed as the minimum. These 94 consisted of 38 Liberators, 22 Halifax and 34 Fortresses and amongst them the only V.L.R. aircraft were the 21 Liberators in Nos. 120 and 86 Squadrons. It was therefore recommended that the proportion of Liberators converted to V.L.R. should be increased so as to achieve an establishment of 80.

C.C.S.189

C.O.S. (W) 539
19 March

The U.S. Chiefs of Staff issued a report dated 16 March which was approved by the Combined Chiefs of Staff in which there was a minimum requirement of 120 V.L.R. aircraft in U.K./Iceland, 36 in the N.W. Atlantic and a further 104 in other parts of the Atlantic making a total of 260 to be achieved by August 1943. Acting on instructions from the Cabinet A/U Warfare Committee, a production study was made by the Air Ministry. By means of accelerating the V.L.R. and L.R. programmes and increasing the proportion of V.L.R. aircraft it was hoped to raise the British and Canadian V.L.R. force to 135(1) by the late summer. As promised by the Washington Conference, a United States contribution of 72 was expected to be available in the Newfoundland area by July and adding this to the 24 U.S.A.A.F. aircraft to be established in the Casablanca area a total of 231 was in sight against the target of 260. It was suggested that the U.S. Chiefs of Staff should initiate a similar review to ascertain whether the difference of 29 aircraft could not be found by an acceleration or extension of their programme.

A more considered programme for the re-equipment of further Coastal Command squadrons with Liberators was presented by the C.A.S. to the Cabinet A/U Warfare Committee on 24 March. In it he said that any acceleration of the target programme depended on three factors:-

- (a) Increased output from the G.R. modification centre in the United States
- (b) Provision of sufficient spares for aircraft and engines
- (c) Increased output of trained crews in Coastal Command.

C.A.S.
File No. 923
Part 3
AU (43) 93
22 March

As regarded (a), the M.A.P. had received assurances that during the next three months all Liberators delivered from America would be modified to G.R. standards. The resultant increase in numbers could be handled at Prestwick in further modification to V.L.R. specification. As regarded (b), this would require continuous pressure at high level in the United States where there were indications that the supply of spare parts might be sacrificed to maintain the aircraft output. As regarded (c), the A.O.C. in C. Coastal Command in conjunction with the Air Ministry had satisfied him that the schedule outlined below could be achieved.

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- (1) This figure included 15 Halifaxes. Although originally intended to be, these aircraft never were true V.L.R. Similarly the Fortress and, till much later in the year, all United States Liberators were merely long range. The confusion between V.L.R. and L.R. numbers was a constant source of misunderstanding in returns not only between British and American authorities but amongst their own staffs.

SECRET

25

ibid
AU (43)
12th meeting
24 March

As a result of a recent examination of the Bay of Biscay operations, the A.O.C. in C. Coastal Command had come to the conclusion that action round threatened convoys should have first priority and that the proportion of V.L.R. to L.R. Liberators should be 75:15. The C.A.S. was so convinced of the correctness of the policy of attacking U-boats round threatened convoys rather than in any other areas that he strongly recommended that all of the projected 90 Liberators be so converted.

On the basis of the above there should have become available 75 V.L.R. Liberators during June, 90 during July and 105 during August to which must be added the 15 in the R.C.A.F. The R.A.F. L.R. force would remain at 60, consisting of two squadrons of Halifax and two of Fortresses.

All the foregoing were comparatively long term programmes of expansion; what was needed was drastic and immediate deployment of V.L.R. aircraft into the N.W. Atlantic. The Washington Conference had recommended certain U.S. deployment of local squadrons but had said there should be no large diversion from aircraft earmarked for other theatres of war. That this showed a lack of appreciation for the seriousness of the mounting losses in the North Atlantic by both the U.S. Navy Department and the Army Air Command was realised by the RAFDEL at Washington. In a signal to the Air Ministry they stressed this and said they had informed their opposite numbers in U.S. Air circles of what was being done on the British side to accelerate the numbers of operational V.L.R. aircraft and they expected a similar examination and report from the Americans particularly the existing availability and location of Liberators in both the U.S. Army and Navy dispositions in the light of Atlantic priority, the state of crew training including 10 cm A.S.V. operators and what acceleration, if any, was being made to the flow of their aircraft through the modification centres.

A.H.B./
ID/12/164
Troon 107
24 March

C.A.S. File
No. 923 Part 3
Marcus 718
26 March

ibid
Minute by the
P.M.
29 March

Two days later a suggestion was made from RAFDEL to the C.A.S. that the Prime Minister, having delayed his reply to President Roosevelt's telegram re Atlantic losses and need for more V.L.R. aircraft, might now ask outright what the Americans were doing to help meet the emergency, observing that there were only 15 V.L.R. aircraft operating over the whole route at a time of critical shipping losses and of these only about eight were on daily availability. It was urged that without direct pressure from the President, Cominch would not act drastically or give priority to the North Atlantic over the Pacific. The Prime Minister took note of this and instructed a draft telegram on these lines to be made out but, although approving of it, he decided to wait a little before sending it.

In the meantime strong representations by the British Joint Staff Mission in the Combined Planners sub-committee on V.L.R. aircraft resulted in certain recommendations being endorsed by the Combined Planners. These were:-

(1) That 200 of the projected 260 V.L.R. aircraft should be allocated to the area north of latitude 40° N and in the approaches to the Mediterranean.

(2) That first priority of A.S.V. fitting should go to A/U Liberators for the Atlantic.

ibid
Troon 111
27 March

(17500)41

SECRET

(3) That all V.L.R. Liberator output during April and May should go to the A/U war in the Atlantic

(4) That if any V.L.R. aircraft assigned to the U.S.A.A.F., the U.S. Navy or the R.A.F. could not be immediately matched with a trained crew they should be re-assigned to another service including the R.C.A.F. who might have a surplus of A/U trained crews.

This report was discussed on 29 March at an ad hoc meeting of the Combined Chiefs of Staff and produced a much more realistic view amongst the U.S. Chiefs of Staff. Cominch's complacency regarding the increasing Atlantic shipping losses disappeared when it was recognised that an adequate number of V.L.R. aircraft for the North Atlantic was of the highest urgency and priority. It was decided that 255 V.L.R. aircraft must be provided by July. Of these, 75 would come from the Army Air Force, 60 from the Navy⁽¹⁾ and 120 from the United Kingdom including the 15 being diverted from the R.A.F. to Canada. General Arnold made himself responsible for making good the wastage of this Canadian squadron and undertook to replace the allocation to the R.A.F. at a later date.

The Planner's recommendations (1) to (4) were accepted and in order to satisfy them it was directed that an adjustment should be made in the priorities hitherto in force for other theatres of the war. Somewhat unwillingly the U.S. Chiefs of Staff accepted the formation of a joint committee comprising the Combined Planners together with technical and other assistance to report weekly on the actual progress made in providing operational V.L.R. aircraft.

This change of heart was welcome indeed and appears to have come about not only through the Combined Planner's report but because the President had enquired from the U.S. Navy Department of the number of V.L.R. aircraft which were operating on the whole North Atlantic route at the time of recent heavy sinkings. An additional cause undoubtedly was a report at this time from the Kauffman/Mansfield Allied Anti-Submarine Advisory Board in which the air coverage of the North Atlantic was described as totally inadequate and severe strictures were made as to the absence of proper A.S.V. training in the U.S. Navy. It was pointed out by the Board that at the time of recent heavy sinkings in the N.W. Atlantic there was not a single V.L.R. aircraft based west of Iceland.

The routine exchange of figures giving current strengths of V.L.R. aircraft now started in the new Progress Committee brought into prominence the confusion arising from the absence of a precise definition of such aircraft. To give two examples only shows the danger of such comparisons. On 30 March the figure for the United Kingdom gave 47 V.L.R. aircraft but 13 of these aircraft were Halifaxes. The American position was given as 26 Liberators in the U.S. Army A/S Command with 90 Liberators and 37 Coronado flying boats in the U.S. Navy.

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- (1) It will be noticed that the U.S. Navy contribution shows a big rise from the one squadron mentioned earlier in March in the findings of the Atlantic Convoy Conference. It seems that enquiries as to how the Navy Liberators were deployed had revealed a substantial allocation of these valuable aircraft for photographic and other types of reconnaissance in the Southern Pacific. (Marcus 800)

ibid
Marcus 800
29 March

and
J.S.M. 843
29 March

C.A.S. File
No. 923 Part 3
Waltz 69
30 March

ibid
 Wobber W. 324
 and 527
 13 and 21 April

Of these the only ones operational in the Atlantic were eight Army Liberators in the Casablanca area moreover none of the U.S. Liberators were V.L.R. and the Coronado was even further from V.L.R. standard. The real position at the end of March was that there was a total strength of only 34 V.L.R. aircraft in the North and North West Atlantic. These were in Nos. 120 and 86 squadrons with a few in the newly equipping No. 59 Squadron and of which a total of only 20 were actually operational.(1) On 15 April the figure given for the United Kingdom was 52 of which nine were non-operational and 12 were Halifaxes.(2) It was added on this occasion that the thirteen ordinary Liberators in No. 224 Squadron (operating in the Bay of Biscay) would be converted to V.L.R. specification.

This inclusion of non-V.L.R. aircraft in the returns by both American and British authorities continued throughout April and May and did much to hide the basic fact that the defeat of the U-boats by mid-May in the North Atlantic was effected, in conjunction with surface escorts and two escort carriers, by a maximum of 41 V.L.R. Liberators all operated by British crews.(3) Truly another case of the few being owed so much by the many.

(vii) The Expansion and Re-equipment Policy for Coastal Command

C.O.
 MS. 15,096
 Encl. 1A.

During the latter part of 1942, the expansion of the R.A.F. as a whole was in the course of implementation under Target Plan G which envisaged a total of 600 operational squadrons by December 1943. Owing to the growing shortage of man-power in the United Kingdom, the Air Ministry late in 1942 had been compelled to accept a drastic cut in their intake expectation for 1943. This necessitated a re-consideration of Target G figures and an attempt was being made to reconcile strategic requirements with the probabilities of aircraft and personnel availability. A new programme in draft form under the name Target Force H with completion date March 1944 was in the course of preparation. By comparison with Target G this showed a cut from 600 to 517 squadrons. This draft was discussed at a meeting of the Expansion and Re-equipment Policy Committee (short title E.R.P.) on the 4 January 1943. It was agreed that each of the operational Commands should

ibid

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- (1) Exact figures from squadron O.R.Bs
 - No. 120 Squadron 15 - still fitted with Mk. II A.S.V.
 - No. 86 Squadron 5 - ditto
 - No. 59 Squadron Nil
 - (2) Exact figures from squadron O.R.Bs.
 - No. 120 Squadron 15 still fitted with Mk. II A.S.V.
 - No. 86 Squadron 12 three with 10 cm A.S.V.
 - No. 59 Squadron Nil
 - (3) Exact figures in May from Squadron O.R.Bs.
 - No. 120 Squadron 16 - still fitted with Mk. II A.S.V.
 - No. 86 Squadron 13 - Four with 10 cm A.S.V.
 - No. 59 Squadron 6 - All fitted with 10 cm A.S.V.
 - No. 10 Squadron R.C.A.F. 6 - all fitted with 10 cm A.S.V.
- N.B. The only U.S. aircraft operating in this northern area were:-
- 12 U.S.A.A.F. Fortresses from Newfoundland)
 - 18 U.S.N. Amphibian Catalinas from Iceland)
- neither
 of which
 were
 V.L.R.

estimate their minimum requirements for the forthcoming year so that Target Force H could be prepared in detail together with a revised expansion programme for submission to the Air Council.

For Coastal Command this examination of future requirements necessitated consultation with the Admiralty. Following meetings between their representatives, provisional agreement was reached on a figure of 41 squadrons totalling 643 aircraft⁽¹⁾ apart from any other squadrons on loan from other Commands.⁽²⁾ This was still considered on the high side by the Air Ministry but further discussion was postponed until the newly appointed A.O.C.-in-C. (Sir John Slessor) had taken over the Command and re-examined the situation.

In a letter dated 26 February 1943, Sir John Slessor gave reasoned proposals for the future strength of Coastal Command. The figure amounted to 39 squadrons of total establishment 600 aircraft apart from any on loan and excluding photographic reconnaissance, air sea rescue and meteorological squadrons. This was a cut from the existing establishment of $3\frac{1}{2}$ squadrons. He also proposed that establishments should be standardized at 9 plus 3 for flying boat squadrons, 12 plus 3 for V.L.R., L.R. and M.R. land plane squadrons, and 16 plus 4 for L.R. fighter and torpedo squadrons. Furthermore, to keep overhead personnel to a minimum, he recommended that any additional expansion that might be found necessary in the future should be effected by raising the establishment of existing squadrons.

These proposals for Coastal Command's Target H were agreed at an Air Ministry meeting on 4 March and received approval from the C.A.S. on 12 March 1943. Certain minor changes had been made inside the Command prior to this approval⁽³⁾ but subsequently a re-organisation took place involving the disbandment of Nos. 119 and 246 Sunderland Squadrons and the transfer of No. 320 (Dutch) Hudson Squadron to Bomber Command for re-arming as bombers.

At Appendix I is given the March Order of Battle and strengths. Thereafter the number of squadrons remained almost constant and the expansion of Coastal Command took the form of occasional slight increases in squadron establishments. The emphasis was on re-equipment to more powerful and up to date aircraft.

A request was repeated for Mosquito VI aircraft with which to re-arm No. 235 Beaufighter Squadron in view of their reconnaissance duties off the Norwegian coast in face of the superior enemy fighter opposition. This was approved early in

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- (1) Not including Air Sea Rescue, Photographic Reconnaissance or Meteorological squadrons.
 - (2) In January 1943, Coastal Command's Order of Battle disposed 42 $\frac{1}{2}$ Coastal squadrons plus seven more squadrons on loan either from Bomber Command, the U.S. Air Force or the Fleet Air Arm. See Appendix I in Volume III.
 - (3) Notably the splitting of No. 210 Catalina squadron between Pembroke Dock and Gibraltar, the formation of No. 190 Squadron on Catalinas based at Sullom Voe and the creation of a special service flight (No. 1477) of three Catalinas manned by Norwegians based at Woodhaven (Firth of Tay). - Ref. A.M./S.6457 Encl. 176A.

ibid
Encls. 3B and 9A

ibid
Encl. 14A

A.M. File
S.6457
Encl. 179A

See Map No. 1
for location of
airfields

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29

A.M. File
C.M.S. 509
Encls. 41A, 44A
and 45A

ibid
Encls. 51A, 58A
and 74A.

March but such was the tight supply position in these universally sought after aircraft that only a flight of six aircraft could be allocated. This was not found satisfactory and in April the flight was transferred together with No. 1477 Catalina flight to form No. 333 (Norwegian) Squadron engaged on S.O.E. operations over Norway.

A new squadron came into existence at the end of March outside the Command's planned expansion. This was No. 618 Squadron formed at Skitten near Wick on twenty modified Mosquito Mk. IV aircraft. It had the special purpose of experiment and training in the development of a new bomb against enemy major warships. The bomb, whose code name was Highball, was similar to but smaller than that afterwards used in the breaching of the Mohne Dam. Trials and training continued for over a year without the squadron becoming operational.(1)

ibid
Encl. 71A

Unfortunately for the anti-shipping strike side of Coastal Command, the E.R.P. Committee decided that owing to other more important operational commitments overseas it would not be possible to re-arm the three Hampden torpedo squadrons with Beaufighters until the end of 1943.(2) In part compensation, a request by Coastal Command to train Nos. 547 and 304 Wellington squadrons for flare illumination and night torpedo operations was approved on 15 April 1943 and their establishments were raised to 16 plus 4 aircraft.

ibid
Encl. 72A

By early May the position for anti-U-boat aircraft was rapidly improving. No Whitley and only three Hudson squadrons remained, the others being in the course of re-arming to Leigh Light Wellingtons or Liberators. With a better flow of these latter aircraft from the United States there were more very long range aircraft available. During May when the U-boat war was at its height the Command disposed, apart from squadrons on loan, 28 anti-U-boat and 11 anti-shipping squadrons of total establishment 619 aircraft. The May Order of Battle and strength is at Appendix I. From July 1943 it was decided to show the establishment of squadrons as a single figure of unit equipment in place of the former I.E. plus I.R. figures.

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- (1) It had been intended to use this squadron against the Tirpitz in Norway. After the successful attacks on this ship by Bomber Command in October and November 1944, the squadron was trained in deck landings and despatched in two escort carriers to Australia where it was hoped to use the weapon in the Pacific war.
 - (2) An additional set-back to anti-shipping operations was the temporary detachment of No. 144 Torpedo Beaufighter squadron to the Mediterranean from 3 May 1943. This was one of the only two modern torpedo squadrons possessed by Coastal Command. It did not return to the line until 29 October 1943.

CHAPTER II

THE U-BOAT WAR IN MID-NORTH ATLANTIC - OPERATIONS
FEBRUARY TO MAY INCLUSIVE 1943

(i) Introduction

Before starting to recount the events at sea, the following is a brief description of the conditions obtaining in the first half of February 1943. Admiral Doenitz had just taken over the office of C.-in-C. German Navy from Admiral Raeder(1) but continued to exercise personal control of the U-boat Service and its operations under his previous title of Flag Officer U-boats (short title - B. d U.).(2)

Fuehrer
Conferences
on Naval
Affairs 1943
Pages 5 to 10

At his first official conference with Hitler on 8 February Doenitz reported that, during January, Allied convoys had on many occasions succeeded in avoiding the U-boat lines of search by evasive routing and were obviously aware of their precise disposition. This knowledge, he said, could come to them only through either treason or undetected air reconnaissance. In regard to the former possibility all necessary steps had been taken; if the enemy located U-boat formations by means of air reconnaissance the groups would have to be scattered more widely in spite of the resulting fall in interception efficiency. Such disadvantage was already apparent in the failure to locate convoys heading for the Strait of Gibraltar. With reasonably good German air reconnaissance the spotting of these convoys would be simple and the weakest point in the prosecution of the U-boat war was the complete lack of consistent air reconnaissance. This could only be offset by increasing still further the number of U-boats on patrol.

To ensure the necessary expansion of the U-boat fleet Doenitz requested and was granted complete exemption from transfer to the other armed services of all men and material pertaining to the Submarine branch including construction yard and repair personnel together with their equipment and all surface vessels connected with submarine warfare and training. Permission was given to co-opt into the U-boat service many of the personnel from the major naval surface units about to be decommissioned or reduced to training duty complements.(3)

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- (1) The causes and events leading up to the supersession of Raeder by Doenitz are given in Vol. III. Chapter XIII (xiv).
 - (2) Although keeping his finger firmly on U-boat operational policy and tactics, Doenitz actually delegated the day to day conduct of operations to Admiral Godt who had been his Chief of Staff. For simplification in the subsequent narrative, many of the orders, comments and memoranda have been credited to Admiral Doenitz as he was of course in agreement with the views expressed.
 - (3) Ships about to be paid off:- Hipper, Leipzig, Köln, Schlesien, Schleswig-Holstein and Gneisenau.

Ships to be reduced to training complements:- Scheer, Prinz Eugen, Nürnberg and Emden.

Leaving in full commission only the Tirpitz, Scharnhorst and Lützow.

Much of the shipping in the Atlantic as a whole was still not in convoy and it was among these independents and stragglers from convoys that the U-boats had obtained 70 per cent of their victims. The current campaign planned by Admiral Doenitz was, however, against the shipping using the lifeline route between North America and the United Kingdom and here the bulk was now sailing in convoy. The scene was one of preparation for what both sides realised was to be a decisive struggle. Doenitz was deploying U-boats into the 'Air Gap' in mid-N. Atlantic and the Allies were planning measures to strengthen the surface and air support given to convoys in this region.

(ii) February Operations(1)

The first major clash between the opponents had occurred in the early days of February when the slow eastbound convoy SC.118 of 64 ships had, between 4 and 9 February, lost eleven ships including three stragglers against the destruction of three U-boats and damage to three more by the surface and air escorts. Doenitz had effected a concentration of 20 U-boats against this convoy and, while pleased with this aspect of the operation, had blamed British air cover for robbing his boats of better sinking figures. The action had lessons for us also and they were not unheeded.

Operational Policy for V.L.R. aircraft

Firstly, the U-boat making the initial sighting and subsequent shadowing reports was speedily sunk thus hindering the concentration of the line of waiting U-boats. Secondly, the attacks by the pack did not start until the convoy was just inside maximum V.L.R. aircraft range from Iceland (900 miles from base). Had they occurred a day or two earlier the convoy losses might well have been far more serious. Thirdly, what losses there were in convoy occurred at night when air escort was necessarily absent. This absence could only be rectified if and when the air escorts were fitted with Leigh Lights, a requirement which was not met until the closing months of 1943.

The second lesson re-affirmed the vital necessity of closing the gap in air cover in mid-Atlantic and, pending the provision of V.L.R. aircraft in Newfoundland, of ensuring the maximum use of the few V.L.Rs at the Iceland/N. Ireland bases on actual escort or close support to convoys. Accordingly the new A.O.C. in C. Coastal Command(2) decided to place up to twelve Coastal Command squadrons on a basis of Planned Maintenance and Flying within the next three months giving priority to V.L.R. squadrons in this scheme. His memorandum dated 14 February stated that Planned Flying could be either:-

- (1) On a basis of maintaining a constant effort day in day out or
- (2) On a variable opportunity cycle whereby the maximum effort was available at peak periods when it was required to support a threatened convoy.

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- (1) In this and the succeeding sections the convoy and straggler casualties have been taken from Admty. BR.1337.
 - (2) Air Marshal Sir John Slessor.

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The recent experience of convoy SC.118 had proved that with but few V.L.R. aircraft the second alternative offered more opportunities for a U-boat kill per sortie. Indeed only by adopting this course could reasonably adequate assistance be afforded to convoys actually attacked.

Air protection to convoys was afforded under two headings:-

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February

- (a) By distant cover i.e. sweeps in areas where U-boat lines were suspected to be lying in wait
- (b) By close support of actually threatened convoys, which included sweeps in the immediate vicinity of such convoys.

The V.L.R. resources were so inadequate that it was impossible to apply both measures at the ranges from base at which the U-boat dispositions lay and he therefore proposed to adopt the second method alone and to plan the operations of V.L.R. squadrons, as they became operational, on a variable opportunity cycle confined to close support.

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and
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7th Meeting
17 February

This policy had the agreement of the Admiralty and was included in a memorandum laid before the next meeting of the Cabinet A/U Committee in which it was stated that 'unless strong air forces could be brought to a convoy attacked by a pack of U-boats heavy losses would inevitably follow.' This V.L.R. policy was approved by the Committee on 17 February.

U-boat dispositions

B. d U.
War Diary

At the beginning of February the strength of the U-boat Fleet was 410 consisting of 64 school boats engaged in training and exercising with 125 newly commissioned U-boats in the southern Baltic. 218 U-boats were fully operational, of which three were in the Black Sea, 18 based in West Norway for operations in Arctic waters, 23 inside the Mediterranean and 174 attached to Bay of Biscay ports. On 8 February, 110 of these latter were actually at sea disposed as under:-

See Map No. 2
for U-boat
dispositions
8 February

- (a) 14 boats on patrol in Groups Nordsturm and Haudegen to the north and northeast of Newfoundland with five leaving these groups for home and four reliefs approaching including one supply U-boat.
- (b) 12 boats of Group Pfeil somewhat scattered south of Iceland and west of Ireland after the action with convoy SC.118. Two others were homeward bound from this group.
- (c) Six fresh boats from Germany were outward bound in the Northern Transit area and six more off S.W. Norway.
- (d) 18 boats outward bound and eight inward bound in the Bay of Biscay out to 20°W.
- (e) Nine boats of Group Delphin on patrol between the Azores and Portugal with two boats homeward bound near this group.
- (f) 10 boats of Group Rochen on patrol between the Canary Islands and the mainland of Africa.
- (g) Six boats well westward of the Canary Islands either outward or homeward bound to or from the Brazilian coast or South Africa.

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(h) Three boats on patrol off the Brazilian coast.

(i) Five boats on patrol off South Africa and one supply U-boat near St. Helena.

To meet this deployment there were Allied Maritime Air Forces based along the Eastern Atlantic seaboard in Iceland, the United Kingdom, Gibraltar, West and South Africa and along the Western Atlantic seaboard from Newfoundland to Bahia in South America amounting to an approximate strength of 1,150 aircraft.(1) About a third of these aircraft had only a short radius of action, one third were of medium range and only a third could operate effectively up to 600 miles from base. With the exception of one British V.L.R. Liberator squadron, none could reach out into the middle of the Atlantic.

In deciding the positioning of his northern Atlantic U-boat groups Doenitz was still faced with the alternatives of either keeping them in mid-ocean free from air menace but thereby accepting greater difficulty in finding convoys or of closing them in nearer the convoy departure points to obtain certain location but being unable to concentrate on the attack owing to consistent air cover. The higher number of U-boats at sea encouraged him to continue to keep the main deployments in areas beyond the reach of aircraft but from time to time he edged a group in towards Cape Finisterre to try and intercept a convoy on the north/south route between the United Kingdom and Gibraltar or Sierra Leone.

After breaking off the action against SC.118, Doenitz re-disposed the groups of U-boats in the North Atlantic. The remnants of Group Pfeil were re-fuelling from supply boat U.460 in mid-Atlantic. Group Nordsturm was merged into Group Haudegen which took up a line covering the northeast of Newfoundland. Fresh arrivals in mid-Atlantic formed a new Group Ritter of 11 boats athwart the northern convoy route. To meet a possible Anglo-American landing in Portugal, which was thought likely by the High Command, the Group Delphin was edged in close off Lisbon in which position it was also hoped to intercept the North/South convoys between the United Kingdom and Gibraltar. Group Rothen, after an abortive operation against a large escorted merchant ship just east of Madeira,(2) was re-disposed in a line to the south-east of the Azores so as to intercept the supply convoys from New York direct to Casablanca.

KMS 9

At 1323 hours on 12 February, U.569 of Group Delphin sighted the south bound Torch supply convoy KMS 9 some 200 miles west of Cape Finisterre. All other Group Delphin boats were ordered to operate. At 2000 hours U.185 made contact, attacked but missed with torpedoes and together with U.569 was driven off by air and surface escorts. U.442, coming up towards the convoy from the southward, was attacked

- (1) Dispositions, ranges and strengths are given in Appendix II.
- (2) Nine boats were ordered to operate, following the sighting report by U.108 at 0930 hours/10 February. U.43 was the only other boat to make even a partial contact. Both were driven off and U.108 was seriously damaged by Catalina N/202 Squadron from Gibraltar, necessitating an immediate return home.

B. d U.
War Diary

B. d U. War Diary
and Gibraltar
O.R.B. Appendices

by the Gibraltar based Hudson F/48 squadron and sunk. Other boats came up during the 13th but were kept at a distance by the surface and air escorts. U.511 was damaged by depth charges from the former. During the night of 13th/14th several boats made vain efforts to close in and attack but without success. Night air escort was on this occasion being provided by Catalina J/202 Squadron. Two U-boats were detected within 20 miles of the convoy by this aircraft's Mk.II A.S.V. and aided by the moonlight conditions both were attacked. In one case U.381 was damaged and in the other U.620 was sunk. The operation was broken off by signal from B. d U. on the 14th and in his comments he remarked that it was ill-fated from the beginning. Strong English air activity had forced the boats to submerge constantly and made it impossible to get close up to the convoy. It showed once again, he said, that operations against convoys in this area close to the coast and covered by air forces was no longer possible. Accordingly he shifted Group Delphin out to the westward once more and on 15 February merged them with Group Rochen under the new name of Group Robbe disposed N.E. and S.W. of the Azores against the supply convoys on the America/Casablanca route.

ibid

See Map No.3
for U-boat
dispositions

Meanwhile failure to intercept any of the British transatlantic convoys in the north since SC.118 and the fuel shortage in many of the waiting U-boats caused B. d U. to make another redistribution along this route. Eight of the Haudegen Group were returning home and the remaining five were formed into Group Taifun close in to the north-eastward of St. Johns (N.F.). Ten fresh boats out from Germany were stationed between Greenland and Iceland as Group Neptun just to the north of Group Ritter.

ON 165

B. d U.
War Diary and
Admty.
C.B.04050/43(2)

On 17 February, U.69 and 201 returning from Group Haudegen sighted the westbound convoy ON 165 out of air range about 600 miles east of Newfoundland. B. d U. ordered Group Taifun, and those boats returning home who had sufficient fuel, to operate against the convoy. The surface escort to ON 165 promptly located the shadowing U.69 and 201 and sank them both in $50^{\circ}10' \text{ N} \times 41^{\circ} \text{ W}$. The weather now deteriorated with a rising gale from the southwest and it was not till 1700 hours on the 18th that another boat (U.403) sighted the convoy, followed by U.226 and 525 on the morning of the 19th. U.403 and 525 attacked but failed to hit any ships. By the evening five more boats had reached the area but tempestuous weather prevented any concerted action and most of them were dangerously low in fuel. U.525 made one more attack but missed with a long range salvo of torpedoes. Although another three boats had reported themselves as in the convoy vicinity the extremely unfavourable weather conditions and the approach to air range from Newfoundland decided B. d U. to break off the operation on the 20th. Soon afterwards the boats ran into two bad stragglers from the convoy and sank both.(1)

ON 166

Unfortunately for us, the next convoy - ON.166 - was intercepted on the eastern edge of the Air Gap on the same day (the 20th) by boats of Group Ritter in $52^{\circ} \text{ N} \times 27^{\circ} \text{ W}$. This was 720 miles from the nearest air base. The convoy

(1) Zeus - 5,961 tons and Radhurst - 3,454 tons.

ibid
and
C.C. No. 15
Group
O.R.B.
Appendices

had been supported by air sweeps up to the 20th but after this only V.L.R. aircraft could reach it. B. d U. ordered all fifteen boats of Group Ritter to close, chase and attack. By mid-day 21 February seven boats had contacted and it was realised in England that the convoy was seriously threatened. Two V.L.R. Liberators of No.120 Squadron and the only one operational in No.86 Squadron gave cover during the 21st. Early in the day U.225 was destroyed by the surface escorts but during a five hour gap in air escort one straggler was sunk.(1) At 2015 hours the last escorting Liberator (T/120 Squadron) sighted two U-boats close together of which one (U.623) was attacked and sunk. The other (U.91) was heavily depth charged by the surface escort directed to the spot by T/120 and forced to withdraw for repairs. During the night of 21st/22nd other U-boats closed in and sank two ships.(2)

On 22 February a last effort to provide air cover was made by a V.L.R. Liberator but although searching the vicinity for the convoy (by now over 1,000 miles from base) for five hours no visual contact was obtained. Thereafter for the next two days the convoy was beset by 11 U-boats with no air support at all. A further eight ships and two stragglers were sunk(3) but counter-attacks by the surface escorts sank one U-boat and damaged two more. Four others had to break off owing to fuel shortage.

ibid and
R.C.A.F.
Narrative

On 24 February, some air cover was given at extreme Canso range (600 miles) by two aircraft of No.5 Squadron R.C.A.F. from Gander (N.F.) but, although sighting two U-boats and attacking one, the scale of air support was not sufficient to break up the pack. Three fresh U-boats joined during the day and the enemy succeeded that night in sinking one more ship.(4) One U-boat was damaged by the surface escorts. The convoy was now in the foggy area off the Newfoundland Banks and during the 25th only three boats maintained close contact. No more ships were sunk before reaching the 100 fathom line off Newfoundland at dawn on 26 February when B. d U. ordered the operation to be broken off.

Summing up in his War Diary, Doenitz recorded that the operation, lasting six days, had covered more than 1,000 miles. Nineteen U-boats had been in action of which thirteen actually fired torpedoes. 24 ships were claimed for a trifling loss in U-boats and he expressed himself as very pleased with the result. He did not know that his U-boat claims were exaggerated by 10 ships nor was he aware till

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- (1) Stigstad - 5,964 tons.
 - (2) Empire Trader - 9,990 tons and N.T. Nielsen Alonso - 9,348 tons.
 - (3) Empire Redshank - 6,625, Chattanooga City - 5,686, Expositor - 4,959, Eulima - 6,207, Hastings - 5,401, Glittre - 6,409, Winkler - 6,907, Ingrid - 4,392 and stragglers Stockport - 1,683 and Jonathan Sturges - 7,176 tons.
 - (4) Manchester Merchant - 7,264.

Admty.
C.B.04050/
43(2)

later that three U-boats had been sunk in addition to the four damaged. The lesson for us was, however, re-emphasised that in the absence of adequate air cover the surface escorts alone could not break up or shake off a determined pack of U-boats and a purely surface escort was bound eventually to be overwhelmed by sheer weight of numbers.

ONS 167

B. d U.
War Diary

While this chase to the westward by Group Ritter was taking place B. d U. was forming nine boats from Biscay Ports into another new group Burggraf to occupy Ritter's old position on the eastern edge of the Air Gap ready to pick up another west bound convoy. Well to the southeast of this new group were five more U-boats also outwardbound from the Bay. Just before dark on 21 February, one of these (U.664) sighted convoy ONS.167 steering southwest in $51^{\circ}\text{N} \times 24^{\circ}\text{W}$. (1) B. d U. directed the other four boats to engage. U.664 attacked during the night of 21st/22nd and sank two ships (2) but lost contact with the convoy. At dawn/22nd the convoy made a major alteration of course to the northwest and V.L.R. aircraft cover was ordered. During the 22nd two V.L.R. Liberators of No.120 Squadron gave escort for five hours and another swept the area astern of convoy.

ibid

See Map No.4
for U-boat
dispositions
26/27 Feb.

Meanwhile in order to regain contact, B. d U. ordered the five U-boats plus six others homeward bound in the vicinity to form Group Sturmbock and follow up on the last reported southwest course of the convoy. Somewhat naturally they failed to locate it and on the 24th were instructed to sweep to the northward. ONS.167 received both air escort and support by V.L.R. Liberators on 23 February after which it was outside air range but the drastic alteration in course had been successful in avoiding the chase. As no success followed the U-boats' sweep the Group was dissolved on 26 February, some boats continuing their homeward passage, others to the refuelling position in mid-Atlantic and the remaining seven to form Group Wildfang on a North/South line about 450 miles E.N.E. from St. John's N.F. Group Neptun, between Iceland and Greenland, had seen no convoys since its formation. B. d U. had been moving it steadily westward in an endeavour to locate the eastbound HX and SC convoys. It was now, on 26 February, on a North/South line about 300 miles south of Greenland and touching the northern boat of Group Wildfang.

HX 227

B. d U.
War Diary

At 0300 hours on 27 February the northern boat of Group Neptun (U.759) detected and for a short time followed a convoy steering 030° approximately 240 miles south of Greenland. This was HX.227. Eight boats were told by B. d U. to operate. Towards nightfall U.405 picked it up and attacked at midnight sinking one straggler. (3) U.566 joined up at noon on the 28th but no more attacks developed, and during the night contact was lost. B. d U. now ordered Group Wildfang to move 200 miles N.W. so as to fill up the

- (1) ONS.167 had received air support by Fortress sweeps over the convoy and its track during the 19 and 20 February.
- (2) Rosario - 4,659 and H.H. Rogers - 8,807 tons.
- (3) Wade Hampton - 7,176 tons.

patrol line off Newfoundland and instructed Group Burggraf to sweep westward into Wildfang's old position. Strict W/T silence was imposed on these two Groups.

At 1045 hours on 1 March, U.759 sighted a ship believed to be part of convoy HX.227, chased it for some hours and then missed with torpedoes. U.634 carried on with the chase and during the early hours of 2 March sank it.(1) During 1 March the situation, as B. d U. could see it, was confused by some boats running into a westbound convoy (ON.168). They were beaten off by the surface escorts and lost touch. The Group became scattered and B. d U's instructions to individual boats for re-location of either of the convoys produced no sightings. The operations were broken off on 2 March and the next four days were spent in reforming boats with sufficient fuel and newcomers into a new Group Neuland midway between Greenland and South Ireland.

Turning to more southerly latitudes, the two Groups Robbe and Rochen to the North and South respectively of the Azores had had no success in locating any America/Casablanca convoys and on 21 February Group Rochen was dissolved so that the boats could refuel from U.461 south of the Azores.

UC.1

At 1413 hours on 22 February, U.522, who had been diverted towards Madeira, ran into convoy U.C.1.(2) steering a south westerly course to the W.N.W. of the island and well outside air range. B. d U. was aware from the report that this was not a North Africa/America convoy but the presence of numbers of tankers made it a very desirable target. Group Rochen's refuelling was temporarily suspended and eight boats plus the three nearest Group Robbe boats were sent against the convoy. U.522 shadowed the convoy and shortly after dawn/23rd torpedoed and sank the Athel Princess - 8,882 tons - just astern of the convoy. Four more U-boats joined up during the 23rd and attacks developed from 2230 hours. Four tankers were torpedoed of which two sank (Empire Norseman - 9,811 tons and Esso Baton Rouge 7,989 tons). Strong counter-attacks were made by the surface escorts resulting in U.522 being sunk by H.M.S. Totland and U.382 severely damaged. The pursuit continued during the 24th and further U-boat attacks were made during the night but no hits were secured. Several more Group Robbe boats joined in on the 25th but again the escorts frustrated the attacks. By dark on the 26th damage or fuel shortage had forced all but three U-boats to break away. At dawn/27th February B. d U. called off the chase and the scattered units were instructed either to set course for home or to the refuelling position.

ibid and
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- (1) This was another straggler from HX.227, the Meriwether Lewis - 7,176 tons.
- (2) This was the first of a new convoy cycle. U.C.1. consisted of 32 tankers returning to the Dutch West Indies escorted by four sloops, two frigates and four U.S.N. destroyers.

B. d U.
War Diary

The five Group Robbe boats not taking part were closed eastward towards the western approaches to Gibraltar while six long range Type IX boats were detailed for patrol off the New York coast. Thus B. d U. hoped to interrupt the supply convoys to North Africa, where the Tunisian campaign was developing unfavourably for the Axis, by watching at each end of the route instead of vainly searching the mid-ocean longitudes where evasive routing was so successful against his groups.

Summary for February

For flying hours
expended on air
escort and sup-
port to ocean
convoys see
Appendix IV.

The month gave a foretaste of the increasing severity of the U-boat onslaught against Atlantic shipping. In this area a total of 45 ships of 283,820 tons were sunk by U-boats. During the month seven eastbound (148 ships) and nine westbound (287 ships) ocean convoys reached their destinations without attack. In addition there were 90 American seaboard convoys (1,108 ships) which suffered no loss. Out of the eight ocean convoys (242 ships) attacked, twenty-six ships actually in convoy and twelve stragglers were sunk, the remaining seven ships lost being independently routed. The number of Atlantic merchant convoys receiving air cover by the R.A.F. was 22 with a further 14 Torch supply and military convoys. During the month 14 V.L.R. Liberators were operational, all from Northern Ireland or Iceland bases.(1)

Good evasive routing raises Doenitz's suspicions

B. d U.
War Diary

In his War Diary for 5 March B. d U. noted with approval the increase in shipping sunk over that for January but he was forced to admit failure in his efforts to intercept the America/Casablanca convoys. After a systematic evaluation of Allied counter-measures in January and February he came to the conclusion that his suspicions that the German Codes had been broken were unfounded. With the facts available to the Allies, such as W/T bearings, aircraft radar reports and actual sightings, a fair estimate of U-boat movements could, he thought, be made from intelligent combination of such evidence. The most important revelation, he stated, was that the Allies were able with the help of airborne radar to plot U-boat dispositions with sufficient accuracy to enable convoy evasion to be used on occasions with great success. Accordingly boats must avoid being seen in their waiting billets by submerging for about half an hour after confirmation of aircraft radar impulses in the Metox search receiver.

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- (1) January figures for comparison:- Total sunk in the Atlantic by U-boats - 29 ships of 181,767 tons. Seven ocean and one U.S. coastal convoys were attacked, losing twelve ships in convoy and eight stragglers. The remaining 9 ships were independently routed. Ten ocean (245 ships) eastbound and eleven (229 ships) westbound convoys arrived safely. In addition there were 124 American seaboard convoys (1,424 ships) which suffered no loss. R.A.F. air support was given as far as range would permit to 19 Atlantic merchant convoys and 15 Torch supply convoys between U.K. and North Africa. The number of operational V.L.R. Liberators during January was 15.

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This stipulated a set in good working order and in constant use. To facilitate the latter a new fixed cable in place of the portable aerial was shortly to be introduced. Boats must also avoid unnecessary waiting about in patrol positions and to help in this the group line must move in a slow sweep. Although this movement was almost stationary in relation to a rapid aircraft sweep there was no better method and it was infinitely superior to an unsystematic dotting about of individual boats.

The most interesting part of this summary described the action being taken to counter the use by the Allies of airborne radar on a new frequency which could not be detected by the existing Metox search receiver. Indication of whether this frequency was above or below the Metox sensitivity might, he said, come from a report that an English bomber aircraft recently shot down in Holland contained radar apparatus working apparently on 9.7 centimetres. However, a U-boat telegraphist had, also recently, fitted a visible tuner (called the Magic Eye) into a Metox circuit and thus rendered visible impulses on frequencies which were quite inaudible in the normal circuit. B. d U. and his staff jumped to the conclusion that this was the answer to the new Allied search radar and the immediate instalment of Magic Eyes in all outwardbound U-boats was ordered.

The train of events following this rash assumption is described in the section on the Bay Offensive. Here it is only to be noted that no aircraft fitted with 10 cm A.S.V. was operating near the mid-Atlantic U-boat dispositions before mid-April and therefore B. d U's belief that his Group positions were discovered by the new form of Allied airborne radar had no foundation in fact.

(iii) March operations

XK.2

At midnight on the 1 March, one of the Group Robbe boats off Cape St. Vincent sighted a northbound convoy. The boat was fired at by the surface escorts, forced to dive and lost contact. Reports to Gibraltar about this incident resulted in special air sweeps over the area and close escort to this convoy (XK2) by Gibraltar based Hudsons and Catalinas. Nine sightings resulting in four attacks were subsequently made on U-boats in this area but without inflicting any damage; however, B. d U. signalled the Group Robbe late on the 4 March giving them permission to withdraw if necessary to the westward in view of the strong air patrols. He had also requested G.A.F. reconnaissance to the westward of Portugal and during the day received reports from F.W.200 aircraft of convoy XK2 now some 150 miles westward of Cape Finisterre and a southbound convoy (KMS10) in the same vicinity.

The next day, an outward bound boat (U.130) sighted XK2 at 1030 hours in 4400 N. x 1800 W.(1) and shadowed it until dusk. Five U-boats on passage in the area were told

Gibraltar
O.R.B.
Appendices

B. d U. War Diary
and Gibraltar
O.R.B. Appendices

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- (1) Fortresses B and E/59 Sqdn. from No.19 Group searched for the convoy between 0900 and 1030 and from 1830 to 2130 hours without success.

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to operate but none made contact. U.130 attacked soon after dusk and sank four ships.(1) Counter-attacks by the surface escort beat her off and she lost contact by dawn/6th. In view of the probability of strong air support on the 6th B. d U. discontinued the operation and observed in his War Diary that only the absence of enemy air escort on the 5th had made this success by U.130 possible.

KMS 10

KMS.10 was intercepted at 0930 hours on the 6th by U.107 but she was quickly forced to dive by the air escort and lost touch. At 1525 hours U.410 reported the convoy off Cape St. Vincent and, in spite of air escort, attacked and torpedoed two ships.(2) Depth charge damage by counter-attacks forced her to break away to the westward. No other U-boats took part in this operation.

B. d U.
War Diary

Meanwhile B. d U's re-grouping of packs in the North Atlantic was nearly complete. Two groups - Wildfang and Burggraf - totalling 28 boats were to the N.E. of Newfoundland on the western edge of the Air Gap and one group - Neuland - of 17 boats was on the eastern edge. One re-fuelling boat - U.119 - was stationed between them and an empty supply boat - U.462 - had just started homeward to the Bay of Biscay. Map No.5 shows the disposition for 6 March. A number of boats were on passage to or from these groups and there were 18 on passage actually within Coastal Command's range in the Bay of Biscay. Several 750 ton class U-boats were north of the Azores on their way westward towards America and three had taken up preliminary positions across the line of America/Casablanca convoys. Group Tumbler was proceeding to the Canary Islands and Group Robbe were to the southwest of Cape St. Vincent though shortly to be withdrawn westward to positions between Portugal and the Azores.

SC 121

At 1056 hours on 6 March, U.405 reported a convoy in 5200N x 4200W C°N.E. This was correctly presumed to be SC.121 and, as the sighting had taken place between Groups Wildfang and Burggraf, 17 of the nearest boats in these Groups were detailed to operate under the name of Group Westmark. Ten boats of Group Neuland were ordered to close the line of advance of the convoy from the eastward under the name of Group Ostmark. The weather conditions were bad with a gale and frequent snow showers. No air escort or support was possible from Newfoundland. During the night of the 6/7th several Westmark boats made contact and one ship was sunk.(3)

On the 7 March more Westmark boats joined in but in the gale conditions no successful attacks were delivered. The remainder of the old Groups Wildfang and Burggraf were formed

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- (1) Empire Tower - 4,378 tons: Trefusis - 5,299:
Fidra - 1,574: Ger-y-Bryn - 5,108.
 - (2) Fort Battle River - 7,133 tons - The Fort Paskoyac -
7,134 tons was also hit but remained afloat.
 - (3) s.s. Egyptian - 2,868 tons.

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into a new Group Raubgraf and moved 300 miles to the eastward in readiness to intercept an expected HX convoy astern of SC.121. Air sweeps from the United Kingdom down SC.121's line of advance produced a sighting and attack on one of the Ostmark boats. This was U.633 which was sunk by Fortress J/220 Sqdn. in 5714N x 2630W.

Ibid

By the 8 March the continuous gale and poor visibility had produced a number of stragglers from SC.121 and the increasing pack of Westmark boats succeeded in sinking three of them.(1) The main convoy was trailed by four U-boats but air support by V.L.R. Liberators of No.120 Sqdn. from Northern Ireland and Iceland was afforded. During the day four of these aircraft were in the vicinity of the convoy. 'O' and 'R'1/120 escorted SC.121 between 1230 and 1900 hours sighting three and attacking two U-boats. All four U-boats had lost touch before dusk.

On the 9th, some of the Ostmark boats made contact but the poor visibility, heavy sea and the air support hampered the pursuit during daylight hours. During the night however, four boats closed up and attacked, sinking four ships and damaging one.(2)

During the 10 March, up to seven boats were still following the convoy but only occasional sightings of it were made. In view of the increasing air cover, B. d U. signalled the boats to drop astern and try for stragglers. No more attacks were made on the main convoy but four more stragglers were sunk.(3) The operation was cancelled at dawn 11 March.

In his War Diary notes on the action, B. d U. observed that the whole operation was adversely affected by the weather. Seventeen boats operated on the 6th and 7th being joined by ten more on the 9th. An average of fifteen were constantly around the convoy of which ten attacked with success. Claims were made for at least 13 ships sunk (actually 12 plus one damaged). Seven boats were attacked by surface craft and four by aircraft. None were lost or received serious damage near the convoy.

HX228

B. d U.
War Diary
and
Admty. C.B.
04050/43(3)

The German Radio Intelligence had on the 8 March reported to B. d U. that an HX convoy (believed to be HX228) was at sea and at 2000 hours was estimated to be in 50°N x 40°W. B. d U. ordered the remainder of Group Neuland (11 boats) to deploy against it on a North/South line between 50° and 53°N up longitude 31°W. Two other boats en route for the refueling position and one fresh out from the Bay were also detailed for the reconnaissance line.

Convoy HX 228 was accompanied by the American escort carrier Bogue and was the first transatlantic merchant convoy to be so supported. She put two aircraft in the air during

- (1) Fort Lamy - 5,242 Guide - 3,921 Vojvoda Putnik - 5,879.
- (2) Malantic - 3,837 Rosewood - 5,989. Nailsea Court - 4,946 and Bonneville - 4,665. Coulmore - 3,670 damaged.
- (3) Milos - 3,058, Empire Lakeland - 7,015 Empire Impala - 6,116. Leadgate - 2,125.

the afternoon of the 10 March. One of these sighted a U-boat but the attack was abortive owing to the depth charges failing to release. Subsequent delays and inaccuracies in the sighting report reduced the value of this encounter because at 1335 hours U.336, the southernmost boat of Group Neuland got in a sighting report of the convoy in 5015N x 3100W - out of shore based air range.

All Group Neuland was closed to the south and four other U-boats on their way to the refuelling position were told to join in. During the evening and night of the 10th/11th nine boats came up with the convoy and several attacks were made, sinking four ships.(1) A counter-attack by H.M.S. Harvester sank U.444 by ramming. Early in the morning of the 11 March, H.M.S. Harvester was lying astern of the convoy crippled after the ramming and was torpedoed and sunk by U.432 who in turn was sunk immediately after by the Free French Corvette Aconit.

Heavy shore-based air support was given to HX 228 all the 11th during which five U-boats were sighted and two attacked by V.L.R. Liberators of Nos. 120 and 86 Sqdns. In all, twelve hours actual close escort was afforded and no U-boat was able to make contact with the convoy during the day or the subsequent night. Similar air support was given during the 12th and B. d U. gave up the operation on the 13 March.

OS44

B. d U.
War Diary
and
No.19 Grp.
and
Gib. O.R.B.
Appendices

Turning further south, the F.W. 200 reconnaissance to the west of Cape Finisterre picked up a large southbound convoy (OS.44) at 1430 hours on the 12 March. U.107, 410, 445 and 610 were ordered to close the position given in the air report. In spite of air escort to the convoy during the day they made contact just before dusk. No air escort could be given after 2035 hours and attacks made by U.107 in the early hours of the 13th were successful in sinking four ships(2) U.410 reported that owing to counter-attacks around midnight she was unable to close and following the breakdown of her attack periscope she ceased operations. U.107 re-located the convoy at 1200 hours on the 13th but constant air cover from Gibraltar frustrated any attempt at shadowing and she lost touch. No other boats having made any signals, U.107, 410 and 445 were ordered to return to their patrol area and U.610 to continue her outward passage.

UGS6

The German Radio Intelligence had reported to B. d U. on the 10 March the precise location, route and composition of a slow American convoy proceeding direct to Casablanca. This was the UGS.6. In view of this positive information B. d U. cancelled his dispositions off the American coast and concentrated all available U-boats in this region into

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- (1) Tucurinca - 5,412 A.F. Luckenbach - 6,565.
W.G. Gorgas - 7,197 and Brant County - 5,001.
 - (2) Clan Alpine - 5,442 - Oporto - 2,352. Marcella - 4,592 and Sembilangan - 4,990.

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two groups. Group Unverzagt of six boats was to take position well to the west of the Azores and Group Wohlgemut of six boats was to line up just south of the Azores.

At 1840 hours on the 12 March U.130 (Unverzagt) sighted UGS.6. She was instructed to shadow and not to attack until others had contacted the convoy. However, U.130 was located, attacked and sunk by one of the convoy escorts (U.S.S. Champlin) in 3710N x 4021W and the convoy was lost.

Also on the 12 March, one of the Canary Islands boats (U.43) sighted the small convoy TO.2 at 1450 hours. U.504 contacted soon after but the air escort given by Hudsons of No.233 Sqdn, working from Agadir, drove them off with two attacks on the 12th and one on the 13th. The other boats of this group were told to operate but as no further contact was made and in view of the importance of the operation against UGS.6 these boats, four in all, were ordered westward to the new target.

At 1230 hours on the 13th, UGS.6 was re-located by U.513. Two other boats joined up and one ship was sunk by U.172. (1) For the next four days a gathering pack of up to nine U-boats was kept at bay by the surface escorts of the convoy. One ship was sunk after dark on the 15th and two more during the night of the 16/17 March. (2)

Ibid and
Gib. O.R.B.
Appendices

Late in the afternoon of the 17th, air escort by Gibraltar based Catalinas of Nos.202 and 210 Sqdns arrived. Several boats took the opportunity to move away for repairs and U.66 started homeward. Stronger air support was given on the 18th and U-boats were forced so far away from the convoy that they lost touch completely. B. d U. cancelled the operation at dawn on the 19 March and disbanded the two Groups. Six of the boats shortest of fuel started homeward and the other seven were moved into the Canary Islands area.

While this running fight was going on, B. d U. had again re-grouped the packs further north after the encounters with SC.121 and HX 228. The old Groups Westmark and Ostmark were disbanded and the remnants, together with fresh boats out from bases were formed into Group Sturmer of 18 boats and the old Group Neuland was similarly reconstituted into Group Draenger of 10 boats, both being disposed in a long line on the eastern edge of the Air Gap. Group Raubgraf continued to patrol to the northeast of Newfoundland. Map No.6 shows the dispositions on the 14 March.

B. d U.
War Diary

SC122 and HX229

Late on the 14th, the Radio Intelligence reported to B. d U. details regarding the sailing and route of SC.122 and Group Raubgraf was alerted. At 2000 hours on the 15 March, U.91 sighted some eastbound escort vessels in

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- (1) Keystone - 5,565 tons, actually straggler from the convoy.
 - (2) Wyoming - 8,062 on the 15th and Benjamin Harrison - 7,191 and Molly Pitcher - 7,200 during the night of the 16/17 March.

4930N x 4100W out of shore-based air range. This was presumed by B. d U. to be SC.122 and the three most southerly boats of the Group were deployed towards the reported position while the remainder were sent eastward to take up waiting positions. All Group Draenger and the eleven most southerly boats in Sturmer were ordered to close westward.

Sighting reports from U-boats poured in late on the 16th and five boats reported making attacks during the night of the 16/17 March. Actually both SC.122 and HX 229, some 120 miles astern, had been contacted. Of the twelve ships sunk during the night, eight were from HX 229(1) and four from SC.122.(2)

Analysis of sighting reports coming in during the 17 March made it clear to B. d U. that two separate convoys were involved and he directed his disengaged boats accordingly while telling those in contact to remain with their existing target. In all, 36 U-boats were now operating and B. d U. had high hopes of spectacular results.

Ibid and
No. 15 Grp,
and Iceland
O.R.B.
Appendices

Naturally V.L.R. air support was sent at the earliest moment and was effected soon after daybreak on the 17th by Nos. 120 and 86 Squadrons from Northern Ireland on both convoys. During the day ten U-boats were sighted of which five were attacked but notwithstanding this air cover five U-boats succeeded in making submerged attacks during the day, which sank two ships in HX 229(3) and one in SC.122.(4) However, owing to the air activity, all contact with both convoys was lost before dark as the constant necessity to dive had caused the boats to lag further and further astern. In addition twelve boats had to break off owing to fuel shortage or minor damage.

Ibid

By midnight on the 17/18th, some boats had caught up with the slow SC.122 and, although the re-inforced surface escort frustrated many attacks, two more ships were sunk.(5) During the day very strong air support was given from Iceland and Northern Ireland and none of the pursuing U-boats were able to get ahead into submerged attack positions. Aircraft of No.120 Squadron made six sighting of which four were attacked. Once again after dark several boats closed up but again the surface escort frustrated most of the attacks. U.666 managed to get close in to the convoy and sank one ship in the early hours of the 19 March.(6)

HX 229 was also re-located on the 18th, and U.221 got in a daylight submerged attack sinking two ships.(7) Air support was being given but none of the sorties actually

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- (1) Elink - 5,214, Zaanland - 6,813, James Oglethorpe - 7,176, William Eustis - 7,196, Harry Luckenbach - 6,366, Irene Dupont - 6,125, Nariva - 8,714 and Southern Princess - 12,156.
 - (2) Kingsbury - 4,898, Kinggruffyd - 5,072, Aldermin - 7,886 and Fort Cedar Lake - 7,134.
 - (3) Coracero - 7,252 and Terkolei - 5,158.
 - (4) Granville - 4,071.
 - (5) Fort Auckland - 8,789 and Zouave - 4,256.
 - (6) Carras - 5,234.
 - (7) Walter Q. Gresham - 7,191 and Canadian Star - 8,293.

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sighted the convoy. Six U-boats were sighted and two attacked in the vicinity. By nightfall nine boats had succeeded in closing up round the convoy and during the night of 18/19th one more ship was sunk.(1)

Both convoys were within reach of medium range aircraft on the 19th and maximum air escort and support were given by Sunderlands and Fortresses as well as V.L.R. Liberators. Seven sightings leading to five attacks were made in which three U-boats were damaged. Direct contact with SC.122 was lost by all U-boats soon after daybreak and with HX 229 from 1230 hours. After this, only partial contact was maintained by hydrophone and the occasional sighting of a destroyer. No boats succeeded in getting up to either convoy during the night of 19/20th. On the 20th, heavy air cover was again provided resulting in six sightings of which four were attacked. In one of these U.384 was sunk by Sunderland T/201 Sqdn. and in two others U.441 and U.631 were damaged. The operation was then abandoned.

Ibid

Commenting on the action, B. d U. stated that, although the initial surprise attacks were most successful, from the second day of the chase the ever increasing shore-based air support together with re-inforced surface escort gave the boats a hard fight. He was, however, pleased with the results which he assessed as 32 ships sunk against damage only to three U-boats, whereas in fact there was in addition one U-boat sunk and only 21 ships sunk. Still this was an ugly example of what determined U-boats could do in spite of daylight air cover.

KMS11

B. d U.
War Diary
and
No.19 Group
O.R.B.
Appendices

On the 18 March, the homeward bound U-621 reported a convoy of 2100 hours in 48°N x 16°W C° 190°. This was KMS11 and boats in the neighbourhood were ordered to make for it during the night. U.632 and 634 both reached the vicinity of the convoy but were forced so many times to dive by the air support from No.15 Group that they gave up the chase. U.621 kept only partial contact during the 19th being badly hampered by an air escort from No.19 Group. A small Group in the area (U.107, 410 and 445) were told to close as also were U.103, 504 and 521 homeward bound from the U.G.S.6 operation. In face of continued air cover during the 20th none of these boats located the convoy and U.621 was told to abandon the chase and continue her homeward passage - a good example of the deterrent effect of air cover.

RS3

B. d U.
War Diary and
West Africa Command
O.R.B. Appendices

Radio Intelligence again gave B. d U. particulars of a convoy on the 21 March. This was convoy RS.3 bound for Freetown from Gibraltar which would be off Casablanca at 2000 hours. An operation was planned against it when it arrived in the channel between the Canary Islands and the mainland of Africa. By the 22nd there were six boats in the Canaries area with two more approaching from the north. During the day one of these (U.524) was sunk by U.S. Army Air patrols working from the Moroccan Sea Frontier. From the 24th these seven boats were known as Group Seerauber and were disposed across the southern end of the Canaries channel.

(1) Matthew Luckenbach - 5,848.

As the expected convoy had not been sighted by the 27th, B. d U. presumed it had passed through the Canary Islands and Group Seerauber was sent at speed to the southwest to try and catch up. It was located on the 28 March at 0800 hours about 120 miles south of the Canaries by U.167 and during the day was closed by the rest of the Group. A sweep over the convoy's track was made by Hudsons of No.200 Sqdn. West Africa Command working from Port Etienne during which one U-boat was sighted and attacked. Three others were depth charged by the surface escorts and driven off but the remaining three made attacks, two of them being submerged by daylight, and three ships were sunk.(1)

On the 29th, the air support from Port Etienne, which made two attacks, prevented any contact with the convoy until 2030 hours when U.105 sighted it only to lose it again at 2200 hours. Air cover was increased on the 30th by Hudsons and Sunderlands from Bathurst making it impossible for the U-boats to shadow, get ahead of or attack the convoy and the operation was abandoned. Group Seerauber was dissolved and distributed in various areas. Four boats went back to the Canaries Channel, one off Dakar, one off Freetown and one to a position some 300 miles southwest of Cape Palmas. Three fresh outward bound boats were allocated billets off Freetown.

SL126

B. d U.
War Diary
and
No.19 Group
O.R.B.
Appendices

Further to the north, the G.A.F. reconnaissance had on the 26 March reported a northbound convoy of 32 ships and again on the 27th by which time its position was given as 42°N x 16°W. Radio Intelligence correctly named this convoy as SL126 and B. d U. detailed the only U-boats in the vicinity (U.181, 267 and 404) to make a search for it. The convoy was being escorted by Halifax G/502 Sqdn. who sighted and attacked two U-boats 40 miles from the convoy late on the 27th. There being no location reports from these boats, B. d U. instructed them on the 28th to continue their outward passage.

However, early on the 29th, U-404 reported hydrophone evidence of a large number of ships in position 4530N x 1700W and the operation was renewed for all boats on passage in the vicinity. This day the air escort to SL126 was being given by a Liberator and two Halifaxes. Two sightings of U-boats were made within 20 miles of the convoy, at 1037 and 1653 hours, the latter being followed by an attack. After aircraft had left at dusk U.571 sighted and reported the convoy. After dark U-404 and 662 closed up and also made contact. Attacks were made by both these boats and four ships were sunk.(2) Counter-attacks by the surface escorts caused all three U-boats to lose touch by dawn/30 March. B. d U. then ordered the boats to break off as 'this is a strongly defended area in which few convoy actions had taken place for many months.' He commended the gratifying reconnaissance co-operation with the G.A.F. and the perseverance of U.404 and 662. He hoped the action would result in future convoys being routed further out to the west where he

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- (1) Silverbeech - 5,319, Lagosian - 5,449 and Moanda - 4,621.
(2) Umaria - 6,852, Empire Whale - 6,159, Nagara - 8,791 and Empire Bowman - 7,031.
Another ship, Ocean Viceroy - 7,174 was torpedoed but remained afloat.

could conduct more prolonged operations beyond the reach of shore-based aircraft.

Far to the north, B. d U. once again regrouped his forces. Most of the boats engaged against SC.122 and HX.229 were on their way back to Biscay ports and new groups were being built up of fresh boats from these ports and batches of newly commissioned U-boats from the Baltic training area. By the 25 March a new Group Seeteufel of 19 boats was stationed 200 miles S.E. of Greenland and a Group Seewolf of 17 boats some 600 miles E.N.E. of Newfoundland. Map No.7 shows the dispositions for this date.

Further suspicion by Doenitz

Doenitz's Radio Intelligence had intercepted a U.S. Navy signal on the 24 March giving the estimated positions for the U-boat pack. As this report was substantially correct as regards the main dispositions, Doenitz was at first highly suspicious but soon after he came to the conclusion that, although in the western Atlantic no U-boat had used her radio, in the eastern half there had been a great deal of W/T signaling after the operation against SC.122 and HX.229. It was therefore quite reasonable for the Allies to conclude from the volume of this radio traffic that a redistribution was taking place back into areas least subject to air activity and there was nothing significant in the comparative accuracy of the situation report.

At 1845 hours on the 26 March, U.564 (Seeteufel) sighted a convoy in 5630N x 4000W 0°25' followed at 2100 hours by a report from U.663 of the convoy now steering 180° and containing an escort carrier while a little later U.415 sighted an escort vessel steering 200°. B. d U. decided it was an ON convoy and ordered the rest of Seeteufel to chase to the southwest. Group Seewolf was told to move 150 miles to the northward in case an SC or HX convoy should slip through off Cape Farewell (Greenland) and also to make more certain of intercepting the ON convoy.

HX230

At 1500 hours on the 27th, U.305 (Seewolf) sighted a convoy in 5645N x 4030W 0°. 025° which was correctly presumed by B. d U. to be HX 230 and the search for the ON convoy was at once called off in favour of the more important eastbound convoy. All Group Seeteufel with ten of Group Seewolf were ordered to operate. The remainder of Seewolf were halted on a line just to the eastward of the convoy's reported position. Throughout the night of the 27th/28th three U-boats maintained contact but no attacks were made. Flares seen over the convoy denoted that their presence was known. On the 28th, the weather deteriorated with a gale and low visibility. The convoy became somewhat scattered and in the prevailing conditions the U-boats had difficulty in keeping touch. They were ordered to continue the chase as there would be excellent chances of picking up stragglers as easy targets. Air escort and support was given this day by V.L.R. Liberators from Iceland and Northern Ireland during which one U-boat was attacked. By the evening no boats were in a position to attack and seven had had to retire through fuel shortage leaving 22 still operating.

B. d U.
War Diary

Ibid

Ibid and
No.15 Group
and Iceland
O.R.B.
Appendices

Weather conditions continued unfavourable for the U-boats all the 29th. Consistent air escort was given all day and boats continually complained to B. d U. of air interference. He signalled back that they must get ahead of the convoy at all costs so as to be in a position to attack when the weather improved. During the night of the 29/30th, one U-boat (U.610) managed to intercept and sink a straggler - the William Pierce Frye - 7,176 tons - the only loss suffered by HX 230.

By daylight on the 30 March the convoy had reached 5700N x 2200W and very complete air escort and support was given by Liberators and Fortresses. Although U.631 momentarily picked-up a portion of the convoy at 1100 hours neither she nor any other of the U-boats could remain long on the surface and all contact was lost. The operation was consequently broken off by B. d U. and the Groups Seeteufel and Seewolf were dissolved, most of them having to return to base or proceed independently to the supply position in mid-Atlantic.

Summary for March

The U-boat operations against North Atlantic shipping have been given in some detail because, although the convoy air support hindered the exploitation of pack interceptions and together with the surface escorts accounted for seven U-boats destroyed, this month was to prove their most successful time against convoys.(1) Of the 84 ships of 501,162 tons sunk by them in the Atlantic,(2) 57 of 343,795 tons were actually in convoy.

During the month seven eastbound (120 ships) and ten westbound (210 ships) ocean convoys reached their destination without attack.(3) Thirteen ocean and four coastwise convoys (617 ships) were attacked, losing 57 in convoy and thirteen stragglers. The number of Atlantic merchant convoys receiving air support from R.A.F. bases was 19 with a further 10 local convoys to Iceland and 13 in the Gibraltar/West Africa area. In addition 15 Torch supply convoys received air cover to or from North Africa. A total of only 22 V.L.R. Liberators, all from Coastal Command, were operational during March.

The vital need was for more V.L.R. aircraft and more escort carriers. March saw the first use of these vessels with North Atlantic trade convoys. As stated in the text, the U.S.S. Bogue accompanied HX 228 while traversing the Air Gap. This vessel also supported SC.123 in the same area between 21 and 27 March but the convoy was not intercepted by any U-boats. Convoy CG.1, the first of a new convoy cycle running between the Dutch West Indies and the United Kingdom, was escorted at the end of the month all the way

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- (1) During March the average number of U-boats at sea in the Atlantic was 116.
 - (2) U-boat sinkings in the Arctic, in the Mediterranean, Indian Ocean and off South Africa brought the grand total up to 108 ships - 597,377 tons.
 - (3) 130 (1,698 ships) American coastwise convoys were not attacked. Three such convoys lost eight ships.

across by the British escort carrier Attacker but in this case also no U-boats located the convoy.(1)

(iv) April Operations

For the first four days of the month the U-boats north of 40°N were being re-disposed after the operation against HX 230. A large number were homeward bound or making for the supply boat (U.463) stationed in mid-ocean. Fifteen were in the process of re-grouping some 300 miles southeast of Cape Farewell (Greenland) under the name of Lowenherz and were on the look-out for the next HX convoy.

OS45

Early on the 2 April, the southbound convoy OS.45 was sighted fortuitously by U.178, a 1600 ton U.Kreuzer bound for the South Atlantic. She was instructed to keep in touch with the convoy until an ordinary patrol type of U-boat could take over. By dusk this had been effected by U.124 and the U-Kreuzer continued on her passage. After dark U-124 attacked the convoy sinking two ships,(2) but was herself sunk shortly afterwards by the convoy's surface escorts. Air escort had been given this convoy during the 1 April but it was out of air range by daylight/2nd. No other boats being near the convoy, no chase developed.

HX231

The expected HX 231 convoy was sighted at 1224 hours on the 4 April by U.530 (Lowenherz) in 55°N x 37°W steering 060°. All Group Lowenherz was ordered to operate and in addition five U-boats who were on their way to refuel and one fresh boat out from the Biscay. By dusk there were six up to the convoy and two more boats joined in after dark. Attacks were made during the night 4/5 by several U-boats and two ships were sunk.(3)

In the general confusion of counter-action by the surface escorts and alteration of course by the convoy the U-boats lost contact, one of them (U.572) being damaged by ramming. Five ships became separated from the convoy and proceeded independently. The main convoy was re-located shortly after daybreak by U.260 who was soon joined by five others. A submerged attack was made at 1500 hours which sunk one ship.(4) Air escort was given to the convoy just after 1600 hours by V.L.R. Liberators of No.120 Squadron from Iceland, distant cover being supplied by another of these aircraft on a shuttle sortie from Gander (Newfoundland), and four U.S.N. Catalinas from Iceland. Four U-boats were sighted by these aircraft between 10 and 40 miles from the convoy and two were attacked before they disappeared. Contact with the convoy was lost by all the pack.

-
- (1) Nine Swordfish were available from Attacker and during the passage 74 daylight sorties were made around the convoy.
 - (2) Gogra - 5,190 tons and Katha - 4,357 tons.
 - (3) Shillong - 5,529 tons and Waroonga - 9,365.
 - (4) British Ardour - 7,124 tons.

B. d U.
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See Map No.8
for dispositions

No.19 Group
and
Gibraltar
O.R.B.
Appendices

B. d U.
War Diary

Iceland
O.R.B.
Appendices

Ibid
and
No.15 Group
O.R.B.
Appendices

During the day some of the trailing U-boats found the unescorted detached ships and sank three of them.(1) Soon after dusk, U.635 endeavouring to attack the main convoy was engaged and sunk by the surface escorts while three others had to break away owing to fuel shortage leaving sixteen still operating. Contact with the convoy was lost by midnight but regained for a short time at 0800 hours on the 6 April by U.270. Constant air escort was supplied from 0900 hours onwards by five V.L.R. Liberators during which four U-boats were attacked and one (U.594) badly damaged. All contact with the convoy was broken until late in the evening when U.632 reported sighting the rearguard. Very shortly afterwards she was herself sighted by Liberator R/86 Squadron and sunk at 2147 hours.

All boats still operating were instructed to overtake the convoy during the night so as to be in positions to make submerged attacks on the following day but none of the pursuers succeeded in doing this. During the daylight hours of the 7th, air cover was continuous. Five U-boats were sighted, all astern of the convoy, and three were attacked. B. d U. abandoned the operation in the evening.

B. d U.
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In his comments on the action he noted that most of the boats were on their first operation which, he said, explained why the eight boats achieved so little on the all-important first night surprise. It was true that some ships became detached making it easier to get a few more sunk but the main convoy was only re-contacted again by one or two boats and the increasingly strong air cover made it impossible for the others to close in or to get ahead of the convoy.

A rearrangement of U-boats followed the end of this engagement resulting in two new groups each of ten boats being stationed on each side of the Air Gap and another of seven boats further to the south in case the shipping route should be switched to lower latitudes.

QN176

Ibid
and
Admty
B.R.1337

Convoy QN176 was intercepted on the 10 April by two boats of the westmost group. It was still outside air range and three others soon joined up but all attacks were beaten off by the surface escorts. Light air support from Newfoundland appeared during the 11th which hampered the pursuit but by full darkness nine boats had caught up. Attacks developed in the course of which an escort vessel (H.M.S. Beverley) and one ship of the convoy were sunk(2) as well as an unfortunate straggler from ONS2 which the U-boats found in the vicinity.(3) Some of the attacking boats received damage from the escorts' depth charges and the disengagement of these together with foggy weather and increased air cover from Canada caused a break-off from further action in the afternoon on the 12th.

-
- (1) Sunoil - 9,005 tons, Vaalaran - 3,406 tons and Blitar - 7,065 tons.
 - (2) Lancastrian Prince - 1,914 tons.
 - (3) Ingerfire - 3,835 tons.

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HX232

Meanwhile the other boat of this group (U.615) had sighted a large ship on a northeast course on the 10th. He torpedoed it but the ship made off with U.615 after it. He finally caught it up during the night of 10th/11th and sank it.(1) This was a straggler from HX 232 and at 1100 hours U-584 of the eastern group sighted the main convoy in 5330N x 3330W. The nine other boats of this group were told to operate and during the night of the 11th/12th attacks were made by three of them resulting in the sinking of three ships.(2) Two other U-boats were badly damaged by the surface escorts and touch was lost by the pack. The convoy was re-located soon after dawn by U.203 but air escort by V.L.R. Liberators from Aldergrove (No.86 Sqdn.) and Iceland (No.120 Sqdn.) was maintained unbroken from 0900 to 2330 hours effectively stopping attack or pursuit. Of the two U-boats sighted, one was attacked inconclusively but the other fought back with flak to such effect that the aircraft (M/86 Sqdn.) sheered off and shadowed while calling up the surface escort to deal with this unusually pugnacious opponent. On the appearance of the destroyer the U-boat dived but was not picked up in the subsequent ASDIC hunt. This U-boat was U.191 and his report of the action was repeated on all wave lengths by B. d U. so as to encourage other boats to do likewise.(3) Prospects of stronger air cover and the fact that the only five boats still in the operation were out of touch astern of the convoy decided B. d U. to break off the action at daylight/13th.

In order to induce a more southerly routing out of air range of the slow convoy SC.126 which B. d U. expected to follow HX 232, he had detached U.84 on the 11th from the western group to go to a position northeast of Newfoundland and to give out continual radio signals to simulate the presence of a group in this area. At the same time he reinforced the southern group to 18 boats and moved them south-westerly in a slow sweep. In case this ruse was fruitless he started forming an additional group to the northwestward with fresh boats outward bound from the Biscay so as to catch either SC.126 or the next HX convoy.

HX233

Early in the morning of the 15 April, a westbound boat - U.262 -(4) reported a convoy in 45° x 26°W steering northerly. This was HX 233 and five boats,(5) all outward bound, were told to operate but as they were fairly distant no reports

- (1) Edward B. Dudley - 7,177 tons.
- (2) Fresno City - 7,261, Pacific Grove - 7,117 and Ulysses - 2,666.
- (3) Cases in which U-boats engaged in convoy operations used flak against the supporting aircraft had been rare. None up to September 1942 and only six between then and the end of February 1943. However, during March the number rose to four, in one of which the aircraft (Halifax B/502 Sqdn.) was shot down. In April the figure rose to seven but in no case was the aircraft even hit.
- (4) U.262 was on a special mission to the St. Lawrence to land agents.
- (5) U.175, 226, 264, 358 and 628.

SECRET

Ibid and
No.15 Group
O.R.B.
Appendices
Amty
C.B.04050/
43(5)

were expected for 24 hours. U.262 was soon beaten off by the convoy's surface escorts and in view of her special mission she was told to continue her westward passage. It was not till 2230 hours on the 16th that U.175 sighted some destroyers and during the night the convoy was located by U.226, 264, 382 and 628. Attacks were made and one ship was sunk, (1) U.382 was badly damaged by counter-attack. During the daylight of 17th, U.175 made an attempted submerged attack but was detected and sunk by one of the surface escorts. Air escort arrived on the scene at 1630 hours and was maintained throughout the night by V.L.R. Liberators "R" and G/86 Sqdn. It was resumed at 0820 hours/18th and continued all day. Recognising the futility of further pursuit, B. d U. broke off the operation observing in his Diary that with such a scratch collection of odd outwardbounders he was not expecting much success.

ONSL4

On the evening of the 18th a newly commissioned boat coming into the Atlantic from Germany sighted to the southwest of Iceland the local portion of ONSL4. Three other U-boats from Germany in the vicinity were told to operate. In the early hours of the 19th, the first boat fired torpedoes and wrongfully claimed one ship hit. Shortly after dawn he was attacked by Hudson G/269 Sqdn., (just arrived on escort duty) and touch with the convoy was broken. It was not found by the other U-boats who all complained of air activity and B. d U. abandoned the search.

B. d U.
War Diary

Meanwhile the southern group now increased to 23 boats had failed to find SC.126(2) and were now stationed to the eastward of Newfoundland in wait for the next pair of HX and SC convoys. A belated deciphering of routing signals intercepted by B. d U's Radio Intelligence confirmed that both HX 233 and SC 126 had taken an unusually southerly route. This was suspected by him to link up with an American situation report (also belatedly deciphered) in which 20 U-boats were estimated as being in an area eastward of Newfoundland where in fact they were at the time. However, in order to cover future possible northerly or southerly routings he disposed the waiting group more to the northeast of Newfoundland and started to build up a new group to east-southeast. On the 20th, Radio Intelligence informed him that the next HX convoy (HX 234) had been given an evasive detour far to the northward which B. d U. noted was in agreement with the most recent American estimate of U-boats being (on the 18th) to the northeast of Newfoundland. He therefore ordered the majority of his group to move north at high speed. A further Radio Intelligence intercept gave the next SC convoy

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- (1) Fort Rampart - 7,134 tons.
 - (2) This convoy was fortuitously sighted far to the eastward by two boats outward bound from the Biscay during the afternoon of the 18th in 4830N x 2100W. Air escort was being given by Liberators of No.86 Sqdn. X/86 sighted one U-boat at 1625 hours but the DC.s failed to release. L/86 carried on the escort throughout a moonlight night and with the aid of Mk.V 10 cm. A.S.V. made three sightings and one attack. Air escort was maintained unbroken for the next 24 hours and both U-boats gave up the operation as hopeless. Ref: No.15 Group O.R.B. Appendices and War Diary B. d U.

SECRET

54.

(SC 127) a repeat southerly route which B. d U. hoped to counter with his new formation to the eastsoutheast.

On the 21 April his dispositions lay as follows:-

One group of 19 boats (Group Meise) on the arc of circle 600 miles to the N.N.E. of Newfoundland to catch HX 234 with another group of 17 boats (Group Specht), 600 miles eastward of Newfoundland to locate SC 127. An embryo of five boats was stationed to the southwest of Iceland to be joined by seven new boats coming round Scotland from Germany. A total of 24 boats were outward bound in the Outer and Inner Biscay to maintain these groups and to form a new group (Amsel) across the southerly transatlantic route - a sufficiency, he thought, to cater for all Allied evasions and produce good results in convoy actions.

Ibid
See Map No.9
for dispositions
21.4.43

Allied Tactics

While B. d U. and the convoys were thus playing at hide and seek in the wide spaces of the North Atlantic it would be as well to pause and mention some of the developments on the Allied side. The evasive routing was, as we have seen from Volume III, nothing new. It was possible because of the highly intelligent and expert organisation behind and in the Admiralty Submarine Tracking Room. A counterpart had been formed of course on the other side of the Atlantic at Cominch's headquarters and the digested information was freely exchanged between the two, albeit that on occasions the Americans were over-rash in taking countermeasures based on the pooled intelligence which tended to limit the amount of 'strange coincidence' which the enemy could swallow. Mercifully Admiral Doenitz was so obsessed with the powers attributed to the latest form of Allied radar that he continued to credit air reconnaissance with locations of U-boat dispositions far beyond air range let alone outside the scope of any airborne radar.

While the D/F'ing of U-boats' radio signals by shore stations gave most useful indications of which convoys had been intercepted, it was the by now universal fitment of HF/DF in convoy escort craft that made possible most of the local and immediate counter-attacks.(1) Such bearings were either followed up by surface escorts themselves or by the escorting aircraft on direction by the S.N.O. escorts. In any case it revealed the dispositions of U-boats around the convoy and made possible a planned offensive against them. The old rigid close air escort confined to a visible radius round the convoy was a thing of the past. Offensive action beyond the surface escorts' prudent steaming distance from the convoy was performed by the air. Radio telephony and constant practice had welded the surface and air escorts into a highly effective and flexible team. The units of the team themselves had an increased range of detection. Shipborne radar efficiency had recently improved and one of the two V.L.R. Liberator squadrons (No.86) was now equipped with 10 cm. A.S.V. though the absence of Leigh Lights as yet in these aircraft confined the highly desirable night air escort to the rare periods of clear skies and moonlight.

(1) The development of this tactical aid is described in Volume III Chapter II (Xiii).

Escort carriers were at last making their appearance thus enabling more continuous air cover to be given in the Air Gap including some night escort which their types of aircraft could perform outside the full moon periods. Coincident with these vessels was the growing use of supporting groups of surface escorts which kept the sea for long periods in order to reinforce the standing escorts of any convoy that was threatened or attacked and which permitted the detachment of members to stay and hunt a located U-boat to a finish.

New or improved weapons were also on the point of fruition. Since the beginning of 1943 an airborne rocket projectile had been perfected against surfaced U-boats and was soon to appear in carrierborne and the smaller types of shorebased aircraft. Great improvements had been introduced in the ASDIC equipment, particularly against deep diving U-boats, depth charge patterns were more destructive, the ahead throwing weapon (Hedgehog) had passed its initial teething troubles and the big shorebased aircraft was about to be supplied with a form of homing torpedo which still further threatened the U-boat that imagined safety in diving before air attack.

All these were to reap a rich harvest of U-boats killed in the month of May but even in the third week in April there were signs that, when B. d U. did succeed in effecting interceptions of convoys, his U-boats were not pressing home the attack with the same vigour that they had shown in the past.

ONS3, ON178 and HX234

Reverting to the Atlantic battle, B. d U's dispositions produced convoy interceptions almost immediately with the sighting on the 21 April of HX 234 by U.306, the northernmost of Group Meise, of ONS3 by U.706, another Meise boat and of ON178 by U.438 yet another Meise boat. All these convoys were out of reach by shorebased aircraft and none had an escort carrier near them, however the sightings proved somewhat of an 'embarras de richesse' to B. d U. and boats of Group Meise were told to operate on whichever convoy was nearest to them. Initial surprise enabled two ships to be sunk out of ONS3(1) and one each out of ON178(2) and HX 234(3) during the night of 21st/22nd. Spirited counter-action by the surface escorts of both the westbound convoys and foggy conditions on the 22nd resulted in the shaking off of all pursuit without further loss but up to 18 boats were following HX 234 by the end of the day. U.306's shadowing reports had been D/F ed in England and V.L.R. air escort was laid on from Iceland. The first aircraft was with the convoy at 2230 hours on the 21st and had sighted a U-boat astern of convoy an hour later. Unhappily the attack failed through the jamming of depth charge release. The aircraft had to leave the convoy at 0300 hours/22nd for Goose (Labrador) and soon afterwards the Amerika was torpedoed. The next aircraft arrived at 0940 hours/22nd followed later in the day by two more who kept the air escort going until 0100 hours/23rd. Both the latter landed back in Labrador and one of

B. d U.
War Diary
and
Iceland
O.R.B.
Appendices

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- (1) Wanstead - 5,486 tons and Ashantian - 4,917 tons.
 - (2) Scebeli - 3,025 tons.
 - (3) Amerika - 10,218 tons.

them sighted five U-boats at varying distances astern of convoy but again unhappily no attacks were delivered owing to failure of depth charges to release. However the presence of these three aircraft prevented the pack from closing in on the convoy but they snapped up a straggler lying far astern.(1) The weather at base delayed relief sorties on the 23rd and U.306 managed to re-sight the convoy and shadow thus enabling eleven other U-boats to join up during the day. A submerged attack in the afternoon by U.306 damaged one ship.(2) The first Liberator sortie (V/120 Sqn) did not arrive at the convoy until 1800 hours followed half an hour later by J/120 Sqn. They remained with the convoy until 2130 hours during which time six U-boats were sighted and two attacks were made, that by V/120 Sqn. sinking U.189. During the night hours some boats closed up and attacked but were driven off by the surface escorts with considerable damage to one of their number. Air escort was resumed at dawn/24th and maintained until 1730 hours by U.S.N. Catalinas of No.84 Sqn. from Iceland one of whose aircraft forced seven U-boats to dive after expending his depth bombs on the first. Another aircraft sighted two and attacked one of them. All contact was lost with the convoy with the exception of a fleeting glimpse by U.267 at dusk. It was never regained in spite of the presence of twelve boats in the vicinity and the operation was abandoned at dawn/25th. In his summing up B. d U. explained away the lack of success by stressing the inexperience of most of the commanders and, as usual, by the strength of the air cover. He said that conditions of convoy warfare were becoming increasingly difficult and results could only be gained by resolute attacks on the first night after interception because after this the air cover always frustrated any further hopes.

Ibid

ONS4

While the fruitless chase of HX 234 had been going on, U.732 (one of the embryo group stationed southwest of Iceland) had sighted the main ONS4 westbound convoy at 1000 hours on the 23 April.(3) In order not to interfere with his operation against HX 234, B. d U. gave permission against ONS4 only to such boats as were lying ahead of this convoy's mean line of advance. The non-engaged Group Specht away to the west was alerted and told to move northwards in readiness to intercept.

Weather at base in Iceland prevented shorebased air escort on the 23rd but ONS4 was accompanied by H.M. escort carrier Biter and one of her Swordfish aircraft spotted and put U.732 down thus breaking the contact. The convoy was not relocated until the evening. Four U-boats were in the vicinity soon after dusk. One of these - U.191 - was attacked and sunk by the surface escort. Another U-boat joined up during the night and at dawn on the 24th U.404 fired

Ibid

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- (1) Robert Gray - 7,176 tons.
 - (2) Silver Maple - 5,313 tons.
 - (3) This convoy had received consistent shorebased air support from the 19th to late on the 22nd during which five sightings and two attacks had been made on U-boats in the vicinity of the convoy. These boats were also of the embryo group forming to the southwest of Iceland and none of them actually sighted the convoy.
- Ref: War Diary B. d U. and R.A.F. Iceland and No. 15 Group Appendices.

five torpedoes at the Biter wrongfully claiming hits in his signal to base. Shorebased air cover was given to the convoy during the 24th by No.120 Squadron Liberators from Iceland and Labrador. This together with air patrols from the Biter prevented any concentration from developing during the day although some of the Group Specht boats were close at hand. No further reports being received of the convoy, B. d U. abandoned the operation at dusk. However one boat at least appears to have held on because on the 25 April a Swordfish from H.M.S. Biter and an escort - H.M.S. Pathfinder - shared in the kill of U.203 near the convoy.

RU71

Ibid
and
No.15 Group
O.R.B.
Appendices

Two of the seven new U-boats from Germany about to join the embryo group blundered into a small local convoy in the afternoon of the 24th. This was RU71 running between Iceland and the United Kingdom. Iceland based Hudsons of No.269 Sqdn. were giving support. Both U-boats were promptly attacked and forced to disengage. During the night they ran across a straggler miles astern of the convoy and sank it.(1) Not far away two more of these new comers were sighted by the air support being given to the next slow westbound convoy ONS5. Both were attacked, one of them (U.710) being sunk by Fortress D/206 Sqdn. Neither was aware of the convoy's proximity.

Doenitz suspects airborne radar

B. d U.
War Diary

After the breakaway from HX 234, the losing of ONS4 and failure in the search for SC127 the U-boats were widely scattered and B. d U. re-grouped for a fresh effort. His Radio Intelligence had discovered that SC127 had altered route while at sea with almost uncanny insight through a temporary gap between Groups Meise and Specht. As both these groups had been on the move on his orders the very exact timing of this diversion was to him most significant and in his words 'confirms more than ever that the enemy has at his disposal a radar device, especially effective in aircraft, which our boats are powerless to guard against.' More than ever was he convinced that the accuracy of the U-boat situation reports in Allied Signals, was derived from airborne radar equipment.

See Map No.10
for U-boat
dispositions

His new disposition was mainly directed to Newfoundland waters where it appeared that air cover was weakest. During the next week Groups Specht and Amsel containing 32 boats were spread on a long arc from a position 300 miles N.N.E. of St. Johns round to a point 500 miles E.S.E. of this port. As a kind of long stop the group off Iceland, now completed to 13 boats and named Star, was stationed to the eastward of Cape Farewell (Greenland). A new group Drossel of 13 boats was positioned in an east/west line some 360 miles west of Cape Finisterre in order to make a surprise interception of convoys on the United Kingdom/West Africa route and assistance to locate these was arranged with the G.A.F. long range reconnaissance aircraft at Bordeaux.

(1) Rosenberg - 1,997 tons.

ONS5 (first battle)

Some of these moves were still proceeding when at 0942 hours on the 28 April, U.650 (Group Star) reported a westbound convoy about half way between Iceland and Greenland. This was ONS5. Air escort and support had been given to this convoy with regularity from the afternoon of the 24th until midnight on the 27th. No U-boats were thought to be following it so escort was discontinued. Distant cover by one Catalina of No.84 Sqdn. U.S.N. had momentarily sighted the convoy late on the 28th and the aircraft was sighted by U.650 then engaged in shadowing. Her radio signals and a rising volume of other U-boat W/T traffic after dark were D/F ed in England and long range air escort was ordered for the 29th but had to be cancelled owing to adverse weather at base in Iceland.

Meanwhile acting on U.650's reports, B. d U. had directed all Group Star into action. The weather in the area was atrocious with snow and much magnetic interference with W/T so that there was considerable delay in getting signals back to B. d U. Four other boats joined U.650 during the night of the 28th/29th and attacks were made. U.386 was heavily depth charged by the surface escorts and withdrew for repairs. U.532 missed with torpedoes and was thereafter hunted for 15 hours. U.258 succeeded in sinking one ship (McKeesport - 6,198) but all boats lost contact before daybreak. The pack followed blindly for the next 36 hours. U.381 reported hydrophone contact at 1600 hours on the 30th but lost it an hour later. With nothing being heard from any boat on 1 May B. d U. ordered the group to break off.

TS37

From far away to the south came the only real enemy success against convoys. This was effected by a single U-boat (U.515) who during the last night in April torpedoed and sank seven ships out of nineteen in convoy TS37 just outside Freetown. This coup resulted from a weak surface escort of one corvette and three trawlers with only thin day and no night air cover.

Summary for April

Thus ended a month which contained many encouraging features for us. The same number of convoys (17) were intercepted in the Atlantic as in March(1) but whereas 57 ships were sunk out of them in March against six U-boats destroyed by air and surface escorts, only 23 ships were lost from convoy in April against eight U-boats destroyed by the combined escorts. The score for ships out of convoy in the Atlantic was also better being 19 against 27.(2)

During the month, ten eastbound (234 ships) and nine westbound (182 ships) ocean convoys reached their destination without interception.(3) The number of Atlantic merchant convoys receiving air support from R.A.F. bases was twenty

- (1) During April the average number of U-boats at sea in the Atlantic was 111.
- (2) U-boat sinkings in areas outside the Atlantic were mostly out of convoy and brought April's grand total to 58 ships of 345,506 tons, only a little more than half that for March.
- (3) None of the 134 (1,764 ships) American coastwise convoys were attacked.

Ibid and
Iceland and
No.15 Group
O.R.B.
Appendices

R.A.F.
West Africa
O.R.B.
Appendices

with a further six local convoys between Iceland and the United Kingdom, and nine in the Gibraltar to West Africa area. In addition, eighteen supply convoys to or from Africa received air cover.

There were still only 26 V.L.R. Liberators, all from Coastal Command, operating in the Atlantic. Few long range and no very long range aircraft either American or Canadian were working in the N.W. Atlantic. Shorebased air escort outside 500 miles from Newfoundland was limited to some shuttle sorties to and from Gander (N.F.) and Goose (Labrador) by No.120 Squadron based in Iceland. However, these together with the two escort carriers had almost closed the Air Gap and the U-boat packs were plainly feeling the effect of this. Contemporary opinion at the end of April was justified in observing that the enemy's peak effort was probably passed and that, for the first time, the U-boats were not pressing home attacks on convoys even when favourably situated to do so.

Admty.
Monthly
A/S Report
CS.04050/
43(4)
page 3

(v) Centralised direction of Air Cover and three new air A/U weapons

(a) Direction of Air Cover and Support - Stipple and Tubular

See Vol.III
Chapter III
(xv)

As early as August 1942 a daily signal was initiated from Headquarters Coastal Command to the R.A.F. Iceland, Gibraltar and the Home Groups indicating which of the convoys or convoy within air reach was considered in danger or approaching a U-boat infested area. Convoys were named in priority for receiving escort and any infested area was called a 'high probability area' worthy of sweeps or patrols in support of adjacent convoys. The information came from the close liaison maintained between the naval staff at H.Q.C.C. and the Admiralty Submarine Tracking Room. This daily signal was initiated because in many cases (particularly Iceland and Gibraltar) the local A.O.C. did not always have access to such intelligence.

C.C. File
S.7050/8
Encl.71A

This signal arrangement continued through into 1943 with an additional refinement early in the year of a short forecast of probable requirements for the day after as well as the current day so that the Group Commanders could plan accordingly. The increasing importance in March 1943 of getting V.L.R. aircraft based in Iceland away at the earliest moment to a threatened convoy and the prevalence of atmospheric and other delays in receipt of the set time daily signal resulted on 7 April in the introduction of a short fire alarm signal by which the A.O.C. Iceland could be immediately informed if a convoy was in danger. The signal was very brief and merely read 'Stand by for convoy so and so' if nearing danger and if definitely threatened (D/Fs of U-boat W/T in vicinity) read 'Convoy so and so - Go'. If more than one convoy was implicated the priority was the sequence in which the convoys were given.

C.C. File
S.7050
Encl.101A

Also on 7 April a conference was held at H.Q.C.C. to discuss how the Canadian Eastern Air Command should be brought into the co-ordination for convoy cover requirements now that transatlantic shuttle sorties were becoming frequent and in view of the early expectation of a Canadian squadron of V.L.R. Liberators. Air Vice-Marshal Durston had already laid the foundation for such co-operation in the Anderson - Durston Agreement negotiated during the Washington Conference in March. The meeting now agreed that a special operational form should be instituted which contained information on:-

- (1) What convoys required cover
- (2) The aircraft available and the duties assigned
- (3) The estimated time of departure and proposed return to base
- (4) The state of airfields for diversion purposes.

This form would apply only to the operation of V.L.R. aircraft and would be known as Form V.L.R. and would be signalled daily between No.15 Group, R.A.F. Iceland and No.1 Group St. Johns (N.F.) repeated in each case to H.Q.C.C. It should be timed immediately after the receipt of H.Q.C.C.'s daily convoy priority and high probability area signal. In this way the priority tasks could be quickly settled between the groups concerned and all would know the exact state of the implementation. The Form V.L.R. scheme was brought into force on 15 April.

Thus far the priority, early warning and task mission arrangement was confined to air authorities although naturally the naval partners in the various A.C.H.Qs could view the signal. Later in April the system was criticised by the C.-in-C. Western Approaches on the ground that different priorities and probability areas were being issued by H.Q.C.C. to those prepared by his own naval staff. In fact this was because their drafting was influenced by different factors. Naval priorities were governed by the value and size of different convoys, whether they had strong or weak surface escort and only included convoys which No.15 Group aircraft could not cover. H.Q.C.C. priorities included all convoys within reach of shore-based air and took note of the current availability of aircraft while the high probability areas given were selected with reference to the probable capabilities of the Groups to cover them.

To obtain complete co-ordination a conference was held on 28 April in the Admiralty at which the interested parties were present. It was agreed that uniformity would be achieved by instituting a three-cornered telephonic talk at 0930 hours daily between the Chief of Staff Western Approaches at Liverpool, the Senior Naval Staff Officer at H.Q.C.C. and the head of the Admiralty Tracking Room to decide on priorities for convoy escort which would be under three categories:-

- A. Definitely threatened or being attacked
- B. Standing into danger
- C. Might require cover in the future with the probable date.

This signal should be sent by H.Q.C.C. to No.15 Group, R.A.F. Iceland, R.A.F. Gibraltar and E.A.C. Canada prefixed by a permanent code word indicating the agreed decision of the three home authorities previously mentioned. As soon as possible after this H.Q.C.C. should signal the probability areas and any special instructions necessary to co-ordinate action to Nos.15 and 19 Groups, R.A.F. Iceland, R.A.F. Gibraltar and E.A.C. Canada also prefixed by a code word indicating Admiralty Tracking Room agreement.

Admty Message
071612 B
7.5. '43.

On 30 April the code word Stipple was allocated for the convoy priority signal and Tubular for the U-boat probability area signal. On 7 May the Admiralty made a general signal to all maritime authorities acquainting them with the procedure and bringing it into effect from 10 May.(1)

C.-in-C. File
A.H.B./
IHK/54/10/30.

The R.A.F. Gibraltar, however, had still not been returned to Coastal Command's operational control and under the Torch directive were bound to extend air escort to all Torch convoys irrespective of whether they were threatened or not. This anomaly was corrected on 20 May when the Admiralty/Coastal Command Committee amended the order to read that all Gibraltar and West African convoys should be included in the Stipple signal on the same principles as applied to other Atlantic convoys.

On 27 August 1943 the wording of the three categories governing the priority for convoy air escort was amplified and amended to read:-

Category A - Convoys and Fleet Units for which air cover must if possible be provided before any other commitment. i.e. Those definitely threatened or being attacked or of special importance even though not known to be actually threatened.

A.M.
D.C.A.S. File
A.H.B./ID4/72

Category B - Probable future requirements. i.e. Convoys and Fleet Units likely to be included in Category A on days subsequent to the period of the present Stipple Signal with indication of dates.

Category C - Any Convoys or Fleet Units to which it was desired to give modified air cover against possible contact with a single U-boat. Discretion was left to the A.C.H.Q. concerned to withhold this cover and report accordingly if promising or important offensive operations were in hand.

(b) Three new weapons in the air war on U-boats at sea

(1) The Mark 24 Mine

This was a weapon designed for use against U-boats that completely disappeared before the attacking aircraft could release depth charges. The early development was carried out in the United States and by the end of February 1943 had reached the stage of performance trials. Throughout its life it was treated with the greatest secrecy and was known

(1) In this order the addressees were enlarged as follows:-

Stipple - to Nos.18 and 19 Groups and R.A.F. Iceland repeated to E.A.C. No.1 Group St. Johns, R.A.F. Gibraltar, Admiralty, Air Ministry, Naval Commands concerned, Canadian Naval Command and C.-in-C. United States Navy.

Tubular - to all Coastal Command Home Groups and R.A.F. Iceland repeated to Admiralty, E.A.C. Halifax, No.1 Group St. Johns and R.A.F. Gibraltar. The various Naval Commands to be informed through their associated A.C.H.Qs and C.-in-C. Rosyth to inform C.-in-C. Home Fleet.

C.A.S. File
No. 2012

as the Mark 24 Mine. It was a low velocity acoustic torpedo designed to home on to propeller noises. It was seven feet long with a diameter of 19 inches and weighed 680 lb. The head contained 100 lb. of T.N.T. fitted with a contact fuze. It was battery driven at 12 knots with an endurance of 15 minutes and was calculated to home within a maximum range of 1,300 yards of a U-boat proceeding at best submerged speed at shallow depth (i.e. the conditions of a crash dive). Naturally the range fell sharply at diminished U-boat speeds and increased depth to about 150 feet homing range when the U-boat had slowed to two knots at 250 feet depth. It had to be dropped from aircraft in level flight from 150 to 300 feet altitude at air speeds between 125 and 150 knots.

ibid
Signal from
B.A.D.
Washington to
Admiralty
T.O.O.2301Z/
27/2

The first series of performance trials were satisfactory and on 27 February the C.-in-C. United States Navy indicated that the first priority for this weapon was in the South Pacific with a probable date of readiness in supply by 1 May. After this, as soon as production permitted, it could be used in the Atlantic and the probable date was given as 1 August 1943. As the Washington Convoy Conference was about to open and as the Mark 24 Mine was essentially an anti-submarine air weapon the matter was brought to Air Vice-Marshal Durston's attention in order that its early use by British V.L.R. aircraft in the North Atlantic could be raised in committee. The Admiralty also drew the British delegation's notice to the disadvantage of using it against the Japanese three months before the Germans if surprise in all strategic areas was intended by the C.-in-C. United States Navy. Representations along these lines in the Conference resulted in the U.S. delegate's declaration in favour of using the weapon on a pack of U-boats in the Atlantic as soon as practicable rather than on single Japanese submarines in the southwest Pacific and anticipated at least a hundred Mark 24 mines being ready by 1 May.

ibid
Signal
T.O.O.2125Z/
6/3

Meanwhile successful trials had been carried out against an American submarine on 4 March and initial supplies were promised in April to Argentia and Gander in Newfoundland, Iceland and the United Kingdom so that simultaneous use in the North Atlantic could be effected. The first consignment of mines arrived in Northern Ireland on the 27th, in Newfoundland on 29 April and in Iceland on 1 May. The C.-in-C. United States Navy then gave permission to start simultaneous operational use on 8 May but the convoy battle raging around ONS.5 off Greenland on the 5th caused an advance in the operational date to 6 May 1943.

ibid
Signals
T.O.O.2047Z/6
and 2301Z/16.

ibid
T.O.O.
1721Z/3/5

Certain regulations, aside from the drill for maintenance, attack and release, governed the tactical use of the weapon. It was of course surrounded with the greatest secrecy both in handling and reports. It's use was forbidden in the Mediterranean or in any inshore waters of the Atlantic where it might run ashore neither was it ever to be employed against surfaced U-boats(1) and it was considered useless to release it more than two minutes after a U-boat had disappeared.

(1) Permission was given on 8 June 1943 for it's use in the Bay of Biscay outside the 100 fathom line. However, as the U-boats in this area were committed to fighting back on the surface, no opportunities arose for it's employment.

It was found at Aldergrove (N. Ireland) that a V.L.R. Liberator could carry two Mark 24 mines plus four normal depth charges and this became the standard load. The first sorties on operations with the new weapon began on the 7th but it was not till 12 May that the first attacks were made. On that day three V.L.R. Liberators of No.86 Squadron were giving cover to convoy HX.237. Each aircraft sighted a U-boat which was attacked with the new weapon after it had dived. The only evidence of result seen in the rather rough sea conditions was by B/86 Squadron.(1) This consisted of a brownish patch 90 feet in diameter which appeared within half a mile of the diving swirl some two minutes after release. Very soon after, the U-boat re-surfaced and made off on her Diesel engines zig-zagging violently and firing at the aircraft with the flak armament. B/86 returned the fire and attacked with depth charges but overshot out of lethal range. The aircraft then called up the surface escort on R/T and directed two of them towards the still surfaced U-boat. B/86 was then at the limit of endurance and had to leave the scene. The U-boat got away but was re-located early the next day (13 May) by Sunderland G/423 Squadron, still unable to dive. In face of the hot flak fire put up, the Sunderland circled around while contacting the convoy's surface escort commander on R/T. He detailed two corvettes who arrived on the scene shortly after. On sighting their approach the U-boat dived in desperation and G/423 Squadron got in a depth charge attack 30 seconds after disappearance. Attacks were then made by the corvettes with depth charges and the U-boat was assessed (correctly) as sunk. After the war it was established that the U-boat was U.456 and that she had been badly damaged aft by the Mark 24 Mine attack.

In default of any visual evidence after the other two attacks they had to be assessed as 'Insufficient evidence of damage' and similar lack of evidence followed the next three attacks. However, on 14 May a U.S. Catalina of No.84 Squadron from Iceland while escorting convoy ONS.7 made an attack in a calm sea following which a large welling was seen on the surface some 800 feet ahead of where the U-boat had dived and on the same day, much further south, B/86 Squadron attacked another U-boat soon after it had dived and saw 90 seconds after release a sizable mushroom-like disturbance 600 feet away. In neither case could a 'known sunk' assessment be given at the time but a detailed check after the war from German naval documents established that on that day U.657 and U.266 had vanished at positions corresponding to the respective aircraft attacks.

Three more indecisive attacks followed and then, on 19 May, Liberator T/120 Squadron escorting SC.130 attacked a diving U-boat with depth charges which missed and then with two Mark 24 Mines. This time two upheavals of water were seen which merged into each other about 200 feet ahead of the diving swirl some 30 seconds after release. Even now a

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- (1) The scanty surface disturbance resulting from an explosion of only 100 lb. of T.N.T. at depths down to 150 or 200 feet always made the confirmation of a hit difficult particularly in rough sea conditions.

positive 'known sunk' could not be given but checks after the war show that it was U.954 that was destroyed. More attacks with no after evidence followed until 25 May when U.S. Catalina F/84 Squadron attacked a U-boat and 90 seconds later saw a shock wave followed by a welling on the surface about 300 yards ahead of the diving swirl. Postwar evidence established that this was U.467 outward bound on her first trip from Germany.

During May, twenty-one attacks were made and twenty-two weapons released.(1) At the time, the sighting of positive after results was held to justify an assessment of 'Possibly Sunk' and the Mark 24 Mine was considered a very valuable addition to the armoury of the A/U aircraft. Post war knowledge confirms nearly all these wartime assumptions and may reveal one or two more kills among the 'unknown cause' category of U-boat losses. These latter are still under scrutiny among relevant German records.

(2) The Rocket Projectile - (R.P.)

Mention has been made in Volume III of the experimental development of this weapon from August 1942 up to its full scale trials in February 1943. By November 1942 it had been decided that the R.P. should be fitted first to the more manoeuvrable aircraft of Coastal Command - the Hudson for attacks on U-boats and the Beaufighter against enemy shipping.(2) At the 31st meeting, on 1 January 1943, of the Admiralty Standing Committee on Aircraft Attacks on U-boats it was stated that a 60 lb. explosive headed R.P. would be used against shipping and the solid 25 lb. headed R.P. against U-boats.(3) The latter weapon on trials had, after entering the water, travelled some 70 feet at a shallow depth before emerging again at half velocity but even after this reduction was still capable of driving the 25 lb. head through the pressure hull of a submarine.

At the 10th meeting of the Coastal Command Committee on A/U warfare held on 19 February 1943 it was announced that two squadrons of Hudson ex Coastal Command but now based in the Western Mediterranean were to be fitted for firing the new weapon(4) and if results should be satisfactory that nearly

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- (1) The withdrawal of U-boat packs from the Northern Atlantic at the end of May drastically reduced the opportunities for using this weapon. Only six attacks were made in June which resulted in two U-boats sunk. Five were made in July without result and none in August. The German attempt to re-open the convoy war in the Northern Atlantic in September and October brought 20 attacks but only two U-boats were sunk. Thereafter attacks dropped to two in November and none in December.
 - (2) The equipping of Beaufighters proceeded separately from A/U aircraft. No.236 Squadron was fitted ready for training late in March 1943. Their subsequent story is continued in the Anti-shipping chapters.
 - (3) For the history and development of the Rocket Projectile see Appendix III.
 - (4) The two squadrons designated were Nos.500 and 608. They had just been incorporated in the new North African Coastal Air Force based in Algeria. They were selected as the more settled Mediterranean weather favoured rapid training and U-boats local to this area showed at this date more preference to remaining on the surface to fight than those in any other region.

See Vol.III
Chapter XII
(xii)

C.C. File
S.7050/5
Pt.III.
Encl.19A

ibid
Encl. 30A
and A.H.B./
IIK/54/10/24.

A.M. File
C.S.14561
Encl. 21A and
A.H.B./IIK/54/
10/24

all A/U aircraft would be equipped in due course. At the next Admiralty Committee meeting (5 March) it was confirmed that the two Hudson squadrons would be fitted by the second week in April.

Further trials with the installation in England had established that the best attack approach was in a shallow 20 degrees dive. In this attitude about 75 per cent of the rounds emerged from the water again after having travelled between 100 and 190 feet at a uniform depth of 13 to 15 feet. There were, however, two tactical limitations:-

- (a) It was of no use unless a nearly beam attack could be delivered as the projectile would only strike a glancing blow on the pressure hull or conning tower if fired on bow or stern angles.
- (b) It was useless at periscope depth or if the U-boat had completely disappeared.

Resulting from subsequent trials in March and April, full tactical instructions and memoranda on the fitting and operational use against U-boats were issued not only by the Air Ministry and Coastal Command but by the Admiralty who were pressing ahead with the equipping of Swordfish aircraft for the escort carriers.

Meanwhile the fitting and training of Nos.500 and 608 Squadrons had proceeded at their base in Algeria and the aircraft started operations with the R.P. in May 1943. Their first success came on 28 May when Hudson M/608 Squadron sank U.755 about 360 miles east of Gibraltar. The U-boat fired flak at the approaching aircraft who attacked on a bearing just abaft the port beam. At 20° dive the first salvo was fired from 850 feet altitude range 800 yards, the second salvo from 650 feet at 600 yards range. One rocket of the first salvo of two failed to release but the other secured a direct hit on the water line at the base of the conning tower. All four rockets of the second salvo entered the water in line with the conning tower and about 80 feet short thus scoring a total of one direct hit on the water line and four underwater hits. The U-boat circled slowly sinking but still firing all flak guns. As she settled lower and lower the gunfire ceased and she was seen to founder before the aircraft left the scene.

Five days earlier, on 23 May, the first Atlantic success had been obtained by Swordfish B/819 Squadron from H.M. escort carrier Archer supporting convoy HX.239 when U.752 was sunk. Late in May three R.P. fitted aircraft of No.236 Beaufighter Squadron were detached to No.19 Group for operations against the transit U-boats in the Bay and on 1 June B/236 Squadron sank U.418 homeward bound. By the last week in May both the Hudson squadrons at Gibraltar (Nos.48 and 233) contained aircraft fitted with R.P. and after an abortive attack on 1 June succeeded in sinking U.594 about 180 miles west of Gibraltar on 4 June. In this case the aircraft (F/48 Squadron) caught the U-boat unprepared on the surface and smothered it with eight R.P. One and a half minutes later the U-boat had sunk leaving an enormous patch of oil behind.

Another useful killing weapon had been added to the A/U aircraft's armour. In July the Iceland based Hudson squadron was equipped and a start made in fitting the Liberators of No.224 Squadron.

C.C. File
S.7050/5
Pt. III
Encl. 43A

C.C. File
S.7001/10
Encls.31A,
44A, 63A and
66A

ibid
Encl.64A

R.A.F.
North Africa
O.R.B.
Appendices

(3) The 600 lb. A/S depth bomb

See Vol.III
Chapter XII
(xii)

C.C. File
S.7050/5
Part III
Encl.43A

The early history of the development of this weapon is also mentioned in Volume III up to 31 December 1942 when, owing to countermining difficulties when released in a stick, the bomb was suspended from operational use. Further trials and alterations during the next two months produced a satisfactory performance and at the Admiralty meeting on Aircraft Attacks on U-boats of 5 March 1943 it was reported that the bomb was cleared for release heights between 1,200 and 5,000 feet and when dropped in sticks of three at spacings from 80 to 120 feet had not countermined.

ibid
Encl.45A

C.-in-C. File
A.H.B./
IHK/54/10/24

By 2 April trials on the sound range had established that the hydrostatic fuze set at 35 feet depth produced detonation within + five feet and that the lethal radius was approximately 29 feet. It was hoped to start using the bomb operationally during the month in conjunction with the Mark XIV high level sight using a stick of three spaced at 100 feet. Mark XIV sights were supplied to the Czech No.311 Wellington X Squadron and training was hastened as it was felt that this high level weapon might be the only answer to surfaced U-boats if their flak ever became really accurate at low levels. The fitting of these sights also started, late in April, to the Halifaxes of No.502 Squadron who were earmarked for using the bomb.

No.19 Group
O.R.B.
Appendices

Early in May No.311 Squadron started operations in the Bay area followed towards the end of the month by No.502 Squadron. The first and only attack by the former was made by H/311 Squadron on 16 May on an inward bound U-boat from 1,600 feet releasing three bombs spaced at 100 feet. The explosions straddled the extreme stern of the boat at an acute angle. The U-boat dived within a minute leaving a large patch of oil. The Admiralty assessment at the time was 'serious damage' but as yet German records have not established the identity of the boat. Three days later No.311 Squadron left the line to re-equip to Liberators leaving No.502 as the only squadron using the bomb. Their first attack took place on 30 May, by E/502. This time the U-boat dived as the aircraft was approaching and as the Mk.XIV sight was not working satisfactorily the pilot lost height to 500 feet and released one bomb by eye just ahead of the diving swirl. Beyond a decided bump no ill effects were felt in the aircraft after this low release. It was not considered that any damage had been inflicted on the U-boat.

ibid

No further attacks were made until the 15 and 20 June but in neither case were any significant after results seen. It was not till 30 July that success was obtained when S/502 Squadron sank U.462. This proved, however, to be the only one for over a year and it was 12 August 1944 before F/502 sank U.981. These two sinkings were the only successes scored with a weapon on which much time and labour had been expended.

(vi) May operations

See Map No.10
for
dispositions

B. d U.
War Diary

At the beginning of May the North Atlantic U-boats were in the same dispositions as for the end of April. Group Star of thirteen boats was off the southeast corner of Greenland, Groups Specht and Amsel of thirty-two boats on a wide arc covering Newfoundland and Group Drossel of thirteen boats to the W.N.W. of Cape Finisterre with two refuelling supply boats midway between the three groups. Numerous boats were returning to or coming out from the French bases and there

were some thirteen large type boats in Equatorial and South Atlantic waters. In all, 134 U-boats were at sea in the Atlantic and a further nine were being made available from Arctic waters now that the German Command had realised that the convoys to and from Russia had ceased.(1)

Group Drossel off Cape Finisterre

Things went wrong for B. d U. right from the start of this ill-fated month. Group Drossel had lost one boat unknown to him on 2 May.(2) The Group, now comprising ten boats(3), was strung out on an east/west line ready to take advantage of any convoy locations made by the daily F.W.200 reconnaissance to the west of Spain. At 0830 hours on 3 May this reconnaissance reported two southbound convoys fairly close together in approximately 45°N x 14°W(4) and B. d U. ordered the Group to operate. Only two boats - U.89 and 456 - picked up the F.W.200's beacon signals and both sighted the coastal craft convoy during the day. Further G.A.F. sorties again reported both convoys at 1830 hours. Six boats received the beacon signals and closed at speed after dark. U.89 fired misses and both she and U.456 lost contact. Two other boats - U.439 and 659 were manoeuvring at high speed near the coastal craft convoy and collided soon after midnight with such force that both sank shortly afterwards neither being able to inform the U-boat Command of the disaster. None of the Group sighted either convoy on the 4th and B. d U. refused to chase any further south for fear of the Gibraltar based air support.

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43/(6)
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B. d U.
War Diary

On 5 May the line was being reformed and during the night of 5/6th U.406 and 600 collided - this time not with fatal results but with sufficient damage to compel both boats to return home immediately. On 6 May, U.447 and 659 were instructed to break through into the Mediterranean as reinforcements to the depleted U-boat strength in that area. As we have seen U.659 was already sunk and on the 7th the Gibraltar based Hudsons I and X/233 Squadron sank U.447 about 300 miles west of Gibraltar.

ibid and
R.A.F.
Gibraltar
O.R.B.
Appendices

The remnants of the Group, now only numbering five, sighted the northbound convoy SL.128/MKS.12 early on 7 May after a day's search caused by inaccurate initial sighting reports by the F.W.200 reconnaissance. U.89 made a submerged attack at 1130 hours and sank the Laconikos - 3,803 tons but subsequent shadowing was greatly hampered by the air cover which arrived soon after midday. This was provided by Gibraltar based Catalinas of No.202 Squadron and a Liberator of No.86 Squadron from England which continued up to midnight. The surface escorts were active in counter-measures, U.230 being depth charged twice and U.456 sustaining

- (1) These convoys were discontinued from March owing to the continual daylight and increased risk in inaccessible latitudes of G.A.F. and U-boat attack. They were resumed in the late autumn.
- (2) This was U.332 sunk by aircraft in the Bay on her way to join the Group.
- (3) U.89, 230, 406, 436, 439, 447, 456, 600, 607, and 659.
- (4) One consisted of 28 landing craft escorted by two trawlers, the other of 15 coastal craft (M.Ls and M.T.Bs) escorted by a corvette and trawler.

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extensive damage to her compasses and stern torpedo tube. In view of the stronger air support to be expected as the convoy neared England, B. d U. abandoned the operation before dawn on the 8th.

ONS 5 (main battle)

B. d U.
War Diary

In mid-Atlantic up to 3 May, Groups Specht and Star had had some fruitless chasing after chance sightings without being able to intercept a convoy. B. d U. had just signalled instructions for the two Groups to combine into a new Group Pink when on the morning of 4th, U.628 reported a southwest bound convoy in 554ON x 424OW. B. d U. sent all Group Pink and half of Group Amsel (41 boats in all) to attack.

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The convoy was ONS.5 again. After the previous interception at the end of April, when one ship was lost (against U.710 sunk), the convoy had run into a very severe gale and by 3 May was somewhat scattered. Ocean escort was being given by H.M.S. Duncan (S.O.), Vidette, Tay, Loosestrife, Snowflake, Sunflower and Pink. Inability to refuel in the existing rough weather forced Duncan to leave at 1400/3rd but the 3rd Escort Group consisting of Offa (S.O.), Penn, Impulsive, Panther and Oribi joined as extra support. Again owing to refuelling difficulties only Offa and Oribi could remain longer than 48 hours. The main convoy consisted of 30 ships with a detachment of four ships escorted by Pink proceeding as a separate convoy. There were some other ships straggling. Air escort from Iceland had ceased on 2 May.

R.C.A.F.
Narrative

By midday on the 4th, the wind had eased to Force 6 and the weather had cleared sufficiently for Canadian air cover to get out from Gander (N.F.). Two Cansos - W and E/No.5 Squadron R.C.A.F. - provided cover during the afternoon. Both aircraft sighted and attacked U-boats closing in on the convoy, the former sinking U.630 with an accurate depth charge attack. During the day five U-boats reached the convoy followed soon after dark by six more. At midnight one straggler(1) was sunk by U.707 and at 0100 hours on the 5th (2) the defence was penetrated by several boats who sank two ships. Another series of attacks at 0500 hours sunk four more ships.(3) Four U-boats dropped out including U.270 with severe depth charge damage leaving 36 boats still operating at daylight/5th. Thick fog over Newfoundland grounded the R.C.A.F. but Liberator J/120 Squadron managed to get out to the convoy at 2130 hours from Iceland. At this distance from base (1,050 miles) the aircraft could only remain one hour with the convoy and in fog patch conditions sighted no U-boats.

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A furious fight around the convoy continued all the 5th in increasingly foggy conditions. Another straggler was sunk at 1240 hours, (4) one of the detached convoy at 1545 hours(5) and three out of the main convoy at 1940 hours.(6) Frequent encounter at point blank range took place between escorts and surfaced U-boats in sudden clear patches resulting

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- (1) North Britain - 4,635 tons.
 - (2) Harperley - 4,586 and Harburg - 5,081.
 - (3) Bristol City - 2,864, Dolius - 5,507, Wentworth - 5,213 and West Maximus - 5,561.
 - (4) Lorient - 4,737.
 - (5) West Madaket - 5,565.
 - (6) Bonde - 1,570, Selvistan - 5,136 and Charinda - 5,306.

in U.192 being sunk by Pink and U.638 by Loosestrife. By midnight 5/6th the weather was calm and foggy and up to dawn no less than twenty-four attempts were made by U-boats to break through the screen but all were beaten off. Three more U-boats were badly damaged and two were sunk - U.125 by Vidette and U.531 by Oribi. A little before dawn/6th the 1st Escort Group (Pelican (S.O.), Sennen, Wear, Jed and Spey) joined up from the south and completely surprised U.438 on the surface who was promptly sunk by Pelican.

B. d U.
War Diary

The convoy was last reported to B. d U. at 0425 hours/6th as being in 5230N x 4630W in thick fog. In view of these conditions, the proximity to Newfoundland and the U-boat casualties already reported to him, he broke off the engagement at 0600 hours. In his summary of the operation B. d U. blamed the fog for limiting the convoy losses to the 17 ships which his U-boats claimed. Four U-boats were badly damaged and six others had not reported and therefore must be considered sunk. These heavy losses were of grave concern to him considering the short duration of attack. In the Admiralty view the heavy price exacted from the enemy gave cause for satisfaction in spite of the loss of twelve ships. In the light of postwar knowledge this was the last occasion on which a U-boat pack showed determination in pressing home attacks.

The U-boats losing heart

The success of ONS.5's escorts in locating surfaced U-boats in conditions of fog directed B. d U's attention anew to Allied radar performance. He summed up the situation as follows:-

ibid

- (i) Radar location by air and naval forces not only rendered the attack by individual boats most difficult but also provided the enemy with a means of fixing the U-boat patrol lines and avoiding them by evasive routing. Radar location thus robbed the submarine of her most important characteristic - ability to remain undetected. All responsible departments were working at high pressure to establish what type of radar was being used and provide countermeasures to it.
- (ii) The enemy air force was already able to give convoy cover in almost all the northern Atlantic area and it must be expected that the remaining gaps would soon be closed either by land based planes or escort carrier aircraft. This air cover operating around convoys had always forced our U-boats to lag helplessly astern of the convoy and so prevent the achieving of success especially when surface craft and air escorts co-operate efficiently.

Then followed some remarks on the growing seriousness of the air threat to the Biscay transit route and the decision to strengthen the flak armament of U-boats not only for the transit passage but to enable boats to fight their way ahead of convoys into attacking positions.(1) Also was noted the

(1) The number of cases in which U-boats around convoys offered flak resistance to attacking aircraft rose from seven in April to fourteen in May but the still inadequate flak armament resulted in no aircraft loss and on only three occasions was even superficial damage inflicted.

ibid

growing explosive power of depth charges. In this respect the use of the large Type IX U-boats on convoy work was discontinued(1) as they had been found too clumsy and vulnerable to counter-attack. The use of upper deck spare torpedo containers was abolished for all north Atlantic boats as their collapse and flooding under the powerful depth charge explosions endangered the boat by the sudden loss of buoyancy. The increase in the number of escort vessels was noted together with the fact that as yet he possessed no special weapon for use against them. He ended by stating that the U-boats' struggle was now harder than ever but all departments were working full out to assist the boats in their task and to equip them with better weapons.

ONS 6

ibid and
R.A.F.
Iceland
O.R.B.
Appendices

After breaking away from ONS.5, the U-boats moved off to the east and south. About 15 were still fully operational, another ten proceeded towards the two supply boats to refuel for further operations and the remaining nine started their homeward journey. A new group Isar was in course of building up between Greenland and Iceland. Two of these boats - U.418 and 952 - sighted a westbound convoy at 1000 hours on 6 May in 6015N x 2420W. This was convoy ONS.6 which had been receiving air support from Iceland since 3 May. D/Fs of the U-boat reporting signals indicated their presence and stronger air cover was given for noon/6th. Escort was provided by two Catalinas of No.84 Squadron U.S.N. for 8½ hours during which three attacks on U-boats were carried out and supporting sweeps by Hudsons of No.269 Squadron produced four sightings and three attacks. U.227 and 645 were also in the vicinity but these attacks broke all direct contact with the convoy although U.418 and 952 continued to follow well behind during the night of 6/7th. Supporting sweeps by the Catalinas were provided all day (7th) and although U.418 re-sighted the convoy at noon she was forced to dive and gave up the chase at 1800 hours. U.952 momentarily sighted the convoy at 1400 hours on the 8th but was counter-attacked soon after by the surface escorts and lost touch. No other boats having made any report B. d U. abandoned the operation.

Doenitz's suspicions raised again

The next pair of eastbound convoys were expected by B. d U. to cross longitude 42°W at some time on 8 May and he had stationed 28 U-boats up longitude 42°W between 52½°N and 44°N. These comprised a new Group Elbe (mostly ex ONS.5 operation) and Group Rhein (previously called Amsel). A Radio Intelligence intercept had established that HX.237 was in the 44°N x 49°W late on the 6th and it looked to him as if a southerly route was intended. Both Groups were therefore instructed to move 90 miles to the southward. Belated intercepts by Radio Intelligence on the 8th indicated that the convoy had been in 42°N x 46°W on the 7th steering southeast and that SC.129 was routed through 41°N x 41°W. This very definite avoidance of both Groups Elbe and Rhein raised all B. d U's old suspicions. It was, he stated, most important to demand how the enemy was able to have knowledge of his

B. d U.
War Diary
pages 333 and
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- (1) The employment of Type IX U-boats on convoy operations was instituted on 6 April to make up for the drop in availability of Type VII due to the very extensive effort put up during March.

patrol lines. Apart from airborne location, the nature of which appeared to be unknown to his staff, it was possible that the increased W/T traffic after the ONS.5 operation had given the enemy information through intelligent D/F ing but this almost circular detour by both convoys was highly suspicious. He considered it unlikely that the enemy had cracked the German cyphers but this possibility had now been cancelled by an immediate change in the cypher settings. Other possible sources of leakage were again being checked.

HX 237

However, acting on Radio Intelligence's reports, all Group Rhein were told to steer southeastward at maximum speed to set up a line between 44° and 40°N on longitude 35°W to catch HX.237 and Group Elbe was moved down at 10 knots in the hopes of catching SC.129. Group Drossel off Cape Finisterre was instructed to proceed due west at cruising speed to intercept either convoy at a later stage in their journey. At 1300 hours on 9 May, U.359 (Rhein) encountered HX.237 in 41°N x 37°W. B. d U. ordered U.359 to shadow while the rest of Group Rhein were sent on to get ahead of the convoy. Group Drossel, closing westward, was told to increase speed towards the position. U.359, however, was soon located by the convoy's surface escort and attacked, thereby losing touch. The convoy was at this time well outside shore based air range but was accompanied by H.M. Escort Carrier Biter. It was not sighted again until late on 10 May, by U.403 who was promptly forced to dive by the Biter's aircraft, and again contact was lost. As the other Group Rhein boats were 90 miles astern of this fast convoy their orders were cancelled, B. d U. considering it better to put his main concentration against the slow SC.129. To this end he combined the Elbe and Rhein boats into a single group of 27 boats and halted them on a line between 46°N and 40°N on longitude 34°W. Group Drossel and U.403 were instructed to continue the operation against HX.237.

B. d U.
War Diary

Group Drossel sighted the convoy late on 11 May in 44½°N x 27½°W. They and all other outward bound boats in the vicinity were ordered to attack if reasonably placed. Some boats reported hindrance in closing the convoy before dark by carrier-borne aircraft but in the early hours of the 12th U.456 attacked and sank a straggler.(1) By daylight the convoy was being followed by at least eight U-boats.(2) Shore-based aircraft now joined in with the Biter's aircraft in giving air cover. Three attacks were made during the day by the latter. U.230 reported shooting down one carrier aircraft but U.89 was sunk by B/811 Squadron from Biter in co-operation with surface escorts. Four V.L.R. Liberators of No.86 Squadron were around the convoy from dawn till two hours after dark. Each aircraft sighted a U-boat and three of them attacked.(3) One U-boat (U.456) was badly damaged.

ibid and
Nos.15 and 19
Groups
O.R.B.
Appendices

- (1) Fort Concord - 7,138 tons.
- (2) U.89, 230, 403, 413, 436, 456, 628 and 753.
- (3) This was the first occasion on which the shore-based aircraft carried and used the new weapon against submerged U-boats - the Mark 24 Mine. The nature of the weapon made it unlikely that visible evidence of a hit or destruction would always be seen from the aircraft, in fact it was some time after before it was known that U.456 had been damaged. U.753, known to have been in this area at this time, was never heard of again and might well have been a victim of one of the other two Mk.24 attacks carried out this day, particularly as the sea was rough which would mask any visible evidence.

Another boat was severely damaged by the surface escorts and the pack dropped well astern of the convoy. Soon after dusk two stragglers were sunk(1) by U.403 and 603 but no boats succeeded in closing up to the convoy.

ibid

At dawn on the 13th the convoy was re-sighted by U.628 but she was attacked and forced off at 0800 hours. The damaged U.456 was still in the vicinity and was located by Sunderland G/423 Squadron. Attacks by this aircraft and H.M. ships sank her at 0900 hours. Relays of Sunderlands provided escort during the 13th and in face of both carrier and shore-based air cover B. d U. broke off the operation observing in his Diary that this combination made disproportionate losses inevitable.

OS 47

No.19 Group
O.R.B.
Appendices

On the same day (11 May) that Group Drossel had sighted HX.237, U.528, returning home damaged after an air attack when in Group Star off Iceland, blundered into convoy OS.47 then some 500 miles eastward of HX.237. OS.47 was being escorted by Halifax D/58 Squadron. She spotted the U-boat at 0830 hours but it dived before an attack could be made. An hour later the aircraft returned to the position, re-sighted U.528 and attacked, completely crippling the U-boat which, unable to dive, was easily finished off by H.M.S. Fleetwood, one of the surface escorts.

SC 129

B. d U.
War Diary
and
No.15 Group
O.R.B.
Appendices
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C.B.04050/43
(5)

Also on 11 May, U.504 (Elbe) sighted the expected SC.129 convoy in 41°N x 33°W at 1830 hours. All Group Elbe was ordered in to attack. U.359 and 383 contacted an hour later and after dusk U.223 and 402 closed in, the latter boat making an immediate attack and sinking two ships.(2) Both U.223 and 402 were counter-attacked and forced to break away to make good damage received. By daybreak on the 12th twenty-two boats were in the convoy's vicinity. The task of shadowing and making reports was taken up by U.186. During the day eleven other boats closed in. Frequent attacks were made during the night of the 12/13th but all were beaten off by the surface escorts. U.186 was sunk and five other boats had to retire. The remaining 16 followed at a respectful distance during the 13th. In the evening V.L.R. support was given by G/86 Squadron who attacked two U-boats. U.642 reported the sighting of a carrier(3) and B. d U. realised that the combined air cover to be expected the next day was likely to be formidable. During the 14th four Liberators of No.86 Squadron together with Biter's aircraft maintained escort and cover. B/86 Squadron sank U.266 at some distance from the convoy. Only two boats even sighted the convoy - U.403 at 1630 hours who was soon after spotted and put down by B/86 and U.107 at about the same time was forced to dive and hunted by the surface escorts. As all the others were far behind the convoy and the strong air patrols ruled out

-
- (1) Sandanger - 9,432 and Brand - 4,819 tons.
 - (2) Antigone - 4,545 and Grado - 3,082 tons.
 - (3) H.M.S. Biter was transferred from HX.237 at noon/13th and joined SC.129 at 1400/14th. As she was approaching the convoy, one of her aircraft attacked a U-boat at 0940/14th.

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any further success B. d U. called the operation off before dark.

ONS.7

Meanwhile in the far north newly commissioned U-boats and fresh boats out from the Biscay ports had enabled B. d U. to form a new Group Iller of five boats off southwest Iceland and to add three more small groups (Inn, Lech and Nab) to the existing Group Isar to the southeast of Cape Farewell (Greenland) numbering 17 boats in all.

Just after midnight 11/12 May, U.640 nearing Group Iller from the eastward, sighted a westbound convoy south of Iceland which was correctly estimated by B. d U. to be ONS.7. U.640 was told to keep well astern while the Group Iller boats were instructed to move eastward towards it. Supporting sweeps by Catalinas of No.84 Squadron U.S.N. during the 12th did not detect U.640. By the 13th the Group Iller boats were nearing the convoy and at 1930 hours U.640 closed up and fired a long range salvo into the convoy but missed. Shortly after she was sighted and attacked by T/84 Squadron (one of the Catalina supporting sweep) and lost contact during the night.

B. d U.
War Diary
and R.A.F.
Iceland
O.R.B.
Appendices

After this incident full air escort was given the convoy throughout the 14th by six of No.84 Squadron and J/120 Squadron. Six U-boat sightings were made followed by four attacks, one of these by C/84 Squadron sinking U.657. (1) These sightings and attacks had the effect of keeping the U-boats in the vicinity submerged for so long that they failed to observe a major evasive alteration of course to the southward by ONS.7 and never regained contact. In the absence of any further reports from his boats B. d U. ordered the Group to reform on a line ready to intercept the next HX convoy. U.640, however, continued to follow the approximate direction of advance by the convoy and two nights later caught up. She attacked at 0037 hours/17 May and sank the Aymeric - 5,196 tons. (2) Later on the 17th she was detected and sunk by H.M.S. Swale, one of the convoy escorts.

Admty
C.B.04050/
43(5)

SC.130

By 17 May B. d U. realised from his Radio Intelligence that the Allies were aware of his Greenland disposition and that HX.238 had by-passed the line to the southward. He expected that SC.130 following behind would take the same southerly route and accordingly combined the four small groups off Greenland into one single Group Donau of 17 boats sending them and Group Iller to lower latitudes to intercept it. At 0040/18 May U.304 sighted the expected convoy in 5450N x 3630W. Nineteen other boats were detailed to operate and three made contact late on the 18th with three more early on the 19th. One (U.218) was located and depth charged by the surface escorts and forced to retire.

See Map No.11
for
dispositions
B. d U.
War Diary and
R.A.F.
Iceland
No.15 Group
O.R.B.
Appendices
and Admty
C.B.04050/43(6)

- (1) This was the first use of the Mark 24 mine by this squadron.
- (2) This was the last ship to be sunk in the Northern Atlantic for four months.

SC.130 of 37 ships had sailed from Halifax on 11 May and was met on the 15th by the ocean Escort Group B.7 consisting of Duncan (S.O.), Vidette, Tay, Snowflake, Pink and Loosestrife. The Canadian corvette Kitchener was also attached with a trawler Northern Spray as rescue ship. On the 16th in perfect weather the Sunflower joined up bringing the escort strength to eight vessels. Air cover from Newfoundland was given during the forenoons of the 15th and 16th and for most of the day of the 17th by which time the convoy was nearing the 600 mile range from Gander. No U-boats were sighted. Early on the 18th it was evident from W/T signal D/Fs that the convoy had been located and during the night of 18/19th at least four U-boats were thought to be in contact. Accordingly just before dawn/19th the Senior Officer ordered an alteration of 90° to starboard with the object of foxing a possible dawn submerged attack. V.L.R. air cover arrived from Iceland soon after dawn. The first aircraft - Liberator T/120 Squadron - attacked a U-boat at 0535 hours in what would have been an ideal position for submerged attack if no turn had been made. This attack was made with both depth charges and Mark 24 mines and sank U.954. Thereafter in the next three hours the same aircraft sighted and forced under five more U-boats all on the port side of the convoy.(1) Another U-boat was attacked by Tay and the convoy instructed to make a further emergency turn to starboard. At 0744 hours U.381 tried to penetrate the screen and was sunk by Duncan and Snowflake. A further attempt by another boat was frustrated by Duncan at 1039 hours. Liberator P/120 Squadron took up the air escort at 1120 hours and in the next five hours sighted seven U-boats of which one was depth charged. The others all dived before an attack could be delivered.

Early in the afternoon the 1st Escort Group(2) joined from astern and when about 15 miles from the convoy sighted two U-boats of which one (U.209) was attacked and sunk. Air escort was continued by three more Liberators of No.120 Squadron and one of No.86 Squadron up till 2330/19 May. Three U-boats were sighted all of which were attacked. During the day distant support sweeps were carried out by nine Hudsons of No.269 Squadron from Iceland. Four U-boats were sighted, all on courses towards the convoy. Three of them were attacked and U.273 was sunk by M/269 Squadron.

In his War Diary B. d U. estimated that at least ten boats were in contact with the convoy during the night of 19/20th but only one attempt was made to close in. This was defeated by Spey at 0323/20th and the U-boat, attacked with depth charges and hedgehog. During daylight/20th continuous air escort was given by Liberators of Nos.120, 86 and 59 Squadrons and extended through the night up to 0100/21st. Fourteen sightings of U-boats were made of which five were attacked, one resulted in the sinking of U.258 by P/120 Squadron. All these sightings were at some distance from the convoy and before dawn it was evident that the pack had hauled off.

B. d U. gives a figure of 21 boats having been implicated and stated that the strong continuous air cover prevented any close approach to the convoy and he abandoned the

- (1) After the first attack T/120 had no more weapon load left and the other five U-boats were machine gunned until they dived.
- (2) Wear (S.O.), Spey, Jed and Sennen.

operation late on the 20th. Thus although heavily beset this slow convoy was successfully fought through without loss and inflicted severe casualties on the pack. The Admiralty considered this satisfactory result was due to four things:-

- (1) The strong air support given to the convoy
- (2) The arrival of the 1st Escort Group on 19 May
- (3) The accurate appreciation of the situation throughout by the Senior Officer escorts
- (4) The successful evasive steering by the convoy. Twenty emergency turns were made during the two days.

HX.239 and ON.184.

B. d U.
War Diary

After the operation was cancelled, B. d U. ordered the Group Donau boats to haul off to the southward and form a line in approximately $51\frac{1}{2}^{\circ}\text{N} \times 31^{\circ}\text{W}$ ready for the next HX convoy. This he estimated would be HX.239 and from the Radio Intelligence reports was thought to be taking a southerly route before turning up to the northeast. An additional group named Mosel had been formed of fresh boats numbering 21 and were on 21 May patrolling a line from $55^{\circ}\text{N} \times 44^{\circ}\text{W}$ to $52^{\circ}\text{N} \times 38^{\circ}\text{W}$. In order to make more certain of catching HX.239, B. d U. instructed the southern twelve of this group to proceed southeastward and the remaining nine to go east at their highest possible speed to get on to the presumed line of advance of the convoy thus shutting the convoy in between three different concentrations.

Ibid and
Admty
C.B.04050/43
(6)

HX.239 was accompanied by the Escort Carrier Archer and when U.305 (Southern Mosel) sighted some of the surface escort at noon/22 May she was soon afterwards detected and bombed by one of Archer's aircraft. Assuming that the main convoy was near this position, B. d U. sent five other southern Mosel boats in to attack. At 1710 hours U.218 sighted the convoy but lost it at dusk in a rain squall. U.468 was attacked and severely damaged by Archer's aircraft and none of the others connected. B. d U. now halted all the southern Mosel boats as being in a hopeless position astern of the fast HX.239 and ordered Group Donau and the nine northern Mosel boats to advance to meet the convoy.

Meanwhile U.569 (Southern Mosel) had blundered into a westbound convoy - ON.184 - and in spite of being continually forced to dive by aircraft was following and reporting. Unfortunately for her the convoy was being supported by the American escort carrier Bogue and her aircraft finally attacked and sunk U.569 in $504^{\circ}\text{ON} \times 3521^{\circ}\text{W}$. Several other U-boats must have been drawn off on this convoy because Bogue's aircraft sighted and attacked five during 22 May after which they were shaken off.

See Map No.12
for U-boat
dispositions

Ibid and
No.15 Group
O.R.B.
Appendices

At least five boats of the Donau and northern Mosel groups contacted HX.239 on 23 May during which continuous air cover was given by V.L.R. Liberators from Northern Ireland and H.M.S. Archer's aircraft. They were constantly forced to submerge so that close approach, apart from any attack, was quite impossible. Z/86 Squadron made an indecisive attack with a Mark 24 mine and Sunderland A/423 Squadron a depth charge attack with no positive results. Three attacks were made by Archer's Swordfish, one of which made history by being the first kill with the Rocket Projectile. The victim was U.752 which was holed when at periscope depth.

She surfaced, fought off three further air attacks but, on sighting approaching destroyers, scuttled herself. Some survivors were taken on board by U.91.

In view of the very strong air cover, B. d U. broke off the operation observing that all the U-boat casualties round these two convoys had been inflicted by aircraft. On the next day - significantly Empire Day 24 May - B. d U. made a major strategic decision in the U-boat war.

Retreat from the Northern Atlantic

In his War Diary for 24 May, B. d U. has this entry:-

"In the last few days circumstances have arisen which indicate a crisis in the U-boat War and force us to make a decision. These circumstances are the heavy losses which have occurred, the failure against convoy SC.130 and the conditions during the operations against HX.239. U-boat losses in the Atlantic were 14 in February, 13 in March and 12 in April but up to 22 May they are already at least 31 with two further in the last two days. Heavy losses can be borne if they are accompanied by corresponding heavy ship sinkings but in May it cost one U-boat lost for every 10,000 tons of shipping sunk whereas not long ago it was only one U-boat for 100,000 tons. The May losses have therefore reached an impossible height."

There followed an analysis of these losses and a statement that in the case of SC.130 and HX.239 the part played by aircraft was decisive. In the former operation the aircraft prevented the boats approaching into attacking positions and in the latter no real contact was ever made. The increased use of land based and carrier borne aircraft combined with the surprise element by day and night through radar location had played an important part in causing the high May losses. Until U-boats were equipped with better defence and attack weapons the immediate measure was to prevent losses from air attack both in transit and in mid-Atlantic operating positions. The following order was signalled to all U-boats:-

(1) The procedure for both the Biscay and Northern transit areas was contained in Permanent Order No.13 which ordered maximum submerged time, only surfacing to recharge batteries and ventilate the boat and that to be done by day. No surface day passage was to be attempted unless in conditions of very good visibility. Special orders would follow later about projected new procedure of Group sailing.

(2) Procedure when waiting in the convoy operational area was to be:-

(a) By night - One electric motor slow to half speed with the other Diesel clutched in and ready to start up. The ventilating fans to be switched off so as to hear the approach of aircraft. Flak armament to be manned.

(b) By day - Proceed at higher cruising speed so that the boat was capable of immediate manoeuvring or an instant dive. Flak armament to be manned.

(c) If visibility conditions were unfavourable either by day or night, proceed submerged.

B. d U.
War Diary
page 430

ibid

In a further signal to all boats it was stated that the situation in the Northern Atlantic forced a temporary shifting of operations to areas less endangered by aircraft such as the Caribbean, Brazilian coast and West Africa. It was intended to operate in these areas primarily with the smaller Type VII boats subject to suitable supply boat dispositions. The boats at present in the Northern Atlantic with sufficient fuel would be used against the traffic between the U.S.A. and North Africa. Those low in fuel and the newly commissioned boats out from Germany would remain in scattered positions to mask the main withdrawal. Then followed the detailing of thirteen boats to isolated billets ranging between longitudes 45° to 30°W between latitudes 57° to 49°N. Seventeen fully fuelled boats were sent south towards the position 35°N x 42°W (southwest of the Azores) for operations against UGS.9 which was expected to be in that vicinity about 31 May. The signal went on to impress all captains of boats that the decisions were a temporary measure in order to avoid losses while U-boat weapons were inferior. It was clearly to be understood that the main operational area was as always in the Northern Atlantic and action would be resumed as soon as the U-boats had the necessary equipment which included quadruple 2 cm flak cannon, homing torpedoes for use against escort craft and an efficient radar detector. In the meantime it was essential that the morale of the crews should not be affected by this purely temporary decision, a task requiring the full co-operation of all commanding officers as well as the personal touch of the C.-in-C. Navy. These almost personal signals were followed by an Order of the Day in which the decision was expanded in great detail with explanations of the radar situation ending with a declaration that the U-boat still remained the major war winning weapon in the battle for the security of the homeland and occupied territories.

ibid
pages 432
and 433

Because of this withdrawal and the virtual immobility of the few remaining boats there was little to report in the Northern Atlantic for the rest of May. On the 25th U.558 on her way south sighted convoy SC.131. The few boats in the vicinity were given freedom of action to operate but the strong air cover and vigilance of the surface escorts sufficed to break all contact by midday on the 26th. Isolated boats were sighted and attacked by Allied forces engaged on convoy work notably U-467 outward bound from Germany and sunk by F/84 Squadron U.S.N. to the south of Iceland, U.436 homeward bound sunk by H.M. ships westward of Cape Finisterre, U.304 sighted by E/120 Squadron on the way to escort HX.240 and sunk by a well directed stick of depth charges and U.552 (inward bound) seriously damaged by Liberator S/59 after a spirited flak duel in the Outer Bay. The seventeen south-bound U-boats were instructed to take up a patrol line by 0800/1 June on longitude 43¹⁰°W between the latitudes of 39° and 32°N under the name of Group Trutz.

See Map No.13
for
dispositions
1.6.43

Doenitz's report to Hitler

This crisis in the U-boat War had of course been discussed with Hitler by B. d U. in his capacity as C.-in-C. German Navy and possessing as he did the sympathetic ear of the Fuehrer. On 14 May, when making a report on the unsatisfactory state of Axis naval affairs in the Mediterranean, Doenitz had told Hitler that the Allies' command of the sea in those waters was equivalent to a gain of two million tons in shipping space. Hitler's rather facetious remark 'which our trusty submarines will now have to sink'

Fuehrer
Conferences
on Naval
Affairs 1943

stung Doenitz into retorting that they were facing the greatest crisis in U-boats warfare in that the enemy by means of a new location device was making fighting almost impossible. The only outbound route for operations lay through the Bay of Biscay and this passage was now so difficult that it took a U-boat ten days to get through. He suggested that the occupation of Spain including Gibraltar would be the best strategical solution. However, Hitler was realist enough to see that a forcible invasion of Spain would open yet another wasting front and that the time for a successful negotiated agreement with General Franco had vanished.

On 31 May, Doenitz gave a report on the U-boat war situation to a Hitler Conference held at the Berghof. It recapitulated the events of May particularly the appearance of escort carriers which meant that the Northern Atlantic convoys now had air cover throughout their journey but stressing that the real menace from aircraft lay in their possession of the new location device which enabled them to make surprise attacks in conditions of low cloud, poor visibility, heavy seas and at night. Approximately 65 per cent of U-boat losses occurred while in transit or in waiting positions. This proportion was to be expected because a U-boat spent most of the six to eight weeks of a cruise either en route or in the patrol area waiting but the majority of these casualties were from aircraft. The other 35 per cent were incurred in actual convoy battles and even here the air attack was as dangerous if not more so than counter-action by surface craft. During May the losses had increased from a previous 14 U-boats or 13 per cent of those at sea to 37 or 30 per cent of all boats at sea. This was too high to continue. He had, therefore, initiated the following measures:-

(1) Withdrawn from the Northern Atlantic to an area west of the Azores in the hope of encountering less air reconnaissance and where he intended to operate against convoys heading for Gibraltar from the U.S.A. As soon as U-boats were fitted with some of the equipment outlined in subsequent paragraphs he intended to resume attacks on the northern transatlantic convoys. The following was required:-

(2) (a) An efficient radar interception set. While he did not know on what wave length the enemy worked nor whether it was electronic or other kind of location everything was being done to find it out. Meanwhile U-boats were restricted at night to one electric motor so as to increase the chance of hearing an approaching aircraft. Trials were proceeding on a sound detector which must also be capable of standing up to diving conditions.

(b) A jamming device against enemy radar. Experiments were in train but this was a complex problem with no early solution in sight. An immediate measure was the so-called Aphrodite, a decoy consisting of a small balloon from which hung metallic strips which simulated the radar echo given back from a submarine's conning tower and which could be released in numbers to confuse the enemy. It was also intended in June to scatter large buoys in the Bay of Biscay for the same purpose.

ibid
pages 41
to 47

(c) So far no satisfactory solution had been found to enable a U-boat to detect aircraft with a radar set of its own. The difficulty lay in the U-boat set having such a narrow beam that it took too long to search the sky with it.

(d) Experiment had shown that it was possible to screen the conning tower against radar detection to the extent of reducing the reflections by 70 per cent. In other words a present range of detection of 9,000 metres would be reduced to 3,000 metres.

(e) Installation of four barrelled flak cannon on super-structures abaft the conning tower. These would come forward in adequate numbers during July.

(f) Ability to fight off aircraft was not sufficient unless action could also be taken against surface craft. An acoustic torpedo (Falke) would soon be in use but was not effective against enemy speeds above 12 knots. An improved torpedo called Zaunkoenig effective up to 18 knots was in view and steps would be taken with the War Production Minister (Speer) to have it available by the autumn.

(g) A concentration of air protection in the Bay of Biscay was essential. Enemy planes were attacking U-boats without interference and support from the G.A.F. was completely inadequate. Unless several Ju.88s were in formation they were no match for the English A/U aircraft or their long range fighters. In his opinion it was advisable that the Me.410 should be brought to the Bay area as soon as possible.

ibid

Here Hitler broke in to say that he was doubtful if the Me.410 was suitable and then launched into a dissertation on the lack of German four-engined bombers with which to attack England and that it was the absence of such operations that made the growing attacks possible on German cities. Doenitz brought him back to the subject by observing that the Navy had always been of the opinion that the construction of suitable planes for naval war purposes should have been undertaken at the same time that the decision to build a large submarine fleet was taken. If this had been done the U-boats could have sunk far more shipping with the air of properly trained naval air reconnaissance and would have had their own naval air protection in transit areas. He went on to suggest that even now it was not too late to create a naval air force which could easily be trained in the Baltic over the same exercising ground in which the newly commissioned U-boats received their indoctrination. Thus they would both 'speak the same language' and be in the best position subsequently to fight together. But beyond expressing verbal agreement Hitler would give no assurances that this policy would be adopted.

Doenitz then recounted the frustration suffered by his U-boats from Allied radar and other counter-measures but affirmed that he still considered that the U-boat war must be carried on even if great successes were no longer possible. Here Hitler interrupted again to say that there could be no talk of a let-up in submarine warfare. The Atlantic was his first line of defence in the West and even if he had to fight a defensive battle there it was preferable to waiting to defend

the coast of Europe. The enemy forces tied up by U-boat warfare were tremendous even though the actual losses inflicted on the enemy might no longer be great. He could not afford to release these forces by discontinuing the submarine war.

In that case, Doenitz said, it was essential that U-boat construction should be increased. Even for defensive war he did not think that the existing programme of 30 boats per month was sufficient and he recommended at least 40. Hitler agreed and signed the necessary alteration in the production schedule held by the Reichsminister Speer. Doenitz then suggested a surprise attack on the Gibraltar anchorage and dockyard with the new G.A.F. weapon - the Glider Bomb. Hitler refused this as not only were these weapons not in full supply but some of them would inevitably fall on the land and their secrets fall into English hands moreover the range was extreme from German air bases and from a political angle it would be difficult to fly over Spain. He did, however, agree that a use should be found for them to make up for the falling off in results from U-boat warfare which must be expected during the next few months.

Summary for May

During this month, so disastrous for Doenitz, no less than 41 U-boats were lost.(1) 29 of these were in the Northern Atlantic and seven in the Bay of Biscay. Shore-based aircraft accounted for 18, carrier borne for 2 $\frac{1}{2}$, surface craft for 12 $\frac{1}{2}$ and three were by collision and unknown cause.

In the Atlantic as a whole, the shipping losses were 33 vessels of 164,287 tons;(2) and of these, nine of 44,592 tons were independently routed. Nine convoys (270 ships) lost 18 ships of 82,690 tons actually in convoy and six stragglers of 37,005 tons.

During the month, 12 eastbound (354 ships) and 13 westbound (533 ships) convoys reached their destination without loss. In addition, 165 (1,758 ships) convoys off the Western Atlantic seaboard and numerous coastal convoys off the African coast suffered no loss.

The number of Atlantic merchant convoys receiving air cover by the R.A.F. was 27 with a further 19 Torch supply and military convoys, seven Iceland convoys and 26 coastal convoys running between Gibraltar and Freetown.

During May, 35 V.L.R. Liberators were operational from Iceland and Northern Ireland and from 10 May, six V.L.R. Liberators of No.10 Squadron R.C.A.F. were operational from Gander in Newfoundland. Two British escort carriers (Biter and Archer) and one U.S. escort carrier (Bogue) were attached as extra support to convoys in the mid-Atlantic. Six convoys

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- (1) Two of these were sunk in the Equatorial Atlantic by American shore-based aircraft and three in the Mediterranean (one by shore-based aircraft) leaving 36 lost in the North Atlantic.
 - (2) U-boat sinkings off South Africa, Mediterranean and the Far East brought the May total up to 47 ships of 246,361 tons.

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were so supported⁽¹⁾ and in conjunction with shore-based air completely bridged the North Atlantic. It was this continual air cover more than any other factor which put a stop to all sinkings north of latitude 45°N by 17 May and which caused the withdrawal of U-boat packs to more southerly latitudes during the last week of May.

(1) ONS.6 by Archer - 0700/9 to 0700/11 - No Sightings

HX.237 by Biter - 1200/7 to 1030/13 - 7 - 7 -
S. A.
U.89 Shared Sunk

ON.182 by Archer - 1300/12 to 1945/14 - No Sightings

SC.129 by Biter - 1400/14 to 1130/16 - 1 - 1
S. A.

ON.184 by Bogue - 0800/19 to 1030/25 - 6 - 5 -
S. A.
U.569 Sunk

HX.239 by Archer - 0800/21 to 1200/25 - 4 - 4 -
S. A.
U.752 Sunk

CHAPTER III

THE BAY OFFENSIVE - FEBRUARY TO MAY 1943 INCLUSIVE(i) Introduction

In Volume III chapter XII (vi) (d) the Bay Offensive was left at the end of January 1943 in a state of impotence caused by the efficiency of the German U-boats' search receivers which gave ample warning of the approach of aircraft who used the Mark II A.S.V. at night or in poor day visibility in order to locate them. On clear days the U-boats were content to rely on good visual look-out. Since October 1942, by a judicious use of look-outs, search receiver and periods of submerged passage and aided by winter weather conditions some 290 U-boats had passed through the Bay of Biscay with only 22 attacks having been made by aircraft.⁽¹⁾ Two U-boats were damaged in November but none had been sunk in this three month period. As described in Volume III, various measures including the flooding of a strip of the Bay by radar transmission and the intermittent use of their A.S.V. by the Leigh Light aircraft had been tried but January 1943 had seen the lowest number of U-boat sightings yet returned. From contemporary German records it is apparent that U-boats were oblivious of most of our radar counter tactics though B.d U. did warn all boats on the 17 December that aircraft were using A.S.V. very cautiously and after an initial location appeared to reduce the transmission strength so as to mask their approach.

B. d U.
War Diary and
U-boats logs

The obvious success of the search receiver in the Bay and the assumption that it was less likely to be used when operating against convoys⁽²⁾ had led to a greater use of No. 19 Group's longer ranged aircraft on support for the convoys (both Torch and merchant) using the North/South route down longitude 18°W. However, the absence of serious U-boat threat to these convoys during December and January had resulted in a switch back of these aircraft to purely A/U patrols in the Bay.

(ii) Operation Gondola

Following some rather pessimistic appreciations on the value of A/U operations by aircraft at sea and the Bay of Biscay in particular it was planned by Coastal Command Staff at the end of January to alter the scope of the Biscay transit operations. Instead of flying selections from the fan system of patrols it was proposed to take an area sufficiently far from the G. A. F.

C.C.
S.7050/26/Air
and
H.Q.C.C.
Appendices
A.H.B./IIM/A.3/Id
App. C and F

(1)	U-boat traffic in and out	A/C sightings		A/C attacks	
		Day	Night	Day	Night
Nov. 1942	90	9	3	6	2
Dec. 1942	107	9	4	5	3
Jan. 1943	89	5	3	4	2

- (2) The fact that the search receiver aerial was cumbersome and had to be taken down the conning tower hatch before diving was known to us from Intelligence and P.O.W. sources. It was assumed therefore that when operating on convoys where instant readiness to dive was essential the U-boats would probably not be using the search receiver.

H. Q. C. C. Naval
Staff
A/U File,
Encl. 54
and
A. H. B. / IIK/
54/10/32(A)
Encl. 1A

fighter bases to the eastward in Brittany and within effective patrol range to the westward and, using only those standard fan patrols which crossed it, to fly them so timed as to maintain maximum possible cover day and night for as long as possible.

On getting down to detailed planning it was found impossible in a single area to avoid the routes taken by our own submarines on passage both out to and from the Mediterranean and to billets in the Inner Bay where others were operating against German blockade runners. It was highly undesirable to introduce the bombing restriction areas necessary for the safety of our own submarines into a scheme of sustained day and night air operations. Moreover it would be difficult to guarantee against mistaken attacks, particularly at night. After discussions with the Flag Officer Submarines it was agreed to canalise his submarines' routes and to split the air operations into two areas.⁽¹⁾ To the west of this passage route were to operate the Liberators and Halifaxes⁽²⁾ on day flying with Leigh Light Catalinas and some Sunderlands on night patrols, to the eastward would be the day medium range squadrons with the Leigh Light Wellingtons and Sunderlands as the night contingent. In order to have as many aircraft available as possible, No. 19 Group conserved their flying effort during the week before the proposed zero hour.

See Map No. 14

C. C. Files
S.7050 Encl.
193A
and
S.7050/4
Encl. 119A
Part I

Reference to the Submarine Tracking Room confirmed that, following recent unsuccessful U-boat pack searches for convoys in the North Atlantic, there would probably be an influx of time-expired U-boats returning to Biscay ports arriving in Outer Bay longitudes round about the beginning of February. The operation was therefore timed to begin on the 6th February under the cover name of Gondola. As it was directed mainly against inward bound boats the Outer area was scheduled to start two days before the Inner and in each area the night effort was placed slightly eastward of the day flying.

C. C. File
S.7050/4
Part I
Encl. 119A

The Tracking Room's forecast was a little early as on the 6 February there were only six inward bound boats in the two areas and five westbound boats. There were, however, in the Outer Area a group of ten more boats temporarily halted by B. d U. in the hopes of catching an H. G. convoy. These were dispersed in a day or so both westwards and eastwards. Though the wave of home bound boats, numbering thirteen, did not reach the Gondola area until the 10 February, the timing of the operation was accurate enough.

B. d U.
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Gondola lasted from the 6th to the 15th by which time the patrol intensity could no longer be maintained. Between these dates it is now known that 38 U-boats were in or crossed the Outer Area and 40 traversed the Inner Area.⁽³⁾ Eighteen

-
- (1) Outer Area from 15° to 22°W between 45¹/₂° and 50°N.
Inner Area from 8° to 10°W between 45° and 48¹/₂°N.
 - (2) The Liberators were from Nos. 1 and 2 U. S. A. A. F. squadrons. These aircraft were fitted with an early type of American 10 cm A. S. V. (SCR. 517) which, though by no means fully efficient, was hoped would neutralise the enemy search receiver.
The Halifaxes were in No. 405 Sqdn. on loan from Bomber Command, and had no A. S. V. In neither area were British aircraft to use their Mk. II A. S. V. except at night.
 - (3) The estimate at the time was 53 for the outer and 41 for the inner area.

sightings were made resulting in seven attacks of which details are given below.⁽¹⁾ In the Outer Area twelve of the sightings⁽²⁾ and four of the attacks were made by the U.S.A.A.F. Squadrons.⁽³⁾ One of these resulted in the sinking of the outward bound U.519 on the 10 February.⁽⁴⁾

As compared with January, the welcome increase in sightings and the drop in flying hours required to make them was held to justify the new system but it was realised that the relative success in the Outer Area was due partly to the fact that U-boats out there were not expecting intense air patrols and that most of the aircraft were not using Mk. II A.S.V. In the Inner Bay the enemy's search receiver and day submerged tactics were still the obstacle and would be until the night aircraft at least, were fitted with an efficient 10 cm. A.S.V.

(iii) The Bay patrols revert to normal

Meanwhile the rising intensity of convoy warfare both on the North/South route as well as in mid-Atlantic required the longer range aircraft in No. 19 Group on escort and support. The purely Bay operations therefore reverted to fan patrols at pre-Gondola intensity and the sightings fell back to the former low level.⁽⁵⁾ However, although only four attacks were delivered, one of these made by Leigh Light Wellington F/172 Sqdn. in the Inner Bay on the night of 19/20th sank the inward bound U.268 and one in the Outer Bay by C/1 Sqdn U.S.A.A.F. on the 20th so damaged U.211 that she had to return to harbour. Fan patrols on a similar scale of flying during the first half of March produced eleven sightings with ten attacks⁽⁶⁾ but taken with the figures since operation Gondola represented a severe falling off in results.

- (1) Squadrons taking part - Libs of Nos. 1 and 2 U.S.A.A.F. and one of No. 224 Sqdn. all with 10 cm. A.S.V., Halifaxes of No. 405 (No A.S.V.), Fortresses of No. 59, Sunderlands of Nos. 10, 119, 423 and 461, two L/L Catalinas of No. 210, L/L Wellingtons of No. 172, Wellingtons of Nos. 304 and 311 (neither any A.S.V.) and Whitleys of No. 502 and No. 10 O.T.U. Sqdn. (No A.S.V.). 136 individual aircraft took part out of a strength of 191.

	Outer Gondola				Inner Gondola			
	Hours Effective	Hours Total	Sightings	Attacks	Hours Effective	Hours Total	Sightings	Attacks
Day	740	922	14	6 (<u>U.519</u> sunk)	672	825	2	1
(Night ord Night L/L)	75 21	132 24	nil nil	nil nil	63 215	100 257	nil 2	nil 0
Total	836	1,078	14	6	950	1,182	4	1

- (2) Only two of these sightings were initiated by the 10 cm. ASV.
 (3) Three more attacks were attempted but the depth charges refused to release.
 (4) U.519 was sunk by T/2 Sqdn. U.S.A.A.F. The initial contact was by 10 cm. A.S.V. at 3½ miles range in conditions of 1 to 3 miles visibility.

(5) The Bay operations - 16 Feb. to 14 March.

	Hours Effective	Hours Total	Sightings	Attacks	Result
16-28 Day	1,781	2,159	3	2	<u>U.211</u> dam.
Feb. (Night ord)	355	542	nil	nil	nil
(Night L/L)	366	428	2L/L	2L/L	<u>U.268</u> sunk
Total	2,502	3,129	5	4	
6) 1 - 14 day	1,911	2,257	8	7	nil
Mar. (Night ord)	164	339	nil	nil	nil
(Night L/L)	412	471	3 L/L	3 L/L	<u>U.525</u> dam.
Total	2,487	3,067	11	10	

N.B. The number of U-boats crossing the Bay between 16 Feb. and 14 March was 99.

(iv) The withdrawal of Nos. 1 and 2 U.S.A.A.F. Squadrons

A contributory reason for the drop in sightings was the departure early in March of the two U.S.A.A.F. Liberator squadrons from St. Eval. This was doubly unfortunate in that not only did they constitute the bulk of the long range force in the Bay operations but the intensive training in A/U work, particularly the 10 cm. A.S.V. equipment, was at last bearing fruit. The withdrawal came about in the following manner.

A.C.A.S. (P)
File No. 22/9

Encl. 33

The U.S. Navy Department, headed by Admiral King, requested on the 12 February the transfer of between six to twelve of the U.S.A.A.F. 10 cm. A.S.V. Liberators then based in Cornwall to Morocco under control of the U.S. Naval Commander for meeting the menace of the U-boat concentration which, it was stated, was seriously endangering the approach of U.S. convoys in that area. General Marshal, to whom this request was addressed, asked for comments from both General Andrewes (U.S. Air Commander in Europe) and General Eisenhower (Allied C.-in-C. North Africa) observing that the two squadrons in question had originally been diverted from the Western Atlantic for the express purpose of protecting shipping in connection with the North African operation.

Ibid
Encls. 34 and
35

The request was considered by the British Chiefs of Staff on the same day and passed to the Air Ministry and Admiralty for examination. Concurrently Admiral Cunningham (N.C.X.F.) asked for Admiralty opinion regarding the U-boat situation in the Atlantic before agreeing to Eisenhower's proposed acceptance of this transfer. Resulting from the Air and Naval Staff examination of the request, the British Chiefs of Staff informed Andrewes on the 13th that there were still only fourteen Liberators altogether in the two squadrons and the training was far from complete. In their view it was unsound and uneconomical to move them at that stage. They intended to maintain sufficient Catalinas at Gibraltar to cover both the KM/MK and UG/GU convoys to maximum air range. These together with the U.S. Catalinas at Port Lyautey should provide air cover out to 600 miles from base. This was also communicated to Cunningham (N.C.X.F.) for discussion with Eisenhower and the latter then replied to General Marshal on the 16 February that he accepted the proposed transfer of one squadron as soon as training was complete.

Ibid
Encls. 36
36A and 36B

Ibid
Encl. 37

However, later on the 16th General Marshal signalled Andrewes repeated to Eisenhower that it was understood in America that both squadrons had completed their training as they were carrying out daily operations. Accordingly Andrewes was requested to despatch twelve aircraft to the U.S. Northwest Africa Air Command followed by the remainder as soon as possible.

Ibid
Encl. 38

Ibid
Encls 39
and 39A

This apparent misapprehension in the United States resulted in a message from the British Chiefs of Staff on the 18th to the Joint Staff Mission in Washington pointing out that as neither squadron had completed its training a transfer to Morocco would be premature and suggested that the question should be discussed at the forthcoming conference in Washington when the control and disposition of air forces in the North Atlantic would be dealt with. This message was considered on the 19 February at a meeting of the Combined Chiefs of Staff in which the U.S. Joint chiefs would not agree to defer a decision until the Washington Conference opened and took the line that if Eisenhower wanted the squadrons he should have them as presumably this was based on air advice from Air Marshal Tedder. Admiral King took a more extreme view and stated in committee that the U-boat menace

Ibid
Encl. 40

was such that counter measures could not await completion of training to ideal standards. (1) Under this spur the British Staff Mission were asked to inform the British Chiefs of Staff in London that the U.S. Chiefs of Staff felt there was an urgent requirement in the Casablanca area which should be met by transferring a full squadron from Cornwall as early as practicable. (2)

Ibid
Encls 41 and
41A
and
A.H.B./IIK/24/
217

Encl 42
and
No. 19 Group
O.R.B. Appen-
dices

After a few more signals between the British Chiefs of Staff and the Joint Staff Mission in Washington no further steps were taken to delay departure and on the 1 March General Marshall informed Eisenhower that one squadron was already under orders to transfer and now the remainder together with their headquarter staff had been directed to North Africa forthwith. The move was put in train by this order through the Commanding General of the U.S. VIIIth Air Force. The last operational sorties by the two squadrons took place from St. Eval on the 5 March and they together with their headquarter staff arrived at Port Lyautey in batches between the 9 and 14 March.

(v) The Magic Eye

If these March results were, from our contemporary viewpoint, considered disappointing, they had set off a train of thought in the U-boat Command which was to prove very much to our advantage. Mention has been made at the end of the February convoy section of an appreciation by B. d U. on Allied airborne radar at sea. His remarks on the probability of a new type of airborne radar were focussed by events occurring in the first week of March, particularly by a report from U.333 then outward bound in the Bay of Biscay. This boat reported being surprised by a night attack on the 4 March with no previous Metox receiver warning. The slight damage from the attack was balanced by the shooting down of the attacker - in this case B/172 Sqdn. Leigh Light Wellington and the first aircraft to locate a U-boat with the new British Mark III 10 cm. A.S.V. (3) Not only did this, in B. d U's eyes, link up with a similar surprise location reported shortly afterwards by U.156

B. d U.
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- (1) This reference to Tedder's presumed air views on a matter of Atlantic convoy requirements and King's stressing of a U-boat menace off Northwest Africa are a good example of his special pleading in cases where he wanted his own way. There was a curious contrast a month later, when the U-boat packs on the northern Atlantic route really were a menace, in his off-hand dismissal of any need for American assistance in providing more V.L.R. Liberators for convoy cover.

- (2) On the 21 February the position in the squadrons was:-

No. 1 Sqdn. - Six aircraft of which four were operational with five crews.

No. 2 Sqdn. - Eight aircraft operational with five crews of whom two were only day operational.

Four other crews were still training on two non-operational aircraft.

- (3) This U-boat's success in shooting down her attacker, when coupled with other isolated cases of defiance, went far to influence B. d U's subsequent encouragement of fighting back tactics.

also in the Bay but with previous stories in February from the Caribbean. (1) Further enquiries elicited from some of his captains the admission that several unexplained surprise locations had occurred in the Bay area in February also with no Metox warning. (2)

ibid

One of the Caribbean boats (U.214) on her return at the end of February had put in a very full report on the subject. Her telegraphist had fitted the ordinary visible tuner from the W/T set into the Metox circuit and thereby rendered visible what normally was only faintly audible in the headphones of the receiver. Moreover he had noticed that the tuner sometimes lit up when nothing at all was audible in the headphones and that shortly afterwards aircraft were observed approaching. After only cursory thoughts on the theoretical liklihood of this device covering any wavelengths greatly differing from those it was designed to detect, (3) his staff persuaded B. d U. that this was the answer to the new Allied radar. The tuner was named the Magic Eye and installation ordered in all outward-bound U-boats who were instructed to report on its performance.

Almost at the same time the Germans were presented with the real answer to their suspicions in the shape of the magnetron of the H2S set recovered from a Bomber Command aircraft shot down over Holland. Although badly damaged it had been identified by the G.A.F. as part of a location apparatus working on a wavelength of about 9.7 centimetres. This report was immediately made available to B. d U. and, although not in great detail it did indicate a location wavelength far below that which the Metox receiver was designed to detect. However, so convinced were the U-boat Command that the Magic Eye was the answer that no connection was suspected between the bomber's equipment and that used in anti-U-boat aircraft. From mid-March therefore the outward bound U-boats were depending upon the Metox with Magic Eye which was in fact still generally only good against Mark II 1½ metre A.S.V. From the 1 March the first Mark III 10 cm. A.S.V. sets were becoming operational in the Leigh Light Wellingtons of No. 172 Sqdn. and a few Mark IV (DMS. 1000) sets in the Liberators of No. 224 Sqdn.

(vi) A new depth charge stick spacing

An exhaustive research had been carried out at the end of 1942 to determine whether it was the weapon or the aim which was responsible for only 6% of attacks on U-boats being lethal.

See
Vol. III
Chap. XII (xii)

- (1) Some U.S. Army aircraft in this area were equipped with the American type 10 cm. A.S.V.
- (2) Not only were the aircraft of Nos. 1 and 2 U.S.A.A.F. Sqdns using 10 cm. A.S.V. but there were two or three experimentally fitted sets in Nos. 59 and 224 Sqdn.
- (3) Technically, if the Metox receiver aerial happened to be just right in electrical capacity and if the circuit was not finely tuned to 1½ metres the harmonics of 10 cm. A.S.V. would cause a Magic Eye to glow, particularly if the transmitting aircraft was on high power and close to the U-boat. Quite by chance the telegraphist of U.214 had hit on a correct set-up but apparently the U-boat Command signal staff were not sufficiently expert in electronics to recognise this. So the paradox remains that the Germans were and were not on to a successful detector of our 10 cm A.S.V.

C.C. File
S. 7050/5/1
Encl. 19A
Appendix II

A.H.B./IHK/
54/7/1 and 2

The findings had supported the weapon, in this case the 250 lb Torpex filled depth charge, and had set in train intensive practices in marksmanship. Results had, however, continued below expectations and at the end of February 1943 were still only 7%. Accordingly the Naval Staff at H.Q.C.C. made an analysis of some 300 attacks paying particular attention to the direction of attack, the state of submergence of the U-boat, numbers of depth charges used in a stick and such photographic evidence as there was of the fall of shot. The Command Operational Research Section then integrated this with average operational bombing errors, lethal range of the standard depth charge and alternative stick spacings. Even a mathematical answer was inevitably a compromise in view of the diversity in angles of attack and numbers of depth charges carried by different types of aircraft but it was clearly shown that a universal stick spacing of 100 feet (in place of the existing 36 feet for large aircraft and 60 feet for Hudsons) was the optimum both for outright kills and infliction of damage. The spacing was therefore standardised at 100 feet from 14 March by an amendment to C.C. Tactical Instruction No. 31 and the explanation for this alteration set out in C.C. Tactical Memorandum No. 52.

It was not a popular order because it appeared to be an official reflection on all pilots and bomb aimers irrespective of their personal record at the bombing practice camps or on operations but it had an immediate effect in results. The next 90 depth charge attacks produced eight U-boats sunk and twelve damaged up to the end of April and in the 83 depth charge attacks using 100 foot spacing against U-boats in May no less than fourteen were sunk and thirteen damaged.

Thereafter the long awaited Mark III Angular Velocity sight was becoming operational, first in Liberators squadrons and ultimately to all large A/U aircraft. The gain in precision which this sight conferred allowed the spacing to be closed in to 60 feet but all depth charge attacks made without this sight remained standardised at 100 foot spacing.

(vii) Operation Enclose

The drastic drop in the ratio of sightings to flying hours since Gondola plus the knowledge that by mid-March the numbers of 10 cm. A.S.V. fitted aircraft would be rising rapidly, brought a suggestion from the naval staff at H.Q. Coastal Command for another intensified effort but on different lines. The area proposed was a ribbon running north and south across the Bay between longitudes 7° and 10½°W. The breadth of this ribbon was 140 miles, selected as being the probable maximum distance covered by a U-boat in 24 hours whatever its ratio of surfaced to submerged passage time. By agreement with the Flag Officer Submarines our own submarines' route was shifted westward well clear of the ribbon. Aircraft taking part were to be fed into the ribbon so as to maintain a constant stream sweeping to the south as far as latitude 44½°N and returning on nearly reciprocal tracks. Regarding the night effort it was recommended that in addition to the 10 cm. A.S.V. Leigh Light Wellingtons there should be old type Mark II A.S.V. aircraft with a proportion of them doing A.S.V. flooding in order to confuse the U-boats. It was suggested that the operation should continue for at least one week and if good results were obtained that the Ribbon Scheme should become the permanent form of the Bay offensive.

C.C. Naval
Staff
A/U File
Encl. 62

See Map No. 15

SECRET

90

C.C.O.I.
No. 110
14.3.43
in
A.H.B./
IIK/54/10/34

The scheme was adopted and, as before, No. 19 Group's flying was conserved ready for a period of intensive effort. Following recent convoy battles in mid-Atlantic it was expected that there would be an extra movement of U-boats both into and out of the Bay ports starting about the 20 March and the operation was timed for this date under the cover name of Enclose.

In some ways the aircraft situation in No. 19 Group was not as favourable as for Gondola in that Nos. 1 and 2 Sqdns U.S.A.A.F. had been transferred on 6 March at American insistence to Morocco and No. 405 Halifax squadron had been returned to Bomber Command. Also neither of the newly equipped Coastal Command Halifax squadrons (Nos. 58 and 502) had as yet any A.S.V. moreover the threat to the North/South convoy route was greater and required more long range escort and support.

Operation Enclose was carried out between the 20th and daylight on the 28 March. For the expenditure of 1,300 hours of flying in the ribbon, (1) 26 sightings were made of which 15 were attacked resulting in the sinking of U.665 and serious damage to U.332. Both these casualties and nine of the night sightings were the work of the 10 cm. A.S.V. Leigh Light Wellingtons. During the eight days it is now known that 41 U-boats were in or crossed the area (2) so that not only were the hours per sighting halved but the ratio of sightings to U-boats on passage was doubled as compared with Gondola.

C.C. File
S. 7050/4
Part I
Encls. 145A
and 140A.

B. d U.
War Diary

These results were regarded with satisfaction and were held to justify the permanent adoption of the Ribbon Method in Biscay operations. They were also not unnoticed by the enemy. In his War Diary, B. d U. noted on 23 March that the Biscay route was becoming dangerous. From November 1942 to January 1943, he wrote, enemy flying had little result but since February its effect had increased to an alarming extent with increasing numbers of U-boats being sighted and attacked. It was noted that air activity increased when there were larger numbers of U-boats returning from major convoy operations. Requests to the Fliegerfuhrer Atlantik on the subject of fighter protection during these periods brought little expectation of any improvement in the near future and B. d U. concluded his remarks with the words 'there will be further losses.' There certainly were!

- (1) Squadrons taking part - Libs. of No. 224 Sqn (10 cm. A.S.V.), Halifaxes of No. 58 (No A.S.V), Forts of No. 59, Sunderlands of Nos. 10, 119 and 461, one Catalina of No. 210, L/L Wells. of No. 172 (10 cm. A.S.V.), Wells. of Nos. 304 and 311 (No. A.S.V.) and Witleys of No. 10 O.T.U. (No A.S.V.) 115 individual aircraft took part out of a strength of 145.

	Effective hrs.	Total Hours	Sightings	Attacks	Results
Operation Enclose	Day - 794	979	16	10	nil
	Night ord 304	442	1	nil	nil
	Night L/L 195	254	9 L/L	5 L/L	(U.665 Sunk (U.332 dam.
Total	1,293	1,575	26	15	

- (2) The estimate at the time was 42 - Ref.
C.C. Naval Staff A/U File encl. 63.

(viii) Clash of opinion regarding the priority and value of the Bay Offensive.

However, the better results noted in H.Q. Coastal Command and the Air Ministry were not allowed to give a false perspective to the Bay operations nor to influence the prosecution of the Atlantic convoy war. The Prime Minister had called for appreciations on the conduct of the U-boat war and in a paper forwarded to the Cabinet A/U Committee on the 22nd March the A.O.C. in C. Coastal Command made an exhaustive analysis of the Bay operations as compared with convoy support since mid-1942. The outstanding point emerging was that whereas there had been one sighting for every 29 hours flown on threatened convoys it had required 164 hours in the Bay between June and September, 1942, 312 from October to February 1943 and 170 up to the third week in March. If the enemy persisted in his present pack tactics we should not hesitate to take these opportunities at the expense, if necessary, of the Bay offensive. In fact if the number of threatened convoys increased (as predicted in A.U. (43) 68) the rate of U-boat killing around them would be far higher than anything we could possibly hope to inflict even by concentrating to the maximum upon the Bay patrols. Until the threat to convoys relaxed he proposed, therefore, to give priority to close cover to them in preference to an all-out Bay offensive.

A.U. (43) 84
22.3.43

He added that it should be clear this would not mean the abandonment of the Bay operations. Most of the aircraft in No. 19 Group had not the range to cover convoys far out in the Atlantic and there were in any case definite limitations on aerodromes and flying boat bases which in turn made it impracticable to concentrate solely on the North Atlantic. No. 19 Group would therefore continue the Bay patrols but it must be faced that though they did succeed in killing some U-boats they were a relatively expensive and uneconomical means of so doing. Regarding the possibility of switching the convoy cover effort to the Bay in periods of quietness in mid-Atlantic it must be remembered that there was a practical limit to the tactical flexibility of the V.L.R. Squadrons in that the removal of the midship turret and the self sealing bags in the petrol stowage (necessary to attain V.L.R. specification) made them unsuitable for use in the Bay within the range of enemy long range fighters.

ibid

Other sections of this important policy paper discussed the low lethality of attack - only 7% of all sightings made. This was estimated as due partly to inaccuracy of aim, partly to a supposedly inadequate weapon (the 250 lb depth charge) and partly to individual aircraft making further sightings after the depth charge load had been expended. Arising out of the latter it should be a rule for the future that any additional load capacity available in later types of aircraft must be utilised not for more petrol but for more depth charges. The interference of French tunny fishing craft in the Bay of Biscay was mentioned and figures quoted which showed that the investigation of what proved to be these non-sub A.S.V. contacts at night reduced the effectiveness of the night effort by about 25%. Attention was also called to the continued denial of flying boat bases in S.W. Eire which prevented the covering of the very important Outer Bay area by aircraft other than V.L.R. type. Finally it was stressed that the effectiveness of the Bay air patrols could be enormously increased if the U-boats sighted could subsequently be hunted to exhaustion. This could be done far more effectively by one surface vessel than by a succession of aircraft and it was submitted that the

ibid

Admiralty should examine the possibility of providing a limited number of these - if necessary at the cost of reducing the escorts to convoys on the North/South route across the Bay where experience had shown a threat far less than to the mid-Atlantic convoys.

On the same date (the 22 March) papers were forwarded from the Admiralty and the American Naval Command in London (under Admiral Stark U.S.N.). That from the Admiralty observed that sufficient V.L.R. aircraft and escort carriers for adequate convoy cover would not be forthcoming until mid-summer and no increase in the number of surface escorts until the autumn of 1943. The next four months would be a critical time and, in order to disrupt the U-boat effort, it was recommended to continue full scale bombing of the Biscay ports at top priority by the R.A.F. and U.S. Army Bomber Commands. Admiral Stark's proposals not only endorsed this together with particular efforts against the U-boat construction yards in Germany but called for the re-inforcement of the Bay offensive by a transfer of 160 bomber aircraft.

A.U. (43)90
22.3.43

A.U. (43)86
22.3.43

The Admiralty proposal was resisted in a forthright paper by the A.O.C. in C. Bomber Command dated the 29 March in which he said that this demand involved the momentous decision of calling off the bomber offensive against Germany for the next four months in favour of trying to hamper the U-boat campaign during the period. It would mean that the whole brunt of fighting Germany during the vital part of 1943 would be thrown on Russia. No such decision could be justified unless it was certain that the result would be of overwhelming importance in the U-boat war. Experience to date showed that exactly the opposite was the case. The U-boats and all their essential services were under impenetrable concrete and the 10,000 tons of bombs recently dropped on Lorient and St. Nazaire had, on the Admiralty's own admission, an almost negligible effect on U-boat operations.

A.U. (43)96

Signal
Andrewes to
Marshall
ETTCG
T.O.O.
1915Z/30/3

General Andrewes commanding the U.S. Army bomber forces in Europe refuted Admiral Stark's paper in like manner and particularly opposed the proposal to take away 160 bombers which he said would cripple his power for bombardment of German targets.

Meantime the Admiralty followed up part of Admiral Stark's proposals in a further paper dated the 28 March backed by detailed calculations by the Admiralty Operational Research Scientists. While agreeing with Sir John Slessor in his policy to concentrate all suitable aircraft around threatened convoys, they advanced the view that such opportunities were irregular whereas in the Bay of Biscay, with about 120 crossings per month, the opportunities for attacking U-boats were always present. They quoted Admiral Stark's paper as striking and independent support for their opinion that the Bay offensive was vital. They estimated that a rate of destruction of three out of every ten U-boats at sea would break the U-boat morale. One out of every ten on the convoy routes was being sunk and the addition of two out of every ten on passage in the Bay would therefore win the U-boat war. From their Operational Research Section's calculations this could be effected by the addition to the existing Bay force of a further 70 long range aircraft as long as the U-boats were unaware of our 10 cm. A.S.V. If and when the enemy fitted detectors to this new wavelength the addition necessary would rise to 190 long range aircraft. As this fitment was more than likely in the near future steps must be taken immediately to make the latter

A.U. (43)98
28.3.43

ibid

transfer and it appeared to be a small price to pay for the difference between success or non-success in the Battle of the Atlantic.

All these papers were discussed at the 13th meeting of the War Cabinet A/U Warfare Committee on the 31 March. The First Lord of the Admiralty announced that, taking into account the long range aircraft already in Coastal Command, their previous estimate was revised to an additional requirement of 55 long range aircraft if the U-boats were unaware of 10 cm. A.S.V. and 175 if and when they could detect it. The Secretary of State for Air drew attention to the fact that such transference could only be at great cost to the bomber offensive which was the most valuable contribution we could make towards helping Russia and to which Stalin attached increasing importance. The First Sea Lord considered that we must look on this provision of additional aircraft in the Bay as a absolute necessity and not a luxury in the anti-U-boat campaign. To provide adequate air cover for convoys without increasing the Bay patrols would not enable us to sink U-boats at the necessary rate. The Chief of the Air Staff agreed with Sir John Slessor in his warning that the recent improved Bay results came from special operations over short periods when large numbers of U-boats were known to be in the area. He seriously deprecated the transfer of even 55 bombers from Bomber Command on a purely theoretical calculation. The Minister of Aircraft Production suggested that the two U.S. Army Air Squadrons recently sent to Morocco should be re-deployed in the Bay instead of robbing Bomber Command.

The Prime Minister in summing up said we had only limited forces to meet all our needs, defensive and offensive, and the results in each theatre of operations must be commensurate with the forces employed. It was clear that the maximum number of V.L.R. and L.R. aircraft must be given to convoy cover. Although the sinking of U-boats by Biscay air patrols was an important objective, it had been urged that the Bay patrols should receive an immediate and large addition which could only come from Bomber Command and would mean a reduction in the bomber offensive at what was an extremely critical moment for that offensive. Nevertheless he thought that the Air Ministry and Coastal Command should examine the possibility of providing additional aircraft without impairing the bomber offensive. Though he doubted the feasibility of withdrawing the two American squadrons from Morocco, as they were there at American insistence for the protection of American troop convoys, we should ask the U.S. Government to help in providing additional aircraft for the Bay. Regarding the proposed continuance of the bombing attacks on the Biscay ports he was sceptical whether the damage in these ports was commensurate with the results achievable by bombing targets in Germany. However, he would agree with the suggestion made by the C.A.S. to employ a certain number of inexperienced bomber crews on attacking those Biscay bases where the ground defences were not very strong and that the U.S. Army Precision bombing should be used on alleged vulnerable points in the U-boat servicing system at Lorient subject to conditions being unfavourable for attacking targets in Germany.

The staggering figure of 190 aircraft arrived at by the Admiralty O.R.S. calculations was closely scrutinised by the A.O.C. in C. Coastal Command in a memorandum sent to C.N.S., C.A.S. and the Cabinet A/U Committee on 4 April. He came to the conclusion that there were so many imponderables

A. U. (43)
13th meeting
31.3.43

C.A.S. File
No. 1843B.

concerned that the figure was quite valueless⁽¹⁾ While agreeing that scientific analysis was of vital importance, the A.O.C. in C was forced to the conclusion that strategy by slide rule was not a working proposition. In particular the scientists obviously could not forecast what strategy or tactics the enemy were going to adopt, how they would react to heavier casualties or even accurately what counter measures they were going to produce. He suggested a less scientific but more realistic approach to the problem.

It was agreed that the most fruitful area at the moment was around threatened convoys and it was also agreed that the main source of U-boats at sea were the Biscay bases. The building up of the Biscay air patrols should be done but neither at the expense of convoy cover nor of the bomber offensive against Germany. The solution could best be found by taking a date line on July 1. He suggested this date partly because some date must be assumed as being the probable start of U-boat detection of 10 cm. A.S.V. but more because he was sure that the only answer to the Bay requirement lay in assistance from the American A/U Liberator squadrons and none would be available for transfer before 1 July.

ibid

Up to 1 July he proposed to augment the Bay force, not by borrowing Bomber Command Squadrons which, besides interfering with the bombing offensive, would require extensive re-equipment and training in the very specialised form of air work involved in A/U operations, but by temporary increases in establishment and re-deployment of certain medium range squadrons already in Coastal Command. These would amount in all to an addition of about 70 aircraft in the Bay.

ibid

After the 1 July he made no forecast but it should be possible, with Admiral Stark's assistance, to convince the U.S. Chiefs of Staff that the Bay was a productive area for U-boat kills. He suggested asking them for six squadrons (72 aircraft) to be assigned to the Bay offensive by 1 July. He would not ask for more because 72 additional aircraft was the maximum which could be maintained and accommodated in S.W. England this summer. This request would be a logical outcome of the recent Washington Convoy Conference in which the U.S. representative had placed on record the U.S. policy 'to avoid freezing the A/U aviation in any particular area and to

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- (1) In arriving at this figure it was stated that a monthly loss of three U-boats in ten of those at sea would break their morale. This, Sir John Slessor remarked, could be only assumption. Suppose it was wrong, even 11 per cent. each way. This would mean two U-boats per month more or less to be sunk which in turn resulted in 70 long range aircraft more or less on the requirement. If the U-boats were detecting 10 cm. A.S.V. the requirement including A.S.V. flooding tactics rose to 150 night aircraft in order that every U-boat should get a signal in its search receiver once every 20 minutes. But who was certain that say 40 minutes would not be sufficient. If so the requirement would drop to 50 aircraft. Did the two U-boats intended to be sunk on passage take no account of those coming out north of Scotland and did the figure mean all U-boats on passage or only those outward bound. Each assumption meant a different figure per month which involved differences of up to 110 aircraft in the requirement.

regard all such units as available for shifting from time to time to areas where the need is greatest'. (1)

C.O.S. (43)
196(0)
16.4.43

Acting on this suggestion a paper was submitted to the British Chiefs of Staff on the 16 April embodying a request to the U.S. Chiefs of Staff for six squadrons (72 aircraft) of long range A/U aircraft fitted with 10 cm. A.S.V. to join Coastal Command in an all-out offensive against the U-boats in the Bay of Biscay. The paper contained most of the arguments put forward by the A.O.C. in C. Coastal Command, made clear the continued priority for threatened convoys, gave the details of the British aircraft available and invoked the declared U.S. policy regarding the flexibility in deployment of Allied A/U aviation, finally quoting the excess of such aviation which was given in the Washington Conference Report.

C.O.S. (W)
587
T.O.O.
1420Z/21/4

Telegram
J.S.M. 196
to
War Cabinet
Offices
London.

The paper was approved and transmitted to Washington on the 21 April for consideration by the U.S. Joint Chiefs of Staff. On the 1 May they replied stating that they were sympathetic toward the Bay of Biscay operation but regretted there were no aircraft of suitable types and equipment available at this time for the project. At their meeting on the subject Admiral King (the Chief of Naval operations) had explained that the 'excess of A/U aviation' had been founded on certain figures produced at the Washington Convoy Conference the origin and accuracy of which could not be entirely vouched for and which apparently had raised hopes as to the availability of aircraft which facts did not now warrant.

C.O.S. (W) 601
T.O.O.
1200Z/4/5

This bland denial of figures contained in a considered report from an important conference caused some resentment in England. However, the British Chiefs of Staff contented themselves with sending a telegram admitting that the request was based on the figures contained in the Washington Conference Report and requesting correct figures as quickly as possible.

(ix) Operation Enclose 2

While these discussions on policy had been going on, the A.O.C. in C Coastal Command decided to repeat the ribbon operation in the Bay with his existing aircraft in No. 19 Group and from the 5th to dawn/13 April Operation Enclose 2 was carried out with slightly fewer aircraft. (2) The total flying hours in the area amounted to 980 which obtained eleven sightings and four attacks. (3) Twenty five U-boats were actually present in

- (1) Annexe A to the Conference Report showed that the aircraft expected to be available by the 1 July in the N.W. Atlantic and along the American seaboard exceeded by 56 V.L.R. 113 L.R. and 48 M.R. aircraft the immediate minimum requirements of these areas. See chap. I(iii)
- (2) Neither No. 59 (Fortress) nor No. 311 (Wellington) squadrons were available for this operation but three Leigh Light Catalines of No. 210 Sqdn were introduced. 86 individual aircraft took part out of a strength of 115.

(3)		Effective hrs.	Total hours	Sightings	Attacks	Results
Operation Enclose 2		501	694	3	1	nil
	Night ord	267	343	5N	1N	nil
	Night L/L	212	260	3 L/L	2 L/L	U.376 Sunk U.465 dam.
		980	1,297	11	4	

the area⁽¹⁾ and for the first time a minority of sightings were obtained by day flying which indicated that U-boats were spending most of the time (in this area) on the surface at night. Metric A.S.V. flooding was again employed at night and the Mark II A.S.V. fitted Sunderlands made five sightings but, in the absence of suitable illuminants, could only secure one attack. The Wellington Leigh Light flying with 10 cm. A.S.V. was augmented by three Leigh Light Catalinas still fitted with metric A.S.V. and although only securing three sightings made two excellent attacks - C/172 Sqdn sinking U.376 and M/210 Sqdn badly damaging U.465. There is still no explanation why in this operation the Mk.II A.S.V. should have been so much better at night (six sightings out of eight) but it appears to constitute the one and only successful use of metric A.S.V. flooding.

(x) Operation Derange

During the last few days of Enolose 2, arrangements with the Flag Officer Submarines allowed a further alteration in our own submarines' passage routes which not only permitted air operations more to the westward but when considered necessary would allow the air patrols to extend almost down to the North West Spanish coast. Accordingly the patrols were shifted from dawn/13 April to a ribbon between 8¹⁰ and 12⁰⁰W under the name of Operation Derange with orders to continue until further notice. Following the approval on the 8 April of the deployments and increased establishments proposed by the A.O.C. in C. in his memorandum of the 4 April, the number of aircraft taking part in Operation Derange were augmented and included another Leigh Light Wellington squadron fitted with 10 cm. A.S.V. (No. 407) and Nos. 311 (ordinary Wellingtons) and 612 (Whitley) Squadrons. (2)

Up to the end of April the flying in the Derange area aggregated 2,593 hours for 36 sightings and 22 attacks. (3) The results from our viewpoint at the time were not spectacular though we knew that the night flying had done much better. The effect on German tactics, however, was drastic and not only destroyed Doenitz's faith in the Magic Eye but forced him into what proved to be a series of tactical blunders regarding the U-boat passage procedure through the Bay. The immediate cause originated in a batch of seven night attacks (by L/L Wellingtons) without any Metox warning which occurred between the 26 and 28 April. No boats were sunk by them but two were seriously damaged. (4)

- (1) The estimate at the time was 28.
(2) 131 individual aircraft took part out of a strength of 172 aircraft. The number of U-boats crossing Derange between the 13 and 30 April was 22 inward and 59 outward bound.

(3)		Hours Effective	Hours Total	Sightings	Attacks	Results
Operation	Day	1,992	2,519	19	10	Two U-boats possibly damaged
Derange to 30/4/43	Night ord. Night L/L	127N 474L/L	219N 607L/L	nil 17L/L	nil 12L/L	nil U.566) U.437) dam.
Totals		2,593	3,345	36	22	

- (4) U.566 - outward bound, damaged by R/172 at 2325 hrs/26 and forced to return. Close escort of four JU.88's ordered for dawn/27 followed by destroyer escort.
U.437 - outwardbound, damaged by H/172 at 0020/29 and forced to return. All U-boats in vicinity ordered to go to her assistance. Destroyer and fighter escort requested.

(a) Reversal of U-boat tactics in the Bay

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to 400
of Jan/June
1943 Vol.

The moral effect of this sudden rise in night attacks coupled with a conviction that worse was to come decided Doenitz on the 28 April to signal permission to all U-boats in the Bay area to dive by night and only surface by day long enough to recharge batteries. He assured his captains that every effort was being made to produce apparatus to detect the enemy radar equipment. A long situation report by B.d U. on Allied radar was then circulated to all U-boat flotillas dated the 3 May. Briefly, it stated that as radar location was vital to the Allies in their struggle against the U-boats the relatively greater reserves of man-power and materials available to the Anglo-American war potential had been devoted to this end and they were for the moment ahead of German counter measures. Descriptions of various types of Allied search radar were given and the drawbacks of existing German detectors (including the Magic Eye) were enumerated. An extract from a recently captured British instruction on the subject of air anti-submarine tactics was quoted⁽¹⁾ and finally some proposed new counter measures were outlined including the fitting of G. A. F. Hohentwiel radar sets to assist U-boats in locating and attacking convoys.

Somewhat naturally this reversal of tactics caused the day-light sightings and attacks to rise at the expense of night results.⁽²⁾ During the first week of May, twenty six different U-boats were sighted (only three at night) and twenty one attacks were delivered resulting in U.332, 465, 109 and 663 being sunk and U.415, 257 and 214 being damaged.⁽³⁾

(b) Introduction of Fighting Back tactics

It has been noted in Volume III Chapter XII (xiii) how some German U-boats became more flak minded in the autumn of 1942. There were no official instructions on this point from B. d U. and the practice was confined to a few individual U-boat captains in the Atlantic and to the special conditions obtaining in the calmer waters of the Western Mediterranean.

- (1) This was a resume' of Coastal Command's Tactical Memorandum No. 22 which originally appeared in January 1942. B.d U. stated it had been taken from a British plane that made an emergency landing in the Mediterranean area.
- (2) Between the 1 and 7 May, the number of aircraft in the Derange area remained the same. To compensate for the withdrawal to re-equip of Nos. 119 and 304 Sqdn, two squadrons - No. 228 (Sunds.) and No. 502 (Halifaxes) - had joined up. Air support during this period to the North/South convoys was given by a detachment of seven V.L.R. Liberators from the still re-equipping Nos. 59 and 86 Sqdns plus two Liberators of No. 224 and four Halifaxes of No. 502 Sqdns. A total of 1,427 effective hours was flown in area Derange of which 279 were by Leigh Light aircraft at night and 50 by ordinary night sorties.
- (3) Four sunk all outward bound. U.332 by Sunderland M/461 Sqdn, U.465 by Sunderland W/10 Sqdn, U.109 by Liberator P/86 Sqdn. and U.663 by Halifax S/58 Sqdn.

Two damaged were inward bound - U.415 by L/L Well. N/172 followed by Sunderland M/461 and Whitley E/612 Sqdns.

U.257 by Sunderland S/461 Sqdn.

One outward bound - U.214 had her C.O. badly wounded by M/G fire from Whitley K/10 O.T.U. and returned to Brest.

Following the withdrawal of U-boats from the areas west and east of Gibraltar the flak incidents fell away to two in December, two in January and three in February. In March 1943 the increasing number of surprise attacks on U-boats revived a tendency to fight back, particularly in the Bay of Biscay and around Atlantic convoys the figures being four in convoy areas, six in the Bay, one in the Northern transit and only one in the Western Mediterranean. There was, however, still no official encouragement or increase in the standard flak armament⁽¹⁾ although two aircraft were shot down.⁽²⁾ The first official blessing came on 12 April when, following a successful resistance by U.191 against Liberator M/86 Squadron⁽³⁾ B. d U. repeated the details to all U-boats as an incentive to others both around convoys and in the transit areas. Flak incidents increased in April to seven round convoys, twelve in the Bay (of which nine were at night) and one in the Northern Transit area. Although no aircraft are known to have been shot down, three Leigh Light Wellingtons were lost without trace in the Bay of Biscay during the month.

It was the heavy U-boat losses in the Bay during the first week of May that produced a considered plan of flak counter-measures. Regarding the twenty one air attacks delivered, in seven of these cases (five outward and two inward bound) the U-boat fought back, without, however, damaging the attacking aircraft.

On the 6 May, B.d U., unaware as yet of the full U-boat casualty list, noted that the enemy air force had made themselves felt over the approaches to the Bay of Biscay to a very marked degree. Losses and damage in the area had again increased sharply as during the period in 1942 before the introduction of the Metox search receiver. As a countermeasure to the surprise locations he said the A/A armament was being strengthened. This solution could be considered satisfactory only when the U-boats' flak armament allowed them to remain on the surface to fight it out with the aircraft whether on passage in the Bay or around convoys when trying to get ahead into attacking positions. Regarding the Bay area, two boats (U.256 and 441) had been fitted with strong flak armament with lightly armoured conning towers and gunshields.⁽⁴⁾ They would leave port soon to operate on the surface in the Bay with the specific task of attacking aircraft and giving flak escort to

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- (1) This was one 20 mm cannon and several machine guns on the bridge. Many U-boats still carried the main anti-ship gun on deck forward of the conning tower and the 740 ton Type IX boats carried an additional 37 mm gun on deck abaft the conning tower.
 - (2) L/L Well. B/172 Sqdn. shot down by U.333 in the Bay Halifax B/502 Sqdn. shot down by U.333 near convoy XK3.
 - (3) Already mentioned in Chapter II (iv) HX. 232.
 - (4) This special flak armament consisted of a quadruple 20 m.m. cannon mounting on a raised platform before the bridge, two single 20 m.m. cannon at the after end of the bridge, a 3.7 c.m. gun on a raised platform abaft the bridge and another quadruple 20 m.m. cannon mounting on an extension to this platform.

Atlantic
operation Order
No. 55
7-5-43
page 419
B. d U. War
Diary and
also
Pages 449
to 455.

ibid
page 422.

No. 19 Group
O.R.B. Appen-
dices

U-boats unable to submerge or damaged in other ways.⁽¹⁾ In the operational orders the flak U-boats were warned that aircraft would be encountered anywhere out to at least 150W, day or night, with and without radar, using searchlights or flares at night and from some indications might use infra-red or ultra-violet rays for short range location. This latter was the first mention of a belief which subsequently wasted much time in the endeavours to find a detector for our air-borne search radar.

Concurrently an instruction was issued to all U-boats on the subject of defence against enemy aircraft when surfaced. This advised that it was better to stay on the surface and fight back if the U-boat could not be sure of getting down to a safe depth before the aircraft released bombs or depth charges.⁽²⁾ In case of doubt it was best to remain on the surface. If deciding on surface action the boat should keep the aircraft on a stern bearing so as to present a small silhouette and use all flak guns. When the aircraft was seen to be committed to its final attacking run-in, the boat must use avoiding action at maximum speed using full helm. If a strong crosswind was blowing, it was better always to turn to windward to take advantage of the aircraft's sideways drift.

Flying in the Derange area continued from the 8th to the end of May. Towards the end of the month the obvious slackening of U-boat operations against the northern transatlantic convoys allowed some long range aircraft (not V.L.R.s) to be switched from both No. 15 and 19 Groups into purely Biscay transit patrols. From 8 May the effective flying was 3,156 day hours, 103 ordinary night hours and 409 Leigh Light night hours and a total of 71 sightings were made of which 43 were attacked.⁽³⁾ In view of the preponderance of day flying⁽⁴⁾ and the U-boat commitment to diving all the dark hours it was not surprising that all these sightings took place in daylight. The 'fight back if surprised' order of 6 May resulted in only 17 of the 43 U-boats attacked using flak against the aircraft, the other 26 having decided to try to reach a safe depth before the explosion of the depth charges.

- (1) U.441 sailed from Brest on the 22 May. Two days later she was attacked by Sunderland L/228 Sqdn. and, although shooting down the aircraft, was so badly damaged that she had to return to harbour. She next sailed on the 8 July and on the 12th was attacked by three Beaufighters/248 sqdn. who killed ten and wounded 15 others, including the captain, with their cannon fire. Again the boat had to return to Brest. U.256 did not put to sea until October 1943.
- (2) A safe depth was reckoned at between 250 and 300 feet - Vide B. d U. War Diary for 24 May - Page 430. An extra single 20 m.m. cannon was in the process of being mounted in some of the operational U-boats (both 500 and 740 ton types) on a stepped platform abaft the bridge. A new design of bridge for carrying both twin and quadruple 20 m.m. cannon was being discussed for early installation.
- (3) For the whole month of May, Derange occupied 194 individual aircraft out of a strength available of 212. The number of U-boats crossing the area was 120. Of these, 54 were sighted (sometimes more than once) and 45 different boats were attacked.

	Type	Effve. hrs.	Total hrs.	Sight- ings	Attacks	Results
Operation Derange May	Day	4,263	5,542	101	66	7 sunk - 5 damaged
	Night (ord. L/L)	153N 688L/L	397 N 912 L/L	- 2 L/L	- 1 L/L	- -
	Total	5,104	6,851	103	67	

- (4) From the 20 May, the Leigh Light Squadrons (Nos. 172, 210 and 407) operated largely by day.

(c) Introduction of U-boat group sailings

U-boat casualties were not severe between the 8 and the 29 May, one having been sunk⁽¹⁾ and three forced to return to harbour⁽²⁾ but on this date B.d U. took a major tactical decision. In order to make it difficult for enemy aircraft in the Bay of Biscay area to find U-boats and if found to enable them to fight back more effectively, he instructed all returning U-boats at that time west of longitude 16°W to continue the passage in company through the Bay in groups of up to four boats. Rendez-vous positions for this purpose were given for the 31 May and 1 June. The same procedure would be introduced for outgoing boats who would, after leaving port, assemble at pre-arranged points in groups of three to six boats under the orders of the most senior captain. They were to leave the French coast in daylight on the surface and strict orders were given not to dive in case of aircraft attack but fight back with all guns. The groups were to dive at night at prescribed speeds and surface at dawn, reform into group and proceed on the surface as before. Groups would finally disperse at longitude 15°W. Fighter escort would be given as far out as possible but especially at the points of rendez-vous.

This order had not been implemented before the end of May and during the last two days of the month twelve U-boats were sighted of which ten were attacked. Six stayed up and fought back shooting down one aircraft and wounding several of the crew in another but two (U.440 and 563 outward bound) were sunk.⁽³⁾ So ended a definite phase in the course of the Bay offensive. Centimetric A.S.V. plus resolute attack in face of growing flak had jockeyed B.d U. out of his comparatively safe night surface passage for U-boats and had forced him to adopt one mistaken tactic after another resulting in losses he could ill afford at the climax of the main battle in mid-Atlantic. The next two months were to cost him dear before he stumbled back into the relative immunity of diving by day.

(xi) Aircraft casualties in Bay Operations and the Beaufighter Interception Patrols - January to May inclusive.

In Volume III Chapter XII (vi) (a) were described the enemy efforts to interfere with the Bay patrols with fighter aircraft and which died away in November 1942. The G.A.F. under the

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- (1) U.463 (an outward bound supply boat) was sunk on the 15 May by Halifax M/58 sqdn.
 - (2) U.591 (outward bound) was attacked by Whitley M/10 O.T.U. on the 15th. This aircraft had already expended its depth charges on another attack and engaged U.591 in a machine gun/flak duel. The C.O. of the U-boat was badly wounded and the boat returned to harbour. U.523 (outward bound) was attacked on the 24 May by Whitley J/10 O.T.U. and so damaged that she had to return to harbour. U.441 (one of the two special flak U-boats) sailed from Brest on the 22 May looking for trouble. She found it on the 24th when she was attacked by Sunderland L/228 Sqdn. Although the aircraft was shot down the pilot had released the depth charges with accuracy and the resultant damage forced U.441 to return immediately to Brest.
 - (3) U.440 was sunk on 31 May by Sunderland R/210 sqdn. U.563 was sunk on 31 May by the combined attacks of Halifaxes J and R/58 sqdn, Sunderland E/10 sqdn. and Sunderland X/228 sqdn.

Fliegerfuehrer Atlantik maintained, however, a strength of some 30 JU.88.s and 20 Arado 196.s together with 20 long range reconnaissance aircraft (JU 88 and FW 200) all the winter months but the fighter element was not very active as a deterrent in the Bay. (1) Only two of the twelve A/U aircraft casualties in January and none of the eight in February 1943 are believed to have been attributable to enemy fighters and the U-boats were not yet fighting back with flak. All were apparently due to flying hazards over the sea or were known to be crashes on take off or landing.

See Appendix VII.

Twelve A/U aircraft were lost in March of which four are attributable to the enemy, three by JU.88.s and one shot down by U.333 at night. No. 19 Group had retained two Beaufighter squadrons on fighter interception patrols during the winter but few combats had resulted. During March the enemy fighter patrols increased (2) but only three combats occurred. (3) In April the Bay aircraft losses dropped to six of which only one was by day. All were due to flying hazards although four undecided combats with JU.88.s took place. The Beaufighters only had one combat, one JU.88 being shot down by A and H/248 sqdn.

The order given by B. d. U. at the end of April for U-boats to dive at night and do their charging by day did produce more cases of flak actions in early May but it was not until the end of the month that fighting back tactics by the U-boats became really noticeable. During the month, twenty four flak actions resulted in the loss of five A/U aircraft while the G.A.F., by now increased to 40 JU.88.s, 18 Arado 196.s and six FW.190.s, only managed to engage in six combats in which six of our aircraft were shot down. The Beaufighters again had one interception in which one JU.88 was destroyed. Of the remaining eight aircraft lost during May, six were known to have crashed on take off or landing and two were by flying hazards over the sea.

Hours flown by the long range fighters

Although the Beaufighter interception patrols, augmented in May by No. 264 Mosquito Squadron, ^{from Fighter Command} were primarily to safeguard the A/U aircraft they occasionally sighted and attacked U-boats with their cannon. It can be claimed that their flying effort should be included in the Bay offensive returns and it is, therefore, given in footnote. (4)

- (1) There were five indecisive attacks made on our A/U aircraft in January and six in February. On the other hand, our Beaufighter interceptor patrols shot down three JU.88's in January for the loss of two aircraft and three JU.88's in February for no loss.
- (2) Fliegerfuehrer Atlantik's fighter strength was increased in March to 34 JU.88's, 17 Arado 196.s and 3 F.W. 190.s. There was also a step up in reconnaissance aircraft to 12 long range JU.88.s and 35 F.W. 200.s.
- (3) No. 248 sqdn shot down one JU.88 and one FW.200 for the loss of two Beaufighters and No.404 sqdn shot down two JU.88.s.

1943	Effective hours	U-boat		Enemy aircraft	
		Sightings	Attacks	Combats	Destroyed
Feb.	392	1	0	1	3
Mar.	684	nil	nil	3	4
Apr.	303	nil	nil	1	1
May	428	2	1	1	1

(xii) Air Sea Rescue in the Bay

One other activity remains to be mentioned - that of rescuing the crews of ditched aircraft. Regular Air Sea Rescue squadrons were of course part of Coastal Command and their story is given in the separate Air Sea Rescue Narrative but it frequently happened that the operational A/U aircraft were given the additional mission on their sorties to keep a look out for survivors from aircraft forced to ditch either by engine failure, U-boat flak or enemy fighter action. Aircraft sighting such dinghies would orbit the survivors, send back position reports and endeavour to home either the regular A.S.R. planes, the A.S.R. launches or any other surface craft in the vicinity. On occasions a flying boat would, if sea conditions permitted, land on the water and effect a direct rescue. One of these episodes deserves special mention as ending in a unique landing of a large flying boat on an airfield.

On the 28 May, Sunderland O/461 Sqdn piloted by Flight Lieutenant Dods was searching for the survivors of Whitley P/10 O.T.U. which had ditched on the 27th from engine failure in position 4750NX 0938W. Dods found the dinghy and received permission from base to effect a rescue but in attempting to land cross wind along a heavy swell the Sunderland caught a cross swell, bounced and then stalled nose first into an approaching wave. Dods was killed instantly and the co-pilot Flying Officer Gipps seriously injured. The rest of the crew scrambled out of the astro-hatch as the aircraft sank only to find that all the dinghies were damaged except one. Flight Sergeant Mackie swam over to Gipps who was floating helplessly at some distance away and supported him until the dinghy could be paddled over. The ten Sunderland and six Whitley survivors then joined forces and roped their dinghies together.

On the morning of the 29th Sunderland E/461 Sqdn. piloted by Flying Officer Singleton found the dinghies at 0630 hours and put down in the sea to pick them up. This was successfully accomplished but the flying boat was now too heavy to take off. Other aircraft had by this time appeared on the scene and a Free French sloop - La Combattante - was homed to the spot. All survivors and some of the crew of E/461 were transferred to her leaving only a skeleton party on board the aircraft which was taken in tow by the sloop. However, after 4½ hours the Sunderland broke adrift and Singleton decided to try a take off.

After crashing from wave to wave for three miles the Sunderland finally got into the air but was so badly holed in the hull that a water landing was quite impossible. No parachutes were carried⁽¹⁾ so Singleton decided to attempt a ground landing at Angle airfield near Pembroke Dock. Arriving over Milford Haven at 2000 hours he jettisoned all excess fuel, equipment and inflammable gear and with the crew at crash stations he approached the grass border alongside the tarmac strip. The keel jarred into the ground cutting a shallow furrow through the turf for 150 yards and then the Sunderland lost speed and laid gently over on one float buckling the wing tip but without further injury.

(1) Parachutes were part of the weight removal policy in order to gain a maximum range and endurance on patrol

CHAPTER IV

THE BAY OFFENSIVE - 1st JUNE TO 31ST AUGUST 1943(i) The group sailing of U-boats through the Bay of Biscay

B. d U.
War Diary

Although this tactical decision was taken by B. d U. on 29 May, the necessary organisation took a little time to come into effect and singleton inward bound U-boats continued to arrive in Biscay ports until 9 June. The situation for B. d U. was complicated by the fact that the positions of homeward bound U-boats were largely approximate plotting so that, although rendez-vous points were signalled to U.377 and 552 for 31 May and to U.91, 413 and 664 for 1 June to enable two groups to return in company, they could not in fact conform. U.91 and 377 arrived in Brest on 7 June, U.664 on the 9th and U.413 and 552 on the 13th. Two little groups were successfully brought in as planned. U.161 and 229 crossed the Bay together between 3 and 7 June and U.575 with 731 between 6th and 11th. In all cases the basis of conduct was in accordance with B. d U's standing Order No.13, (1) with the addition that groups were to remain surfaced as long as possible in good weather in order to cover ground. In case of surprise attack they were to remain on the surface, fire at the aircraft with their flak guns and at all costs keep together.

ibid

With outward bound U-boats the problem was relatively simple. The first outward group formed was U.333 and 572 who left La Pallice together on 2 June and reported on 7th that the passage in company had been successful, surfaced by day and diving at night. The senior officer (U.333) reported several unexplained radar detections with the Magic Eye and suggested that group passage procedure should be extended as far as longitude 18°W. Groups of three or five boats thereafter left Biscay ports regularly - on the 7th, 8th, 9th, 10th and 12th. (2)

(1) Standing Order No.13 was issued on 30 May and recapitulated the early May orders for U-boats on passage through the Bay and northabout from Germany through the Iceland channel. They were normally to proceed submerged, surfacing by day to charge batteries and ventilate the boat. A long surface run by day was only permissible in good visibility when surprise was unlikely. Owing to mine danger off the Biscay coast, when inside the 100 fathom line boats were to proceed on the surface, only diving when danger from aircraft was acute. U-boats were to leave harbour in the morning and enter in the evening so that the port approaches would be traversed in daylight. Ref. B. d U. War Diary, page 445.

(2) On the 7th - U.135, 508 and 759 from Lorient
On the 8th - U.571, 590 and 618 from St. Nazaire
On the 9th - U.185 and 564 from Bordeaux.
On the 10th - (U.358, 134 and 653 from La Pallice.
U. 84, 306 and 732 from Brest
On the 12th - (U. 68, 155, 159, 415 and 634 from Brest and Lorient
U.257, 600 and 615 from La Pallice

The groups sailing on the 7th and 8th got through the Bay undetected as did the Brest group which sailed on the 10th. (1) The first group to be sighted from the air was that formed by the Bordeaux and La Pallice sailings on the 9th and 10th respectively who had combined into a single group of five boats. (2) The sightings were made by unarmed aircraft on transit flights at 0830 hours on the 12 June in 4500N x 0840W. The leader of the group ordered all boats to dive and re-surfaced some hours later after which the passage was continued through the Derange area without further detection. They had reached longitude 15°W late on 13 June.

(ii) Operations up to 14 June

No. 19 Group continued to fly in the Derange area at a slightly increased intensity, made possible by further re-deployments of medium and short range aircraft from other Groups.

On 1 June, the singleton U.418 (inward bound) was sighted and sunk by the R.P. equipped Beaufighter B/236 Squadron (5) and two other singleton inward bound U-boats were sighted by Halifax O/58 Squadron but in both cases the boats got under too quickly for an attack to be made. On 2 June, the singleton U.455 (outward bound) was attacked by the cannon Beaufighter S/248 Squadron and after an indecisive exchange of shots the U-boat dived. She was picked up on the surface again an hour later by Halifax J/58 Squadron who attacked but U.455 had got under some 30 seconds before the depth charge exploded and no damage was inflicted. On 3 June, an inward bound U-boat was attacked by L/L Wellington G/407 Squadron on a daylight patrol but again the U-boat had got well under before the stick exploded. This was the last sighting of a U-boat by operational aircraft in the Bay until late on 13 June.

The G.A.F. became more active in the Bay area from the beginning of the month and Ju.88s began to be sighted in large formations. One such concentration intercepted and shot down Halifax B/58 Squadron on 1 June and another flight of eight Ju.88s intercepted Sunderland N/461 Squadron on the next day. For over an hour a running battle ensued in which the Sunderland was badly damaged and lost one killed and one wounded but put up such a stout resistance that three Ju.88s were destroyed, three more damaged and the remainder driven off. The flying boat was too badly holed to land normally and was beached at Marazion in south Cornwall. (4) On 3 June, eight Ju.88s attacked the R.P. Beaufighter W/236 Squadron and in the first few moments severely wounded the navigator who was acting as rear gunner. The Beaufighter dived to sea level taking violent evasive action but was again attacked and frequently hit during which Lieut. Commander Brookes, R.N. (on observation duty) was fatally wounded. After receiving further damage the aircraft managed to shake off pursuit and reached Predannock where it crash landed. Similar Ju.88 concentrations attacked Fortress A/206 Squadron and Halifax O/58 Squadron on 5 June but in each case the aircraft was able to reach safety in cloud cover after exchanging fire with the attackers. It was noticed that the

(4) The pilot was Flt. Lt. C.B. Walker. During the action Sgt. F.C.E. Miles was killed at the starboard galley gun, Flt. Sgt. R. Goode was knocked unconscious in the rear turret and the navigator Flt. Lt. K.M. Simpson wounded at the front guns. The aircraft, besides being badly holed, lost the entire port outer engine and had to fly back 350 miles in this damaged state.

- (1) The 8 June group reported three radar detections on the 9th and the sighting of one aircraft on the 10th but nothing more. The 10 June group from Best recorded no air activity in the southern Biscay area although they sighted a Sunderland aircraft on the 12th and two more on 13th. They were not detected themselves.
- (2) U.134, 358, 653, 185 and 564.
- (3) A detachment of this anti-shipping squadron had been moved from No. 18 to No. 19 Group at the end of May.

enemy did not press home their attacks with much determination. Thereafter, more frequent interception patrols by counter-formations of Mosquitoes from No. 10 Group Fighter Command gave effective protection to the A/U aircraft.⁽¹⁾

By 5 June the obvious slackening in U-boat pressure in mid-Atlantic permitted the A.O.C. in C. to switch aircraft effort surplus to convoy requirements into the outer Bay longitudes - a project long envisaged by him if and when the U-boat packs withdrew from the northern Atlantic area. In a signal to Nos. 15 and 19 Groups late on 5 June he instituted a new area designated 'Orderly' between latitudes 50° and 45°N from longitude 17° to 21°W to be covered by V.L.R. and L.R. aircraft whenever minimum safe convoy requirements permitted. The A.O.C.'s concerned were to exchange information as to how many aircraft would be available daily and the A.O.C. No. 19 Group was to co-ordinate the flying in the new area.

Flying in the two areas continued up to late on 13 June without any further sightings by operational aircraft.⁽²⁾ During these first thirteen days of June the effective flying totalled 1,706 hours in Derange plus 640 hours in Orderly and produced only six sightings of singleton U-boats⁽³⁾ while eight groups of U-boats and ten singletons had traversed the Bay unseen. This was the measure of the initial success attending Doenitz's new passage tactics. This relative success was of short duration as a new patrol scheme by Coastal Command was to prove effective in the location of further surfaced group passages.

The sighting of five U-boats in company was the first positive evidence for us that the enemy had adopted a new procedure for passage through the Bay of Biscay. Logical reasoning in British A/U circles aided by Admiralty Intelligence had assumed that some such tactic might be forthcoming. On the 7 June, a meeting had been held between the Admiralty and Coastal Command A/U Divisions to determine the policy to be adopted should the enemy send U-boats through the Bay in groups. The proposals discussed included:-

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- (1) From the middle of May, No.264 Mosquito Squadron Fighter Command had re-inforced the two Coastal Command Beaufighter interception squadrons and early in June these patrols were strengthened by sorties from Nos. 25, 151, 157, 204, 307, 410 and 456 Mosquito squadrons and Nos.414 and 613 Mustang squadrons.
 - (2) The five U-boats sighted by the transit aircraft early on 12 June were not picked up again until after they had traversed Derange.
 - (3) Flying in Derange - 1,512 day hours, 46 night hours and (six day sightings) 148 Leigh Light night hours.
Flying in Orderly - 613 day hours, 16 night hours and 11 (no sightings) Leigh Light night hours.
 N.B. From post war knowledge it is not surprising that there were no sightings in Orderly, as, since the withdrawal from the northern Atlantic, U-boats were going to or returning from the Azores area and so passed well to the south of Orderly.

C.C. File
S.54 Part I
Encl. 54.
See Map No. 15

Nos. 15 and 19
Groups
O.R.B.
Appendices

C.C. File
S.7050/4 Part I
Encl. 173B

- (1) That patrolling aircraft should work in pairs
- (2) That the aircraft making the first sighting of a group should shadow and report until a striking force of aircraft arrived.
- (3) That an air striking force should be maintained in the patrol area in readiness. This was discarded as requiring more aircraft than could be made available.
- (4) A comprehensive follow-up procedure either from base or by aircraft already in the area.
- (5) That a surface craft striking force be introduced into the area
- (6) That an escort carrier be attached to the surface striking force. This was not considered justified in view of its vulnerability both to submerged attack and to enemy shore-based bombers.

The proposals for air action were examined in detail at H.Q. Coastal Command on the following day and an appreciation with recommendations was drawn up. It was felt that, having forced the singleton U-boats on passage to submerge by night, every effort must be made to induce the enemy to continue this procedure even if he adopted group passages as it was far easier to deal with surfaced groups by daylight. Neither formation flying nor the maintenance of a strike force was considered practicable and it was recommended that the sighting aircraft should shadow and home others already out on patrol. To make this effective it would be essential to fly the maximum number of aircraft in the search area and to ensure that all sorties were so staggered in time that at any given moment it would be possible to concentrate at least two aircraft on to the shadower. If found practicable, a small strike force might be kept available at base in case the time and distance factor enabled them to be used.

ibid
Encls. 171A
and 172A

If the enemy did adopt group sailing, it was almost certain that he would provide increased fighter cover and our own fighter interception patrols must therefore be strengthened while it would be an advantage to place the main search area as far as possible from the enemy air bases. It was recommended that a proportion of each fighter patrol be fitted with Air Interception radar because of the difficulty of contacting enemy aircraft in the wide spaces of the Outer Bay of Biscay.(1)

Regarding the method of attack, it was considered that high level release using the Mark XIV sight would be the best when tackling U-boat groups in which the massed flak might be intense. This limited the weapon to the 600 lb A/S depth bomb but long sticks of the 250 lb or even the 100 lb standard A/S bomb might be used. If sufficient R.P. armed aircraft could be made available so that all U-boats in a group could be engaged simultaneously, this weapon was also suitable. Unless the latter qualification could be satisfied it was felt that depth

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- (1) This entailed the lifting of the existing embargo against A.I. fitted aircraft being employed near or over enemy coasts owing to the risk of their falling into enemy hands and compromising the equipment.

charges from low level were not the best weapon. The final recommendations were:-

ibid

- (i) That every effort be made to increase the density of Leigh Light Wellington flying south of latitude 4730N and west of 0700W and that Leigh Light Catalinas be operated west of longitude 1500W until such time as Leigh Light Liberators were available.
- (ii) That all No. 19 Group aircraft be concentrated in the Derange area and as many of Nos. 19 and 15 Group long range aircraft as possible in the Orderly area.
- (iii) That fighter patrols be accompanied by A.I. fitted aircraft
- (iv) That all aircraft be conversant with and practiced in the homing procedure by D/F loop.
- (v) That the A.O.C. No. 19 Group be asked to consider the practicability of keeping a small strike force available to take advantage of sightings upon which a follow-up attack from base could be effected.

Discussion and planning along these lines continued during the next three days and a new scheme of patrols was prepared ready to meet a change in the U-boat passage procedure if and when it eventuated.

- (iii) The new patrol scheme is brought into operation-
Musketry and Seaslug

The sighting of five U-boats in company by the transit aircraft was taken by H.Q. Coastal Command as sufficient confirmation of the expected change in enemy tactics to bring the new scheme into force. Late on 12 June, the A.O.C. in C. sent a signal to all Groups acquainting them with the new situation. Until further orders the maximum possible effort of Nos. 19 and 15 Groups was to be directed to the Bay Offensive after the minimum requirements of air cover to threatened convoys had been satisfied. The areas Derange and Orderly were cancelled and in their place the following two areas were instituted:-

See Map No. 16

- (A) Area Musketry - between latitudes 4730N and 4330N and longitudes 0930W and 1130W. This area was to be swept by seven aircraft at a time on parallel tracks carried out three times daily during daylight hours. As it was reasonable to assume that the U-boats would continue to submerge at night, they would have to reform at daylight and the first sweep must be well into the area as dawn broke.

C.C. File
S.7050/4/7
Encl. 1A

In the event of a group being sighted, it was left to the captain's discretion as to whether he should attack at once or wait until he had homed other aircraft. (1) Before attacking, he was to break W/T silence and send the code group '465' followed by a numeral indicating the number of U-boats and then give position, course and speed. If deciding to shadow, he

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- (1) In smooth sea conditions when U-boats would be good gun platforms the aircraft should not attack but shadow and home other aircraft.

was, after giving these particulars, to switch over immediately to M/F homing procedure to enable other aircraft to concentrate. No. 19 Group headquarters was also to broadcast the position to ensure all airborne aircraft receiving the message. Once a pack of U-boats had been sighted they must be hunted to exhaustion and the rest of the area neglected until it was clear that they had all been sunk or had got through.

At least three R.P. Beaufighters were to be kept at immediate readiness throughout the hours of daylight to proceed to a sighting at the earliest possible moment.⁽¹⁾

Arrangements were to be made by the A.O.C. No. 19 Group with the A.O.C. No. 10 Fighter Command Group that when a group of U-boats had been sighted, sections of Mosquito aircraft should be sent to the area to give continuous air cover.

See Map No. 16

(B) Area Seaslug - between latitudes 4730N and 4400N and longitudes 1300W and 1500W. This area was to be covered by V.L.R. and L.R. aircraft of No. 15 Group during daylight as often as the convoy situation permitted. These patrols were to be co-ordinated by the A.O.C. No. 19 Group in conjunction with his own patrols.

Night flying - Normal planned night flying was to be resumed by Leigh Light Wellingtons in Musketry and Leigh Light Catalinas (Mark II A.S.V.) in Seaslug. All aircraft in Bay operations still fitted with Mk.II A.S.V. were to keep it switched on in their patrol area until further orders.

General - No. 415 Hampden T/B Squadron and Nos. 304 and 547 Squadrons re-equipping as torpedo aircraft were to be brought into the line as A/U aircraft and armed with depth charges. It was most important that the A.O.Cs of No. 18 Group and Iceland should co-ordinate their Northern Transit area patrols so that every U-boat sighted there should be hunted to exhaustion.

On the same date revised general instructions governing aircraft operations against U-boats in all areas was issued. This Tactical Instruction No. 41 cancelled all previous orders and contained specific guidance on such matters as visual look-out, A.S.V. look-out, height at which to fly in various weather conditions, the different weapons and description, stick spacing, method of approach and attack, when to attack or not either on patrol or convoy cover, what to do if the U-boat fought back, the signals procedure and debriefing after a sortie. A copy is attached at Appendix VI.

(iv) The new scheme in action.⁽²⁾

The new scheme did not become operative until dawn on 14 June. As we have seen, the group of five U-boats was not

- (1) The A.O.C. No. 18 Group was to detail six R.P. Beaufighters to join the three already stationed in No. 19 Group.
- (2) Many of the events described in the stories of the three U-boat groups were not known to us at the time. Reconstruction has been possible by comparing Nos. 15 and 19 Group O.R.B. appendices with B. d U's War Diary.

located again during the 12th and it was not till late on the 13th that they were again picked up - well to the westward of the Derange area. During the subsequent three days, three groups of outward bound U-boats were sighted and engaged continuously.

The first group - five U-boats - U.134, 358, 653, 185 and 564

This group was relocated at about 2000 hours on 13 June when Sunderland U/228 Squadron on an extended Derange patrol sighted them in approximately 4430N x 1500W. The aircraft apparently went straight in and attacked U.564 but was shot down by the intense flak put up by the group. However, the depth charges fell accurately and so damaged the U-boat that she was unable to dive. U.185 was detailed to escort her towards the Spanish coast while the other three of the group continued their outward passage without further incident. B. d U. despatched a destroyer from Le Verdon to meet the two U-boats and the G.A.F. undertook to supply cover by F.W.200s and Ju.88s from dawn/14th.

Early on 14 June, flying started in the Musketry and Seaslug areas under the new procedure. At 1439 hours Whitley G/10. O.T.U. on Musketry sighted two U-boats on the surface in 4417N x 1025W steering southeast at 10 kts. These were U.185 and the damaged U.564. (1) The Whitley was fired at on approach so circled out of range while carrying out the homing procedure. Two hours later Hampden S/415 Squadron arrived on the scene and both aircraft shadowed until 1645 hours when the Whitley, after receiving permission from base, went in to attack. U.564 could not employ zig-zag steering owing to her damaged condition and G/10. O.T.U. delivered an accurate stick of six depth charges which sunk her outright. (2) The Whitley was badly hit by flak and started to struggle home, reporting his position and damaged condition at intervals. The last position signal received at base was at 1930 hours in 4730N x 0810W followed at 2000 hours by an S.O.S. From D/F bearings this was about 80 miles S.W. of the Scillies but subsequent Air Sea Rescue operations never found any survivors.

Meanwhile U.185 had rescued 19 (including the C.O.) of U.564's crew of 46 and continued towards the destroyer rendezvous. A flight of Ju.88s sent out as air escort intercepted and shot down the still shadowing Hampden S/415 Squadron. Finally, U.185 met the destroyer, transhipped the U-boat survivors and resumed her outward passage.

The second group - three U-boats

Earlier on 14 June, Sunderland T/10 Squadron, also on a Musketry patrol, sighted three U-boats steering west at 12 kts on the surface in 4520N x 0950W at 0857 hours. These were U.257, 600 and 615 who had left La Pallice on 12 June. After starting the homing procedure, 'T' was joined by Sunderlands W/461 Squadron at 0933 hours and V/228 Squadron at 0945 hours. The arrival of the latter was apparently too much for the senior

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- (1) Early on the 14th, the two boats had sighted a flying boat but were not detected themselves. At 0940 hours two F.W.200s approached them but as both U-boats opened fire their 'air escort' sheered off.
 - (2) Pilot - Sergt. A. J. Benson

officer U-boats who ordered a simultaneous dive. Being the nearest, V/228 Squadron attacked one of the boats as it disappeared but inflicted no damage. The three aircraft then left the scene. Soon after both W/461 and V/228 sighted Ju.88s, the latter aircraft having a short indecisive combat before breaking away into cloud.

Later in the day this U-boat group re-surfaced and at 1605 hours were sighted by Whitley P/10 O.T.U. who was on a Musketry patrol. One of the boats was seen to be slightly out of formation and, as the sea was moderately rough, the pilot decided to attack immediately. On the run-in all three U-boats opened fire without hitting the aircraft and being replied to by front and rear guns as they bore. At the last moment the attacked U-boat altered course violently and the stick of depth charges only straddled the extreme bow. When the explosion plumes subsided the U-boat (U.600) was seen to be turning in a tight circle. Indecisive fire was exchanged for about a quarter of an hour after which P/10 O.T.U. had to set course for base as P.L.E. had been reached. Twenty minutes later, at 1637 hours, another Whitley (E/10 O.T.U.), having expended its main armament earlier on another target (see below), sighted this group once more. U.257 and 615 had turned back to reform on U.600 who had sustained slight damage from the depth charges and all three were actually on a southeasterly course when sighted. Having no more depth charges the Whitley engaged with M/G fire to which the U-boats replied with intense but inaccurate flak. After circling and sending sighting reports until 1641 hours, E/10 O.T.U. being also at P.L.E. started back to base. Once more the U-boat group resumed the outward passage only to be sighted at about 2015 hours by Fortress V/220 Squadron. This aircraft appears to have gone straight in to attack because after a W/T position report at the above time nothing more was heard from her. U.600 reported being attacked by an aircraft at about 2030 hours which she shot down. This was almost certainly V/220 Squadron.

At 2108 hours, this same U-boat group was sighted by Wellington H/547 Squadron. As the aircraft approached, all the U-boats opened fire. After summing up the situation the pilot decided to attack one boat which was lagging behind the others. He came in at medium level at 2,000 feet and dropped two 100 lb A/S bombs which although straddling were too far off the U-boat's sides to do any harm. The Wellington then circled and in face of continuous flak attacked the same U-boat from 50 feet with six depth charges. The pilot claimed a straddle but the U-boat continued on the surface. The Wellington then circled out of flak range carrying out the homing procedure but at 2135 hours all three U-boats submerged. The boat which had been attacked was U.615 and no damage was sustained.

Continuing their passage, the group were not sighted at all during 15 June but at 0900 hours on the 16th, V.L.R. Liberator C/59 Squadron on a Seaslug patrol sighted them in 4322N x 1413W in close formation. On approaching, the aircraft was fired at by all boats but in view of the choppy sea conditions the pilot decided on an immediate attack, choosing the centre U-boat (U.600). On the run-in the flak was replied to by the front gun and, after releasing six depth charges from 150 feet, by a long burst from the rear gunner. The stick just overshot out of damaging range and the Liberator circled while trying to repair electrical circuits which had been hit by flak. The group took this opportunity to dive but C/59 managed to get in an attack on the nearest U-boat with the two

remaining depth charges some 35 to 40 seconds after disappearance. No damage by depth charges was done to either U-boat but one man on U.600's bridge had been killed earlier by M/G fire from C/59. No further sightings of this group were made.

The third group - five U-boats

At 0930 hours on 14 June a fighter interception patrol consisting of four Mosquito aircraft of Nos. 307 and 410 Squadrons sighted a group of five U-boats in 4450N x 0800W. These were U.68, 155, 159, 415 and 634 who had left Brest and Lorient on 12 June. When sighted the boats were manoeuvring into a tight formation and all opened intense fire on the aircraft. Two Mosquitoes made close range cannon attacks but the others held off owing to the heavy flak barrage. Action was broken off after about a quarter of an hour. Post war evidence establishes that the two attacking Mosquitoes inflicted so many casualties among the bridge and flak gun personnel in U.68 and 155 that both had to return to harbour immediately. The remaining three carried on and at 1558 hours were sighted by the Whitley E/10 O.T.U. already mentioned. After circling some two miles away while a sighting report was made the pilot saw that all three U-boats were starting to dive. He immediately lost height and attacked the nearest one with six depth charges some 20 to 30 seconds after it had disappeared out the stick undershot by a considerable distance and no damage was inflicted. The U-boat in question was U.415 and the group continued on their passage. At 0806 hours on the following morning they were sighted once more, by Halifax T/502 Squadron armed with the 600 lb A/U depth bomb for high level release. The aircraft was at 3,000 feet and as soon as the U-boats saw it they started zig-zagging violently and all opened fire. The Halifax went back into cloud and worked round to approach out of the sun and astern of the group. On breaking cloud two miles away, the U-boats again started evasive steering so that the Mk.XIV sight could not be used.⁽¹⁾ After several attempts the pilot saw that the group was diving and, having at last a target on a steady course, he attacked from 2,000 feet with three 600 lb depth bombs which exploded some 20 seconds after the boat had disappeared but slightly overshot the probable track of the submerged U-boat. The boat in question, U.415, confirmed that no damage was inflicted.

Finally, this group was picked up in hazy weather with a very low cloud base at 1618 hours on 16 June by Sunderland G/422 Squadron on a Seaslug patrol. The sighting was made at only 1,000 yards range. All three U-boats promptly opened fire but failed to hit the Sunderland who sheered off and started to circle. However, owing to patches of fog the aircraft frequently lost sight of them and finally lost contact altogether. This group cleared the Bay without further incident.

(v) British and German reviews - 17 June

The new Coastal Command Scheme of patrols had fully justified itself in the location of U-boat groups but it was felt at the time that the standard of attack left much to be desired. The flak put up by a group of U-boats, though not as

(1) This was a serious disadvantage which had not been thought of. From anything over about 700 feet altitude a violently jinking U-boat was an impossible mark for a high level sight like the Mk.XIV.

C.C. File
S.7050/4/7
Encls. 2A
and 9A

A.H.B./
IHK/54/22/1
Encls. 70A
and B.

A.H.B./
IHK/54/7/1
C.C.T.M. No. 63

deadly as had been feared in some circles, had frustrated some approaches and upset the aim in a number of attacks. Co-ordination of attack when more than one aircraft was present was required and on 16 June an order was issued for a group leader to be detailed at briefing for each flight of aircraft setting out on Musketry sweeps. Later, on 27 June, when the patrols reverted to individual sweeps the aircraft that made the sighting was instructed to assume leadership of those subsequently appearing on the scene and to concert tactics for dispersing the U-boat's fire and make a simultaneous attack. Attention was also given to increasing the front gunfire from aircraft and to train the gunners to open accurate fire at least 1,000 yards from the U-boat on the run-in.⁽¹⁾ Some squadrons fitted 0.5 inch guns but it was volume of fire which was most effective in countering this flak and it was found that the various types of 0.303 inch guns were both adequate and accurate enough. A Tactical Memorandum on the subject of U-boat flak and counter-measures to it was issued at this time.

The net result of these three days operations was in fact considerably better than we thought at the time. For the loss of three A/U aircraft, we had sunk one and turned back two of the outgoing U-boats, thoroughly harried the remainder and neutralized the attempted G.A.F. protection. This latter was singularly unsuccessful in interfering with the A/U patrols and, although numerous sightings of enemy aircraft were reported, only two combats developed in one of which the Hampden S/415 Squadron was shot down. Even the fighter interception patrols had only three encounters. These resulted in the destruction of one F.W.200 but included the loss of three Mosquitoes when they ran into a party of single engined F.W.190 fighters southwest of Ushant. This relative failure by the G.A.F. permitted the shifting of Seaslug on 21 June to lie further to the eastward between longitudes 14° and 12°W.⁽²⁾

C.C. file
S.7050/4
Encl. 174A

B. d U.
War Diary

A decision at this time by the G.O.C. German Air Forces in the Atlantic that Ju.88s should fly in large formations owing to their small individual striking power was adversely commented on by Doenitz who remarked that as a result the English fighters also appeared in groups. The consequent local combats deprived U-boat groups of direct air cover and by themselves the U-boats could not get the better of the heavy A/U aircraft even when all firing at once. Experience during the next few days, he noted, would show whether or not it was best for U-boats to continue in groups on the surface.

As a result of this experience Doenitz issued an immediate order that groups of U-boats were to proceed through the Bay of Biscay mainly submerged and were only to surface by day to recharge batteries. The instructions for fighting back if surprised by aircraft when on the surface were to remain unaffected. However the lack of an effective search receiver

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- (1) Hitherto in the R.A.F. the general rule was not to open fire above 600 yards on the assumption that inaccuracy over this range was a waste of ammunition.
 - (2) The ex-convoy support V.L.R. Liberators and stripped Sunderlands who were flying Seaslug were without a proportion of their standard M/G armament as part of the price to save weight and gain in endurance. The area had, therefore, initially been placed beyond the effective Ju.88 range.

ibid

ibid
page 498

coupled with the unseen approach using cloud cover with 10 cm. A.S.V. continued to result in U-boats being frequently surprised on the surface. The failure of the existing flak armament to discourage low level depth charge attacks and the rising number of bridge personnel casualties from the aircraft's machine guns were a matter of increasing concern to Doenitz.⁽¹⁾ It had become necessary, he noted, to push forward the equipment of all types of U-boats with twin and quadruple 20 mm cannon together with appropriate armour plate protection without waiting for more reports from prototype installations on trial.⁽²⁾ He gave orders, therefore, that no boat was to leave Biscay ports without some kind of increased armament and between 14 and 25 June no further groups sailed and only six singleton U-boats put to sea.

(vi) Operations continueNo. 19 Group
O.R.B.
AppendicesB. d U.
War Diary

On 17 June, U.338 (singleton) who had left Bordeaux two days earlier was sighted and attacked in face of flak by Fortress F/206 Squadron. So much damage was inflicted by the low level depth charge attack that she had to abandon her cruise and return to harbour. On the following day, Liberator B/59 Squadron sighted two U-boats together on an easterly course. These were U.645 escorting U.450 who had been damaged in a previous air attack in the Northern Transit area.⁽³⁾ After an exchange of gun fire both U-boats dived before a depth charge attack could be delivered. They were located again on 20 June by five Beaufighters of Nos. 236 and 248 Squadrons on fighter interception patrol but again both boats got under before even a cannon attack could be made. They reached Brest on the 22nd. Also on 20 June, two Whitleys of No. 10 O.T.U. sighted and attacked an Italian U-boat⁽⁴⁾ outward bound in 4528N x 0931W. Both aircraft missed short with their depth charges and one (L/10 O.T.U.) crashed in flames after passing over the U-boat which then dived.

- (1) A probable increase in bridge casualties had been foreseen by Doenitz when he first introduced fighting back tactics and he had made provision for a medical officer to be included in the complements of all supply U-boats and the large 1,600 ton boats. He now decided on drafting medical officers to all types of U-boats. One was to be carried by every new boat leaving Germany and as soon as possible by those going to sea from Biscay ports. Ref. B. d U. War Diary.
- (2) The first U-boat to be fitted with a trial quadruple mounting, apart from the Flak U-boat previously mentioned, was U.758. While at sea on 4 June she reported favourably on its serviceability. Ref. B. d U. War Diary.
- (3) This was an interesting story and is recounted in Chapter V Part I (ii) which deals with the Northern Transit Area. Briefly, U.450 had been severely damaged on 6 June by Fortress A/220 and in addition had seven men wounded. Temporary repairs were effected and after some difficulty a U-boat with a doctor on board was met. Finally the damaged boat set off for a Biscay port escorted by U.645.
- (4) From German records this U-boat was either the Italian Barbarigo or Torelli who are established as having been outward bound at 2100 hours on 16 June about 250 miles east of this position. Ref. Admiralty. TSD/FDS/X. 398/52.

SECRET

114

It was momentarily sighted an hour later in the act of diving again by Fortress R/220 Squadron but thereafter was never re-located. On 21 June, four Mosquitoes of Nos. 161 and 456 Squadrons on fighter interception patrol sighted the supply boat U.462 outward bound alone from Bordeaux. All four aircraft attacked with cannon fire and after four minutes of ineffectual return fire U.462 dived. Post war evidence reveals that she had one man killed and several severely wounded which necessitated a return to Bordeaux.

It had been noticed at Coastal Command H.Q. that all the locations of U-boats were occurring in the more southerly part of the Musketry area and on 23 June the sweeps were modified to extend slightly further westward and southward in a dog-leg direction nearly as far as the Spanish coast between Capes Ortegal and Finisterre. Nothing was sighted on the 22nd but at 1156 hours on 23 June, V.L.R. Liberator K/86 Squadron on the way out to escort the combined convoy WS.31 and KMF.17 sighted three inward bound U-boats in company in 4449N x 1350W. These were U.119, 449 and 650. They all dived while the aircraft was still three miles away. The Liberator was armed with two Mark 24 mines and released both near the still visible diving swirls. Three minutes later a small brown patch was seen on the surface of the calm sea about 100 yards ahead of where the second mine had been dropped. Post war evidence established that U.650 was hit in the stern causing considerable damage aft and rendering the rudder uncertain in action. However, on resurfacing later she managed to continue with the other two. After completing the convoy escort duty, K/86 returned homeward via the area of her forenoon encounter and at 1840 hours sighted the same three U-boats, the position now being 4456N x 1243W. One of them (U.650) immediately dived but the other two opened fire causing the Liberator to sheer away whereupon they both started to dive. K/86 came round and attacked from 500 feet with one 600 lb A/S depth bomb about 10 seconds after disappearance. The bomb undershot and did no damage. The sequel, however, ushers in a new phase in the Bay offensive.

(vii) Surface craft start co-operation in the Bay - 20 June

The desirability of introducing surface craft into the Bay of Biscay to co-operate with Coastal Command aircraft had been one of the proposals put forward at the Admiralty/Coastal Command meeting on 7 June. When initiating the new scheme of air patrols on 12 June, Sir John Slessor had sent a signal to the Admiralty drawing attention to the golden opportunity for the employment of a surface hunting group to work with the aircraft. The Admiralty concurred and suggested to the C.-in-C. Western Approaches and Plymouth that, failing any evidence of U-boat threat to the Gibraltar convoys, the support group allocated to this route might be more profitably used to operate in the Bay of Biscay under the control of the C. in C. Plymouth. This was agreed to and the 2nd Escort Group sailed from Liverpool late on 16 June to proceed to a position in 4530N x 1200W to act as an anti-submarine striking force in conjunction with the air operations in Musketry and Seaslug.

Unfortunately, the C. in C. Plymouth saw no necessity for this Escort Group to call in at Plymouth for a quick co-ordination of plans with the A.O.C. No. 19 Group who was conducting the air offensive and the S.O. Group had to carry out his cruise in ignorance of the detailed air scheme in force and with no planned co-operation regarding signals, homing or shadowing. The 2nd Escort Group arrived in the patrol area

See Map No. 17

ibid

C.C. File
S.54 Part I
Encl. 56

ibid
Encl. 57

ibid
Encl. 58

A.H.B./
IIK/54/22/1
H.Q.C.C. Naval
Staff file
Encl. 68.

(17500)130

SECRET

on 20 June⁽¹⁾ being supported by H.M. cruiser Scylla as cover against possible interference by the four Narvik class enemy destroyers known to be in La Pallice.⁽²⁾

Reports of U-boat sightings on 20 and 21 June from aircraft were all too distant or fleeting to yield results but the two encounters by K/86 with an inward bound group of three U-boats and last seen on the evening of 23rd were followed up and by good fortune asdic contact was made at 0800 hours on 24 June in 4500N x 1200W. The Starling attacked with depth charges and shortly afterwards a U-boat appeared on the surface close by which was immediately rammed, depth charged and destroyed. Two hours later in the same vicinity another asdic contact was obtained and after a series of attacks lasting until 1500 hours large quantities of oil and wreckage came to the surface. From post war evidence these attacks marked the end of U.119 and 449. The remaining U-boat (U.650) escaped but was sighted later in the day at 2034 hours by Halifax H/502 Squadron on the surface in 4500N x 1120W. An attack was made from 4,000 feet with three 600 lb A/S depth bombs as she started to submerge. The stick overshot and did no damage but that night U.650 reported to B. d U. that she was forced to surface with empty batteries and aggravated trouble with her previously damaged rudder and gyro compass. B. d U. promised air escort as soon as possible and U.650 reached St. Nazaire on 28 June without further incident.

Admty
C.B.04050/43(6)

No. 19 Group
O.R.B.
Appendices
and B. d U.
War Diary

C.C. File
S.7050/4/7
Encl. 8A

No further sightings were made for the next two and a half days.⁽³⁾ On 27 June, Muskety was again modified. It was extended westward to meet Seaslug on Longitude 1200W and southward to latitude 4330N and the Spanish coast. Seaslug was also extended to the south to latitude 4300N. Aircraft in the two areas were to revert to individual patrol and attack singleton U-boats immediately. Packs of two or more U-boats were to be reported and shadowed. Homing procedure would be ordered from base for the benefit of other aircraft and/or the surface force. No. 19 Group would broadcast sighting reports and all aircraft within 100 miles were to concentrate. Concerted attack was to be made under the leadership of the sighting aircraft.

Nos. 15 and 19
Groups O.R.B.
Appendices and
B. d U. War
Diary

At 1236 hours on 27 June, Sunderland P/201 Squadron sighted an outward bound U-boat in 4332N x 1320W. One depth charge attack was made as the U-boat was diving which brought her to the surface again. A second attack was pressed home in the face of intense flak after which the U-boat again dived and was not seen again. This was U.518 who was unable to cope with the damage received and later surfaced and started back to harbour. She was sighted on her homeward passage at 1125 hours on 30 June by Sunderland T/10 Squadron. The aircraft was received with accurate flak which killed the rear gunner and damaged the fuselage and hull while the stick of depth

- (1) H.M. ships Woodpecker, Wild Goose, Wren and Kite. H.M.S. Starling carrying the senior officer - Captain F. J. Walker - joined up on 23 June having been delayed by repairs in Liverpool.
- (2) The term 'Narvik class' was an Allied term to describe the large enemy destroyers known to the German Navy as Z-class.
- (3) In fact there were only two U-boats present in the areas during this time.

charges overshot out of lethal range. The Sunderland had to leave for base immediately leaving U.518 still on the surface. She reached Bordeaux on 3 July without further location.

One other inward bound group - U.180 and 530 - who had traversed most of the patrol areas undetected was sighted at 0730 hours on 30th by Liberator R/53 Squadron. Flak was encountered and the Liberator attempted a dive attack from 2,500 feet out of the sun but all the depth charges failed to release and before another attack could be made the U-boats had disappeared. U.180 was a 1,600 ton U-Kreuzer and carried a valuable cargo of gold besides some Japanese officers as passengers.⁽¹⁾ Doenitz arranged a destroyer escort to meet the two U-boats on 1 July and the story is continued in section (x).

Meanwhile the 2nd Escort Group had not been able to follow up any of the aircraft sightings and at 1530 hours on 28 June had set course for Plymouth. In their place another Escort Group took up patrol from 30 June. On arrival at Plymouth a conference was held to discuss the recent cruise and to formulate a scheme for closer co-operation. Captain Walker's main concern was to improve general communications and allow a clear picture of the sequence of sightings to be obtained both in the Escort Group at sea and at the Plymouth A.C.H.Q. It was decided that in future the S.N.O. Group would have an aircraft attached to him under his personal orders not only to provide a direct link with sightings within reach but, on landing back, to give the A.C.H.Q. precise knowledge of the Escort Group's position, future intentions and other messages which in the necessary condition of W/T silence for the ships could not be otherwise passed. It was also arranged that No. 19 Group would vet all aircraft sighting reports so that the subsequent broadcast would only contain positions of bona fide U-boats.⁽²⁾ Finally it was agreed that a responsible Coastal Command officer should take passage in the next Escort Group to be sent into the area to act as air liaison.

(viii) Summary of operations - 13 to 30 June

A total of 4,957 effective flying hours had been expended in the Bay operations.⁽³⁾ With the aid of German records it

- (1) U.180 had left Kiel on 9 February and operated off the South African coast between 8 April and 28 May. Just before leaving for home she received her cargo at a rendezvous southwest of Madagascar from a Japanese U-boat.
- (2) During the 2nd E.G.'s cruise there had been a number of sightings broadcasted which had later proved to be either suspected U-boats, suspicious swirls on the water or plain mistaken identity where no U-boats were likely to be.

(3)

Area	Effective Day Hours	Sights	Attacks	Effective Night Hours	Sight-ings
Musketry	2,721	40	13	601	NIL
Seaslug	713	10	3	38	NIL
Fighter	884	6	6	NIL	NIL
Interception					

The number of A/U squadrons taking part was 24. Total strength 307 aircraft. Fighter sorties came from one Beaufighter, eight Mosquito and two Mustang squadrons.

has been possible to reconstruct the actual course of events. Many of the sightings were of the same U-boats over and over again but of the nine groups and seven singleton U-boats (in all 32 boats) traversing the two areas in this period only three groups and two singletons (in all 11 boats) did so unseen. The remainder were sighted or attacked, sometimes several times, resulting in two U-boats being sunk by surface craft and one by air attack, while six were damaged by air attack sufficiently to necessitate return to harbour. Air losses among the A/U aircraft were four from U-boat flak and two from enemy aircraft. The fighter interception patrols lost three in air combat while destroying four enemy aircraft and also did yeoman service against U-boats.

This was the highest ratio of numbers of U-boats located and brought to action to the total number in transit that had yet been achieved in Bay operations. We were not at the time fully aware of these results but it was obvious that the enemy's tactics were not having the success that he hoped for. It was the moment for crowding in as many aircraft as possible and Sir John Slessor requested Gibraltar to fly a cross-over patrol westward of Cape Finisterre whenever their convoy commitments permitted and to ask the U.S. air forces at Casablanca in the Moroccan Sea Frontier to assist if possible. At the same time he re-doubled his efforts to induce the American authorities in the U.S.A. to deploy anti-submarine aircraft from their practically U-boat free areas over to this bottleneck in the Bay.

C.C. File
S.7050
Encl. 106A

See section
(ix)

Doenitz was fully aware of the shortcomings of his Group sailing scheme and was considering surface escort to them as far west as possible with his destroyers or torpedo boats. He also made further representations on the inadequacy of the G.A.F. support in the Bay. More immediately he drew U-boat flotilla attention to his Standing Orders Nos. 13 and 14 regarding precautions against air attack in transit areas, that life jackets were to be available for the entire crew when in air endangered areas and that no new U-boats were to put to sea from Germany until quadruple 20 mm flak mountings were fitted. Meantime the equipping of the Biscay U-boats with increased flak was pressed forward in haste. The sailing of groups, which had ceased on 12 June was resumed towards the end of the month and between 28 June and 1 July four groups totalling nine U-boats put to sea. They did not reach the Musketry area until the early days of July.

B. d U.
War Diary

(ix) Efforts to induce the U.S. Chiefs of Staff to re-inforce the Bay

Having exhausted the possibilities of further re-arrangement of A/U squadrons in British waters the logical solution was the re-deployment of American A/U squadrons from areas where little or no U-boat threat existed. The American Joint Chiefs of Staff had already been asked at the end of April to make available six squadrons (72 aircraft) shown on their order of battle as surplus to their minimum requirements. They had replied, under the guidance of Admiral King, that the record in question was inaccurate and no such surplus was in existence. Apart from the astonishment felt in British circles at this statement it was apparent that the employment of the denied surplus should be scrutinised. Accordingly the first three weeks of May saw a number of briefing signals being despatched to the R.A.F. delegation in Washington on:-

See
Chapter III
(viii)

- (1) The facts and figures anent the Bay Offensive showing the positive results obtained already.

C.A.S. File
No. 1843B
Signals on
7, 19 and
22 May and
A.U. (43)152

(17500)133

(2) The flying hours expended on A/U missions in American waters where no ship sinkings were occurring or U-boats being sighted.

ibid
C.C.S. 241/3

C.C.S. 241/4

These were embodied finally in a memorandum by the British Chief of Staff and laid before the Combined Chiefs of Staff on 22 May. The U.S. Chiefs of Staff submitted a similar memorandum in which it was stated that there were no L.R. aircraft in excess of their requirements and that the major part of A/U flying off their coasts was done by short range and Civil Air Patrol aircraft. The deadlock therefore continued.

ibid
A.U.(43)161
5 June

The pros and cons were summarised in a paper presented to the Cabinet A/U Committee by the Secretary of State for Air in which it was pointed out that no further redistribution could be taken in Home Waters. As it was, such measures had only been effected at the expense of air action against blockade runners in the Bay, enemy shipping in the North Sea and A/U patrols in the less profitable but still important Northern Transit Area. The results of A/U operations in Bay during May more than justified the conclusions set out in the British Chiefs of Staff original request and it was clearly of the first importance that the U.S. authorities should spare no effort to re-inforce the R.A.F. in an area so much more profitable than those in which the bulk of U.S. A/U squadrons were at present flying.

ibid
A.U.(43)
20th Meeting

Further consideration was given by the U.S. Chiefs of Staff to the question and on the 9 June at the meeting of the Cabinet A/U Committee it was announced that the Chief of the U.S. Navy (Admiral King) had offered one Catalina and one Ventura squadron for service in Iceland so that the British aircraft in that area could be diverted to the Bay of Biscay. General Marshall, who was in favour of a re-deployment, privately enquired if it was possible to accommodate several U.S. Army squadrons in the south of England.

ibid
J.S.M. 982

A week later, on the 15 June, the U.S. Chiefs of Staff reported that as a result of investigations it had been found that there was an excess of American V.L.R. aviation in Newfoundland and they were now prepared to assign two U.S. Army squadrons of A/U Liberators to British control for the Bay of Biscay until not later than the last week in August. Ever ready to withdraw a forced offer, Admiral King on learning of this proposal stated that he no longer planned to send the Ventura squadron to Iceland. He was informed that his offer of the Catalina squadron to be based in Iceland would have no effect in strengthening the Bay Offensive as, apart from No. 120 Squadron of V.L.R. Liberators still required for convoy cover, there were only Hudsons in Iceland who were of no use in the Bay area. The British Chiefs of Staff therefore suggested the basing of this Catalina squadron in the south of England.

ibid
A.U.(43)174
21 June

Impatient at this shilly shallying, the A.O.C. in C. Coastal Command (Sir John Slessor), with C.O.S. approval, himself went over to the United States. When actually face to face with Admiral King on the 24 June a large measure of agreement was achieved after discussion and it was settled that the Ventura squadron should after all go to Iceland and the Catalina squadron to the south of England. The despatch of two U.S. Army Liberator squadrons would be hastened and Sir John extracted a promise from Admiral King that these latter would be increased as soon as possible to the required six squadrons (72 aircraft). The situation, as always, had been bedevilled by the antagonism between the American Navy and Army. General Arnold had always been anxious to deploy

ibid
Memo by
Sir John Slessor
24 June
and covering
letter
27 June

his Army A/U squadrons into the Bay where they could get some effective action but as long as Army A/U squadrons were in the U.S.A. they were under Admiral King's control.

Some part of this agreement was implemented in July. The Catalina squadron which was No. 63 fitted with M.A.D. (1) was transferred to Pembroke Dock on the 22 July and Nos. 4 and 19 Squadrons U.S.A.A.F. started operations in the Bay from St. Eval on the 13 July. The promised build up by additional squadrons did not eventuate until September and after, by which time the Bay offensive as a U-boat killer had ceased to be effective. The promised total of 72 aircraft was never reached.

(x) - July Operations

U.180 carrying the valuable cargo mentioned before and escorted by U.530 were met by two 'Z' class destroyers with air escort at 0600 hours on 1 July in 4430N x 0830W. Two hours later the party were sighted by three Beaufighters of No. 248 Squadron on Fighter Interception patrol but the A/A fire from the destroyers prevented an attack. Following up the sighting report, Liberator O/53 Squadron sighted them again at 1340 hours in 4413N x 0752W. The Liberator closed at 1,500 feet altitude but was then attacked by four Ju.88s. A combat ensued and O/53 got away into cloud after damaging two of the enemy aircraft.

No. 19 Group
O.R.B.
Appendices
and
Admiralty
C.B. 04050/43(7)

Escort Group B.5 (2) had relieved the 2nd Escort Group and were patrolling at the southern end of Musketry. On receipt of the Beaufighter's sighting report the Scylla together with the Havelock, Vimy, Volunteer and Viscount steamed eastward to intercept the enemy squadron leaving the three corvettes still in Musketry. After a fruitless search during the remainder of the day the force withdrew to the northwest during the night. (3) The enemy were sighted and attacked about 100 miles southwest of the Gironde at 0730 hours on the 2 July by H.M.S/M Stubborn who was, with the Sea Nymph keeping a combined anti-blockade runner and anti-submarine patrol in the Inner Bay. Although firing a salvo of six torpedoes no hits were obtained and the enemy vessels entered the Gironde later in the day.

No. 15 and 19
Groups, O.R.B.
Appendices and
B. d U. War Diary

That afternoon at 1545 hours, Liberator J/224 Squadron sighted two U-boats outward bound in company in 4337N x 1005W. These were U.160 escorting the supply boat U.462. After a few rounds had been fired at the approaching aircraft both boats started to dive. J/224 attacked one of them which was still just visible with a simultaneous release of six depth

- (1) M.A.D. or Magnetic Anti-Submarine Detector was a means of locating submerged U-boats. It is explained more fully in Appendix V.
- (2) H.M. ships Havelock (S.O.), Vimy, Volunteer, Viscount, Berry, Pimpernel and Godetia supported by H.M. cruiser Scylla.
- (3) Following a radar contact at 0255 hours on the 2nd, the Havelock carried out an asdic hunt and depth charge attack in 4509N x 0732W. This was on one of U.359, 386 or 466 who were outward bound in company in this vicinity. No damage was inflicted.

charges and a stick of 24 - 35lb. contact bombs.(1) Beyond a patch of oil, nothing significant in the way of after results was noticed by the Liberator but post war evidence established that U.462 received a bomb hit forward which so damaged the foremost main ballast tanks that she had to return to Bordeaux being escorted part of the way by U.160. They were sighted later in the day at 2115 hours by Sunderland S/228 Squadron who noticed that one boat was leaving a large oil trail. In spite of a rough sea both U-boats opened accurate flak and the Sunderland circled while awaiting sunset with possibly more favourable tactical approach conditions but at 2215 hours both U-boats dived while the aircraft was too far off to attack.

During the 3 July the two Bay patrol areas were filling up with both inward and outward bound U-boats. Early in the middle watch, U.126 coming in with U.154 was detected, homed on to, illuminated and attacked by Leigh Light Wellington R/172 Squadron at 0244 hours. The stick straddled accurately and sunk U.126 outright. U.154 reported to B. d U. as having seen the attack, that she had subsequently failed to find U.126 and that she was continuing the inward passage alone. Another two inward bound boats were sighted further down the Bay at 0718 hours by Halifax J/502 Squadron. These were once more U.160 with the damaged U.462. Both adopted violent evasive steering which completely frustrated the attempted attacks by the Halifax armed as it was with the 600lb. A/S depth bomb aimed with the Mark XIV high level sight. Choosing their moment when the aircraft was turning for another run over, both boats submerged and got away. They were later met by the two Z class destroyers(2) with air escort and U.462 was taken into the Gironde while U.160 resumed her outward passage.

Three more inward bound U-boats in company were sighted by Sunderland H/423 Squadron at 1400 hours in 434N x 1328W. These were U.170, 535 and 536. All three opened fire and the Sunderland sheered away climbing to 4,000 feet to shadow until re-inforcements arrived whereupon all the U-boats dived and were well under before any depth charge attack could be made. This group was not sighted again until the 5 July.

To the eastward a few minutes later Liberator J/224 Squadron sighted an outward bound U-boat. This was U.628 in company with U.648. The latter dived before being sighted.

-
- (1) These bombs were being tried out. They were specially shaped to obtain the maximum blast against the object struck. The idea of this rival to the standard depth charge originated early in 1942. Development and trials continued until the end of 1942 with unsatisfactory results but on War Cabinet insistence were pursued until June 1943 when the bomb container and delicate release mechanism were accepted for operational trial. Six Liberators of No. 224 Squadron were equipped but owing to the meagre results in action during July the bomb was withdrawn in September and all work on it ceased at the end of 1943. Full details are given in the Air History Branch Armament Monograph - Bombs and Bombing Equipment. Vol. I Chapter III pp 47 to 52.
 - (2) On their way out to this rendezvous the Z class destroyers were again sighted by H.M. S/M Stubborn but she was unable to get close enough to fire torpedoes.

ibid

U.628 opened a hot fire as the Liberator ran in hitting the starboard main plane and tail and holing the petrol tank. The attack was made from 250 feet with a stick of 24 - 35lb. contact bombs, one of which was seen to explode just abaft the conning tower. Return fire from the roargunner knocked one man overboard from the bridge. A second attack was immediately made with six depth charges which closely straddled the U-boat. After the spray had subsided at least six bodies were seen floating in a large oily patch. J/224 had to leave soon after as petrol was pouring out near one of the engine exhausts. Later evidence established that U.628 had been destroyed. It cannot be said whether the single hit by a 35lb. bomb was lethal because the subsequent depth charge attack was itself accurate enough to have sunk the U-boat.

ibid

Two more outward bound boats were sighted by another Liberator (D/53 Squadron) in 4450N x 1048W who dived immediately. The aircraft left and returned to the spot two hours later being rewarded by the sighting of one of them on the surface. This was U.386 who was in company with U.359. An attack was pressed home in the face of flak with eight depth charges which straddled the bow of the boat. As the aircraft was tracking over, a large object described as like a grenade narrowly missed the nose.⁽¹⁾ By the time the explosion plumes had subsided the U-boat had disappeared. Postwar evidence reveals that the damage caused to U.386 compelled her return to St. Nazaire where she arrived on the 8 July.

ibid

Beyond the sighting at long range of U.188 by a Catalina nothing of note occurred on the 4 July. Escort Group B5 were relieved by Escort Group B1 ⁽²⁾ with H.M. cruiser Bermuda as support and on the 5 July the 2nd Escort Group again entered the Bay thus making two groups of surface craft in the Musketry area.

On the morning of the 5 July the inward bound group U.170, 535 and 536 were again located. First of all Sunderland G, and then H/10 Squadron picked them up. In each case intense flak was experienced and when the aircraft turned away, the group took the opportunity to dive. H/10 did get in a belated attack nearly a minute after disappearance but it did no harm. The 2nd Escort Group was nearby and hunted the area until 1700 hours but without success. Only a little later, Liberator G/53 Squadron found them on the surface again. Once more intense flak was opened which baulked the aircraft and on a second run in all the depth charges failed to release. For a third time the Liberator faced the flak and from 50 feet released a stick of eight depth charges which straddled. After the subsidence of spray two of the U-boats were seen at high speed with the attacked U-boat lagging far behind almost stopped. The Liberator having been severely shot about and with one man wounded started back to base so the sequel was not observed. The laggard boat which was U.535 had been mortally damaged and it foundered soon after.

- (1) This was a line carrying rocket with which some U-boats were equipped since the 16 June. It was found to be of little use as a deterrent to aircraft and was replaced later in July by a fixed elevation 8.6 cm. H.E. rocket. Ref. B. d U. War Diary for June page 499.
- (2) H.M. Ships Hurricane (S.O.), Rockingham, Meadowsweet, Dahlia and Borage.

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C.C. File
S.7050/4/7
Encl. 20A
See Map No. 18

The patrol areas were relatively empty on the 6 July but a bunch of outward bound U-boats were entering Musketry during the 7th including seven large type IX bound for the Cape and the Indian Ocean. On this day the Musketry area was further modified into Musketry South East from 4500N to 4310N between 10° and 8½°W and Musketry South West from 44½° to 42½°N between 10° and 12°W.(1)

Admty
C.B. 04050/43
(7)

Only two sightings were made on the 7 July, both leading to indecisive attacks on U-boats which had got well under before the explosion of depth charges released. One by Liberator P/53 Sqn. was on one of U.230, 566 and 709 outward bound and the other by D/53 Sqn. on an unidentified single U-boat. The latter sighting being only 45 miles away from Escort Group B, was followed up by them and the U-boat was sighted at 2226 hours. After a 40 minute chase on the surface the U-boat dived. A hunt developed with only occasional asdic contact in which the 2nd Escort Group also took part. One attack was made soon after midnight but without result. The 2nd Escort Group left this hunt soon after daylight/8th and the rest of the day was spent by the B1 Group sweeping the area with air co-operation but without success. Late in the day the B1 Group was withdrawn to give extra support to convoy OS 51 then south bound towards Gibraltar leaving the 2nd Escort Group alone in the Musketry area. Better results attended the flying in other parts of the patrol areas. At 1316 hours, Liberator R/224 Sqn. sighted a surfaced U-boat in 4337N x 0859W steering 240°. This aircraft was the first Liberator to be fitted with R.P. An excellent attack was made, hits being clearly seen. Soon after, the U-boat submerged and further attacks both with a Mk.24 mine and depth charges were delivered but the interval of time since disappearance was all against these latter having any effect. However, a great deal of wreckage appeared on the surface and R/224 got into R/T touch with the 2nd Escort Group then about 30 miles away. They were guided back to the spot by the Liberator dropping a line of sea markers and on arrival the S.O. Group told R/224 that the wreckage was undoubtedly of U-boat origin. It was in fact U.514 which had been destroyed. She was one of the large boats bound for the Cape.

No.19 Group
O.R.B.
Appendices

Further to the north the outward bound group U.230, 566 and 709 were again located on two separate occasions but in each case got under before an effective attack could be made. The other incidents were all some 150 miles west and southwest of Cape Finisterre and were the fruits of Sir John Slessor's request to Gibraltar and Casablanca(2) for flying to be done in this area as an extended part of the Bay offensive. Between the 7 and 9 July, fifteen sightings leading to twelve attacks were made by either Gibraltar or Port Lyautey

R.A.F.
Gibraltar
O.R.B.
Appendices

- (1) This modification only affected the disposition of the surface groups. Aircraft continued to fly Modified Musketry except that it was extended right up to the N.W. Spanish Coast.
- (2) Casablanca was the H.Q. of the American Morocco Sea Frontier. At Port Lyautey in this command were stationed the U.S. Army Air Nos. 1 and 2 Squadrons who had previously operated under Coastal Command at St. Eval until March, 1943.

based aircraft. Most of them were on a group of U-boats stationed off Cape Finisterre and of these U.232, 435 and 951 were sunk and U.603 severely damaged. Two boats outward bound from Bay ports were attacked - U.267 who was forced to return home after signalling B. d U. for assistance and U.183 bound for the Cape was slightly damaged.(1)

(a) Review of the Bay situation by Doenitz - 11 July

B. d U.
War Diary
for July
page 18

This air and surface craft activity off the north, northwest and west of Spain caused Doenitz to signal U-boats on passage to avoid the area. He also took the opportunity to warn all U-boats that reports from some of the G.A.F. air cover indicated that boats were diving when surprised by unidentified aircraft so late that portions of them were still visible when the aircraft arrived over the spot. All U-boats at sea were therefore reminded that their greatest danger lay in diving too late. They must only submerge if either they had themselves not been sighted or if they were sure they could reach a safe depth (at least 320 feet) before the aircraft could reach them.

ibid
pages 26 and 27

By this time Doenitz was of course well aware of the organised blockade of the Bay of Biscay and on the 11 July he reviewed the situation. After observing that the English air offensive made great demands on the U-boats' battery capacity so that they were frequently forced by empty batteries to surface and fight it out with flak willy nilly, he noted with misgiving the appearance of surface craft which could be homed on to air locations of U-boats - a combination which might mean a considerable increase in the already heavy casualties inflicted by aircraft alone. Every effort, he continued, must be made:-

- (1) To pinpoint the surface forces by organised air reconnaissance so that U-boats could be given evasive routes.
- (2) To attack the surface force with the few German destroyers available.
- (3) To attack the surface force with all FW. 200s available.

ibid

The situation with regard to combatting the English A/U aircraft by formations of Ju. 88s had not changed for the better although he noted an abatement of air activity east of 8°W so that in that sector of the Bay at least, the U-boats were relatively safe against surprise attacks. He hoped much from the promised Me 410 fighters in reducing the superiority of the English Mosquitoes and that thereby the Ju. 88s. operating further south would be able to carry out their sorties with less than eight aircraft at a time so obtaining more individual sorties and better attention to U-boat groups.

- (1) U.232 Sunk by No.2 U.S.A.A.F. Sqdn.
U.435 Sunk by I/L Wellington R/179 Sqdn.
U.951 Sunk by No.1 U.S.A.A.F. Sqdn.
U.603 Severely damaged by G/202 and G/210 Sqdns.
U.267 Severely damaged by B/210 Sqdn.
U.183 Slightly damaged by No.1 U.S.A.A.F. Sqdn.

July operations continue

No sightings were made by the Seaslug or Musketry aircraft on the 10 or 11 July but two indecisive attacks resulted from the Gibraltar and Port Lyantey based aircraft south-westward of C. Finisterre. The 12 July was noteworthy in the sighting by three Beaufighters of No. 248 Sqdn. of a surfaced U-boat in 4506N x 0854W at 1405 hours. All three aircraft went in immediately firing their cannon. A very intense but unavailing flak barrage was put up by this U-boat which included grenade like missiles fired from the upper deck.(1) The bridge and casing was seen to be crammed with men serving the numerous flak guns. It was in fact the Flak U-boat U.441 on her second cruise. After about twenty minutes of furious action in which the ready use ammunition on the upper deck was exploded by the Beaufighters' cannon fire the U-boat ceased fire and dived. Post war evidence establishes that U.441 sustained ten men killed and thirteen, including the commanding officer, wounded and once more had to return to port.(2) On receipt of the position of this action the 2nd Escort Group with the cruiser Bermuda set off to search for the U-boat but beyond sighting two F.W. 200.s and a bunch of eight JU.88s. nothing was found. Later in the day well to the westward of Cape Finisterre an aircraft of No. 1 U.S.A.A.F. Sqdn. attacked and sank U.506, another of the large boats bound for the Cape.

See Chapter III
section (X)(b)

Nos. 15 and 19
Groups O.R.B.
Appendices and
B.d. U. War Diary
and Admty.
C.B. 04050/43
(7)

On the 13 July, Sunderland N/228 Sqdn. and Halifax O/58 Sqdn. sighted an outward bound group of three U-boats at 0800 hours in 4505W x 0915W. These were U.607, 613 and 445. Heavy flak fire was opened and both aircraft circled together. The Halifax then proposed by R/T that they should circle in opposite directions. This was successful in splitting the fire from the U-boats and in their endeavours to keep their guns bearing the close formation was lost. U.607 got detached and was promptly attacked by N/228 who straddled with a perfectly placed stick of seven depth charges and saw the boat break up leaving about 25 survivors swimming in the explosion mark. The other two boats continued on the surface for a few minutes and then under cover of flak from U.455, U.613 dived. O/58 took this opportunity and attacked U.455 just as she too started to submerge. Although the stick was thought to have straddled, no damage was inflicted.(3)

- (1) This was the fixed elevation H.E. rocket installation previously mentioned.
- (2) Doenitz arranged destroyer escort to bring U.441 back to Brest and seems to have stung the G.A.F. into unusual action as there were several parties of JU.88.s at large for the rest of the day. A flight of eight of these aircraft intercepted and shot down Sunderland Y/228 Sqdn. off the north coast of Spain at 1430 hours and eighty minutes later Whitley N/10 O.T.U. was shot down further to the north by a party of five.
- (3) Reporting on this encounter from the Atlantic on the 18 July, U.445 criticised the sailing of groups containing more than two U-boats in company on the grounds that delay in transmitting orders constituted a danger. Close formation was too clumsy against air attacks and open formation made it too difficult for the senior officer of the group to judge the favourable opportunity for diving. Doenitz was not altogether convinced and three boat group passage was continued. Ref. B.d U. War Diary - Page 56.

SECRET

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The 2nd Escort Group closed the scene and arrived at 1340 hours. By this time three other aircraft were circling the area, the original two having had to leave. A combined search was kept up till 0400 hours on the 14 July but neither aircraft A.S.V. nor ship asdic regained contact. At 0600 hours the Wren picked up seven of U.607's survivors and later in the day the Escort Group left for Plymouth. No more surface forces were present in the Bay until the 21 July.

ibid

Away to the eastward H.M. S/M Sea Nymph on patrol off the Biscay coast sighted two outward bound U-boats but missed with her torpedo attack. Relatively few U-boats were crossing the Bay from the 14 July until nearly the end of the month but most of these were sighted or attacked by the air patrols. Three outward and four inward bound were attacked with three more inward bound being sighted only. In only one case was the attack decisive, that of U.558. This boat was returning from a patrol billet off Portugal and had been first attacked on the 15 July by Wellington M/179 Squadron off Cape Roca. The captain of U.558 - Kapitan Lieutenant Krech - was a flak-minded officer who had paid much attention to the training of his gunners. He opened a hot fire on the aircraft and, though not seriously hitting it, caused a miss with the depth charges whereupon he dived and continued his passage. He was next picked up on the 17 July by Liberator P/224 Squadron which was armed only with 35 lb. contact bombs. Again intense flak was opened which hit the aircraft in several places and the first stick of 24 contact bombs missed. The Liberator came round again and U.558, apparently thinking that no more bombs remained, started to dive. Another attack was made but unfortunately half the stick failed to release and the twelve bombs dropped just overshot. U.558 was not sighted again until the 20 July when she was nearly through the Musketry area and in 4510N x 0940W. Here she was sighted and attacked by B/19 U.S.A.A.F. Squadron(1) at 1119 hours. On the run in and just before releasing the depth charges B/19 was shot down by the same intense flak from U.558. One hour later she was sighted by another U.S. Army Liberator (F/19 Squadron) who was also greeted with intense flak which hit the aircraft in several places and wounded one of the crew. The attack was pressed home and seven depth charges released which mortally damaged the U-boat. However, she remained afloat and continued to fire at F/19, who was circling her, causing the port inner engine to cut. As a Halifax was then seen approaching, F/19 broke away and set course for base jettisoning her remaining depth charges as she went. The newcomer - Halifax E/58 Squadron - was received with such a volume of flak that she sheered off and for twenty minutes engaged in a gun duel. U.558's fire then slackened and numbers of her crew were seen to be climbing down from the bridge to the foredeck while the boat was obviously sinking by the stern. To make quite certain the Halifax attacked with eight depth charges which straddled. Bodies could be seen blown up in the explosion and when the plumes subsided the U-boat had vanished leaving some men in a dinghy surrounded by twenty to thirty others dead and alive in the water. U.558 had signalled her plight to B. d U. before abandoning ship and he detailed surface and air escorts to go out immediately while two homecoming U-Kreutzers from the Cape (U.193 and 195) who were in the vicinity were

ibid

ibid

(1) This was the first sighting or attack made by either of the newly arrived Nos. 4 and 19 Squadrons, U.S.A.A.F. who started operations in the Bay on the 13 July.

told to go to her assistance. They had, however, been sighted by three aircraft during the forenoon and had dived before either of the aircraft could attack. The subsequent air hunt kept them underwater for the rest of the day. The air escort of nine JU.88s. were delayed by weather at base and finally had to turn back before reaching the scene. Two torpedo boats reached a position some 90 miles short of the action area at 1000 hours on the next day but as this point was their western limit of action and they had seen no signs of U.558 they turned back.

During this week the Bomber Command No. 10 O.T.U. ceased their provision of sorties in the Bay under Coastal Command control. They had started on the 12 August 1942 and up to the 19 July 1943 had completed 16,455 flying hours from St. Eval. They were of course a training unit and the crews never stayed long enough to become fully experienced. Their record therefore affords no comparison with that of a permanent A/U squadron. Nevertheless they had sighted 89 U-boats of which 55 were attacked resulting in one being sunk and three others damaged. In this task they had lost 50 aircraft mostly due to flying hazard and temperamental Whitley engines. A tribute to the Unit's valuable services was paid by the First Sea Lord in a general signal in which the strenuous endeavour and gallantry displayed by the crews under training was extolled.

No. 10 O.T.U.
O.R.B.s.

Admty.
C.B. 04050/43
(7) Page 11

(b) Amendments in the Bay operational orders - 22 July

There had been frequent cases of U-boat groups being located and escaping attack either through delays in getting other aircraft to the spot or to failure in co-ordination of action by those actually there. The R/T performance was poor and the navigation so faulty that sighting report positions instead of clarifying the picture at headquarters actually made it more confused. The two latter deficiencies were tackled by the appropriate branches in due course but the A.O.C.-in-C. rectified the tactical shortcoming in an immediate signal to the three Air Groups concerned dated the 22 July. In it he cancelled the instructions which required an aircraft who sighted two or more U-boats to shadow and start the homing procedure until more aircraft appeared on the scene. Instead, the sighting aircraft was to attack at once from low level making the fullest use of front guns to smother the U-boat flak. Experience had shown, he said, that packs seldom remained on the surface long enough to justify awaiting re-inforcements, moreover the flak from a group of U-boats was not generally more formidable than that from a single U-boat. After the initial attack, the homing procedure was to be carried out and in addition the Group H.Q. must see to it that the area was saturated for the remainder of the day and the following night at the expense of other parts of Musketry and Seaslug. Except on these occasions, not more than six Leigh Light sorties were to be detailed during the dark hours, the balance of night availability being utilised in the more useful daylight patrols.

C.C. File
S. 7050/4/7
Encl. 26A

July operations continue

Between the 24 and 27 July there were never more than two or three singleton U-boats actually crossing the air patrolled areas. On the former date surface craft again entered the Bay area with the cruiser Glasgow as support.

Nos. 15 and 19
Groups
O.R.B. Appendices

B. d. U. War
Diary and Admty.
C.B. 04050/43 (8)

Escort Group B5, (1) now including the escort carrier Archer, occupied the western edge of Musketry North. Her aircraft, consisting of Swordfish and Martlets, carried out patrols until the 26 July but without sighting any U-boats. Numerous JU.88s. were seen and one FW. 200 was engaged by a Martlet fighter but the enemy aircraft managed to reach cloud after an indecisive combat. Force W consisting of three destroyers (2) occupied Musketry South East between the 20 and 24 July but all that was seen was one FW. 200.

ibid

On the 24 July, one of the only three U-boats present in the patrol areas was sighted by Q/172 Squadron on daylight patrol. This was the supply boat U.459. She put up an unusually intense flak (3) in face of which Q/172 made an immediate attack but just after releasing the depth charges the aircraft was shot down and crashed on to the U-boat's upper deck tearing away the quadruple and starboard 20 m.m. mountings and killing or wounding these guns' crews. Two depth charges hit and lodged on the after end of the U-boat and another exploded under her which rendered her incapable of diving. Very shortly after, Wellington V/547 Squadron arrived and U.459 opened fire with her remaining flak guns but was soon silenced by V/547's front guns as the depth charge attack was pressed home. The stick actually over-shot but the damaged state of the boat and the additional casualties caused by V.547's front gun fire decided the captain of U.459 to abandon ship. The fuzes of the demolition charges were lit and after their explosion the U-boat sank leaving between 20 and 30 men in dinghies. About a mile distant was seen one R.A.F. type dinghy with one man in it. This was Flight Sergeant Turner the sole survivor of Q/172. (4) Force W then on their way home had just picked up five survivors from U.558 sunk four days before and, receiving the report of this action, turned back. They rescued the Flight Sergeant and 41 survivors from U.459 at 0215 hours on the 25 July before resuming their journey to Plymouth. Their place in Musketry South East was taken by the 2nd Escort Group.

ibid

By the 28 July there were four outward and one inward bound U-boats in the areas. The outgoing U.404 was attacked by Liberator Y/4 Squadron, U.S.A.A.F. at 1520 hours and sunk at 1800 hours by Liberators N/4 Squadron and W/224 Squadron acting in concert. All three attacks were made under heavy flak which repeatedly hit the aircraft but without causing serious damage or casualties. Two other outward bound U-boats were sighted by two Sunderlands and attacked by the U.S.N. Catalina I/63 Squadron armed with small contact retro-bombs. (5) Although release by magnetic indicator took place only five seconds after disappearance no results were seen and neither U-boat reported the attack.

- (1) Archer (S.O.), Havelock, Warwick, Volunteer, Vimy, Pimpernel, Godetia and Saxifrage
- (2) Athabaskan (S.O.), Iroquois and Orkan
- (3) U.459 carried one 37 m.m., one quadruple 20 m.m., two single 20 m.m. and twin Type 81 heavy machine guns. In order to get this supply boat, which was urgently required, through the Bay with some degree of safety Doenitz had ordered destroyer escort for U.459 and U.117 as far as 46° N x 10° W. The escort had only left these two boats that morning.
- (4) The gallant pilot was Flying Officer W.H.T. Jennings.
- (5) No. 63 Squadron was one of the recently arrived American re-inforcements. It was equipped with the Magnetic Anti-Submarine Detector (M.A.D.) which could detect a submarine down to 400 feet below the aircraft. The armament was 65 lb. contact bombs up to thirty of which, on receipt of a positive magnetic indication, could be propelled backwards to release so that they fell vertically from the aircraft in a salvo pattern with no forward travel. Hence the name retrobomb. The M.A.D. tactics are explained in Appendix V.

ibid

Another outward bound boat - U.614 - was detected by Wellington G/172 Sqdn. on the 29 July. An unseen cloud approach was made to within a mile of the unsuspecting U-boat. The surprise was so complete that no flak was experienced and a perfect low level attack with six depth charges straddled U.614 and sank her instantly leaving several men swimming in the water.

(c) The destruction of a complete U-boat group - 30 July

During the last four days of July, eleven U-boats put to sea. Amongst these was an important group which Doenitz was particularly anxious to pass through the blockade. It consisted of two supply boats - U.462 and 461 escorted by the 740 tonner U.504. The losses and damage inflicted by air attacks on supply boats had already seriously embarrassed Doenitz's organisation for refuelling U-boats in the outer seas and it was most important to get these two through.

ibid

The group was first located by Liberator O/53 Squadron at 0945 hours on the 30 July in 4510N x 1030W steering 230° information at 10 kts. Unhappily the position actually given by this aircraft was 80 miles in error to the southward which led to the diversion of many air sorties in the belief that another group of U-boats was in this area. However, Sunderland R/228 Squadron quite fortuitously sighted them twenty minutes later and sent a more correct position which partially retrieved the mistake. The U-boats opened fire when approached and both aircraft circled until at 1047 hours the Sunderland was attacked by a JU.88. He jettisoned his depth charges and escaped into cloud. A few minutes later Catalina K/210 Squadron also fortuitously sighted the U-boats. This aircraft was attached to the 2nd Escort Group and had been doing a box patrol 50 miles around them. Having made a sighting report to No. 19 Group, K/210 left to get into visual touch with the Escort Group. Liberator A/19 Squadron U.S.A.A.F. had intercepted R/228's sighting position and on closing it duly sighted the three U-boats while at the same moment (1115 hours) R/228 returned to the scene after shaking off the JU.88. There were now three aircraft circling around and making vain efforts to get into R/T touch with each other so as to co-ordinate some concerted tactics. They were joined at 1125 hours by Halifax B/502 Squadron also by chance. After trying to communicate with the other aircraft the pilot took independent action at 1148 hours and, selecting one of the U-boats which was slightly detached from the others, he attacked from 1,600 feet with 3-600 lb. A/S depth bombs. The U-boats were by this time putting up a continuous barrage and all jinking violently, which made them a difficult target for the Mk. XIV sight and the bombs overshot by 70 to 100 yards. B/502, whose endurance was at prudent limit, left for base at 1150 hours sighting the 2nd Escort Group soon afterwards some 15 miles away advancing in line abreast at high speed.

ibid

Halifax S/502 Squadron sighted the 2nd Escort Group at 1120 hours and from them learnt by R/T that three U-boats were ahead. S/502 altered towards the bearing indicated and joined the scene just before B/502's attack. He too made unsuccessful attempts to get into R/T touch with the others and then returned to the Escort Group for instructions only to be told again on R/T that three U-boats were ahead. Meanwhile Sunderland U/461 Squadron had arrived. He had been searching the false area to the south and was on his way home when he intercepted K/210's sighting position and followed it up.

S/502 now returned to the scene and also decided on independent action. This pilot decided to drop his load of 600 lb A/S bombs in single attacks and at 1158 hours released one bomb from 3,000 feet on the port outer U-boat which was U.462. It exploded very close to the stern and the U-boat was seen to slow down and start to circle. This seemed to break the spell for the other aircraft. U/461 and A/19 almost simultaneously started to attack the U-boat nearest to them but were received with such concentrated flak that both broke away. O/53 took the opportunity of the U-boats' preoccupation to attack the starboard outer U-boat which was U.461. He was, however, repeatedly hit on the run-in and the depth charges undershot. The aircraft was so shot about that course was immediately set for the nearest neutral land and ultimately a safe landing was made in Portugal.

ibid

U/461 had meantime turned and, profiting by the distraction caused by O/53's attack and the ensuing explosion plumes of the depth charges, got in an almost unopposed low level attack on the same U-boat (U.461) which straddled and sunk her in a few moments.(1) Twenty to thirty men were seen swimming about and the Sunderland dropped a dinghy amongst them.

S/502, high overhead, now dropped his second bomb aimed as before at U.462, but missed astern. A/19 from sea level ran into attack the same boat and encountered accurate flak which smashed the release gear and the depth charges failed to drop. S/502 then dropped his last bomb which also missed but the U-boat was already sinking from the effects of the first and about 40 men took to the sea or clambered into dinghies. A/19 made one last run over the mortally wounded U.462 but even the jettisoning gear failed to release the depth charges.

ibid

U/461 still had one depth charge left and a run was commenced on the third U-boat (U.504) who up to now had not been attacked. However, as the run in developed, shell splashes were seen all around coming from the 2nd Escort Group now only about five miles away. U.504 crash dived and the surface action was over. Latterly events had moved rapidly as only eighteen minutes elapsed between S/502's first bomb and the last run in by U/461 Squadron.

ibid

S/502 was asked by R/T from the 2nd Escort Group for particulars and replied that two U-boats had been sunk and the third had just dived on a westerly course. A hunt was started and by 1234 hours asdic contact was obtained. Asdic conditions were, however, poor and depth charge attacks by the Group did not commence until 1349 hours. Further deep patterns were dropped at 1458 and 1542 hours after which much oil and wreckage appeared on the surface including human remains. This marked the end of U.504. The survivors from the other two U-boats were then picked up and patrol resumed. The 2nd Escort Group was joined in the area on the 31 July by the 40th Escort Group.(2)

Further amendment in the Bay operational orders

Although this wiping out of a complete group of U-boats was a notable achievement, it was effected more as a result of

- (1) A noteworthy co-incidence of fate - Sunderland U/461 sank U-boat U.461.
- (2) Landguard (S.O.) Bideford, Hastings and Waveney

C.C. File
S. 7050/4/10
Encl. 3A

No. 19 Group
Operational
Order No. 6
19G/7838/Air.

B. d U.
War Diary and
Nos. 15 and
19 Grps.
O.R.B.
Appendices and
Admty
C.B. 04050/43
(B)

chance sightings than a planned sequence. The patrol scheme was sound but the dispassionate analysis of events on this day made by the O.R.S. at Command Headquarters revealed serious faults in the practical implementation of the Bay Scheme particularly the deficiencies in signal communications, R/T serviceability, homing efficiency and navigational standards. It paralleled the similar glaring faults which had been found during operations against blockade runners at the end of 1942 and which were to be repeated in December 1943.(1) A renewed drive was initiated by the Coastal Command Communications and Navigational branches for intensified training and exercise. Certain details of action and signal procedure were amended forthwith and a revised order covering all aspects of co-operation between air and surface forces, known as operation Packhorse, was brought into force on the 1 August.

(xi) The climax of Bay operations - 31 July to 2 August

Even after the events of the 30 July, there were still eight U-boats in the Bay, all outward bound. One of these, U.107, was located and attacked indecisively by Halifax T/502 Squadron on the 31 July but it was the first two days of August that crowned the achievements of the Bay offensive against U-boats. On the 1 August another six U-boats sailed in three groups from Lorient and St. Nazaire but none of these reached the air patrolled areas during the next two days operations. To the westward in Musketry, Wellington G/304 Squadron at 1020 hours sighted either U.454 or 706 (they were supposed to be in company) and a further sighting of one of these two boats was made at 1440 hours by Catalina O/210 Squadron. In both cases the U-boat got under before an attack was possible. O/210 was attached to the 2nd Escort Group and made an R/T report to the S.N.O. who started to close the position at high speed. Shortly after, Sunderland B/10 Squadron joined in the search and at 1642 hours sighted U.454 in 4536N x 1023W about six miles from the 2nd Escort Group. An immediate run-in was made in face of accurate flak which repeatedly hit the aircraft. The attack was pressed home from 50 feet and an accurate stick of depth charges straddled and sank U.454. After tracking over, the Sunderland became unmanageable owing to flak damage and crashed into the sea killing both pilots.(2) Six survivors were rescued about 30 minutes later by H.M.S. Wren and other ships of the Group picked up the captain and thirteen other survivors from the U-boat. The 2nd Escort Group then proceeded to search an area a little further to the north where Liberator K/59 Squadron had made an indecisive attack on U.106 at 2150 hours but made no contact.

Further still to the north in 4724N x 1040W Sunderland V/228 Squadron at 2013 hours sighted U.383 who with U.218 was also outward bound. The first approach was frustrated by intense flak but the second attempt was pressed home in spite of numerous hits which carried away the starboard float and aileron, holed the hull and hit the port main plane. The depth charges straddled U.383 and after the explosion plumes had subsided the U-boat was seen to be listing heavily to port

- (1) See Volume III Chapter XI (xiv)(K) Pages 457 to 464 and Chapter X (ix) of this Volume IV.
(2) Pilots - Flight Lieutenant K.G. Fry and Flying Officer H.R. Budd.

ibid

and men were jumping into the sea. Owing to the damage received the Sunderland had to leave immediately and landed safely at base. U.383 reported her crippled state to B. d U. who ordered U.218 to stand by her and instructed U.706 and 454(1) to go to her assistance. Air escort was promised at daylight the next day and three "T" class torpedo boats were despatched to meet her. However, U.383 foundered during the night without being able to inform B. d U.

On the morning of the 2 August, Hampden A/415 Squadron sighted a U-boat on the surface in 4615N x 1125W steering 040° at 0900 hours. This was U.706 searching for U.383. Rather inaccurate flak was opened and the Hampden circled so as to attack from the U-boat's quarter. However, as the depth charges were released, the U-boat made a violent alteration of course and the stick missed astern. Twelve minutes later, Liberator T/4 Squadron U.S.A.A.F. arrived and went straight in with an accurate stick of twelve depth charges which sank U.706 outright. At least fifteen men were seen in the water amidst wreckage and oil. Catalina L/210 Squadron, who was the naval co-operation aircraft, arrived in time to see this attack and informed the 40th Escort Group who started to close the position. Sunderland W/10 Squadron arrived at 1020 hours, having intercepted the sighting report and being unaware of the successful attack. These two aircraft led H.M.S. Waveney to the scene and the U-boat survivors were picked up at 1315 hours.

ibid

At 1520 hours, U.218 also trying to find U.383 was sighted by Wellington B/547 Squadron in 4712N x 1054W. Against inaccurate flak a depth charge attack was made on the U-boat which overshot and U.218 dived, being observed at this stage by W/10 who had come up from U.706's final position. Postwar evidence establishes that U.218, although not damaged by the depth charge attack, had sustained several casualties from B/547's gunfire and she returned to harbour entering Brest on the 6 August.

ibid

Meanwhile another drama had been progressing further to the westward. At 0932 hours, Wellington C/407 Squadron had re-located U.106 and immediately delivered a low level attack in flak rendered inaccurate by the excellent smothering fire from the front guns. The depth charges were well placed and seriously damaged U.106 who had to turn back for home and, after the aircraft had left, signalled B. d U. for assistance. He detailed JU.88.s as air cover and instructed the three torpedo boats already searching for U.383 to extend their sweep in order to pick up U.106. During the afternoon both the 40th and 2nd Escort Groups were in the general area, the former being near where U.706 had been sunk and the latter closing the position in which U.106 had been attacked.

ibid

At 1620 hours, Sunderland Z/228 Squadron sighted what he at first took to be three U-boats and reported as such. On closer approach they turned out to be the three torpedo boats who opened up with A/A fire. Z/228 retired into cloud and reported them to base as three Z class destroyers. He then started the homing procedure which brought Sunderlands N/228 and M/461 Squadrons on to the scene, at 1650 hours, and they started shadowing while sending out frequent position reports. At 1705 hours, Halifax F/58 Squadron, who had been

(1) B. d U. was unaware as yet that U.454 had been sunk.

with the 40th Escort Group half an hour earlier, broke cloud right over the torpedo boats and was immediately hit by A/A fire which compelled a return to base. This fixed the enemy as being about 65 miles north east of the 40th Escort Group. Z/228 had to leave forty minutes later but his place was taken by Halifax C/502 Squadron who fortuitously sighted the torpedo boats and also reported them as destroyers. A few minutes later, yet another aircraft arrived - Liberator G/224 Squadron who had been diverted by base to close the original sighting position.

At 1804 hours, N/228 Squadron sighted the 40th Escort Group and leaving the others to shadow he went backwards and forwards between the enemy vessels and the Group giving relative bearings and distances by visual signals. By 1908 hours the enemy was bearing 345° 15 miles and H.M.S. Bideford momentarily sighted them and made a signal to this effect. Meanwhile G/224 had had to leave, leaving C/502 and M/461 still circling the enemy. The latter aircraft at 2000 hours sighted a U-boat on the surface some 20 miles southeast of the enemy force steering 050°. This was the damaged U.106. Ten minutes later N/228 also sighted this U-boat and both aircraft engaged in a gun duel with U.106 scoring numerous hits with their machine guns. Both decided almost at the same moment to attack and within 30 seconds of each other straddled U.106 with well aimed sticks of depth charges. The U-boat stopped and many men appeared on deck. Some jumped overboard and others attempted to re-open flak but were shot down by M/G fire from both aircraft. At 2040 hours the U-boat blew up leaving much wreckage and four dinghies full of survivors. Both aircraft then had to leave the scene.

While this was occurring, the enemy torpedo boats were still being shadowed by C/502 but her endurance was nearly at an end. Before leaving she made a bombing attack at 2050 hours out of cloud from 5,000 feet with 3-600 lb A/S bombs but missed by over 100 yards.

The various position reports made by the several aircraft differed widely from each other and no clear idea could be gathered as regards the enemy's precise position and course either by Plymouth, the 2nd Escort Group or after the departure of N/228 by the 40th Escort Group. The 2nd Escort Group had intercepted the Bideford's sighting report and, reckoning this to be the most reliable of many conflicting positions, accordingly steered in that direction. However, the 40th Escort Group considered that the enemy, reported always as three destroyers, constituted a superior force and was retiring south-eastwards to where the 2nd Escort Group was believed to be. Meanwhile C.-in-C. Plymouth had sent two destroyers - Athabaskan and Grenville into the area as re-inforcement and all three parties finally met at 2030 hours but well to the southward of the enemy.

Since the departure of C/502 no news had been received of the enemy's whereabouts. They had in fact reached the position of U.106's and soon after the departure of the two Sunderlands and had rescued 36 survivors including the captain whereupon they turned for home. At 2120 hours they were sighted by Halifax S/502 Squadron steering 070° but his sighting report position was 40 miles in error to the south. Several attempts were made to bomb them from heights varying up to 8,000 feet but the heavy A/A barrage frustrated approach and at 2233 hours the Halifax left. Night dispositions were made by the combined surface groups to intercept the enemy's homeward track but without success.

(xii) - Doenitz abandons group sailing of U-boats.

B. d. U.
War Diary

The destruction of four U-boats in two days coming on top of the grievous losses sustained during the last week of July was too much for Doenitz. He issued immediate orders recalling to harbour the six U-boats who had recently put to sea from Lorient and St. Nazaire and cancelled forthwith all further group passages in company. Incoming U-boats were to enter the Bay via Cape Finisterre and were to proceed independently along the Spanish coast close inshore without regard for territorial waters and pending a report of their experience on the new route no further sailings from Biscay ports took place.

ibid
and
Fuehrer
Conferences on
Naval Affairs
1943
pages 51 to 58.

In his conferences with Hitler at this time he reported that the Allied blockade of the Bay of Biscay had necessitated the abandonment of surfaced passage and had seriously disrupted the U-boat campaign. Not only were valuable U-boats sunk but the casualties among the supply U-boats had compelled the recall of some cruises and shortened the duration of others in the outer seas. Several of the outward bound U-boats lost had been on mine laying missions and this form of action against allied shipping was therefore adversely affected. Submerged passage through the transit areas made over-great demands on battery capacity but in this respect two technical projects were being developed. The first was the equipment of existing U-boats with a device called Schnorchel. This consisted of combined air intake and engine exhaust tubes enabling the Diesel engine to function at periscope depth and thus avoiding the necessity for surfacing when on passage or recharging batteries.⁽¹⁾ The second was a major change in U-boat construction involving sectional pre-fabricated assembly in place of conventional building on the stocks; but the significant part of the new design lay in the provision of enormously increased battery power which by using the ultra streamlined hull pattern, already incorporated in the Walter hydrogenated fuel boat plans,⁽²⁾ would make possible high sustained underwater speed.

ibid

Taken together, these projects were expected to revolutionise U-boat warfare and provide a solution to the existing menace of Allied aircraft both in the transit areas and around shipping at sea. High priority was approved in both cases by Hitler. Both these projects are dealt with in a later chapter but this period end July/early August 1943 marks their initiation. Other measures against the air menace were also reported to Hitler as being under active examination, notably the early fitment of an improved Metox search receiver called Hagenuk in which self radiation had been cut to a minimum and the perfection of two materials with which to coat a U-boat, one to absorb radar impulses and the other to give back no echoes from asdic transmissions.

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- (1) The first trial Schnorchel was fitted in a non-operational School boat and had been demonstrated as a practical preposition on or about the 11 July 1943. This idea was not new as the Germans had found a similar fitment in some of the large Dutch submarines which had fallen into their hands during the summer of 1940.
 - (2) The Walter boat was first mentioned officially at a Hitler Conference on Naval Affairs in September 1942. In mid 1943 it was under active development at Kiel. See Volume III Ch. XII (viii) and chapter VIII Part II of this volume.

(xiii) - Summary of operations - 1 July to 2 August inclusive

For base to
base flying
hours see
Appendix VII

A total of 9,689 effective flying hours had been expended in the Musketry and Seaslug areas together with the Cape Finisterre area down to latitude 40°N. (1) Once more many of the sightings and some of the attacks were on the same U-boat as it progressed through the Bay. During this period of thirty three days, 86 U-boats were crossing the areas either in or out in groups or as singletons. The air patrols attacked or sighted 55 of these and sank 16, (2) while six more were turned back to harbour in a damaged condition. In addition, the Finisterre patrols sank three U-boats on patrol to the westward and severely damaged another. Regarding the U-boats on passage, the ratio of sightings to total numbers present was about the same as that for June but the lethality of attack was nearly seven times as great.

Air losses among the A/U aircraft were four shot down by U-boat flak, six by enemy aircraft and four lost from unknown causes. The fighter interception patrols lost two Beaufighters in air combat and destroyed two F.W. 200s and two JU.88s. Thus ended another definite phase in the Bay of Biscay offensive.

(xiv) The Bay reviewed by Doenitz - 5 August.

On the 5 August, Doenitz reviewed the general U-boat warfare situation with particular emphasis on the Biscay area. He assumed that the recent heavy losses in this area were in part due to close co-operation between air and surface craft. The latter had been observed in increasing strength so that the enemy appeared to have benefited from the U-boat withdrawal from the northern Atlantic and to have employed part of his ocean defences in blocking the approaches to the Biscay ports. Doenitz stated frankly that the steps taken by him had not led to success. The introduction of group passages theoretically gave many advantages i.e. greater fire power, a better look-out organisation, the sharing of radar interception search on several wave bands by individual boats, the possibility of mutual assistance if in trouble and finally the psychological

B. d U.
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(1) Flying in the Bay Transit Area - 1 July to 2 August 1943.

Area	Effective Day Hours	Sightings	Attacks	Effective Night Hours	Sightings	Attacks
Musketry	4,974	49	35	1,208	1	1
Seaslug	1,747	16	7	62	-	-
Fighter Patrols	840	2	1	-	-	-
Finisterre	757*	26	21	101	-	-
Total	8,318	93	64	1,371	1	1

*Includes flying from Morocco Sea Frontier by two U.S.A.A.F. Liberator Squadrons. The number of U.K. based A/U squadrons taking part was 25. Total strength 368 aircraft.

The number of Gibraltar based A/U squadrons taking part was 24. Total strength 36 aircraft.

Nos. 1 and 2 U.S.A.A.F. Sqdns. (Strength 24) flew approx. 400 day hours in the Finisterre area.

The fighter sorties came from one Beaufighter, one Mustang and six Mosquito squadrons.

(2) An additional U-boat was sunk by the 2nd Escort Group.

effect on the crews when in company.(1) There had been in practice, however, considerable disadvantage. Passage in company, for which U-boats were not trained, required a large part of the crews' attention. It was easier for a singleton U-boat to take advantage of a sudden favourable chance to dive than for a group while the attempts to assist a damaged U-boat though once successful had on other occasions led to further loss. The enemy's tactics of shadowing and bringing up other aircraft as well as the probability of homing surface craft emphasised the disadvantages and had led to the order for all groups at sea to disperse. Destroyer and torpedo boat escort would also be discontinued as not only was it likely to lead to surface action with superior English concentrations but the fuel situation made it necessary to restrict their use to assistance for damaged U-boats.

ibid

The majority of U-boat losses, both in the Bay and in the Atlantic, he attributed basically to the enemy air superiority coupled with the inferiority of the German radar interception gear. In this latter respect recent experiments by the Group West Command had established that the Metox search receiver produced sufficient radiation of its own to enable enemy aircraft to detect a U-boat without having to use the airborne radar at all.(2) Although there was as yet no positive proof that the enemy was adopting this procedure the uncertainty had made it necessary to cancel all sailings until boats were fitted with the new Hagenuk set.(3)

Incoming U-boats were to use the Spanish coast route (Route Piening) where the hugging of a precipitous coast should give protection from radar location. When the fitting of Hagenuk permitted, outward sailings would re-start and boats would proceed independently on routes scattered over the

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- (1) The known presence of British surface craft in the Bay may have had a psychological effect on U-boat crews in that they could abandon ship, when seriously damaged, with more freedom as they knew they would almost certainly be picked up. The presence of these surface forces certainly heartened our own aircrews when pressing attacks home in the face of flak by the knowledge that if shot down or in danger of having to ditch there were rescue craft reasonably close at hand.
 - (2) On the 31 July, the Group West Experimental branch reported that Metox radiations could be detected by aircraft at distances between 23 and 50 kilometres when flying at heights between 500 and 2,000 metres. Doenitz issued a precautionary order that Metox must be switched off in good visibility conditions and altered in tune continuously in poor visibility. If any enemy radar transmissions were detected, Metox was to be switched off and the boat must dive immediately. Those U-boats fitted with the ex-G.A.F. Hohentwiel radar set must use it instead of Metox when on the surface. Meantime a further re-examination of the situation was to be carried out by technical establishments including the determination of what radiation was given off by the new Hagenuk search receiver in trials at sea as near the Bay operational area as possible. Ref. War Diary B. d U. page 81.
 - (3) The Metox had been known to radiate excessively and a set re-designed to cut radiation to a minimum was under acceptance trials. It was named Hagenuk using the initial letters of fabricating company.

Bay latitudes. No radical change from this procedure could be seen unless the G.A.F. could operate more effectively against the English A/U aircraft and the blockading surface forces. However there were few signs that the Atlantic Air Force would be adequate for this purpose though there was a prospect of Dornier 217 re-inforcement. Unfortunately the Me 410 fighter/bombers recently allocated to Bay operations had been recalled to the home area after operating only once.

ibid

The situation would be greatly eased when it was possible for U-boats to traverse the whole Bay of Biscay submerged. The Schnorchel for Diesel engine air intake and exhaust while diving did offer this prospect and also, looking further ahead, the new type XXI large battery U-boat.(1) The mining situation off U-boat base ports and their approaches was still under control although the use of very varied firing units made it necessary to include several different types of sweeping units in each escort and this had strained the organisation to extreme limits.

Doenitz had in fact been bludgeoned back into a relatively safe though protracted passage procedure. In spite of increased flying hours through the coming months the Bay Offensive was never again to reach the killing efficiency of the 1943 Summer months.

(xv) - The U-boat Passage policy during August

Having been forced by heavy U-boat casualties in the Bay to cancel for a time all further sailings and to bring boats in from the Atlantic close along the north coast of Spain, Doenitz pursued a cautious transit policy for the next fortnight. By the 16 August the first five U-boats to use the Spanish route had arrived in port without being attacked(2) and on the 19th Doenitz confirmed this procedure for all boats on passage to or from southerly latitudes.

B. d U.
War Diary

On the 22 August he sailed two boats from Brest with orders to proceed across the middle part of the Bay independently of each other diving by day and only surfacing at night long enough to recharge their batteries.(3) He followed these up at intervals during the rest of August with another eleven U-boats all using this mid-Bay route and bound for the Northern Atlantic,(4) while four others were despatched by the Spanish coast route for southerly latitudes.(5)

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- (1) For the early development of the Schnorchel and the introduction of the change over to Types XXI and XXIII prefabricated U-boats see Chapter VIII Part II.
 - (2) U.155, 306, 373, 466 and 648. U.161, 123 and 523 were outward bound by this route and had safely cleared the Finisterre area by 22 August.
 - (3) U.214 to lay mines off Panama and Flakboat U.621 to take station in the outer approaches to the Bay. Both cleared the air patrolled area unseen by 27 August.
 - (4) These eleven were the first flight of those intended for the resumption of convoy war in the Northern Atlantic.
 - (5) U.170, 515, 518 and 536.

By the end of the month another five homecomers from overseas had arrived safely via Cape Finisterre⁽¹⁾ and a further sixteen were either nearing port, traversing the Spanish coast line or approaching N.W. Spain. The traffic through the Bay was therefore rapidly increasing by the 1 September but not of course reaching the density of earlier months because the U-boat fleet losses from early May onwards had far outnumbered the output of new boats from the Baltic training area.⁽²⁾

(xvi) G.A.F. opposition in the Bay

The frequent representations by Doenitz to Hitler for more adequate support by the G.A.F. in the Bay of Biscay bore tardy fruit during August. The fighter and bomber reconnaissance strength under the Fliegerfuhrer Atlantik had increased slowly during June and July. The fighters had little success in shooting down the anti-U-boat aircraft and none at all in interrupting the air patrols. The threat had been held by first of all the deployment of Coastal Command long range fighters and finally of Fighter Command Mosquito squadrons to the Cornish airfields in order to maintain interception patrols in mid-Bay longitudes. The enemy countered by sending rover formations of his fighters into the A/U patrol area but, although the number of combats increased, the A/U aircraft gave a very good account of themselves and casualties remained tolerable.⁽³⁾

Early in August there was a further step up in G.A.F. fighter strength and a substitution of He. 177 long range bombers in place of the less efficient JU.88 bomber Type. The former resulted in a further rise in the number of combats and the casualties to our aircraft assumed more serious proportions when related to the almost complete absence of U-boat sightings. The enemy bomber/recce. force was much in evidence as regards reporting and shadowing all convoys and surface A/U groups but until the last week in August made no attempt to attack.

(xvii) August operations - The institution of the Percussion Patrols.

The almost complete cessation of U-boat sightings in the Musketry and Seaslug areas after the 2 August⁽⁴⁾

(1) U.199, 333, 510, 516 and 732.

(2) Only 139 U-boats were now operational in the Atlantic Command as compared with 206 in May.

(3) Enemy air opposition in the Bay.

Month	G.A.F. strength in Bay areas		No. of Combats	Own losses		Enemy losses	
	Fighter	Bomber/Recce.		A/U aircraft	Fighters	Fighters	Recce.
May	49	64	8	6	nil	5	nil
June	42	73	16	5	3	7	2
July	60	120	20	5	2	2	1
Aug.	80	132	34	17	6	6	1
Sept.	111	104	25	7	1	6	nil

Reference - The enemy figures are by A.H.B. 6 from G.A.F. records and the strengths are for the 10th of each month.

(4) U.648 (inward bound) was sighted by Lib. X/224 Sqn. on the 5th and by Halifax A/58 Sqn. on the 6 August. U.466 (also inward bound) was sighted by Hudson Y/48 Sqn. when flying from U.K. to Gibraltar on the 11 August. In no case was an attack possible.

was held at Coastal Command Headquarters to be due not only to a possible drop in traffic but to a probable reversal of enemy tactics whereby the U-boats were diving by day and surfacing for a minimum time by night. The night flying was therefore stepped up to the full effort of two Leigh Light squadrons from the 11 August. However, during the next eleven days no sightings at all were obtained. The three brief glimpses of U-boats gained earlier in the month had been close to the northwest corner of Spain and on the 22 August the A.O.C.-in-C. informed all Groups that it was considered U-boats were now entering and leaving the Bay close to the Spanish coast between Capes Finisterre and Ortegal and it was of the utmost importance that this passage should be blocked. The Admiralty had agreed to move two escort groups to this area and our own submarines were patrolling to the eastward. The Musketry and Seaslug areas were cancelled and in their place a system of patrols called Percussion was instituted.

Percussion A - Daylight patrols by No. 19 Group in an area from 4800N x 0930W to 4600N x 0930W to Cape Ortegal, along the Spanish coast to latitude 4300N, then westward to longitude 1100W, up this longitude to 4400N, thence to 4500N x 1200W and due north to latitude 4800N.

Percussion B - Daylight patrols by No. 15 Group, after satisfaction of convoy commitments, in an area between 48° and 43°N from longitude 13°W to the westward boundary of Percussion A.

Percussion C - Night Leigh Light Catalina and Wellington patrols in an area between latitudes 4500N and 4245N from longitudes 11° to 9°W.

Percussion D - Night patrols by ordinary aircraft in an area between latitudes 45° and 44°N and longitudes 0800 and 0945W. These aircraft were to be supplied from Nos. 304 and 547 Wellington Squadrons to act as scarecrows with flares to illuminate all A.S.V. contacts but were not to carry depth charges or bombs.

Percussion E - Day and night patrols in an area between latitudes 42° and 43°N from longitude 11°W to the Spanish coast. The A.O.C. Gibraltar was requested to put in the maximum possible effort including U.S. aircraft by arrangement with the American commander of the Moroccan Sea Frontier.⁽¹⁾ It was emphasised that the night effort was of the utmost importance.

From Map No. 19 it can be seen that the Percussion patrols covered much the same area as the previous system but the emphasis was now on night flying concentrated within 120 miles of the N.W. corner of Spain. On the 23 August the C.-in-C, Plymouth ordered the 5th Escort Group to join the 40th Escort Group in establishing a permanent patrol between Capes Ortegal

(1) A "request" only was possible because the R.A.F. Gibraltar was still under the operational control of the Mediterranean Air Command while the Moroccan Sea Frontier was independent of any British control. In effect this request was loyally met but the chain of command control was anomalous.

C.C. File
S.7050/4
Encl. 2A

C.C. File
S.7050/4/8

ibid
Encl. 2A

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and Villano supported by the cruiser Bermuda, (1) and on the 24 August flying commenced in the new Percussion areas.

R.A.F.
Gibraltar
O.R.B.
Appendices

Gibraltar based aircraft, who had been operating W.S.W. of Finisterre on the earlier request from the A.O.C.-in-C. Coastal Command, had had a blank period since the 2 August similar to that experienced in Musketry and Seaslug. Their only sighting occurred on the 22 August when Leigh Light Wellington G/179 Squadron detected and attacked the outward bound U.523 off Cape Finisterre. No damage was inflicted but three days later this U-boat ran into convoy OG.92 and was sunk by the surface escorts in 4203N x 1802W. After the start of more concentrated flying in Percussion E, Catalina I/202 Squadron sighted the inward bound U.134 on the evening of the 24 August about 40 miles west of Vigo but could not attack as a FW.200 appeared simultaneously and by the time an indecisive combat had been fought the U-boat had disappeared. However, a few hours later U.134 was detected, attacked and sunk by Leigh Light Wellington J/179 at 2320 hours.

(xviii) The first use of Glider Bombs

The threat presented by the surface and aircraft concentration to Doenitz's new found safe route in and out of the Bay of Biscay produced an immediate reaction by the enemy. On the 25 August the G.A.F. launched an air strike on the combined escort groups who were patrolling just west of Cape Ortegal. The strike consisted of seventeen He.177's and JU.88's and, after sighting the escort groups at 1340 hours, split up into small flights of two or three aircraft. Several attacks were made between 1415 and 1423 hours from four to five miles range with radio controlled Glider Bombs (2) but no hits were obtained although H.M.S. Bideford was damaged by a near miss. By 1430 hours the enemy aircraft had all departed.

Admiralty
CB.04050/43(9)

At 1600 hours the 1st Support Group (3) arrived to relieve the 40th Escort Group who thereupon left the area en route for home. On the following day the 5th Escort Group left the area together with the supporting cruiser Bermuda. During the night of the 26/27 August the 1st Support Group attacked an asdic contact off Cape Ortegal but none of the three or four U-boats in this vicinity reported any damage. (4)

At 0700 hours on the 27 August the 1st Support Group were joined by two destroyers from Plymouth - the Athabaskan and Grenville - and a sweep to the southward of Cape Finisterre

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- (1) Since early in August, the 40th and 2nd Escort Groups had been relieving each other in the Musketry area supported by the cruisers Charybdis and Glasgow. They were occasionally reinforced by destroyers from Plymouth or by others on passage to Gibraltar. No U-boats had been sighted or contacted by them.
 - (2) The Glider Bomb as used on this occasion was of about 1,100 ~~lbs~~ lbs weight fitted with stub wings of 11 feet span with a small tail plane. Below the bomb was slung a jet propulsion unit which gave a speed of about 400 kts. The bomb was radio controlled from the releasing aircraft and had a green light in the tail to make it more visible to the operator.
 - (3) H.M. ships Egret (S.O.), Rother and Jed.
 - (4) U.333, 510 and 732 were in this vicinity and possibly U.358 and 566.

was started. Two hours later the force was sighted by two FW.200's who shadowed continuously for the next four hours. At 1240 hours another G.A.F. strike force (18 aircraft) located the force and attacked with Glider Bombs. The Athabaskan and Egret were both hit, the latter blowing up and sinking immediately. The Rother was slightly damaged by near misses. The attack finished at 1330 hours and survivors from the Egret were put on board the damaged Athabaskan who left for Plymouth at her best speed.

The Grenville, Rother and Jed then withdrew to the westward and took up the patrolling of a line some 150 miles southwest of Cape Finisterre. From 0408 hours on the 28 August following radar and asdic contacts, a series of depth charge and hedgehog attacks were carried out during the rest of the day but post war records reveal no damage being suffered by any of the U-boats in this vicinity. In the same early hours of this day, Leigh Light Wellington A/179 Squadron momentarily illuminated a U-boat in the act of diving off Vigo but no attack was possible.(1) Nothing occurred on the 29th and on the 30th the surface group was joined by H.M. sloops Pelican and Crane.

(xix) Amendments to the Percussion plan

Meanwhile two alterations to the Percussion flying plan had been found necessary. Firstly, it was found that after meeting the minimum convoy cover requirements, No. 15 Group had too few long range aircraft to fly Percussion B at a density in any way comparable to that possible in Percussion A by No. 19 Group aircraft moreover the No. 15 Group aircraft were stripped of much of their gun armament and armour against enemy aircraft so as to get a maximum endurance for convoy work and were therefore the more vulnerable to air attack by the G.A.F. Consequently on the 27 August, Percussion B was cancelled and in its place Percussion F was instituted between latitudes 43° and 41°N from longitudes 12° to 14°W. No. 15 Group were to control their own aircraft as to routing into the area keeping out of JU.88 fighter range but to work in close co-operation with No. 19 Group as regards co-ordination in the patrol area.(2) Secondly, it was found that Percussion C, particularly the part off N.W. Spain was beyond the effective endurance of Leigh Light Wellingtons. Accordingly from the 30 August the lower part only of Percussion C was flown by Leigh Light Catalinas and the Leigh Light Wellingtons were directed into a new area Percussion G half way along the northern coast of Spain.(3) The last two days of August saw little action. In the early hours of the 30th, Leigh Light Wellington R/407 Squadron sighted a homeward bound U-boat in Percussion G which dived before an attack could be delivered

C.C. File
S.7050/4/8
Encls. 13A and
14A

See Map No. 19

- (1) This was probably either U.340 or 262. It is here put on record that all the night flying done off the Portuguese and Spanish coast was vitiated by the presence of large numbers of fishing craft which at times completely swamped the A.S.V. screen and, as many of them carried no lights, always made the disentanglement of genuine U-boat contacts a matter of difficulty. Reference - No. 179 Sqdn's O.R.B. appendices.
- (2) The menace from enemy long range fighter formations had by this time forced No. 19 Group aircraft to fly out and back from Percussion A in company at stated intervals.
Ref: C.C./s.7050/4 Part II encl. 11A.
- (3) Percussion G - 44°07'N x 04°22'W to 45°37'N x 05°24'W to 45°02'N x 07°06'W to the Spanish coast in longitude 06°10'W.

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and at 1350 hours on the 31 August, Sunderland N/228 Squadron sighted one on a westerly course in the middle part of Percussion A without being able to attack.

(xx) Summary for August

The month of August, which had opened with such active operations, closed in an air of frustration. The tactical defeat of Doenitz's mistaken surfaced passage policy had resulted in his resumption of the relatively safe independently routed and maximum submerged transit while the use of the Glider Bomb had forced the surface hunting groups far enough to the west to render them largely ineffective.

For base to base
total flying
hours see
Appendix VII

During this period of 28 days, a total of 9,402 effective flying hours had been expended in the Musketry, Seaslug, Finisterre and Percussion areas.(1) Of the 32 U-boats now known to have crossed or been in the air patrolled section of the Bay only six were sighted. Two of these were attacked, one being sunk.

Air losses among the A/U aircraft were 16 shot down by enemy fighters with a further one missing at night from unknown cause while the fighter interception patrols lost six aircraft in combat. Enemy losses amounted to five JU.88s. destroyed when attacking A/U aircraft and one FW.190 shot down by a Mosquito patrol.

(1) Bay operations - 3 to 31 August 1943.

Area	Effective Day Hours	S	A	Effective Night Hours	S	A
Musketry and Seaslug up to 23 August	4,406	2	0	862	-	-
Finisterre * up to 23 Aug.	435	-	-	175	1	1
Percussions * 24 to 31 Aug.	1,589	2	0	830	3	1
Fighter patrols 3 to 31 Aug.	1,105	-	-	-	-	-
Total	7,535	4	0	1,867	4	2

* Finisterre and Percussion E include flying from Morocco. The number of U.K. based A/U squadrons taking part was 25. Total strength 342 aircraft. The number of Gibraltar based squadrons taking part was 2. Total strength 23 aircraft. Nos. 1 and 2 U.S.A.A.F. Sqdns. (strength 24) flew approx. 400 day hours in the Finisterre and Percussion E areas. The fighter sorties came from two Beaufighters and five Mosquito squadrons.

CHAPTER V

U-BOAT OPERATIONS - 1 MARCH 1943 TO 31 AUGUST 1943

PART I - THE NORTHERN TRANSIT AREA - MARCH TO AUGUST 1943 INCLUSIVE

(i) Operations - March to the end of May 1943

At the beginning of March 1943 the Northern Transit Area, through which all U-boats proceeded on their first war cruises into the Atlantic, was very sparsely patrolled. This was due not only to the pre-occupation of Iceland and No.15 Group with the mid-Atlantic convoy battles but to No.18 Group being largely concerned with anti-shipping tasks off the Norwegian coast which left few sorties available for A/U work. Consequently there had been little opposition to the U-boats' free and undeterred passage aided as they were by long hours of darkness and the efficacy of their Metox search receivers.⁽¹⁾

See Map No.20

Iceland and
Nos.15 and 18
Groups O.R.B.
Appendices

The scheme of air patrols was much the same as had been instituted in July 1942 i.e. the Flora patrols from the North of Scotland interlocking with the Port patrols southeastward from Iceland. During March a slight increase in flying hours was achieved by using occasional sorties both from the Hampden torpedo squadrons in No.18 Group and the Fortress squadrons based at Benbecula in No.15 Group. A further increase came from the newly formed No.190 Catalina squadron based at Sullom Voe.⁽²⁾ During the month four U-boats were sighted out of the twenty four now known to have traversed the area. All four were attacked, two being sunk outright by a Fortress aircraft.⁽³⁾ These were the first kills in this area since the previous October. In addition, a Catalina of No. 190 Squadron on an ice reconnaissance sortie to the northeast of Iceland attacked and severely damaged U.339 on patrol there.

Ibid and
B. d U.
War Diary

In April, the flying hours were again increased on the same system of patrols and 18 sightings of U-boats were made. Several of these were of the same boats on consecutive days but even so the ratio to the twenty one known to have traversed the area was better. Of the thirteen attacks made, one by Hampden X/455 Squadron was successful in sinking U.227.

ibid

During May, sorties from three more squadrons were brought in⁽⁴⁾ and on 18 May Iceland replaced the Port system of fan patrols by two sweep areas along the estimated track taken by U-boats on passage called Potman and Copper.⁽⁵⁾ Fourteen of the twenty two U-boats in transit during the month were sighted but only nine were attacked. U.646 was sunk on the 17th by Hudson J/269 Squadron operating from Iceland and U.467 was

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- (1) During January and February, 36 U-boats cleared the area outward bound and three inward. Only one U-boat was sighted by the air patrols.
 - (2) This squadron was formed at Sullom Voe on 17 February from eight crews and aircraft out of the No.210 Squadron detachment stationed there. They were brought up to a 6 + 3 establishment and were operational from 7 March.
 - (3) U.469 was sunk by Fortress L/206 Squadron on 25 March and U.169 on 27 March by the same aircraft but a different crew.
 - (4) No. 84 U.S.N. Catalina Squadron in Iceland, No. 4(o) Sunderland O.T.U. from No. 18 Group and No. 220 Fortress from No. 15 Group.
 - (5) See Map No. 21.

destroyed just after clearing the actual transit area by U.S.N. Catalina F/84 Squadron while covering the Iceland/U.K. convoy RU.75.

C.C. File
S.7050
Encl.103A

At the beginning of June, the withdrawal of U-boat packs from the Northern Atlantic enabled much more attention to be given to the area and flying hours in it were stepped up sharply. The actual transit patrols were frequently backed up to the south and southwest of Iceland by support sweeps covering ocean convoys on this leg of their journey. The net results were far better.

(ii) Operations in June 1943

Iceland and
No.15 Group
O.R.B.
Appendices
and
B. d U. War
Diary

On 6 June, two attacks took place in the transit area, Hudson G/269 Squadron made an indecisive attack on U.535 and Fortress A/220 Squadron severely damaged U.450 at 1102 hours in 6205N x 1420W. The U-boat sustained damage to her main ballast and external fuel tanks and had the C.O. and six others seriously wounded by machine gunfire. She requested urgent assistance and was told by B. d U. that if it was necessary to abandon ship the crew must stay together at all costs and fire star shell if possible every hour. Other U-boats in the vicinity were ordered to close and stand by her.(1) While doing so, U.669 was sighted by Hudson W/269 Squadron on Copper patrol but the U-boat got under before being attacked. U.450 managed to get away undetected to the southwest and on 8 June was met by U.271, 341 and 669 who stayed with her while she effected temporary repairs. On the 9th U.450 reported fit for diving but stated that medical assistance was still urgently required. The nearest boat carrying a medical officer was U.592 some two or three days steaming away and B. d U. fixed a rendez-vous for the 12 June. U.271, 341 and 669 were ordered to resume their passage to patrol positions and in lieu U.645, who was nearly time expired on patrol, was detailed to meet U.450 at the same rendez-vous and to escort her to a Biscay port. Arriving first at the meeting place on the 12th, U.645 was sighted and attacked at 1300 hours in 4850N x 2500W by Liberator H/86 Squadron who was on passage out to escort a convoy. Slight damage was inflicted. At 1633 hours she was again attacked, but without suffering any further damage, by G/86 Squadron. B. d U. shifted the rendez-vous position and on 13 June U.645 and 450 met in 5015N x 2530W being joined by U.592 on the 14th when the wounded were attended to. U.592 was then detailed for a patrol billet and the other two started on their passage through the Bay of Biscay.

While this episode had been occurring, Hudson K/269 Squadron on a sweep to the south of Iceland had re-located and attacked U.535 at 1225 hours on 8 June in 6040N x 210W. Damage was inflicted which temporarily rendered her unable to dive. Still in this condition she was located three hours later by H/269 but on the run-in U.535's flak so knocked the Hudson about that the depth charges failed to release and the numerous hits compelled the aircraft to make for base immediately. Half an hour later, U.535 was approached by U.S.N. Catalina D/84 Squadron but again flak was accurate enough to frustrate attack and contact was lost shortly after in thickening weather. Later, U.535 signalled B. d U. that temporary repairs had been effected and she was making for a Biscay port. However, some

(1) See the 8 June U-boat disposition map for the positions of other boats in the vicinity. (Map No. 22.)

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days afterwards it was decided to resume her cruise and she continued down as far as the Azores.⁽¹⁾

ibid

No. 15 Group
O.R.B.
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On 11 June another outward bound boat - U.417 - was attacked in the transit area by Fortress R/206 Squadron at 1110 hours.⁽²⁾ On the attacking run very intense flak was encountered which repeatedly hit the aircraft. In spite of severe damage an accurate release of depth charges was made and, on turning back over the spot, the Fortress saw the U-boat sink stern first leaving 20 to 30 survivors in the water. At this point, one of the starboard engines fell off and with two other engines spluttering the pilot had to ditch. He put down in the sea about five miles away from the scene of attack and, although the aircraft sank in 90 seconds, all the crew succeeded in getting into the dinghy. Unfortunately the position of ditching was in the middle of a mined area which precluded rescue by surface craft. Later in the day the dinghy was found by U.S.N. Catalina G/84 Squadron but, in trying to land on the sea, the flying boat crashed into a swell, broke up and sank. The crew managed to get into their dinghy but during the night became separated from R/206's dinghy and never regained touch. A gale on 12 June stopped all further rescue attempts but on the 13th, various aircraft from Iceland and Nos. 15 and 18 Groups re-located R/206's survivors. Sea conditions prevented a rescue though the Norwegian Sunderland G/330 Squadron made a praiseworthy attempt. Early on 14 June, aircraft again arrived over them and provisions were dropped. At 1214 hours a specially manned and lightened Catalina (L/190 Squadron) succeeded in landing in difficult conditions, picked up the survivors and safely took off from the choppy sea. Meanwhile no signs could be found of G/84's dinghy. In spite of protracted searches it was not located until late on 16 June some 60 miles southwest of the crash position. A rescue was effected by the U.S. destroyer Symbol who found that all but one man had died of exposure.

Iceland
O.R.B.
Appendices

While these air rescue operations had been going on, U.556 was sighted on 13 June by U.S.N. Catalina K/84 Squadron on a Potman patrol. The U-boat dived and an abortive Mark 24 mine attack was made. Returning to the spot two hours later, the U-boat was again sighted but this time remained on the surface and opened fire on K/84 as a depth bomb attack was pressed home. The Catalina was hit causing the bombs to hang up. Two were released manually but overshot whereupon U.536 started to dive. The aircraft came round and released the last bomb by hand just as the U-boat had disappeared but it undershot the diving swirl. Flak damage to the aircraft compelled an immediate return to base and U.536 was not seen again. During the next week only two U-boats traversed the transit area and neither was sighted by the actual transit air patrols. These boats were U.334 and 388. The former was sunk by surface escorts near convoy QNS 10 on 14 June soon after clearing the Copper patrols and the latter was sunk on 20 June by U.S.N. Catalina I/84 Squadron while on a sweep covering convoy ON.189 well to the southwest of Iceland.

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- (1) U.535 only stayed a short time in this region where she was used as a reserve tanker. When empty she started back for France. While on this passage through the Bay she was sunk on 5 July by Liberator G/53 Squadron.
- (2) R/206 was piloted by the C.O. of the squadron - Wing Commander R.B. Thomson, D.S.O.

(iii) Group sailing of U-boats out from Germany

Shortly after the initiation of group sailings in the Bay of Biscay, Doenitz started similar group passages for new outward bound U-boats from Germany. The first group consisted of U.194, 200 and 420 who sailed in company from Kiel on 12 June. They made their way out into the North Sea, round the Shetlands and Faeroes and on 20 June were sighted at 1802 hours by Hudson K/269 Squadron while on a Copper patrol to the southeast of Iceland. Pursuing the same tactics as the Biscay groups, all three boats stayed on the surface and opened continuous fire. In a spirited fashion K/269 stayed over them for 50 minutes making attacks with 250 lb A/S bombs and depth charges but without inflicting any damage. Finally the Hudson left them still in company on the surface. Five hours later they were sighted in extreme visibility by O/269 Squadron but all dived and had disappeared over a minute before the Hudson arrived on the spot. They were not re-located by the transit patrols but two of them were picked up on 24 June by Iceland aircraft and both sunk.⁽¹⁾

Ibid

and

B. d U.
War DiaryC.C.File
S.7050/14/3
Encls. 1A to 4A

See Map No. 21

Ibid
Encls. 6A and
7Aibid
Encl. 5A

The probability of group passages by U-boats in the Northern Transit Area had been foreseen and more concentrated patrols, analagous to the Biscay area, had been under discussion. The final decision was to replace the Flora patrols by two patrol areas designated Catspaw I (between Iceland and the Faeroes) and Catspaw II (between the Faeroes and Orkneys). Into the former were to be fed all available long range aircraft and into the latter the short range aircraft of No.18 Group. For the time being it was considered desirable that Iceland's short range aircraft should continue to operate the Potman and Copper patrols which did interlock with Catspaw I. The Catspaw patrols were promulgated on the 12th but were not started until after the first sighting of a U-boat group.

(iv) Doenitz temporarily cancels U-boat sailings and summary for June

Until he could learn as to how the first group passage past Iceland had fared, Doenitz despatched no more U-boats through the transit area. After repeated calls to them, only U.420 answered at the end of the month saying that after being attacked on the 20th they had all dived and she had not regained touch with the other two.⁽²⁾ Doenitz was forced to conclude that both U.194 and 200 had been sunk and, assuming that this had been the work of aircraft in the transit area, he cancelled all further north about passages until the new U-boats had been equipped with quadruple mounted flak guns. Furthermore he recalled four U-boats then starting their passage and sent them into Bergen. Thus, in a less spectacular fashion than a month

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- (1) U.200, a 1,200 ton U.Kreuzer, was sunk by U.S.N. Catalina G/84 Squadron using a Mark 24 Mine and U.194, a 740 ton Type IX boat, was sunk by Liberator H/120 Squadron using two Mk.XI depth charges. Both aircraft were on sweeps supporting convoy ONS.11 and in neither case was the U-boat able to get any final signal through to B. d U.
- N.B. U.200 was the first of the Monsoon boats to sail from Europe bound for the Indian Ocean - See Part II of this chapter.
- (2) U.420 arrived on her operational billet 500 miles N.E. of Newfoundland on 2 July. The very next day she was attacked by the Canadian V.L.R. Liberator B/10 Squadron R.C.A.F. and so seriously damaged that she had to start for France immediately.

later in the Biscay, the air patrols in the Northern Transit Area temporarily ended the outflow of new U-boats to the Atlantic. No further sailings via the Iceland/Scotland route took place until the end of July and the ever increasing flying effort was, unbeknown to us, scouring a sea area empty of U-boats.

Summary for June

During the month only fifteen U-boats actually crossed the transit air patrol areas. Eight of these were attacked or sighted by these patrols who sunk one and damaged two others. The sweeps covering convoys southward of Iceland sunk two more of these eight as well as a ninth boat hitherto unlocated. The transit area flying hours up to the end of June together with results are given in footnote (1). Of the four aircraft lost since 1 March, only one was due to enemy action this being R/206 shot down by U.417.

(v) July operations - Institution of Moorings area

In an appreciation of the situation in the Northern Transit Area at the beginning of July, the A.O.C.-in-C. stated that in previous years there had always been a marked increase in the flow of new U-boats from Germany during the autumn and in view of the heavy summer losses in the Atlantic this increased outflow was likely to occur at any moment. Observing that the majority of sightings during the last three months had been in an area lying nearly midway between the Faeroes and south Iceland, his intention was to concentrate in this area all available aircraft from Iceland and No. 18 Group including those already being provided from No. 15 Group. The area would be known as Moorings (2) and would be flown daily until further orders except when intelligence indicated that U-boats were unlikely to be present or if the Admiralty notified that Fleet Reconnaissance was to take priority. Iceland A.C.H.Q. was to arrange for the participation of the U.S. squadrons at Reykjavik and the scheme of patrols was to be co-ordinated by the A.O.C. No. 18 Group. In the promulgation signal, dated 3 July, it was stated that from time to time there might be destroyers available to co-operate in the area. The whole scheme was issued as Coastal Command Operational Instruction No. 114 and was brought into force at 0001 hours/6 July when patrols Catspaw, Copper and Potman were cancelled.

C.C. File
S.7050/14/5
Encl. 1A.

ibid
Encl. 3A

(1)

Month	Flying hours in Transit Area		A/C Lost	U-Boats			
	Effective	Total		Sighted	Attacked	Results	No. in area
Mar.	Day 692	1,207	-	5	5	2 sunk	24
	Night 9(N)	49(N)	-	-	-	-	-
Apr.	Day 782	1,110	2	17	12	1 sunk	21
	Night 28(N)	52(N)	-	1N	1N	-	
May	Day 997	1,472	-	13	8	1 sunk	22
	Night 77(N)	139(N)	-	1N	1N	-	
June	Day 1,707	2,464	2	15	7	1 sunk	15
	Night 78(N)	147(N)	-	-	-	2 dam.	

N.B. Of the four aircraft lost only one, in June, was due to enemy action.

(2) Moorings Area - Bounded by 6408N x 1302W to 6247N x 0956W to 6120N x 1303W to 6244N x 1605W. See Map No. 21.

ibid
Encl. 25A

After the first day's flying the Moorings area was divided into six strips running N.W. to S.E. The nearest strip to Reykjavik was labelled No. 1 and was used by the Iceland Hudsons. No. 2 was flown by the U.S.N. Catalinas, No. 3 by No. 15 Group flying boats, No. 4 by No. 15 Group Fortresses and Nos. 5 and 6 by No. 18 Group Catalinas and Sunderlands. When convoy cover requirements permitted, the V.L.R. Liberators were fed into No. 3 strip.

ibid
Encl. 22A
and
CC/S.7050/13/4

C.C.File
S.7050/14/5

On 10 July, under a procedure known as Operation SF, three Home Fleet destroyers patrolled in the middle of Moorings in co-operation with the air patrols.⁽¹⁾ When no sighting had been obtained by the 19 July the A.O.C.-in-C. sent a signal to the Groups concerned to the effect that, although U-boat traffic had apparently ceased, the numbers of U-boats disclosed in Kiel by P.R.U. sorties had increased and the enemy was probably re-arming the new boats. He would therefore soon be sending unusually large numbers out into the Atlantic. At the first sign of this move A/U warfare would temporarily assume priority over all other operations for all classes of aircraft in No. 18 Group and Iceland. Moorings would also take priority over the Bay Seaslug area for No. 15 Group's flying surplus to minimum convoy requirements. In addition, the R.P. Beaufighter detachment at present in No. 19 Group was to return to No. 18 Group so that a full R.P. squadron could operate against U-boats moving up the Norwegian coast.

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S.7050
Encl. 109

This signal was followed on 23 July by a warning that there were indications that the efflux of new U-boats might be starting. No. 18 Group were instructed to lay on R.P. Beaufighter sweeps off S.W. Norway and to be prepared to thicken up the flying in the Moorings area in three or four days time. This warning was based on the sighting by a P.R.U. sortie of two northbound U-boats outside Kiel. They were in fact the supply boat U.489 and U.647.

(vi) Doenitz tries a passage north of Iceland

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After his cancellation of normal outward passages at the end of June, Doenitz despatched the U. Kreuzer U.847 from Kiel⁽²⁾ of 6 July via the north of Iceland and through the Denmark Strait so as to avoid the air patrols in the Iceland/Faeroes channel.⁽³⁾ U.847 reached the northern end of the Denmark Strait on 16 July but then collided with an iceberg and became frozen in. She extricated herself with considerable structural damage and had to return to Bergen where she arrived on the 20th. After this failure, Doenitz sent the next trial out through the normal channel but independently of each other and diving as much as possible. These were the above mentioned U.489 and 647. They left Kiel on 22 July while on 29 July, U.847 left Bergen, this time on the normal route. None of the three reached the Moorings area until the early days of August.

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- (1) H.M. destroyers Onslow, Obdurate and Orwell. On 12 July Onslow was replaced by Opportune. Subsequently in July small detachments of fleet destroyers were maintained in the Moorings area, based in the Faeroes. In August this task was performed by the 15th Minesweeping Flotilla - Ref: C.C./S.7050/14/4.
 - (2) U.847 was the last of the Monsoon boats bound for the Indian Ocean.
 - (3) See the 15 July U-boat disposition map No. 27.

C.C.File
S.7050/14/5
Encls. 32A to
41A.

There were, therefore, no U-boats in the Northern Transit Area during the whole of July and naturally the 3,000 odd flying hours produced no sighting.⁽¹⁾ This absence of U-boats was not realised in all A/U circles and the apparent failure to intercept anything gave rise to a number of suggestions either to modify the area of search or to change the operating procedure including a detailed scheme submitted by the American Naval Delegation in London. However, both the A.O.C.-in-C. and the Admiralty considered that the existing Moorings organisation was adequate and no changes took place.

(vii) August operations - Doenitz again cancels U-boat passages

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U.647 is known to have been nearing the Moorings area on about 2 August but as she was never heard of again it has been assumed that she struck a mine in the barrage line extending between the Faeroes and the east coast of Iceland. Incidentally this was the only U-boat loss believed to have been caused by this extensive field. U.489 entered Moorings on 3 August and was sighted at 0750 hours almost simultaneously by Hudson J/269 Squadron, Fortress F/220 Squadron and Catalina U/190 Squadron in showery weather with low cloud. The U-boat put up intense flak at all three aircraft hitting both the Catalina and the Fortress and frustrating the latter's attack. The Hudson made two high level attacks with single 100 lb A/S bombs, the second of which was a close miss alongside and slightly damaged U.489. Meanwhile the Catalina had had to leave and soon after the bomb attack both the Hudson and the Fortress lost sight of the U-boat in a heavy rain shower. U.489 took the opportunity and dived.

Air patrols were thickened along her probable line of advance and she was re-located the following day at 0810 hours in 6118 N x 1436W by Sunderland G/423 Squadron. In face of intense flak a low level depth charge attack was pressed home and the subsequent explosions seriously damaged U.489 who slowed down and started to settle by the stern. The Sunderland had, however, been hit many times and was on fire so that the pilot was forced to ditch near by. He and five others, although all wounded, managed to struggle clear but the remaining five some of whom had been killed by flak were never seen again. Ten minutes later surface craft were seen approaching and U.489 abandoned ship into two large rafts, the captain sinking the boat with demolition charges. In another ten minutes three destroyers arrived on the scene and H.M.S. Castleton rescued the Sunderland survivors afterwards picking up all the crew of U.489. Coming on top of the recent loss of three supply boats in the Bay of Biscay, the loss of U.489 was the final blow to Doenitz's remaining hopes of continuing U-boat warfare in the outer seas.

(1) Flying hours in July.

Type	Effective flying hours	Total Flying hours
Day Night	2,714 300(N)	3,676 421(N)

N.B. There was one aircraft casualty, not due to enemy action.

U.847 crossed the Moorings area between the 3 and 5 August but was sighted on the 5th by Hampden X/455 Squadron who was leaving the area en route to Reykjavik. The U-boat was in the act of diving when sighted and had disappeared two minutes before the aircraft was over the spot. U.847 was not again located. The loss of two out of three U-boats in this area caused Doenitz to once more cancel all passages and no further sailings took place during August. Instead, the thirteen boats leaving Kiel during the month were held in Bergen pending further deliberation. Once again we were not aware of this cessation and the August expenditure of 4,255 flying hours to sight two U-boats, even if one was sunk, was held to be most disappointing.(1)

PART II - U-BOAT OPERATIONS IN THE OUTER SEAS - 1 APRIL TO

31 AUGUST 1943.

(1) Introduction

Apart from the main battle around convoys in the Northern Atlantic and the separate air operations against U-boats on passage through the two transit areas, there was continual, if less concentrated, flying against the larger Type IX and U. Kreutzer boats employed by Doenitz in what may be called the Outer Seas. One of these areas, the Arctic,(2) is not dealt with in this volume as at this time little flying by the R.A.F. took place in this region. Except for air support within some 250 miles of Iceland the provision of consistent air escort to the convoys to and from Russia was, after the special shore-based air effort from North Russia in September 1942, rightly considered to be the task of escort carriers.(3) This was far more efficient and economical of effort in view of the absence of shore air bases along the route. Many battles with U-boats around these convoys took place in 1943 and 1944 the results of which vindicated the principle that adequate air cover together with surface escort not only safeguards the convoy but is the most productive method of killing U-boats.(4)

The areas we are concerned with are off Freetown, Capetown, the Brazilian coast, the Caribbean and occasionally off the United States seaboard. In all these areas the enemy in 1942

(1) Flying hours for August

Type	Effective flying hours	Total Flying hours
Day	3,798	5,216
Night	457(N)	685(N)

N.B. One aircraft was lost during the month, shot down by U.489

- (2) The Arctic area formed a separate U-boat Command and was first formed early in 1942. The U-boats were based in Narvik, Trondheim and Bergen. They were all Type VII Boats and from April 1942 were maintained at a strength of between 20 and 25.
- (3) See Volume III Chapter VIII end of Part I.
- (4) The story of these operations is told in Volume I of the Admiralty Staff History of the Defence of Trade and in the Admiralty Narrative of Naval Air Operations.

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had had great success with comparatively little loss but during the latter half of 1942 the gradual adoption of convoy together with a slow growth of air cover had reduced his numbers, mobility and striking power⁽¹⁾ From the end of March 1943 the enemy operations overseas consisted of nuisance raids by a few long endurance Type IX boats operating singly. At that time the U-boat fleet numbered 430 of which 237 were fully operational. Twenty-one were in the Arctic Command, seventeen in the Mediterranean Command and three in the Black Sea leaving 196 in the Atlantic Command with which we are concerned. Of these latter, 126 were of the smaller Type VII and 70 were large boats made up of 53 Type IX 750 tonners, eight U-Kreuzers of 1,200 tons, three 1,600 tons Type XB mine-layers and six 1,600 ton Type XIV supply tankers. The availability for overseas work of the Type IXs was reduced in April by an order from Doenitz that to make up the numbers required in the convoy war, up to a dozen were to be operated in the Northern Atlantic in the U-boat packs in spite of their unhandiness in this type of warfare.

(ii) Operations overseas

Instead of treating each of these distant areas separately, an attempt has been made to describe the course of events as a whole in the Atlantic south of latitude 40° N. The U-boat disposition maps for various dates (Nos. 8 to 13) will help to illustrate the text from now onwards.⁽²⁾

(a) April 1943

At the beginning of the month the disposition of overseas U-boats in the Western Atlantic (hereafter called Area A) was seven. Those off West Africa (hereafter called Area B) were nine. The large mine-layer U.117 was off Cape Finisterre coming down to lay mines off Fedala and Casablanca. These were laid by her and U.455 on the 8 April⁽³⁾ The U-boats off or near the coast of South Africa (hereafter called Area C) numbered seven. A fresh batch of six U.Kreuzers was on its way to this area and were strung out between the Northern Atlantic and the Cape Verde Islands.⁽⁴⁾ Individual boats and their positions can be seen for 3 April on Map No. 8.

During April, in spite of fairly consistent air cover in Area A, the U-boats occasionally picked up independently routed ships. U.155 and 129 each sunk two and U.185 one ship. Similarly in Area B, U.123 sank three and U.515 one ship while the Cape bound U.Kreuzers U.181 and 195 each sank one ship. This was difficult to prevent or avenge as most of the air effort in both areas was devoted to convoy escort and support⁽⁵⁾ which had the desired result that convoys were rarely molested but inevitably the independents were relatively unprotected and were easy targets. An exception came on the last night in April when U.515 got into a weakly escorted convoy south of

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and
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- (1) See Volume III Chapter XIII end of Parts I and II.
(2) These maps have been compiled from the War Diary of B.d U.
(3) S.S. Rouennais (Fr.) - 3,777 tons in convoy C.O.29 mined on the 25 April off Casablanca was the only victim of these fields.
(4) These six were U.177, 178, 181, 195, 196 and 198.
(5) Flying figures for West Africa in April - Ref. West Africa Command O.R.B. Appendices.

Type	Convoy Escort				Convoy Support and Patrols			
	Eff. hours	Total hours	S	A	Eff. hours	Total hours	S	A
Day	825	1,358	2	2	759	1,078	1	1
Night	61	182	-	-	62	112	-	-

Aircraft casualties - one (not due to enemy action)
N.B. No figures are available for Areas A or C.

Freetown and sank no less than seven ships.⁽¹⁾ In Area C a coastwise convoy system with somewhat sparse air cover was being started but by keeping to seaward of this the two German and one Italian U-boat snapped up six large independents aggregating 43,000 tons. Retaliatory action in these areas accounted for U.167 sunk on the 5th in the Canaries Channel by Gibraltar Hudsons working from Agadir and U.174 sunk south of Halifax by a U.S. aircraft on the 27 April. U.161 and 129 attempted during the month to close Cape Hatteras in search of shipping but had to withdraw well to seaward again because of air and surface craft activity which they reported as extending out to 200 miles from the U.S. coast.

(b) May 1943

During the month the number of overseas boats changed but little. U.176 replaced U.155 in the Florida Strait. U.154 was transferred from West Africa to the Brazilian coast where she was joined by U.128 fresh from France. U.159 had returned home. In the Atlantic Narrows between South America and Africa was the supply tanker U.460 to replenish the U-boats in the vicinity. Passing through this area was U.182 homeward bound from the Cape and two fresh U-Kreutzers - U.195 and 197 - bound for the Cape. On the way through each of these boats intercepted and sank an independent ship. However, a few days later when further north U.182 was sunk on the 16 May by a U.S. destroyer forming part of the escort to an American cross-Atlantic convoy. During the second half of May six U-Kreutzers were in operational billets off the South African coast between Capetown and Lourenco Marques.

In Area A - U.176 attacked a local convoy in the Florida Strait and sank two ships but two days later on the 15 May was *patrol boat* located and sunk herself by American and Cuban aircraft. U.161 after further complaints about the strength of air and surface craft activity to seaward of Cape Hatteras, started for home on the 18 May. When 600 miles on her homeward journey she managed to sink a 255 ton sailing vessel - her sole victim after six weeks patrol. U.154 sank one ship off Pernambuco and then had to withdraw because of continuous day and night air activity while U.128 was sunk on the 17 May by combined American air and surface craft action off Bahia.

In Area B - the four U-boats in the Freetown Sector sank between them five independent ships aggregating 27,000 tons. They then refuelled together with U.154 from the tanker U.460 after which U.123 started home and the others returned to their previous billets. In this month also, the air effort by the West African Command safeguarded the coastwise convoys but found few opportunities for contacting U-boats who were keeping well to seaward.⁽²⁾ Towards the end of the month the

- (1) This was convoy TS.37 - See Chapter II end of Section (iv)
(2) Flying figures for West Africa in May - Ref. West Africa Command O.R.B. apprentices

Type	Convoy Escort				Convoy Support and Patrols			
	Eff. hours	Total hours	S	A	Eff. hours	Total hours	S	A
Day	949	1,570	1	1	608	860	-	-
Night	8	38	-	-	1	8	-	-

Aircraft casualties - NIL.

Type IX U.511 was passing outside the Cape Verde Islands on her way to Japan. (1)

In Area C - During the month five independent ships were sunk. On the 23 May, U.178 and 196 tackled a convoy between Port Elizabeth and Durban but were frustrated by the strong air cover. U.196 was afterwards heavily depth charged by the surface escort. However, on the 28th, U.177 attacked another convoy and sank two large ships out of it, afterwards escaping undetected.

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Doenitz's order, given early in April, for the participation by Type IX U-boats in the Northern Atlantic convoy war had up to the 6 May resulted in the loss of eight of them. As new Type VIIIs were becoming available in increasing numbers, he reverted to the exclusive employment of the larger types in the more distant areas. As May progressed, the very heavy losses in the Northern Atlantic compelled Doenitz to withdraw the U-boat packs to more southerly latitudes and the prosecution of Outer Sea operations became his only alternative until he could re-equip with better weapons. (2) By the end of May this prosecution was being intensified. Two Type IXs were coming out from Germany (U.170 and 535) and two more (U.172 and 530) together with three Type VIIIs (U.758, 592 and 455) from French ports. The large minelayer U.119, after replenishing some boats in mid-Atlantic, was about to lay a minefield off Halifax. (3) U.66, 190 and 521 had taken up positions off Cape Hatteras. U.67, 527 and 513 were well on their way towards the Caribbean and Brazilian coast followed by the U-Kreuzer U.199. Another large minelayer (U.118) was south-bound off the Azores to act as a refueller and a small minelayer (U.214) was nearby on her way to lay mines off Dakar. (4) The same three U-boats were in the Freetown area with the supply tanker U.460 southwest of the Cape Verde Islands. Further south, U.154 was off Cape San Roque, U.511 off Ascension Isle and U.180 was returning from the Cape area with a consignment of gold and some Japanese officials. (5) Her place off South Africa was being taken by U.197. The six other U-Kreuzers were still in positions along the coast.

See Map No. 13

(iii) The U-boat War in all Parts of the Atlantic in June 1943

From the 1 June onwards, it is proposed to recount the course of events in all parts of the Atlantic because the unsuccessful attempts to intercept the American transatlantic convoys hastened the merging of both Types VII and IX U-boats into the Outer Seas Offensive - a campaign which was brought to

- (1) It had been arranged between the respective High Commands that a German U-boat should be transferred, not only to assist the Japanese in organising U-boat warfare against Allied shipping but as part payment for rubber cargoes brought from the Far East by the blockade runners. Ref. Fuehrer Conferences on Naval Affairs Pages 11 to 20.
- (2) See end of Chapter II.
- (3) This field was laid on the 2 June and claimed the one and only victim the next day. This was S.S. Halma - 2,937 tons.
- (4) U.214 laid her mines off Dakar on the 6 June. The only casualty to them occurred on the 20 June - S.S. Santa Maria (U.S.) - 6,507 tons damaged.
- (5) This valuable cargo and the Japanese had been transhipped off Madagascar from a Japanese U-boat.

nought mainly by the break-down in the facilities for refueling at sea. In this second major reverse the Allied Maritime Air played a leading part to which the two transit offensives contributed in no small degree. Frequent cross reference will therefore be made to events described in Chapter IV and Part I of this chapter.(1)

See Map No. 13

When Doenitz withdrew the U-boat packs from the Northern Atlantic he maintained a few Type VII boats on the old hunting ground to put out bogus radio traffic in order to deceive the Allies into thinking that his large concentrations were still in position. He recalled those convoy war U-boats that were low in fuel and deployed the remaining sixteen into a Group Trutz disposed in a north/south line some 600 miles west of the Azores. The dummy radio traffic did not deceive the Allies for long and by the middle of June both air and surface support to Northern Atlantic convoys was being reduced to a prudent minimum thus releasing forces to stiffen the operations in both the transit areas. Moreover additional American escort carriers were becoming available and starting early in the month with the existing U.S.S. Bogue they were employed in giving air support to the American UG and GU convoys plying direct between New York and Gibraltar. Thus the deployment of Group Trutz to the Azores area in the hopes of getting out of the hated air cover was doomed to disappointment.

(a) The Atlantic north of Latitude 30° N.

During the month new Type VII boats from Germany were directed into the scattered billets in the Northern Atlantic but time expired departures homeward and casualties caused by Allied attack resulted in only five billets being consistently maintained.(2) Their radio traffic was a waste of time and their threat to convoys nil. They were however, sighted and occasionally attacked by Coastal Command aircraft escorting or

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- (1) The reference for U-boat movements and policy is from the War Diary of B.d U.
 - (2) 1 June - U.202 sunk by H.M.S. Starling when supporting convoy HX 241.
 4 June - U.308 (outward) sunk north of the Shetlands by H.M.S/M. Truculent.
 6 June - U.450 seriously damaged in the Northern Transit Area by A/220 Squadron.
 11 June - U.417 sunk in the Northern Transit area by R/206 Squadron.
 14 June - U.334 sunk S.W. of Iceland by H.M. ships escorting convoy QNS10.
 15 June - U.449 damaged S.W. of Iceland by F/120 Squadron escorting QNS10.
 20 June - U.388 sunk S.W. of Iceland by I/84 Squadron U.S.N. covering QN189.
 24 June - Two large boats - U.194 and 200 - both intended for overseas were sunk by aircraft supporting QNS11.

supporting the northern convoys. (1) No convoys were attacked and indeed no ships at all were sunk by U-boats north of latitude 31° N. Group Trutz was equally unsuccessful. Early in the month Doenitz was expecting a UG convoy to approach them from the west but part of his waiting line was located on the 4th by aircraft from U.S.S. Bogue who was supporting this convoy. U.603, 641 and 228 were attacked indecisively but the next day a further search by her aircraft attacked and sank U.217. As the Group had seen no signs of the convoy by the 6 June, Doenitz assumed that, acting on the previous sightings of U-boats, the convoy had by-passed the line. This was confirmed to him on the 8th as U.758 outward bound sighted a destroyer and some ships well to the southward of the Azores. Shortly afterwards the boat was attacked by carrier-borne aircraft and, although shooting down two of them, was badly damaged with several men wounded. From these episodes Doenitz concluded correctly that escort carriers were being used to provide air cover for these convoys and air reconnaissance must be expected up to 200 miles ahead of them. This had not been expected by him and he forthwith instituted a procedure to meet this contingency:-

(A) - If carrier borne aircraft were sighted by day, U-boats were to make for the presumed convoy in rear at high speed, the U-boat Command at the same time ordering the rest of the line to follow suit. The convoy would then only be able to evade by making a large alteration of course. If the convoy was not sighted by dark, the line must be halted and the boats must patrol north and south until daybreak when a further advance in line towards the convoy must be made until it was sighted.

(B) - If carrier borne aircraft were sighted in the evening U-boats must not follow the convoy's presumed course but patrol at high speed at right angles until daybreak when the line must advance towards the convoy as in (A).

Having missed this UG convoy, Doenitz disbanded the patrol line and sent all Group Trutz to refuel from the supply tanker U.488 westward of the Azores.

(b) The Outer Seas re-inforcements

The intensification of the Outer Seas offensive was now well under way. Four Type IX boats - U.172, 510, 513 and 530 together with four Type VIIIs - U.333, 455, 572 and 592 were outward bound for the Brazilian and West African Coasts soon to be followed by five more Type IXs and eight Type VIIIs all

(1) June convoy escort and support by Nos. 15, 18 and Iceland Groups.

Convoy Escort					
Type	Effective hours	Total hours	Sights	Attacks	Results
Day	908	1,901	10	5	<u>U.449</u> damaged.
Night	18	302	-	-	
Convoy Support					
Day	1,033	1,618	7	5	<u>U.388</u> , <u>194</u> , <u>200</u> sunk
Night	16	60	-	-	-

Maps
Nos. 22 to 33

destined for distant areas.⁽¹⁾ From this date (8 June) the Maps illustrating the disposition and movement of all U-boats in the Atlantic are made out at weekly intervals. The large U-boats on or intended for overseas missions are in plain red, the Type VIIIs on specific Outer Seas tasks are in red underlined with green and the Type VIIIs still being employed on convoy operations in the North Atlantic are in plain green. The individual boats' number is given in all cases as being of use in conjunction with the text in this and the Bay Offensive chapters.

Adequate refuelling facilities a basic requirement

Doenitz realised that his planned extension of the overseas effort, particularly by Type VII boats, as well as the maintenance of an anti-convoy group in Azores area would depend on adequate and suitably disposed supply tankers. To this end the large minelayer U.118 was being used as a reserve tanker south of the Azores as also would be U.119 after laying her mines off Halifax. By the 12 June most of Group Trutz had replenished fuel and provisions from U.488 and were sent to establish a triple patrol line some 900 miles W.S.W. of the Azores so as to intercept the next UG convoy.

The first set-back to Doenitz's refuelling plan occurred on the 12 June when U.118 was sunk by U.S.S. Bogue's aircraft S.S.W. of the Azores. This compelled him to cancel some of the Type IX missions in order to use their fuel to replenish the more numerous Type VIIIs. Accordingly U.530, 170, 535 and 536 all received instructions either to refuel other operational boats to capacity or to give up their fuel to U.488 after which they were to return to Biscay Ports. By the middle of the month another batch of three Type IX and eight Type VII boats were leaving the Bay⁽²⁾ to be refuelled to capacity south of the Azores before proceeding to overseas billets. On the 21 June, another blow to the refuelling programme took place. The supply tanker U.462, outward bound from Bordeaux, was severely shot up by Mosquito aircraft in the Bay and suffered several killed and wounded which necessitated her return to harbour. This was followed on the 24th by the sinking of the incoming U.119 in the Bay by the 2nd Escort Group, and on the 27th by the forced return of U.518 after being attacked in the Bay by P/201 Squadron. Although another supply tanker - U.487 - had got through the Bay outward bound, Doenitz had to inform the boats in the scattered Northern Atlantic billets that no refuelling was possible for them and when low in stock they must start home without further orders. At the same time he instructed all southbound U-boats that they were duty bound to proceed at economic speed.

(c) Doenitz abandons mid-Atlantic convoy operations

Group Trutz had formed the new line by the 16 June but in the ensuing five days had seen no signs of the expected

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- (1) Type IXs - U.185, 508, 170, 535 and 536, the latter three north about from Germany
 - Type VIIIs - U.759, 135, 571, 618, 590, 84, 306 and 732.
 - (2) Type IXs - U.159, 68 and 155. The two latter were forced to return to harbour owing to attack by Coastal Command Beaufighters.
 - Type VIIIs - U.134, 415, 653, 634, 358, 600, 257 and 615. Another one - U.564 - was sunk in the Bay by G/10.O.T.U. Still another - U.338 - was damaged by F/206 Squadron in the Bay and forced to return.

UG convoy so on the 21st he ordered the triple line to move eastward at seven knots until reaching an area south of the Azores by the 29th where he proposed to halt it in expectation of a GU convoy. He surmised that the UG convoy must have taken a long southerly detour and this was confirmed on the 22nd by a report from U.572, on the way to the West Indies, that she had sighted a large strongly escorted convoy about 1,200 miles southwest of the Azores steering 110°. As the distance was too great to operate against it, he allowed the orders to Group Trutz to stand. By the 26 June, Group Trutz was in position to the S.S.W. of the Azores and he temporarily extended the line up to the latitude of the Azores by using five or six of the overoas task boats who were topping up with fuel from U.488. He noted at this time in his War Diary that there was always a possibility of enemy convoys passing close north or south of the Azores and stressed the difficulty of intercepting these convoys in the wide ocean space without any air reconnaissance of his own and without any decyphered intelligence.⁽¹⁾

Finally at midnight on the 28 June, with no signs of the GU convoy, Doenitz abandoned the fruitless and unprofitable campaign against the American convoys and permanently dissolved Group Trutz. All boats in it, except U.666 who was to return time expired to France, were to move E.N.E. in three sub-groups called Geier I, II and III.⁽²⁾ They were to make for Cape Roca (Portuguese coast) and then spread fanwise up to the latitude of Cape Finisterre where they would occupy billets for operations against Allied shipping proceeding between the United Kingdom and Gibraltar or Africa. Pending their arrival, which was expected to be about the 6 July, a batch of six outward bound Type VII boats⁽³⁾ were told to halt in an area some 300 miles W.S.W. of Cape Finisterre to initiate the operation against the north/south convoys.

(d) - The Outer Seas operations

Few successes attended the U-boats in distant areas because, as yet, there were not many actually in position. In Area A the month started badly for the enemy as U.521 was sunk off Cape Hatteras by a U.S. patrol boat on the 2nd but thereafter no further U-boat losses took place. On the other hand the seven remaining U-boats in the area effected little. U.66 sank a large tanker south of Charleston, one ship was sunk and one damaged by U.513 southeast of Rio de Janeiro and one ship was sunk by U.172 near the end of the month between Pernambuco and Ascension Isle. In Area B, U.515 attacked the northbound convoy T.S.42 at dusk on the 1 June to the south of Freetown but was detected and so heavily depth charged by the surface escorts that she had to break away and start homeward. On the following day U.126, off Freetown, torpedoed but only damaged a straggler from this same convoy. On the same day a little further north, U.105 was sunk off Dakar by a Free French aircraft working from that base. Nothing further occurred in this area. U.126, the only

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- (1) For sometime his Radio Intelligence Branch had been unable to gain any routing information from intercepted Allied signals.
- (2) Geier I - U.228, 603, 608 and 641.
 Geier II - U.211, 435, 951 and 953.
 Geier III - U.232, 336 and 642.
U.221 and 558 to take up billets between Lisbon and Gibraltar.
- (3) U.604, 270, 406, 591, 598 and 662.

remaining boat, left for home on the 12 June and the U-boat re-inforcements did not arrive in positions off the coast until right at the end of the month. In these conditions it is not surprising that the West Africa Command had a completely blank month.(1) Area C provided Doenitz with a few successes in an exceptionally poor month for him. Up to the 8 June, four independent ships were sunk off South Africa by U.178, 181, and 198 and one near Ascension Isle by U.180 on her homeward journey. Thereafter the South Africa boats were withdrawn well to the southeastward of Madagascar where during the latter half of the month they were refuelled and provisioned from the German tanker 'Schliemann'. Thus replenished they were intended by Doenitz to operate during July between the South African coast, Madagascar and Mauritius.

(e) - Operation Monsoon

In order to exploit the promising area still further to the north, Doenitz detailed in June a further nine Type IX boats and two U-Kreuzers to proceed out to the Indian Ocean for operations up the east coast of Africa, in the Gulfs of Aden, Oman and Cambay and off the southern tip of India. Their departure was timed so as to reach their areas at the end of the S.W. Monsoon period and the venture was given the cover name of Operation Monsoon.(2) The first to set out was U-Kreuzer U.200 who left Kiel on the 12 June. She was sunk when southwest of Iceland on the 24 June by the Coastal Command controlled U.S.N. Catalina G/84 Squadron who was covering convoy ONS.11. The second boat to sail was U.188 from Lorient on the 30 June followed early in July by the other nine. Their story is given in the July section.

(f) - Summary for June

Doenitz abandoned operations against the American convoys not because of losses incurred as had been the reason further north in May but because of his complete failure to intercept any of them. This was due primarily to intelligent evasive routing aided by air cover provided by U.S.S. Bogue's aircraft. Doenitz had no air reconnaissance capable of reaching the western Azores area and it was because he could obtain this nearer Europe that he started to operate against Allied convoys westward of Cape Finisterre. That he would run straight into excellent Allied shore-based air cover in this area was to be painfully demonstrated to him early in July. The meagre total of only four ships sunk in the Atlantic was, apart from the failure in the Azores region, due to the fact that only few U-boats were in overseas attack areas. A large number were

- (1) Flying figures for West Africa in June - Ref. West Africa Command O.R.B. appendices.

Type	Convoy escort				Convoy Support and Patrols			
	Eff. Hours	Total Hours	S	A	Eff. Hours	Total Hours	S	A
Day	939	1,560	-	-	565	789	-	-
Night	1	41	-	-	10	23	-	-

Aircraft casualties - NIL

- (2) The boats detailed were:-
 Type IXs - U.168, 183, 188, 506, 509, 514, 516, 532, 533
 all from Lorient.
 U-Kreuzers - U.200 and 847 both from Kiel.

on their way to or approaching their stations and July seemed to him to promise a good dividend but supply difficulties had already appeared. Moreover the mistaken tactics of surface flak battles with aircraft coupled with a trust in an obsolete search receiver were to cost him dear in mid-ocean, overseas and in the transit areas.

(iv) July operations

(a) The Atlantic north of Latitude 30° N

Shorebased air activity in the Bay and Outer Bay very soon affected not only the current enemy intention against convoys on the Gibraltar route but his Outer Seas campaign as well. The five boats temporarily halted west of Cape Finisterre were soon told to continue their outward passage having sighted nothing.⁽¹⁾ Their place was taken from the 5 July onwards by the slowly advancing Geier groups whose arrival off the west coast of Portugal coincided with the special air effort from Gibraltar and Morocco requested by the A.O.C.-in-C. Coastal Command.⁽²⁾ Between the 7 and 11 July these aircraft sank three Geier boats⁽³⁾ and damaged two others. Two more were attacked indecisively and an outward bound boat - U.257 - was forced to return severely damaged. In spite of frequent sighting reports of convoys in the area by the G.A.F. reconnaissance, the Geier groups were quite unable to follow them up and on the 12 July Doenitz disbanded them and recalled the boats to France. Ironically enough, his final signal to return was addressed to the very three boats who had just been sunk.

In the Northern Atlantic, exhaustion of fuel stocks caused four of the scattered units to start for home while another - U.420 - after arriving on her billet northeast of Newfoundland on the 2 July was the next day attacked by the R.C.A.F. Liberator B/10 Squadron and so severely damaged that she had to make for home immediately. This left only U.667 in the entire area and she too had to leave on the 14 July. No U-boats were sighted during the month by the much reduced convoy support flying done by Nos. 15, 18 and Iceland Groups.⁽⁴⁾

During the first ten days of July, the implementation of the Outer Seas campaign continued. The other nine Monsoon boats sailed, eight from Lorient and the ninth - U-Kreutzor 847 - from Kiel. From other Bay ports sailed four Type IXs, twelve

- (1) U.604, 406, 591, 598, and 662. U.270 had turned back while still in the Bay owing to defects.
- (2) See Chapter IV (viii) and (x).
- (3) U.951, 435 and 232.
- (4) July convoy escort and support by Nos. 15, 18 and Iceland Groups.

Flying hours on Convoy Escort					
Type	Effective	Total	Sightings	Attacks	Results
Day	538	1,622	-	-	-
Night	37	210	-	-	-
Flying hours on Convoy Support					
Day	208	311	-	-	-
Night	15	45	-	-	-

Type VIIIs, five small minelayers⁽¹⁾ and one supply tanker. The Bay air operations took toll among this bunch. Two Monsoon boats, one Type VII and a small minelayer were sunk outright while one Type IX, one Type VII and the ill-fated tanker U.462 were sufficiently damaged to compel their return to harbour.⁽²⁾ The latter mishap was another direct blow at the already strained refuelling situation. U.462 was intended to proceed into the South Atlantic and Doenitz had now to make plans to refuel the Monsoon boats much further north. U.487, then near the Azores, had not sufficient stocks to do all the replenishing necessary and another operational boat - U.160 - was detailed as a reserve tanker. Doenitz decided that those boats at present outward bound would have to go to their attack areas direct without first refuelling and accordingly he switched those already replenished to the Caribbean and Brazilian coasts so that the former could go to the less remote Freetown area. Should the next two supply tankers get through the Bay unscathed, one would proceed to the Cape Verde Islands so that the Freetown boats could remain there as long as possible and the other towards Trinidad for the benefit of boats in the Caribbean and Brazilian areas. He also summarised the whole U-boat War Situation as he saw it. This recapitulates what has already been narrated in this and the previous chapter but it underlines the already crippling effect of maritime air attack on U-boats at sea and the dependence of his present campaign on adequate refuelling facilities. For those interested, it has been included at Appendix VIII.

The revised refuelling scheme received a further blow in the middle of July. U.487 was sunk by aircraft from U.S. escort carrier Core some 800 miles S.S.W. of the Azores and U.160 by aircraft from the Santee⁽³⁾ just south of these islands. The latter followed this up a day later by sinking the Monsoon boat U.509 in much the same position. Doenitz did not become aware of these losses until a week later and then gave orders that until further notice U-boats were to avoid the area east and south of the Azores down to the latitude of the Canary Islands. Any boats compelled to use part of this prohibited area were, in view of the danger from carrier borne aircraft, to proceed with the utmost caution. Further emergency measures as regards refuelling were taken. The outward bound U.648 was to refuel the returning U.527⁽⁴⁾ and U.155 was to replenish three of the Monsoon boats while U.516 had to cancel her Indian Ocean mission in order to refuel the others.

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- (1) U.373 to mine off Port Lyautey. U.607 off Kingston (Jamaica). U.613 off Jacksonville. U.230 and 566 off Norfolk (Va.).
 - (2) Monsoon boats U.506 and 514 sunk by U.S.A.A.F. aircraft and R/224 Squadron respectively. U.628 and minelayer U.607 sunk by J/224 and N/228 Squadrons respectively. U.505 damaged by H.M. ships and U.386 and 462 damaged by D/53 and J/224 Squadrons respectively. Two others - U.706 and 709 had to return owing to internal defects.
 - (3) These two escort carriers had recently joined U.S.S. Bogue in providing air cover and reconnaissance for the UG and GU convoys.
 - (4) After being refuelled, U.527 continued on her homeward passage but was sunk on the 23 July by U.S.S. Bogue's aircraft just south of the Azores. Shortly afterwards her aircraft spotted the outward bound minelayer U.613 who dived. The Bogue's destroyer screen was homed to the spot and U.613 was sunk by U.S.S. Badger.

On the 22 July, two precious supply boats sailed from Bordeaux - the supply tanker U.459 and the large minelayer U.117. So anxious was Doenitz to help them safely through the Bay that he detailed three 'Z' class destroyers to escort them as far as longitude 10°W. However, just after they had been left by their destroyer escort on the 24th to continue alone, U.459 was sunk by Wellington Q/172 Squadron. This marked the beginning of the end of the Outer Sea operations. U.84, 572 and 134 in the West Indies were told to start home and other boats were instructed to leave their stations when their fuel stocks approached the minimum required for the return journey. If vitally necessary, some fuel to ensure return could be obtained from U.117 who would be stationed off the Azores.

Meanwhile since the middle of the month six more Type VIIIs and one Type IX minelayer⁽¹⁾ had left Biscay ports for overseas operations. All had been attacked by Coastal Command aircraft and two Type VIIIs had been sunk.⁽²⁾ One of the final blows to the desperate refuelling problem came on the 30 July when the next two supply tankers U.461 and 462 were sunk in the Bay by U/461 Squadron and S/502 Squadron and the type IX accompanying them was destroyed by ships of the 2nd Escort Group. Confirmation of this disaster did not reach Doenitz for some days and his subsequent decisions are related in the August section.

(b) The Outer Seas operations

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The month started well for Doenitz as his first wave of U-boats were arriving in their attacking areas and for a time caught the defence forces at a disadvantage. Nine ships were sunk up to the 9 July off the Brazilian coast (three of them out of a convoy), three in the West Indies, three off the West African coast and six off the southeast coast of Africa. No U-boats were lost. However, from the 9th onward, shore-based aircraft reacted strongly, particularly off South America, and took an increasing toll of the operating U-boats. The rate of shipping loss fell accordingly. During the rest of the month, seven ships were sunk and three damaged in Area A against ten U-boats destroyed with two others seriously damaged - all by U.S. shorebased aircraft. In Area B, only one ship was sunk and three damaged in spite of a large concentration of U-boats between Freetown and Lagos. One U-boat was sunk in this area by H.M. ships escorting a convoy in the Canaries Channel and one was seriously damaged off Takoradi by West African Air Command aircraft.⁽³⁾ Area C was the only region to continue to afford Doenitz any reasonable returns. Here the U-Kreutzers off the southeast coast sank a further eight large ships and damaged another with no loss to themselves.

- (1) U.43 to lay mines off Lagos.
- (2) U.404 by W/224 and N/4 U.S.A.A.F. Sqdns.
U.614 by G/172 Sqdn.
- (3) Flying figures for West Africa in July - Ref. West Africa Command O.R.B. appendices.

Type	Convoy escort				Convoy support and patrols			
	Eff. hours	Total hours	S	A	Eff. hours	Total hours	S	A
Day	1,078	1,825	2	2	935	1,293	2	2
Night	14	76	-	-	36	52	-	U.571 dam.

In mid-ocean, the American escort carriers supporting the UG and GU convoys had three further successes apart from those already recounted in connection with the enemy's refuelling arrangements. On the 16 July, the Core's aircraft sighted and sank U.67 east of Bermuda as she was on her return journey. On the 24th, carrier borne aircraft attacked U.373 off Madeira as she was on her way to lay mines off Port Lyantey. The damage inflicted forced her to abandon this mission and start for home. Finally on the 30 July, the Santee's aircraft sank U.43 southwest of the Azores as she was on her way to lay mines off Lagos.

(v) August operations

(a) The Atlantic north of latitude 30° N.

By the 2 August Doenitz realised the probable loss of one of the essential supply tankers in the Bay of Biscay and immediately recalled those overseas boats who were lowest in fuel. Six were told to start back from West Africa and six more from the Guiana and Brazilian coasts. They were instructed to make for a position well to the west of the Azores where those in vital need of fuel to reach France would be able to get some from U.117 after which this boat was to lay mines off New York. It was impressed on all U-boats at sea that the utmost economy must be exercised in fuel and provisions.

By the 4 August, repeated W/T calls had failed to raise a reply from either of the outward bound supply tankers in the Bay and Doenitz recorded in his War Diary that further supply was now problematical. All boats overseas were to start on their return passage and, as carrier borne aircraft were to be expected everywhere in the Central and North Atlantic, the order of the 21 July was cancelled so that boats were free to use the shortest way home eastward of the Azores.

The Bay offensive closed in a climax of U-boat sinkings during the first three days of August. Out of the eight boats then outward bound, four were sunk and one was turned back damaged.(1) On the 4 August, the new outward bound supply tanker U.489 from Germany was sunk in the Northern Transit Area by G/423 Squadron and on the 7th the reserve supply boat U.117 was destroyed 400 miles west of the Azores by the Card's aircraft(2) who also seriously damaged U.66 who was refuelling from her. Thus no refuelling boats remained afloat in the Atlantic.

It was not till the 10 August that Doenitz was aware of the loss of U.489. He then realised that, in order to get the lowest stocked boats back to French ports, he must detail the outward bound Type IXs U.129 and 525 as reserve fuellers as well as using U.117. Meanwhile the Card's aircraft had on the 9 August sunk U.664 and badly damaged U.262 to the northwest of the Azores.(3) On the 11th, they sank the newly detailed emergency fueller U.525 in the same area. Delays in confirmation of these losses resulted in much W/T traffic and

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- (1) U.106, 383, 454 and 706 sunk. U.218 (to mine off Trinidad) damaged.
 - (2) U.S.S. Card was another American escort carrier engaged in air support to the UG and GU convoys.
 - (3) These two boats together with U.760 were on their way to watching billets off the U.S. seaboard. Three days later U.760 was attacked by a U.S. Liberator when approaching the coast. She was severely damaged and had to return to France.

considerable confusion in the U-boat Command H.Q. as boats in need of fuel or doctors searched the ocean west and south of the Azores in vain for non-existent sources of supply with whom they had been given rendez-vous.

On the 14 August Doenitz gave up U.117 as lost and decided to use the last Monsoon boat - U.847 - to ease the fuel crisis.(1) He gave orders, however, that every effort was to be made not to take so much fuel from her as would result in the cancelling of her mission. By the 18 August it was realised that U.525 had been sunk and, although U.129 had started replenishing some of the returning boats, it was imperative to find additional sources. U.847 therefore had her Indian Ocean mission cancelled and from the 21st took over the duty of supply in a position some 750 miles south-west of the Azores.

(b) The Outer Seas

Consequent upon the growing refuelling crisis the July high tide of operations was ebbing fast and, in the Atlantic, shipping losses were insignificant. In Area A, only two ships were sunk - both by U.185 in the Bahia sector. U.S. shorebased aircraft sank U.572 east of Trinidad, U.615 off Curacca and together with surface craft so damaged U.604 off Pernambuco that she had subsequently to be scuttled. In Area B only one ship was sunk but West Africa aircraft sank U.403 off Dakar and U.468 westward of Bathurst.(2) This latter attack was by Liberator D/200 Squadron.(3) It was made in the face of very intense flak and in spite of mortal injury and a raging fire in the aircraft the gallant pilot - Pilot Officer L. A. Trigg D.F.C. - released an accurate stick of depth charges and then crashed in flames. There were no survivors. Trigg afterwards received a posthumous V.C. on the admiring evidence supplied by survivors from the U-boat who were picked up by a corvette some days later. By the 18 August no U-boats remained in operation in the Outer Seas.

Only in Area C was any significant shipping loss incurred. This was well round the corner from the Atlantic in the waters between southeast Africa, Madagascar and Mauritius. Seven ships were sunk, the last being by U.197 on the 17 August. She was herself sunk by air attack on the 20 August when south of

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- (1) This U-Kreutzer's attempts to get out from Germany into the Atlantic have been recounted in Part I of this Chapter. She was, on the 14 August, approaching the Azores from the north.
- (2) Flying figures for West Africa in August - Ref. West Africa Command C.R.B. appendices.

	Convoy escort				Convoy support and patrols			
	Eff. hours	Total hours	S	A	Eff. hours	Total hours	S	A
Day	1210	1930	2	2	894	1,151	5	4 <u>U.403</u> and <u>U.468</u> sunk
Night	5	47	-	-	21	36	-	-

Aircraft casualties - One on convoy escort (not due to enemy action) and one on patrol shot down by U.468.

- (3) No. 200 Squadron had just started re-equipping from Hudsons to Liberators. This was the first sortie undertaken by the detachment of four Liberators based at Rufisque near Bathurst.

Madagascar. By this date the other U-Kreuzers were homeward bound except for U.178 who was on passage for Penang. The five surviving Monsoon boats were rounding the Cape on their long trek to the East African and Arabian sea coasts.

(vi) The U-boat War Reviewed by Doenitz

On the termination of U-boat operations in all parts of the Atlantic, Doenitz reviewed the U-boat War at length. The following is a summary of the major points made by him:-

(A) - The outstanding feature of the U-boat war continued to be the high losses amongst U-boats which were not balanced by commensurate ship sinkings. In the open Atlantic, the U-boat losses were attributed entirely to carrier borne aircraft against which at present the only counter-measure was increased vigilance. Losses among operational boats in overseas areas had been high. These also were mainly due to air attack and it was presumed that Metox radiation had been extensively exploited by the enemy for location and surprise attacks. With the introduction of Hagemuk search receivers it should be possible to resume this warfare but the employment of Type VII boats would depend on the future supply facilities.

(B) - The Capetown to Madagascar operations had been successful but the favourable conditions could not be exploited to the full as further supply could not be guaranteed. It had only been possible to replenish the Monsoon boats at the start of their journey by cancelling the missions of other operational U-boats. Central Atlantic and Outer Seas operations had had to be abandoned considerably earlier than anticipated owing to the lack of supply facilities. It was intended to supply boats on their outward passage far to the south but this was frustrated by the loss of U.463 in May, the twice forced return of U.462 in June and the loss of U.487 in July. A few boats were replenished only at the expense of cancelling several overseas operational missions. As a substitute measure it was then intended to operate boats to nearly dry tanks and give them fuel on the return journey only sufficient to enable them to reach Biscay ports. This plan also failed with the sinking of U.459, 461, 462 and 489. It then became necessary to recall boats early with no expectation of receiving fuel on the way.

(C) - It was not possible, in the existing state of affairs in the Bay of Biscay, to plan future operations as it was impossible to guarantee safe passage to supply tankers. Only three Type XIV tankers remained available with a fourth still on trials in the Baltic.⁽¹⁾ One large Type XB minelayer was operational for this task with two others still on trials in the Baltic.⁽²⁾ With these few, only the most essential supply operations could be carried out and then only to U-boats on outward passage.

(D) - To balance the absence of offensive action against convoys a large number of minelaying operations had been intended. So far, however, out of the eleven sorties despatched only four

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- (1) In fact only two Type XIV tankers were operational - U.460 and U.488 both in Bordeaux. Doenitz was still unaware when drawing up this review that U.489 had been sunk. The other supply boat was U.490 then at Kiel.
- (2) Here again Doenitz was unaware, when writing, that the one operational large minelayer U.117 had just been sunk.

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had been carried out.⁽¹⁾ Three had been sunk on the way, two turned back because of damage received, one (U.117) had to be used as an emergency tanker and one (U.107) was still on the way.

(E) - The intention to resume convoy warfare in the Northern Atlantic at the beginning of September had also been frustrated by heavy losses and by the temporary cancellation of sailings from Biscay Ports to enable further trials with the Hagenuk search receiver. This resumption was, therefore, postponed until the end of September. By then the boats would be equipped with the new Zaunkoenig acoustic torpedo, the fully automatic 37 m.m. flak gun and, besides Hagenuk, the radar decoy Aphrodite on which favourable reports had been received.

(vii) Summary of the Outer Seas Campaign

Little remains to be said about this phase of U-boat warfare in the Outer Seas. The final bunch of returning U-boats were making for U.847 to get sufficient fuel to take them into port. The American escort carriers Core and Card made a last killing among them, aircraft from the former sinking U.185 and 84 on the 24 August and those from the latter destroying U.847 herself on the 27th. U.134 nearing Finisterre on the 24th was sunk at night by a Gibraltar based Leigh Light Wellington and H.M. ships escorting convoy SL.135 killed the returning U.634 east of the Azores. An outward bound Type IX U.523 was sunk on the 25th by H.M. ships escorting convoy OG.92.

That the Outer Seas campaign was a costly failure is borne out by the figures in footnote (2) below. Of these 53 U-boats sunk, all except seven and one shared were the work of Allied aircraft and of the 16 damaged sufficiently to compel return, 14 were caused by air attack. A striking demonstration of Maritime Air Power with the Bay offensive equal head of the scoring list.

- (1) The four carried out were:-
 U.119 off Halifax on the 3 June.
 U.214 off Dakar on the 6 June.
 U.230 and 566 off Norfolk (Va.) on the 31 July and 1 August.
 U.107 was still on the way to lay off Charleston.
- (2) U-boats engaged in the Overseas Campaign and the ships they sank.

MERCHANT SHIPS*			U-BOATS SUNK				U-BOATS DAMAGED			
Month	Sunk	Damaged	Bay Transit	North Transit	Central Atlantic Carriers	In operations areas overseas	Bay Transit	North Transit	Central Atlantic Carriers	In operations areas overseas
June	9 + 1 mined	2 + 1 mined	2	2	1	2	5	nil	1	1
July	38	6	11	nil	7	10	2	nil	1	3
Aug.	10	nil	5	1	6	6	nil	nil	2	1
Sub Totals			18	3	14	18	7	nil	4	5
TOTALS	57 + 1 mined	8 + 1 mined	53				16			

* Merchant ship casualties caused by German U-boats. Those inflicted by Japanese submarines in the Indian Ocean are not included.

PART III - THE PASSAGE OF U-BOATS THROUGH THE GIBRALTAR STRAIT -APRIL TO AUGUST 1943 INCLUSIVE

One last area in the Atlantic remains to be dealt with. This is the Gibraltar Strait and its approaches. Since the repulse of the U-boat concentrations on both sides of Gibraltar after the N.W. Africa landings in November 1942, the area had been avoided by Doenitz in dispositions of U-boats on account of the strength of the air patrols. For a very short time early in March 1943 a small group of U-boats was temporarily stationed off Cape St. Vincent against convoys bound for Gibraltar either from the United Kingdom or America.⁽¹⁾ After a single success by one of the boats the group was withdrawn to the west owing to the continual air patrolling from Gibraltar.

Thereafter no U-boats approached the Strait area unless they were endeavouring to enter the Mediterranean. In fact the flying in the area became another transit operation and henceforth is treated as such. The flying boat squadrons based at Gibraltar together with the Hudson and Leigh Light Wellington detachments at Agadir were engaged much further afield on ocean convoy escort and support. They did have actions with U-boats on occasions but the short and medium range aircraft based at Gibraltar saw little from 1 April onwards unless some attempt was being made to re-inforce the U-boat flotilla inside the Mediterranean.

No such re-inforcement had taken place since early in January 1943. By the end of March the number in the Mediterranean had been reduced by losses from 24 to 17 and on the 1 April two U-boats - U.303 and 414 - were detailed to make the passage. They arrived unseen in the western approaches to the Strait on the 8 April and, using their Metox Search receivers, got safely through on the surface during the night of the 9/10 April.⁽²⁾ Two more boats - U.616 and 410 - left Biscay ports towards the end of April, arriving off the Strait on the 28th. Both waited for the new moon darkest night and, again using their Metox, both succeeded in passing through on the surface during the nights of the 3/4 and 4/5 May respectively.

In view of the Axis reverses in North Africa, Doenitz was being pressed to send more boats in and the next day he detailed two of the boats already on patrol westward of Portugal to make the attempt. Unknown to him, one of these (U.659) had two days previously been sunk in collision with another U-boat. The other (U.447) obeyed the order but was sunk as she was approaching west of Gibraltar on the 7 May by Hudson X/233 Squadron.⁽³⁾ By the time Doenitz was aware of the fate of these two boats, further loss inside the Mediterranean had again reduced the number to 17 and on the 22 May U.594 and 409 were ordered to sail. The former was intercepted west of the Strait and sunk on the 4 June by Hudson F/48 Squadron using Rocket Projectiles. The latter arrived off the Strait on the last day of May. For the next four days and nights she was chivvied about, being sighted and indecisively attacked from the air several times, but got through safely during the night of the 4/5 June.

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- (1) This was Group Robbe mentioned in Chapter II (ii) and (iii).
 - (2) No R.A.F. or F.A.A. aircraft at Gibraltar were fitted with 10 cm. A.S.V. until mid-August 1943.
 - (3) Mentioned in Chapter II (vi)

No further U-boats were detailed to make this passage until the 17 September 1943. The flying hours in this area during most of June and all July and August were over a sea completely empty of U-boats. However, such flying was by those aircraft who could not get up as far as the Finisterre area where the main action against U-boats was being fought. The flying hours and results in the Gibraltar transit area are given below in footnote(1).

(1) Patrols and Sweeps east and west of Gibraltar.

N.B. Night flying by Leigh Light aircraft (L/L) is distinguished from ordinary aircraft (N).

Month	Type	Effective hours	Total hours	Sights	Attacks	Result
April	Day	1,038	1,429	-	-	-
	R.A.F.	(54(N)	(92(N)	-	-	-
	Night	(345(L/L)	(406(L/L)	-	-	-
	F.A.A.	29	52	-	-	-
May	Day	1,281	1,840	5	5	U.447 sunk
	R.A.F.	(84(N)	(132(N)	-	-	-
	Night	(567(L/L)	(681(L/L)	3L/L	1L/L	-
	F.A.A.	nil	nil	-	-	-
June	Day	1,081	1,793	5	3	U.594 sunk
	R.A.F.	(7(N)	(22(N)	-	-	-
	Night	(578(L/L)	(712(L/L)	1L/L	0	-
	F.A.A.	12	20	-	-	-
July	Day	1,021	1,454	-	-	-
	R.A.F.	(14(N)	(27(N)	-	-	-
	Night	(69(L/L)	(102(L/L)	-	-	-
	F.A.A.	13	22	-	-	-
Aug.	Day	1,118	1,553	-	-	-
	R.A.F.	(8(N)	(48(N)	-	-	-
	Night	(105(L/L)	(141(L/L)	-	-	-
	F.A.A.	nil	nil	-	-	-
	Day	19(N)	(27(N)	-	-	-
	Night					

CHAPTER VI

THE RESOLUTION OF CONVOY WAR IN THE NORTHERN ATLANTIC(i) - Doenitz and airborne radar(a) Recapitulation of the factors up to July 1943

Frequent mention has been made in the convoy war chapters of the conviction held by Doenitz that airborne radar was responsible for our accurate estimations of the U-boat dispositions in mid-Atlantic which enabled successful convoy evasion to be practised. This obsession is strange in view of the fact that between August 1942 and May 1943 these dispositions were purposely placed by him outside the range of shorebased aircraft and he knew that up to March we employed no escort carriers on these routes. During the autumn of 1942 he had correctly diagnosed A.S.V. as the reason for surprise night attacks in the Bay of Biscay and had drastically reduced them in this area by the introduction of the Metox search receiver. He remained, however, obsessed by the belief that in the ocean areas we must be employing some mysterious airborne radar which was all-seeing and undetectable.

Before recounting the mental morass into which these conflicting beliefs landed the U-boat Command it is as well to examine what A.S.V. had done and was doing for us in the A/U war. By September 1941, most of the aircraft employed on A/U duties were equipped with either the Long Range Mk. II A.S.V. or the Standard forward looking Mk. II A.S.V. During the next nine months to the end of May 1942, A.S.V. did not help very much in the initial location of U-boats. Owing to the absence of a reliable illuminant very little night flying took place and daytime visual lookout was still regarded as the prime method of location with A.S.V. merely a supplementary aid. Maintenance difficulties, inadequate training of operators and the apathy of pilots towards a "new gadget" accounted for this attitude.(1)

In the table below(2) are given all the U-boat locations

(1) Reference R.A.F. Signals History Vol. VI. chap. V.

(2) Initial locations of U-boats by aircraft fitted with A.S.V.

Period		Atlantic Convoy Area			U-boat Transit Areas Northern - Biscay - Gibraltar		
		Initial location by		A.S.V. % of total	Initial location by		A.S.V. % of total
		Visual	A.S.V.		Visual	A.S.V.	
9 mths.	Sept. 1941 to May 1942	58 (1 by night)	13 (2 by night)	18.3	93 (7 by night)	17 (5 by night)	15.5
5 mths.	June to Oct. 1942	101 (1 by night)	11 (1 by night)	9.8	114 (1 by night)	43 (19 by night)	27.4
4 mths.	Nov. 1942 to Feb. 1943	88 (none by night)	8 (2 by night)	8.3	142 (2 by night)	52 (43 by night)	26.8
3 mths.	March to May 1943	192 (3 by night)	21 (7 by night)	9.8	119 (3 by night)	55 (44 by night)	31.6
3 mths.	June to Aug. 1943	11 (none by night)	2 (none by night)	15.4	88 (1 by night)	31 (5 by night)	26

by Coastal Command aircraft fitted with A.S.V. It will be seen that in the nine months to the end of May 1942, over 80 per cent of the U-boats sighted, whether in the convoy or transit areas, were initially detected by the visual lookouts. The introduction of the Leigh Light in June 1942 and the start of night operations in the transit areas with emphasis on a high standard of A.S.V. training resulted in a rise in night locations while better training in the day squadrons helped to increase the percentage of A.S.V. contacts up to the end of October. This increase persisted in the next period to the end of February 1943 in spite of a severe drop in the Biscay due to the German Metox Search receiver because this drop was offset by excellent A.S.V. results by night off Gibraltar against U-boats not yet fitted with this device. However, initial visual location still continued to be over 70 per cent. The coming of 10 cm. A.S.V. in March 1943 to the night squadrons restored the efficacy of night location in the Bay area but during the summer months up to 2 August U-boats in the transit areas were mainly surfaced by day and in spite of the re-equipment of many day squadrons to 10 cm. A.S.V. the A.S.V. percentage dropped slightly in favour of visual location.

In contrast, right through the period of convoy battles in the Northern Atlantic from August 1942 to early May 1943, during which Doenitz was most vociferous about the menace from airborne radar, over 90 per cent of U-boats sighted were initially detected by eyesight; moreover all the aircraft on convoy operations were still fitted with Mark II A.S.V. against which, after October 1942, his U-boats were adequately safeguarded.

It appears, therefore, that radar's real claim to success was confined to night operations in the transit areas whether metric or centimetric A.S.V. This was not due to shortcomings of the equipment but to the superior training of operators in the night squadrons and to the fact that there was no visual competition in darkness.

In order to appreciate the state of mind reached in the summer of 1943 by Doenitz regarding airborne A.S.V. the sequence of events is briefly recapitulated.

Early February 1943 - Doenitz told Hitler that the knowledge enabling Allied convoys to by-pass his Atlantic U-boat dispositions could only come from treason or undetected air reconnaissance. The former possibility was being dealt with. If the latter was responsible, the U-boat groups would have to be scattered more widely in the Atlantic and to do this he must have many more U-boats. A proper solution was German long range air reconnaissance but this unhappily was non-existent.

Early March 1943 - Failure to intercept any of the New York to Casablanca convoys raised Doenitz's suspicions of leakage of information but after a systematic analysis he came to the conclusion that the positions of U-boat groups could be estimated by intelligent combination of W/T transmission bearings, occasional visual sightings and airborne A.S.V. locations. At this time his opinion that airborne radar was the greatest menace received support from information that the G.A.F. had recently recovered from a crashed British bomber the remains of a radar apparatus which apparently worked on a wavelength of 9.7 centimetres. However, concurrent with this communication his staff reported on the success of a visual tuner incorporated in the standard Metox search receiver which gave warning of A.S.V. transmissions not detectable by the normal aural fitment. Jumping to the conclusion that this was

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the answer, Doenitz paid no further attention to the G.A.F. information and gave orders for the Magic Eye to be fitted in all Metox receiver circuits. This assumption seemed to be supported shortly afterwards by several favourable reports from U-boats at sea.

Apart from our continued use of metric A.S.V. which would of course light up the Magic Eye, we had at this time just started to use centimetric A.S.V. at night in the Bay of Biscay. Technically it was possible, if the Metox aerial happened to be of just the right electrical capacity, for the Magic Eye to glow on the harmonics of 10 cm. A.S.V. transmissions. But no centimetric A.S.V. was as yet being used in mid-Atlantic and of the 100 U-boats sighted on the convoy routes during the first quarter of 1943 by aircraft fitted with metric A.S.V. only eight were initially located with the A.S.V. Thus Doenitz was not only leaning on a broken reed as regards warning against surprise attack in the Bay of Biscay but thought he was guarding against the premature discovery of his Atlantic-U-boat dispositions which latter had little to do with airborne radar.

End of March 1943 - Doenitz's suspicion of something other than airborne radar was again raised by the interception by his Radio Intelligence Group of Allied W/T broadcasts giving estimations of U-boat group positions in mid-Atlantic. These were generally remarkably accurate but again Doenitz decided that painstaking piecing together of scraps of information could account for their precision.

End of April 1943 - More of these accurate W/T broadcasts and a series of successful evasions by Atlantic convoys coinciding with an unusually large number of unheralded night locations of U-boats in the Bay of Biscay once more swayed Doenitz into the belief that we possessed an airborne radar undetectable by U-boats whether in mid-Atlantic or the Bay of Biscay. His faith in the Magic Eye was shattered and he set all his responsible departments to the task of discovering the nature of this mysterious location device.

Early May 1943 - Still more obvious avoidance of his U-boat groups by convoys, particularly SC.129, switched Doenitz's suspicions back to treachery or the possibility of the compromise of German cyphers. An immediate change in the U-boat cypher settings was ordered and all other possible sources of leakage were again checked. Meanwhile, to avoid the continuance of surprise night attacks in the Bay of Biscay, he reversed the U-boat tactics on passage and started diving by night and surfacing by day - a measure which led him into serious trouble during the summer of 1943.

End of May 1943 - Further successful convoy evasions and the heavy casualties among U-boats who managed to intercept others finally convinced Doenitz that the major menace came from aircraft who must carry an undetectable radar. He withdrew from the Northern Atlantic into latitudes which he hoped were outside air range. Aircraft certainly were the major menace but not because of A.S.V. Of the 157 sightings in the convoy areas during April and May only 17 were initially detected by A.S.V. In the transit areas however, it played a larger part, particularly at night, in enabling aircraft to surprise U-boats before they could dive.

In his report to Hitler on the U-boat war situation, Doenitz said that the most urgent requirement was a counter-measure to Allied airborne radar. Neither he nor his staff knew on what principle it operated nor were they even certain

that it was electronic. Experiments and trials were under active development in several directions among which were:-

- (1) Jamming devices against airborne radar.
- (2) Screening material and/or paint designed to reduce the radar echo from U-boats' bridge casing and super-structure.
- (3) Decoy radar targets either suspended from small balloons or mounted on buoys.
- (4) Fitment of U-boats with their own anti-aircraft search radar adapted from the G.A.F. Hohentwiel model.
- (5) Fitment of U-boats with sound locators to detect approaching aircraft.
- (6) Research into the possibility that infra-red or ultra-violet rays might be the detecting agency and the provision of suitable warning equipment.
- (7) Research into the possibility of location by thermal detectors.

Attempting to evaluate on the one hand the efficiency of A.S.V. as an initial locator and on the other hand the effect of this device on the enemy's tactics one is forced to conclude that the net result was an illogical psychology imposed on him whereby the frustration caused by intelligent convoy evasion was laid at the door of an airborne radar already largely countered in the transit areas. Basically this was caused by Doenitz's inability to credit our Radio Intelligence with even the same scale of information gained from time to time by his own and which resulted in his giving powers to airborne radar in ocean areas far beyond what serious reflection should have told him was possible as regards aircraft range and absence of detection by search receiver.

(b) The Radiation Myth

During the summer months of 1943, Doenitz's attention was focussed on the Bay of Biscay. The almost unfailing location of his U-boats on passage by Coastal Command aircraft stimulated the special efforts being made to discover how this was being done. Once again the technical advisers to the U-boat Command failed to suspect a change in the A.S.V. wave length and instead directed investigations to their own equipment.

It will be recalled that at the end of July the Group West Command Experimental Section had reported on the extent that the Metox search receiver emitted radiation and that, in their view, it was likely that aircraft fitted with suitable receivers were homing on this emission. As a precaution the boats who early in August were entering the Bay by the Spanish territorial water route were ordered by Doenitz to keep their Metox receivers switched off. Additional precautions were issued on the 9 August when all boats were informed that W/T transmissions could also give away their position. In Serial Order No. 33, Doenitz attempted to lessen this danger by instructing boats to take the opportunity to send their radio messages or reports if and when they had been definitely sighted. If necessary to use W/T at other times a special visual and radar interception watch was to be kept and if they were in a known dangerous area they were if possible to remain submerged for several hours afterwards. The radio sets themselves were to be

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carefully tuned free of radiation and the use of alternative frequencies was recommended in order to lessen the chance of enemy direction finding.

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On 13 August a further joint report on Metox was laid before Doenitz. The technicians conceived it possible for homing to take place on Metox radiations but doubted if the enemy was actually making use of this fact. From U-boat logs there was little evidence that this was taking place, indeed the frequent reports of constant enemy radar transmission and numerous cases of surprise attack on boats who were not using their Metox pointed to the contrary. On the other hand Group West's Radar Detachment, after further experiments with Metox on shore and at sea, considered that expert operators could and did detect and approach U-boats even if a wide band receiver sweep technique was used. This applied equally to the similar search receivers made by the firm of Grandin.

Doenitz was debating which set of experts to believe when at the psychological moment a P.O.W. Interrogation Report was rushed to him. This was from the head of the Naval Communications Bureau to the effect that earlier on 13 August a captured English pilot under interrogation by an officer of the Bureau in Oberursel Transit Camp had stated that the English aircraft now hardly ever used their A.S.V. for anti-submarine hunts because the U-boats themselves emitted sufficient radiation on which the aircraft was able to make a target run-in. A.S.V. sets were only switched on for short periods to check the range. This radiation from U-boats could be detected at ranges up to 90 miles when flying at heights up to 1000 metres (3,250 feet).

The apparent confirmation of his previous fears coming at a fortuitous but critical moment completely blinded Doenitz to the doubts of the technical scientists. He immediately put on record that special importance must be attached to this statement in view of recent experiments and the losses from air attack during the past two or three months. It was, he wrote, possible that the prisoner was deliberately trying to mislead, especially as the range mentioned was unlikely, but it must be accepted as true in as far as affecting his decision for the future.

ibid page 125

Accordingly he issued a memorandum in which the use of Metox and Grandin sets was described as dangerous for U-boats. The risk of surprise attack run by a U-boat without an interception set was known and it was better to accept this known danger than trust to a set which might be betraying the boat. A radio message was therefore sent to all U-boats (T.O.O. 2315/13/8) stating that the suspicion that the enemy was making use of Metox radiation had been further confirmed. The use of Metox and Grandin receivers was forthwith forbidden in all sea areas.

Regarding further steps, Doenitz recorded that it was of the greatest importance to carry out further tests for radiation on the new Hagenuk receiver.(1) As fitted in the boats about to leave port for the Northern Atlantic it was known to emit far less radiation than Metox and of a different nature

(1) Hagenuk was the code name for the Wanze G.1 wave indicator. Radiation was very much reduced but the tunable range still only covered the 120 to 180 centimetre wave band.

so that even if detected by the enemy it was unlikely at first to be recognised. The question of radiation from other short and long wave receivers used in U-boats would have to be carefully examined.

The name of this pilot has not as yet been discovered but, although disobeying the strict orders not to talk beyond giving name, number and rank when under interrogation,⁽¹⁾ his fairy tale was successful in preserving the secrecy of 10 cm. A.S.V., in leading the U-boat Command up many subsequent blind alleys and in ensuring that the convoy war would be resumed in the Northern Atlantic by U-boats who would be wide open to surprise attack from the air.

This emphasis on radiation being the cause of Allied aircraft locations reduced the priority of research into the other possibilities such as infra-red, ultra violet and thermal detection together with their various appropriate counter-measures but much valuable technical and specialised time ~~cont~~ continued to be wasted on them. Experiments to even further reduce the radiation emitted by Hagenuk produced a new model called Wanze G.1 which was nearing the mass production stage towards the end of October 1943.

Meanwhile, early in September Doenitz had happened to be in conversation with a leading German physicist (Professor Esau) who was aware of the use by R.A.F. Bomber Command of centimetric equipment (H2S) and of the measures adopted by the G.A.F. to counter it. No positive action was taken by Doenitz until nearly the end of September when his attention was focussed on the efforts made by a batch of U-boats to penetrate past Gibraltar into the Mediterranean. All three of the first comers reported continuous surprise night locations and attacks of which no warning was given by their Hagenuk wave indicators. Although one succeeded in getting through, the others were beaten back and Doenitz abandoned further attempts. He noted in his War Diary that it was suspected that the aircraft were using centimetric A.S.V. Accordingly he sent for Professor Esau and arrangements were expedited to modify the G.A.F. indicator - codename Naxos - (2) for fitment into U-boats. No further attempt to enter the Mediterranean was to be made until the boats had been so equipped.

Although the probability of 10 cm. A.S.V. was thus admitted by Doenitz at the end of September, the radiation myth still obsessed the technical and research branches of the U-boat Command. In fact it was reduction of radiation more than the covering of low centimetric wavelengths that occupied their ingenuity. Concurrent with the experiments to improve Hagenuk in this respect, the research department designed a crystal detector which by its nature was unable to radiate at all.

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- (1) Air Publication 1548 - The Responsibilities of a Prisoner of War.
 - (2) The ex-G.A.F. Naxos set was a detector receiver for the 8 to 12 cm. band. The maximum theoretical range on our Mk.III 10 cm. A.S.V. was no more than about five miles. It was a delicate instrument with a long coil of flexible cable and had to be passed below from the bridge before diving. It was also adversely affected by spray and in general was a makeshift affair.

This received the code name of Borkum⁽¹⁾ and had reached production stage by the last week in October.

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Meanwhile during October a number of U-boats were supplied with the Naxos detector and five of these were detailed to effect the penetration of the Gibraltar Strait. Three of them were sunk by the Gibraltar air and surface defences and during the attempts, which took place at the end of October, Doenitz received numerous signals from the boats complaining of surprise air attacks at night of which their Naxos equipment gave them no warning. This failure coupled with the serious U-boat losses from air attack around convoys during October and continued successful evasion by convoys completely discredited Naxos and with it the 10 cm. A.S.V. belief. Radiation was once more considered the villain of the piece and early in November the Wanz G.1 was scrapped in favour of the Wanz G.2 while Borkum crystal sets were rushed into service. In addition, suspicion had fallen on the short wave W/T receiver as fitted in U-boats and this too was to be replaced by one designed against excessive radiation. The other possibilities (infra-red etc.) were re-examined and specially equipped U-boats carrying small parties of technicians (Field Watches) were organised to observe while at sea the hitherto unwatched frequency bands in the spectrum. So convinced were the U-boat Command that radiation of some kind was the basis of Allied air location that the Naxos set continued to be supplied to U-boats as well as the other two sets not because it covered the low centimetric wave band but because it did not radiate.

The awakening from this Radiation Myth did not occur till the end of 1943 when Doenitz, dissatisfied with the multiplication of blind alley research, ordered a drastic re-organisation of the technical and research departments. He created a Naval Scientific Directional Staff with headquarters in Berlin to co-ordinate all radio and radar matters. At its head was placed an eminent scientist - Professor Kuepfmuller - who was directly subordinate to Doenitz. Under this Professor's energetic guidance the reality of both 10 and 3 centimetre A.S.V. was established. Naxos was standardised as a detector until he could produce an efficient and practical improvement. The further events in this war of countermeasures are recounted in a later chapter.

(ii) Preparations for the renewal of convoy war

Before the last of the returning overseas U-boats had reached Biscay ports Doenitz had started sailing Type VII boats into the Northern Atlantic in preparation for the resumption of convoy warfare. The first batches numbering ten in all ⁽²⁾ left port during the last week in August. They proceeded ^{independently} across the middle latitudes of the Bay keeping submerged for the maximum time possible. Doenitz made the following signal to all U-boat commanders announcing the new campaign:-

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- (1) U-boat warfare has experienced grave set backs in the past months and boats have been inexplicably lost in transit and in their waiting positions while U-boat groups in mid-Atlantic were frequently by-passed by enemy convoys.

- (1) The Borkum set had no tuning control but was designed to accept all transmissions between 75 and 300 cms. Outside of this band the sensibility fell off but a strong enough 10 cm. transmission would nevertheless produce a response.
- (2) U.305, 645, 260, 338, 731, 386, 669, 229, 341 and the supply boat U.460.

- (2) The reason for this was presumed to be a new undetectable method of location by the enemy. It has now been established by means of research and confirmed by prisoner of war statement that the former Metox and Grandin Search receivers enabled the enemy aircraft to locate U-boats by their strong radiation.
- (3) These models are now superseded by the non-radiating Hagenuk wave indicator which can also be used for detecting radar transmissions on all primary wave band frequencies.
- (4) The whole situation is thereby decisively altered. Boats now putting to sea are equipped with this Hagenuk device, with the new Zaunkoenig homing torpedo, and with strengthened flak armament. On this basis the fight is to be resumed with renewed intensity and determination.

Further batches of U-boats were sailed during the first nine days of September - thirteen from Biscay ports⁽¹⁾ and six from Norway and Germany.⁽²⁾ Their experiences while traversing these transit areas are given in Chapter VII, here it is sufficient to state that the tactics of maximum submerged time and independent routing were successful in getting all except one boat through safely. As they cleared into the Atlantic they were directed into a waiting area in mid-Atlantic where they refuelled from U.460 and remained until such time as sufficient arrived to be deployed into a patrol line.

See Map No.34

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By the 16 September some twenty boats were in, or nearing the waiting area and on that day were ordered to take up a patrol line under the name of Group Leuthen for operation against an ONS convoy expected to cross the line during 21 September. This line was positioned between 59¹⁰ N x 28° W and 54° N x 25° W beyond the supposed range of consistent air escort. To avoid prior compromise of the line, the reference points for each individual boat were contained in sealed envelopes which had been given to Commanding officers before sailing. Special instructions were included to the effect that boats were to remain unseen in the line while waiting for the convoy and open attacks were not to be started until the executive was made from base. Then the elimination of the surface escort craft was to be the objective so as to demoralise defence and simplify the attack on the merchant ships. Group Leuthen was encouraged in a personal W/T message which concluded with the words...."I am sure that you will take up the challenge with all the old fighting spirit of the submariner because this struggle is decisive for our nation's future. The Fuehrer is watching every phase of your struggle. Attack! Follow up! Sink!"

See Map No.35

B. d U.
War Diary

This was followed by another signal to all U-boats at sea warning them that surprise attacks by aircraft must be expected in all sea areas. Normally there were to be four look-outs on the bridge for surface vessels and two for aircraft but in areas where aircraft were active this allocation must be reversed and if on the surface at night there must always be four look-outs. The flak guns must be ready for instant fire with the necessary personnel closed up on the bridge and only in most exceptional circumstances were men to be allowed on

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- (1) U.758, 584, 641, 610, 402, 448, 666, 952, 378, 270, 413, 377 and 603.
 - (2) U.274, 275, 279, 238, 220 and 422.

the upper deck casing. In particular, instant flak alertness must be maintained when refuelling and any boats waiting their turn must form a screen around the tanker for flak protection. Boats actually in line or on patrol must never lie stopped. Always proceed at least slow on one Diesel so as to be manoeuvrable.

Finally on 18 September a signal was made to Group Leuthen that the use of Hagenuk must not cramp the tactics of boats when in a convoy operation. It was a means of guarding against surprise air attacks on passage or when patrolling. When action was joined, an indication in Hagenuk must not induce the U-boat to dive if no aircraft was in sight. Special note was to be taken of its facilities in maintaining contact outside visual range with surface escorts using radar. Since very good results had been recently reported from the Mediterranean by the use of the Aphrodite radar decoy balloons these should certainly be used to confuse the defence during night attacks.

Meanwhile the indications of a probable resumption of U-boat activity in the Northern Atlantic had been noted in British circles, not least from D/F.s of W/T traffic from U-boats reporting their safe clearance from the transit areas and completion of refuelling from U.460. The 9th Support Group on its way out to the Biscay Percussion area was recalled on 16 September to re-inforce the escorts of convoy ONS 18 and by the 18 September the other surface craft operating in the Outer Bay were withdrawn to rejoin the Western Approaches Command.

(iii) Convoys ON202 and ONS18(1)

At noon on the 18 September the slow westbound convoy ONS18 was in approximately 56° N x 23° W with the faster convoy ON202 some 120 miles astern. Neither convoy had as yet received shorebased air escort and heavy weather had prevented any flying from the M.A.C. ship. D/F bearings of enemy W/T signals during the day indicated the probable presence of U-boats ahead and late in the afternoon both convoys were re-routed to the W.N.W. Shorebased air escort was arranged for daylight on the 19th. This was given by Liberator P/86 Squadron from 0745 to 1045 hours while more distant air cover was afforded by two Canadian Liberators A and B/10 Squadron R.C.A.F. operating from Iceland on shuttle service to Newfoundland. One of these aircraft (A/10) at 0755 hours sighted, attacked in face of continuous flak⁽²⁾ and sank U.341 in a position about 160 miles north of ONS18. Air cover continued to be given with no further sightings.

Although after dark on 19 September the surface escorts to ONS18 reported asdic contacts no U-boat reported having located

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- (1) ONS 18 - 27 ships escorted by E.G. B3 of eight vessels and including the M.A.C. ship Empire MacAlpine.
ON 202 - 38 ships escorted by E.G. C2 of seven vessels.
 The 9th Support Group of five vessels was between the convoys.
 References for this convoy battle - B. d U. War Diary, No. 15 Group and Iceland O.R.B. appendices and Admiralty C.B. 04050/43/(9) and (10).
 - (2) It was a feature of this convoy battle that practically all the U-boats encountered by aircraft fought back with flak. U.341 was still to the eastward of her proper position in the line.

this convoy. The first sighting report received by Doenitz was from U.270 at 0206 hours on 20 September and from subsequent events this was of ON 202 which by this time was only about 30 miles to the northeast of ONS 18. Doenitz at once gave the executive and ordered all Group Leuthen to close at maximum speed. The nearest boats in the line soon picked up ON 202⁽¹⁾ and attacks developed from 0300 hours to dawn during which U.270 hit and damaged H.M.S. Lagan while one or more of the other four boats sank two merchant ships.⁽²⁾ Contact with the convoy was lost soon after dawn at which time the shorebased air escort arrived on the scene.⁽³⁾ At 1004 hours, Liberator X/120 Squadron attacked a U-boat 15 miles north of ON 202 and at 1012 hours F/120 Squadron sank U.338 with Mk.24 mines some 20 miles astern of ONS 18.

Junction of the two convoys

By noon the two convoys were so close to each other that to simplify control of the air and surface escorts they were told to join. While this complicated manoeuvre was being effected, eight more U-boats arrived in the vicinity⁽⁴⁾ and numerous encounters between the opposing forces ensued. Up to darkness, the Liberators sighted six U-boats of which two were attacked - U.952 being slightly damaged and two more were counter-attacked by surface craft of which U.386 was damaged and forced to disengage from the operation. One of the sloops was near-missed by an exploding torpedo.

At 2020 hours the combined convoy consisting of 63 ships finally steadied on a course of 230° having suffered no casualties during the lengthy process of junction. However, in the darkness astern a hot action still continued. H.M.C.S. St. Croix was torpedoed and again an hour later causing the damaged vessel to sink immediately. Shortly after, a near-miss torpedo exploded astern of H.M.S. Itchen and at 2230 hours the corvette Polyanthus was torpedoed and sunk. No responsible U-boat can be named with certainty in these incidents but eight actually fired Zaunkoenig torpedoes at escort vessels during this period.⁽⁵⁾

No further attacks were made after 0500 hours on the 21 September and towards dawn fog descended which only lifted for a short time in the early afternoon. Air escort was again provided by Liberators of No.120 Squadron assisted by one Canadian Liberator of No.10 Squadron R.C.A.F. The convoy was close escorted from 0717 to 1515 hours but thickening fog prevented the last two aircraft from sighting the convoy although they were in its vicinity till 1610 hours. No U-boats were seen, indeed only one U-boat (U.377) reported any contact and that was only a long range hydrophone bearing. After dark at 2110 hours, U.584 regained partial contact and during the

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- (1) U.238, 338, 731 and 645.
 - (2) S.S. Theodore Dwight Weld - 7,176 tons and Frederick Douglass - 7,176 tons. The Lagan was taken in tow and escorted home by two of the escorts.
 - (3) Air escort during the day was supplied to the two convoys by five Iceland based Liberators of No.120 Squadron between 0750 and 2233 hours.
 - (4) U.305, 260, 584, 641, 377, 386, 952 and 229. None of the U-boats appear to have realised that two convoys were involved which explains Doenitz's subsequent surprise at the exceptional strength of the surface escort screen.
 - (5) U.270, 260, 952, 377, 305, 641, 229 and 584.

night six others⁽¹⁾ occasionally sighted single escort vessels and were engaged by them. In one of these duels H.M.S. Keppel rammed and sank U.229 about 15 miles astern of the convoy. Although some 16 U-boats were still operating, fog and the surface screen prevented any night attack on the convoy.

The fog persisted during 22 September until the afternoon when Canadian Liberators from Newfoundland gave escort from 1537 to 2218 hours. Four U-boats were sighted by them of which two were attacked, the one by L/10 Squadron R.C.A.F. damaging U.270 sufficiently to force her to break off from the operation. The M.A.C. ship Empire MacAlpine had her Swordfish aircraft flying and one of these sighted and attacked another U-boat at 2015 hours.

During the night hours at least seven U-boats were around the convoy and frequent skirmishes took place between them and the surface escorts during which H.M.S. Itchen was torpedoed and blew up with only three survivors.⁽²⁾ Other vessels were near-missed by exploding torpedoes. At 0240 hours on the 23 September the escort screen was at last penetrated and three merchant vessels were sunk.⁽³⁾ The next four hours passed quietly but at 0648 hours the Steel Voyager (U.S.A.) - 6,195 tons was damaged by a torpedo which exploded in her bow wave. She was abandoned prematurely and was afterwards sunk by U.238.

Soon after daylight, shorebased air escort arrived from Newfoundland and was given from 0842 to 2042 hours by Liberators P and Y/10 Squadron R.C.A.F. The former sighted two U-boats of which one was attacked and the latter attacked U.422. Although the main weapons failed to damage her, the aircraft's front gunfire seriously wounded three men on the bridge and slightly damaged fittings on the upper deck.⁽⁴⁾ In view of increasing fog and proximity to Canadian air bases, Doenitz then decided to abandon the operation.

(iv) - Conclusions on this convoy action at the time

Admiralty
C.B.04050/
43(10) Page 22

British - After a four months' lull the results of this renewed effort against Northern Atlantic convoys must have been disappointing to the enemy. In a series of attacks spread over nearly five days, on only three occasions did U-boats succeed in firing torpedoes at the convoy although a pack of at least 15 must have been operating in its vicinity. Except for the use of an acoustic homing torpedo fired at surface escorts and increased gunfire against attacking aircraft there was no evidence of startlingly new tactics or technical developments. H/F D/F in the surface escorts was of great value in determining the direction of impending attacks and air cover was provided in strength throughout daylight hours except for breaks due to thick fog. It appeared that at least 10 torpedoes had been fired at escort vessels resulting in the loss of three and damage to a fourth. Merchant ship losses at six totalling 36,422 tons, did not seem excessive when related to the destruction of three U-boats and probable damage to three more.

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- (1) U.666, 260, 238, 758, 229 and 270.
 - (2) Unhappily the Itchen carried all the survivors from the St. Croix and Polyanthus.
 - (3) Skjelbred - 5,096, Oregon Express - 3,642 and Fort Jemseg - 7,134.
 - (4) U.422 was told to rendezvous with U.460 so as to have the wounded attended to.

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206

German - For the first time for months a U-boat group was again sent in to operate against a convoy in the Northern Atlantic. It consisted of 19 boats equipped with the Zaunkoenig torpedo, the Hagenuk wave indicator, the radar decoy Aphrodite and strengthened flak armament. The intercepted convoy was chased from the 20 to the 23 September. It was at once clear that the convoy was surrounded by an unusually strong remote escort and hardly one boat contacted the actual convoy. All came up against escort vessels forming an outer screen. However, the boats exploited this situation with surprising success and in the first night sank at least seven destroyers of the escort. It was therefore expected that the merchant ships could be attacked without difficulty during the following night but the enemy received the inestimable benefit of two days fog during which time he was able to surround the convoy with a new escort force. When on the evening of the 22nd the fog cleared for a few hours the boats had once again to deal with an escort screen. This they did most effectively by sinking a further five destroyers and three boats were able to attack the mass of ships and to torpedo seven of which five sank. However, now that the way was once more clear for a major blow against the convoy, fog again set in and as there was little hope of an improvement in the weather, the operation was broken off. It was finally noted that although the convoy had strong air escort on the first and third day, the tactics of remaining on the surface and warding off air attacks by flak led to success and contact with the convoy was never lost. That aggressive action was successful was borne out by the almost complete absence of the hitherto numerous depth charge attacks. Only two boats - U.270 and 386 - had to break away from this cause and losses were confined to U.338 and 229. The total sinkings were 12 escort vessels plus three probably sunk and nine merchant ships totalling 46,500 tons.(1) A very satisfactory result which would have been considerably bettered if the weather had been more favourable.

(v) - Doenitz sends a U-boat group too close to Iceland

B. d U.
War Diary

See Map No.36

Iceland O.R.B.
Appendices

After disengaging from this operation, Doenitz reformed those boats of Group Leuthen which had sufficient fuel together with fresh boats from Germany and Biscay ports into a new Group Rossbach numbering 20 disposed in line between $58^{\circ}10' N \times 33^{\circ} W$ and $54^{\circ} N \times 30^{\circ}10' W$ so as to intercept the next westbound convoy.(2) Following decyphered information from his Radio Interception Branch, Doenitz shifted the line to the northwest on 28 September but no convoy having been sighted by 30 September he presumed the line to have been by-passed to the south(3) and he shifted it to the northeastward so as to be ready for another westbound convoy. U.279, who was just joining the line after landing an agent in Iceland, was sighted by an unarmed Hudson on a meteorological sortie at 1505 hours on the 30th and on the 1 October, two Liberators who

- (1) These exaggerated claims undoubtedly arose from the number of Zaunkoenig torpedo explosions heard by the U-boats which were in fact near-misses occasioned by a too sensitive magnetic pistol.
- (2) Sequence - U.279, 643, 641, 731, 539, 666, 758, 402, 584, 419, 378, 952, 645, 260, 603, 275, 336, 610, 448 and 305.
- (3) Actually this convoy (ON 203) passed north of the U-boat line during the 28 September.

were giving escort and cover to the incoming convoy HX 258 sighted U.448, 402 and 631, the latter being inconclusively attacked. (1)

It was now obvious to the Admiralty where the U-boat disposition lay and both the next westbound convoys (ON 204 and ONS 19) were accordingly re-routed to the north. At the same time further information from the Radio Interception Branch re the convoy stragglers' route led Doenitz to move the Rossbach line still further to the north to lie between $63^{\circ}10'N \times 28^{\circ}W$ and $59^{\circ}N \times 27^{\circ}W$. (2) This dangerous position within 200 miles of Reykjavik known to be a major air base evidently produced misgivings in the U-boat Command because Doenitz records in his War Diary:-

- (1) It was possible that the U-boat line had been located by centimetric airborne radar which would not have been detected by the boats and which would explain the northwards alteration in the convoy stragglers' route.
- (2) Owing to the recent Italian collapse the enemy had captured certain Radio Intelligence Groups who knew of the periodic breaking of English cyphers. It was, therefore, not impossible that the German Radio Intelligence was being deliberately deceived by false routing signals.
- (3) In spite of the risks attached, the line must be extended to the north in order to locate the convoy. This location problem was the crux of the whole U-boat war and it could only be satisfactorily solved by the constant operation of long range reconnaissance aircraft of which he possessed none for this area.

ibid

B. d U.
War Diary

Following the sightings of U-boats on 1 October, the convoy HX 258 coming in to the south was given strong air support during the 2nd and when safely clear on 3 October the Iceland based aircraft were directed over the U-boat sightings area with the result that U.610, 275 and 952 were all sighted and attacked - the latter being once more slightly damaged. Both westbound convoys then passed through the extreme north end of the line just before dark on the 3rd, U.666 being detected by asdic and heavily depth charged by some of the surface escorts. (3) Other escorts and several aircraft were seen by the next boat in the line (U.336) but in neither case did their reports reach Doenitz until the following day. He had meantime ordered the line to move slowly eastward during the night so as to make it more difficult for the expected convoy to evade either to the north or south. When he realised from these two U-boats' belated reports that the prey had slipped through it was too late to start a chase to the west and he halted Group Rossbach on their 1700 hour 4 October positions. Again he noted bitterly in his War Diary that had he possessed even half a dozen long range JU.290s. their presence could have been of decisive importance.

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- (1) It is of interest to note that all these sightings were by eye-sight and the Mk.II metric A.S.V. carried by the aircraft was not being used at the time.
 - (2) New sequence - U.643, 641, 539, 666, 336, 731, 758, 584, 610, 412, 279, 378, 952, 645, 260, 603, 275, 448, 305, 631, and 402.
 - (3) Both convoys received Iceland based Liberator escort all day. U.666 had to start for home owing to the damage sustained.

ibid and
Iceland O.R.B.
Appendices

Such a golden opportunity in having a concentration of U-boats so close to Reykjavik was followed up with vigour on 4 October by all available aircraft. Sweeps over the area by ten Hudsons and five U.S.N. Venturas as well as sorties to and from the two convoys aggregated seven sightings of which five were attacked resulting in U.279 and 336 being sunk, and U.731 and 305 so damaged as to compel a start for home. U.539 was attacked with no damage by Hudson A/269 Squadron and then shot down Liberator V/120 Squadron who approached shortly after. There were no survivors from the aircraft. Similar sweeps on 5 October produced only one sighting but this was attacked and resulted in the destruction of U.389.⁽¹⁾

(vi) - Convoy SC 143

Doenitz hastily withdrew the remaining boats some 350 miles to the S.S.W. detaching some to refuel and ordering a new line to be formed with fresh arrivals between $56^{\circ}10' N \times 29^{\circ}10' W$ and $53^{\circ} N \times 28^{\circ}10' W$. While these movements were in train, three of the disengaging boats reported sighting late in the afternoon of 7 October some eastbound destroyers in approximately $56^{\circ} N \times 30^{\circ} W$. These were correctly assumed by Doenitz to be part of the outer screen around convoy SC 143⁽²⁾ and the whole of Group Rossbach totalling 18 boats was ordered to operate.

During the night eight boats made contact with the screen. At 2100 hours O.R.P. Orkan was near-missed by an exploding torpedo and again at 0605 hours on 8 October, but less than a minute later was hit by another and sank in five minutes with heavy loss of life. A dawn patrol was flown off by the M.A.C. ship and at 0707 hours the first shorebased air escort arrived. This was Liberator R/86 Squadron who attacked U.419 about 15 miles off the convoy's port beam at 0756 hours a few seconds after it had dived. Returning to the spot an hour later, R/86 sighted the same U-boat once more on the surface and this time sank it with two well aimed depth charges. The sole survivor, who was the commanding officer, was picked up shortly afterwards by one of the Support Group.

Continuous air escort was given for the rest of the day by double relays of Liberators and Sunderlands from Iceland and Northern Ireland bases. At 1010 hours, R/86 sighted U.643 about 30 miles astern of the convoy. Having no depth charges left, M/G attacks were made on the U-boat while Liberator Z/86 Squadron was homed to the spot. This aircraft arrived at 1140 hours and attacked inconclusively half a minute after the U-boat had dived. Repeating the previous tactics the S.N.O. escorts instructed Z/86 accompanied by Liberator T/120 Squadron to return to the spot later and at 1312 hours the two aircraft resighted U.643 and sank it in a position some 18 miles astern of the convoy, the final end being watched by L/86 who directed the Support Group to the spot and 21 survivors were picked up. Meanwhile another Liberator (G/120 Squadron) at 1109 hours

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- (1) U.279 sighted by Hudson F/269 Squadron and sunk by Liberator X/120 Squadron.
U.336 sunk by U.S.N. Ventura B/128 Squadron.
U.731 damaged and C.O. with five others wounded by Hudson S/269 Squadron.
U.305 damaged by a Mk.24 Mine from U.S.N. Ventura B/128 Squadron.
U.389 sunk with R.P.s by Hudson F/269 Squadron.
- (2) SC 143 consisted of 39 ships including the M.A.C. ship Rapana escorted by E.G.C2 of nine vessels and the 10th Support Group of four vessels.

attacked and slightly damaged U.762 beside wounding several of her bridge personnel with front gunfire.

So far since dawn none of the U-boats had reached the escort screen and during the afternoon no sightings were made even by the escorting aircraft. At 1339 hours the convoy was located and correctly reported by a BV.222 long range flying boat who made beacon signals to the U-boats for 15 minutes as laid down in the mission orders. In his analysis of the operation, Doenitz says that the BV.222 was over the convoy $1\frac{1}{2}$ hours earlier than expected and the U-boats had not yet been told to keep watch on beacon D/F reception. The value of these signals was, therefore, entirely lost; moreover Doenitz made no use of the aircraft's position report to base because he doubted its accuracy. Consequently all except one of the pack remained out of touch well astern of the convoy and searching the wrong area. Ranging in this direction at 1830 hours in deteriorating visibility, Sunderland J/423 Squadron suddenly came on a surfaced U-boat about 35 miles on the convoy's starboard quarter and in an accurate snap attack sank U.610 with three depth charges.

(vii) - The first night air escort with Leigh Light in the Northern Atlantic.

The final air escort to the convoy was by a Liberator of No.53 Squadron newly fitted with the Leigh Light. After some difficulty in finding the convoy, Q/53 Squadron contacted it at 0110 hours on 9 October and, after being informed by the S.N.O. escorts of the screen dispositions, was sent by him to search on the convoy's starboard quarter from which direction it was considered that U-boats might haul up to attack. Q/53 remained until 0230 hours when P.L.E. was reached and course had to be set for base. This was the first occasion on which a Northern Atlantic convoy received Leigh Light escort and it was unfortunate that there was no relief for this aircraft because the one U-boat (U.645) who had managed to trail the convoy did later on close from this bearing and an hour before daylight at 0628 hours fired at and sank S.S. Yorkmar - 5,612 tons. U.645 was kept down and unable to report to base that it had re-located the convoy, consequently soon after dawn Doenitz broke off the operation as he had received no information of the whereabouts of the convoy.

Commenting on the action, Doenitz admitted that his pack only contacted destroyers and advanced the opinion that in reality the convoy was much farther to the south and his failure to find it resulted from a feint northwards by the escort. The definite location by the BV.222 was disregarded because he doubted its navigational accuracy. He again claimed more successes against escort vessels than the one actually secured but put on record that the danger from air attack was as great as ever. The exchange was in fact more serious than he then realised - one escort vessel and one merchant ship against three U-boats sunk.

Many of the Rossbach boats were now low in fuel and the group was disbanded, some to refuel at sea for further operations, (1) some to replenish for return to harbour (2) while others

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- (1) U.584, 603, 378 and 402.
 - (2) U.641, 758 and 731.

started immediately on their homeward journey. (1) Only six remained ready for operations (2) and they were moved to a waiting area around 55° N x 35° W where they were to be joined by eight newcomers. (3) The assemblage was nearly complete by 13 October and the 14 boats were formed into Group Schlieffen to take up a line between $57\frac{1}{2}^{\circ}$ N x $31\frac{1}{2}^{\circ}$ W by midnight on the 15 October. They were to approach their positions in the line submerged by day to avoid location from the air and high cruising speed on the surface by night.

(viii) - Difficulties in refuelling U-boats in mid-ocean

In this pause between convoy actions, the opportunity is taken to recount the experiences up to date of the refuelling arrangements in mid-Atlantic.

The supply boat U.460 had reached her allotted position by 9 September and up to the last week of the month was engaged in refuelling Type VII boats going to or coming from Group Leuthen. Another supply boat (U.488) had meantime put to sea from Bordeaux and was by 21 September south of the Azores en route for the South Atlantic to act as supply for U-Kreuzers returning from South Africa and the few type IX boats intended to operate in the Outer Seas. Three U-Kreuzers, then on their homeward journey, reported that they had sufficient fuel to reach Biscay ports and so U.488 was halted to refuel a Type IX boat (U.68) bound for the Gulf of Guinea after which she was to move north of the Azores to help refuel the increasing numbers of convoy war U-boats. While waiting for U.68 to the southwest of the Azores she reported sighting a carrier borne aircraft (4) and Doenitz shifted the rendezvous 200 miles to the north. U.68 was met here on 1 October and two other south-bound Type IX boats (U.103 and 155) were refuelled on the 4 October after which U.488 proceeded slowly northwards.

Meantime U.460 had met U.422 to attend to her wounded on the 27 September in 48° N x 30° W. The latter then started for home while U.460 was sent 300 miles to the south in order to refuel two boats who had failed to break into the Mediterranean and who were now required for convoy operations. (5) Shortly after starting for home, U.422 signalled that she was capable of further operations and was instructed to turn back, join these other two boats and refuel from U.460 in 43° N x 29° W. When nearing the meeting place, U.455 was attacked by some of U.S.S. Card's aircraft and Doenitz promptly shifted the rendezvous well to the northwest but unknown to him on the 4 October all four U-boats met at the old position and the

- (1) U.539, 275, 645, 305, 952, 260, 666.
- (2) U.437, 91, 309, 448, 631, and 762.
- (3) U.455, 231, 470, 608, 267, 413, 844 and 964.
- (4) This aircraft was from U.S. escort carrier Card who was giving general air cover to UG/GU convoys.
- (5) A batch of U-boats had been detailed to go into the Mediterranean during September. The first arrivals in the Gibraltar Strait had reported continuous night air attacks. U.223 ultimately got through, U.667 had to return damaged to France. U.455 and 264 were ordered to abandon the attempt and refuel before joining the mid-Atlantic convoy operations. It was this failure which led Doenitz to assume that aircraft were, at any rate in the Gibraltar area, employing centimetric A.S.V.

same day were attacked by the Card's aircraft, U.460 and 422 being sunk. Reporting the next day, U.264 said that she and U.455 had fought the attacking aircraft for half an hour before diving but had not seen anything further of the other two boats. Later, U.264 was again attacked, seriously damaged and forced to start homeward.

By 7 October, Doenitz was resigned to the loss of U.460 so U.488 was ordered into the Northern Atlantic to take her place. She was told to proceed submerged by day and warned about carrier borne aircraft. The Flakboat U.271, then stationed in the Outer Bay, was instructed to go to her waiting position in 49° N x 29° W in order to protect her. The disaster to U.460 and 422 produced an admonitory W/T signal to all U-boats to the effect that during supply operations the most important task was the protection of the tanker because on her depended the extended fighting efficiency of numbers of operational U-boats. When refuelling, the boats awaiting their turn must form a screen at 500 metres and Flakboats, if present, must station themselves on the tanker's beam. In the case of surprise air attack the tanker was to dive while the other boats covered her by flak at full risk to themselves. They could only dive after the tanker had reached a safe depth.

U.488 now took over the refuelling of the Northern Atlantic boats but by 11 October it became obvious that one tanker was not sufficient for all the demands. To ease the situation, four Type IX boats in billets off the South American coast were ordered to cut short their patrol and start home and the large minelayer U.220, who had just laid mines off St. Johns (N.F.) was detailed as an emergency tanker. The Card, who had moved up from the Azores, sent her aircraft ranging to the northward and on 12 October located and seriously damaged U.731 coming down to refuel. Later in the day they sighted U.402 and unsuccessfully attacked U.488 herself. A new supply rendezvous was signalled but on the 13th U.402 was again located and this time sunk by the Card's aircraft.

B. d U.
Serial Order
No. 24

See Map No. 37

This further upset to the supply operations resulted in a more drastic order from Doenitz whereby the actual supply was confined to the dark hours. The tanker was always to remain submerged until two hours before sunset and the boats had to make a submerged daylight approach to the rendezvous position. Another Flakboat (U.256) was detailed to join U.488 for protection. By 15 October, U.220 was nearing U.488's position and was ordered to help in the current supply operation.

Meanwhile two other U.S. escort carriers had moved up to the area northwest of the Azores which numerous W/T transmission bearings had indicated as a refuelling centre. On 20 October, aircraft from U.S.S. Core sank U.378 soon after having replenished from U.488. On learning of this attack, Doenitz changed the rendezvous positions but on 28 October, aircraft from U.S.S. Block Island sank the auxiliary tanker U.220 leaving six U-boats in the neighbourhood all short of fuel. Three days later U.S.S. Card's aircraft caught U.91 and 584 together on the surface. The former managed to dive but U.584 was sunk in 4914 N x 3155 W. Doenitz then sent U.488 well to the southwest out of this dangerous area and other means to refuel the remaining boats were put in train. Here for the moment we will leave the scene.

(ix) - Convoys ON 206 and ONS 20

To return to the convoy area. From 13 October, the Group Schlieffen boats were in process of taking up their positions in

the line. The Radio Intelligence Branch had sent three small parties to sea in U-boats. They had with them a D/F equipment designed to intercept and take bearings of any radio signals which might be sent by convoys and hoped by this means to frustrate successful convoy evasion. The first party in U.584 had already reported success but it came too late to be of use at the time.⁽¹⁾ The two other boats - U.631 and 413 - were in Group Schlieffen and were ordered to take up station in the northern and southern sections of the line so as to give warning of any impending evasion. While still forming line during the night of 13/14 October, U.631 rammed U.455 so seriously that the latter had to withdraw from the operation. Despite all four bow tubes being out of action, U.631 was retained in the line in view of her D/F gear until the expected convoy should be intercepted.

See Map No. 37

At 2147 hours on 15 October, U.844, who had not yet reached her position in the Schlieffen line, sighted a west-bound convoy in approximately 58° N x 24° W. This was actually convoy ON 206 though Doenitz thought it was ONS 20. He ordered U.844 to do her utmost to shadow for as long as possible and signalled six fresh outward bound boats in the vicinity to close.⁽²⁾ Group Schlieffen, 200 miles to the west, was not moved as yet because it seemed unlikely to Doenitz that U.844 could hang on long enough to enable him to bring them into action with certainty. Sure enough towards midnight she was forced to dive by the surface escort, depth charged and lost contact. As soon as possible she surfaced once more and hurried on to catch up. Others of the six boats detailed to close signalled during the night that if they were to contact, let alone shadow, the convoy after dawn they must do so on the surface in defiance of the expected air cover and requested instructions. This was debated in Doenitz's headquarters and finally a signal was sent to all U-boats implicated in the operation that they were to remain surfaced and use their flak armament. This explains the determination displayed during 16 October by nearly all the U-boats sighted in fighting it out with the attacking aircraft.

Air escort was arranged from dawn on the 16th for ON 206 and for the slower ONS 20 which by then would be about 70 miles to the southward. The first aircraft arrived over the two convoys soon after 0630 hours. At 0900 hours, Liberator L/86 Squadron on ON 206, sighted U.844 about 15 miles on the convoy's port beam. Accurate flak on two approach runs severed the release circuits and on both occasions the depth charges failed to drop. L/86 was joined at 0925 hours by Liberator S/59 Squadron who attacked twice under severe flak and sank U.844. L/86 with accumulated damage from flak was forced to ditch near the convoy mortally injuring two members in the process. The surviving crew were picked up by H.M.S. Pink. Another U-boat was sighted at 1010 hours by S/59 on the opposite beam of the convoy. Having no depth charges left, the aircraft engaged it in an M/G duel for 25 minutes until P.L.E. necessitated a return

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- (1) U.584 reported on 11 October that convoy R/T traffic had been intercepted up to 200 miles range and the D/F attachment gave accurate bearings. With this assistance it had been possible to confirm that convoy ON 203 had by-passed the Group Leuthen line to the north during the night of 28/29 September and convoy ON 204 had done the same to Group Rossbach during the night of 3/4 October.
 - (2) U.964, 842, 540, 281, 841 and 426.

to base after informing the S.N.O escorts that the U-boat was still on the surface.

Double Liberator sorties were maintained for the rest of the day until 2050 hours. At 1808 hours, C/59 Squadron attacked a U-boat 30 miles on the convoy's port beam and was joined soon after by Liberators E and Z/120 Squadron. Alternating attacks by these three aircraft amidst continuous flak ended at 1830 hours with the destruction of U.470 (the northernmost boat in the Schlieffen line).

Meanwhile ONS 20 had not been contacted by any U-boats until the late afternoon. Liberator H/86 Squadron had escorted from 0644 to 1246 hours and Catalina A/131 O.T.U. was in the vicinity till 1500 hours without seeing any signs of the enemy. Soon after 1530 hours the convoy made a major alteration of course to the northward in order to pass well astern of the faster ON 206. It was not till 1627 hours, when Liberator Y/86 Squadron was searching for ONS 20 that a U-boat was sighted. This was U.964 who at the time was some 30 miles on the convoy's port quarter. Attack was made under flak but the U-boat was not seriously damaged. For the next 1½ hours repeated efforts were made to home surface craft to the spot while every approach to the U-boat met continuous flak. Finally in failing light at 1810 hours the pilot decided to go in once more. Excellent front gun fire temporarily smothered the flak and an accurate release of the last three depth charges so damaged U.964 that she foundered at 1848 hours. Before leaving, Y/86 observed between 30 and 40 survivors clinging to small rafts and dinghies. After dark one or more U-boats must have contacted this convoy because at 2141 hours S.S. Essex Lance - 6,625 tons was torpedoed and sunk.

During the night of 16/17 October, ON 206 was diverted to the southwest and by 0800 hours on the 17th was more than 90 miles to the westward of ONS 20 having passed round the top of Group Schlieffen the boats of which were now coming into contact with the latter convoy. Very strong air escort and support was given to both convoys from dawn/17 October. Two Liberators accompanied each convoy with two others in support between the two convoys while five Sunderlands afforded general cover. Ten Hudsons and five Venturas from Iceland carried out sweeps over ONS 20. During the day ten U-boats were sighted, all around ONS 20, of which six were attacked and in every case flak was experienced. After four separate attacks, Liberators H/120 and D/59 Squadrons sank U.540 and Sunderland S/422 Squadron severely damaged one of two U-boats attacked while in company on the surface. The aircraft was so badly shot about that it had to ditch near the convoy. Two of the crew had already been killed by flak and another was lost in the ditching. Seven survivors were picked up by H.M.S Drury. Another escort - H.M.S. Byard - sank U.841 who was attempting to close the convoy. Now that ON 206 was drawing clear of danger, the Support Group B.7 was detached at 1700 hours to join ONS 20 then 150 miles to the northeast. On passage during the night of the 17th/18th, H.M.S. Sunflower detected and sank U.631 in 5813 N x 3239 W about 40 miles ahead of ONS 20 which was now also steering a southwesterly course.

(x) - Doenitz withdraws the U-boats towards Newfoundland

All U-boats had lost touch with ONS 20 by dawn/18th October and Support Group B.7 was again detached to re-inforce the escorts of ON 207 just leaving the United Kingdom. Doenitz withdrew his scattered U-boats southwestward into mid-Atlantic

out of reach from shorebased aircraft. This action was a resounding blow to his campaign. He had lost six U-boats, four to air and two to surface escorts, against only one merchant ship sunk. Group Schlieffen was disbanded and the five boats still operational together with fifteen others fresh from Germany and France were formed into Group Siegfried. They were ordered to take up a patrol line 500 miles eastward from Newfoundland by 24 October. One of these boats - U.274 - when still on passage to this line was sighted on 23 October by Liberator Z/224 Squadron who was flying out to escort Convoy ON 207. The U-boat remained surfaced and was attacked with R.P.s but not damaged. Z/224 proceeded to shadow while Support Group B.7 with the convoy was called up on R/T and homing started. Before B.7 arrived, the U-boat started to dive at 1020 hours and Z/224 carried out a depth charge attack but again inflicted no damage. She did, however, drop markers on the point of submergence. The Group arrived at 1100 hours and after picking up the markers soon obtained asdic contact. A series of hedgehog and depth charge attacks followed and at 1330 hours large quantities of wreckage came to the surface confirming the destruction of U.274 in 5714 N x 2750 W. By the 26 October, ON 207 was receiving air escort from Canadian Liberators operating from Newfoundland. One of these - A/10 Squadron R.C.A.F. - at 1105 hours sighted a U-boat about 70 miles on the convoy's starboard quarter. The first attack was made with depth charges which missed and a running duel with M/G fire ensued for over an hour after which the U-boat started to dive. A/10 then delivered another depth charge attack followed immediately by release of two Mk.24 mines which resulted in the destruction of U.420 (one of the Siegfried line) in 5049 N x 4101 W.

None of Group Siegfried sighted this convoy or the following ONS 21 which Doenitz assumed to have by-passed to the south; neither did they sight the eastbound HX 263 which evaded to the north. In an effort to make certain of any succeeding convoys he split the group into three sections with orders to keep moving in zig-zag sweeps to the eastward. This proved equally fruitless and at the end of October he re-disposed the boats into two groups for use mainly against eastbound convoys. Two type IX boats - U.536 and 537 - were stationed off St. Johns and Halifax to give warning of HX and SC convoys. The two groups were Koerner of eleven boats and Jahn of ten boats on lines 400 miles N.E. and E.S.E. respectively from St. Johns Newfoundland. While this movement was taking place U.282, joining up from the east, was intercepted on 29 October some 20 miles ahead of convoy ON 208 by the ubiquitous Support Group B.7 and sunk by H.M. Ships Duncan, Vidette and Sunflower.

(xi) - Resumption of U-boat operations between the U.K. and Gibraltar.

There had been promise during October of more FW.200 reconnaissance from Bordeaux and in the last week of the month Doenitz formed a new Group Schill of eight boats⁽¹⁾ in approximately 48°N x 20°W against the north/south convoy route between the United Kingdom and Gibraltar, in co-operation with the G.A.F.

FW.200 reconnaissance picked up the northbound combined convoy SL 138/MKS 28 of 60 ships on 27 October abreast Portugal.

(1) U.707, 466, 211, 953, 262, 333, 306 and 441.

Group Schill was ordered to spread on an east/west line and move southward so as to intercept at dusk on the 30th being aided in their movements by beacon signals from the daily sweeps by FW.200 aircraft. Air escort and cover was given to the convoy by aircraft from Gibraltar and the United Kingdom during most of the daylight on 28 and 29 October. On the 30th this was augmented by Fortresses from the recently established base in the Azores. No U-boats were sighted.

The Schill boats mistimed the speed of the advancing convoy because it was not till just before dawn on 31 October that one of them sighted the outer screen on the convoy's starboard beam. Two more shortly afterwards made contact and reported to base. HF/DF bearings by the escort of these signals enabled H.M.S. Whitehall to run up the direction and at 0800 hours when it was just light she sighted a U-boat ahead which dived. She and H.M.S. Geranium closed the position, gained asdic contact and after a series of attacks destroyed U.306. Another U-boat had been detected off the convoy's port bow and an alteration of course by the convoy was nearly completed when at 0832 hours S.S. Hallfried - 2,968 tons was torpedoed and sank in 30 seconds. The subsequent counter-attacks by the two nearest escorts severely damaged U.441 who was forced to disengage and start homeward.

Shorebased air escort did not arrive until 1630 hours and was then maintained from the United Kingdom to 2058 hours. However, the rest of the Schill group made no attempt to chase on the surface and the operation was abandoned. On 1 November the boats were ordered to move slowly on to the south being joined by two fresh boats from France so as to take up a line half way between Cape Finisterre and the Azores. In this, Doenitz appears to have underestimated the menace from Coastal Command aircraft recently based at Lagens in the island of Terceira. He was perfectly aware of this landing because on the 12 October he commented in his War Diary that it would probably mean heavier shipping traffic in the vicinity. He had ordered two type IX boats, then outward bound, to halt and patrol off Ponta Delgada and Horta with instructions to attack warships and shipping but to continue to respect Portuguese neutrality. As it happened, the two U-boats saw nothing as they were off the wrong islands in the Azores and they were soon ordered to continue their previous passages. This new air base was, however, to have an important part in the final defeat of U-boat group operations against convoys.

(xii) - The establishment of a Coastal Command Group in the Azores

The operation of Coastal Command aircraft from the Azores was a project which had been under consideration for two years. Following Anglo-Portuguese political and staff conversations in October 1941, Coastal Command were required in December to examine the possibilities of giving escort to the convoys using the north/south route between the United Kingdom and West Africa with aircraft based in the Azores. Concurrently discussions were continued with the Portuguese Government and in February 1942 provisional plans were submitted in conjunction with the other two Services which envisaged the basing of two heavy landplane squadrons at Lagens, the airfield in the island of Terceira with one medium range squadron on San Miguel and Fayal together with A/A batteries and a small naval defence force. Early in March 1942 these were embodied in a War Cabinet paper entitled

See Map No.38

C.C. File
S.7010/17/4
Encl. 20A
and Min. 21

C.C. File
S.7010/17/11
Encls. 1 A to
20 B.

"Plan of Anglo-Portuguese Collaboration in the event of emergency". This was favourably received in April by the head of the Portuguese Government - Dr. Salazar.

Detailed discussion and amendment of this plan continued until October 1942 when the Joint Planning Staff combined this with a similar project for the Canary Islands under operational code names.

ibid
Encl. 35A.

(1) Operation Tonic - The capture of the Canary Islands by assault.

(2) Operation Adroit - Occupation of the Canaries by invitation.

(3) Operation Sparklet - Occupation of the Azores by invitation.

Operations Adroit and Sparklet were, if carried out, to be under the direction of the A.O.C.-in-C. Coastal Command but in accordance with the current policy they would, when established become Groups under the R.A.F. Gibraltar which in turn was, under the Torch Operation (N.W. Africa) Orders, to be operationally controlled by the new Eastern Air Command at Algiers. However, this incipient muddle in operational control never eventuated because protracted political discussions with the Portuguese Government dragged on into 1943.

The whole question, although based on the ancient alliance still existing between England and Portugal, was complicated by several factors not least among them being Dr. Salazar's fear of retaliation by Germany and a disinclination to include United States forces in any invitation he might extend to Great Britain. These doubts together with our preoccupation with the N.W. African campaign resulted in desultory conversations dragging on till in the late spring of 1943 the matter was again revived at high level. By early June negotiations had developed sufficiently to plan for a landing by invitation (Operation Vault) or, if diplomatic approach failed, by occupation (Operation Lifebelt). (1)

C.C./S. 15186
Encls. 5A and
10A

ibid
Encls. 17A and
20A

On 18 July the code word Vault was changed to Alacrity and a provisional detailed plan submitted to the Chiefs of Staff whereby two Fortress squadrons were to be based at Lagens in Terceira together with the necessary ground personnel and stores while six anti-submarine and minesweeping trawlers would use the port of Horta. The expedition would be carried in four or five ships accompanied by oilers and landing craft, the whole to be escorted by an escort carrier and three destroyers.

While preparations were going forward, the negotiations were jeopardised in August by the U.S. Government insisting that they should share in any facilities we might acquire from the Portuguese Government. Dr. Salazar immediately demurred and the British Chiefs of Staff informed their American opposite numbers that we were not prepared to risk a breakdown in

Ibid
Encl. 29A and
War Cabinet
Paper
A.H.B./IIJ
18/3/10

(1) In the case of invitation, the existing Portuguese forces in the Azores would remain to co-operate in the defence of the islands whereas an occupation would mean their withdrawal and necessitate a much larger British force.

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the hardly achieved negotiations. The matter was, therefore, allowed to rest until we had become firmly established in the islands.

C.O.S. (43)
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The provisional plan Alacrity was approved and a Directive was issued on 10 August by the Chiefs of Staff Committee in which Air Vice Marshal G.R. Bromet was placed in command of the land and air forces to be sent to Terceira and Fayal. On arrival he was to assume the title of Senior British Officer and thereafter the Naval Force Commander would be known as the Senior British Naval Officer who would be responsible under the Air Vice Marshal's direction for the control of naval forces and port parties remaining in the islands.

War Cabinet
Publication
A.H.B./IA/20

C.C./S.15186
Encls. 27A
to 58A.

On 18 August a formal Anglo-Portuguese Agreement was agreed and signed whereby Portugal received certain war material and the guarantee of armed assistance in case of an attack by Germany. In return Portugal granted the facilities for which we asked in the Azores and such facilities would date from 8 October 1943. For the remainder of the month and during September the Alacrity plan was perfected in detail with necessary amendments. For instance, while stores were being unloaded, the auxiliary carrier was to be retained for local A/U air patrols until such time as a flight of Hudsons could be flown in from Gibraltar. The two Fortress squadrons would arrive as soon as the extension to the existing runway permitted. The air base was to be known as No. 247 Group and would be under the direct operational control of Coastal Command. An A.C.H.Q. was to be set up and customary co-ordination signals were to be exchanged with the A.C.H.Q.s at St. Johns Newfoundland and Gibraltar. Co-operation with the U.S. Moroccan Sea Frontier was to be attempted through the R.A.F. Gibraltar. (1)

The expedition sailed on 30 September in three small convoys - UA1, 2 and 3 - with six A/S M/S trawlers supported by the escort carrier Fencer and destroyers Inconstant, Garland and Burza. They arrived without incident off the port of Angra in Terceira Island on 8 October. The unloading of stores, setting up of camps and preparation of the airfield at Lagens occupied the next three weeks. Air cover for the landing and subsequent local A/U patrols were done by the Fencer's aircraft while the surface craft patrolled outside Angra anchorage.

No. 247 Group
O.R.B. Appen-
dices

The first two Fortress aircraft arrived from England on the 18 October and started operational sorties the next day. Nine Hudsons of No. 233 Squadron from Gibraltar and another ten Fortresses landed on the 23rd followed during the next two days by the remaining seventeen Fortresses of Nos. 206 and 220 Squadrons. No. 247 Group was now able to take over the local air patrols from the Fencer, who left on 25 October, and to start full scale A/U operational flying. This was directed around the Azores out to a distance of 400 to 500 miles. On the 27 October, convoy HX 262 was given two hours escort by

(1) In due course the absurdity of having the R.A.F. Gibraltar still under Mediterranean operational control was at last recognised and from 15 November 1943, the R.A.F. Gibraltar reverted to Coastal Command. Unfortunately the Moroccan Sea Frontier remained independent and continued much unco-ordinated and wasteful flying.

F/220 Squadron when 400 miles N.N.W. of Lagens. During this time a U-boat was sighted on the surface eight miles from the convoy. It dived immediately and no attack was possible. On 30 October, escort and support was given for six hours by four Fortresses to convoy SL 138/MKS 28 as mentioned in the previous section.

Thus almost unfailing shorebased air cover was assured everywhere in the North Atlantic down to the latitude of 30°N. The employment of U.S. and British escort carriers together with the convoy M.A.C. ships ensured complete air cover over a vast area. Not least among the benefits was the more southerly routing of transatlantic convoys clear of the devastating winter gales which had previously caused such heavy marine casualties. The effect of this menacing air umbrella on U-boat tactics was immediate and is recounted in the succeeding sections.

(xiii) - Summary of the Northern Atlantic Convoy War - June to October inclusive.

During the three months June, July and August none of the 85 Northern Atlantic ocean convoys had lost a single ship and few had even been approached by U-boats yet eight U-boats had been sunk by surface escort or air support to these convoys.

During September and October, when they once again became the priority target for U-boat packs, the enemy sustained the following losses:-

Around Convoys		In the refuelling area
By air cover(1)	By surface escort	By air attack from U.S. escort carriers.
13 U-boats	5 U-boats	6 U-boats
one U-boat shared		

Against these 25 U-boats destroyed in mid-ocean, the enemy succeeded in sinking only nine merchant ships in the five convoys attacked out of the 64 ocean convoys containing 2,468 ships actually at sea during the two months.(2) This adverse balance constituted a second defeat of the U-boats in the Northern Atlantic and forced Doenitz to recast his tactics. In the first days of November he reviewed the situation before deciding to abandon the mobile surfaced U-boat group dispositions.

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- (1) On the 1 September the V.L.R. Liberator strength available for convoy cover amounted to 78. Of this total, 15 were in No. 10 R.C.A.F. Squadron operating from Newfoundland, 48 were in Nos. 59, 86 and 120 Squadrons in Northern Ireland and Iceland, and 15 were in No. 53 Squadron based at Beaulieu in Hampshire.
 - (2) In addition to ocean convoys, there were 302 American coastal convoys, containing 3,273 ships, which suffered no loss. Few independently routed ships now traversed the North Atlantic and the seven sunk (32,756 tons) during these two months were lost off the South American and West Africa coasts.

(xiv) - Refuelling in mid-ocean abandoned

B. d U.
War Diary

It will be remembered that at the end of October, Doenitz's refuelling arrangements in mid-North Atlantic were rapidly breaking down under the attacks by the American escort carriers Block Island and Card. Emergency refuelling from the large minelayer U-220 had finished abruptly by her destruction on the 28 October and the only tanker - U.488 - had been withdrawn to more southerly latitudes out of harm's way leaving two boats (U.762 and 91) almost out of fuel. U.405 was detailed to rendez-vous with them as soon as possible so as to give them enough fuel to reach a Biscay port but she ran into a small convoy the escorts of which detected her and she was sunk on 1 November by the U.S. destroyer Borie in 4900N x 3114W. For the next two days both U.762 and 91 were signalling to base that they could find neither U.405 nor U.488. Consequently Doenitz was forced to allocate another large minelayer - U.219 who, fresh out from Germany, was in the vicinity outward bound on a minelaying mission. Her orders were cancelled and she was instructed to refuel U.91 as quickly as possible before going on to U.762 at high speed. Another operational boat - U.343 - was also ordered to U.762 as she was now immobilised with empty tanks. This refuelling was successfully accomplished by 7 November but Doenitz realised that the era of mid-ocean replenishment was over. After one more refuelling operation in equatorial latitudes, U.488 started for home on 13 November and other overseas U-boats were told that they could not be replenished again and must start their return passages according to the state of their existing fuel stocks. U.219 stayed in southern latitudes long enough to refuel three outward bound overseas boats later in the month, finally giving her remaining fuel to U.172 bound for the Far East in early December after which she too returned to France.

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The considerable extension of sea endurance which the mid-ocean replenishment scheme had conferred on all types of U-boat operations since March 1942 thus came to an end almost entirely due to shorebased and carrier borne aircraft action. In this respect the use of specially equipped Flak-U-boats as protection against air attack either in the Bay of Biscay or in the refuelling area had failed. In the course of the summer of 1943 a total of seven such boats had been converted.⁽¹⁾ This involved the fitting of a special conningtower structure on which to mount the extra flak guns which not only detracted from the U-boats' seagoing qualities but limited their fuel and torpedo capacity. By September the lack of success in their special role was apparent and for a time they were used on convoy operations but their marked inferiority in performance compared to normal U-boats resulted in a decision by Doenitz on the 11 November to re-convert them back to the ordinary Type VII class.

(xv) A review of the Convoy War by the U-boat Command Staff -
1 November 1943

Heavy casualties and lack of success in October forced a review of the convoy war situation. This was noted in the B. d U. War Diary. The following were the salient points:-

- (1) Although the initial resumption in September was a success, the U-boat losses, particularly from air attack around convoys, had subsequently become serious.

(1) U.441, 256, 621, 211, 953, 271 and 263.

B. d U. War
Diary Pages 267
and 268.

(2) With no success to counterbalance them, these losses could not be borne. It was still maintained that when U-boats had been fitted with 3.7 cm flak armament they would be able to ward off air attacks and thus get to the convoy in daylight. Meantime operations on the surface against convoys must be conducted mainly at night with a break-away during the day if strong air support came on the scene.

(3) The air menace required the waiting lines of U-boats to be on diving patrol during daylight in shorter patrol lines, close formation within each group and greater distance between individual groups and between these and the scouting U-boats looking for the enemy.

(4) The pattern for the immediate future would therefore be:-

(a) Avoidance by the above measure of the discovery of U-boat waiting lines and resultant evasion by enemy convoys.

(b) Timing of interception of convoys, in so far as possible, so that they were contacted in the evening and for rapid attacks to be carried out on the surface during the first night without delay.

(c) The breaking off of any operation if very strong air support appeared.

(5) Conditions could only improve radically when the scale of G.A.F. reconnaissance was adequate and early enough to direct the U-boats to a position ahead of the intercepted convoy. With the existing G.A.F. weakness in long range aircraft this could only be attempted on the route between England and Gibraltar.

(xvi) - November operations

(a) The Northern Atlantic

Acting on the new tactics, Groups Koerner and Jahn, off Newfoundland, were dissolved and in their place the U-boats were formed into five small groups numbered Tirpitz 1 to 5. These were spread along the arc of a circle 450 miles E.N.E. to E.S.E. of the southern tip of Newfoundland. A gap was left between each grouplet and single U-boats posted 60 miles to the west to act as advance reconnaissance. Boats were to dive by day but any enemy sightings were to be reported immediately so as to permit of a concentration by night. By keeping the grouplets detached, Doenitz hoped to hide the extent of the whole formation should one of the little lines be discovered. As there was now no chance of replenishment in the Northern Atlantic, the boats were to start home automatically when stocks of fuel were low.

By the 5 November, the Tirpitz grouplets were in position awaiting an eastbound convoy. The 2nd Escort Group accompanied by the escort carrier Tracker, after supporting the previous HX262 to mid-Atlantic were now returning slowly through the Tirpitz area before attaching themselves to the next convoy. The Tracker's aircraft located but only indecisively attacked U.967 in Tirpitz 2 late on the 5th. The 2nd Escort Group closed the position and early the next day picked up an asdic contact. Several attacks followed and at 0900 hours U.226 was destroyed. Soon afterwards an

Ibid
page 266
See Map. No. 39

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(12) and B. d U.
War Diary

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aircraft from the Tracker sighted U.842 on the surface (against all orders). She escaped damage in the attack by diving but was picked up on asdic by the 2nd Escort Group and sunk at 1500 hours. No further sightings were made but the oncoming HX convoy was diverted well to the south. Having sighted no convoys by 8 November, Doenitz dissolved Group Tirpitz and took up a diamond shaped patrol area to the S.S.E. of Cape Farewell (Greenland) in which the 22 U-boats were scattered in little parties of three. In one of these, U.714 was sighted at 1610 hours on the 8th by Canso N/116 Squadron R.C.A.F. who was escorting convoy ON 209. The flying boat was kept at bay by intense flak from the U-boat. Her R/T broke down and, on leaving the scene to inform the surface escorts by visual signal, U.714 immediately dived. After dark, another boat- U.648 - sighted the Tracker in moonlight and at 1945 hours fired a salvo at her but missed. No U-boats sighted the awaited convoy and two days later Doenitz reformed the loose diamond shaped formation into a slightly more compact rectangle further to the southward under the name of Group Eisenhart, re-inforced to 25 U-boats but still sub-divided into little parties of three. Doenitz was fully aware of the impossibility of a concentrated operation with such a scattered disposition but considered this outbalanced by the difficulty of locating the whole group by air reconnaissance.

Ibid

See Map No. 40

On 12 November, the Radio Intelligence Branch reported that, from intercepted signals, it appeared that the last three transatlantic convoys had followed an unusually southerly routing. Doenitz considered this most likely in view of the additional air cover now possible from the Azores and he instructed the whole Eisenhart Group to move 350 miles in a southeasterly direction so as to reach an area between 55° and 46° N (north of the Azores) by 16 November when it was expected that convoys SC.136 and HX.265 would be approaching from the west.

(b) Convoy MKS 29A⁽¹⁾

While this slow move was taking place, we will turn to the experiences of the other North Atlantic disposition - Group Schill, across the England/Gibraltar route. This group had just been roughly handled by the escorts of SL 138/MKS 28 at the end of October and was, on the 2 November, moving slowly southwards to take up a line on latitude 44° N between longitudes 22° and 18½° W there to await convoys found for them by G.A.F. reconnaissance. The same orders held good as with Group Eisenhart as regards submergence during daylight but with added weight as this area could, as Doenitz realised, be flooded with aircraft from three directions - Azores, Gibraltar and the United Kingdom. What he did not know was that full attention was being given to night air operations in support of convoys on this route.⁽²⁾ Half of No. 172 Leigh Light Squadron were sent to Gibraltar early in November and detachments of this squadron and No. 179 already at Gibraltar were moved to the Azores later in the month.

No convoys, either north or southbound, were located by the rather sparse G.A.F. reconnaissance by 5 November and Group Schill continued to move steadily south until the Fliegerfuhrer Atlantik could muster resources for a more

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- (1) References - B. d U. War Diary and No. 247 Group O.R.B. appendices.
(2) For the development of night air escort to convoys see Appendix IX.

See Maps
Nos. 39 and 40

adequate search planned for the 7th. By this time the U-boat line was nearing latitude 42° N. At 1055 hours, the F.W.200 sortie reported a northbound convoy of 33 ships in 3740 x 1540W. This was convoy MKS 29A and Group Schill of eight boats(1) was instructed to operate against it. Actual interception was planned for the evening of 8 November when the boats were to surface at 1800 hours and listen for D/F beacon signals from the evening G.A.F. sortie. The bearings were to be relayed back to base and a plotted fix secured on the convoy. However, the convoy was not re-located at all by the G.A.F. The forenoon search was ruined by aircraft breakdowns and faulty search radar baulked the evening flight. Accordingly the Group was told to steer for the estimated position of the convoy at high speed on the surface from 2000 hours.

No contact was made until almost daylight on the 9th when an attack was too late. In the half light U.707 was sighted 37 miles from the convoy by Fortress J/220 Squadron and sunk at 0725 hours. Two other boats sighted vague lights and star shell at dawn but the convoy itself was never seen. U.262 missed with an acoustic torpedo at an escort vessel at 1023 hours and U.228 erroneously claimed to have hit a straggler at 1109 hours. At 1130 hours the G.A.F. at last sighted the convoy much further to the north and Group Schill was signalled to surface and chase in this direction but to dive if aircraft appeared. Air escort to the convoy was continued by Azores Fortresses but no U-boats were sighted. U.466 came within sight of one of the outer screen surface escorts and missed with a torpedo at 1600 hours. She was detected soon after by asdic and heavily depth charged with extensive damage.

The evening G.A.F. sortie again reported the convoy's position and sent out beacon signals but these were not received by any of the U-boats as all were kept submerged by fear of the air cover. The Group was told to persevere until daylight/10th when they were to break away to the westward. No further signals were received from the boats and the operation came to an end. This fiasco was explained by Doenitz as due mainly to the still inadequate numbers in the G.A.F. reconnaissance force and to the small size of the U-boat group. The Azores aircraft maintained sweeps over the area where U-boats had disclosed themselves and one of them was sighted and attacked at 0408 hours on the 11th by L/L Wellington D/172 Squadron but no damage was inflicted.

(c) Enemy concentration in the Azores/Portugal area

For the next operation in this area, Doenitz planned for at least two patrol lines in quarterline formation and spaced a day's convoy run apart. To provide the required number of U-boats, five of the Eisenhart boats lowest in fuel were ordered to join Group Schill together with five others fresh from Biscay ports.

A staff appreciation written on the 12 November stated that the movements and lack of results of the recent 12 days illustrated the difficulties under which the U-boats operated. It said "The enemy holds all the trump cards. Far reaching air cover using location methods against which we have no warning make convoy detours possible in an immense sea area

B. d U.
War Diary
Pages 295 and 296

(1) Group Schill - U.211, 333, 707, 262, 466, 953, 228 and 358.

over which we have no corresponding air reconnaissance except in a limited region off Portugal. The enemy air attack menace has curtailed the mobility of U-boats and restricted their range of vision because they must keep submerged all day. They know all our secrets and we know none of theirs. The enemy air operations in the Bay of Biscay, although not inflicting many losses, have so increased the passage time of outward and inward bound boats that this journey now takes as long as a former complete Atlantic cruise. As U-boats can no longer be refuelled at sea they consequently can spend far less time on patrol. The net result is that we have to give up the western half of the Atlantic and restrict attacks on the transatlantic convoys to the area east of longitude 35°W. We must therefore concentrate on operations against the England/Gibraltar convoys where at least we have some air reconnaissance".

Ibid
Page 303

See Map No. 41

This was an admission of defeat in the Northern Atlantic comparable to the earlier withdrawal in May 1943. It became more complete on 15 November by the withdrawal of all the remaining Eisenhart boats from northern latitudes and their redeployment into the Group Schill area to the N.W. of Spain. While making this move, some of the boats became involved in partial contacts with HX 265 - one of the convoys they had been vainly waiting for in the previous disposition. Both this convoy and SC 146 received ample air cover between the 15 and 17 November from the Azores and the United Kingdom and, although several U-boats sighted some of the outer screens of surface craft, none succeeded in closing the actual convoys. While escorting HX 265 on 16 November, V.L.R. Liberator M/86 Squadron attacked and sank U.280 some 40 miles from the convoy. No general operation was attempted by Doenitz and the re-inforcement of Group Schill continued.

The experiences of this and subsequent groups of U-boats against the North/South convoys will be given in detail because they constitute the final defeat of U-boat concentrations against ocean convoys. Thereafter, U-boat operations relapse into minor pinpricks. To avoid constant marginal reference in the narrative of these convoys, it is stated here that the accounts have been compiled from the following sources:-

H.Q. Coastal Command and Group O.R.B. appendices, B. d U. War Diary for November and December 1943, and Admiralty C.B.04050/43(11), (12) and /44(1). All times are G.M.T.

(d) - Convoy SL 139/MKS 30

Meanwhile late on 15 November, the G.A.F. search had sighted a large convoy steering N.W. in position 35°30'N x 12°30'W which was correctly estimated to be the combined SL/MKS convoy bound for England. A full scale operation was planned against it using all available U-boats grouped as follows:-

Group Schill I - Eight boats⁽¹⁾ to await further orders in or near Position 41°00'N x 21°00'W. This was to be the initial attack position.

(1) Schill I - U.608, 262, 228, 515, 358, 333, 211, 600.

Group Schill II - Eight boats⁽¹⁾ to take up a line on latitude $42\frac{1}{2}^{\circ}$ N between longitudes 20° and $22\frac{1}{2}^{\circ}$ W by dusk/19 November, as the second attack position.

Group Schill III - Ten boats⁽²⁾ to await further orders on latitude 46° N between longitudes $18\frac{1}{2}^{\circ}$ and 22° W from dusk/20th as the final attacking line.

See Map No. 42

All boats were to proceed submerged by day and keep a diving patrol when in position but shallow enough to receive long wave W/T signals from base. A general message to all U-boats was broadcast in which Doenitz explained the reasons for the withdrawal from the transatlantic trade route and stating that the first long range JU 290.s were now available, supplemented by BV.222.s and F.W.200.s, as convoy locators while the He. 177 had largely replaced the JU.88 as long range fighter/bombers. The use of the Zaunkoenig acoustic torpedoes he said had already discouraged much of the former counter-action by surface escorts while the fully automatic 37 mm flak guns now mounted in increasing numbers of U-boats would help against their main enemy - the aircraft, and should restore surfaced mobility during the day. The installation of the detector receivers Naxos, Borkum and Wanze G2 guaranteed radar interception over wide bands without the risk of radiation. The signal concluded "You have had to combat a strong air menace with, up to date, little chance of success but your fighting has led to a very large deployment of enemy resources in the sea war. Keep fighting so as to continue to tie down these forces and so prevent their use against the Fatherland even though the battle seems fruitless to you."⁽³⁾

On the following day the BV.222 reconnaissance reported the convoy at 1025 hours as being in 36° N x 14° W steering northwest. Group Schill I was ordered to take up a line on latitude 40.45° N between 17° and 20° W by P.M./18 November. On the 17th, after a forenoon report by the G.A.F. on the convoy's position the Group was told to improve their position by moving southwestwards to latitude 39° N between 19° and 21° W and to surface at 1800 hours on 18 November keeping watch on D/F beacon signal reception. Two G.A.F. flights were ordered, one in the forenoon to still further improve the positioning of the line and one at dusk to bring the boats to the convoy.

The increasing enemy W/T traffic from 15 November onward had indicated the presence of numerous U-boats on the route of the convoy and considerable re-inforcement of surface escort was in train while maximum air cover was planned. The convoy SL 139/MKS 30 consisted of 66 ships and initially had the 40th E.G. (six vessels) as escort. This was re-inforced on 18 November by the 7th E.G. (five ships). While on their way to join, two of this group detected and attacked U.648, one of the Schill II boats waiting further north, but inflicted no damage. Night air support ahead of the convoy commenced during the night of the 17th/18th and I/L Wellington D/172 Squadron located and attacked indecisively another Schill II boat at 0354/18th. None of Schill I were seen.

(1) Schill II - U.709, 969, 343, 586, 648, 238, 618, 86.

(2) Schill III - U.714, 843, 424, 212, 391, 967, 538, 542, 575, 764.

(3) The final words of this otherwise encouraging signal must have been read with mixed feelings by captains of U-boats.

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The forenoon G.A.F. search found the convoy in 39°N x 18¹⁰°W and as Schill I's line was too far to the west, they were told to proceed submerged to the northeast and after surfacing at 1830 hours were to search in this direction. Soon after noon, U.515 sighted the convoy and surfaced in order to report to base. She was immediately sighted by H.M.S. Chanticleer who was 25 miles astern of the convoy, forced to dive and hunted together with H.M.S. Crane of the 7th E.G. U.515 retaliated with acoustic torpedoes, one of which hit and blew off the Chanticleer's stern. She was taken in tow by the convoy rescue tug Salveda and started for the Azores accompanied by H.M.S. Garlies and a Hudson air escort. Meanwhile the Crane continued depth charge attacks until losing contact at dusk.

The evening G.A.F. sortie located the convoy and sent out beacon signals until 2000 hours but only U.262 received them and a W/T fix of the convoy was not obtained. Later at around midnight, U.515 surfaced and got her signal through which showed Doenitz that the convoy had been further ahead than estimated and, realising that it had by now passed the line, he signalled all Group Schill I to press on to the north at maximum speed.

During daylight on the 18th, the convoy had received continuous air escort and support by a total of six Fortresses and four Hudsons from the Azores and three Catalinas from Gibraltar. Night support was then given by three I/L Wellingtons from the Azores. One of these, F/179 Squadron, detected, attacked and sank U.211 while obeying Doenitz's signal to press on. Another U-boat (U.333) ran up against the outer surface screen and was so severely damaged by depth charge attacks that she barely managed to reach port after a nightmare journey.⁽¹⁾ Only U.262, following up her D/F bearing, managed to catch a glimpse of the convoy just before dawn but had to dive for safety as the light grew stronger.

Doenitz ordered Schill I to abandon the operation in view of the obviously strong air cover explaining the lack of success as due to the unavoidable delay in getting off U.515's sighting report. Group Schill II was moved eastward to lie between 18° and 21°W on latitude 43°N. During the day of 19 November the convoy's surface escort was further strengthened by two Canadian ships Calgary and Snowberry, the 5th E.G. (four ships) and H.M. Ships Essington, Watchman and Winchelsea who were incorporated into the 7th E.G. Air cover was again continuous and was given by a total of ten Fortress sorties. One of these sighted a U-boat at 1443 hours some 30 miles on the convoy's starboard bow but it dived before an attack could be made.

The morning JU.290 had duly located the convoy and Schill II augmented by U.608, 238 and 536 were instructed to move still further east submerged during the day. The evening JU.290, although engaged by the escorting Fortress, managed to keep touch with the convoy and made beacon signals as ordered. These were picked up by six of the Schill II boats and gave a

(1) She arrived at La Pallice on 1 December hardly afloat and in such a battered state that Doenitz made a general signal to all U-boats eulogising her commanding officer (Kapt. Lt. Cremer) and citing his achievement as an example of how a well trained crew resolutely led could surmount almost hopeless conditions.

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good fix of the convoy. All the group were informed and a general attack ordered.

During the dark hours, support was given between 1900 and 0500/20th by seven I/L Wellingtons. They saw no U-boats but several reported diving because of their presence. The convoy was unmolested. Three U-boats reported sighting star shell, U.648 got a hydrophone bearing of the convoy and U.238 missed with a torpedo at a frigate. After diving she heard the convoy pass overhead. H.M.S. Nene, one of the advanced outer screen, sighted U.536, forced her to dive and together with the Calgary and Snowberry blew her to the surface again with depth charges. Here she was met by a hail of gunfire and sank stern first at 0247/20th. Her captain and 16 of the crew were picked up later.

The G.A.F. reconnaissances on the 20th were made by four aircraft. One F.W.200 and one JU.290 on their way out were shot down by Beaufighters of No. 248 Squadron and Mosquitoes of No. 157 Squadron respectively off Cape Ortegal and the other two aircraft had defective search radar so the convoy was not located. In default of air location, Schill III started moving south submerged towards the estimated convoy position with orders to surface as soon as reasonable and press on at full speed in case of convoy evasion. Air cover during the day was even stronger, being supplied by six Fortresses from the Azores, six Liberators and three Sunderlands from the United Kingdom. One of the Liberators (P/86 Squadron) sighted a U-boat through a rain squall at 0940 hours 25 miles off the convoy's port bow but it dived before attack was possible. At 1740 hours, Sunderland G/422 Squadron sighted U.618 on the surface. A signal was sent to base indicating immediate attack but the aircraft never returned. U.618 claimed a Sunderland at this time and it seems certain that this aircraft was shot down on the attacking run-in.

Schill III actually surfaced before dark and steered southward during the night to meet the convoy but appear to have missed it altogether because the first contacts were made on the convoy's quarters and astern by the rear outer screen vessels. Actual night air escort was given on this occasion and lasted from 1945/20th to 0903/21st by eight Leigh Light Liberators of No. 53 Squadron from England. Many A.S.V. contacts were made astern of the convoy and four U-boats illuminated of which two were attacked. A/53 Squadron failed to harm U.575 owing to intermittent trouble with the Leigh Light and another boat was afterwards detected but no attack was possible owing to the same cause.⁽¹⁾ N/53 Squadron illuminated U.648 but was shot down with no survivors on the attacking run-in. Altogether seven U-boats reported incidents with aircraft this night. At one time the 5th E.G. complained that the frequent glare of exposed searchlights was diminishing their prospects of surprise attacks but their chance came at 0420/21st. H.M.S. Foley obtained a radar contact about 40 miles on the convoy's port quarter. Together with the Crane she closed, illuminated with star shell and

(1) A/53 Squadron completed her escort duty and left the convoy at 0800 hours. Shortly before reaching Cornwall on the homeward journey, three engines suddenly cut and the aircraft ditched. Only one survivor was subsequently picked up.

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See Map No. 42

See Appendix IX
for development
of night air
escort.

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sighted a large U-boat which immediately dived. Asdic contact was gained and a long series of underwater attacks ensued which at 1005 hours finally resulted in the destruction of U.538.

Doenitz abandoned the operation at dawn on 21 November remarking in his War Diary that 31 U-boats had taken part in three different night dispositions but had only resulted in one escort vessel being hit and two aircraft shot down. Events had shown, he wrote, that the enemy is well able to take quick and effective action in this area with numerous air and surface escorts. The next operation must therefore be carried out in one single night with as close a massing of U-boats as was possible. The G.A.F. numbers must be increased and they should shadow the convoy at night so that beacon signals could be used by U-boats throughout the dark hours. Means to combat the enemy night air support must be found.

A glider bomb attack on the convoy

Continuing northward the convoy was located by a F.W.200 and a JU.290 at 0900 hours/21 November. They were engaged by the two escorting Liberators but continued to shadow for some hours. At 1400 hours, the 4th E.G. (six ships) joined as additional outer screens. Air escort was provided throughout the day by Liberators and Sunderlands from the United Kingdom. At 1530 hours, several He. 177.s appeared and attacks with glider bombs against the convoy started in position 4646N x 1821W. As the attacks developed the defence was joined by the A/A ship H.M.C.S. Prince Robert who took station close astern of the convoy. Air combats took place between the escorting Liberator K/224 Sqdn. and four of the attacking He.177.s during which one of them was shot down. At 1600 hours, S.S. Marsa - 4,405 tons straggling $3\frac{1}{2}$ miles astern was hit and had to be abandoned. A few minutes later S.S. Delius - 6,065 tons in the convoy was damaged and set on fire but eventually reached harbour. The attacks ceased at 1657 hours. In all sixteen bombs were released but only two found their mark.⁽¹⁾ At the same time, the Watchman and Winchelsea who were 40 miles astern were also attacked and the latter was slightly damaged by a near miss.

Air escort was continued throughout the night but the recent sustained effort left only two British Liberators available for the 22 November. A request by the A.O.C. No. 19 Group for sorties by the U.S.N. Liberators under his control met with a refusal on the ground that convoy cover was not within their Commanding Officer's assignment.⁽²⁾ In the event, the convoy was not further molested but the incident gave point to the need for haste in the clarification of operational control then under discussion between the British authorities and the Washington U.S. Naval Staff.

(e) - Convoys OS 59/KMS 30 and SL 140/MKS 31

After the failure of this major operation, Doenitz reformed the remaining Schill boats into a new Group Weddigen consisting of 16 boats⁽³⁾ and directed them to form a line on

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- (1) From German records, of the 25 aircraft which took off, three He. 177.s failed to return. Exaggerated claims were made of two large ships being sunk and three others damaged. (Ref. G. & U. War Diary).
 - (2) The clash arose over the too rigid interpretation of the Commanding Officer's written assignment from his superiors. It was settled in this case by personal interview by the A.O.C.-in-C. and correspondence with Admiral Stark U.S.N. in London. Ref. C.C./TS.8 encls. 51B and 41A to 45A.
 - (3) Group Weddigen - U.424, 843, 618, 600, 358, 542, 586, 262, 764, 86, 238, 643, 228, 259, 391 and 714.

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See
Chapter VII
(iv)

latitude $43\frac{1}{2}^{\circ}\text{N}$ between $19\frac{1}{2}^{\circ}$ and $22\frac{1}{2}^{\circ}\text{W}$ by dark on the 23 November for an operation against the southbound OS/KMS convoy. The 4th E.G. was in the course of being transferred from SL 139/MKS 30 to this convoy which was OS 59/KMS 30 and the Azores aircraft were flying continuous sweeps over the general area where the recent battle had taken place. It was not surprising therefore that odd U-boats should sight both aircraft and surface vessels which were in no particular relation to any specific convoy. Several of these southwest moving U-boats ran into the 4th E.G. during the night of the 22nd/23rd in the course of which U.714 was hunted for five hours, U.424 for eight hours and U.648 was sunk by H.M. ships Bazely, Blackwood and Drury. U.843 sighted the ships just before dawn and missed them with an acoustic torpedo.

After these encounters, the second division of the 4th E.G. were instructed to continue a southward sweep in this fruitful area while the other division continued over to the southbound convoy. Azores based aircraft now gave full air escort to this convoy which was routed down further west than usual. The G.A.F. search failed to locate it during the 23rd and Doentiz, guessing that the convoy had hauled out following the glider bomb attack on the SL convoy, ordered Group Weddigen to transfer their patrol line as soon as dark had fallen at full speed 90 miles to the southwest. Nothing was seen by them of the convoy but two boats again caught glimpses of the detached 4th E.G. division.

Continued failure to locate the convoy by air or U-boat search during the 24th decided Doentiz that it must already have passed beyond his reach⁽¹⁾ and he re-directed Group Weddigen to latitude $37\frac{1}{2}^{\circ}\text{N}$ between 17° and $19\frac{1}{2}^{\circ}\text{W}$ by dark on 27 November in readiness to operate against the next north-bound convoy. During the night 24th/25th some of the boats once more ran into the detached ships of the 4th E.G. U.542 was chased but got away. U.262 and 843 sighted starshell and U.600 was located, attacked and sunk at 0303 hours on the 25th by the Bazely and Blackwood. No further contacts being obtained by 1630 hours, the ships set course to re-join the other division which was now moving over to support the north-bound convoy SL 140/MKS 31. Azores aircraft continued to sweep over the general area through which the convoy would have to advance and during the night 25th/26th, L/L Wellington H/172 Squadron caught U.542 on the surface. Under intense flak an attack was delivered which did not damage her. U.S.S. Bogue, who was also moving over towards the SL convoy, had her aircraft flying and they detected U.618. The flares dropped by the aircraft and flak from the U-boat were seen from the 4th E.G. who closed, picked up U.618 on asdic and severely damaged her in a series of underwater attacks lasting till midday/26th.

At 1344 hours the convoy was located and reported by the G.A.F. reconnaissance and Doentiz signalled the Weddigen boats to improve their positioning to the southeastwards in preparation for action at dusk/27th. The combined convoy consisting of 68 ships was initially escorted by Group B.1 of eight vessels. Close air escort was not yet being given on

(1) Convoy OS 59/KMS 33 proceeded down longitude $23\frac{1}{2}^{\circ}\text{W}$ heavily supported day and night by Azores based aircraft. During the afternoon of 23 November, the convoy was further supported by the U.S. escort carrier Bogue escorted by three U.S. destroyers.

the 26th but seven Azores Fortresses aided by the Bogue's aircraft gave air support ahead. This was continued through the night of the 26th/27th during which a U-boat was illuminated and attacked by A/179 Squadron but no damage was inflicted. Not far away the 4th E.G. contacted another U-boat and subjected her to an hour's hunt with depth charges but she also got away unharmed.

See Map No. 43

At 0830/27th, a F.W.200 found the convoy well to the east of the estimated position and Group Waddigen were told to move submerged in a northeasterly direction until dusk and then to proceed northeast at high speed on the surface. During the forenoon the other division of the 4th E.G. joined the convoy followed in the afternoon by the 2nd E.G. (four ships) carrying the famous Captain Walker as senior officer who thenceforth took command of all the escorts. Gibraltar based Catalinas gave close air escort from dawn followed during the day by four Azores Fortresses with general support provided by five more Fortresses, two Hudsons and the Bogue's aircraft.

No U-boats were sighted during the day of the 27th because not only were they submerged but were in fact well to the westward of the convoy's line of advance. This was realised to the full by Doenitz in the evening when a BV.222 picked up the convoy in 3900N x 1630W. The beacon signals made by this aircraft after dusk were picked up by five of the U-boats which showed them to be some distance off the convoy's port quarter. The BV.222 continued to shadow, making continuous beacon signals until 0130 hours on the 28th and earning subsequent congratulations from Doenitz. The U-boats were however, too far off to gain contact even by high speed on the surface. Escorting L/L Wellingtons during the night 27th/28th sighted two boats, both to the westward of the convoy. One - U.542 - was attacked and sunk by L/179 Squadron⁽¹⁾ and the other - U.764 - shot down her adversary O/172 Squadron. Two other boats reported night air attacks which were by the Bogue's aircraft one of which was shot down. Other U-boats drew up towards the convoy in the latter part of the dark hours and numerous encounters took place with the rearguard outer screen in which U.764 was damaged. U.238 deserves a negative mention. She had seen the flak actions in which the two aircraft had been shot down and she picked up the pilot and radio operator from O/172 Squadron subsequently landing them as prisoners.⁽²⁾

The only boat to reach the convoy was U.262 who dived under the screen and surfaced among the ships just before

(1) Although the actual aircraft was L/172 the crew were from No. 179 Squadron.

(2) During 28 November, U.238 signalled to base the results of a preliminary interrogation of the British radio operator. He stated:-

- (a) The location of U-boats was passive, i.e. Homing on U-boats' own electronic emanations.
- (b) The searchlight was not always necessary for accurate release of depth charges.
- (c) The attacking course was always at right angles to the U-boat's track.
- (d) The point of aim was the wake.
- (e) He had two years experience on A/U operations and claimed to be able to distinguish a German from a British submarine with the location method in use.

dawn. She fired four torpedoes and claimed three hits but actually all four torpedoes exploded harmlessly at the end of their run. U.262 was promptly attacked by H.M.S. Dahlia but escaped unharmed.⁽¹⁾ After daylight U.238 caught a distant sight of the convoy and missed with a torpedo at a corvette at 1042 hours. There were no further reports from other U-boats and the operation was broken off. The scattered group was ordered to move out to the west where it was intended to build up another patrol line against the next southbound convoy. The Azores and Gibraltar based aircraft continued to give air cover to the convoy while the Bogue ranged over the recent scene of action. On the 29 November, her aircraft caught and sank U.86, and inflicted casualties by M/G fire on U.238 who had to make an immediate return to port.

In his comments on the action, Doenitz noted that the convoy had altered course drastically as soon as the shadowing G.A.F. aircraft had departed which made it difficult to re-dispose the waiting line of U-boats restricted as they were in mobility. More continuous shadowing was impossible owing to lack of aircraft. Night shadowing was feasible and on this occasion was very successful. The prolific use of flares and starshell had misled U-boats at night but newly designed signal buoys to be dropped by the shadowing aircraft should prevent this in future. The enemy was making increasing use of night air escort which not only added to the risks to U-boats but frustrated their approach to the convoy in time before daylight. The small results (three ships erroneously claimed as sunk) were attributed in this case to:-

- (a) A bad start in that the patrol line was initially too far to the west.
- (b) The strong activity by night flying aircraft which caused so much diving when attempting to close on the surface.
- (c) False trails occasioned by the use of flares and star shell.
- (d) The opposition by the numerous outer screen surface craft.

(xvii) - December operations

During the latter part of November, a large number of new U-boats had cleared into the Atlantic through the Northern Transit area. Those, together with a few from Biscay ports, had been kept in a waiting area well to the S.S.W. of Iceland. Early in December, sixteen of these boats were formed into a Group Coronel and disposed down longitude 25¹/₂°W between latitudes 57° and 53°N. Limited G.A.F. reconnaissance was promised to the east of this line in order to locate westbound transatlantic convoys. As there was no sign of a southbound

See Map. No. 44

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- (1) The captain of U.262 (Lieutenant Franko) was, on his return to harbour, given the Knights Cross on Doenitz's recommendation as being the only commanding officer who had in the recent operations forced his way up to convoys in face of the strong air and surface position.

KMS convoy, Group Weddigen was moved up towards the Coronel line so that all possible evasive routeing might be covered. Ironically enough the expected convoy (ON 214) actually passed between the groups before the line was complete and after vainly searching with the limited G.A.F. resources the Coronel boats were re-disposed southwards to try for an eastbound convoy while Group Weddigen, being time and fuel expired, was disbanded. In due course the eastbound convoy by-passed Group Coronel to the north leaving Doenitz entirely mystified as to how the submerged line had been located to permit of this evasion.

On 8 December, he split the Coronel boats into two sub-groups for greater ease in submerged manoeuvrability and tried again for an ON convoy. This was sighted on the 13th by a F.W. 200 but so far to the south that no operation against it was practicable. More new boats from Germany had by the middle of the month swelled the numbers to 24 U-boats and these were re-disposed in three sub-groups but no sighting materialised. U-boat numbers in the area continued to grow; re-groupings and re-dispositions followed one another in vain until by 23 December Doenitz was back again to the old loose formation of 20 boats in parties of three in the northern area and a Group Borkum of 13 boats between the Azores and N.W. of Spain.

See Maps
Nos. 45, 46 and
47

On this day (23rd), two of the northern boats - U.471 and 421 - sighted the fast westbound convoy TU 5. The former was attacked and damaged by the escorting Liberator O/120 Squadron and the latter heavily depthcharged by the surface escort. No operation was attempted. However, further south there was a more serious encounter. At 1425 hours the G.A.F. reconnaissance reported an escort carrier steering southwest in position $46\frac{1}{2}^{\circ}\text{N} \times 20^{\circ}\text{W}$. This was the U.S.S. Card who actually had four destroyers with her. Weary of awaiting the elusive merchant convoys, Doenitz ordered Group Borkum to operate. Contact was made that evening and during the night 23/24 December at least seven U-boats came into action. The long expected southbound convoy OS 62/KMS 36 was just to the north accompanied by the British escort carrier Striker. Well in advance were H.M. ships Hurricane and Glenarm. As soon as the Card's group reported contacts with U-boats, these two vessels were ordered to join her while the convoy was diverted far to the west. A confused battle ensued during which U.645 was sunk by U.S.S. Schenk and both U.S.S. Leary and H.M.S. Hurricane were hit by acoustic torpedoes from U.415 and 275 respectively. The Leary sank immediately with heavy loss of life and the Hurricane had to be abandoned later. At dawn the operation was called off and for the next two days Group Borkum searched eastwards for the convoy which of course was never sighted. Realising that a number of U-boats were in the area athwart the usual convoy route, the U.S. escort carriers Block Island and Core, each with an escort of destroyers, were sent to operate from the 27 December in a sector 400 miles N.E. of the Azores over which shore-based air sweeps were also maintained by day and night. In this same region Group Borkum were being re-disposed against the northbound SL 143/MKS 36. Consequently during the 29 and 30 December several incidents took place between the opposing forces. L/L Wellingtons from the Azores made two attacks on U-boats at night and at least seven boats were engaged by the escort carrier groups. No U-boats were sunk but three were roughly handled while erroneous claims were signalled by them totalling six enemy destroyers sunk.

The 31 December saw the only other positive convoy sighting by the northern group of U-boats. Both U.744 and 545 sighted convoy ON 217 in position 6030N x 2430W. The latter fired at and hit a straggler - S.S. Empire Housman - but only damaged her.(1) U.545 was counter-attacked without damage and fired an acoustic torpedo at her assailants claiming one of them sunk. Also on the 31st, further signalled claims from Group Borkum increased their reported score by three more destroyers sunk.

These exaggerated claims by U-boats were growing to a fantastic figure but as 90 per cent of acoustic torpedoes exploded, either at the end of their run or when coming up against the Foxer device towed astern by escort craft(2) it was not altogether unreasonable for the hunted U-boat to conclude a hit whenever an explosion was heard. However, the large numbers of such surface craft believed sunk by the U-boat Command undoubtedly led them to think the U-boats were effective whereas in actual fact they were accomplishing practically nothing.

(xviii) - Summary of the Convoy War at the end of 1943

See Map No. 48

The months of November and December saw the final defeat of serious threats against ocean convoys. The day of high mobility surfaced U-boat concentrations was over for good. The western Atlantic had been abandoned by Doenitz and the Azores/Portugal area was too hot to pursue even submerged operations in conjunction with G.A.F. reconnaissance. Thenceforth U-boats were reduced to diving patrols scattered in penny packets in the northeastern sector of the Atlantic, constantly harried by support groups and air cover to the numerous and increasingly large convoys.

For the loss of twelve U-boats in convoy operations during these two months not a single merchant ship had been sunk(3) and out of all the claims against escorting craft only three surface and four aircraft had been lost to enemy action.

The flying hours expended on convoy escort and support from the United Kingdom, Iceland Gibraltar and the Azores during the four months since the resumption of U-boat operations

- (1) This ship lay in a damaged condition hove to for some days and on 3 January 1944 was again torpedoed and this time sunk by U.744.
- (2) Soon after the first use of Zaunkoenig acoustic torpedoes in September, the British naval authorities had countered with a noise making device capable of being quickly streamed and towed astern by escort craft when U-boats were encountered. It received the appropriate name of FOXER.
- (3) 72 ocean convoys containing 2,218 merchant ships reached their destinations safely.

in the Northern Atlantic are given below.

Atlantic Convoy Escort and Support							
Month	Base	Effective hrs.	Total hrs.	Sightings	Attacks	Sunk	Dem.
Sept.	U.K. and Iceland	(517 (20 (N)	(1,292 (241 (N)	9 -	5 -	2 -	3 -
	Gib.	(359 (29 (N)	(617 (128 (N)	- -	- -	- -	- -
Oct.	U.K. and Iceland	(1,280 (73 (N) (2 (N) L/L	(2,443 (605 (N) (20 (N) L/L	34 1 N -	30 1 N -	10+1 sh. - -	4 - -
	Gib.	(231 (17 (N)	(392 (81 (N)	- -	- -	- -	- -
	Azores	241	376	1	0	-	-
Nov.	U.K. and Iceland	(352 (10 (N) (22 (N) L/L	(893 (265 (N) (80 (N) L/L	2 - 3 L/L	1 - 1 L/L	1 - -	- - -
	Gib.	(278 (31 (N) (3 (N) L/L	(439 (75 (N) (11 (N) L/L	- - -	- - -	- - -	- - -
	Azores	(1,028 (50 (N) (224 (N) L/L	(1,850 (257 (N) (313 (N) L/L	2 - 6 L/L	1 - 6 L/L	1 - 2 L/L	- - -
Dec.	U.K. and Iceland	(579 (112 (N) (103 (N) L/L	(1,083 (439 (N) (147 (N) L/L	1 - -	1 - -	- - -	1 - -
	Gib.	(129 (4 (N)	(167 (18 (N)	- -	- -	- -	- -
	Azores	(879 (110 (N) (188 (N) L/L	(1,391 (350 (N) (277 (N) L/L	- - 4 L/L	- - 3 L/L	- - -	- - -

(xix) - Attempts to establish U.S. aircraft in the Azores

The agreement with the Portuguese Government under Dr. Salazar whereby we gained certain facilities in the Azores was only arrived at on the understanding that they did not apply to U.S. forces. Privately the U.S. Government was assured by us, that, as soon as our force was firmly established, ways would be found to induce Dr. Salazar to reconsider this exclusion.

During the latter part of 1943, the U.S. authorities made no secret of their wishes to base a considerable operational force in the Azores in addition to using Lages airfield as a staging post for up to 400 planes per month. (f) All this was against Salazar's original intention to grant limited facilities to the British only - based on the ancient treaty between Portugal and England.

A.M.
D.C.A.S. File
A.H.B./ID4/73

- (f) An operating force of one amphibian Catalina and four Liberator squadrons together with landing facilities on another island for carrier borne aircraft and the use of two harbours for naval craft involving a large constructional and maintenance ground force.

Salazar was fearful lest any permission granted to the U.S.A. separately might result in permanent claims on such islands as were used either as airfields or naval bases which not only might create immediate trouble with Spain with her background of German influence but would prejudice the status of the Azores as an independent Portuguese possession after the war. This feeling of being under constant pressure from American requests also resulted in a much more strict interpretation of the Anglo-Portuguese Agreement than would otherwise have been the case. It showed itself in a number of ways such as unwillingness to permit British parties to survey other islands for emergency landing fields, to put up W/T point to point equipment or radio beacons, enforcement of plain clothes on British naval base personnel and many small obstructions which undoubtedly could have been surmounted by compromise.

In the circumstances therefore it was agreed between the two Allies that American operational participation should be cut to a minimum. Based on the November and December experience it was considered that the convoy cover required for Atlantic convoys from the Azores could be adequately performed by the two existing British Fortress squadrons and one U.S.N. Liberator squadron fitted with searchlights.(1) It was confirmed by Cominch that the latter would be under British operational control through the A.O.C. of No. 247 Group who was also the Senior British officer Azores. This American squadron would release the detachments of Nos. 172 and 179L/L Wellington squadrons which were required elsewhere. The short range work hitherto done by the detachment of No. 233 Hudson squadron could it was thought be replaced by an American Ventura or amphibian Catalina squadron.

Active negotiations for these moves were in train by the U.S. Minister at Lisbon. By the end of 1943, Dr. Salazar had accepted the use of Lagens airfield as a staging post involving up to 1,200 transits per month and was on the point of agreeing to the introduction of U.S. operational aircraft provided they were camouflaged as assistance to the British and maintained under British control. However, before the agreement had been signed he heard that the Americans had sailed large numbers of ground personnel, equipment and stores. For some days it appeared that Salazar was satisfied but by the 15 January 1944 it transpired that the U.S. Minister was mistaken and Salazar was highly suspicious regarding the numbers of U.S. personnel involved, the fact that the U.S. operational squadron was an American unit and that it was not camouflaged under British markings. He refused to sign any formula of agreement.

Negotiations dragged on throughout the rest of January and all through February until on 12 March at a meeting in London, at which were present H.M. Ambassador at Lisbon, Mr. Winant, Admiral Stark, U.S.N., together with representatives of the Admiralty, Foreign Office, Air Ministry and Coastal Command, a new formula was thrashed out in which it was stressed that the U.S. squadron would be in effect similar in status to the three U.S. squadrons already operating in No. 19 Group under

(1) No. 114 U.S.N. Liberator Squadron was designated. The first six G.E.C. searchlight fitted aircraft were expected to be ready for transfer by mid-January 1944.

ibid

ibid
O.A.S. to C.N.S.
Letter of
23/12/43 and
A.O.C. in C. to
S.B.O. Azores
Signal 1450A/
31/12

ibid
Signal - Lisbon
to F.O. London
0145/2/1/44

ibid
Signal - F.O.
London to
S.B.O. Azores
1755Z/14/4

A.M.
D.C.A.S. File
A.H.B./ID4/73

Coastal Command control. There would be, therefore, nothing sinister in the introduction of No. 114 Squadron to the Azores and it was merely a re-disposition of Coastal Command's forces to enable a medium range Leigh Light squadron to be recalled to Home Waters.

Meantime the disputed No. 114 U.S.N. searchlight squadron had, after many delays in equipment and training, arrived at Port Lyautey early in March where it was held pending the conclusion of these tedious negotiations. Actually it was a case of the ill wind that blows some good because the presence of a night trained squadron was particularly welcome in this area at the time, (1) and much valuable flying was done against U-boats attempting to run through the Strait of Gibraltar. Ultimately the squadron was transferred to No. 247 Group in the Azores in August 1944.

(xx) The trend of A/U re-equipment to long endurance night operations

In view of the new situation in the Bay of Biscay and Northern Transit areas, consequent on the adoption by the U-boats of diving tactics during daylight and maximum submergence at night, there was an urgent requirement for more Leigh Light aircraft of greater endurance. The planned composition of Coastal Command envisaged four L/L Wellington squadrons on the Mk. XII or XIV and three L/L Catalina squadrons on the Mk. IB or IV. The Catalina IB was rapidly dying out and the intended replacement by the new American Mariner flying boat had failed. (2) The Catalina IV was not yet engineered for the Leigh Light and in face of this setback in the re-equipment plans, the A.O.C. in C. requested on the 24 August that Nos. 547 and 304 Night Torpedo Wellington XIII squadrons should be immediately converted to Leigh Light squadrons on the Mk. XIV Wellington which had 10 cm. A.S.V. Furthermore, as he understood it was the Air Ministry's intention as soon as sufficient Liberators were forthcoming to re-equip the existing night trained Halifax squadrons, he asked that these Liberators should go in preference to the re-arming of Nos. 547 and 304 Squadrons. The Mk. XIII Wellingtons so thrown up could then be transferred to No. 415 Hampden squadron in implementation of a recent decision to devote this squadron to anti-E-boat duties equipped with A.S.V. Wellingtons to locate and Albacores to strike.

A.M. File
CMS 509
Encl. 76A

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- (1) See Chapter XIV Part II (C).
(2) Production in the United States of the Catalina IB had ceased and it was expected that the Mariner would provide the standard flying boat successor. Preliminary trials with this aircraft in the United Kingdom were not promising. However, in September No. 524 Squadron was formed at Oban on U.E. 12 Mariners so as to gain some operational experience. Only four aircraft were ever delivered and they proved a failure in that they were inferior in endurance to and had not the carrying capacity of a Sunderland. The Squadron was disbanded on 7 December 1943.
Ref:- C.C./C. in C. File S.10 encl. 28 and C.C. O.R.B. appendices Summary of decisions No. 125A and 137 and A.H.B./I.D.4/294.

at these elusive targets.(1) Finally he asked for expedition in the fitting of Leigh Lights in the Catalina IV aircraft as they arrived in this country and to the Liberators of No. 53 and 224 Squadrons.

All these requests were noted and approved on 7 September, including a fresh though minor commitment for the Command. This concerned the provision of A/U patrols over the Home Fleet practice area in the immediate vicinity of the Orkney Islands. As coastal Command had not the short range aircraft, which were all that was necessary for this task, a flight of Ansons (No. 1693 Flight) was established at Wick.(2)

In October 1943, four of No. 618 squadron's Mosquitoes were fitted with a 6 pdr. automatic gun and designated Mosquito XVIII (Tsetse). They were attached to No. 248 squadron operating from Predannock and used against surfaced U-boats entering or leaving Biscay ports.

During November 1943 the menace from the air resulted in U-boats adopting daylight submergence on the convoy routes as well as in the transit areas. There was, therefore, increasing demand for night escort and support to convoys and it was planned to fit all the latest types of Liberators with the Leigh Light as soon as possible. There was a good flow of new Liberator aircraft from the United States and the opportunity was taken to re-allot the types so as to achieve uniformity in the squadrons. All the Mk. III Liberators still having only the 1½ metre Mk. II ASV went to No. 86 V.L.R. Squadron. No.59 V.L.R. Squadron received those Mk. V aircraft fitted with 10 cm A.S.G.1 radar from which the upper turret had been removed. Those with an upper turret were to go to re-arm No. 547 Squadron, the balance consisting of Mk. V aircraft with A.S.G. III radar.

At the same period the U.S. authorities gave notice that the Mk. V was going out of production in the near future but the flow would continue on the Mk. VI. The description, specification and bomb loads with and without Leigh Light or upper turret for all these Marks is given at Appendix X.

To economise in overheads and in conformity with the U-boat situation at the end of 1943 it was decided to temporarily disband No. 210 Catalina IB Squadron, allocate four of its aircraft to No. 202 Squadron at Gibraltar and early in 1944 to reform at Sullom Voe on Catalina IV's where it would absorb No. 190 Squadron. Also, in December, No. 269 Hudson Squadron was withdrawn from Iceland in view of its limited value in winter weather. It ceased to be an A/U squadron and, leaving four Hudsons at Reykjavik for Air Sea Rescue duties, returned to the United Kingdom from where it was deployed in

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- (1) On 20 August a combined Air Ministry/Admiralty meeting decided to withdraw No. 415 Hampden Torpedo Squadron from the anti-shipping role and employ it against the E-boat activities in the Nore and Plymouth Naval Command areas. For this it was necessary to re-arm with Wellington XIII aircraft for night reconnaissance and an Albacore flight for strike action. Ref: AM/CMS 509 encl. 81A.
 - (2) Early in October six Ansons were supplied for training and the first operational sortie took place on 29 December 1943.

SECRET

211

March 1944 to the Azores as a composite Air Sea Rescue/
Meteorological squadron.

A comparison between the Orders of Battle at Appendix I
for August 1943, January and March 1944 show the course of re-
equipment of A/U squadrons towards long endurance aircraft
capable of operating night or day in the transit areas and
around ocean convoys.

(17500)227

SECRET

CHAPTER VII

THE TRANSIT AREAS - SEPTEMBER TO DECEMBER 1943PART I - THE BAY OF BISCAY(i) Introduction

The poor results of the August operations in the Bay were held to confirm that all U-boats were squeezing in and out along Spanish territorial waters from where the approach and departure route lay W.S.W. from Cape Finisterre. This strip was at extreme operational range from either United Kingdom or Gibraltar/Morocco bases and placed a premium on Liberator availability. When, therefore, there was a request at the end of August from General Eisenhower that one of the U.S. Army A/U Liberator squadrons at Port Lyautey should move into the Central Mediterranean the A.O.C.-in-C. Coastal Command, as the Commander most affected, protested that the removal of a proportion of the long range air effort was a serious matter for the Bay Offensive and should be carefully weighed by the Chiefs of Staff.⁽¹⁾ At the same time he sent a letter to the Admiralty agreeing, in reply to a query from the Interallied A/S Advisory Board, that the proposed deployment of four U.S. Navy Liberator squadrons to England should be welcomed but informing them that the changed conditions in the Bay had rendered the M.A.D. fitted U.S.N. Catalina squadron of little use and suggesting that this squadron together with any further Liberator re-inforcements should be directed to Gibraltar or Port Lyautey in view of the importance of long range operations from that end in the Finisterre area. These representations had the desired effect and both the Army squadrons were allowed to remain at Port Lyautey to give co-operation in the southern part of Percussion until replaced by U.S. Naval Liberators under the contract between the two U.S. Services.

(ii) - September operations

Following these poor August results the Percussion scheme of patrols was re-organised on 1 September in order to get a more balanced night and day effort and to ensure the integration of any flying that could be arranged from Gibraltar and Port Lyautey.⁽²⁾ Map No. 49 shows the lay out of patrols which were certainly more compact and which promised well during the first ten days of September. Thirteen different U-boats were sighted, eleven of them at night by the Leigh Light squadrons. The nine attacks made were also all by these aircraft and resulted in the destruction of U.669 outward bound on the night of the 6th/7th by I/L Wellington W/407 Squadron and serious damage to the incoming U.760 on the same night by I/L Wellington O/179 Squadron which forced her to take refuge in Vigo where she was ultimately interned.

C.C. File S. 105
Encl. 26

C.C. File
S. 7050/4
Part II
Encl. 47A

ibid
Encl. 47B

C.C. File
S. 7050/4/8
Encl. 15 A

No. 19 Group
and Gibraltar
O.R.B.
Appendices

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- (1) He also stressed once more the necessity for restoring the R.A.F. Gibraltar to Coastal Command control and the absurdity of the continued independence of the Moroccan Sea Frontier Command - Ref. C.C./S.31 Part II encl. 49A.
 - (2) This was still a case of negotiation as neither the R.A.F. Gibraltar nor the U.S. aviation in the Moroccan Sea Frontier were under Coastal Command operational Control.

However, the next 14 days up to 24 September were almost a complete blank, only two momentary glimpses of U-boats being obtained, and it was plain that they were using the utmost caution in surfacing even at night. Contemporary German records make it clear that no detectors for 10 c.m. A.S.V. were responsible and the U-boats' immunity was due purely to tactics of maximum submergence. This was suspected at the time by the Naval Staff at Coastal Command H.Q. as an estimation was made on 26 September in which it was pointed out that a submarine could traverse the whole passage submerged with only three hours surfaced time per night. No extraneous radar search aids would be necessary in order to do so undetected by the relatively thin night flying. From this time onwards it became the objective not only to increase the proportion of night effort but to equip the Leigh Light into longer ranged aircraft such as Liberators and Catalinas.

During this blank 14 days, the obvious re-deployment of U-boats into the Northern Atlantic caused the recall on 16 September of the 9th Support Group then on its way to relieve the 2nd Escort Group in the Outer Bay, of the 2nd Escort Group itself on the 18th and by the 24 September of the remainder of the surface craft co-operating with No. 19 Group's aircraft. Since the joint destruction of a U-boat group on 30 July no loss or damage had been effected by this naval co-operation and it seems to be a lesson that if submarines choose to take their time and dive through a transit area it is unlikely that combined air/surface operations will be much of a deterrent. It had already been recognised that surface forces alone were unable and it was to be learnt during the next six months that air alone was equally unable to seriously incommode the passage of submarines through areas such as the Bay of Biscay and the Faeroes/Iceland channel. Only in really constricted waters such as the Strait of Gibraltar was this possible. This is not to say that no transit operations should ever be mounted but that they should be recognised as only a secondary method of destroying submarines.

On the 23 September, Percussion F South was extended eastward to join Percussion E and an additional set of air patrols called Percussion X and Z was instituted which covered the middle latitudes of the Bay in east/west track sweeps.⁽¹⁾ These provided an alternative in tactical flexibility to confuse the enemy. The latter area provided the only other U-boat encounter during September. Three aircraft were involved. Liberator E/311 Squadron sighted the outward bound U.221 at 1005 hours on 27 September but too far away to make an attack before the boat had got well under. An hour and a half later U.221 was sighted on the surface once more, by G/311 Squadron, who attacked some 25 seconds after disappearance but inflicted no damage. Later in the day at 1713 hours, Halifax B/58 squadron sighted U.221 who now elected to stay on the surface and fight it out. The aircraft was repeatedly hit on the run-in but the stick of depth charges was accurately placed and the U-boat foundered soon after. Meanwhile the Halifax, badly damaged by flak, had to be ditched two minutes after the attack some three miles away. Six survivors climbed into the dinghy but were not picked up till 8 October when they were rescued by H.M.S. Mahratta.

- (1) Percussion Z - Day - From 49° to 45° N between 15° and 24° W.
Percussion X - Night - Four sub-areas X1 to X4 covering 48° to 45° N between 8° and 16° W.
 Ref. C.C./S.7050/4/8 encl. 53A.

C.O.
 T.S.54 Part II
 Encl. 6 A

No. 19 Group
 O.R.B.
 Appendices

Although two U-boats had been sunk and one forced into internment during the month, it was not an economic exchange. In addition to the one aircraft lost to U-boat flak, eight were shot down by G.A.F. fighter sweeps and four others were missing. For an expenditure of 11,037 effective flying hours only 16 individual U-boats were sighted out of the 60 actually in or crossing the Percussion areas.(1)

(iii) - October operations

At the beginning of the month the Percussion scheme was again modified. While retaining the X and Z areas as alternatives, the remainder were scrapped in favour of a simple block plan. Two interlocking day and night areas K and L were placed across the middle latitudes of the Bay for the U.K. based flying.(2) The Sunderland squadrons were transposed from day to night flying and instructed to illuminate all A.S.V. contacts with flares so that even if an attack did not eventuate the U-boat would be forced to interrupt its charging and dive. By this re-distribution of effort the 6 $\frac{1}{2}$ Liberator squadrons on day work were estimated to cover Percussion K once every 46 minutes while the 10 $\frac{1}{2}$ squadrons (three Sunderland, two Halifax, four L/L Wellington one L/L Catalina and a half Liberator) would cover Percussion L at night once every 43 minutes.

During the first fortnight of October only three U-boats were located, all by night and all were attacked but no damage was done to them. An additional alternative area for night flying was accordingly instituted. This was Percussion M and was designed to catch U-boats either on their first night outwards from port or their last night before arrival at the swept channel entrances.(3) It was not a regular patrol and was intended for use if intelligence or previous sightings warranted it. The employment of aircraft on night operations in this area would have been likely to result in unfortunate incidents with our own submarines who were still keeping patrols in the Inner Bay and before Percussion M was brought into force the Flag Officer Submarines was consulted. In view of the barren results of these submarine patrols and with the concurrence of the Admiralty they were discontinued while the passage routes of those bound to and from the Mediterranean reverted to the outer longitudes of the Bay westward of the Percussion areas.

C.C. File
S.7050/4/8
Encls. 55 A
and 61 A

ibid
Encl. 61 B

ibid
Encl. 62 A

ibid
Encl. 66 A

C.C. File
S.7050/4
Part II
Encl. 28 A

- (1) The average strength during September was 414 A/U Aircraft and 120 fighters.

Type	Effective Hours	Total Hours	Total Sights	Total Attacks	Sunk	Dam.
Day *	8,180	12,048	10	2	1	-
Night	{ 1,904 L/L 953 N	2,496 L/L 1,867 N	12 L/L -	10 L/L -	1 L/L -	1 L/L -

* Includes flying done by the Moroccan Sea Frontier

- (2) Percussion K - Day - From 44 $\frac{1}{2}$ ° to 47° N between 10° and 12° W.

Percussion L - Night - From 44 $\frac{1}{2}$ ° to 47° N between 9° and 11° W. See Map No. 50

- (3) Percussion M - Night - From 4719 N x 0645 W to 4638 N x 0828 W to Cape Penas to 4423 N x 0413 W. See Map No. 50

Percussion M caught two U-boats on the night of the 15th/16th of which one was attacked but no damage was inflicted. An outgoing flakboat (U.441) was attacked in Percussion L early on the 17th and was again attacked in Percussion Z on the 21st but in neither case was the U-boat harmed. A momentary sighting was made of an inward bound boat on the 20th but the dearth of sightings continued and the A.O.C.-in-C. informed No. 19 Group that, although this lack of success was probably due to the enemy's ultra cautious diving policy it was as well to assume the worst and start tactics based on the possibility of his having an efficient search receiver for centimetric A.S.V. Such a situation demanded a further increase in night cover which could only be achieved by increasing the length of night sorties at the expense if necessary of depthcharge, bomb and ammunition loads. Sorties were accordingly extended to 13½ hours for Liberators and Sunderlands.

ibid
Encl. 37 A

Special intelligence had hinted at the possibility of the despatch of several U-boats to attempt the passage into the Mediterranean and those sections of Percussion around the N.W. corner of Spain were thickened and extended down the Portuguese coast from the 20 October. This was rewarded during the night of the 23rd/24th by an attack on a southbound U-boat (U.340) in Percussion E which, however, did it no harm and an excellent attack by L/L Wellington A/179 Squadron on another southbound boat off Vigo. The run-in was made under heavy flak but the depth charges were accurately placed and resulted in the sinking of U.566. Thereafter the flying from Gibraltar was concentrated between Cape St. Vincent and the Strait. Several sightings and attacks followed at the end of the month which are described in Part II of this chapter.

Gibraltar and
No. 19 Group
O.R.B.
Appendices.

In the other parts of Percussion there were only two more locations in October. One was an abortive day attack in Percussion K on the inward bound U.641 and the other an equally harmless attack on U.358 outward bound in Percussion M. Finally on the last day of the month a set of coastal sweeps was promulgated as Percussion Q. The scarcity of sightings was still thought to be due to a far more general use of the Spanish territorial waters than postwar knowledge can confirm⁽¹⁾ To counter this traffic a series of sweeps was designed out to the North Spanish coast, along the coast for 60 miles and return home. These were numbered Q1 to Q10 and were for use by L/L Wellingtons. Allowing a sortie of 10 Hours, aircraft were to leave in pairs at regular intervals and sweep the Spanish coast for approximately one hour before leaving for base. The first pair was to leave at dusk and the last to reach the Scilly Isles at dawn. The coast of Spain between Bilbao and Corunna would thereby be swept every 45 minutes repeated five times during the night if ten aircraft were available. However, these sweeps were not actually flown till the 6 November and October closed with no further sightings.

ibid

C.C. File
S.7050/4/8
Encl. 68 A

See Map No. 51

It had been an even more disappointing month than September. A total effort of 9,315 effective flying hours had only sighted 11 individual U-boats out of the 70 now known to have crossed

(1) Postwar plotting of U-boats on passage in the Bay discloses that during September twenty-five out of the sixty crossings were along the Spanish coast but this proportion dropped to nine out of seventy in October and numbered ten out of forty-six in November.

the Percussion areas. Of these 11 boats, nine had been attacked resulting in one being sunk.⁽¹⁾ As can be seen from the breakdown of flying hours, the proportion of night flying was nearly equal to the day and parity was to come closer in November. The G.A.F. was not nearly so active in opposition there having been only seven combats, in which three JU.88s were shot down, as compared with 25 combats accounting for six enemy aircraft in September. One fighter and two A/U aircraft were lost to enemy fighters with two others missing from unknown cause.

(iv) - The American A/U Squadrons in the Eastern Atlantic

During October and November there was considerable argument as to the employment of the American A/U Squadrons based on the eastern side of the Atlantic. On 1 October the situation regarding American A/U Squadrons in Home Waters and in particular the change over from Army Air to Navy Air was:-

No. 4 Squadron U.S.A.A.F.	} Operational at Dunkeswell.
No. 19 Squadron U.S.A.A.F.	
No. 22 Squadron U.S.A.A.F.	
No. 103 Squadron U.S.N. (2)	

No. 63 Squadron U.S.N. (M.A.D.) operational at Pembroke Dock

No. 105 Squadron U.S.N. training at St. Eval and nearly operational

No. 110 Squadron U.S.N. only half of which had arrived was in the stage of initial training at St. Eval.

No. 111 Squadron U.S.N. should have arrived at St. Eval in September but had not yet left the U.S.

On 8 October, Cominch (Admiral King U.S.N.) issued an informative message to various U.S. Naval Commands and the British Admiralty in which he said that, based on statistics showing the value of Biscay operations in the spring, the United States had promised their assistance but now it was clear that under the existing German tactics it was no more unsafe for U-boats in the Bay of Biscay than other areas; furthermore now that the enemy had re-opened an offensive on the convoy routes there were areas where V.L.R. planes could

(1) Percussion flying for October. Average strength 320 A/U aircraft plus 80 fighters for interception patrols.

	Effective Hours	Total Hours	Total Sightings	Total Attacks	Sunk Damaged
Day *	5,240	7,313	3	2	nil nil
Night {	2,167 L/L	2,927 L/L	8 L/L	6 L/L	1 L/L nil
	1,908 N	3,043 N	2 N	2 N	nil nil

N.B. One U-boat was sighted three times and attacked twice.

* Includes flying done by the Morocco Sea Frontier

(2) No. 6 Squadron U.S.A.A.F. which had been operating during September had just been replaced by No. 103 Squadron U.S.N.

C.A.S. File
Signal from Cominch
T.O.O. 2213/8/10

be expected to be of much more use in driving away or sinking U-boats. It was therefore his intention to re-deploy the U.S. Navy Squadrons at present earmarked for Bay operations as followed:-

- (a) Three Liberator squadrons to the Moroccan Sea Frontier, of which two would relieve the Army squadrons in accordance with the change over and one was for eventual assignment to the Azores.
- (b) One Liberator squadron to Bermuda for additional cover to transatlantic convoys.
- (c) The recall of No. 63 Catalina (M.A.D.) Squadron to the U.S. If, however, the British could demonstrate in the future that, resulting from new technical or tactical measures, extensive operations in the Bay might again be profitable, he would be prepared to consider appropriate re-inforcements.

ibid
Marcus 939
11 Oct.

This ruthless writing off of the Bay campaign produced immediate reactions in British circles. The R.A.F. Delegation in Washington considered that unilateral action by Admiral King in what was a joint commitment in the British Strategic Zone called for a critical examination at Chief of Staff level and requested full Air Ministry briefing so as to exploit a golden opportunity to put a stop to these ever-recurring independent actions by the U.S. Naval Staff. The A.O.C.-in-C. Coastal Command felt strongly that Cominch was receiving uninformed opinions from the American Naval Staff in London and, in a reasoned memorandum to the C.A.S., pointed out that counter-measures to restore the efficacy of Bay operations had already been prepared in agreement with the Admiralty and amounted to:-

ibid
Letter to C.A.S.
and Draft memo.
of
12 Oct.

- (1) An increase in the proportion of Leigh Light aircraft particularly the equipment of Liberators as the Wellington had not the effective endurance in what was believed to be the vital area off the N.W. corner of Spain.
- (2) Far from a reduction, the maintenance if not the increase in allocation of aircraft to Bay operations so that denser air cover would compel U-boats to offer themselves as surfaced targets within the limits of the Percussion areas. Any withdrawal of U.S. squadrons would deny the means of even trying out this policy and fore-doom the future of the Bay Offensive.

ibid
Admty. to B.A.D.
T.O.O. 2357A/13/10

A recapitulation of the Bay results since March 1943 together with a precis of the A.O.C.-in-C's paper was sent on 13 October by the Admiralty to the Naval Mission in Washington with instructions that every endeavour should be made to induce Admiral King to postpone action until the matter was more fully discussed. In London, a considered paper was prepared to form the British Chiefs of Staff's case in rebutting Admiral King's arguments and on 19 October the Air Ministry communicated this to the R.A.F. Delegation with the hope that, should the matter come to a head before being stated in Combined Chief of Staff Committee, any local discussion might be postponed until this full presentation of the British view was heard.

ibid
Webber W.783
T.O.O.
1157Z/19/10

However, the Naval Mission had gone ahead with private talks with Admiral King and the latter soon realised that an awkward attack was coming should the matter develop in Combined Staff Committee. Accordingly he adroitly modified

ibid
B.A.D. to
Admty.
T.O.O.
1641Z/20/10

his redistribution plan but only to the extent of permitting the admittedly useless Catalina squadron and the two least ready Naval Liberator squadrons to remain in S.W. England until the 1 January 1944 and insisting that the by now two operational Naval Liberator squadrons should on the 1 November 1943 proceed to relieve the Army squadrons in the Moroccan Sea Frontier, followed later by a new squadron from the United States with ultimate destination in the Azores.

ibid
Marcus 192
T.O.O. 2200Z
and 2230Z/21/10

More in sorrow than in anger the R.A.F. Delegation reported on this astute avoidance of a show-down in Combined Staff Committee and suggested that further signals from London should always be a joint Admiralty/Air Ministry communication so that the R.A.F. and Admiralty heads of the British Mission would be simultaneously in the picture and so avoid action by the one before the other.

C.C. File
S.105 Part II
Encl. 19A

Before actually ordering the modified re-distribution, Admiral King asked the Admiralty on 25 October for a statement as to the number of British aircraft engaged on the Bay operations and what increases were contemplated up to 1 January 1944. He concluded with the remark that it seemed to him that too many people were taking a hand in the matter.

C.C. File
T.S. 8 Part II
Encl. 39
C.C. File
S.105 Part II
Encl. 35 A

One of the major reasons for these recurrent arguments with Admiral King on dispositions of A/U squadrons in the British Strategic Zone was his inability or unwillingness to realise that, although nominal operational control was exercised by the Admiralty, it was only on overall policy via the A.O.C.-in-C. Coastal Command. In their reply the Admiralty stated that their responsibility did not extend to the disposition of units nor to the methods employed though the system of co-operation with the Air Ministry and Coastal Command naturally provided for consultation on these matters. The Air authorities were thus most intimately concerned with any changes in the air forces allocated to the war at sea and there were many aspects of Anglo-American co-operation in the U-boat war on which the Air Ministry, as the department mainly concerned, had to put forward its own views. The figures asked for were given as twelve squadrons aggregating 168 aircraft from United Kingdom bases and two squadrons totalling 27 aircraft available from time to time from Gibraltar. The drop in numbers since September was mainly due to the resumption of U-boat operations in the Northern Atlantic. Only an illusory increase in numbers was possible before January 1944 in that two day squadrons, at present out of the line, would by then be operational at night on Leigh Lights.

and

C.C. File
T.S. 54 Part II
Encl. 8A

This argument and the necessity for clarification on the subject of movements of anti-submarine forces in and out of different strategic areas were discussed by the British Chiefs of Staff. A signal was made on 7 November to Field Marshal Sir John Dill, head of the British Mission in Washington in which they wished for agreement by their opposite numbers on the following principles:-

C.A.S. File
Signal
C.O.S. to Dill
T.O.O.
2055Z/7/11

(A) Any redistribution of A/U squadrons between British, Canadian and American areas of responsibility in the Atlantic were to be effected in consultation between the authorities concerned, reference being made if necessary to the Combined Chiefs of Staff.

(B) The disposition of A/U units within any area of the Atlantic should be a matter for decision by the British, Canadian or American authorities responsible in the area

SECRET

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concerned in accordance with the conclusions of the Washington Convoy Conference, subject to the concurrence of the authorities to whom the squadrons belonged.

(G) The operational direction of all A/U squadrons in a British, Canadian or American area of responsibility in the Atlantic should be vested in the appropriate British, Canadian or American authority.

Sir John Dill was asked to decide whether to insist on their acceptance with possible antagonism from Admiral King or whether to water them down and accept probable future unilateral action by him.

Another signal followed in which the British Chiefs of Staff urged that the previously promised U.S. strength of six Liberator Squadrons (72 aircraft) should henceforth be maintained as between the United Kingdom and Morocco, if necessary at the expense of other areas which at the moment were unquestionably of less importance in the U-boat war. They noted that Admiral King still denied the value of the existing Bay operations but, far from considering them of mere nuisance value, they considered them of major importance. Statistics for September and October were included together with other data for use in the event of discussion in which Admiral King might re-open the challenge.

ibid
T.O.O.
2104Z/7/11

Discussions on this subject resulted during the latter half of November in the retention of Nos. 103, 105 and 110 U.S.N. Liberator squadrons in S.W. England in place of the four U.S. Army squadrons. The fourth U.S.N. Liberator squadron (No. 111), together with No. 112 from the United States, joined Fleet Airwing 15 in the Moroccan Sea Frontier in place of Nos. 1 and 2 U.S. Army squadrons and on the 12 December, No. 63 U.S.N. Catalina (M.A.D.) Squadron was transferred from Pembroke Dock to Port Lyautey.

C.C. File
S. 105 Part II
Encls. 48A and
B

The impossibility, under the existing divided control, of co-ordinating the Gibraltar flying with No. 19 Group in the Percussion area or in convoy support with No. 247 Group in the Azores was at last recognised by the Mediterranean Command and from 15 November the R.A.F. Gibraltar reverted to Coastal Command operational control. If, therefore, the Moroccan Sea Frontier could be induced to co-operate fully in the lower section of Percussion, 60 out of the 72 American L.R. aircraft so consistently asked for since April by Sir John Slessor were in sight. But on 27 November, Commorseafron(1) protested that his Liberator aircraft had since the end of August expended an average of 600 flying hours per month in supporting the Percussion scheme without sighting a single U-boat. He considered that, after meeting his convoy escort requirements, a better use for them would be in searching ocean probability areas in conjunction with other aircraft from the Azores and Gibraltar.

C.C. File
S. 31 Part II
Encls. 75A to
82A

C.C. File
T.S.54 Part II
Encl. 19A

This brought up once again the vexed question of operational control. Sir John Slessor took the opportunity, when visiting the Azores and Gibraltar early in December, of calling at Casablanca and arguing the case in person with the American Commander and his staff. Private agreement was secured on co-operation with the A.C.H.Q.

(1) This was the short U.S. title for the Commander of the Moroccan Sea Frontier.

C.C. Files
S. 31 Part II
Encls. 83A and
84A and B and
T.S.8 Encls.
46A to 68A

at Gibraltar(1) but the official status of the Sea Frontier remained at issue. Negotiations at Chief of Staff level dragged on in evasive signals the tenure of which was a stubborn refusal to admit the necessity of unified operational control in this area.

(v) - November operations

C.C. File
S. 7050/37

To return to operations - the continuing scarcity of sightings in Percussion areas directed attention to the possibility of catching U-boats on their approach to or departure from the outer end of the swept channels which were known to extend out to the 100 fathom line from the base ports. Being inside easy single engine fighter range, any such operation would have to be carefully timed by fast aircraft. To this end three Mark XVIII Mosquito aircraft armed with a fixed 6 pdr. gun(2) were attached to No. 248 Beaufighter squadron stationed at Predannock. These aircraft were immediately christened Tsetse. The procedure was to arrive at the seaward end of a swept channel at dawn or dusk, take a quick look round for possible targets, attack and be away before enemy fighters could intercept.

No. 19 Group
O.R.B.
Appendices and
B. d U.
War Diary

The first of such operations took place at dawn on the 4 November by O and I/248 Squadron. No U-boat was seen but a suspicious looking trawler was attacked and severely damaged. Unhappily O/248 caught fire after her second attack and crashed in the sea with no survivors. The next sortie was by I/248 alone on 7 November. This time U.123 was sighted in 4715N x 0438W inward bound. Eight rounds of 6 pdr. were fired, some of which hit the U-boat and pierced her conningtower. She made urgent signals to base for fighter protection but succeeded in reaching port on the surface. Six subsequent sorties were made in November but no U-boats were again sighted.

The flying in Percussion yielded a sighting (either U.309 or 441) on the night of the 4th/5th in Percussion I but the homing was inaccurate and only a glimpse of a disappearing U-boat was obtained. However, on the night of the 9/10 November, L/L Wellington B/612 Squadron detected, homed and by moonlight sighted an inward bound U-boat on the surface in 4439 N x 1028 W. A good attack was delivered and the U-boat (U.966) altered course in a damaged condition towards the Spanish coast. L/L Wellington T/407 Squadron was diverted to the position but never returned and it is possible that this aircraft was shot down by U.966. The U-boat was re-sighted at 0900 hours on the 10th by U.S.N. Liberator R/105 Squadron who ran in under flak on two occasions but damage received caused the depth charges to hang up on both occasions. Another U.S.N. Liberator (E/103 Squadron) joined in at 1150 hours and delivered an attack which further damaged U.966. Later at

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- (1) In place of Percussion F south, a new area was allotted to the day flying expected from Commorseafron and Gibraltar. This was Percussion V which extended from 42° to 44°N between longitude 11° W and the coast of Spain.
Ref. C.C./S.17062 encl. 2. and see Map No. 52.
 - (2) The rate of fire was 60 rounds a minute automatic loading but required a press on the button to fire each shot. 25 rounds of high velocity flat trajectory ammunition were carried. The optimum angle of dive attack was 30° and it was estimated that four to six shots could be fired in one attack.

ibid

1315 hours a third American Liberator (E/110 Squadron) made an attack which did no harm. Finally at 1345 hours, the Czech Liberator D/311 Squadron appeared and made an R.P. attack on the U-boat who by this time was only three miles from the Spanish coast. Several hits were made forward of the bridge, the boat's speed dropped to two knots and course was laid direct towards the beach. At 1700 hours, having lost seven of the crew killed and being in a sinking state, U.966 was blown up by her crew. The survivors took to the dinghies and landed in Spain being photographed doing so by Catalina P/202 Squadron. Information on the course of this action was intercepted by the German Radio Intelligence and several JU.88s. were despatched to the area arriving towards 1800 hours. They failed to find U.966 but intercepted and shot down Sunderland V/228 Squadron.

This welcome sinking was followed two days later by the destruction of the outward bound U.508 by U.S.N. Liberator C/103 Squadron flying Percussion Q9. Unhappily this aircraft never returned and was probably brought down by flak from U.508 just after release of depth charges. Thereafter in November there were only two brief glimpses of U-boats on the night of 15th/16th by Halifaxes E and D/502 Squadron in neither case leading to any attack.

See Map No. 52

C.C. File
S.30 Part II
Encl. 67A

Another re-organisation of Bay flying was promulgated on 17 November in which further concentration was given to the night effort and the Percussion areas were made still more compact. No. 19 Group's night patrols were to cover Percussion R, S, or T at the A.O.C.'s discretion or on information from H.Q.C.C. Their day patrols were to follow up at dawn in the area flown during the previous night. Percussion U was to be covered day and night by Gibraltar based aircraft. Except for three Sunderland and two U.S.N. Liberator squadrons, all No. 19 Group aircraft were to be employed at night with the Leigh Light Wellingtons doing as much of their time as possible on the Spanish coast.

(vi) - Emphasis on A.S.V. tactics and density of air patrols

No sightings at all were obtained during the remainder of November and by 3 December it was thought that the failure was due to a general use by U-boats of an efficient search receiver against 10 c.m. A.S.V. Although a number of U-boats were by this time equipped with Naxos, which covered the 10 cm. wave-band, the device was so prone to breakdown and its aerial system so crude and unhandy that C.O.s of U-boats, surfeited by the many so-called infallible counters to Allied air location, were not using it consistently. It certainly played little part up to the end of 1943 in warning U-boats of the approach of aircraft. However, this state of affairs was unknown to us and it was quite reasonable that measures should be adopted on the assumption of such detection.

C.C. File
S.7050/4/8
Encl. 82A

Briefly these consisted in further increasing the density of night air cover in Percussion R, S or T and in a modification of the day A.S.V. tactics. Mark II metric A.S.V. and the Mark III centimetric (which was now recognised as inferior to the Mark V) was only to be used on daylight patrol for navigation purposes or if the visibility was less than three miles. The Mark V operators were, on obtaining a contact, to establish a homing course in the shortest time possible and then to stop the spinner in a position looking aft while the pilot carried on homing by D.R. using visual lookout as the final locator. Pending acceptance trials with a new high powered 10 cm A.S.V.

transmitter fitted with an attenuator⁽¹⁾ there was no restriction on the use of any Mark of A.S.V. at night and in order to increase the chance of forcing U-boats to dive, all aircraft not fitted with a Leigh Light were to drop depth charges blind on any A.S.V. contact they might obtain.

Emphasis was laid on the vital necessity of a high standard of efficiency among A.S.V. operators both in picking up contacts and in the subsequent co-operation with the pilot in conning the aircraft on its homing approach. Here it is appropriate to examine the progress of A.S.V. since August as a means of initial location relative to visual lookout.

The decision by Doenitz to adopt diving by day with only minimum surface time at night in transit areas naturally reduced the total number of locations and ensured those obtained being mostly at night made by A.S.V. This is reflected in the transit figures given in the table below.⁽²⁾ On the other hand in the resumption of convoy war in mid-Atlantic visual sighting provided 84 per cent. of the initial locations in September and October in spite of the growing number of long and very long range aircraft fitted with centimetric A.S.V. It was not till the mid-Atlantic U-boats were forced to keep diving patrol by day in November and night air support to convoys started that A.S.V. initial locations outnumbered those obtained by eyesight. It is also to be noted that, notwithstanding the general equipment of A.S.V. to aircraft since September 1941, it was the end of 1943 before A.S.V. proved itself a better initial locator than visual and then only because the U-boats surfaced mainly by night.

In order to confirm the estimation made earlier by the Naval Staff at H.Q. Coastal Command on the probable diving performance by U-boats through the transit areas, a conference

- (1) This equipment consisted of a high power transmitter fitted to the Mk. III A.S.V. installation incorporating a device by which the operator could diminish or attenuate the strength of the pulse signals when starting to home on a positive contact. It was hoped that a U-boat listening on its search receiver would on registering a lessening strength be deceived into thinking that the aircraft was receding from instead of rapidly approaching it. The equipment became known as Mark VI A.S.V. and at this time in December was of first priority for fitment into the Leigh Light Wellington squadrons. Full details are given in the R.A.F. Signals History - Volume VI.

(2)

Month	Atlantic Convoy Area			U-boat transit areas Northern - Biscay - Gibraltar		
	Initial location by		A.S.V. %	Initial location by		A.S.V. %
	Visual	A.S.V. %		Visual	A.S.V.	
Sept.	11 + 1 Day Night	5 Day	29	10 Day	1 + 18 Day Night	65
Oct.	41 Day	5 Day	11	3 Day	15 Night	83
Nov.	8 + 1 Day Night	8 Night	47	2 + 1 Day Night	3 + 3 Day Night	66
Dec.	1 Day	4 Night	80	2 Day	9 Night	82

O.C. File
S.7050/4
Encl. 49

was held at H.Q. Flag Officer Submarines on 10 December at which were present several experienced captains of submarines. The object was to discuss and advise on what measures could be taken by Coastal Command aircraft which would present the greatest obstacle to U-boats on passage. It was agreed unanimously that, assuming the existing density of air patrol and capabilities similar in U-boats to those of our own submarines but without any German radar detector or search radar devices, during the winter months a U-boat had every chance of spending up to two hours per night charging on the surface without being detected from the air.(1) All the submarine captains agreed that they would break the charge and dive for every aircraft heard or sighted. The most important factor, therefore, was the frequency of air cover. If the existing density of once every hour over a given spot could be increased to once every 15 minutes the constant interruption to charging would result in early exhaustion of battery capacity and force the presentation of a surfaced target for air attack. But, in the light of modern battery capacities this density of air patrol must extend to a width of 120 miles in place of the 80 mile ribbon hitherto thought sufficient. Given this increased width and recommended density, the fact that U-boats might be fitted with efficient warning equipment would not lessen but rather enhance the desired result.

This was a policy impossible to implement at the time because the utmost density that could be sustained was about once every 45 minutes and this took no account of enforced reduction of flying due to bad weather. It was regarded, however, as the ultimate goal and later, in 1944, formed the basis of the block patrol maintained in the mouth of the English Channel to cover the landing in Normandy.

(vii) - December operations and summary of the last months of 1943

During the first ten days of December, five separate U-boats were located, all at night. Of these, three were attacked but without inflicting any damage. However, on the night of 12th/13th U.391 was located three times by different aircraft and on the last occasion was accurately attacked under flak by L/L Liberator B/53 Squadron and sunk. Two brief and distant sightings of U-boats in the act of diving were obtained during daylight on 14 December and nothing further for the remainder of the month.

The last two months of 1943 thus saw a continuance of the eclipse in Bay operations either as a marked deterrent to traffic or as a prolific killer of U-boats.(2) A total of 17,765 effective flying hours located 13 out of the 96 U-boats in or crossing the Percussion areas. Of these, seven were attacked

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- (1) This conclusion had been borne out by experience since the end of August and was to hold good in 1944.
(2) See Appendix VII for consolidated results of the Bay Operations during the year 1943.

resulting in three being sunk and one damaged.⁽¹⁾ The net standard of attack was therefore high and also on the credit side can be placed that all U-boats were much delayed in passage which, in view of the abandonment of refuelling in mid-Atlantic, meant that their time in operational billets was curtailed by at least three weeks. Regarding enemy fighter opposition, the number of combats rose to 31 in these last two months but only four A/U aircraft were lost. The fighter interception patrols shot down 14 enemy aircraft at a cost to themselves of five aircraft.

PART II - THE STRAIT OF GIBRALTAR

(i) - Introduction

No U-boats had been sent into the Mediterranean since the first week of June 1943 and for the remainder of that month, in July and August the air patrols to the west and east of the Strait had no sightings. During July and August, the invasion first of Sicily and then the mainland of Italy had resulted in the collapse of the Fascist regime and an unconditional surrender by the Italian forces on 8 September. German reinforcements, however, poured into Northern Italy and the struggle continued unabated by land and sea. The Italian submarine fleet numbering 56 were surrendered but such was the relative inefficiency of Italian submarines that the scale and scope of A/U operations, though materially simplified, had still to be maintained against the 13 operational German U-boats remaining inside the Mediterranean.

On 11 September one of these boats (U.617) was located about 90 miles east of Gibraltar near the North African coast by L/L Wellington P/179 Squadron at 2253 hours. A good attack was delivered under flak which seriously damaged the U-boat and after lying stopped for 15 minutes she made off slowly on the surface towards the coast. The aircraft shadowed under intermittent flak fire until at 0115 hours on the 12th another L/L Wellington (J/179) made contact and also attacked under heavy flak damaging U.617 still more but being hit several times with the fatal wounding of the rear gunner. J/179 continued shadowing and saw the U-boat beach herself at 0200 hours in 3415 N x 0321 W (Spanish Morocco). The crew abandoned ship under gun fire from H.M. Trawler Haarlem who had been directed to the spot by J/179. The survivors swam ashore and were later rounded up by Spanish forces.⁽²⁾

R.A.F. Gib.
O.R.B.
Appendices

- (1) Bay operations in November and December - Average aircraft strength 280 plus 85 fighters.

Month	Type	Effective Hours	Total Hours	Total Sightings	Total Attacks	Sunk	Dam.
Nov.	Day *	4,833	7,303	5	4	1	1
	Night	{ 2,571 L/L 2,017 N	{ 3,404 L/L 3,120 N	{ 2 L/L 3 N	{ 1 L/L 1 N	{ - 1 N	{ - -
Dec.	Day *	3,452	5,116	2	0	-	-
	Night	{ 2,863 L/L 2,029 N	{ 3,782 L/L 3,014 N	{ 6 L/L 3 N	{ 4 L/L 2 N	{ 1 L/L -	{ - -

* Includes flying done by the Moroccan Sea Frontier

- (2) Later in the day, seven R.P. fitted Hudsons from Gibraltar carried out bombing and R.P. attacks on the stranded U-boat so as to complete her destruction and prevent possible salvage.

(ii) - The September attempts

In order to re-inforce attacks on the Allied sea communications in the central Mediterranean, Doenitz instructed seven Atlantic U-boats to penetrate the Strait during the September no moon period.⁽¹⁾ These boats were all fitted with Hagenuk search receivers which the U-boat Command confidently expected were efficient against the search radar carried in Allied A/U aircraft. U.223 arrived in the western approaches to Gibraltar late on 23 September and during the next two nights experienced numerous scares from aircraft of which no warning was given in the Hagenuk receiver.⁽²⁾ She was not actually attacked but her report on the constant night air activity caused Doenitz to signal both her and the next two boats approaching (U.667 and 445) to make their attempts from the southwest around Cape Spartel keeping close up to the African shore. U.667, coming south just to the northward of Cape St. Vincent, was located at 0247/24 September by P/179 Squadron who attacked under flak but did not injure her. The following night she was detected when rounding Cape St. Vincent and attacked by both D and R/179 Squadron. Extensive damage was inflicted and she disengaged to the southwest. Later on this same night, Q/179 sighted her but the attack was frustrated by accurate flak which severed the bomb release circuits. She was not contacted again until early in the dark hours of the 25th/26th when F/179 sent an S.O.S. from a position on the line of U.667's withdrawal and never returned. It seems likely, though not recorded in German reports, that this aircraft was shot down by the retiring U-boat. At 0841 hours on the 26th she was picked up on a westerly course by X/179 in daylight who delivered a good attack again in face of flak and further damaged the U-boat who was now unable to submerge. Twenty minutes later Hudson T/233 Squadron arrived and attacked with R.P. being followed an hour later by Hudson N/48 Squadron who also fired R.P. at the zigzagging U-boat. No further serious damage was done but U.667's speed was materially reduced. All three aircraft made repeated efforts to induce H.M. destroyer Witherington, then about 30 miles distant, to close the position but flak damage had affected their means of communication by either W/T, R/T or Aldis lamp and the significance of a line of smoke floats laid in the desired direction by X/179 was not understood by the destroyer. Follow up aircraft failed to find U.667 and she continued on her return journey to the Biscay reporting her plight to base. Later on the 26th Doenitz ordered U.223, 455 and the approaching U.264 to abandon their attempts at penetration.

However, U.223 had succeeded in passing through the Strait during the night of 25/26 September; nevertheless Doenitz cancelled the sailing on this mission of the other three boats observing in his War Diary that the strong air defence might be using centimetric A.S.V. To counter this he said a new detector receiver Naxos, designed to cover these short wave lengths, was available and would shortly be installed in U-boats. When fitted, another attempt would be made during the October new moon period. U.455 and 264 were told to withdraw westward into the Atlantic to refuel from U.460 for subsequent operations against convoys.

(1) U.223, 445, 667, 264, 420, 450 and 466.

(2) No. 179 Squadron had recently been fitted with Mk. III 10 cm. A.S.V.

B. d U.
War Diary

ibid
and
R.A.F. Gib.
O.R.B.
Appendices

See
Chapter VI
(i) (b)

ibid
section (viii)

(iii) - The October attempts

The next attempt was made at the end of October. Five boats fitted with Naxos left port between the 14 and 18 October.⁽¹⁾ A suspicion of this operation had been circulated by Special Intelligence and Gibraltar thickened the night air patrols in Percussion E and along the Portuguese coast from the 20th. Part I of this chapter mentions how U.340 was attacked when rounding Cape Finisterre and U.566 was sunk off Vigo during the night of 23/24 October. The Gibraltar air patrols were thereafter concentrated around Cape St. Vincent and in the approaches to the Strait where also all available surface craft from Gibraltar were patrolling in co-operation by night and day.

U.642 was the next boat to be located. This took place close into Cape St. Vincent by L/L Wellington P/179 Squadron on the night 28th/29th. As usual flak was experienced which, among other damage to the aircraft, put the Leigh Light out of action and resulted in a miss astern with the depth charges. On the following night, U.340 was detected southwest of Cape Spartel by W/179 Squadron. Again the depth charge attack missed astern but three destroyers were called up on R/T and put on her trail. However, U.340 remained undetected during the 31st but was re-located in the early hours of 1 November by R/179 Squadron who slightly damaged her. Surface craft were homed and arrived on the scene at 0202 hours but no asdic contact was obtained and U.340 actually passed through the strait submerged during the early part of the night 1/2 November and surfaced with her batteries almost exhausted. Patrol craft sighted her soon after midnight and the boat dived hurriedly. No damage was done to her in several depth charge attacks and she sought safety on the bottom. In view of his experiences and the low state of the batteries the commanding officer decided he had had enough and at dawn he surfaced. Despite the absence of hunting craft in sight, he abandoned ship after firing the demolition charges and took to the dinghies. The whole crew were picked up by Spanish fishing craft in the vicinity and might have got away but that H.M.S. Fleetwood, still searching for the lost contact, happened to pass fairly close. The unusual sight of numerous men in yellow Mae Wests on the trawler's decks caused a closer scrutiny and the U-boat crew were speedily transhipped as prisoners of war.

U.732, after passing Cape Finisterre, made a wide sweep into the Atlantic before making a landfall south of Cape Spartel early on 31 October. She was not observed during this approach by aircraft but soon after midday was picked up on asdic by H.M. trawler Imperialist who was escorting a small convoy from Lisbon. The trawler attacked with depth charges and blew U.732 to the surface where she was damaged by gunfire before getting under again. After lying on the bottom until dark she surfaced and made off to the west. She was soon picked up by radar from H.M.S. Douglas who closed, opened accurate gunfire and in a hopeless condition U.732 was scuttled. U.450 and 642 both succeeded in getting through, the former during the night of 30/31 October and the latter on 2/3 November. One of them, probably U.450, was sighted momentarily by H/179 Squadron on the night of 2nd/3rd after having cleared into the Mediterranean but no attack was possible.

R.A.F. Gib.
O.R.B.
Appendices

Admty.
C.B. 04050/44
(1)
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ibid
C.B. 04050/43
(12)

(1) U.450, 340, 732, 642 and 566.

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The destruction of three out of the five boats together with reports at some time from all of them that night air location continued to surprise them unheralded on the Naxos detector coupled with the heavy losses from air attack in the Northern Atlantic combined to discredit the efficacy of this device and on 5 November Doenitz noted that the German warning equipment was inadequate in its present form. It was possible, he said, that the enemy had entered new fields as yet unknown to him or was using passive location on electronic or heat radiations given out by U-boats. Accordingly the brains of his research and technical branches were once more directed to the suppression of all kinds of radiation from any equipment carried by a U-boat and the true causes of his discomforture continued to elude him.

(iv) The end of year passages

No more attempts to penetrate the Strait were made until the end of November when U.230 proceeding by herself made the passage undetected on the night of the 4/5 December. Two more boats were despatched singly later in the month and both got through safely - U.952 on the night 3/4 January and U.343 on 5/6 January 1944. These successes appeared to derive from the impossibility of maintaining a high density of Air/surface craft patrol with the forces available in the vicinity of the Strait for long periods.(1) Effective measures to bar the passage thus depended on prior special intelligence. This was borne out during the subsequent period 19 January to 12 February when four more U-boats sailed singly and got through unscathed. The factors leading to the final abandonment of these passages are narrated in the next chapter on the Transit Areas.

(1) Flying hours to west and east of Gibraltar - Average strength 40 aircraft.

Month	Type	Effective Hrs.	Total Hrs.	Sightings	Attacks	Results
Sept.	(Day	1,081	1,544	3	3	U.667 dam.
	R.A.F. (Night	(225 (N) L/L	(280 (N) L/L	5 L/L	5 L/L	U.617 sunk
	(20 (N)		(55 (N)	-	-	-
	(Day	90	135	-	-	-
	F.A.A. (Night	39 (N)	56 (N)	-	-	-
Oct.	(Day	768	1,123	-	-	-
	R.A.F. (Night	(286 (N) L/L	(368 (N) L/L	4 L/L	4 L/L	U.340 sunk
	(26 (N)		39 (N)	-	-	-
	F.A.A.	NIL	NIL	-	-	-
Nov.	(Day	639	933	-	-	-
	R.A.F. (Night	244 (N) L/L	314 (N) L/L	1 L/L	0	-
	(6 (N)		69 (N)	-	-	-
	F.A.A.	NIL	NIL	-	-	-
Dec.	(Day	819	1,177	-	-	-
	R.A.F. (Night	122 (N) L/L	199 (N) L/L	-	-	-
	(Night			-	-	-
	F.A.A.	NIL	NIL	-	-	-

PART III - THE NORTHERN TRANSIT AREA(i) Introduction

At the end of Chapter V it was recounted that Doenitz had cancelled further sailings of U-boats through the Northern Transit Area after the loss of U.647 and 489 early in August. The output of newly trained U-boats from the Baltic was halted in Norwegian ports pending his decision as to when to restart passages into the Atlantic. On the 2 September there were twelve of these new boats at Bergen and one at Trondheim.⁽¹⁾ Photographic reconnaissance gave fairly precise information and we were fully aware of the growing build-up so there was no slackening of the flying in the Moorings area in spite of the absence of sightings.

See
Chapter V (vi)

C.C. File
S.30 Part II
Encl. 26A

It will be remembered that a cessation of sightings had occurred earlier in July and among suggestions for new patrol measures had been one from the American Naval Delegation in London above Admiral Stark's signature. No change of area was then considered necessary but on 7 September, Cominch (Admiral King U.S.N.) alluded to this plan and enquired as to how the British authorities proposed to interfere with what must soon be a considerable mass debouchment of U-boats into the Atlantic either north or south of Iceland. This, he said, would seriously embarrass the frequent independent sailings of ships which the absence of U-boats in the Northern Atlantic since June had made practicable and which were so helpful as extra to convoy schedules.

ibid
Encl. 34A

B. d U.
War Diary

A reply was made that the oncoming of winter bad weather, lengthening hours of darkness and shortage of Leigh Light aircraft rendered it unlikely that air patrols approximating the density in the Bay of Biscay would ever be possible. In any case the attempt would not be made at the expense of Biscay operations, furthermore it was not expected that any mass movement of U-boats would take place though a flow comparable to pre-May proportions was expected and provided for in the existing Moorings scheme. Regarding transits north of Iceland and through the Denmark Strait it was not considered likely that the enemy would use this egress with any regularity. As a matter of interest, when Doenitz resumed outward sailings at the beginning of September, he sent the first two boats (U.274 and 963) round the north of Iceland but both fouled the pack ice in the Denmark Strait and had to return to harbour. No further attempts were made at this route.

(ii) September

C.C. File
S.30 Part II
Encl. 35A

ibid
Encl. 36A

No sightings having been obtained by 18 September, the C.-in-C. Home Fleet proposed that Iceland long range aircraft should carry out day and night sweeps to the north of Iceland and No. 18 Group aircraft to the north of the Shetlands while he kept the allocated destroyers in harbour until sightings were resumed. The A.O.C.-in-C. replied that long range sweeps had not proved productive in the past in any transit area and could only sight U-boats by pure chance. He preferred to stick to the proven principle of relatively concentrated patrol over an area through which U-boats were bound to pass and to have such surface craft as could be made available stationed in or near the area of air patrol.

(1) Bergen - U.956, 960, 238, 274, 275, 422, 309, 841, 220, U.643, 389 and 419
Trondheim - U.963

However, Doenitz had started the same independently routed and maximum submerged policy which was reducing the Bay Offensive to impotence. By 20 September, four U-boats had got through and four more were in or approaching the Moorings area. On the 21st, Hudson G/269 Squadron sighted U.539 on the surface but the attack with bombs and depth charges inflicted no damage while efforts to call up surface craft by W/T failed. This was the sole location for September by the end of which a total of nine U-boats had got through unscathed.(1)

(iii) October

Meantime the convoy war had flared up in the Northern Atlantic and early in October the surface craft were withdrawn from co-operation followed in mid-October by the discontinuance of V.L.R. aircraft sorties. Moorings itself was temporarily replaced on the 16th by parallel track sweeps by all available Sunderlands between latitudes $58^{\circ}10'$ and 60° N from 24° to 30° W longitudes returning to 20° W if endurance permitted. The Iceland Hudsons continued to fly in Moorings with occasional sorties by No. 18 Group's shorter ranged aircraft but during the month there was not a single sighting although 26 U-boats made the passage.

(iv) November and December

November proved no better. On the 6th, with the fading out of aggressive U-boat tactics against northern Atlantic convoys, V.L.R. aircraft sorties were again permitted and Moorings was re-instituted. But on the 20 November with still no sightings the A.O.C.-in-C. made an informative signal in which he said that the situation was most unsatisfactory but that we could not be strong everywhere. The first priority for A/U aircraft must be for convoy cover, with the Bay Transit area as next in importance. Moorings was, therefore, to be cancelled but to avoid allowing the enemy to think we had abandoned the area Nos. 18 and 15 Groups should, after providing cover for convoys and Fleet movements, use surplus sorties in the daily signalled high probability areas so that U-boats would be made aware of air patrols anywhere between longitudes 2° E to 15° W along their passage route. Iceland aircraft should, after the same provision, revert to the old Potman and Copper patrols with sweeps to the S.W. of Iceland in accordance with signalled high probability areas.

On 3 December, an area designated as Hancox was instituted between latitudes 65° and 64° N from longitude 2° E to 10° W in which to expend A/U sorties should there be no intelligence on which to base a probability area signal. There was, however, a drastic drop in flying hours for these last two months of the year and it is not surprising that there were no sightings whatever of the 34 U-boats making the passage.

(1) U.238, 220, 422, 275, 279, 419, 539, 643 and 389.

C.C. Files
S.7050/14/5
Encl. 53A
S.7050/14/4
Encl. 29A

and
S.30 Part II
Encl. 49A

C.C. File
S.7050/14/5
Encl. 60A

C.C. File
S.30 Part II
Encl. 53A

ibid
Encl. 63A

ibid
Encl. 75A

See Map No. 53

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Although during the four months September/December 1943 the density of air patrol⁽¹⁾ never approached that maintained in the Bay of Biscay, it seems unlikely that, once the U-boats adopted maximum submerged passage, any better results would have been obtained from other measures. In this transit area, wider and subject to worse weather conditions than is the Bay of Biscay, the lesson appears the same. An effective air/surface blockade against well handled submarines is impracticable unless huge forces are made available - an unlikely supposition in a general sea war.

(1) Flying hours in the Northern Transit Area - Average strength 70 aircraft.

Month	Effective hrs.	Total hrs.	Sightings	Attacks	No. of U/Bs on passage
Sept.	Day 1,502 Night 275	2,076 393	1 -	1 -	9
Oct.	Day 1,411 Night 470	2,020 674	- -	- -	26
Nov.	Day 807 Night 155	1,243 315	- -	- -	15
Dec.	Day 558 Night 223	844 371	- -	- -	19

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CHAPTER VIII

U-BOATS ON OUTER SEAS MISSIONS AND NEW U-BOAT CONSTRUCTION

PART I - U-BOATS ON OUTER SEAS MISSIONS⁽¹⁾
SEPTEMBER 1943 TO JUNE 1944

Chapter V Part II took the Outer Seas U-boat operations up to the end of August 1943 when they had ceased, except for one boat off the Florida coast, because of the losses inflicted on the supply U-boats in mid-ocean and the vigilant air/surface craft patrols and coastal convoy cover in all the distant areas.

(i) September and October 1943

In September Doenitz re-opened the ocean convoy war in the Northern Atlantic and as this developed in the succeeding months he employed many of the large Type IX boats in this region so as to augment the numbers in the U-boat groups deployed to intercept convoys. The number available for Outer Seas missions was therefore limited and only eight such boats were on outward passage during the first half of September.⁽²⁾ A diagram at Appendix XI shows the distribution of U-boats on overseas missions from September onward to June 1944 indicating the time spent on their billets and the number of ships sunk by them.

By the end of September, U. 123, 518, 214, 161, and 536 were in their appointed billets but only U. 161 scored any success. She sank the independents S.S. St. Usk - 5,472 tons on the 20th and S.S. Itapage - 4,998 tons on 26 September together with a small Brazilian schooner. She was herself sunk on the following day by a U.S.N. flying boat of No. 74 Squadron.

In the latter half of September another five boats sailed on various overseas missions.⁽³⁾ The operations of the five outward bound Monsoon boats (now entering the Indian Ocean) and the measures taken against them there lie outside the scope of this narrative and are not further alluded to other than a mention of subsequent reinforcements sailed from German or Biscay Ports. At Appendix XII there is another diagram illustrating both the outward bound reinforcements and the few return journeys from the Indian Ocean together with their fate and any ships sunk by them.

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- (1) References - B, d U War Diary, Admty B.R. 1337 and the Official List of U-boat Casualties.
- (2) U. 161 to North Brazil Coast
U. 170 to East Brazil Coast
U. 123 to Trinidad area
U. 214 to mine off Panama Canal
U. 518 to the Florida Strait
U. 220 to mine off St. John's N.F.
U. 536 to patrol off Newfoundland
U. 68 to West African Coast.
- (3) U. 218 to mine off Trinidad. U. 103 to mine off Takoradi.
U. 155 to the North Brazilian Coast. U. 537 to Newfoundland and the U-Kreutzer 848 bound for the Indian Ocean.

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A steady trickle of boats were sailed during October⁽¹⁾ but refuelling in mid-ocean was almost impossible in face of the active operations by U.S. escort carriers and U-boats could only remain in distant areas for relatively short periods. U.220 laid mines off St. John's N.F. and on 19 October two ships in convoy WB. 65 fell victims to them. Subsequently U.220 had to be co-opted as an emergency refueller and met her end as already described in Chapter VI Section (viii). U.68 sank two independently routed ships, one off Freetown on the 22nd and the other off Lagos on 31 October.⁽²⁾ U.68 and 103 were the first U-boats on the West African Coast since August and although flying was intensified by the R.A.F. Command no sighting was obtained of either of them before they left but neither boat scored any further success.⁽³⁾

Over on the Brazilian coast, U.170 sank a ship off Rio de Janeiro on the 23rd and U.155 one north of Cape San Rogue on 24 October.⁽⁴⁾ U.214 completed laying mines off the Panama Canal and left for home as did U.123 and U.518 having accomplished nothing in their areas.

(ii) November 1943 to March 1944

November was unproductive in all areas except for U.516 who arrived in the Caribbean on the 10th. She accounted for three ships and a small sailing vessel.⁽⁵⁾ U.155 was damaged by air attack on 21 November off the mouth of the Amazon and started home forthwith. One of the U-Kreutzers - U.848 - intercepted and sank S.S. Baron Semple - 4,573 tons on 2 November in the Atlantic Narrows but was herself sunk three days later by U.S.N. and U.S.A.A.F. aircraft working from Ascension Isle. The other - U.849 - was sunk on the 25th to the N.E. of the same island by a U.S.N. Liberator. During the month another U-Kreutzer and two Type IX boats sailed for the Indian Ocean⁽⁶⁾ and U.515, after being employed in a convoy operation was despatched to the Freetown area.

- (1) U.154 and 190 to the North Brazilian Coast.
U.516 and 530 to the Caribbean
U.129 and 193 to the Florida Coast.
U.Kreutzer 849 bound for the Indian Ocean.
- (2) Litiope - 5,356 and New Columbia - 6,574 tons.
- (3) Flying hours in the R.A.F. West Africa Command - Ref.O.R.B. Apps.

Month	Convoy Escort				Convoy support and Patrols			
	Eff. hours	Total hours	S	A	Eff. hours	Total hours	S	A
Sept.	(1,102 (5 (N)	(1,676 (74 (N)	-	-	(624 (11 (N)	(836 (17 (N)	-	-
Oct.	(1,221 (55 (N)	(1,788 (229 (N)	-	-	(1,107 (32 (N)	(1,378 (114 (N)	-	-
Nov.	(1,337 (198 (N)	(1,923 (426 (N)	-	-	(1,059 (76 (N)	(1,337 (165 (N)	-	-

- (4) Campos - 4,663 and Siranger - 5,393
- (5) Pompoen - 1,082, Elizabeth Kellogg - 5,189, Melville E. Stone - 7,176 and the Ruby - 39 tons.
- (6) U.850, U.510 and U.172.

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Seven ships were sunk in December. U.516 added a small one to her score before leaving the Caribbean on the 10th, U.193 and 129 each sank one in their areas and U.530 bagged a large American tanker off Jamaica on the 16th besides damaging another off Colon on 26 December.⁽¹⁾ U.515, finding Freetown unluccrative, moved into the Gulf of Guinea where she sank three independently routed ships between the 17 and 24 December, after which she left for home.⁽²⁾ Once more, intensive flying by the West Africa Command failed to get a sighting of the boat.⁽³⁾

The southbound reinforcements for the Indian Ocean again ran into trouble. U.172 was sunk on 12 December by U.S.S. Bogue's aircraft and destroyer escort when 700 miles west of the Canaries. U.850 was sunk when 600 miles S.W. of the Azores on 20 December also by the Bogue's aircraft. U.510, the sole survivor of this batch of reinforcements, escaped and duly arrived in the Indian Ocean early in February 1944.

There being by now no refuelling facilities in mid-ocean, the remainder of the overseas boats had to start for home and during most of January 1944 the distant areas were clear. It was not till the last days of the month that U.123 arrived off the West African Coast and U.845 off St. John's N.F. During February they were reinforced in these areas by U.66 and U.539 respectively but except for one ship being sunk by U.66 and one damaged by U.845 nothing of note was achieved.⁽⁴⁾ Another batch of six large U-boats were by now outward bound for the Indian Ocean. One of these (U.177) was sunk on 6 February when west of Ascension Isle by a U.S.N. Liberator. During March most of the distant areas were once again occupied. U.66 added three more ships to her score, U.518 one in the Panama area and U.802 one off Halifax before having to leave.⁽⁵⁾

(iii) A last attempt at mid-ocean refuelling

The relatively short patrol time which was enforced by the limits of individual fuel capacity of each U-boat caused Doenitz to attempt once again the refuelling in equatorial

- (1) U.516 sank S.S. Colombia - 1,064, U.129 sank S.S. Libertad - 5,441, U.193 sank S.S. Touchet - 10,172, and U.530 sank the McDowell - 10,195 afterwards damaging the Chapultepec - 10,195 tons.
- (2) Kingswood - 5,080, Phemius - 7,406 and Dumana - 8,427 tons.
- (3) Flying in December 1943 by the R.A.F. West Africa Command.

Convoy Escort			Convoy Support and Patrol		
Eff. hours	Total hours	S.A.	Eff. hours	Total hours	S.A.
(2,076 15(N)	(3,154 60(N)	- - - -	(730 10(N)	(892 30(N)	- - - -

- (4) S.S. Silvermaple - 5,313 sunk by U.66 out of convoy STL. 12 and S.S. Kelmscott - 7,039 damaged by U.845.
- (5) U.66 sank the St.Louis - 5,202, John Holt - 4,964 and Matadian - 4,275.
U.518 sank the Valera - 3,401 and U.802 sank the Watuka - 1,621.

latitudes. Supply boat U.488 left France at the end of February so as to be in position westward of the Cape Verde Islands by mid-March. It was intended that outward bound U-boats should call at her to top up fuel supply before going on to their billets, stay on patrol till fuel was nearly exhausted and call again so as to take on just enough fuel to reach home.

The scheme reckoned without the ubiquitous American escort carriers who, each screened by three or four destroyers, were cruising in the waters south of the Azores to the Atlantic Narrows. It was here on 16 March that the Block Island's aircraft sank U.801 bound for West Africa following this up on the 19th by destroying U.1059 en route for the Indian Ocean. Both these boats were making for U.488 but later at the end of March another Indian Ocean boat (U.843) and the time expired U.123 from West Africa did succeed in refuelling.

The next five weeks were disastrous for the enemy's overseas campaign. U.856 and 550 patrolling off Cape Cod (Boston area) were sunk by U.S. destroyers on 7 and 16 April, U.68 and 515 on their way to U.488 were sunk on 9 and 10 April by aircraft from the U.S.S. Guadalcanal operating westward of the Canaries and finally the U.S.S. Croatan's group sank the supply boat U.488 on 26 April leaving the time expired U.66 completely out of fuel and provisions. She was, however, put out of her misery by being sunk on 6 May by aircraft from the Block Island.

(iv) April and May 1944

The only success the enemy could set against these losses was one ship sunk off Cape Cod by U.550 just before she herself was destroyed.⁽¹⁾ By the last week in April there were ten more large U-boats on passage for the Indian Ocean and three of these each accounted for an independently routed ship intercepted in mid-ocean⁽²⁾ but even these had to be qualified by the disappearance without trace of U-Kreutzer 851 and the sinking of U.193 in the Bay of Biscay by a Coastal Command aircraft.

May was another unproductive month for the enemy in spite of five U-boats being present at times off the West African Coast. No merchant ships were sunk here or off the U.S. seaboard where two boats were stationed.⁽³⁾ The only sinkings that occurred were two by U.129 during a short stay off the east coast of Brazil and one ship snapped up in the South Atlantic by U-Kreutzer 181.⁽⁴⁾ As against this latter the Indian Ocean reinforcements lost U.846 sunk in the Bay by Coastal Command and a Japanese manned ex-German Type IX U-boat destroyed west of the Cape Verde Islands by the Block Island group.

U.S. Fleet
A/S Bulletin
for July 1944

On 29 May, U.549 (when S.W. of Madeira en route to Brazil) sank the Block Island and damaged one of her escorting destroyers. She was then sunk herself by hedgehog attacks from the other three destroyers.

- (1) S.S. Pan-Pennsylvania - 11,017 out of convoy CU.21.
- (2) The Dahomian - 5,277, Nebraska - 8,262 and Colin - 6,254.
- (3) One of the latter (U.548) sank H.M.C.S. Valleyfield on May 7th. to the southeast of Newfoundland.
- (4) U.129 sank the Anadyr - 5,321 and Empire Heath - 6,644 and U.181 sank the Janeta - 5,312.

(v) Summary

On 1 June 1944 there were two boats (U.543 and 547) on the West African Coast, two on the U.S. seaboard (U.548 and 1222) and in mid-Atlantic longitudes were four boats still on passage to the Indian Ocean. Since 1 September 1943 a total of 42 boats had been on patrol in distant areas and had sunk 27 ships with two more damaged. Of these 42 boats, three had been sunk actually on patrol - one by aircraft and two by surface craft. Four more were sunk on their return journey, two by U.S. escort carrier action and two by H.M. ships. Additional to the above, five U-boats were sunk on their way out to distant areas - three by U.S. escort carriers, one by Coastal Command and one by surface craft.

The reinforcements for the Indian Ocean had an even worse record. A total of 21 had left German or Biscay Ports of which ten had been sunk on passage in the Atlantic - two by Coastal Command, three by U.S. land based aircraft, four by U.S. escort carrier groups and one by cause unknown. Seven had reached the Indian Ocean and four were still on passage in the Atlantic. During the nine months six ships has been sunk by these southbound boats. In the same period six Far Eastern boats were despatched home and all arrived safely in France.

PART II - NEW U-BOAT CONSTRUCTION - 1943 AND EARLY 1944.(1)

The output of new U-boats during 1942 had followed closely the planned schedule and averaged 20 per month. These boats were all of conventional design incorporating of course certain technical advances but still basically the same kind of submersible craft familiar in all navies since the First World War. They were limited to a maximum speed of eight knots submerged which could only be maintained for a short period and were forced to surface in order to recharge exhausted battery power and air supply.

(i) Walter boats

Towards the latter part of 1942, the increasing restriction on mobility caused by enforced diving to avoid air attack had encouraged renewed experiments with streamlined hulls to give better underwater performance aided by a revolutionary closed cycle form of underwater propulsion.(2) Four trial boats of 260 tons displacement were put under construction in Hamburg and Kiel yards in collaboration with Professor Walter. Two were delivered in November 1943 as Type WA.201 (U.792 and 793) and two in April 1944 as Type WK. 202 (U.794 and 795). They had a designed speed of up to 26 knots submerged and one of them was reputed to have actually attained 21 knots but they never got beyond the experimental trial stage.

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- (1) Reference for Part II - Fuehrer Conferences on Naval Affairs, Admty. N.I.D.24/T.65/45, B.B.S.U. Report on Production of U-boats and the U.S. Strategic Bombing Survey - Submarine Branch.
 - (2) Professor Walter had first experimented in 1939 and 1940 with a small 100 ton submarine, fitted with his gas turbine which used diesel oil fired by a highly concentrated hydrogen peroxide mixture enabling the engine to function without access to the outside air.

Meantime the results of small scale trials at the Walter Werke - Kiel were held to justify an order, dated 22 December 1942, for 12 boats of 320 tons displacement mounting two torpedo tubes having a designed speed of 9 knots on the surface and up to 26 knots submerged rated officially as Type XVII.(1) They were intended to become prototype training boats for crews to man the ultimate perfect submarine which was projected as the Type XXVI of 800 tons displacement with probable delivery in the second half of 1945. At the same date in December 1942 an order was given for two much larger prototype Walter boats of 1600 tons displacement having the same high underwater performance and a surfaced speed of 15 knots. These were classified as Type XVIII boats.

(ii) Accelerated U-boat building programmes

Early in 1943, Doenitz complained to Hitler that the U-boat construction and repair organisation was being adversely affected by a growing shortage in dockyard personnel and on 8 February Hitler approved an order forbidding any further call up for the Armed Forces of men engaged in the U-boat construction industry. In April 1943 the increasing U-boat losses at sea resulted in an accelerated building programme. This involved an additional monthly quota of 4,500 tons of iron which Reichminister Speer was instructed to plan for. The programme increased U-boat output to 27 per month during the year July 1943 to July 1944 thereafter being further increased by the inclusion of three Walter boats to 30 per month.

The very heavy May losses among U-boats at sea resulted in demands by Doenitz for still further increases in output and on 31 May Hitler approved a step-up in the programme to 40 U-boats per month. A fortnight later on insistence by Doenitz, Hitler re-affirmed the screening of all U-boat construction personnel and approved certain measures to ensure adequate naval recruiting to provide crews for the additional submarines.

(iii) The pre-fabricated Type XXI and XXIII U-boats.

Meanwhile the Walter propulsion method was not responding successfully to full scale application and the concurrent designing had progressed to an intermediate type of large ocean-going boat which would combine long surfaced endurance without refuelling with good underwater performance. The design retained the super streamline hull of the Type XVIII Walter boat but had a very much bigger battery than the conventional boat which not only allowed a large diving range but allowed bursts of up to 17 knots submerged speed. The advantages to be gained in this type had an especial appeal to Doenitz by mid-summer 1943 because of the losses being incurred from aircraft attack round convoys, in mid-ocean refuelling areas and on passage through the Bay of Biscay. The new design was classified as Type XXI and the plans were submitted to Hitler by Doenitz in July 1943. Hitler immediately gave his approval to its construction at top priority and instructed Reichminister Speer to go ahead with the planning. Such was the faith placed in the new Type XXI that from this date the laying down of conventional U-boat types ceased entirely.

(1) Owing to continuous mechanical troubles, six of the Type XVII class were cancelled and only three were ever delivered. These were U.1405 in Dec. 1944, U.1406 in Jan. 1945 and U.1407 in March 1945. They never became operational.

Those already on the stocks or in various stages of fitting out were to be completed while the radical change in constructive method was in progress.⁽¹⁾ Appendix XIII shows the fluctuations in U-boat strength and the building outputs between February 1943 and June 1944.

By October 1943, Speer had completed the reorganisation plan for the new construction and delegated the working details to two committees. In order to expedite the delivery of the new Type XXI boats, mass production methods were introduced by which the submarines were constructed in eight separate sections pre-fabricated by different firms widely dispersed in Germany. The finished sections were to be transported to three selected building yards there to be assembled into complete submarines.⁽²⁾ This method not only ensured maximum speed of construction but neutralised to a large extent the possibility of delays due to Allied bombing raids which were increasing in severity.⁽³⁾ The advantages of the type and the capacity for speedy construction were held to warrant the production of a smaller type for use in the Mediterranean and Black Sea to which they could be sent by canal and river across Europe. The design classified as Type XXIII utilised the streamlined hull of the Type XVII Walter boat and on a displacement of 320 tons with similar much increased battery power was expected to give 13 knots submerged speed. The original combined programme dated November 1943 scheduled a total of 288 Type XXI by the end of February 1945 and 140 Type XXIII by the end of October 1944.

The new programme was officially launched on 12 December 1943 with a statement by Speer that all other work would be limited in order to give it the highest priority.⁽⁴⁾ However, the manpower problem proved to be one of the major difficulties in realising this programme. Efforts to minimise it included the ruthless use of conscripted foreign labour and long hours worked by the German personnel (up to 75 hours per week) but in spite of every form of drive, delays in the programme grew as 1944 advanced. Other causes contributing were teething troubles in the new organisation, faulty planning in the distribution of raw material and, though still to a minor degree, late delivery of electric motors, auxiliary machinery, batteries etc. due to air raids on certain industrial centres. The cumulative effect of all these causes was that by the beginning of June

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- (1) Delivery of the 250 conventional U-boats already started continued at the scheduled rate until the end of 1943 after which there was a tapering off to nil during 1944.
 - (2) Blohm and Voss - Hamburg
Deschimag - Bremen
Schichau - Danzig
 - (3) The heavy July raids on Hamburg, although not seriously affecting the U-boat output in that port, had done enormous damage to other war industries and workers' housing conditions within the city boundaries. For full details see Chapter XII (iv).
 - (4) Delivery of the first three Type XXI was expected in April 1944. This should have risen to six in May, nine in June, 18 in July, 27 in August and the full 33 per month in September until February 1945. The Type XXIII was scheduled as two in February, six in March, 12 in May and thereafter 20 per month until October 1944.

1944 only one Type XXI and two Type XXIII had been delivered to the Navy for trials.(1)

(iv) The Schnorchel

There was one particular introduction that gave a new lease of useful life to the conventional U-boat and in the event made them more than a mere stop-gap between two methods of construction. This was the Schnorchel air intake and exhaust mast.

The idea of an extensible air intake had been current in U-boat circles in pre-war years but it was brought to the attention of higher naval authority by the capture during the invasion of Holland in May 1940 of two Dutch submarines fitted with such equipment. No steps, however, were taken to improve on the idea while things were going well for the U-boat arm. In the late spring of 1943 when U-boat losses from air attack were causing such concern to Doenitz the idea was resuscitated and on 11 July it was reported to him that, after trials with an experimental combined air intake and engine exhaust tube, a small submarine had remained under water for 18 days successfully re-charging the battery as necessary during this time.

By the end of 1943 a practical design had been developed for operational U-boats and U.264, 575 and 667 were fitted while at St. Nazaire. Other conventional U-boats in the fitting out yards in Germany were also equipped and by February 1944 numbers of them were being trained in its use while working up in the Baltic. Fitment continued also among the boats in Biscay ports and by the end of May 1944 there was a total of some thirty operational boats so equipped.

As fitted at this time,(2) the Schnorchel consisted of an air induction trunk and diesel exhaust pipe enclosed together in a metal fairing the cross-section of which was streamlined with a maximum diameter fore and aft of about 20 inches. The whole mast was about 26 feet in length and was raised or lowered by hydraulic power. When in the up position its top was a few inches lower than the tip of the extended periscope. At its bottom end the air and exhaust tubes made contact with the air intake and Diesel exhaust ducts on the hull of the U-boat.

At the top of the air pipe was a non-return clapper valve to prevent water from being sucked in should the Schnorchel head be dipped below the surface either in a seaway or by inaccurate depth keeping. However, when in practice this occurred the resultant discomfort to the crew before the Diesel engines could be stopped was an early cause of bitter complaint but it was found that with practice and experience prolonged cruises could be undertaken showing very little Schnorchel above water in seas up to Force 5 on the Beaufort scale.

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- (1) For fuller details see Chapter XII (vi) (b).
 - (2) Improved patterns of Schnorchel were introduced from time to time during 1944 and a telescopic model was included in the pre-fabricated Types XXI and XXIII.

Admty.
N.I.D. 24/T.65/
45 Page 35
Footnote (2)

B.d U.
War Diary.

Advantages

1. The Schnorchel enabled a U-boat to travel at periscope depth on its Diesel engines at speeds up to seven knots, also to charge the battery and renew the air supply without surfacing. It thus reduced to vanishing point the time hitherto necessary for a U-boat to spend on the surface exposed to danger from air attack.
2. As only the Schnorchel head protruded above the surface the risk of radar or visual location by aircraft was drastically reduced.
3. The Schnorchel conferred upon the outmoded conventional type of U-boat many of the attributes of the true submarine as opposed to the limitations of the vulnerable submersible.

Disadvantages

1. In adopting such a purely defensive device, the U-boats gave up the mobility of surfaced operations at high speed and thereby greatly reduced their offensive power.
2. The efficiency of a periscope watch was much impaired and the noise of the Diesel engines rendered the hydrophones practically useless.
3. The prolonged use of Schnorchel increased the crew fatigue resulting from varying air pressure, occasional blow back into the boat of exhaust fumes and the rigorous attention necessary to maintain depth control. Despite the disadvantages, the degree of immunity from air location and attack conferred by the Schnorchel made it possible for Doenitz to plan U-boat operations in areas hitherto quite impossible to exploit since 1939, while the U-boat crews infinitely preferred the feeling of security when on passage through air patrolled areas compared with their harassing experiences prior to its introduction. On the other hand the safety first attitude of mind, which had started in November 1943 with the maximum diving tactics on patrol or passage, was greatly increased and with it a progressively rapid sapping of the offensive spirit.

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CHAPTER IX

THE ANTI-SHIPING WAR IN NORTH WEST EUROPE

MARCH 1943 to DECEMBER 1943

(i) Introduction

A.H.B./II AI/
1/1/3(B) M.E.W.
Reports by EB.4

By the spring of 1943, the decline in the strength of serviceable tonnage in Germany's mercantile marine, which had become evident during the closing months of 1942, had been arrested. The appointment of a Reich Commissioner of Shipping in the summer of 1942, and the subsequent granting to him of wide powers was in itself an indication of the seriousness of the situation. From then onwards, his policy was reflected in a number of measures designed to relieve this shortage of shipping: (a) an increase in merchant shipping, (b) the mobilisation of such small untouched reserves as still existed, and (c) the co-ordination of administration.

The aggregate effect of these measures did not become fully apparent until full scale shipping activity was resumed in the early summer of 1943. In the meantime, however, it was clear that the new organisation was not backward in reaping the advantages bestowed by an abnormally mild winter. The absence of a substantial freeze-up in the Baltic and Swedish waters not only extended the trading period at the beginning of 1943 by three months (equivalent to a bonus of some 600,000 G.R.T. of shipping on the year's programme) but Germany was also spared the usual aftermath of the ice-bound period, when large numbers of vessels were awaiting repair for ice damage and a congestion of goods in port awaiting shipment. Little wonder, therefore, that the Reich Commissioner was confident that the more important demands to be made on sea transport in 1943 could be satisfied.

Events during the summer months, however, exposed the new organisation to a stern test. First, the virtual abandonment of Rotterdam as the North Sea terminal for the iron ore trade, which necessitated doubling the bulk cargo turnover of the other German North Sea ports, and, secondly, the bombing of the key port of Hamburg in July and August. In the latter case, the need to resume normal working at the earliest possible moment was vital, and the Reich Commissioner's effort in this direction was regarded as one of his greatest achievements.

At the same time, the Swedes, who were involved in the iron ore trade and operated some 450,000 G.R.T. of shipping on German account, were becoming increasingly anxious to withdraw their tonnage completely from trade with Germany.

There were, therefore, formidable problems in the offing for the Reich Commissioner and the shipping situation was to continue to cause grave anxiety to the Germans so long as British attacks persisted and losses exceeded new construction.

H.Q. C.C.
File S.15207
(A.H.B./IIK/54/
ii/361)

On the Allied side, it was fully appreciated that the decline in the fortunes of Germany's mercantile marine had taken a turn for the better and we were now faced with the task of disrupting a system which had become more highly organised, and defensively equipped to deal with all the offensive measures we had so far used.

There was no doubt that the answer to this problem lay in the formation of the Beaufighter Strike Wings, one of which was already in being and just about to emerge from a

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period of hard and meticulous training. It re-entered the line in April 1943, and justified the faith that had been placed in this type of warfare for tackling such a well-armed adversary.

Unfortunately, the urgent requirements of the war in the Mediterranean and other inroads upon the resources of Coastal Command prevented the mustering of a force of ten Beaufighter squadrons in the Command as planned for April 1943, and it was not until the very end of the year that the fulfilment of this programme was in sight.

In the meantime, a crisis in the affairs of the Strike Wing arose during the summer months in the shape of a clear conflict of priorities which had to be resolved at a much higher level. Suffice to state that the Strike Wings survived and went on to greater achievements as this chapter closes.

The efforts of the Axis powers to maintain sea communications between Europe and the Far East were continued during the appropriate times in 1943. The urgency of the Axis need, and the energy with which Germany and Japan prosecuted this traffic stressed the need for its frustration by the Allies. It was fortunate, indeed, that as far as the European end was concerned, it began and ended in the Bay of Biscay, where concentration on interception by aircraft of the blockade runners concerned was relatively easy, and did contribute towards the ultimate failure of this exchange in the more important deficiencies of Germany and Japan, which occurred in January 1944.

(ii) Increased enemy shipping activity in Northern Waters

By the spring of 1943, it was evident that the schemes of re-organisation initiated by Kaufmann since his appointment as Reich Commissioner for Shipping had achieved a marked increase in the lift of Germany's remaining tonnage resources. Furthermore, the exceptionally mild weather of the past winter had allowed navigation to proceed almost completely unimpeded off the central Swedish and German Baltic ports and through the Belts. The only exception was in the north of the Gulf of Bothnia and at the eastern end of the Gulf of Finland. In the aggregate, iron ore shipments during the first five months of 1943 were estimated to have totalled 3,495,000 tons compared with 1,584,000 tons during the same period of the previous year. Although, admittedly, Germany concentrated on the iron ore, there was every indication that other aspects of her shipping programme received similar assistance.

In addition, imports of Swedish iron ore from the port of Narvik also rose steadily from 95,000 tons in January 1943 to 234,000 tons in May 1943. The rate of shipment from this port was controlled by the amount of return cargo space available in ships bringing military supplies to Norway, the number of which had steadily increased throughout the late winter and early spring. The precise reason for this general increase in shipping was not clear at the time, but the Ministry of Economic Warfare considered that the enemy was probably taking advantage of the mild weather to carry out large scale movements of supplies. Principal among the commodities carried up the Norwegian coast was coal, on which the strategically vital rail communications with Norway were largely dependant, exports of which increased from 1,300,000 tons in May 1941/April 1942 to 1,700,000 tons in the twelve months May 1942/April 1943.

A.H.B./IIA/
1/1/1/3B.
M.E.W. Monthly
Reports

AHB/IIA3/1/1/4.
M.E.W. Six
Monthly Reports

By contrast, Germany exported only 3,800,000 tons of coal and coke to Sweden in the year ending December 1942, instead of the 5,700,000 tons for which she had contracted. It appeared that both countries regarded iron ore/coal and coke as reciprocal trades and in view of Sweden's absolute dependence on Germany for the latter, it was not surprising that the new 1943 Agreement⁽¹⁾ stipulated that if German exports of coal and coke did not reach the target figures in the first six months of 1943, a corresponding reduction would be made in Sweden's export to Germany, not of iron ore, but of timber. The main point of interest in the new agreement was the further inducements which it contained for Swedish ships to trade with Rotterdam. Whereas the basic freight rates for iron ore from Swedish ports to North Sea ports, including Delfzyl, varied from Kr.18.00 to Kr.11.50 according to the size of the ship, a supplementary flat rate of Kr.8.50 was to be paid for cargoes to Rotterdam. Moreover, under the agreement, Rotterdam was the only port of discharge where Swedish iron-ore ships were guaranteed return cargoes of coal and coke.

Quite clearly, it was Germany's intention early in 1943, to follow her policy of the last two years by continuing the importation through Rotterdam of the greater part of the Swedish ore carried in Swedish bottoms - a system which gave the most relief to the German shipping situation and imposed the least strain on her inland transport system.

Until the end of April 1943, it appeared that sufficient coal was available to effect the smooth working of the Agreement.

(iii) Sweden tightens control over her merchant fleet.

At the same time that the new German/Swedish Iron Ore Freight Agreement came into force, the Swedes took measures to tighten control over their merchant fleet operating in Northern Waters, apparently with the intention of ensuring that all Swedish shipping resources were placed at the disposal of the Swedish Government in order that no opportunity was lost of securing the maximum quantity of coal and coke offered. Towards the end of 1942, owing to irregular deliveries of coal and coke to the German ports, the Swedes sometimes found themselves without shipping to pick up available cargoes. Whereas formerly Swedish owners were at liberty to make chartering agreements with concerns in other countries subject to the over-riding right of the Swedish Shipping Association to cancel them, under the new regulations, each owner had to obtain a permit for every voyage before it was performed.

According to M.E.W., these new regulations could have an even deeper significance. The Swedes may have felt that the time was not far distant when their position vis-a-vis the Germans would be strong enough to enable them to use their tonnage in the way that it would best satisfy the requirements of both their short and long term policies. In the first instance, they may have thought that in certain eventualities the surest means of securing coal exports from Germany would be by the limitation of Swedish shipping carrying cargoes for German account. It was considered that high among Sweden's 'war' aims was the desire to enter the post-war period with

(1) Covering the period 1 February - 31 December 1943.

the largest possible merchant fleet. She probably foresaw the time when immediate advantages to be gained in allowing her ships to trade with some or all German ports would be more than offset by the risks involved.

A.H.B./IIA1/1/
1/3(A) AS/205/2z
May 1943

Meanwhile, Germany's search for tonnage continued. It was known that the enemy had offered exceedingly high rates for the use of Finnish vessels in Norwegian coastal traffic and was at first successful in chartering a number of small vessels and one or two large vessels up to 2,000 tons for the Speer organisation. The Finnish Government then intervened and refused to allow owners to accept German offers, probably owing to the desire to conserve as much tonnage as possible for post-war use.

(iv) Preparations for the re-introduction of the Beaufighter Strike Wing

A.H.B./IIH1/104/
1/7 Beaufighter
Wing Operational
Policy.
(16G/5044/1/OPS)

Having thoroughly digested the lessons of the first operations of the Beaufighter Strike Wing, which had taken place in November 1942 and proved so disappointing, arrangements for remedial action were put in hand almost at once and by mid February 1943 had reached the stage whereby the Coastal Command components were ready to commence trials for co-ordination with the single-seater fighter escort to be supplied by Fighter Command.

Prior to the trials, a conference was held at H.Q.C.C. on 22 February 1943 to discuss the final details. At the outset, it was fully appreciated that one of the first essentials for the successful operation of the Wing was good weather at base and at the target, and also the undesirability of the Wing staying long on the enemy coastline. It was also considered undesirable to lay down any hard and fast rules. Moreover, it was emphasised that the leader of the Wing must be given to understand that he had the confidence of his superiors and full freedom of action to act as he thought best. Among the many decisions made at the meeting, the principal ones were:-

- (a) That a minimum of two single-seater fighter squadrons (24 aircraft) should be employed to escort the strike wing; one squadron as close escort and one as cover; more aircraft being provided at the discretion of H.Q.F.C.
- (b) If cloud base was below 2,000 feet at target, no more than two squadrons of single-seater fighters were to be employed, and these were to act as close escort.
- (c) That fighter escort and Torpedo bomber leaders should be in V.H.F. communication with one another. The suggested channel was No. 12 Group guard.
- (d) No special instructions for Fighter squadrons carrying out this role were necessary.
- (e) That a practice strike against one of our own ships be arranged between No. 16 and No. 12 Group.
- (f) As the existing limit of fighter protection was just north of Texel, (1) it was not intended, save in

(1) This limit was extended to Ameland by using long range Spitfires, and even to Wangeroog with long range Mustangs.

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exceptional circumstances, to operate the wing outside single-seater Fighter protection.

(g) A final reconnaissance must be made before the Strike Wing took off to ascertain position, course and speed for final briefing of crews. This check reconnaissance should, if possible, be carried out by aircraft other than those of the Strike Wing. H.Q.C.C. would endeavour to obtain the co-operation of Fighter or Army Co-operation Command for this purpose.

(h) In the opinion of all present, cannon and other diversionary attacks should be directed at the enemy escort vessels. The task of sinking the target ship was that of torpedo bombers. If experience showed, however, that the target ship carried considerable flak, a proportion of the Fighter diversionary force would attack her.

(j) The minimum force to be employed on Wing operations was eight Torpedo (ideal number twelve) and sixteen escorting Beaufighters (cannon or other weapons)

(k) The supply of V.H.F. to No. 236 Squadron was to be hastened by H.Q.C.C. and the re-equipment of No.143 Squadron with Beaufighter XIC aircraft carried out as soon as possible.

Throughout the month of March 1943, further meetings between Squadron Commanders took place and by 9 April, a full scale practice was carried out with the Beaufighter Wing up to operational requirement level. The practice was laid on in exactly the same manner as an operation, thus also exercising controlling staffs and channels of communication.

(v) No. 12 Group (F.C.) undertake anti-shipping reconnaissance

To keep track of the movements of enemy convoys, regular reconnaissance was necessary over the coastline from the Hook to the Weser Estuary. The enemy coastline was divided into sectors each of which was covered by a single aircraft flying very low. The sectors were varied from time to time but they were so designed that each could be covered in a few minutes flying - it was considered unwise for a reconnaissance aircraft to remain longer.

At first, these sorties were flown by the North Coates Beaufighters themselves, but since it was essential that the entire stretch of enemy coastline should be frequently reconnoitred, it was soon apparent that this commitment was going to prove too much for the Wing in addition to their strike and training functions - apart from which a single Beaufighter had little chance of survival if engaged by Me. 109s or FW 190s which were at this time operating off this coastline. It was, therefore, necessary for the superior performance single-engined fighters of No.12 Group (Fighter Command) to undertake at least a proportion of the reconnaissance over that part of the enemy coastline that lay within their range, and in fact a standing arrangement came about on 5 April 1943 between the two Commands to that effect. It was agreed that at first, Mustangs of Army Co-operation Command would be made available to carry out the shipping reconnaissance along the Dutch coast. They were to be known as 'Lagoons', and No. 12 Group issued an Operational Instruction (No.54) on 13 April 1943. The furthest point to which this reconnaissance could be carried out was Norderney. The

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Beaufighters of the Strike Wing, namely Nos.143 and 236 Squadrons, continued to carry out reconnaissance with single aircraft to the east of Norderney. (1)

A.H.B./IHH/240/
10/9 Encl.37A
ibid.
Encl.44A

The Tripartite Pact (2) was revised in April 1943 to regularise this reconnaissance by No.12 Group aircraft which had, in fact, been going on for over a year. It was finally agreed on 3 May that No.12 Group should carry out reconnaissance in the whole area from Ostend to Wangeroog. It was also agreed that Coastal Command should have responsibility over all Class I targets in all areas including the Channel Stop area.

(vi) (a) No.16 Group operations March to June 1943

March 1943

No.16 Group.
O.R.B. App.
March 1943

Aircraft under the operational control of No.16 Group flew 125 sorties on anti-shipping reconnaissance and strikes. (3) Two attacks were delivered and two aircraft were lost. (4) Beaufighters of No.143 and 254 Squadrons from North Coates carried out a number of reconnaissance patrols in small groups off the Dutch coast. The remainder of the operations consisted of Roam patrols and anti-shipping strikes by Hampdens of No.415 Squadron operating from Thorney Island and Docking, and a few reconnaissance patrols by Hudsons of Nos.320 and 407 Squadrons and Swordfish of No.836 F.A.A. Squadron. On the night of 9/10 March, seven Hudsons of No.320 Squadron were despatched from Bircham Newton to attack an enemy convoy. Flares and flame floats were to be dropped round the convoy by the attacking aircraft and small surface craft would be in the area to attack after the aircraft had withdrawn. However, only one Hudson (V/320 Squadron) located the convoy at 2358 hours in position 5338N x 0520E. The aircraft attacked a medium merchant vessel with four x 250lb. GP bombs from 4,000 feet. The bombs undershot and no damage resulted.

April

With the period of reforming and training completed by mid-April 1943, the North Coates Strike Wing was ready to re-enter the line.

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- (1) Reconnaissance and check reconnaissance flights by Nos. 12 and 16 Group aircraft were:-

Month	No. 12 Group	No. 16 Group
April	32	56
May	159	88
June	355	72
July	302	103

- (2) The name given to the anti-shipping agreement between Coastal, Fighter and Bomber Commands. A copy can be found at Appendix XIV to this volume.
- (3) Figures given in this chapter for No.16 Group sorties do not include anti-E boat operations which are described in detail in Chapter XVI-Part I.
- (4) Hampden B/415 squadron crashed on landing on 19 March. Hampden S/415 squadron failed to return from a strike on 23/24 March. Aircraft R/415 reported that what appeared to be a flame float but later identified as probably an aircraft burning was seen within 100 yards of a flak ship.

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A.H.B./IHK/54/
9/49 Provision
of Beaufighter
T/F aircraft and
H.Q.C.C. O.R.B.
App. 'S'

The Wing consisted of three squadrons of Beaufighters, each with an establishment of 19 + 4, all of whom were located at North Coates within No.16 Group's area of operations. The torpedo carrying component was No.254 Squadron which at this time had five Beaufighters VIc (T/F) and twenty-six Beaufighter X (T/F). This squadron was in the process of re-equipping with the latter type of aircraft. The other two squadrons were No.236 with twenty Beaufighters VIc and No.143 with eighteen Beaufighters XIc. None of these aircraft were fitted with radio altimeters, but there was a requirement in existence which, when it materialised, was to be applied to the Torbeaus first. No radar was carried but A.S.V. Mk.II was now beginning to come off the production line for Beaufighters. All squadrons had V.H.F. but A.I. was to be considered later as it was not available until September.

Rails for rocket projectiles were already fitted in all aircraft of No.236 Squadron, and it was planned to fit rails, which could be easily removed if not required, on other aircraft by mid-July. Some of the aircraft in No.254 Squadron, notably the Mk.X version, were fitted with dive brakes, and it was expected that in all future deliveries of Mk.X aircraft, the dive brakes would be installed. All Beaufighters could carry 2 x 250 lb. bombs, if required. As a Command modification the F.24 camera fixed oblique was to be fitted in 25 per cent of the aircraft in No.16 Group.

H.Q. No.16 Group
O.R.B. App. and
Fighter Command
Form Y

Thus equipped, the Wing made its first strike on a well escorted enemy convoy on 18 April 1943.

H.Q.C.C.
Controller's
Log.
H.Q. No.16
Group O.R.B./
App.

Early on that morning, two Beaufighters of No.143 Squadron (No.16 Group) and two Mustangs of No.414 Squadron (A.C.C.), undertook the 'Lagoon' reconnaissance of the enemy shipping route off the Frisian Islands. The Beaufighters saw nothing of importance, but the Mustangs sighted what was described as a large convoy northbound off the Hague at 0657 hours. The check reconnaissance was flown by a Beaufighter of No.236 Squadron which confirmed the sighting as a convoy of nine merchant vessels and four or five escort vessels on a northerly course in 5226N x 0425E. It was originally intended to stage an attack on this convoy with the Strike Wing at noon, but minor difficulties delayed the take-off until 1330 hours. The complete strike force despatched consisted of nine Beaufighters with torpedoes (No.254 Squadron), six Beaufighters with bombs (No.236 Squadron) and six Beaufighters with cannon (No.143 Squadron): the whole was covered by three squadrons of fighters from No.12 Group (Fighter Command). The top cover was provided by twenty-one Spitfires of Nos.167 and 118 Squadrons, rear cover by eight Typhoons of No.56 squadron and close support by eight Mustangs of No.613 Squadron (A.C.C.). All the aircraft located the target and a well executed attack achieved success. The convoy consisted of nine merchant vessels escorted by four 'M' Class Minesweepers and two trawler type auxiliaries. The merchantmen were disposed in two columns each led by a mine-sweeper, the remaining two minesweepers being on either wing. With the exception of one large merchant vessel, the remainder were ships of approximately 2,000 to 2,500 tons. All were flying balloons. The enemy was apparently taken by surprise and the first section of aircraft to attack encountered only moderate heavy and light flak. The largest ship, it was claimed, received at least two torpedo hits and the last photographs taken showed it enveloped in smoke and with a heavy list to port. The

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minesweepers also came under heavy attack and were claimed as damaged. The remaining escort vessels were smothered by cannon and machine gun fire and were also claimed as damaged. Gun's crews on some of the enemy escort vessels were seen to leap overboard and others were believed killed or wounded. Only two aircraft received damage, thus showing on this occasion that the defences were somewhat overwhelmed. Excellent photographs were obtained during the attack, and the large merchant vessel, upon which the Torbeau attack was concentrated, was identified as the Norwegian Hoegh Carrier of 4,906 G.R.T. The assessment Committee's verdict on this attack was one merchant vessel sunk; two armed trawlers damaged; one minesweeper damaged and the remaining two minesweepers seriously damaged.⁽¹⁾

R.A.F. Anti-
Ship Operations
(Merchant) Vol.5

H.Q. No.16 Group
O.R.B./App. and
Fighter Command
Form Y

Although 'Lagoons' were flown daily thereafter by Beaufighters and Mustangs, another favourable opportunity for a strike did not occur until 29 April, when an even better protected convoy was attacked.

In the early morning, two Beaufighters of No.143 Squadron and two Mustangs of No.268 Squadron, were on reconnaissance off the Frisians but only three armed trawlers were sighted. Soon after midday, however, a single Beaufighter of No.143 Squadron on patrol off the Dutch coast sighted a convoy of six merchant vessels and nine escort vessels in 5231N x 0425E.

The Strike Wing was airborne by 1650 hours and on this occasion consisted of twelve torpedo carrying Beaufighters (No.254 Squadron) nine Beaufighters with bombs (No.236 Squadron) and six Beaufighters with cannon (No.143 Squadron). This force was covered by twenty-four Spitfires of Nos.118 and 167 Squadrons and six Mustangs of No.613 Squadron. The enemy convoy consisted of six merchant vessels and nine escort vessels and was located off the Texel. Three minesweepers in a line abreast were leading the convoy followed by the merchant vessels in two lines astern. The escort craft were abeam of the leading merchant vessels, two more escorts were abeam of the rearmost merchantmen and two trawler escorts astern. Five balloons were flying in the centre of the convoy, about 800 to 1,000 feet. The disposition of the escorts made the target more formidable than the one previously attacked. Also, owing to an alteration in speed by the enemy convoy during the period of the last reconnaissance to the estimated time of attack, the all-important element of surprise was lost. However, through skilful leading, the attacking force was brought into position and the onslaught was pressed home to advantage. Owing to avoiding action, the Torbeaus did not observe the results of their torpedo attacks, but the Fighter escorts reported that one merchant ship of about 5,000 tons was hit amidships by torpedo and left stationary and settling by the stern. A second torpedo hit was registered on another merchant vessel. Bomb hits were also observed on two smaller vessels and several other ships appeared to be damaged by bomb blast. The Assessment Committee awards for this attack were two merchant ships sunk,

(1) In the enemy records consulted since the end of the war, only the Hoegh Carrier is confirmed as sunk. No damage to escorting craft is mentioned.

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two armed trawlers seriously damaged and four minesweepers damaged. (1) Our casualties were one Beaufighter lost and two damaged.

No.16 Group
O.R.B. App.
April 1943

In all, No.16 Group flew 135 sorties on anti-shipping operations in April 1943, 48 attacks were carried out and one aircraft lost. (2) Beaufighters of the North Coates Wing carried out individual reconnaissance flights as well as strikes. Hampdens of No.415 Squadron operated on Roam and Rover patrols and anti-shipping strikes on six nights of the month. They carried out three attacks. Two Hampdens, B and K/415, on a strike on the night of 14/15 April, attacked a convoy of six merchant vessels in position 5346N x 0614E with torpedoes. Each Hampden claimed one merchant vessel hit and damaged. Post-war records establish that the Norwegian merchant vessel Borga of 4,821 tons was sunk northeast of Ameland and the Swedish vessel Tom of 2,092 tons was damaged. This last vessel was hit by a torpedo which failed to explode.

May

During May 1943, twenty-two torpedoes were dropped by the North Coates Wing during two wing operations on 17 and 24 May. Of these, that which took place on 17 May produced the most valuable results. The target was a northbound convoy which had been first sighted by a Mustang of No.2 (A.C.C.) squadron shortly after it had left the Hook of Holland. It was subsequently sighted at 1115 hours and photographed from 28,000 by a P.R. aircraft when four miles off IJmuiden. It was sighted a third time from sea-level by another Mustang flying the check reconnaissance sortie at around 1300 hours, when approaching Egmond. This latter aircraft also secured photographs of the additional escort of four 'M' Class minesweepers which was waiting off Den Helder to escort the convoy through what the enemy considered to be the most dangerous part of the route. It was on these photographs that the tactics of the strike were planned. The composition of the Wing was the same as before, twelve torpedo carrying Beaufighters (No.254 Squadron), nine Beaufighters with bombs (No.236 Squadron) and six Beaufighters with cannon (No.143 Squadron). The cover for the Wing on this occasion was fifty-nine Spitfires of Nos.118,167, 302, 308 and 402 Squadrons of No.12 Group (Fighter Command). By the time the Strike Wing made contact with the enemy at 1630 hours, the convoy was off Texel. Other than the addition of the four minesweepers, only minor changes in disposition had been made since the earlier sightings. The convoy itself consisted of six merchant vessels disposed in two lines ahead, escorted by three 'M' Class minesweepers in a VIC formation in front with four trawler type auxiliaries, two on each wing. All the merchant vessels were flying balloons. Although more flak was met than on the two previous strikes, the attack went according to plan. All the minesweepers and other escorts were claimed hit by cannon fire and the minesweeper

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- (1) Post-war records consulted reveal the following casualties for this attack:-

<u>Aludra</u> (Du.)	-	4,930 G.R.T. - sunk
<u>Narvik</u> (Swe.)	-	4,251 G.R.T. - sunk
<u>Auguste Kampf</u> (Ge)	-	385 G.R.T. - sunk

- (2) This was Beaufighter L/143 which was seen to be shot down into the sea during the wing strike on 29 April.

leading the port column was seen to be on fire. One of the merchant vessels was claimed hit by a torpedo. Photographs taken during the attack assisted in establishing these claims. The Assessment Committee awarded one merchant vessel sunk, one merchant vessel damaged, one minesweeper seriously damaged, two trawlers and three minesweepers damaged. (1)

The second strike by the Beaufighter Wing on 24 May did not achieve its main objective for the following reasons:-

- (a) Unsuitable weather conditions for combined attack.
- (b) Due to lack of precise knowledge of the position of the convoy, the Wing attacked some fishing vessels prior to the main attack being delivered.
- (c) The Wing was dispersed by this diversion and the full weight of the attack was not brought to bear on the main target. The attack on the fishing craft had caused alarm and surprise had been lost.

A total of 178 anti-shipping sorties were flown, fifty-nine attacks carried out and three aircraft lost (2) during May 1943. Beaufighters from North Coates carried out individual reconnaissance. Hampdens of No.415 Squadron operated on five nights from Thorney Island and carried out four attacks. Eight Hampdens of No.415 Squadron were despatched on an anti-shipping strike on the night of 17/18 May. One aircraft returned early owing to engine trouble. Three Hampdens sighted and attacked convoys. M and U/415 attacked with torpedoes in position 5339N x 0619E at 0052 hours and position 5338N x 0632E at 0049 hours respectively. H/415 probably attacked a vessel in a separate convoy further north at 0112 hours in position 5350N x 0625E. Two Hampdens, B and D/415 were missing from this operation and it was considered that they also probably attacked the second convoy. As a result of this operation, the German escort trawler Ernst von Briesen (VP1106) of 408 tons was sunk in position 5336N x 0604E and the M Class minesweeper M.345 of 750 tons sank in 5103.5N x 0207.6E.

June

For the shipping strike squadrons, the month of June saw the introduction of the latest anti-shipping weapon, the rocket projectile. An appendix to this volume deals with the development of R.P.

- (1) Post war records consulted confirm the following casualties:-

<u>Kyphissia</u> (Ge.)	- 2,964 G.R.T. - sunk
<u>M.414</u> - M/S (Ge.)	- 750 G.R.T. - sunk
(Tlr.) <u>Hermann Hindrichs</u> (Ge.)	- 523 G.R.T. - sunk

- (2) Beaufighter P/143 failed to return from a reconnaissance of the Texel to Norderney area on 7 May. The aircraft had reported engine trouble when about one hour from base. Hampdens B and D/415 failed to return from a shipping strike on the night of 17/18 May.

No.16 Group
O.R.B. App.
May 1943

See Appendix
III

The North Coates Strike Wing carried out three strikes during the month, one with torpedoes and cannon, one with torpedoes and R.P., and one with R.P. alone.

The first was a daylight attack on 13 June, when a northbound convoy off Den Helder was attacked by the now familiar array of strike aircraft and escorts. The convoy consisted of the Stadt Emden of 5,180 tons and three smaller merchant ships of 2,000 to 3,000 tons, escorted by five 'M' Class minesweepers ahead and astern of the convoy, with two trawler type auxiliaries on either flank. All the merchant ships were flying balloons. On reaching the convoy route, the wing had intended to turn south to strike from the convoy's port bow, but the target was sighted to port and the Wing, therefore, had to turn to port and passed the port side of the enemy to carry out the attack as planned. During the flight up the port beam of the convoy, flak was intense and an early attack signal was given in order to disperse the aircraft. It was noted that a number of escorts had been added. The Strike Wing, nevertheless, endeavoured to attack the targets detailed at briefing. Only seven torpedoes were released as three aircraft were badly positioned and so did not drop. The main target was claimed hit by at least one torpedo, and swung out of line listing heavily to port. Two trawlers and one minesweeper were also claimed hit and were last seen on fire. Again, excellent photographs helped the Assessment Committee to make their awards as follows:- one merchant vessel sunk and one armed trawler sunk.⁽¹⁾ Beaufighter J/143 was missing from the attack.

The second attack by the North Coates Wing was significant in as much as R.P. was used for the first time by No.143 and No.236 Squadrons. On 22 June, a very well protected enemy convoy was attacked between the Hague and Den Helder, after the usual preliminaries by 'Lagoon' reconnaissance aircraft. The convoy consisted of five merchant vessels, five 'M' Class minesweepers and eight armed trawler type auxiliaries. Balloons were flying from all merchant ships. The striking force consisted of twelve Beaufighters of No. 236 Squadron armed with four cannon and eight R.P. (60 lb heads); twelve aircraft of No.143 Squadron with the same armament, and twelve Torbeaus of No.254 Squadron. Complete surprise was achieved, no anti-aircraft fire being met until after the attack had begun. No.254 Squadron were briefed to attack slightly later than usual in order to escape the possibility of being damaged by R.P. fire. The enemy took advantage of this to take avoiding action together in the direction of the torpedo attack. This proved most effective and no torpedo hits were obtained. Two torpedo aircraft, P and N/254 were seen to ditch, each with one engine on fire. Three of the Beaufighters of No.254 Squadron and one of No. 236 Squadron crash landed but all crews were safe. From the R.P. component, four armed trawlers were claimed as damaged, which were allowed by the Assessment Committee.⁽²⁾

(1) Post war records confirmed these awards:-

Stadt Emden (Ge.) - 5,180 G.R.T. - sunk
Mahren (escort) - (Ge.) - 487 G.R.T. - sunk
 (VP.1109)

(2) For the first time since the Wing had reformed, there was no confirmation of these claims in enemy records consulted since the war.

The third attack of the month made by the Strike Wing, on 27 June, was an R.P. and cannon attack only, by twenty-one Beaufighters with the usual fighter escort provided by No.12 Group. The convoy consisted of four merchant vessels with five 'M' Class minesweepers and seven armed trawlers. On this occasion, no element of surprise was achieved, and heavy anti-aircraft fire was met at extreme range. Nevertheless, the aircraft attacked as briefed, and claimed two armed trawlers damaged, which was allowed by the Assessment Committee.(1)

Anti-shipping patrols in June 1943 totalled 176. There were 77 attacks and six aircraft were lost.(2) Individual reconnaissance patrols were also carried out by the North Coates Beaufighters. Hampdens of No.415 Squadron operated on three nights and carried out two bombing attacks on trawlers west of Fecamp on the night of 17/18 June. On this occasion, three of the seven aircraft despatched were armed with six x 250 lb GP bombs.

(vi) (b) No.18 Group operations - March to June 1943

March

No.18 Group flew 123 sorties on shipping reconnaissance and rover patrols off the Norwegian coast. In addition, 35 sorties were flown by the detachment of No.540 P.R. Squadron on photographic reconnaissance of ports in Norway, Germany and the Baltic. One Mosquito, D/540, failed to return from the sortie to Trondheim on 28 March. Another 48 sorties were devoted to fleet reconnaissance for the Scharnhorst at the time of her breakout from the Baltic to Norway. Details of these operations are given in another chapter.(3) In the course of anti-shipping operations, four attacks were made and four aircraft lost.(4) No enemy shipping was sunk or damaged.

Operations were carried out by Hampdens of No.489 and 455 Squadrons, Beaufighters of No.235 Squadron and torpedo Beaufighters of No.144 Squadron. No.489 Squadron spent much time on torpedo training and No.144 Squadron only came back into line on 16 March after converting from Hampdens to Beaufighters VI. On two occasions on 16 and 17 March, Beaufighters of

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- (1) There is no confirmation of these claims in enemy records consulted since the war.
 - (2) Beaufighter P/143 was missing on reconnaissance on 9 June. Beaufighter J/143 was missing on wing strike on 13 June. Beaufighters P and N/254 were seen to ditch during wing strike on 22 June. Beaufighter G/143 was missing on reconnaissance on 25 June. Beaufighter H/143 was missing on strike on 27 June.
 - (3) See chapter XI on Fleet Reconnaissance.
 - (4) These were:-
 - On 3 March Beaufighter P/235 crashed in low cloud on the north east side of Warren Hill near Glen Esk.
 - On 26 March Beaufighter T/144 failed to return from a shipping strike.
 - On 28 March Beaufighter V/235 and Hampden K/489 failed to return from shipping reconnaissance of the Stadtlandet to Smolen area.

No.235 Squadron acted as escort on Rover patrol to the torpedo Beaufighters of No.144 Squadron.

April

No.18 Gp.
O.R.B. App.
April 1943

Sorties rose to 215 in April, 44 attacks were made and seven aircraft were lost.(1) No.540 P.R. Squadron flew 21 sorties on naval targets and lost one Mosquito (L/540) on reconnaissance of Oslo and Horten on 3 April. Three vessels of 17,398 tons were sunk as a result of these attacks.

The first strikes of the month, on 4 April, accounted for two of these vessels. Six Hampdens of No.489 Squadron were ordered to carry out reconnaissance in force in two groups of three aircraft in the area from Stadtlandet to Grip Island. The first three aircraft were ordered to take off at 0730 hours and, at 1037 hours, in position 6303N x 0711E, sighted one merchant vessel of 5,000 tons and one grey motor escort vessel with gun platform. Aircraft attacked from starboard. The torpedo from P/489 was definitely seen to hit slightly forward of the bridge, throwing up spray and debris. The merchant vessel turned shorewards listing 15 degrees to starboard and down by the bows.(2) Light and heavy flak were experienced but there were no casualties. The second three Hampdens, ordered to take off at 1100 hours, attacked a convoy of three merchant vessels in position 6311N x 0753E with torpedoes. Hampden W/489 was shot down by flak and there was no result from the other attacks. The same day four Hampdens of No.455 Squadron and four torpedo bombers of No.144 Squadron were ordered to carry out shipping reconnaissance in the Stavanger/Kristiansand area. Two Hampdens of No.455 Squadron attacked a merchant vessel of 5/6,000 tons but no results were seen. Heavy flak was experienced and the attacking aircraft were harried by an BV 138. The four torpedo aircraft of No.144 Squadron all attacked a merchant vessel of 3/4,000 tons in a convoy in position 5755N x 0635E off Lister. The German merchant vessel Patria of 3,845 tons was sunk in this attack.

The other successful operation of the month was on 27 April. A strike of Nos.455 and 235 Squadrons had failed to locate a convoy sighted off Lister by Beaufighters of No.235 Squadron on morning reconnaissance. Four Beaufighters of No.144 Squadron and six of No.404 Squadron were, therefore, ordered to carry out a strike in the vicinity of Obrestad.

(1) These were:-

On 4 April Hampden W/489 on Rover was hit by flak during an attack and ditched.

On 8 April Beaufighter U/235 on shipping reconnaissance presumably crashed in bad weather.

On 9 April Hampden T/489 on shipping strike was seen to dive into the sea and blow up after attack. Hampden K/489 on the same operation was seen with engine smoking after an attack by E/A escort.

On 12 April Beaufighter Z/235 on Rover was presumed shot down by E/A (FW 190s and Me 109s.)

On 13 April Hampden C/489 on Rover failed to return.

On 27 April Beaufighter M/144 on a strike was damaged by E/A (Me 109s and Ar.196). On return the undercarriage collapsed and aircraft was burned out.

(2) This was the German merchant vessel Attair of 6,800 tons, confirmed as sunk by post war records.

At 1444 hours, a merchant vessel of 4,000 tons and two escort vessels were sighted. No.404 Squadron attacked a flak ship with cannon and No.144 the main target with torpedoes. Position of the attack was south east of Ryvingen Light at 5757N x 0731E. Post war evidence shows that the Norwegian merchant vessel Trondhjemsfjord of 6,753 tons was sunk. A further two Beaufighters of No.144 Squadron were despatched from Tain after the strike but were intercepted by Me.109s and Ar 196s. M/144 was badly shot up and crashed on landing. The main strike is interesting as an early example of the use of strike wing technique in No.18 Group.

S.7743/I

A.H.B./IHK/54/
4/20

In an attack on a tanker and two other vessels off Stadtlandet on 9 April by Hampdens of No.489 Squadron, two aircraft were lost. A photograph taken by N/819 Squadron on 2 May showed a tanker with major damage alongside the floating dock at Lakseraag. The port side of the ship, in the central part of the after well deck, was cut down to the water line. It was considered likely that this tanker was one of the two or three supply tankers which made a northerly journey each month with supplies for the armed forces. Post war records do not confirm serious damage to this vessel.

Aircraft employed on operations remained the same with the addition of No.404 Squadron which had recently been re-equipped with Beaufighter XIc aircraft. The squadron arrived at Tain at the beginning of the month and was transferred to Wick on 20 April. No.144 Squadron moved to Tain on 10 April and carried out torpedo training as well as operations in preparation for a move overseas.

May

No.18 Gp.
O.R.B. App.
May 1943

No.18 Group flew 184 sorties on anti-shipping operations, 21 attacks were made and five aircraft lost.⁽¹⁾ P.R. aircraft flew 26 sorties on naval targets. In addition, 67 sorties were flown and seven aircraft lost, including five from a detachment of No.16 Group aircraft, in the attempt to intercept the light cruiser Nurnberg on 1 May off the south coast of Norway.⁽²⁾

One enemy vessel, the Klaus Howaldt of 5,956 tons, was sunk⁽³⁾ as a result of a Rover strike on 13 May. Two formations, each consisting of four Hampdens of No.489 Squadron, escorted by four Beaufighters of No.404 Squadron, were ordered to carry out Rover patrols on the Norwegian coast from Lister to Mandal and Lister to Egero. The first formation of four Hampdens and one Beaufighter (the other three having lost contact) sighted at 1505 hours in position 5805N x 0645E, just

(1) These were:-

On 4 May Beaufighters S and L/235 were missing without trace on reconnaissance of the Lister to Egero areas.

On 14 May Hampden X/489 was last seen with port engine on fire at time of an attack on a convoy.

On 19/20 May Hampden O/489 failed to return.

On 27 May Beaufighter Y/235 failed to return from shipping reconnaissance in the Kristiansand South to Stavanger area.

(2) See Chapter XI on Fleet Reconnaissance.

(3) In addition, the Swedish merchant vessel Hispania of 1,240 tons received slight damage from air attack in mid-May on a voyage between Germany and Gothenburg.

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off the Naze, a convoy of four merchant vessels and six escort vessels. The Hampdens immediately attacked with torpedoes and Beaufighter D/401 with cannon and M/G fire. No results were observed at the time.

Another escorted Rover strike by Nos.489 and 404 Squadrons on the following day was less successful. Only one of the six Hampdens was able to get in an attack and the four Beaufighters were fully occupied with the convoy air escort of ~~BV~~ 138, Me 109 and FW 190 aircraft. One Hampden was lost on this operation.

There were several other escorted Rover strikes by Hampdens of Nos.489 and 455 Squadrons and Beaufighters of No.404 Squadron during the month. The Hampdens also carried out a number of unescorted night and moonlight Rovers and a few attacks were made on these operations. Another type of operation was a formation flight to the Norge coast and then individual search by the various aircraft.

Hampdens of Nos.489 and 455 Squadrons and Beaufighters of Nos.404 and 235 Squadrons remained the mainstay of anti-shipping operations in No.18 Group. No.144 Squadron at Tain did not operate after the Nurnberg strike on 1 May. The squadron was re-equipping with Beaufighter Xs and on 29 May went overseas to North Africa. On 27 May, Mosquitoes of the newly formed No.333 Norwegian Squadron began operating on shipping reconnaissance from Wick and Leuchars.

June

No.18 Group
O.R.B. App.
June 1943

Anti-shipping sorties dropped to 72. Seven attacks were made and one aircraft lost.⁽¹⁾ P.R. aircraft flew 24 sorties on naval targets. One enemy minor naval unit Roland-UJ1703 of 468 tons was sunk off Lister on 19 June. Attacks on several merchant vessels and escort vessels were carried out on this day by Hampdens on Rover patrols in the Stavanger/Kristiansand area. The vessel was probably sunk by either O or C/455 who both attacked in the Lister area.

On 23 June, two Mosquitoes of the newly formed No.333 Norwegian squadron carried out attacks with cannon and M.G. fire on a convoy in the Leads in position 6130N x 0510E. Unfortunately, F/333 was hit over the convoy and was seen to roll over five times, crash on land and burst into flames.

The drop in the number of operations is partly explained by the fact that No.235 Squadron, after one reconnaissance operation on 3 June, were moved to Tain for training on R.P. from 3 - 17 June and then a detachment was sent down to St. Eval in No.19 Group for operations against enemy fighters in the Bay of Biscay. No.455 Squadron was also occupied in training new crews and had six aircraft detached to Tain on torpedo refresher courses. No.489 Squadron stated that weather seriously interfered with operations. Fog and low cloud at base and lack of cloud cover on Norge coast mainly accounted for the absence of successful torpedo operations. No.404 Squadron carried out operations as usual and a few sorties were flown by the new No.333 Squadron, which was still training.

No.489 Sqdn.
O.R.B.

(1) Mosquito F/333 on 23 June. See text.

(vi) (c) No.19 Group operations March to June 1943

The most important anti-shipping operations flown by No. 19 Group were concerned with the interception of enemy blockade runners. Thus, during March and April 1943, operations were directed against the Himalaya and Pietro Orsedo. These operations are described in detail in chapter X. Nos.833 and 834 F.A.A. Squadrons on loan to Coastal Command, and based at Exeter, also carried out night anti-E boat crossover patrols in the West Channel area until they were withdrawn from the line in April in preparation for their return to the R.A.N.A.S.(1) Figures given for No.19 Group in this chapter exclude operations against blockade runners and E-boats.

No.19 Group
O.R.B. App.

Remaining anti-shipping sorties in March 1943 totalled 35. There were no attacks and no aircraft were lost. Most of the operations were flown by aircraft on transit to Gibraltar, who were ordered to carry out anti-shipping reconnaissance en route. Photographic reconnaissance sorties of enemy-occupied ports totalled seven.

Operations during April once more consisted mainly of transit reconnaissance flights, and totalled 48 sorties with no attacks. Wellingtons of No.547 Squadron flew eight Rover patrols in search of iron ore shipping plying between Bilbao and Bordeaux and Bilbao and Bayonne but with no success. Two aircraft were lost.(2) There were 28 photographic reconnaissance sorties, some of which were directed against blockade runners.

During May, 35 anti-shipping sorties were flown of which 25 were transit reconnaissance flights. There were no attacks and no casualties. P.R. aircraft flew 18 sorties.

Nineteen anti-shipping sorties, all on transit to Gibraltar, were flown in June. Three Mosquitoes of No.51 Squadron, on enemy Fighter interception patrols, attacked with cannon a stationary trawler marked with tricolour and named Duperne in position 472CN x 0550W on 11 June.

A.H.B./IIA/1/
1/3(A) March
1943 M.E.W.
Monthly
Shipping Report

Enemy shipments of iron ore from the Bilbao area to Bayonne and Bordeaux were increasing steadily during March 1943 and were approaching the peak figure of 70,000 tons a month attained earlier in the summer of 1942. Nothing, apart from occasional reconnaissance flights by No.19 Group aircraft and periodic minelaying by Bomber Command aircraft was done by the air to interfere with this traffic.

The enemy evidently attached importance to this trade and the medium sized tonnage was augmented in March 1943 by the return of the Baldur and Scharlachberger to the Bordeaux flotilla. Two smaller vessels, the Bordsee (959 g.r.t.) and Sperber (898 g.r.t.) also joined the Bordeaux flotilla. Iron ore imports in March totalled approximately 64,000 tons and in April 58,000 tons.

ibid.
May 1943

During May, shipments of iron ore from Bilbao slackened to 41,000 tons chiefly owing to the deadlock in economic

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- (1) See chapter XVI - Part I on anti-E boat operations.
 - (2) Beaufighter A/248 on shipping reconnaissance on 11 April. Wellington C/547 on Rover on 22 April.

negotiations in Madrid. As a result of pressure by iron ore interests, attempts to withdraw two of the larger vessels for service elsewhere were frustrated and another vessel, the Hochheimer (1,766 tons) was added to the shipping traffic. There was, however, no possibility of loading the larger vessels. The small Spanish vessel Cho-ko succeeded in making a second contraband voyage from Lisbon to Bayonne with a cargo of coffee and sisal.

ibid.
June 1943

Iron shipments from Bilbao fell to 22,000 tons in June. It was reported that the Minister of Industry and Commerce in Madrid had granted export licences for 20,000 tons of rubios subject to certain conditions, against which the Germans were protesting, including an increase in price of 20 per cent on all licences granted since 1 February 1943.

(vi) (d) Fighter Command Operations March to June 1943

Figures given for Fighter Command consist of anti-shipping operations by Nos. 10, 11 and 12 Groups excluding anti-E boat operations which are described in another chapter. (1) No. 11 Group had control over the 'Channel Stop' area (2) between Ostend and Dieppe, No. 10 Group operated in the west Channel and Channel Approaches, and No. 12 Group mainly off the Dutch coast. An attempt has been made to show the flying effort made by the various Groups each month. These detailed figures are approximate since Fighter Command Headquarters' records sometimes cannot be broken down into Groups.

March 1943

Fighter Command flew a total of 179 sorties on anti-shipping duties. There were 28 attacks and one aircraft was lost. No enemy shipping, excluding one E-boat, was sunk or damaged by Fighter Command aircraft. (3)

There was a sudden increase in enemy shipping activity in the Straits of Dover at the beginning of March. During the last two weeks, however, coincident with the moonlight period, there was no movement of importance. Two large merchant vessels attempted the passage. The first, a 290 foot merchant vessel which had been in Boulogne since the beginning of February, left the port on the night of 2/3 March and was engaged by Coastal Batteries. The convoy entered Calais but the large vessel was not located by daylight air reconnaissance and was presumed sunk. The Penthievre (2,382 tons) was in fact sunk by the Dover batteries on 2 March. The second, a 320 foot merchant vessel probably carrying iron ore, left Boulogne eastwards with six escorts on the night of 11/12 March. The convoy was engaged by Coast Artillery and then by two M.T.B.s. The Dalila (3,176 tons) was sunk by surface craft off Gravelines on 11 March.

- (1) See chapter XVI - Part I.
(2) For details of the development of this system, see Volume III, chapters IV, VI and XI.
(3) Estimate of flying effort during March by the various Groups:-

	Sorties	Attacks	Wastage
No. 10 Group	41	4	-
No. 11 Group	94	6	1
No. 12 Group	44	18	-

On the night of 5/6 March, a number of German naval units, comprising four "Z" class destroyers and two T-class torpedo boats, passed through the Straits westbound. The size of the units was underestimated at the time by R.D.F. and no action was taken. Subsequent air reconnaissance located the force in Le Havre and Cherbourg on 7 March. Other movements included nine minesweepers, one Sperrbrecher, a large coaster and escort vessels. There was a considerable increase in the volume of enemy small sized coastal shipping. Although many of these vessels might have been on passage, there was also an increase in minesweeping.

The number of air attacks on shipping increased, but in many cases good targets did not coincide with suitable flying conditions. Thus, on 7/8 March, two Albacore aircraft of No. 841 F.A.A. Squadron under Swingate R.D.F. control, were unable to locate six small vessels minesweeping off Cap Gris Nez. Six small minesweepers, operating off Blanc Nez, were attacked by a Whirlwind bomber of No. 137 Squadron on 13/14 March with no result.

April

Fighter Command
Form Y

Fighter Command sorties increased to 723, with 97 attacks and 16 aircraft lost. (1) Four small enemy vessels of 815 tons were sunk by Fighter Command during the month and one of 889 tons damaged. (2)

On 5 April, the auxiliary minesweeper Arendje Jacoba - (M.3818) of 131 tons was sunk in position 5026N x 0115E. Typhoons of No.609 Squadron attacked four R-boats and a vessel, estimated 500 tons, three miles south of Le Touquet and probably sank this vessel.

On 17/18 April, three Whirlwind bombers of No.137 Squadron attacked two R-boats and two trawlers near Berck Buoy. One trawler was seen to blow up. This might have been the auxiliary minesweeper M.3817 of 300 tons which sank in position 5025N x 0125E on 18 April.

On 27 April, six Whirlwind bombers of No.263 Squadron, No.10 Group, escorted by ten Spitfire VI of No.616 Squadron as close escort and 12 Spitfire VB(LR) of No.504 Squadron as anti-flak escort, attacked a convoy south west of Jersey and ten miles west of Corbiere Point. The convoy had been sighted earlier in the day by two Mustangs of Army Co-operation Command on shipping reconnaissance. As a result of the attack, the auxiliary minesweeping trawler Etienne Rimbert - (M.4611) (197 tons) and the Helma (187 tons) were sunk.

(1) Estimated details of Group flying in April 1943:-

	Sorties	Attacks	Wastage
No.10 Group	327	53	4
No.11 Group	300	36	9
No.12 Group	96	8	3

- (2) This last vessel was the Swedish vessel Amsterdam damaged off the Dutch coast on 27 April according to enemy records. No attack by Fighter Command or Coastal Command aircraft can be traced on this date. If this date is incorrect, the vessel might have been damaged in the No.16 Group strike on 29 April.

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A.D.G.B. File
S.31523

One large 380 foot enemy merchant vessel passed successfully through the Straits eastwards during the month. The convoy in which she was proceeding, together with a 320 foot merchant vessel and escorts, was engaged by Coastal Batteries between Cap Gris Nez and Calais on the night of 4/5 April. It was thought that the whole convoy then entered Calais. However, at daylight, the larger vessel was located by air reconnaissance in Dunkirk. The other possibility was that the vessel had passed through the previous night and that her size had been much underestimated by R.D.F.

Enemy coastal activity by small vessels was on about the same scale as the preceding month, though there was a greater concentration of shipping during the first two weeks, particularly south of Boulogne.

May

Fighter Command
Form Y

Fighter Command sorties rose to 953 with 78 attacks and 9 aircraft lost.⁽¹⁾ One enemy vessel of 421 tons was sunk. This was the Dutch sailing vessel Oost Vlandered which was probably sunk in attack on 21/22 May by five Whirlwind bombers of No.263 squadron from No.10 Group off Cherbourg.

A.D.G.B. File
S.31523

On thirteen nights of the month, no enemy shipping was detected moving in the Straits of Dover. Movements during the moonlight period were practically negligible. It was considered at the time that this was due to the attacks of Whirlwind bombers of No.137 Squadron.

One large 400 foot merchant vessel with a smaller vessel and eight escorts left Boulogne eastwards at 2120 hours on 1 May. Owing to unsuitable weather, neither surface craft nor aircraft could operate. Coastal Batteries engaged the convoy and one hit was claimed on the main target. The convoy continued on its passage eastward undamaged.

On the night of 24/25 May, three small vessels were detected passing westwards. Weather conditions once more prevented aircraft and coastal forces from operating, and, partly owing to the size of these vessels being underestimated by R.D.F., but chiefly owing to a false report being received from R.D.F. that they had entered Boulogne, they were able to make the passage westward unmolested. Later, P.R.U. reports proved them to have been three Moewe class torpedo boats on passage from Dunkirk to Cherbourg.

Other enemy shipping activity was confined to small coastal traffic and patrols. The increase in numbers of gun barges located by P.R.U. suggested that these heavily armed craft were now being used both for escort duties and coastal traffic.

Albacore aircraft of No.841 Squadron during the dark period and Whirlwind bombers of No.137 Squadron during the moonlight periods, maintained patrols in the channel area whenever weather was suitable. The fact that the Albacores,

(1) Estimated details of Group flying in May 1943:-

	Sorties	Attacks	Wastage
No.10 Group	378	39	1
No.11 Group	248	27	5
No.12 Group	327	12	3

owing to their slow speed and vulnerability, were not permitted to attack within two miles of the enemy coast, reduced the number of targets available to them. The tendency for enemy shipping to hug the coast was becoming more and more pronounced. Whirlwind aircraft carried out four attacks during the first part of the light period. In addition, on 17/18 May, some twelve to fifteen vessels were attacked west of Dunkirk over a period of two hours by ten Whirlwinds. The vessels were identified as M class minesweepers, gun barges and ~~E-R~~ boats. One vessel was claimed sunk and seven damaged, but these claims cannot be confirmed from post war records. One Whirlwind bomber failed to return.

June

Fighter Command
Form Y

Fighter Command sorties rose to 1,078, with 127 attacks and 13 aircraft lost. (1) One M-class minesweeper, M.83 of 750 tons, was sunk on 15 June. No.263 Squadron from No.10 Group, sank this vessel in an attack by four Whirlwind bombers, escorted by eight Spitfires of No.504 Squadron as escort cover, and eight Spitfires of No.616 squadron as anti-flak escort. Four minesweepers were sighted in the Guernsey/Sark area and two were attacked with 8 x 250lb bombs, cannon and M.G. fire and claimed as damaged.

A.D.G.B. File
S.31523

On eight nights during the month, no enemy shipping was detected moving in the Straits. It was again noticeable that movements during the light periods were few and far between.

At 0750 hours on 6 June, radar detected one medium and two small vessels entering Boulogne from the southward. P.R. aircraft later identified the larger vessel as a 1,800 ton vessel known to Intelligence as the M.67. Unfortunately, two Whirlwinds of No.137 and two Typhoons of No.609 Squadron, on anti-shipping patrol from Gris Nez southward, attacked vessels which they sighted north of Boulogne and the M.67 entered Boulogne unmolested. In anticipation of this vessel proceeding to Dunkirk on the following night, our Coastal Forces were disposed to intercept off Gravelines and as no movement of a large vessel had been detected by 0200 hours, which was the latest time at which she could sail to reach Dunkirk in darkness, they were recalled. On the morning of 7 June, M.67 was located in Calais, and it became clear that radar had underestimated the size of the vessels comprising a convoy plotted from Boulogne to Calais and described as small. M.67 left Calais at 2330 hours on 7 June and our coastal forces attempted to attack, in conjunction with Albacore aircraft, off Gravelines in the early hours of the 8th, but were unable to penetrate the screen. The vessel entered Dunkirk and proceeded eastward on the following night.

At 0340 hours on 28 June, one large and six smaller vessels were detected by radar off Etaples proceeding north. At 0505 hours they entered Boulogne and aircraft later reported one vessel of about 1,800 tons. It was established

(1) Estimated details of Group flying was as follows in June 1943:-

	Sorties	Attacks	Wastage
No.10 Group	215	4	4
No.11 Group	528	68	3
No.12 Group	335	55	6

that this was the vessel known to Intelligence as M.59. At 2220 hours on 28 June, radar reported that the vessel, escorted by two medium and eight small craft, was leaving Boulogne for the north. Weather conditions were unsuitable for coastal craft and four Bomphoons with Typhoon escorts were despatched to attack between Gris Nez and Boulogne. The Bomphoons failed to sight the target but the Typhoons attacked with cannon fire, claiming hits on some of the escorts. Coastal Artillery engaged the convoy between Gris Nez and Blanc Nez. The convoy became somewhat disorganised but proceeded eastwards. Two Albacores of No. 841 Squadron attacked with bombs off Gravelines and claimed to have straddled the larger vessel which, however, entered Dunkirk.

A.H.B./IIAI/
1/1/3(A)

Such transfers of enemy merchant vessels from French west coast ports to the North Sea had been resumed again in March 1943 after a lapse of three months. The M.E.W. considered that further transfers were likely as the shortage of shipping became acute in the North Sea area, and issued on 9 April 1943 a paper on 'Enemy merchant shipping (excluding tankers) south of Dover available for transfer to the North Sea area as at 25 March 1943'. In this analysis, the M.E.W. estimated that after deduction of vessels known to be under or in need of extensive repair or overhaul and shipping needed for the maintenance of economic requirements in the Channel Islands and Biscay area, 34 vessels totalling 104,320 g.r.t. would be available for transfer. Of this, 51,492 g.r.t. consisted of diesel driven, oil fired or passenger vessels, the use of which would be subject to qualifications. It was believed that the enemy's policy would be to concentrate on the balance of 52,828 g.r.t. comprising 18 coal fired vessels and that his first choice would fall on those of 2,000 g.r.t. and over, namely 11 vessels of 42,631 g.r.t. In actual fact, during the whole period until the Allied landings in Normandy, the enemy was engaged in transferring large and medium merchant vessels, tankers and so on through the Straits of Dover.

No.841 squadron maintained patrols in the Channel area whenever weather was suitable. No.137 Squadron (Whirlwinds) was relieved on 12 June by No. 3 Squadron (Bomphoons).

(vii) No.10 Group Fighter Command request control of anti-shipping operations in the West Channel area

A.H.B./IIH/240/
10/9 Encl. 51A

On 28 June, No.10 Group stated that they were actually carrying out reconnaissance and attack of enemy shipping in the western part of the English Channel which was the responsibility of Nos.16 and 19 Groups. It was stated that neither No.16 nor 19 Group provided aircraft for day to day reconnaissance which was carried out daily between Pointe Barfleur and Ushant by No.10 Group. Additional reconnaissance or even armed reconnaissance was flown if there was any indication of enemy shipping. In addition, the Group had Mosquito aircraft for use on photographic reconnaissance. Further, neither No.16 nor No.19 Group had aircraft available to attack shipping in lanes between Pointe Barfleur and Brest or in Cherbourg, St. Malo or Brest. No.10 Group had two fighter-bomber squadrons (one Typhoon bomber, one Whirlwind bomber) and one Hurricane IV squadron which were used to attack shipping at sea. The Typhoons and Whirlwinds were also used to attack shipping in Brest and Cherbourg. No.2 Group was immediately informed of shipping that could not be attacked by No.10 Group and a squadron was moved to a No.10 Group airfield if available. All co-ordination regarding

fighter escort and cover was made by No.10 Group. Liaison with Nos.16 and 19 Groups regarding information of shipping movements was bad although there was good liaison with the Plymouth Command. No.10 Group, therefore, requested that they should have responsibility for the attack of Class II and III enemy shipping between Ushant and Barfleur and in the harbours of Brest, St. Malo and Cherbourg, just as No.11 Group had responsibility over the Channel Stop area.

ibid
Encl. 53A

Coastal Command replied on 12 July that the resources of No.10 Group were not considered sufficient to cover the extensive area suggested in regard to either reconnaissance or attack power. The Tripartite Pact was not intended to be rigid and No.10 Group had full authority to carry out shipping reconnaissances and attacks in their sea area. Close liaison with the two Coastal Command Groups was essential.

ibid
Encl. 88A

Later in the year, on 16 December 1943, at the request of Coastal Command, the Tripartite Pact was amended so that No.10 Group could be asked by Nos.16 or 19 Groups to carry out special reconnaissance in coastal waters between Cherbourg and St. Nazaire, using aircraft employed on Instep patrols if necessary.

(viii) Difficulties in co-operation between Nos.12 and 16 Groups

A.H.B./IIH1/
104/1/7 Encl.
43A

A meeting was held at C.C.H.Q. on 14 July 1943 to discuss difficulties which had arisen in the co-operation between No. 12 and No.16 Groups for anti-shipping reconnaissance off the Dutch coast. No.16 Group stated that opportunities for strikes had been lost because check reconnaissance aircraft and photographs had not been available. It was agreed that two Mustangs should be available for check reconnaissance on the return of the Lagoon and Beaufighter reconnaissance in the morning, and of the Lagoon reconnaissance in the afternoon. This would entail two short stand-by periods daily. Fighter Command stated that, owing to Tactical Air Force commitments it was impossible to employ the same Mustang squadrons on shipping reconnaissance. Fighter Command agreed to issue instructions to No.12 Group that a shipping reconnaissance was to take precedence over operations Distil⁽¹⁾ or Rhubarb.⁽²⁾ Fighter escort from No.12 Group for a shipping strike would take precedence over a Rodeo.⁽³⁾ It was agreed that close co-ordination of operations was necessary.⁽⁴⁾

A.H.B. Narrative
on A.D.G.B. Vol.
IV

ibid

A.H.B./IIK/
67/560 CCOI
No.115

- (1) Operation Distil was the attack by Fighter Command aircraft on enemy minesweeping aircraft after Bomber Command minelaying.
- (2) Operation Rhubarb was the code word for patrols by single fighters of a formation up to flight strength over enemy occupied territory under cloud cover. The primary aim was to attack enemy aircraft in flight. If none were seen, suitable ground objectives might be attacked.
- (3) Operation Rodeo covered fighter sweeps over enemy territory without bombers.
- (4) Arrangements were made on 1 August 1943 for the Duty Air Commodore at Fighter Command to centralise all information with a view to avoiding clashes of day offensive operations in the area between Texel and Brest.

ibid
No.12 Gp. O.I.
No.59/1943
Encl.44A

A new operational instruction for No.12 Group was issued on 18 July as a result of this meeting to cover the shipping reconnaissance off the Dutch coast. The code word for these patrols was 'Lagoon' (amended on 2 August to 'Jim Crow!'). It was emphasised that the acquisition of information must take precedence over the avoidance of detection. In particular, photographs taken from sea level or a great height were useless. In certain cases such as check reconnaissance before a strike or when pilots considered their photographs to warrant it, aircraft would be directed to land at North Coates.

On 23 July, No.12 Group reported that it was now impossible to carry out all Lagoons with Mustang squadrons. The number of Mustang squadrons in the Group had decreased and the number of Lagoons had greatly increased. They, therefore, proposed using one of the four long-range Spitfire squadrons (Nos.611, 118, 402 and 416 Squadrons) in turn with the two Mustang squadrons (Nos.309 and 613 Squadrons) on these duties.

Arrangements were also made on 9 August for small strikes by six or eight Beaufighters to take place against enemy minesweeping and escort vessels lying along the convoy route between Hook and Terschelling. Such strikes would be carried out only if there was very little possibility of a major strike, if No.12 Group could provide escort, if weather conditions were suitable, and provided that the target had no additional A.A. support from shore guns or Flak ships.

(ix) Diversion of enemy Iron Ore/Coal and Coke traffic from Rotterdam to Emden

AHB/IIA3/1/1/3
(A) M.E.W.
Reports by
E.B.4 - May
1943

It was observed by air reconnaissance throughout May 1943 that the average quantity of active shipping (excluding tankers) at Rotterdam and Emden showed a decline in port activity at the former and a sharp increase in traffic at the latter. From the table appearing below, it will be seen that during the summer of 1942, the average quantity of tonnage present at Rotterdam was 100,000 G.R.T., whereas that at Emden was 39,000 G.R.T.⁽¹⁾ During the winter when iron ore

(1) Average of active shipping (excluding tankers and ships of under 1,000 G.R.T.):—

		<u>Rotterdam</u>	<u>Emden</u>
<u>1942</u>	January	Not available	Not available
	February	" "	" "
	March	" "	" "
	April	85,000	22,000
	May	106,000	37,000
	June	100,000	47,000
	July	98,000	46,000
	August	104,000	44,000
	September	91,000	Not available
	October	81,000	" "
	November	70,000	" "
	December	67,000	41,000
<u>1943</u>	January	56,000	10,000
	February	75,000	17,000
	March	52,000	7,000
	April	67,000	46,000
	May	37,000	90,000

shipments from Lulea were suspended, there was naturally a decline in the shipping using both ports. The January 1943 figure of 56,000 G.R.T. was therefore in no way abnormal. The rise at Emden in April 1943 was certainly substantial but in the absence of any definite evidence of a decline in Rotterdam this could have been ascribed to a number of other reasons. During May 1943, port activity at Rotterdam as seen from photographic reconnaissance had declined to the lowest level so far observed, while traffic at Emden had increased to 80 per cent above the previous highest concentration seen in that port. At the end of May, there was only 37,000 G.R.T. of active shipping in Rotterdam as compared with 90,000 at Emden. One at least of the ships seen at Emden, an ore carrier of 5,806 G.R.T., had previously been observed at Rotterdam.

There was no doubt that Germany intended to maintain the Rotterdam trade at the highest possible level in 1943 as was made clear from the German Iron Ore Freight Agreement, concluded at the beginning of the year to cover the period 1 February - 31 December, which held out yet further inducements to the Swedes to continue sailing to Rotterdam. Likewise, the scale of deliveries of German coal and coke to that port for Swedish account up till the beginning of May indicated Germany's intention to maintain her part of the bargain.

The transfer of traffic from Rotterdam to Emden, if only temporarily, therefore, represented a sudden and notable reversal of German policy.

Two possible causes for this transfer were suggested at the time:-

- (a) The bombing of the Ruhr.
- (b) The increased weight and effectiveness of the attacks by Coastal Command and light naval forces on the convoys proceeding along the Dutch coast.

In the light of the evidence available at the time, the switch-over of traffic from Rotterdam to Emden could not be attributed to the direct or indirect effects of the bombing of the Ruhr. Since the beginning of April, however, there had been a marked increase in the number of casualties inflicted on convoys operating off the Dutch coast, for which the North Coates Strike Wing could be held responsible. Of the total of ten ships sunk off this coastline during April and May, (1) only one was a Swedish cargo vessel of 4,251 G.R.T. Nevertheless, Swedish apprehension for the safety of their ships on this route, which was evident throughout 1942, had recently been revived. The losses (2) had received a considerable amount of press publicity.

According to information available to M.E.W. at the time, it appeared practically certain that the Swedes had

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- (1) In April 1943, five ships of 19,293 G.R.T. had been sunk; four of which were victims of the Strike Wing. In May 1943, a further five ships of 5,395 G.R.T. were sunk off the Dutch coast, of which three were credited to strike Wing action. The balance was by air laid mines.
 - (2) In addition to one ship lost by direct attack at sea, another Swedish ship of 3,088 G.R.T. had been lost through mines and one of 1,521 tons seriously damaged.

precipitated this switch over.⁽¹⁾ Their vessels originally routed for Rotterdam had been held-up at Borkum and subsequently diverted thence to Emden. It was also reported that the Swedish Insurance Companies had refused hull insurance to vessels proceeding as far as Rotterdam. It thus appeared that, making the most of their recent losses, Sweden had forced Germany to abandon the concentration of their coal and coke supplies at Rotterdam. If this was so, it meant that the Germans were prepared to sacrifice the convenience of their internal transport system to maintain in service generally the maximum amount of Swedish tonnage - a sacrifice which it was well believed Germany was prepared to make in view of the growing stringency of her mercantile shipping position.

(x) A conflict of priorities threatens the existence of the Strike Wing.

AHB/IHK/54/11/
361 Attack on
enemy shipping
off Danish and
Dutch coasts.
H.Q.C.C. File
S.15207

As the summer progressed, the Air Officer Commanding-in-Chief, Coastal Command, became increasingly anxious about the Beaufighter position and on 8 August 1943, he informed the Air Ministry of the dilemma with which he was confronted.

The North Coates Wing of No.16 Group consisted of three squadrons of Beaufighters,⁽²⁾ a total of sixty first-line aircraft, with a personnel establishment of seventy-two aircrews and 1,309 officers and other ranks. Its primary role was the destruction of enemy convoys off the Dutch coast. The squadron's establishment had been based on the assumption that it would take part, on an average, in five strikes a month.

From the time that the wing started to operate on 18 April 1943 to 31 July 1943, fifty-six enemy convoys were estimated to have run between the Hook of Holland and the Elbe. Of these, fifty-five were sighted by reconnaissance aircraft but only nine strikes were made. On the other forty-six occasions, no action was possible for various reasons.⁽³⁾

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- (1) In the eighth report by the Reichskommissar for Shipping, covering the period from August to November 1943, inclusive, it is stated 'in view of the refusal of the Scandinavian shipowners to sail to Rotterdam it has been necessary to reduce this traffic considerably. It is, however, being maintained to a certain extent by German ships and due to the difficulties in making trucks available for coastal coal transports of Army Command, it has been considerably increased! (Ref. C.D.1036 - Effects of Air Attacks on German Sea Communications).
- (2) One of Torpedo-Beaufighters and two for anti-flak escort.
- (3) Thirteen strikes were cancelled after briefing:-
- | | |
|--------------------------------|---|
| Weather | 4 |
| Poor photos. and faulty recce. | 6 |
| Out of fighter range | 2 |
| Ships in convoy too small | 1 |

In thirty three cases, no action was taken after sighting:-

Convoy out of range	19
Wing released	9
Weather	2
No fighter cover available	3

From the above remarks, it will be seen that the North Coates Wing up to date had only been able to fly about half the number of strikes for which it was established. The failure to provide fighter cover and faulty reconnaissance made up the other half. It was in no way suggested that there had been any lack of willingness on the part of Fighter Command to co-operate. In view of the growing number of bomber operations, particularly by the U.S. medium bombers, requiring fighter cover, it had been stated on behalf of the Air Officer Commanding-in-Chief, Fighter Command, on 14 July 1943, that there was likely to be increasing difficulty in finding sufficient fighter escorts for shipping strikes. It had also been made clear, at the same time, that during certain projected operations, no fighter cover at all would be available for strikes against enemy convoys off the Dutch coast. With this possibility in mind, there appeared to be two clear alternatives:-

- (a) Close co-operation with North Coates Wing in anti-shipping strikes on the Dutch coast must be recognised as the primary role of three single-engined Fighter Squadrons; or
- (b) the existing position would have to be accepted, including the probability that the Wing would in future pay even leaner dividends than heretofore.

This problem obviously involved a conflict of priorities which could only be decided on the highest level of policy. If alternative (b) was inevitable, the Air Officer Commanding-in-Chief felt bound to question whether it was justifiable to lock up so valuable a proportion of the available capital in a venture which produced so small a dividend.

The importance to the enemy of the Hook - Elbe convoys, and the serious view which he took of the activities of the strike Wing were demonstrated by the marked increase in the scale of escorts which were provided for protection at this time. On the other hand, these things had to be weighed against other considerations, notably in connection with the U-boat war. The employment of some of the personnel to increase the establishments of the anti-U boat squadrons would increase the number of A/U sorties that could be flown by the squadrons concerned.

Moreover, Coastal Command were already faced with the inevitable increase in the strength of enemy fighter opposition in the Bay of Biscay, and the inability to protect the anti-U boat squadrons against such intensified opposition might well affect the outcome of the Bay offensive. Some increase in the long-range fighter support available to No.19 Group was essential. The Air Officer Commanding-in-Chief, Coastal Command, felt that he would not be justified in asking Fighter Command to provide this support - which it was assumed could only be met at the expense of other important commitments - unless it could be shown that the Beaufighter squadrons of the North Coates Wing were performing so useful a function that they could not be spared for participation in the Bay offensive.

It will be apparent that this problem involved, either way, a potential additional commitment for Fighter Command - the provision on the one hand of regular cover for the North Coates Wing and, on the other, of additional regular fighter co-operation in the Bay offensive. The latter problem in particular was one of some urgency.

SECRET

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In the opinion of the Air Officer Commanding-in-Chief, this subject did not appear to be suitable for discussion by the Aircraft Anti-Ship Committee, and, therefore, a request was made for the whole matter to be put before a conference of representatives of the Admiralty, Air Ministry, Ministry of Economic Warfare, Commander-in-Chief, Nore, Fighter and Coastal Commands.

Ibid
Encl.44A

Ibid
Encl.46A

Meanwhile, as a first step, the Ministry of Economic Warfare was requested by the Naval Staff to state a case for the continuation of the present scale of air attack on enemy shipping moving along the Dutch coast. A paper was produced on 18 August 1943, and circulated to all concerned.⁽¹⁾ It was clear from this report that the results achieved by the North Coates Wing were more widespread than appeared on the surface; the toll of sunk and damaged enemy ships by no means indicated the full extent of their achievements.

At the meeting which was held at the Air Ministry on 20 August 1943, a forceful argument was put forward by the representatives of the Admiralty and M.E.W., namely that the operations of the Strike Wing were complementary to the night operations of the Nore Flotilla; if the former was abandoned, the enemy would, in effect, be granted the freedom of the Dutch coast by day, and the light craft of the Nore Flotilla would be left without opportunity for night attack. It was also stressed that the recent decline in the targets for attack by the Wing was considered to be due, in some measure, to the successes achieved in April and May 1943, which had been partly instrumental in causing the transference of trade from Rotterdam to Emden and other German North Sea ports. Incidentally, many of these ports lay beyond the range of any single-engined fighters which at this time were available to escort the Wing. It was suggested that the bombing of those ports might induce the enemy to resort again to the greater use of Rotterdam, which could, in turn, increase the opportunities for attack by the North Coates Wing. Finally, the operations of the Wing and its fighter escorts had compelled the enemy to strengthen his fighter defences on the Dutch coast at the expense of other vital areas.

To sum up, the attacks by Coastal Command's Strike Wing and the Nore Flotilla upon enemy shipping, the American daylight bombing, the night bombing and mine-laying of Bomber Command, and the action of the fighter escorts, were all complementary and cumulative in their results. The effects of each one aggravated and increased those of the others; the cessation of any one might well go far to stultify the activities of the others by creating a loop-hole for escape.

In consequence, the final decision of the conference was that the North Coates Wing should continue to operate; that, in spite of the severe strain on their resources, Fighter Command should guarantee the provision of three squadrons for escort duties on all occasions, except when a major daylight bombing raid was scheduled. Certain other arrangements were made to ensure even closer liaison between the Coastal and Fighter Groups concerned. In view of the manning position,

(1) A copy of this report is at Appendix XV.

there was no question of providing special aircraft with G.R. trained crews for reconnaissance duties although it was agreed that this would be the ideal solution. The Commander-in-Chief, Fighter Command stated, however, that he would be very willing to provide a few pilots for special G.R. training and undertook to discuss the matter with the Commander-in-Chief, Coastal Command.

A.H.B./IIH1/104/
1/7 Encl. 58A

On 21 August, the A.O.C., No.16 Group requested that one squadron of Beaufighters of the North Coates Wing might be established on a variable opportunity instead of a fleeting opportunity basis in order that a small margin of effort might be held in reserve. He pointed out that much reconnaissance was still done by the Wing. In order that the Wing could make two strikes a week and each time attack two merchant vessels and six escort vessels in addition to providing largely for its own reconnaissance it was recommended that the whole Wing should be established on a variable opportunity basis.

ibid.
Encl. 64A

In reply, on 13 September, C.C.H.Q. noted that over a period of five months, only ten Wing strikes had been made. Since then, the volume of enemy shipping sailing between the Elbe and the Hook had decreased very considerably and it was not considered that sufficient targets would be available to allow for more than one strike per week. In the circumstances, there was no justification for raising the establishment of the wing.

(xi) (a) Operations by No.16 Group. July to September 1943

July

No.16 Gp.
O.R.B. App.
July 1943.

Anti-shipping sorties by aircraft of No.16 Group rose to 298. July proved a disappointing month, however, and there were only 12 attacks whilst four aircraft were lost.⁽¹⁾ No enemy shipping was sunk or damaged.

Only one strike was carried out. On 18 July, twelve Beaufighters of No.236 Squadron (four armed with R.P. and cannon, eight with cannon only) with eleven Beaufighters of No.143 Squadron (four R.P. and seven cannon aircraft) and 12 torpedo-carrying aircraft of No.254 Squadron, set out to attack a north-bound convoy. Fighter escort was provided by 38 Spitfires from Coltishall and eight Typhoons from Matlack. The convoy, consisting of 18 vessels, of which four were reported as merchant vessels of 2,000 to 3,000 tons, had been sighted at 0707 hours by Fighter Command Mustangs of No.613 Squadron from Snailwell. Photographs showed that a large vessel of approximately 4,000 tons was joining the convoy with two escort vessels from the direction of Ijmuiden. A check reconnaissance of four more Mustangs was laid on to ascertain the convoy's speed and obtain more photographs of its disposition at about 1100 hours. After sighting the convoy near Egmond, the Mustangs were intercepted in force by enemy fighters (Me.109s and FW 190s) and three failed to return. It was hoped that it would be possible to attack

No.236 Sqdn
O.R.B.

Fighter Command
Form Y

No.236 Sqdn.
O.R.B.

(1) Beaufighter L/236 was missing on reconnaissance on 12 July. Hampden F/415 was missing on anti-shipping sweep on 16/17 July. Beaufighters E/236 and X/143 failed to return from the strike on 18 July.

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No.16 Gp.
O.R.B. App.

just south of Den Helder, but when the wing with escort of single-engine fighters reached Den Helder at 1507 hours, a convoy of 15/20 vessels was seen between Den Helder and Texel, at the west end of Marsdiep. The convoy had had too good a warning and the attack could not be carried out by torpedo aircraft in that position. The wing accordingly set course for base.

R.P./

No.236 Sqdn.
O.R.B.

Later in the day, six Beaufighters of No.236 Squadron and six of No.143 Squadron, all equipped with eight ~~25~~ 60lb heads, set out again to attack the convoy in Den Helder. Fighter escort was provided by No.12 Group Fighter Command with 37 Spitfires of Nos. 118, 416 and 402 Squadrons from Coltishall and seven Typhoons of No.56 Squadron from Matlask acting as rear cover. Landfall was made south of Helder and at 2047 hours the convoy was seen to be emerging, headed by a large vessel (later identified as a Sperrbrecher), accompanied by trawler type escorts and followed by the merchant vessels. A low level attack was carried out in the most difficult circumstances, and was directed at the leading escort vessel (the Sperrbrecher) and the merchant vessel following. Flak from shore batteries on Den Helder and the southern tip of Texel, and from the vessels themselves, was intense, and balloons flying from the vessels were disturbing in this low level attack. Enemy single-engine fighters also attacked our aircraft and four were claimed as shot down by the Spitfire escort cover. No. R.P. hits on vessels were claimed.⁽¹⁾ Beaufighters E/236 and X/143 failed to return from this attack. Three aircraft of No.143 squadron were damaged by flak.

A.H.B./IHK/54/
11/361 Encl.
37

No.16 Group stated on 26 July that it was decided to attack in Den Helder on this occasion to discourage the enemy from using the anchorage. During the latter part of June and in July, frequent use had been made of Den Helder to avoid air attack. Apparently the enemy had realised that, owing to the time factor in organising a strike, it was safe to proceed soon after being sighted at anchor, as a subsequent reconnaissance would have to be sent to ascertain whether the convoy was still in harbour or at sea again. By the time a strike could be made, the convoy would be four hours steaming from Den Helder in the vicinity of Terschelling Bank where it would be at the extreme range of our fighter escort, if not out of it altogether. No.16 Group stated that no convoys had been observed in Den Helder during the past week and it was possible that the use of this anchorage had been temporarily discouraged.

The same report mentioned the training difficulties experienced by the North Coates Wing owing to the long periods during which the Wing was standing by for operations. It was noted that the particular form of attack used in this Den Helder operation - an approach from sea level and then a pull up sufficient to aim R.P. - had not been practised before by any of the crews. The present allocation of time for training, mainly between 1400 and 1600 hours on days when no target was apparently available, was regarded as inadequate. It was suggested that the Wing should not be kept at availability more than three or four days at a time and should then be completely stood down, no matter what targets presented themselves, in order that essential training could take place.

(1) No damage to this convoy had been established by enemy records.

SECRET

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No.16 Group
O.R.B. App.
July 1943

A Wing strike was ordered on 8 July but had to be recalled owing to the fact that all the squadrons were late on take off and, partly owing to bad visibility, the wing leader found it impossible to obtain control of the formation.

A.H.B./IHK/54/
11/361 Encl.33

No.16 Group also reported that on 16 July, a convoy of eight merchant vessels and nine escorts passed unmolested down the Dutch coast through no fault of the North Coates Wing. The convoy was first sighted at 1150 hours by Beau-fighter L/254 off Texel Island. It was impossible to strike before the convoy reached water too shallow for torpedo attack and it was also thought possible that the convoy might temporarily anchor in Den Helder. It was therefore arranged to attack ten miles from the Hook where the convoy would again enter water of sufficient depth. No.12 Group Fighter Command was asked for a check reconnaissance to be on datum at 1430 hours in order to obtain photographs of the dispositions of the vessels. Great importance was attached to this reconnaissance as information had been received that extra escorts were to join the convoy at Den Helder.

The check reconnaissance of No.12 Group found and photographed the convoy just north of Egmond at 1425 hours. The pilot did not see land nor did the photographs show any land, and the position was believed to be doubtful. Instead of returning to North Coates with the photographs, the Mustang pilot landed back at Snailwell and the photographs were sent over to North Coates when developed. No information for briefing could be obtained from the photographs as they were indistinct and had been taken at too great a range. Moreover, the pilot could not be interrogated as a different pilot was sent over with the photographs. It was decided that a blind attack was not advisable as there were only ten miles of water in which torpedoes could run and the position given was doubtful. The strike was, therefore, called off.

Other operations during July consisted of reconnaissance by single or small groups of Beaufighters or Nos.143, 236 and 254 Squadrons. Hampdens of No.415 Squadron carried out anti-shipping sweeps on four nights of the month.

August

No.16 Group flew 218 anti-shipping sorties, with 51 attacks and four aircraft missing.⁽¹⁾ Two enemy vessels totalling 3,014 tons were sunk.

The chief operation of the month was a Wing attack on 2 August on a convoy of 18 vessels sighted at 0623 hours in position 5333N x 0524E by Beaufighter X/254 on early morning reconnaissance. The wing consisted of 14 R.P. and cannon Beaufighters of No.236 Squadron, 12 Torpedo Beaufighters of No.254 Squadron and ten R.P. and cannon Beaufighters of No.143 Squadron, and was ordered to attack in estimated position 5305N x 0435E. Fighter escort was provided by No.12 Group Fighter Command with 51 Spitfires V (L.R.) of Nos.416, 402, 118 and 611 Squadrons. The convoy was sighted at 1134 hours

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- (1) Beaufighter A/143 was missing on reconnaissance on 1 August. Beaufighter M/143 crashed owing to flak damage received on strike on 2 August and was written off.
Hampden R/415 was missing on reconnaissance on 15/16 August. Hampden U/415 was missing on Roam patrol on 18/19 August.

No.16 Gp.
O.R.B.

F.C. Form Y

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off Kijkduin Light. It consisted of four large merchant vessels and two smaller merchant vessels escorted by five M Class minesweepers and eight or nine auxiliary craft. The attack was made from the west into the rear of the convoy which was apparently caught unawares, since our aircraft met no flak or A.A. fire until well in. On turning away, flak became accurate and intense. Nos.236 and 143 Squadrons attacked escort vessels and saw hits by torpedoes of No.254 Squadron on merchant vessels. Spitfire escort engaged two Me 109s at the south of the convoy and six to the north, driving off one which was attacking X/254. They claimed four Me 109s destroyed and one probably destroyed without loss to themselves. Beaufighter M/143 sustained severe flak damage but managed to return to Coltishall on one engine and crash land. No injury was received by the crew but the aircraft was written off. Post-war records establish that the German merchant vessel Fortuna of 2,700 tons and the escort trawler Arctur (VP1108) of 314 tons were sunk.

One other strike was carried out, on 23 August. Twelve R.P. and cannon Beaufighters of No.236 Squadron were ordered to attack an enemy force of four M Class minesweepers, five merchant vessels and small escort vessels, sighted by F/236 at 1303 hours in position 5340N x 0550E. No.12 Group Fighter Command provided 21 Spitfires V of Nos.308 and 611 Squadrons as escort. All aircraft attacked escort vessels with R.P. and cannon off Texel. No damage was inflicted on the convoy.⁽¹⁾ Wing strikes on 13 and 14 August failed to find a target and a strike on 11 August was cancelled as Jim Crow check aircraft reported that the convoy was still in Den Helder.

No.16 Gp.
O.R.B. August.
CH/G3/19 Aug.

Hampdens of No.415 Squadron operated from Thorney Island on six nights of the month. No.254 Squadron carried out five night Rover patrols. On 19/20 August, for example, three Beaufighters of No.254 Squadron, equipped with contact torpedoes set to eight feet depth and flame floats were ordered to patrol shipping routes. Any suitable target was to be illuminated after attack and reported to allow other aircraft to close the target. Beaufighter A/254 sighted at 0056 hours in position 5333N x 0514E a convoy of three M Class minesweepers and two merchant vessels. One merchant vessel was attacked and an attack report sent on VHF. The other two Beaufighters picked up the message but were unable to locate the target. No operations were carried out by No.254 Squadron from 24 August to 3 September as they were re-equipping from Beaufighter VI to Beaufighter X aircraft.

A.H.B./IIH1/
104/1/7

- (1) The poor results of this strike were the subject of a meeting held at North Coates. It was stated that the aircraft sights had been harmonised for a speed of 265 knots assuming a dive of 20 degrees. It was considered that a Beaufighter was difficult to dive at this angle and probably attack dives seldom exceeded 15 degrees. The wing was instructed to practise attacks at an air-speed of 250 knots, allowing a dive of 15 degrees. As the Beaufighter was only provided with one sight which could not be harmonised for both R.P. and cannon, one flight of Nos.236 squadron was to be allocated to cannon attack and one to R.P. attack, and sights were to be harmonised according to role. Previously, it had been the practice to synchronise the sights for cannon and to aim off when using R.P.

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The whole of No.143 Squadron were detached to St. Eval on 17 August to act as fighter escort to anti-submarine patrols in the Bay of Biscay. On 24 August, the squadron moved permanently to St. Eval and came under the administration of No.19 Group.

September

No.16 Gp.
O.R.B. App.
Sept. 1943

Sorties fell to 147 with 48 attacks and four aircraft lost.(1) One enemy vessel of 550 tons was sunk.

Nos.236 and
254 Sqdns.
O.R.B.s

There were two operations by the Strike Wing, which was now reduced to Nos.236 and 254 Squadrons, on 16 and 25 September. On 16 September, six R.P. and six cannon Beaufighters of No.254 Squadron, escorted by 23 Spitfires V of Nos.308 and 611 Squadrons from No.12 Group Fighter Command, were dispatched to attack a force of six minesweepers, sighted N.E. of Terschelling by eight Spitfires of No.611 Squadron on Jim Crow reconnaissance. Beaufighter K/236 Squadron had sighted the force again at 0927 hours in 5349N x 0620E and G/236 on check reconnaissance relocated the force at 1257 hours in position 5343N x 0607E. The strike wing, less L/254 who returned with engine trouble, sighted the force of six M Class minesweepers and two trawlers in 5303N x 0438E at 1801 hours. Aircraft approached from the south and attacked with R.P. and cannon from the landward side. The Spitfire escort patrolling at 15,000 ft. sighted and fired at four Me.109s which came in below them but no results were observed. Beaufighters J and C/236 failed to return from the attack. No damage to the enemy force can be confirmed from post war evidence. No.16 Group considered that R.P. aircraft delivered their projectiles effectively but that inaccurate cannon fire was in evidence in the case of cannon aircraft. The wing were instructed to practise grouping their cannon fire.

A.H.B./IHM/
104/1/7 Encl.
66A

No.254 Sqdn.
O.R.B.

On 25 September, six torpedo and nine cannon Beaufighters of No.254 Squadron and 12 R.P. Beaufighters of No.236 Squadron were dispatched to attack a convoy of one merchant vessel and 11 escort vessels sighted by D/236 at 0722 hours in position 5330N x 0515E. Fighter escort of 34 Spitfires V((L.R.) of Nos.402, 416 and 611 Squadrons was provided by No.12 Group Fighter Command. The convoy, which now consisted of 14/18 vessels including two large and two small merchant vessels, was attacked in position 5255N x 0435E. Thirteen aircraft of No.254 Squadron and 11 of No.236 Squadron took part in the attack. Hits were claimed on two merchant vessels as well as damage to escort vessels. In fact, one escort vessel VP 316, an ex-Russian trawler of 550 tons, was sunk. Two Beaufighters, L/236 and A/254, failed to return and four Beaufighters of No.236 Squadron and six of No.254 Squadron were damaged by flak. Aircraft reported considerable very accurate heavy flak and much tracer. One rocket was seen from the rear of the convoy during the run-in. Several pilots described the flak as appearing to form a curtain rather than being aimed at specific aircraft.

No.16 Gp.
O.R.B. Sept.
1943

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- (1) Beaufighters J and C/236 were missing from the strike on 16 September.
Beaufighters L/236 and A/254 were missing from the strike on 25 September.

SECRET

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F.C. Form Y
C.C.H.Q. N.S.O.
and Controllers
logs

Interest at the beginning of the month was focused on the German liner Strasbourg (17,001 tons) which, according to post war records was damaged by mine off the Dutch coast on 1 September. At 1133 hours on 3 September, four Fighter Command Mustangs of No.309 Squadron and 12 Spitfires sighted a large liner off IJmuiden escorted by 15 minesweepers proceeding slowly on a northerly course. There was considerable discussion between C.C.H.Q., No.16 Group H.Q. and the Admiralty as to the identity of the vessel and whether a strike should be organised. P.R. photographs taken at 1515 hours on 3 September finally established the vessel as the hospital ship Strasbourg which had been for a long time in Rotterdam. The vessel was heavily camouflaged. Plans for a strike were accordingly called off. On 4 September, the Jim Crow reconnaissance reported that the Strasbourg had moved. However, Mustang F/613 sighted the vessel at 1140 hours, with minesweepers and many tugs, stationary one mile north of IJmuiden. No.16 Group considered that the vessel was not sufficiently clearly painted to qualify as a hospital ship and arranged a strike of six R/P. Beaufighters and 18 anti-flak Beaufighters, escorted by three squadrons of Spitfires and 19 Typhoons. However, the Admiralty made an immediate signal that the Strasbourg had been notified as a hospital ship and the strike, which was already airborne, was recalled. Jim Crow reconnaissance on 5 September reported at 0716 hours the Strasbourg 10 miles north of the Hook and steaming slowly south escorted by 11 auxiliary craft with five balloons. Coastal Command considered that no genuine hospital ship would have such an escort, but the Admiralty maintained their policy of no attack.

However, inadvertent attacks were made on two occasions. On the night of 15/16 September, Hampden R/415 on night rover patrol attacked the Strasbourg aground two miles west of IJmuiden. No.16 Group stated that the Strasbourg had no lights but noted that a torpedo attack was not suitable as the water was too shallow. Coastal Command repeated that the current instructions were that this was not a target. On the night of 19/20 September, MTBs claimed an attack off the Dutch coast on an 8,000 ton vessel which was, in fact, the Strasbourg.

Sorties were lower this month partly owing to the departure of No.143 Squadron and partly owing to operation Starkey,⁽¹⁾ as No.16 Group aircraft were kept at stand-by to cover this exercise from 5 - 11 September. Hampdens of No.415 Squadron operated on seven nights from Thorney Island.

(xi) (b) No.18 Group Operations - July to September 1943

July

No.18 Gp. O.R.B.
App. July 1943

Sorties rose to 201 with 13 attacks and three aircraft lost.⁽²⁾ Twenty P.R. sorties were flown on naval ports.

(1) Starkey was the code name for a large-scale invasion exercise.

(2) These were:-

On 4 July, Beaufighter K/404 was missing from a Rover in the Stadtlandet area. The aircraft was possibly shot down by Me.109s.

On 10 July, Beaufighter O/235 on Rover strike was seen to ditch after attacking merchant vessel.

On 15 July, Hampden N/455 failed to return from Rover patrol.

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Two Mosquitoes of No. 540 Squadron crashed on 11 July. One enemy vessel of 548 tons was sunk.

The important feature of July operations was the establishment of an anti-shipping unit at Sumburgh. Six Beaufighters of No. 235 Squadron, now armed with R.P., returned to No. 18 Group and were based at Sumburgh together with a detachment of four Beaufighters of No. 404 Squadron and two Mosquitoes of No. 333 Squadron. The aircraft arrived on 1 July and commenced operations on 2 July. The unit was established for the specific purpose of anti-shipping operations on the Norge coast under the direction of the Station Commander, Sumburgh. The idea was that preliminary reconnaissance should be flown by Mosquitoes of No. 333 Squadron who would report by signal any shipping sighted. Beaufighters of Nos. 235 and 404 Squadrons should stand by to take off as soon as a suitable target was reported by the Mosquitoes. In fact, the preliminary reconnaissance by No. 333 Squadron was flown on four occasions only in July and some reconnaissance was prevented by weather conditions. However, combined operations by R.P. Beaufighters of No. 235 Squadron, escorted by No. 404 Squadron from Sumburgh, and torpedo Hampdens of No. 489 Squadron, escorted by No. 404 Squadron from Wick, formed the greater part of the month's operations.

All the attacks were delivered in three of the combined Rovers by Nos. 235 and 404 Squadrons. The first operation took place on 4 July. Three Beaufighters of No. 235 Squadron, escorted by three Beaufighters of No. 404 Squadron, were despatched on Rover patrol in the Stadtlandet area. No. 235 Squadron attacked a stranded merchant vessel of 4/5,000 tons in position 6304N x 0740E with eight ~~R.P.~~ each, No. 404 Squadron aircraft circled overhead to cover the operation. Aircraft experienced flak from a nearby convoy and heavy A.A. fire from Kristiansund North. Two Me. 109s failed in an attempt to intercept O/235. One Beaufighter, K/404, failed to return. Aircraft reported that the vessel was on fire and sinking rapidly by the stern. However, no damage can be confirmed by post war records.

The second operation was on 10 July. A merchant vessel of Sperrbrecher type was attacked with RP and cannon in position 6046N x 0448E. Beaufighter O/235 was seen to lose height after the attack and finally hit the sea and break up. Three Beaufighters of No. 235 Squadron and two of No. 404 Squadron attacked. The rest of the escorting aircraft climbed to provide cover and take photographs.

The third operation was at first light on 17 July and was the only one which achieved any success. Three R.P. Beaufighters of No. 235 Squadron, escorted by five of No. 404 Squadron, attacked a merchant vessel of 2,500 to 3,000 tons in position 6047N x 0448E. Two R.P. aircraft attacked. The third, after attacking on approach with cannon and MG fire, was thrown aside by an explosion and unable to get into position to deliver an ~~R.P.~~ attack. Beaufighter E/404 attacked the merchant vessel with cannon and N/404 attacked a small escort vessel. Post-war records show that the A/S escort trawler FD61 (UJ1705) of 548 tons was sunk by aircraft attack. This was presumably the escort vessel attacked by N/404.

Aircraft employed on operations remained the same, namely Hampdens of Nos. 455 and 489 Squadrons, Beaufighters of Nos. 404 and 235 Squadrons and Mosquitoes of No. 333 Squadron.

No. 18 Gp.
O.R.B. App.
G2/30 June

R. P. /

R. P. /

SECRET

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August

No.18 Gp.
O.R.B. App.
August 1943

Sorties fell once more to 102, with fourteen attacks and three aircraft lost.⁽¹⁾ P.R. sorties totalled 23. Mosquito N/540 crash landed on 10 August. No enemy shipping was sunk or damaged.

A combined strike on 4 August by Nos.235 and 404 Squadrons on a convoy in position 6108N x 0508E failed to produce any results. Beaufighter J/404 was shot down over the convoy and F and Z/235 were so damaged that they crash landed on return. Intense accurate light flak from the convoy and flak from shore batteries was reported. On 8 August, four Hampdens of No.489 Squadron attacked a convoy in position 5805N x 0630E with torpedoes but again no results were achieved. Light flak from convoy and heavy flak from shore caused some damage to aircraft. The remainder of the attacks were made by Hampdens of No.455 Squadron, two with torpedoes on 2 and 17/18 August, and one with bombs on 15/16 August.

No.235 Sqdn.
O.R.B.

Hampdens of Nos.489 and 455 Squadrons operated as usual during August. No.404 Squadron carried out a few operations at the beginning of the month and was then withdrawn for RP training and re-equipping. New Beaufighter X aircraft began to arrive for the squadron on 22 August. No.235 Squadron were accordingly informed on 9 August that they must provide their own escort to R.P. aircraft. Arrangements were made for the whole squadron to move to Sumburgh on 23 August. This move was cancelled, however, and the squadron ordered to move immediately to St. Eval and ultimately to Portreath in No.19 Group to operate as fighters in the Bay. The move was complete by 31 August.

These changes explain the fall in the number of sorties. No.489 Squadron also reported that the weather was against shipping sorties so that they could only carry out four operations on the Norge coast.

A.H.B./IHK/54/
11/359 Encs.85,
86, 87, 88

The torpedo supply position was more satisfactory by the summer of 1943 and No.18 Group were given permission on 21 August to use torpedoes against vessels of 2,000 tons and over, instead of 2,500 tons. Only experienced crews were to be selected for torpedo attack against the smaller vessels. The restriction on the number of torpedoes which might be used against merchant vessels was withdrawn.

September

Sorties fell to a very low figure, only 36 being flown although ten attacks were delivered. One aircraft was lost.⁽²⁾ P.R. sorties totalled 21. In addition, 26 sorties, including 12 by Tarpons of No.832 Squadron (F.A.A.), were flown in an attempt to intercept the Lutzow on her passage from Norway to the Baltic.⁽³⁾ Two enemy vessels of 3,513 tons were sunk.

The first successful operation was on 16 September. Six Hampdens of No.489 Squadron were ordered to fly early

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- (1) On 4 August Beaufighter J/404 was shot down by convoy. On 15/16 August Hampden G/455 was missing on reconnaissance in Bonnel Fjord area. On 28 August Mosquito J/333 was missing on reconnaissance in Stadtlandet area.
 - (2) This was Hampden N/455 on 14 September. The aircraft was possibly shot down by a flak vessel when on Rover patrol from Kristiansand South to Egero.
 - (3) Details are in the chapter XI on Fleet Reconnaissance.

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morning Rover patrol, three in area Stavanger to Lister and three in area Lister to Kristiansand. Hampdens H, D and Z/489 on the first sorties all sighted and attacked with torpedoes, in position 5807N x 0632E, the leading merchant vessel (estimated 3,000 tons) of a convoy. The torpedo from H/489 was seen to hit on the bow. As a result, the Norwegian merchant vessel Graziella of 2,137 tons was sunk. The other major operation was an attack on 30 September by six RP Beau-fighters of No.404 Squadron on Rover patrol on a merchant vessel of 2,000 tons in position 6209N x 0403E. A total of 42 x 60lb R.P.s were used in the attack. The whole super-structure of the vessel burst into flames which appeared to reach mast height, and when left she was burning fiercely and heading for shore. This was the Norwegian merchant vessel Sanct Svithun (1,376 tons) which was beached ten miles south of Stadlandet in position 6210N x 0507E.

No.489 Sqdn.
O.R.B.

Weather conditions were partly responsible for the drop in sorties. No.489 Squadron stated that no operations at all could be carried out on 15 days and only three anti-shipping operations were possible. Hampdens of No.455 Squadron also only flew three operations and, apart from the action against the Lutzow, No.404 Squadron flew only one and No.333 none at all.

(xi) (c) No.19 Group operations - July to September 1943

No.19 Gp.
O.R.B. App.

Very few anti-shipping operations were flown during this period. In July, there were twelve sorties of which eleven were transit flights to Gibraltar. Twenty-four P.R. sorties to French ports were flown.

In August, there were only three sorties - two transit flights and one search. In addition, six aircraft on Musketry anti-submarine patrols and four Mosquitoes on fighter interceptor patrols sighted a force of three destroyers on 2 August.⁽¹⁾ Halifax C/502 attacked the force with 3 x 600lb A/S bombs in position 4550N x 1150W, but bombs undershot. However, the trawler Alcyon (VP 420) of 322 tons foundered on 2 August in position 4540N x 0126W south of Lorient. It is possible that she was hit in this attack and foundered whilst trying to put into port. No other attack in No.19 Group area can be traced to account for this loss. Twenty P.R. sorties were flown in August.

September sorties totalled eight of which two were transit flights to Gibraltar and six were flown by No.407 Squadron in accordance with operation Stovepipe⁽²⁾ Wellington Q/407 sighted a small convoy and E-boats during patrol. Twenty P.R. sorties were flown.

(xi) (d) Fighter Command operations July to September 1943

July

F.C. Form Y

Fighter Command aircraft flew 1,185 sorties on anti-shipping operations. There were 74 attacks and 11 aircraft were missing.⁽³⁾ No enemy shipping was sunk but two Swedish

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- (1) The force actually consisted of three torpedo boats. The C. in C., Plymouth Command, drew up a full report of the failure by the 2nd and 40th Escort Groups to intercept these vessels. It was noted that the differences in positions given by aircraft were confusing.
- (2) Operation Stovepipe formed part of the large scale invasion exercise - Operation Starkey.
- (3) Estimated details of Group flying in July 1943 were as follows:-

	Sorties	Attacks	Wastage
No. 10 Group	449	20	1
No. 11 Group	434	33	5
No. 12 Group	300	21	5

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merchant vessels, the Bernicia (1,532 tons) and Korso (2,762 tons), were severely damaged on 1 July in an attack by three Typhoons and three Bomphoons of No. 3 Squadron on a convoy off the Hook. One Typhoon and two Typhoon bombers failed to return.

A.D.G.B. File
S.31523

Movements of enemy shipping continued to be on a small scale especially during the moonlight periods, and on nine nights no shipping was detected. On 4/5 July, two torpedo boats, previously located by P.R.U. in Dunkirk, passed westward through the Straits. They were engaged by Coastal Batteries and attacked by two M.T.B.s, but no major damage was inflicted and the torpedo boats entered Boulogne. While in Boulogne, the vessels were unsuccessfully attacked by Bomphoons of No. 3 Squadron. They sailed westward at 0055 hours on 7 July. One Albacore, vectored on to the target under Swingate Ground Control, attacked with bombs off Etaples but no success was achieved and the enemy reached Le Havre.

Albacore aircraft of No. 841 Squadron continued to maintain patrols over the Straits whenever weather conditions were suitable, but, owing to the enemy's convoy route being close inshore and so strongly protected by his shore batteries, these aircraft had few chances of attacking the small coasters and minesweepers which comprised most of the enemy's traffic.

No. 184 Squadron (R.P. Hurricanes) took over the duty of Channel Stop from No. 3 Squadron Bomphoons.

F.C. Form Y

August

Fighter Command flew 849 sorties, there were 65 attacks and four aircraft were lost.⁽¹⁾ Three enemy vessels of 340 tons were sunk. The first was a harbour defence vessel F.O. 19 (50 tons) which was attacked with cannon by two Spitfires of No. 501 Squadron off Gravelines on 3 August. The second was the Dutch vessel Iris (200 tons) which was attacked with cannon by 11 Typhoons of No. 486 Squadron off Le Becquet on 15 August. The third was R.84 (90 tons) sunk by four R.P. Hurricanes of No. 137 Squadron which attacked two groups of vessels off Blanc Nez and Gravelines on night 19/20 August. These Hurricanes relieved No. 184 Squadron on the Channel Stop duties during the month. It was considered at the time that their activities resulted in the noticeable decrease of enemy shipping movements during the moonlight period.

A.D.G.B. File
S.31523

Movements of enemy shipping during the month appeared to be almost entirely restricted to patrols and small coastal traffic, the great majority of which took place during the dark period. There was no evidence that any merchant vessel of appreciable size moved in the Straits. On twelve nights no shipping was detected.

(1) Estimated details of Group flying in August 1943 was as follows:-

	Sorties	Attacks	Wastage
No. 10 Group	162	8	0
No. 11 Group	323	49	3
No. 12 Group	364	8	1

September

Fighter Command flew 1,130 sorties and delivered 248 attacks for the loss of 13 aircraft.⁽¹⁾ Five enemy vessels totalling 537 tons and one fishing vessel of unknown tonnage were sunk. One vessel of 5,485 tons was damaged. On 4 September, the French tug Somme (50 tons) was sunk in a cannon attack by 12 Typhoons of No.486 squadron which, with nine Typhoons of No.197 Squadron, escorted eight Bomphoons of No.183 Squadron on an offensive search for shipping off Le Havre. On 11 September, 12 Typhoons of No.486 Squadron on a similar operation with Nos.197 and 183 Squadrons attacked with cannon an E or R-boat near the mole at Le Havre. The Commandant Dollmar - (59 tons) sank that day in the Seine at Rouen. No other attack can be traced. On 14 September, 12 Typhoons of No.486 Squadron, on anti-shipping patrol off Cherbourg and Channel Islands, attacked with cannon three miles N.W. of Cherbourg a heavily armed naval auxiliary vessel, a target towing tug and two R-boats. Three vessels, the tug Balidar (134 tons), the harbour defence vessel HS12 (80 tons) and the Jean Barth - FC 12 (tonnage unknown) were sunk in this attack. On 16 September, the Rotherbaum - (VF 1515) (215 tons) was sunk in a cannon attack by 21 Typhoons of Nos.486 and 197 Squadrons on two escort vessels (estimated 1,000 tons) just off Le Havre. Three Typhoons of No.486 Squadron were missing from the attack. On the same day, the Tulane - (Sperrbrecher 16) (5,485 tons) was damaged in a cannon attack by nine Typhoons of No.198 Squadron on one tug, one armed trawler, one cargo vessel, three barges and an armed river patrol boat in the Oosterschelde.

In the Channel Stop area, two enemy vessels of appreciable size attempted passage of the Straits on 3/4 and 26/27 September and were attacked by Coastal batteries and M.T.B.s. The French vessel Madali (3,014 tons) and the R-boat depot ship Jungingen (534 tons) were sunk by M.T.B.s on 27 September.

A considerable amount of enemy minelaying by E/R boats took place during the month. The minefields had now been laid closer to the enemy coast. It was suggested that the activity in the Channel in preparation for the amphibious exercise held on 9 September might have been partly responsible for this defensive minelaying. Albacores of No.841 Squadron attacked minelayers on three occasions.⁽²⁾

The R.P. Hurricanes of No.137 Squadrons found few targets in the ^{day} light period. This was regarded as a sign of success in deterring movements of enemy shipping.

There were only five nights when no enemy shipping was detected in the Stratis, but on four others only small local patrols were plotted.

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- (1) Estimated details of Group flying in September 1943 was as follows:-

	Sorties	Attacks	Wastage
No. 10 Group	43	0	0
No. 11 Group	853	240	12
No. 12 Group	234	8	1

- (2) See also Chapter XVI - Part I on anti-E boat operations.

(xii) Fighter reconnaissance aircraft for the Dutch coast

A.H.B./IIH/240/
10/9 Encl.67A

On 7 September 1943, in a letter to the Air Ministry, the Commander-in-Chief Fighter Command referred to proposals made by Fighter Command on 23 June 1943 that certain reconnaissance squadrons should be disbanded. In view of the need which had arisen for a reliable long distance reconnaissance aircraft to operate against enemy convoys off the Dutch coast and the decisions of the Air Ministry meeting of 20 August 1943, he now recommended that No.613 Squadron (Mustangs) should be retained as a reconnaissance squadron to locate these convoys. The Mustang was the only suitable aircraft with adequate range performance and armament to operate in these areas where single engine enemy fighters were likely to be encountered. When R.P. was installed on Mustang aircraft it might be possible to use the squadron offensively. It was intended that, by arrangement with Coastal Command, the pilots of this squadron should be given special training to enable them to operate on these anti-shiping reconnaissance sorties.

Ibid
Encl.68A

The Air Ministry replied on 17 September, however, that it was impossible to accede to this request and thereby increase Fighter Command's target by one Mustang Squadron over and above the eight Fighter reconnaissance squadrons which had been provisionally approved. It was doubtful if the Mustangs could be retained even if a normal fighter squadron was given up. If Mustang aircraft were essential it was suggested that the three reserve fighter reconnaissance squadrons should be employed on this task which would give them valuable operational experience.

Ibid.
Encl.69A.

Fighter Command informed Coastal Command on 9 October that in view of this decision, the project to send pilots to Coastal Command O.T.U. for training would have to be abandoned. They were however endeavouring to make alternative arrangements.

Ibid.
Encl.73A.

On 19 October 1943 Fighter Command informed the Air Ministry that the training commitments with the Army of the three fighter reconnaissance squadrons were too heavy for them to be taken off for sufficient time to be trained to the specialist role of shipping reconnaissance duties. It was understood that a conference on 9 October 1943 under the Chairmanship of the Director of Operations (Tac) had agreed that two existing Mustang reconnaissance squadrons could be given up. The Commander-in-Chief Fighter Command urged that one of these squadrons should be retained in the reconnaissance role off the Dutch coast.

Ibid.
Encl.74A.

The Air Ministry replied on 26 October that there had been some misunderstanding and that two squadrons of P.R. aircraft were to be saved. Even if these squadrons were now equipped with Mustang aircraft the future saving would be of two Mosquito or Spitfire squadrons. Thus the Air Ministry reply of 17 September was still relevant. A further suggestion was made that Fighter Command might re-arm the fighter reconnaissance squadrons with Spitfires or other aircraft and use their allocation of Mustang III's to re-equip straight fighter squadrons. They would then be able, at their discretion, to employ one of the 12 Mustang squadrons, which they would then have, on shipping reconnaissance.

On 26 November the new Commander-in-Chief of Fighter Command informed Coastal Command of fresh proposals for the shipping reconnaissance off the Dutch coast. The two

Spitfire squadrons at Coltishall had undertaken these reconnaissance flights when a Mustang squadron was not available and had gained some experience in ship recognition. It was suggested that the pilots should attend the Coastal Command School of General Recognition at Squire's Gate in order to improve standards of recognition as far as possible. The Commander-in-Chief proposed to regard the Coltishall Wing as generally available for escort to Coastal Command Beau-fighters subject to the overriding priority of escort to Fortress bomber operations which had been imposed upon them. He also proposed to use the Digby Wing (Nos. 402 and 416 squadrons) as backers up unless required for escort to Fortresses or Marauders. Coastal Command agreed to these proposals on 5 December and noted that the advent of 45 gallon drop tanks for No.12 Group Spitfires might enable reconnaissance and wing strikes to be pushed further to the east. Arrangements had been made for fighter pilots from Coltishall to attend a special G.R. course and further courses could be arranged if required for the pilots of the Digby wing. No. 16 Group were also to send their Group Intelligence Officer to Coltishall to brief Controllers and Intelligence Officers in Coastal requirements and give them photographs of typical vessels, escorts and so on to be found off the Dutch coast.

Ibid
Encl.83A.

A.H.B./IIH1/104/
1/7 Encl.86A.

(xiii) The problem of fighter escort for anti-shipping strikes off the Norwegian coast.

On 21 September 1943 the A.O.C.-in-C. Coastal Command wrote to the Air Ministry regarding fighter escort for the two strike wings in No.18 Group at Wick and Leuchars which would be ready for operations at the end of the year. These wings had two main roles; the attack on enemy merchant shipping, tankers and supply vessels on the Norwegian coast, and the attack on enemy major units in northern waters. Many opportunities for strikes were missed in fine weather since Beaufighters could not be sent unescorted to attack enemy shipping under his single engined fighter cover. He requested that two or three Spitfire VB squadrons with the 90 gallon tank should be located in No.13 Group for escort duties.

Ibid
Encl.3.

The Air Ministry replied on 15 October that Fighter Command had examined these proposals and reached the conclusion that Mustangs or Spitfires V and IX with the 90 gallon tanks were the only aircraft with sufficient range. Even so, fighter aircraft might run dangerously short of fuel if there were any delay in picking up formations. Moreover, the Commander-in-Chief Fighter Command considered fighter escort a very difficult and fatiguing task in the weather conditions prevalent on the Norwegian coast.

IIK/54/11/115
Encl. 9A.

On 24 November the A.O.C. No.18 Group sent to C.C.H.Q. a memorandum on the attack of shipping plying between Germany and Norway and along the Norwegian coast in which he referred to a paper issued by M.E.W. on the organisation of enemy merchant shipping services along the Norwegian coast. In this paper Norway was described as Germany's heaviest shipping commitment and was said to involve the permanent employment of 600,000 G.R.T. of shipping. Moreover, it was estimated that another 60,000 G.R.T. would be permanently employed between the mainland and South Norway and along the Norwegian West coast consequent on the withdrawal by Sweden, in August 1943, of the transit traffic concessions previously granted to Germany.

AS/4/8/7
7.10.43.

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Apart from the inherent difficulties of attack on shipping along the Norwegian coast, where convoys could sail in the shelter of the Leads except for three short stretches, the fact that no single engine fighter cover was available made the timing of strikes more critical. The most profitable of the areas for attack was that between Stavanger and the Naze and here the main concentration of German fighters was to be found. Only one strike wing was available at the moment (the Wick Wing) and it would be some two months before the second wing at Leuchars was complete. Shortage of reconnaissance aircraft was another limiting factor. At present the six Mosquitoes in No.333 Squadron could only maintain a useful but small regular effort. He therefore requested that two Mustang squadrons should be established in No.18 Group to provide fighter escort, that the Mosquito flight of No.333 Squadron should be increased to a total of 20 aircraft, and that the North Coates Wing should be attached temporarily to No.18 Group until the Leuchars Wing became available.

Ibid
Encl.12.

Coastal Command Headquarters replied on 4 December that the question of long range single-engine fighter cover for the strike wings in No.18 Group was still under consideration in the Air Ministry. It was agreed that unless this force was supplied no serious threat to German shipping on the Norwegian coast could really be achieved. It was not considered that the North Coates Wing could be removed from the Dutch coast since a comparison of operations over the last eight months showed that they had carried out 17 strikes whilst No.18 Group had carried out four.⁽¹⁾ Moreover, they were responsible for many other operations such as Coastal Haunch⁽²⁾ and Canelso⁽³⁾ which could not be abandoned. An increase in the establishment of Mosquitoes for No.333 squadron had been discussed with the Air Ministry, but there was little or no hope at the moment.

No.18 Group were recommended to get the Leuchars Wing into line as soon as possible. With this end in view, arrangements had been made to despatch, almost immediately, six Beaufighter X aircraft fitted with R.P. to No.455 Squadron.

A.H.B./IHK/54/
11/115 Encl.14

On 13 December Coastal Command forwarded the memorandum by the A.O.C. No.18 Group to the Air Ministry and made another request for long range fighter aircraft. As an example of targets which were being missed on the Norwegian coast they cited traffic plotted on 12 December 1943. A total of 250,000 tons of shipping was plotted of which 110,000 tons was between Haugesund and Kristiansand South. Both torpedo and R/P Beaufighters were available to attack this shipping but, owing to there being no cloud cover and no single-engined long range fighters available, no attack could be made.

Ibid
Encl.16A.

A reply from the Air Ministry on 19 December stated that the importance of disrupting the enemy convoy system off the Norwegian coast had been stressed by the Ministry of Economic

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- (1) This was hardly a fair comparison since the North Coates Wing had been complete since April 1943 whilst No.18 Group had spent much time in conversion and training.
 - (2) The attack on enemy minesweepers.
 - (3) Anti-E-boat operations.

Warfare and was fully appreciated by the Air Ministry. However, the supply position prevented the two Mustang squadrons and additional Mosquitoes, requested by the A.O.C. No.18 Group, from being made available.

A.H.B./IHK/54/
11/118. Encl.6

The C.-in-C. Coastal Command noted in a letter to D.C.A.S. on 22 December that this decision would mean that the strike wings in No.18 Group would remain a rather uneconomical investment and opportunities would be missed for doing real damage to important convoys.

Ibid.
Encl.5.

The problem of fighter escort had also been discussed at two conferences in November in connection with the break-out of the Lutzow.⁽¹⁾ A further letter to Coastal Command from the Air Ministry on 5 December stated that Mustangs were the only aircraft of sufficient range to operate as fighter escort off Norway. Certain squadrons in the A.E.A.F. were about to be equipped with Mustang III aircraft and it was suggested that the Air Commander-in-Chief should be approached on this subject. However, in order to obtain Mustang aircraft from the A.E.A.F. to escort strikes against enemy major naval units, the Air Ministry were forced to turn down the request for fighters to escort strikes against merchant shipping off Norway. Mustang escort for anti-shipping strikes off the Norwegian coast was not obtained until 29 July 1944.

Ibid
Encl.10A.

Ibid
Encl.28.

(xiv) Proposed Attacks on convoys on the Elbe-Ems route

A.H.B./IHK/54/
11/361 Encls.
52 and 54.

On 23 September and 6 October No.16 Group approached Coastal Command on the subject of attack on enemy convoys between the Elbe and the Ems. The A.O.C. No.16 Group considered that only one unescorted operation on the tip and run principle would be possible. He wondered whether the American VIIIth Air Force could provide Thunderbolts as escorts for regular operations.

Ibid
Encl.55.

The Commander-in-Chief, Coastal Command, replied on 13 October that he foresaw grave difficulties in locating a target. Enemy convoys found leaving the Ems would be well inside Heligoland Bight, where fighter opposition and radar cover was effective, by the time an attack could be made. Westbound convoys would have to be located in the Bight, which would be extremely hazardous, in order that an attack could be made before they entered the Ems. The only alternative was to rely on forecasts of enemy convoy movements based on observations taken over a period of time or on intelligence information. The C.-in-C. felt that the chances of finding a target under these conditions were not sufficient to justify an unescorted operation by the North Coates wing. He could see no prospect of obtaining Thunderbolts from the Americans as escorts.

A.H.B./IHK/104/
1/7 Encl.81A.

In a letter to the A.O.C. No.11 Group on 26 November the A.O.C. No.16 Group summarised the measures taken to attack the Elbe-Ems convoys. Attempts had been made to use sections of four aircraft in fluid pairs in cloud conditions on the Ems-Elbe route but weather was seldom suitable. The possibility of providing long-range Spitfire escort had been discussed with the A.O.C. No.12 Group. However, even with the 45-gallon drop tanks, Spitfires could only give escort as far as Borkum on the extreme westerly fringe of the area.

(1) See Chapter XI on Fleet Reconnaissance.

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Moreover, the 45-gallon drop tanks were not yet available although No.12 Group had asked that the Spitfire Wings at Digby and Coltishall (who provided co-operation with the North Coates Wing) should have highest priority. In the meantime he wondered whether No.11 Group could provide Typhoons to escort the North Coates Wing so that operations could be carried out between Borkum and 0730E. This area should provide targets at almost any time of the day so that they could go and look in force whenever the Typhoons were available.

A.H.B./IHK/54/
11/361. Encl.
67A.

At a meeting held at No.16 Group Headquarters on 17 December at which No.11 Group were represented, it was agreed that reconnaissance in force with Typhoon escort would probably be practicable as far as 07010' E. The A.O.C. No.11 Group considered it should be heavily escorted or co-ordinated with a Fortress bombing air-raid. He was slightly apprehensive that the Typhoons would not have sufficient fuel reserve to return to base should an attack take place at the extreme easterly limit, and suggested that a joint exercise should first take place. The Typhoons would be operated from No.12 Group.

No.12 Gp.O.1.
No.1/1944.

A.H.B./IHK/54/
11/177 Encl.1.
25.1.44.

An operational instruction was drawn up to cover these operations by Typhoons acting as escort to Coastal Command strikes on the Ems-Elbe route. It was decided that such operations must be initiated by No. 12 Group since everything depended on the availability of the fighters. The arrangement was for No.12 Group to contact No.16 Group as early p.m. as possible whenever fighters were available or could be co-ordinated with a Fortress attack. The A.O.C. No.16 Group would then arrange his night flying programme for operations and training so as to leave the maximum number of aircraft available for the next day if weather conditions and fighter availability made a strike possible. In order to keep outside enemy radar cover as long as possible, aircraft would be kept well away to the northward and come in approximately down the seventh meridian. The A.O.C. No.16 Group considered that with a little experience the limiting eastern meridian might be stretched to 0716E. They would endeavour to penetrate further in but the distance would depend on the fuel consumption of the Typhoons since they must be left a comfortable margin for fighting at the eastern range.

(xv) Set-backs to enemy shipping activity

A.H.B./IIA1/1/
1/3B October
1943.

On 15 August the Swedish Government cancelled transit facilities for troops and certain types of military transport passing between Germany, Norway and Finland. The withdrawal of this concession was estimated to have increased the tonnage required for the movement of personnel and stores by some 60,000 tons. A marked increase in troop transport activity between Danish and German Baltic ports and Oslo was noted by October. Steps were taken to withdraw vessels of suitable capacity and construction from the Low Countries and Biscay area for this traffic. For example, the Nordvard had succeeded in making the passage of the Straits of Dover from Le Havre. The Munsterland had proceeded from Brest to Cherbourg. It was noteworthy that diesel vessels structurally suitable for the carriage of military personnel and stores were now included in the transfer of tonnage from the French West coast to the North Sea and Baltic.

The Swedish Government also took indirect measures to reduce Germany's iron ore imports by arranging for the repair of the railway between Lulea and Kiruna. The low rate of Swedish ore exports during the first ten days of September was at first considered to be the result of this step. However, it was not until the 29 September that the Swedish Government notified shipping interests of this measure and the fall off in ore exports was therefore believed to be due to the dislocation of shipping services owing to the bombing of Hamburg. Congestion in Emden and Bremen due to the earlier diversion of shipping from Rotterdam was increased by this further diversion of ore shipments. Photographic reconnaissance of Emden on 22 October revealed 103,000 G.R.T. of shipping, 21,000 G.R.T. more than on the previous cover three weeks earlier. By 9 October, the amount of active shipping in Hamburg had fallen to 95,000 G.R.T. which suggested that the recovery of the port was not so complete as the Germans anticipated.

The successful attack on shipping by naval aircraft from the U.S.S. carrier Ranger off Bodo on 4 October 1943⁽¹⁾ had repercussions both on troop transportation and on iron ore exports from Narvik. Intelligence reports stated that three of the vessels hit during the raid were engaged in carrying troops. The troopship Monte Rosa and another troopship from the Oslo-Germany service were transferred to the Northern Norway run. Iron ore exports from Narvik were the lowest since May 1942 and represented a decrease of 58 per cent. on the previous month.

(xvi) (a) No.16 Group Operations October to December 1943.

October

Sorties dropped still further owing to the withdrawal of No.415 squadron for conversion to a composite squadron of Albacores and Wellington XIII's.⁽²⁾ All anti-shipping sorties from No.16 Group were therefore flown by Nos.236 and 254 squadrons and totalled 117. Twenty nine attacks were carried out and one aircraft was lost.⁽³⁾ One enemy vessel of 17,001 tons was damaged.

One wing strike was carried out on 19 October. Fourteen Beaufighters of No.254 squadron and thirteen of No.236 Squadron were ordered to attack minesweepers expected to be operating in the Ijmuiden area. Six aircraft of No.236 Squadron were armed with R.P.; all the other Beaufighters were armed with cannon. Fighter escort was provided by 36 Spitfires V (L.R.) of Nos.64, 416 and 611 Squadrons from Coltishall. At 1111 hours, due west of Ijmuiden, the Wing sighted and attacked the Strasbourg (17,001 tons), at least one tug, one trawler, one M-class minesweeper, and one probable gun barge.⁽⁴⁾ It was

- (1) Operation Leader. Five ships were sunk and five others damaged.
- (2) Details of the events leading up to this decision are given in Chapter on anti-E-boat operations.
- (3) This was Beaufighter L/236 missing from the strike on 19 October.
- (4) See No.16 Group operations September for the controversy regarding this target.

No.16 Group stated that this attack was directed against tugs and barges round the Strasbourg. The Germans admitted after the attack that the vessel was not a hospital ship.

No.16 Gp.
O.R.B. App.
Oct.1943.

C.C.H.Q.
Controller's
Log.

claimed that the Strasbourg received numerous cannon strikes and two possible R.P. hits, and several aircraft reported flames from base of funnel and considerable smoke. From post war evidence it appears that the Strasbourg, which was still aground from mine damage received on 1 September 1943, was further damaged by aircraft on this date. One Beau-fighter, L/236, failed to return. The aircraft was seen to crash near the Strasbourg after making a flat entry at very fast speed from a dive of 100 to 150 feet.

A sweep from Egmond to Helder by 23 Beaufighters of North Coates Wing on 23 October, again directed against minesweepers, returned having made no sightings. No.254 carried out moonlight rovers on three nights of the month. Unfavourable weather prevented flying on several days of the month.

November

No.16 Gp.
O.R.B. App.
November 1943.

Anti-shipping sorties rose to 158 but only 18 attacks were delivered and six aircraft were lost.⁽¹⁾ All operations were carried out by Nos.254 and 236 Squadrons and one enemy vessel of 6,316 tons was sunk. Some additional sorties were flown in conjunction with the anti-E-boat operations conducted by No.415 Squadron during which one E-boat was sunk.⁽²⁾

There was one strike during the month on 23 November. The North Coates Wing was ordered to attack a convoy of eleven vessels sighted by J/254 on early morning reconnaissance at 0744 hours in position 5334N x 0533E⁽³⁾. One false start was made when the Beaufighter Wing lost touch with its fighter escort and had to return. The Wing, consisting of five torpedo and eight cannon Beaufighters of No.254 Squadron, and nine cannon Beaufighters of No.236 Squadron, took off again from 1332 to 1347 hours. No.12 Group Fighter Command provided escort with 45 Spitfires VB (L.R.) of Nos.64, 402, 416 and 611 Squadrons. At 1451 hours landfall was made at Egmond. Aircraft started to climb and turned north. The fighter escort then called up. "Stuff you want in Den Helder" and the Wing leader then immediately saw target ahead and to port. Disposition of the convoy given by aircraft crews

A.H.B./IIH1/
104/2/2 Encl.
43A

Encl. 45A.

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- (1) Beaufighter Q/236 was missing on reconnaissance on 4 November.
Beaufighter E/254 was missing on Rover patrol on 5 November.
Four Beaufighters, B/236 and Y,G,W/254 failed to return from the strike on 23 November.
 - (2) See chapter XVI - Part I on anti-E-boat operations.
 - (3) North Coates did not receive the sighting report from J/254 until 0810 hours. Aircraft did not send report immediately because it was too near the Dutch coast. A routine transmission from A.C.H.Q. Chatham then lasted until 0800 hours. Aircraft then made two attempts to transmit on 3845 Kc's but no station received the signal. Aircraft reverted to 3590 Kc's and message was picked up by Donna Nook and passed to North Coates. As a result of this delay the sighting report procedure was amended. Aircraft were instructed to send first sighting reports as soon as practicable (taking into account position of convoy, cloud cover and enemy fighters) and to send an amplifying report on the way home.

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varies widely. Four minesweepers were apparently leading in two lines, followed by a large merchant vessel of 6/7,000 tons, and at least one smaller merchant vessel. Three armed trawlers were on starboard side and two armed trawlers on port side. Three Torbeaus attacked the large merchant vessel with torpedoes. Cannon aircraft attacked minesweepers and trawlers. Two Torbeaus Y and G/254 and two cannon aircraft W/254 and B/236 failed to return. Three Beaufighters of No.236 squadron and four of No.254 Squadron were damaged. Aircraft reported considerable heavy "Barrage" flak on way in. Much tracer and heavy flak followed aircraft on breakaway. Spitfires of No.64 Squadron engaged one Me.109 and two FW.190s in the vicinity of the convoy, and claimed one Me.109 and one FW.190 destroyed without loss. As a result of the operation the German merchant vessel Weissenburg of 6,316 tons was sunk in 5310 X 0450E off the Texel.

Two other attempts at strike wing operations during November were unsuccessful. On 2 November the Wing leader set course for base because he could not get the Wing into formation.(1) On 16 November the Wing was delayed in take off and on arrival at Dutch coast found that the convoy of ten to twelve vessels had taken refuge in Den Helder Gap.

No.254 Squadron carried out several night Rovers. On two occasions, on 1 and 3 November, aircraft were instructed to fly in pairs. One aircraft was to carry flares, the other was to be armed with a contact pistol torpedo set to run at six feet depth. Wellingtons of No.415 squadron were engaged on anti-E-boat night operations. Nos.254 and 236 squadrons also carried out a number of anti-E-boat operations.

December

No.16 Gp.
O.R.B. App.
December 1943

Anti-shipping sorties fell to 91 with only one attack and one aircraft crashed.(2) One wing reconnaissance was attempted on 22 December but returned owing to unsuitable weather. Nos.236 and 254 squadrons carried out reconnaissance in small groups. The one attack was by Beaufighter F/254 on early morning Rover patrol on 12 December. One merchant vessel was attacked with torpedo in approximately 5348N x 0730E. No results were seen. Nos.236, 254 and 415 Squadrons were also engaged in anti-E-boat operations. In addition a number of Beaufighters of No.254 squadron were detached to Predannock in No.19 Group to assist in anti-blockade runner operations.(3) Five Beaufighters were detached from 5 to 10 December. Nine Beaufighters proceeded on second detachment on 12 December and were joined by seven more on 24 December and one on 27 December. All these detachments returned on 31 December.

A.H.B./IIH1/
104/1/7. Encl.
73A

- (1) The R.P. leader force landed and narrowly avoided crash owing to lack of elevator control. The deputy R.P. leader and his section were held up by unserviceability.
- (2) D/254 crashed near Redcar, Yorkshire, on 11 December.
- (3) See chapter X on Anti-Blockade Runners.

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(xvi) (b) No.18 Group operations October to December 1943

October

No.18 Gp.
O.R.B. App.
October 1943.

Sorties remained very low, totalling 49 with only one attack and one aircraft lost.⁽¹⁾ There were 19 P.R. sorties. Mosquito W/540 was missing on the Trondheim P.R. sortie on 26 October. The one attack occurred on 26 October and was made by M/489 during a first light Rover patrol on a large merchant vessel in a convoy off Egen. The torpedo was not seen to run and no results were observed.

No operations were carried out by No.333 squadron and few by Hampdens of Nos.489 and 455 Squadrons. The Hampdens took part in intensive anti-U-boat operations in the area Faroes to Iceland at the beginning of the month. No.404 Squadron carried out most of the operations. No.144 torpedo squadron had returned from overseas in August and reformed with Beaufighter X's. September was spent in training. On 20 October the squadron moved to Wick and was back in line on 29 October when eight aircraft carried out a Rover patrol.

C.C. File
S.15249
Encl.1

On 30 October 1943 the operational roles of Nos.144 and 404 Squadrons were stated as follows:-

No.404 squadron

- (i) Anti-flak escort (with cannon) to No.144 Squadron attacking enemy major units.
- (ii) R.P. attacks on enemy shipping.
- (iii) Anti-flak escort to own squadron aircraft attacking shipping with R.P. or on occasions to No.144 Squadron attacking with torpedoes.
- (iv) Long range fighter protection to naval and other units.
- (v) Reconnaissance when no other suitable aircraft are available.

No.144 squadron

- (i) Torpedo attacks on enemy major naval units.
- (ii) Torpedo attacks on enemy shipping.
- (iii) Anti-flak escort (with cannon) to own torpedo aircraft attacking enemy shipping or on occasions to No.404 squadron attacking with R.P.
- (iv) Long range fighter protection to naval and other units.

No.18 Gp.
O.R.B. App.
November
1943.

November

Anti-shipping sorties rose to 116. There were 18 attacks and two aircraft were lost.⁽²⁾ One enemy vessel of 1,651 tons was sunk and two of 1,785 tons damaged.

(1) This was Beaufighter X/404 missing on Rover patrol on 14 October.
(2) On 5 November Hampden K/455 overshot on landing. Aircraft was badly damaged.
On 22 November Beaufighter U/144 was seen to ditch on way home from an attack.

The chief feature of the month was the commencement of operations by the Wick Strike Wing, consisting of torpedo Beaufighters of No.144 Squadron and anti-flak escort Beaufighters of No.404 Squadron. Three Wing operations were carried out.

The first Wing operation on 22 November achieved all the results. Six torpedo Beaufighters of No.144 Squadron escorted by eight Beaufighters of No.404 Squadron were ordered to carry out a Rover patrol from Svino Light to Bremanger to attack an enemy convoy. At 1109 hours two escort vessels, one merchant vessel of 900 - 1500 tons and a coaster were sighted off Stadtlandet. Beaufighter R/144, the Wing leader, did not attack as he thought the vessel was too small and not the main target, and called "do not attack". However, the VHF was afterwards discovered to be unserviceable and the rest of the formation had, in the meantime, received contrary instructions from one of the escort aircraft and attacked in force with torpedoes and cannon. Beaufighter U/144 ditched on the way home owing to engine trouble. Post war records show that the Norwegian merchant vessel Arcturus of 1,651 tons was sunk and the Norwegian Gol (985 tons) and Kari Louise (800 tons) damaged in this attack.

The other attacks of the month were made by five R.P. Beaufighters of No.404 squadron on a morning Rover on 30 November. A convoy was attacked in 6102N x 0456E with a total of 34 R.P. and cannon but no results were obtained.

No.489 Squadron were now converting from Hampdens to Beaufighter X aircraft at Leuchars and carried out no operations. No.455 Squadron remained on Hampdens although a signal was received from the Air Ministry on 19 November that the squadron was to convert from 16 plus 4 Hampden torpedo bombers to 16 plus 4 Beaufighter X aircraft, which were those thrown up by No.248 Squadron.⁽¹⁾ One Beaufighter from No.489 Squadron was to be used for training and was taken on charge on 23 November. Beaufighters of Nos.144 and 404 Squadrons carried out wing and individual operations during the month, and No.333 squadron were back on the task of reconnaissance.

December

No.18 Gp.
O.R.B. App.
December,
1943.

The level of anti-shipping sorties was maintained and 121 were flown. There were 32 attacks and five aircraft were lost.⁽²⁾ Unfortunately despite the increase in the number of attacks no results can be confirmed from post war records. Operations are described in some detail this month as of importance in the development of different forms of strike wing tactics. On 22 December a rather costly attack was carried out by the Strike Wing consisting of six Torbeaus

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- (1) No.248 Squadron were re-equipped with Mosquitoes.
(2) These were:
On 8 December Beaufighter D/404 missing on reconnaissance to the Stadtlandet area.
On 16 December Beaufighter G/404 crashed soon after take off.
On 18 December Mosquito N/333 was missing on reconnaissance.
On 22 December Beaufighters F and H/404 were shot down by flak during attack.

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of No.144 Squadron and three anti-flak Beaufighters of No.404 Squadron. One U-boat escorted by a destroyer was sighted in position 5800N x 0605E and was attacked with torpedo and cannon by the Torbeaus. R/404 also attacked the U-boat with cannon. The other two Beaufighters H and F/404 went in to attack but were both shot down by flak and ditched. No damage appears to have been inflicted on the U-boat or destroyer.

Three other formation attacks were carried out during the month. On the 28th, nine Beaufighters of No.404 Squadron were ordered to stand by for anti-flak escort to Torbeaus of No.144 Squadron on a Rover to Stadtlandet and the shipping leads eastwards. The operation was changed to a squadron Rover, because Mosquito P/333 on reconnaissance had reported that the target was out of the area where torpedoes would be effective. The nine Beaufighters of No.404 Squadron sighted a convoy in position 6210N x 0520E and all aircraft attacked with R.P. but owing to the fact that aircraft were originally intended for anti-flak escort, successful results were not expected as the H.E. R.P. were not harmonised.

On 7 December seven Beaufighters of No.404 Squadron were despatched on Rover patrol. Four aircraft were armed with 25 lb. A.P. R.P. and three with 60 lb. H.E. R.P. A convoy was attacked off Stadtlandet. The anti-flak aircraft attacked an escort vessel with cannon and eight 60 lb. H.E. R.P. each and other aircraft attacked two merchant vessels with 25 lb. A.P. R.P. Aircraft estimated that convoy was seriously damaged but actually no results have been confirmed.

The remaining operation was a Wing attack on 27 December on a convoy in position 5845 x 0530E. No results were obtained.

The two Beaufighter squadrons carried out most of the month's operations. No.333 Squadron carried out individual reconnaissance duties. Hampdens of No.455 Squadron flew two Rovers and were then taken out of line on 13 December for conversion to Beaufighters. The squadron strength by the end of the month was 16 Beaufighter X's. No.489 Squadron were training at Leuchars and Tain and carried out no operations.

(xvi) (c) No.19 Group operations October to December 1943.

No.19 Group
O.R.B. App.

Very few anti-shipping operations were flown by No.19 Group during this period. There were only two sorties in October, none in November and six in December. P.R. sorties totalled 21, 18 and 25 for the three months. Mosquito G/541 was missing from a P.R. sortie to the Gironde on 4 November. In December considerable effort was devoted to the interception of the blockade runners Osorno and Alsterufer and enemy escorting destroyers.⁽¹⁾ One French trawler Le Duperre of 337 tons was sunk by air attack in position 4715N x 0520W on 9 December. No attack by No.19 Group aircraft can be traced on this date.

A.H.B./IIA/1/1/
3(B) August
1943

Shipments of iron ore from the Bilbao area to Bordeaux and Bayonne were suspended on 18 July and remained at a standstill throughout August. Owing to the stringent

(1) See chapter X on anti-blockade running operations.

financial conditions attached to the new agreement by the Spanish Government, it was believed that traffic, when resumed, would be on a greatly reduced scale.

Shipments were in fact resumed on a limited scale in October. The Hochheimer and Sperber loaded and sailed from Bilbao during the last week of the month and the Scharlachberger also began to load. Shipments in November totalled 25,000 tons and rose to over 40,000 tons in December. Tonnage on the Bordeaux service was strengthened by the Rastenburg (4,500 G.R.T.)

Ibid
Six monthly
Report July -
Dec. 1943

(xvi) (d) Fighter Command Operations October to December 1943

October

F.C. Form 7

Fighter Command flew 1,133 sorties. There were 112 attacks and 10 aircraft were lost. (1) Two enemy vessels of 1,225 tons were sunk, and one ex-blockade runner of 6,408 tons damaged. The Konigsau (996 tons), sunk on 2 October off Ostend, was probably the 800/1000 ton coaster claimed as damaged by one Spitfire of No. 501 squadron which attacked off Zeebrugge harbour. The escort trawler Niedersachsen - (VP.2009) of 259 tons was sunk near Veere on 3 October as a result of an attack by eight Bomphoons of No. 3 Squadron, escorted by nine Typhoons of No. 198 Squadron, on docks and shipping in the Flushing area.

Two major attacks by Nos. 2 and 10 Groups were delivered against the cargo vessel Munsterland (6,408 tons) in Cherbourg harbour on 24 and 28 October. On 24 October, 25 Mitchells of No. 180 and 320 Squadrons from No. 2 Group, (2) escorted by 36 Spitfires as close escort and 19 Spitfires as escort cover, attacked the vessel with 85 x 1000 lb. bombs. Good bombing results were claimed. Eight Whirlwind bombers of No. 263 Squadron, escorted by eight Typhoons of No. 257 Squadron from No. 10 Group, also attacked the target with 16 x 250 lb. bombs. Intense and accurate flak was met. Two Whirlwinds were missing and one badly damaged. Serious damage to a 6,500 ton vessel was claimed. Four Typhoons of No. 266 squadron carried out reconnaissance immediately after the attack and reported that the vessel was well ablaze. A second attack was delivered two hours later by eight Bomphoons of No. 183 Squadron. The target was attacked from below mast height amidst intense flak with 14 x 500 lb. bombs. Three bombers failed to return. Post war records confirm that the Munsterland (6,408 tons) was damaged as a result of these attacks.

A second operation against this target was carried out on 28 October. Fifty six Spitfires of Nos. 310, 312 and 313

(1) Estimated details of Group flying:-

October 1943	Sorties	Attacks	Wastage
No. 10 Group	313	17	1
No. 11 Group and No. 83 Group	623	63	7
No. 12 Group	153	-	-
No. 2 Group	44	32	2

(2) No. 2 Group (ex-bomber Command) had been transferred to the Tactical Air Force on the 1 June 1943 and came under Fighter Command operational control.

Squadrons (close escort) and Nos.66, 341 Squadrons (escort cover) were ordered to escort 19 Mitchells of Nos.98 and 320 Squadrons from No.2 Group. Eight Typhoons of No.257 Squadron acted as high cover. A total of seven Mitchells attacked the target with 28 x 1,000 lb. bombs. Heavy accurate flak was encountered and one Mitchell was missing. Eight Whirlwind bombers of No.263 Squadron, escorted by 12 Spitfires of No.610 Squadron, also attacked with 16 x 250 lb. bombs, and eight Typhoon bombers of No.183 Squadron, covered by 16 Typhoons of Nos.193 and 266 squadrons, attacked with 16 x 500 lb. bombs. No further damage to the Munsterland can be traced on this date.

ADGB File
S.31523.

Two enemy merchant vessels of appreciable size succeeded in passing through the Straits eastwards on the nights of 3/4 and 23/24 October. Our coastal forces made an unsuccessful attempt to intercept a 3,000 ton merchant vessel on the first occasion. The vessel was the Livadia (3,094 tons) and she was sunk by the Dover batteries off Boulogne early on 4 October. On the second occasion, a vessel was attacked by M.T.Bs, coastal batteries and one Albacore with no success. This vessel was the Nordvaard. One Sperrbrecher passed westward through the Straits on the night of 3rd/4th when our coastal forces were already fully employed. Coastal batteries engaged the vessel which was unsuccessfully attacked on the following night by one Albacore of No.841 squadron south of Boulogne.

Albacores of No.841 Squadron maintained the usual anti-shipping patrols in mid-channel whenever weather permitted and continued to bomb any vessel that ventured far enough from the enemy coast to make attack practicable. No target was found by Hurricanes of No.137 Squadron who operated during the moonlight period.

November

F.C. Form 7.

Fighter Command sorties reached the peak figure of 1226 with 120 attacks and 13 aircraft lost.⁽¹⁾ One enemy vessel, the dredger Semois of 827 tons, was sunk off Trouville on 16 November. Twelve Typhoons of No.486 Squadron attacked two 1,000 ton merchant vessels off Trouville on this date and claimed one sunk and the second seriously damaged.

ADGB File
S.31523.

No enemy merchant vessels of appreciable size attempted the passage of the Straits. E-boats made the first successful attack on a channel convoy for about two years.⁽²⁾

Two enemy torpedo boats, previously located in Dunkirk, were detected by radar off Gravelines on night of 3/4 November proceeding westward. Coastal batteries engaged the vessels

(1) Estimated details of Group flying:-

November 1943	Sorties	Attacks	Wastage
No.10 Group	303	60	7
No.11 Group	796	60	6
No.12 Group	127	0	0

(2) See Chapter XVI - Part I on anti-E-boat operations.

SECRET

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unsuccessfully and M.T.Bs. failed to intercept. Two Albacores of No.841 F.A.A. Squadron, on patrol off Boulogne, attacked the vessels with 12 x 250 lb. bombs but with no success, and they reached Cherbourg apparently undamaged.

During the month, Fleet Air Arm pilots of No.841 Squadron Albacores were handing over to pilots of No.415 Squadron who were to succeed them.⁽¹⁾ The usual mid-channel patrols were maintained whenever weather was suitable. No.415 Squadron made their initial attack on shipping on the night of 22/23 November when about six vessels, one larger than the others, were attacked with bombs off The Somme. No results have been confirmed.

Hurricane R.P. aircraft, available during the moonlight period, again suffered from lack of targets and unfavourable weather. On night of 12/13 November a small harbour defence vessel was claimed sunk off Boulogne, but this has not been confirmed.

On 12 nights no shipping was detected in the Straits and movements of enemy coastal shipping were on a smaller scale than usual.

December

F.C. Form 7

Fighter Command sorties dropped to 521 with 29 attacks and four aircraft lost.⁽²⁾ No enemy shipping was sunk or damaged.

One Mosquito bomber of No.487 Squadron from No.2 Group, escorted by 12 Typhoons of Nos.193 and 266 Squadrons from No.10 Group attacked the blockade runner Pietre Orseolo off the Isle de Croix on 1 December. The Mosquito ditched immediately after the attack. The Typhoons attacked trawler type vessels near Isle de Croix. One Typhoon of No.266 and one of No.193 Squadron were lost. No damage was inflicted on the Pietre Orseolo.

Two large merchant vessels passed eastward through the Straits of Dover. One of these was a 6,000 tanker which arrived in Dunkirk, undamaged by coastal battery fire, on the night of 3/4 December. This was believed to be the Ostfriesland, recently refitted at Le Truit, which had arrived at Le Havre from Rouen about 19 October. The tanker left Dunkirk on the night of 9/10 December and passed Nieuport before M.T.Bs. could intercept. The ex-blockade runner Minsterland arrived in Boulogne from the south early on 1 January.

Albacore aircraft of No.415 Squadron maintained the usual mid-channel anti-shipping patrols when weather permitted but targets were few. One Hurricane of No.137 R.P. Squadron

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- (1) See Chapter on anti-E-boat operations.
(2) Estimated details of Group flying:-

December 1943	Sorties	Attacks	Wastage
No.10 Group	115	13	4
No.11 Group	297	16	-
No.12 Group	109	-	-

claimed a successful attack on a trawler and R-boats off Walcheren on 4 December but no casualties can be confirmed.

The volume of coastal traffic was again on a small scale. On eight nights no enemy shipping was detected moving in the Straits.

(xvii) Conclusion

A.H.B./IIA1/
1/1/3(B)

An M.E.W. review of enemy shipping activity during the six months July to December 1943 considered that events had exposed the Kaufmann administration to a very severe test. While it could not be said that R.K.S. had ridden out the storm it must be admitted that, but for their long term planning and the resourcefulness with which they had tackled the new situation, the effects of the offensive against North Sea shipping on the German economy would have been very much greater. As was perhaps inevitable Kaufmann seemed to have come into conflict with his civilian and service collaborators and it appeared that steps had been taken to curb his activities. Possibly R.K.S. had been brought under the hegemony of Speer. The appointment of Bergemann - a Civil Servant - as Kaufmann's deputy was regarded as an endeavour by the Wilhelmstrasse to exert its influence. The resignation of Rudolf Blohm, who was responsible under Kaufmann for the German emergency shipbuilding programme, might signify the dissatisfaction of the Berlin authorities with the progress of the Hansa programme, or Blohm's unwillingness to risk his reputation any further on this programme.

The Hansa programme had made some progress. In the five months ending 30 April 1943 ten merchant vessels of the standard 3,000 ton design had been laid down. By December 1943 three of the vessels had been commissioned and four had reached the fitting out stage. Since May work had been started on an additional 14 hulls of the 3,000 ton design and the number of shipyards allocated to the programme had increased from seven to ten.

It appeared, however, that the process of rationalisation initiated by the Kaufmann administration reached its high water mark by mid-summer 1943 and that since then the economies and improvisations introduced had failed to offset the increasing weight of our offensive against German shipping and allied services. There was a limit to the extent to which the lift, of a given tonnage, could be increased, and there was little doubt that in the case of the German mercantile marine the limit had been reached.

During the nine months March to December 1943 Coastal Command flew a total of 4,097 sorties on all kinds of anti-ship operations. In all 557 attacks were made and 90 aircraft lost.⁽¹⁾ Fighter Command flew 9,854 sorties during the same period, made 1,106 attacks and lost 101 aircraft. Enemy

- (1) Total figures for the various Coastal Command Groups during the period March to December 1943 were as follows:-

	Sorties	Attacks	Wastage
No.16 Group	1,852	350	41
No.18 Group	1,593	164	45
No.19 Group	652	43	4

shipping sunk by Coastal Command totalled 30 vessels of 79,521 tons. (1) Fighter Command sank 19 vessels of 5,089 tons.

(xviii) The re-equipment of the Anti-shipping squadrons

During these nine months the re-equipment of the anti-shipping side of Coastal Command only made slow progress. The early Beaufighter IC, II and VIC types with which the squadrons were armed were not only inferior to the enemy aircraft encountered off the Dutch and Norwegian coasts but were of little use in the Bay of Biscay on interceptor patrols in protection of the heavy A/U aircraft. Not much improvement followed the re-equipment to the Mk.XIC in the late summer. Increasing losses due to enemy fighters in the latter area caused the A.O.C. in C to renew his request in August 1943 for the Mosquito VI fighter. He followed this with a protest to the Air Ministry on 2 September on learning that eighteen squadrons of these aircraft were being allotted to Army Co-operation and Photographic Reconnaissance with no mention of Coastal Command.

The Air Ministry reviewed the allocation as between the conflicting requirements of the various Commands and on 18 September decided that:-

(A) First call was for the maintenance of three Mosquito Intruder squadrons in the Fighter and Mediterranean Air Commands and for the formation of a squadron in India.

(B) Second priority would be for the building up of five squadrons in the Tactical Air Force (the new name for Army Co-operation).

None would be available to re-arm any of the Coastal Command Beaufighter squadrons before the end of January 1944. (2) In the meantime for Biscay work, sorties could be requested from Fighter Command's night-fighter Mosquito squadrons at the discretion of the D.C.A.S.

Regarding torpedo aircraft, the Beaufighter supply position continued to be extremely tight and although No.144 Squadron returned to the United Kingdom from the Mediterranean in August, they spent the next two months in slowly re-equipping to Mk.X aircraft and were not in the line again till October 1943. The two Hampden squadrons

- (1) Enemy shipping sunk by Coastal Command Groups during March to December 1943 was as follows:-

	Number	Tonnage
No.16 Group	17	40,325
No.18 Group	9	29,534
No.19 Group	4	9,732

N.B. One of the vessels sunk in No.19 Group area was sunk by an anti-submarine aircraft. No attack can be traced for the other vessel.

- (2) In the event the first Coastal Command fighter squadron to re-arm with Mosquito VI (No.248) did so in February 1944.

C.C. C.-in-C.
File S.10
Encls.27 and
27A.

A.M. File
CMS.509
Encl.92A

remained on their obsolete aircraft restricted to night sorties until the end of the year.⁽¹⁾ Not until March 1944 were the Command's six strike squadrons wholly equipped and operational on up-to-date Beaufighters.

Ibid
Encls. 101A
and 107B.

Thereafter the spur of preparations for operation Overlord went towards developing the A/U strength but the A.O.C. in C. continued to press for more Mosquitoes,⁽²⁾ and that more attention should be paid to action against E-boats. To meet the latter threat, No.524 squadron was re-created in April 1944 on ten Wellington XIII.s for the location and flare illumination of E-boats so that attacks could be delivered by other aircraft or naval surface forces.

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- (1) No.489 Squadron became operational on Beaufighter X (torpedo) on 8 January 1944. No.455 Squadron, having to wait for their aircraft until No.248 had rearmed with Mosquitoes, not till 1 March 1944.
- (2) In this he was unsuccessful. The second fighter squadron to receive Mosquito VI aircraft was No.235 but not until July 1944.

CHAPTER X

THE FINAL PHASE OF ENEMY FAR EASTERN BLOCKADE RUNNINGMARCH 1943 TO JANUARY 1944(i) Introduction

The second and most intensive season of Far Eastern Blockade running, which commenced in August 1942, had ceased, at the European end by mid-April 1943.

The major part of the season's activities has already been dealt with in Volume III, Chapter XI, which took the narrative up to the end of February 1943; so there remains a period of two months to be covered in this chapter, before the usual seasonal lull set-in.

Unlike the two previous periods of inactivity, however, the third season of enemy blockade running was not resumed at the European end until December 1943, which was much later than expected.

Although it was not fully realised by the Allied authorities at the time, the action which occurred during December 1943, in the Bay of Biscay and the North Atlantic between enemy ships and Allied naval and air forces, was the final episode in Far Eastern blockade running, because in January 1944, on Hitler's orders, all further sailings of surface ships to and from the Far East were cancelled, and those ships ready for departure were unloaded and subsequently laid-up in French West Coast ports, never to sail the seas again.

Fuhrer
Conferences
on Naval
Affairs • 1944

R.A.F. in
Maritime War
Vol. III.
Chapter XI

To recapitulate on the second season's activities so far - between August 1942 and February 1943, three ships inward bound to European ports had been successful in breaking the blockade and delivering their valuable cargoes; (1) during the same period, three ships had been intercepted and either scuttled themselves or were sunk by naval action. (2) It was known that five more inward bound ships were still at sea and due to arrive during March and April 1943.

Of the outward bound ships eight were successful in breaking out and safely delivered their cargoes to Far Eastern ports. (3) Two of this number had failed on their first attempts and although their second efforts were detected in the initial stages, they succeeded in eluding all subsequent Allied efforts of frustration. Three more of the outward bound ships were intercepted and either scuttled themselves or were sunk by naval forces. (4) In two cases surface ships of the Royal Navy had been homed on to the target by aircraft of Coastal Command.

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- (1) They were: Tannenfels, Dresden and Kulmerland.
 - (2) Those lost were: Ramses, Rhakotis and Hohenfriedburg (ex. Herborg).
 - (3) The successful break-outs were: Uckermark, Pietro Orseslő, Irene (ex Silvaplane), Burgenland, Rio Grande, Weserland, Brake and Karin (ex Kota Nopan).
 - (4) The unsuccessful break-outs were: Anneliese Essberger, Cortellazo and Germania.

(ii) Operation 'Sombrero'

R.A.F. in
Maritime War
Vol. III
Chapter XI

In the concluding remarks of Chapter XI Volume III it was stated that the existing operational instruction (Operation 'Busby') for anti-blockade running, was in need of revision. This operation never seemed to work satisfactorily, primarily because neither the Controllers or aircrews fully appreciated its importance, and secondly, because the original instruction had been changed and modified out of all recognition.

C.C. File
MS. 15310
Min. 48

With the object of clearing up the many misunderstandings which prevailed at both Groups and Stations, a new instruction was compiled and circulated to all concerned on 4 March 1943.

C.C.O.I.
No. 109
(A.H.B./III/
24/254)

Under the terms of the new operational instruction (Operation 'Sombrero'), the existing standard anti-shipping patrols in the Bay of Biscay were abolished; and since the Navy now operated a cruiser in the area the terms were also extended to give assistance to surface forces as well as submarines.

Until such time as an adequately trained anti-shipping strike and shadowing force was available, the existing anti-submarine Bay patrols flown daily and spread over as much of the Bay of Biscay as possible consistent with the U-boat information were to be considered as anti-shipping patrols also, and crews were briefed accordingly. When the aircraft situation permitted, consideration was to be given to laying on a special anti-shipping sweep of the areas not covered by our anti-submarine patrols, with particular attention being paid to the Spanish coast.

On receipt of a sighting report of the enemy or other reliable information, special patrols were to be laid on best suited to the circumstances obtaining. Consideration was also to be given to diverting aircraft already airborne on other anti-submarine patrols and they were to be instructed either to shadow the enemy or carry out a crossover patrol or track search. Whenever practicable one aircraft was to be kept at readiness throughout the hours of daylight every day, so that it could take-off at the shortest notice to relieve the sighting aircraft, many of whom might well be very nearly at P.L.E. when making the initial sighting. Subsequent to the departure of this aircraft sufficient reserves were to be brought to readiness to enable the shadowing and/or search to be continuous until the interception of the enemy by naval forces had been achieved.

This action was to take priority second only to close support of threatened convoys or sweeps in the immediate vicinity of such convoys.

If the target was within range of the available striking forces, such forces were to be brought to immediate readiness and sent to attack as soon as practicable.

The shadowing aircraft was not to attack under any circumstances.

For the Bay of Biscay area excluding Spanish territorial waters crews were briefed with information concerning position, course and speed of all friendly and neutral ships and all Allied convoys likely to be encountered. All other ships sighted, other than fishing vessels, were to be reported immediately and treated as enemy. Homing procedure was to be commenced at once without further instructions.

In Spanish territorial waters all ships except fishing vessels were to be reported immediately to base. The aircraft was to make a normal first sighting report, request instructions and remain to shadow, but it was not to commence homing unless ordered to do so from base. Aircraft were not to endanger themselves when obtaining the identity of ships.

When a specific target notified at the briefing was located, aircraft were to remain and shadow carrying out homing procedure automatically.

In the case of inward bound ships sighted east of longitude 40 west, only first sighting and amplifying reports were to be made. Aircraft were not to remain and shadow. The reason for this special exemption from normal rules was that the homing procedure was largely for the benefit of naval forces and as it would not be possible to carry out an attack owing to the proximity of the target to the French coast, homing signals were not required. For outward bound ships found in this area making their way westward, normal procedure was to be applied.

Whenever possible, crews were instructed to take photographs of all ships sighted.

Once an aircraft had commenced homing procedure it was not to leave the target until:-

- (i) P.L.E.
- (ii) Relieved by another shadowing aircraft
- (iii) The satisfactory interception of the target by one of our naval forces.

It was essential that aircraft reports when received by Group, even if corrupt, were to be passed immediately by telephone to Headquarters, Coastal Command, so that they could be communicated to the appropriate naval authority for onward transmission to the naval forces within the area of operations. In the case of our own submerged submarines the only reliable channel of communication was via Flag Officer Submarines.

App. 'A'
C.C.O.I.
No. 109

As an appendix to the new instruction an explanatory note on the economic aspect of blockade running was included for the express purpose of interesting Station and aircrews in the job in hand. To further this cause the S.N.S.O. at H.Q.C.C. offered to loan a member of his staff to No. 19 Group for the purpose of lecturing to aircrews and others connected with anti-shiping operations on this most vital subject, an offer which the A.O.C.-in-C. had no hesitation in accepting. During the course of the lectures delivered the speed and accuracy of communications was given special emphasis.

The general theme of this new effort to close the serious leakage in the blockade of the Axis powers was, 'Coastal Command to locate, report, shadow and home; the Royal Navy to destroy.'

(iii) Operations - March/April 1943

Due to the lack of success that had attended the Axis attempts at evasion from mid-November 1942 to end of February 1943, it was regarded as almost certain that fresh tactics to defeat our blockade measures would be formulated without delay. It was anticipated by the Admiralty and H.Q.C.C. that the enemy would revert to his old practice of

H.Q.C.C. File
MS. 15310
(A.E.B./IHK/
54/11/364(B)

sending several ships out of Bordeaux at the same time as arrivals were due in, so that some at least might make a successful evasion. It was also suggested that the role of the large destroyers that had recently arrived on the French Atlantic coast, was to provide a longer ranged escort force than had previously been available, and by constituting a threat to our Gibraltar convoys either by actual attack or by implication, draw off our standing patrols and thus allow blockade runners to slip by unmolested.

Already, the apparent postponement of departures of those ships known to have been loaded and ready for sea by the end of January was difficult to explain except on the grounds that they were awaiting a revision of schedules.

Air reconnaissance of the Gironde ports, maintained at regular intervals by P.R.U. (weather permitting) up to 17 March, had revealed no significant changes so far in the dispositions of potential blockade runners.

M.E.W. Bay of
Biscay Traffic
Summary No. 23

The fact that 9/10,000 tons of rubber was reported to have been loaded into several known blockade runners at the Far Eastern terminal during January, for delivery in Europe, meant that another influx was due sometime during March/April. (1) The prospect of further encounters with blockade runners was stressed at all briefings for aircrews engaged on A/U operations in the Bay of Biscay and descriptions of those ships expected to take part were supplied. Details of the latest operational instruction 'Sombrero' were also explained and any doubtful points clarified.

March

H.Q.C.C.
Naval Staff
Log
9.3.43

As previously mentioned, the presence of three "Z" class destroyers in Bordeaux from 9 March was regarded by the Admiralty as a further sign that another blockade breaking operation was about to take place. Should this force break-out undetected they could also prove a menace to our convoys

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- (1) Unbeknown to the Germans, the Kota Nopan (7,322 g.t.) was intercepted and sunk by a U.S. Task Force in the South Atlantic (0700S x 2100W) on 10 March. Up to 2 April they were still searching for her. Another loss among the inward bound blockade runners was that of the Doggerbank which, according to a German seaman picked up in the North Atlantic was torpedoed on 3 March in the approximate position of 3100N x 3700W. It was assumed that she was sunk by a German U-boat as there was no Allied forces in the vicinity. The fact that she was the ex-British Speybank may well have been the explanation of the U-boat Commander's mistake. Confirmation of her expected arrival is contained in an entry dated 18 March which appears in B. & U's War Diary. It states 'U-boats have again been reminded of the closing of a 200 mile wide strip, as Doggerbank is about to enter port.' This incident in no way affected the information from intelligence sources which estimated that the earliest date for an incoming blockade runner was 13 March in longitude 20 degrees West, between 42 degrees and 47 degrees North.

traversing the western limits of the Bay of Biscay. They were, therefore, regarded as a Class 1 target,⁽¹⁾ and of first priority for P.R.U.⁽²⁾

A marked increase in Focke-Wulf 200 activity in the Bay area was also taking place daily, and was regarded as another sure guide to the imminence of blockade running. It was due to this trend in events backed up by other information from intelligence sources, which alerted all the available Allied forces for possible action as from 17 March.

On the naval side, the operational control of the Bay of Biscay was taken over by the Commander-in-Chief, Plymouth, and both surface and submarine forces⁽³⁾ were instructed to move into a position in which it was considered most likely that an interception could be effected.

H.Q. No. 19
Group
Appendices

H.Q.C.C.
Controllers
Log

Apart from the aircraft engaged on the anti-U-boat patrols for Operation 'Enclose',⁽⁴⁾ special anti-shipping sorties were laid on for 17 March and subsequent days. As there was no suitable air striking force in the south the A.O.C.-in-C., Coastal Command sanctioned the movement of a torpedo attack squadron from No. 16 Group to No. 19 Group.⁽⁵⁾ On arrival they were to be situated at Predannock (near the Lizard) and brought to immediate readiness to strike if a target was located by the reconnaissance aircraft.

H.Q.C.C.
Naval Staff
Log

Naturally, it would be advantageous for the intercepting forces if time could be gained by making the initial sighting of the enemy a little farther westward than had been achieved in the past. With this in mind D.O.D. (H) Admiralty requested the Naval Staff at H.Q.C.C. to approach the Air Officer Commanding-in-Chief on the subject of providing a V.L.R. aircraft for the early detection of an incoming blockade runner.

Ibid

In his reply given on 22 March, the A.O.C.-in-C. said that this was the very situation envisaged in his policy of 'variable opportunity cycle' which had the First Sea Lord's approval. Seventeen V.L.R. aircraft had recently been used to cover two threatened convoys, HX.229 and SC.122, and the

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- (1) It was suggested by H.Q.C.C. that aircraft of No. 2 Group (B.C.) should attack these three destroyers in Bordeaux; after discussions between the two Commands, however, it was considered by Bomber Command that there was so little chance of the Mosquitoes finding the target with sufficient time in hand to attack, that it was not even worth a try.
 - (2) The Admiralty requested a daily photographic reconnaissance of Bordeaux from 12 March onwards, but H.Q.C.C. doubted whether such a big commitment could be met in full.
 - (3) Instead of loitering in the outer Bay awaiting the call to intercept a blockade breaker, the duty Cruiser (Operation 'Regulation') was now held at readiness at Plymouth. On this occasion H.M. Cruiser Newfoundland and two destroyers sailed from Plymouth at 1915 hours on 17 March. In addition to which the U.S. Submarine Herring was to patrol off Cape Finisterre and U.S. Submarine Shad was already patrolling in the S.E. corner of the Bay of Biscay.
 - (4) Operation 'Enclose' was being carried out between latitudes 4440N and 4830N and between 0700W and 1030W.
 - (5) Ten Hampdens of No. 415 (R.C.A.F.) Squadron on detachment to Tain for torpedo training were airborne on 1710 hours on 17 March for Predannock.

policy provided for this concentration, but only if there were several clear days afterwards during which the aircraft could regain full availability. Although at this moment no convoy was actually threatened, SC.123 was the next possibility and by the time the V.L.R. squadrons had got their breath back in four or five days time, another crisis might well be threatening HX.230, SC.123 or ON.174. In the prevailing circumstances the A.O.C.-in-C., felt that the air location of the blockade runner must wait until within range of the available forces in No. 19 Group which included Halifaxes of Nos. 58 and 502 Squadrons and Liberators of No. 224 Squadron, all long range types.

Throughout the next eleven days a systematic search for the blockade breakers continued, but apart from a few scares nothing untoward happened.(1) The weather remained rather unfavourable for the detecting forces and in point of fact there was no satisfactory photographic cover of Bordeaux after 20 March.

H.Q. No. 19
Group O.R.B.
App. 29.3.43

Then on 29 March, the first sighting of an enemy force was made by a Hudson aircraft operating on Air Sea Rescue duty.(2) This aircraft made a first sighting report,(3) the details of which were treated with some reserve as the crew were untrained in reconnaissance duties. The aircraft was damaged by enemy A.A. fire but managed to take some photographs. It was not possible to remain and shadow as the aircraft had reached P.L.E. Another Hudson on A.S.R. duty also sighted this same force, but did not make a first sighting report and took no action until it landed at 1947 hours.(4) This aircraft also came under fire from the enemy escorts.

H.Q.C.C.
Controllers
Log

From the photographs taken by H/279, it was confirmed that the merchant ship was either the Himalaya or her sister ship the Fusiyama, escorted by two probable Elbing class torpedo boats, two T.1-T.19 class torpedo-boats and one probable Mowe class torpedo-boat. Map No. 54 shows the course of events between the 25 March and 1 April.

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- (1) Operation 'Enclose' was being carried out between 4440N and 4830N and between 1030W and 0700W. As the indications of blockade running became firmer Operation 'Enclose' was reduced in intensity and fan patrols laid on as combined Anti-Submarine and Anti-Shipping reconnaissances. The area between the Spanish coast and 4430N had been neglected with the exception of one sortie in the vicinity of Cape Villano on 25 March and one sortie in the Cape Ortegal area on 26 March. In addition, twenty-seven special anti-shipping sorties had been flown during this period to intercept blockade runners and/or their escorts.
 - (2) Three Hudsons of No. 279 Squadron were sent out to try and locate a missing Wellington of No. 172 Squadron.
 - (3) Hudson Z/279 made a first sighting report at 1650 hours on 29 March as follows: 'Position 4550N x 0622W. Five destroyers escorting one MV (10,000 tons) steering 360 degrees 20 knots'. The Admiralty had also intercepted this report.
 - (4) This was Hudson H/279 and reported on return a convoy of six ships - one 10,000 ton M/V and five destroyers. Course 260 degrees in position 4547N x 0550W time 1446 hours. At 1650 hours the same force was seen again in position 4545N x 0620W. Course 250 degrees.

H.Q. No. 19
Group App.

Preparations to follow up this sighting of a blockade breaker were hampered by the fact that by midnight on 29 March all No. 19 Group stations were weatherbound, and in addition a north bound convoy in the region of 47 degrees North was actually under attack from U-boats and aircraft.⁽¹⁾ As No. 15 Group was unable to cover this convoy owing to its own convoy commitments, No. 19 Group was called upon to provide protection. It was confirmed by the A.O.C.-in-C. that escort for SL.126 must take precedence over any search for the blockade runner. Nevertheless, it was planned to use three Wellingtons and two Halifaxes sweeping westward from 0900 degrees West and to have them on patrol by 0800 hours (weather permitting).⁽²⁾ Between 0424 hours and 0910 hours three Wellingtons and one Halifax⁽³⁾ were airborne for the purpose of locating the enemy merchant vessel. By 1040 hours the Halifax (0/58 Sqdn.) had made contact with an enemy force consisting of one merchant vessel and five torpedo boats. The general line of direction was westward and the speed about 12 knots.⁽⁴⁾ With the visibility down to 2,000 yards and accurate A.A. fire from the escorts to contend with, the aircraft repeatedly lost touch with the enemy. Homing procedure was, however, continuous from 1105 until 1130 hours at which time the Halifax received instructions to home other aircraft to the target. This was attempted until 1150 hours when P.L.E. was reached, but proved unsuccessful. Unfortunately, photographs were not taken. In the meantime, Whitley F/10 O.T.U. flying an Anti-Submarine B.P. patrol had made another sighting at 0935 hours of a lone merchant vessel proceeding on a westerly course.⁽⁵⁾ Contact was lost almost immediately through evasive action and low visibility and not regained when P.L.E. was reached at 1130 hours in position 4440N x 0940W. This aircraft was not fitted with radar nor could it carry out homing procedure. Photographs were taken, however, and showed the vessel to be similar in all respects to the Himalaya or her sister ship. There were no escorts present.

To ensure continuity in the shadowing of the force sighted by the Halifax, Liberator P/224 Squadron, also flying on anti-submarine B.P. patrol was diverted to the position 4430N x 1030W. Within thirty-five minutes of turning on to the new course, a radar contact was obtained at thirty miles range and at 1220 hours a visual sighting was made of a lone merchant

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- (1) This was SL.126 which had already been re-routed in order to avoid contact with the enemy destroyers assumed to be acting as escort to the outward bound blockade runner. H.M.S. Newfoundland had been ordered to cover this convoy but the order was apparently not carried out since she had arrived in Plymouth p.m. 29 March. SL.126 had now resumed her N.N.E'ly course and H.M. Submarine Uproar and the Polish Submarine Sokol were approaching the critical area from the north in approximate longitude 1230W.
 - (2) Forms Green FL/G1/30 Mar. and FL/G2/30 Mar. refers. The Wellingtons were armed with 250 lb G.P. bombs fused 3 seconds delay and the Halifax with 500 lb M.C. bombs. They were briefed on 'Sombrero' and were told to be ready to home own submarines to the target. Reporting, shadowing and homing was their primary duty, but at the Captain's discretion they could attack prior to leaving the area.
 - (3) Z, Y and C/311 (Czech) Squadron and 0/58 Squadron.
 - (4) The position of this force was given as 4410N x 1300W.
 - (5) Details of this sighting were: One M/V Course 310 degrees Speed 12 knots, Position 4520N x 1005W.

vessel zig-zagging violently, but which later steadied on a course of 200 degrees.(1) The Liberator commenced homing procedure and proceeded to shadow. From radar contacts which appeared ahead of the ship and maintained steadily at five miles it was considered that U-boats were present and acting as escorts. On following up the contacts, however, nothing was seen. On reaching P.L.E. at 1400 hours the aircraft approached closer to the ship which immediately opened fire with heavy and light armament. The rear gunner of the aircraft replied. Again the photographs taken by the Liberator showed this vessel to be exactly similar to the Himalaya or the sister ship Fusiyama.

H.Q.C.C.
Controllers
Log

At 1430 hours an appreciation of the situation to date was made at H.Q.C.C. Halifax O/58 Sqdn. was on its way home and the torpedo boat force sighted by this aircraft was no longer being shadowed. This enemy force was too far away for our submarines to attack but the Admiralty did not want to lose track of them altogether as their objective had still to be discovered. However, no aircraft was on the way out to them owing to the inability of any of the available aircraft to reach the area before dusk.

H.Q.C.C.
Naval Staff
Log and
Controllers
Log

Liberator P/224 Sqdn. which had been shadowing the lone merchant vessel first sighted by the Whitley was also on its way home. This enemy force was considered to be within reasonable distance of our submarines and it was hoped that a Sunderland aircraft on the way out as a relief to the Liberator would be able to home them on to the target.

At 1910 hours a Sunderland (D/119 Sqdn.) obtained a radar contact at nineteen miles range and ten minutes later visually sighted a merchant vessel on a course of 225 degrees, speed about ten knots.(2) Homing procedure was carried out until P.L.E. at 2018 hours. On approaching the merchant vessel accurate light flak was experienced, mainly from extreme fore and aft positions. Explosions of shells could be heard inside the aircraft. The photographs taken once again showed the ship to be the Himalaya or Fusiyama.

H.Q. No. 19
Group Apps.

Unfortunately the weather forecast for 31 March warned of a rapid deterioration in the weather, therefore only a very limited flying programme from No. 19 Group stations could be permitted and this did not allow for any special anti-shipping sorties for the detection of blockade breakers. At the same time No. 19 Group had been requested to keep a proportion of the available aircraft in hand for protecting a northbound convoy which would be within range the following day. However, of the few anti-submarine aircraft which were airborne and stood a good chance of getting back to a base in south-west England before the weather completely closed down, a Halifax of No. 58 Squadron on B.P. patrol No. 16 made contact with an eastbound enemy force. This aircraft (B/58) was not fitted with radar and made a visual sighting at 1013 hours of one merchant vessel escorted by four destroyers on a course of 070 degrees at twelve knots off the North Spanish coast.(3) Very accurate intense A.A. fire was experienced. At 1100 hours instructions

H.Q.C.C.
Controllers
Log

H.Q. No. 19
Group Apps.

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- (1) The position of this sighting was given as: 4425N x 1104W.
 - (2) The position given by the Sunderland was 4410N x 1125W.
 - (3) The position given in the first sighting report was: 4409N x 0732W.

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were received from base to land back at St. Eval or Holmsley South by 1600 hours, so after only five minutes of homing, the aircraft had to leave the target in order to be back by the time stated.

H.Q.C.C.
Naval Staff
Log

In the meantime, at the Admiralty, the proposed detachment of two destroyers from the northbound convoy to intercept the Himalaya was being examined, and it had been decided to send H.M. cruiser Charybdis and one destroyer into the Bay area from 5105N x 0950W. The speed of this force was twenty knots.

As a direct result of the Halifax sighting and prompt reporting, the U.S. submarine Shad on patrol in the south east corner of the Bay, was able to move northwards out of her billet for interception at the entrance to the swept channel.

At 0342 hours on 1 April the submarine made an attack on a merchant ship escorted by four destroyers in 4437N x 0218W, about 90 miles S.S.W. of the Gironde estuary. She fired eight torpedoes and claimed a total of five or six hits on the merchant vessel and two destroyers. All the enemy vessels were subsequently photographed at Bordeaux. (1)

A.M. File
S.2017/A.I.3c

Bad weather during the next few days prevented accurate assessment of what had occurred, but it appeared that at least two ships had left Bordeaux and one had arrived.

When photographic cover was again practicable on 4 April, it was found that three ships had in fact left Bordeaux; the Himalaya, Portland and the Osorno, all of which had for some time been identified as loaded and ready to leave. Somewhat as a surprise, however, the Himalaya had arrived back at La Pallice. (2)

Thus of the three known blockade runners that had left Bordeaux, one was not seen at all and the other two were sighted on 29 and 30 March. Of these, the Himalaya was escorted by short ranged torpedo boats as far as 0600 degrees West approximately after which it appeared she was left to proceed on her own, and while alone was sighted three times by our aircraft. Since for some time she was known to be loaded, it was unlikely that she was being used as a decoy. The only explanation for her return to port put forward by the Staff at H.Q.C.C., was

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- (1) The vessel concerned was the Pietro Orscolo (6,344 G.R.T.) which arrived in the Gironde at 1100 hours on 1 April. One cargo hold was damaged by torpedo and some rubber was lost. One destroyer was also hit by a torpedo which did not explode.
 - (2) On further examination of these photographs it was realised that the Alsterufer (2,729 g.t.) a former supply ship had also left Bordeaux at about the same time. In view of the disruption of the enemy's blockade running plans, it was considered probable that she was being used on this occasion to carry goods of small bulk but of high value for Japan (Ref: M.E.W. - Bay of Biscay Traffic Summary No. 27).

that, as she was an Italian ship and probably manned mainly by Italians, they probably took fright and turned about.⁽¹⁾

The other escorted vessel was either the Portland or Osorno which after being taken by the long range destroyers to some point west of thirteen degrees, was left by her escort which then picked up an inward bound ship, the Pietro Orseolo. It was this force which was sighted by B/58 Sqdn. on 31 March in 44°03'N x 073°2'W on an easterly course, and subsequently attacked by the U.S. Submarine Shad.

Out of a total of seven aircraft which sighted the enemy, homing procedure was put into operation by the only four ~~fair~~ fitted with the appropriate equipment.

Sighting reports were made by all aircraft except one Hudson on Air Sea Rescue duty, and photographs were taken by four out of seven aircraft making contact, all of which proved invaluable. Unfortunately, the two Halifaxes O and B/58, did not take photographs which would have identified the merchant vessel escorted by torpedo boats on a W.S.Wly course, and the inward bound ship escorted by destroyers on an easterly course.⁽²⁾

While these blockade running operations in the Bay of Biscay area were occupying so much attention, it appeared from intelligence sources, that the enemy was attempting to stage a diversion by way of passing another blockade runner through the Denmark Straits or Iceland/Faeroes route.⁽³⁾

So far as was known this was the first attempt since the winter of 1939 to pass a blockade runner through this passage, in which, at this time of the year, the ice extended at the narrowest, to within thirty-one miles of the North Cape (Iceland).

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- (1) The following entries in the War Diary of B. d U. explains the Himalaya's return. '30 March - The outward bound Italian ship Himalaya reported at 2200 hours that she was stopped by an enemy warship in 44 degrees North 12 degrees West (approx.) and her crew were taking to the boats. U.71, 124, 106 and 178 were given orders to proceed to the supposed position of sinking at maximum speed to pick up the ship's crew. As one of these U-boats was quite near, the rescue operation was likely to be successful.' '31 March - Himalaya is not sunk and has now put into port in Western France. U-boats detailed for rescue are continuing their passages.'
 - (2) As mentioned earlier, the vessel on an easterly course was later identified as the Pietro Orseolo.
 - (3) Postwar evidence from enemy records confirm this as follows:-
 - (i) P.M. 26 March, a U-boat was told off to do an ice reconnaissance north of 68 degrees North in about 13 degrees West, and was only to report back if ice conditions did not permit of a passage.
 - (ii) At 1810 hours on 27 March, a U-boat reported an independent merchant ship in 54°40'N x 39°00'W, which the U-boat was told not to attack.
 - (iii) The following day, at 1500 hours another U-boat reported an independent merchant vessel in 56°40'N x 24°00'W and was instructed to let her go if she bore a resemblance to a German merchantman.

H.Q.C.C.
Naval Staff
Narrative
of Events
24 March/
31 March 1943

H.Q.C.C.
Controllers
Log

M.E.W. Traffic
Summary No. 25

LV/G3/28 Mar.
and
OBA/01/29 Mar.
refers.

BR.1738
The War at Sea
Vol.IV

Fortunately, there were Naval surface forces within easy reach of the area, but aircraft were not so readily available owing to the many calls for convoy protection at this time. However, a Sunderland on convoy escort duty, whose patrol was comparatively near one of the areas of probability of interception was briefed to look out for the blockade breaker, but nothing of note occurred. (1) The following morning however, at 0630 hours, H.M. cruiser Glasgow intercepted an inward bound blockade runner about 67 miles north west of the North Cape (Iceland). The ship proved to be the Regensburg (8,068 G.R.T.) homeward bound from Rangoon. (2) She scuttled herself, and the Glasgow picked up one officer and five men.

April

A.M. File
S.2017/A.I.3c
H.Q.C.C. Int.
Paper

The situation obtaining on 1 April was as follows:-

- (i) The Himalaya fully loaded had returned to La Pallice. In due course, and when an escort was available, another attempt at evasion was to be expected.
- (ii) It was believed that there were sufficient cargoes available in Europe to warrant another two or three ships being sent out to the Far East before the closing down of the blockade running season for the summer.
- (iii) The recent failure to pass an inward bound ship through the Denmark Strait might well have made the enemy decide not to attempt that route again, and any ships still to arrive from the Far East would therefore be routed through the Bay of Biscay. The decision to attempt the hazards of a northabout passage was an indication of the importance attached by the enemy to these blockade operations.
- (iv) When there was a gap between our north and south bound convoys in the Bay area, and when surface patrols were withdrawn, there would probably be a repetition of the events of 29 and 30 March.
- (v) The resumption of activity by F.W.200s would be a sign that the preliminary reconnaissance to find a gap between our convoys and patrols was in progress.

Of the five known departures from the Far East, four had already been accounted for, so there was still one inward bound ship at large.

There was not long to wait before the resumption of F.W. activity fitted in with other intelligence information received that blockade running in the Biscay area was again imminent. (3)

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- (1) Form Orange OBA/01/29 March refers.
 - (2) The Regensburg's cargo was reported as 4,520 tons of rubber, 3,785 tons of coconut oil and whale oil, 520 tons of tin, 100 tons of tungsten ore, 110 tons of tea, 15 tons of quinine - total 9,100 tons. It was also stated that she received her orders to complete her journey north about when she was in the South Atlantic. Her destination was to have been Stettin. (Ref: I.E.W. Bay of Biscay Traffic Summary No. 27).
 - (3) It was believed that early on 6 April a U-boat had rendezvous with an inward bound blockade runner in 4300N x 3500W. According to the Admiralty, it was possible that this was the Waserland in which case her speed would be 11½ knots. From B. d U's War Diary, however, the ship was the Irene (ex Silveplana) and U.174 had made rendezvous with her on 6 April. There was a wing formation of four other U-boats, U.128, 376, 91 and 262 which were to remain submerged if possible and report at once if any enemy forces were sighted.

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H.Q.C.C.
Controllers
Log

During the afternoon of 7 April, two Allied convoys and a Naval force⁽¹⁾ were reported by F.W. aircraft operating from Bordeaux. Seven aircraft in all were active in the Biscay area, and the same number on the following day. As far as was known these aircraft had been ordered out on reconnaissance duties only, for no attacks were made on the shipping sighted.

H.Q.C.C.
Naval Staff
Log

There were no submarines on patrol in the area, but H.M. cruiser Charybdis in company with H.M. destroyer Meteor were suitably disposed for interception of an inward bound ship.⁽²⁾

Photographs taken by P.R.U. at 1130 hours on 9 April disclosed the departure of four "Z" class destroyers from Bordeaux. The departure of the Himalaya from La Pallice was also revealed, and she was not located elsewhere on this sortie.

H.Q. No. 19
Group Apps.

From 0800 hours to 1630 hours on 9 April two Liberators and a Halifax patrolled an area between 4400N and 4520N with the eastern limit at 14 degrees West and the western limit at 18 degrees West but apart from sighting our own naval force nothing else of importance was seen. In addition to these special anti-shipping sorties, fourteen aircraft were on patrol within the 'Enclose' area throughout the day and night. It was one of the night patrols which made the first contact with an enemy force.⁽³⁾ At 2305 hours on 9 April when the aircraft was in 4527N x 0748W a radar contact was obtained at a range of ten miles indicating one large ship and three smaller ships in Vic formation on a course of 230 degrees. As the aircraft approached, the enemy force altered formation to line abreast. At 2310 hours a first sighting report was sent to base and homing procedure commenced.⁽⁴⁾ The presence of an enemy aircraft was suspected but no contact was made. Several times during shadowing the outline of ships and wakes were seen. Owing to P.L.E. the aircraft was compelled to set course for base at 0210 hours on 10 April, leaving the enemy force in 4500N x 0920W.

H.Q.C.C.
Controllers
Log

On receipt of the first sighting report, No. 19 Group informed H.Q.C.C. that another aircraft had been ordered off to locate, report and shadow; a second aircraft was also being brought to immediate readiness to enable the shadowing to be continuous.⁽⁵⁾ It was appreciated at H.Q.C.C., that the primary object at this stage was to home the naval surface forces on to the target when the destroyers had left the outward bound ship to pick up the expected inward bound vessel, thus

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- (1) This was KMS.12 and possibly a TIC convoy, and the naval force was H.M. cruiser Charybdis and H.M. destroyer Meteor.
 - (2) Orders were transmitted to this force to patrol in the vicinity of 4400N x 1400W as from P.M. on 8 April. Later, they were ordered to do a creeping line ahead search to westward from 140W between 4420N, and 4510N. If nothing had been sighted by dark 9 March they were to return to Plymouth. This was subsequently cancelled and orders were given for these two ships to remain on patrol until P.L.E.
 - (3) This was Wellington M/172 on Enclose 172-4.
 - (4) M/172's first sighting report was received at H.Q.C.C. at 2359/9 and immediately passed to the Admiralty. C-in-C., Plymouth was taking steps to inform H.M. Charybdis.
 - (5) PL/G3/10 Apl. and PL/G6/10 Apl. refer. Two Liberators of No. 224 Squadron were detailed.

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leaving an available Wellington Torpedo Bomber Squadron (No. 547) free to deal with the eastbound ship at last light. (1) However, the Admiralty's appreciation was that it was more important to attack the enemy which, at least, had been sighted, with all the available aircraft, rather than to keep anything in reserve for an inward bound ship which had not yet been detected; moreover this vessel could almost certainly not be dealt with by the naval force when within range of shore based enemy strike aircraft. (2)

H.Q.C.C.
Naval Staff
Log 10.4.43

During the pre-dawn hours of 10 April, the situation was discussed between S.A.S.O. Headquarters, Coastal Command, and D.O.D. (H), Admiralty. The weather was on the doubtful side, but it was finally agreed that the Wellington Squadron should take-off at 0530 hours to enable them to fly in formation in daylight to the expected position of the escorted ship sighted by M/172. (3)

H.Q. No. 19 Gp.
O.R.B. App.
9.4.43

Meantime, Wellington F/172 had made contact with the enemy force at 0050/10 April and shadowed continuously until 0425 hours (4) having attempted to home G/172 onto the target before leaving. This effort unfortunately proved unsuccessful owing to G/172's difficulty in obtaining bearings of F/172's signals. At 0237 hours a Sunderland W/10 (R.A.A.F.) had also located the same target and realising that it was already being shadowed, continued with its ordered Anti-U/boat patrol at 0344 hours. (5)

Between 0430 and 0500 hours, two Halifaxes were airborne to relocate this or any other enemy surface units and were briefed to be prepared to home a striking force of aircraft onto the target; neither of these aircraft, however, saw anything of the enemy.

H.Q.C.C.
Controllers
Log 10 Apl.

At 0730 hours the A.O.C.-in-C., was informed of the situation and immediately ordered the move of six torpedo carrying Hampdens of No. 415 (R.C.A.F.) Squadron from Docking (No. 16 Group) to St. Eval (No. 19 Group) to prepare for a strike at dusk on the expected inward bound ship. This brought

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- (1) H.Q.C.C. were very reluctant to subject low flying torpedo aircraft in broad daylight to the heavy flak barrage which four destroyers could muster.
 - (2) The Admiralty were, also, not very enthusiastic about Charybdis taking on four large destroyers. Yet the cruiser's previous orders were to join up with MKS-11A for no other reason than fear of attack from German surface forces. (Ref: H.Q.C.C. Naval Staff Log - Entry timed 0125 hours 10 April).
 - (3) S.A.S.O. Headquarters, Coastal Command, gave instructions to No. 19 Group that, it was to be made perfectly clear at the briefing, that if the Wellingtons saw the blockade runner escorted by destroyers in daylight they were not to attack, but if they saw torpedo-boats as the escort, the risk could be taken. If the Wellingtons saw the inward bound vessel, they were to have a crack at that rather than at the escorted outward bound ship. The same orders applied to the naval surface forces. (Ref: H.Q.C.C. Naval Staff Log 0220 and 0245 entries 10 April 1943).
 - (4) The last position given by F/172 on leaving the force was 4532N x 0925W which was arrived at by Astro-fix.
 - (5) The Sunderland left the enemy in a reported position of 4525N x 0900W, Course 265 degrees.

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forth a protest from S.A.S.O., No. 16 Group, as he was hoping to stage a large scale strike against an expected abnormally large volume of enemy shipping off the Dutch coast, which had been held up for five days. The Admiralty were consulted, and declared that the blockade runner took precedence, so the executive order for the detachment of No. 415 Squadron was issued immediately.

H.Q. No. 19 Gp.
O.R.B./App.
10.4.43

The next sighting of the enemy came from a Sunderland at 0900 hours, in position 4530N x 0745W. (1) The force sighted was one merchant vessel and three destroyers on an easterly course. At this time it was not known what force this was. The previous sighting at 0425 hours had been of similar composition but on a westerly track. Until a good amplifying report came in it was impossible to say if this was the inward bound ship or the Himalaya returning to the Gironde. (2)

H.Q.C.C.
Controllers
Log 10.4.43

The 0900 hours sighting report was not received at base until 0926 hours due to a period of considerable W/T congestion. The Sunderland received instructions to go over to 385 kcs and start homing procedure, which was carried out as from 0945 hours.

H.Q. No. 19 Gp.
O.R.B./App.
10.4.43.

Meanwhile the Wellington Torpedo Squadron consisting of five aircraft were well on their way to their allotted area viz: 4435N to 4455N between 0940W and 1055W. Their actual time in this area was 1022 hours to 1130 hours. By 1513 hours they had all landed back at base having sighted nothing.

The Sunderland continued shadowing until 1346 hours when P.L.E. was reached. Unfortunately, at that time, no other aircraft was in contact, (3) and the enemy force was lost until 1849 hours when shadowing was resumed by a Halifax (4) sent out specially to relieve the Sunderland. Although not fitted with

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- (1) This was Sunderland J/119 on Enclose 119-2.
 - (2) Entries in B. d U's War Diary dated 9 April states:
 - (i) 'In view of several reports by our own aircraft of enemy forces sighted (cruisers, destroyers) Group West decided to escort the Himalaya back with destroyers and order Irene (Silvaplana) to proceed to Vigo.'
 - (ii) 'On the personal orders of the Naval High Command, the four U-boats detailed as a wing formation for the Irene were later sent at maximum speed to meet the homeward bound vessel in order to take over in close escort as complete flak defence and defence against surface ships.'
 - (iii) A later entry states 'U-boats will now operate on a new course and rendezvous will take place at the earliest during the course of the morning. They will wait there for about two hours and then proceed to Vigo on searching courses.'
 - (3) During the forenoon one of the Liberators (L/224) sent out specially to find enemy shipping homed on to the Sunderland signals and had sighted the blockade runner at 1055 hours, having previously picked up the force on radar at 45 miles range. The Liberator was promptly engaged by Ju.88s which caused a temporary loss of contact. This was regained at 1131 hours when it was noticed that two fast motor boats had joined the force which was now on a course of 104 degrees. Ten minutes later this Liberator reached P.L.E. and set course for base. A second Liberator (M/224) sent out as a relief developed radar trouble and never found the enemy force.
 - (4) This was O/58 whose first sighting report was '1 MV 4 DRS in 4551N x 0455W, Course 070 degrees, Speed unknown.

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radar, contact was maintained by the Halifax, which also had to contend with repeated attacks by Ju.88s. P.L.E. was reached at 2019 hours. From 2005 hours, a Sunderland (O/461) diverted from Enclose, was also in the vicinity but remained for only ten minutes owing to P.L.E. This aircraft was also engaged by Ju.88s and A.A. fire from the escort units.

H.Q.C.C.
Controllers
Log
PL/G9/10 Apl.
PL/G10/10 Apl.

H.Q. No. 19
Group
O.R.B. App.

H.Q.C.C. File
S.15211
Encl. 84A

As the T/B Wellington Squadron was not available to attack having been sent out on an abortive sortie during the forenoon, another strike force was scraped together during the afternoon consisting of five torpedo-carrying Hampdens, (1) eight Wellingtons (2) with bombs and eight Beaufighters (3) with cannon. The Hampdens and Wellingtons were briefed to tackle the merchant vessel, while five of the Beaufighters were to make for the escorts and the remaining Beaufighters were to act as a defence against enemy fighters. This striking force was airborne by 1800 hours and it was informed of the Halifax sighting at 1849 hours as soon as the report was received at base.

The first to arrive in the target area were five Hampdens and four Wellingtons (4) at 2035 hours; they proceeded to attack despite intense flak. One Hampden (P/415 Sqdn.) was promptly shot down into the sea but the remainder dropped their torpedoes from ranges estimated at 1,000, 1,200, 1,500 and 2,000 yards. (5) No hits were claimed. All the four Wellingtons using the Mk.XIV sight bombed from heights between 1,500 to 4,000 feet, but only one estimated a hit on the merchant vessel's stern.

Five Beaufighters of No. 248 Squadron arrived in the target area at 2040 hours and waited for the Hampdens to attack before going-in themselves. However, as they were five minutes late the Hampdens had already attacked and were not seen, and so the Beaufighters returned to base alone when the light failed. Three Beaufighters of No. 141 Squadron arrived at 2046 hours and immediately attacked the escorting craft. This attack was also, unfortunately, not synchronized with the Hampdens. One of these Beaufighters (S/141 Sqdn.) was shot down by flak and seen to dive into the sea.

Of the four Wellingtons which set course with the Hampdens but which were subsequently lost sight of, three saw the target by the flak which was coming-up at 2100 hours, but were unable to locate it clearly and so abandoned their attempt; the fourth, observed two destroyers at 2120 hours, and made an attack, but no results were observed. The merchant vessel was not seen. Photographs taken during this operation identified the ship as the Himalaya with two destroyers, one Moewe class torpedo boat, and one unidentified escort vessel.

Photographs taken subsequently by P.R.U. revealed that there was no new arrivals in the Gironde and no apparent damage to the Himalaya or any of the escorts. (6) When first seen the

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- (1) No. 415 (R.C.A.F.) Squadron.
 - (2) No. 311 (Czech) Squadron.
 - (3) Five of No. 248 Squadron, and three of No. 141 Squadron. The last three on loan from No. 10 Group, Fighter Command.
 - (4) The four Wellingtons had set course independently from Talbenny at 1700 hours.
 - (5) The torpedo settings were: four at fifteen feet and one at eight feet.
 - (6) From German records consulted since the war it appears that the Himalaya was damaged by bombs during this attack.

merchant vessel was off Le Verdon, but two days later i.e. 13 April she had moved to a berth at Pauillac.

Ibid and
BR.1738
The War at
Sea Vol. IV.

Of the expected inward bound ship, there had been no positive news until 1950 hours on 10 April when it was learned from the Admiralty that, H.M. Minelayer Adventure returning to Milford Haven from minelaying in the Mediterranean, had intercepted a surface vessel at about 1700 hours in 4318N x 1426W some 200 miles west of Cape Finisterre. (1) The ship scuttled herself and sank heavily on fire at 1731A. All survivors, numbering 146 were picked by H.M.S. Adventure. This was the Irene (ex Silvaplana) inward bound from Saigon which was carrying about 8,000 tons of raw rubber, zinc and general cargo.

Three days later the Portland (7,132 tons) one of the outward bound blockade runners which had left the Gironde on 30 March, was intercepted and sunk by the French cruiser Georges Leygues in 0612N x 2145W about 500 miles W.S.W. of Freetown. All her crew were rescued.

(iv) The need for exercise in synchronized attack

H.Q.C.C.
File S. 15211

Like most of the previous air strike operations against blockade runners, the operations which took place on the 9 and 10 April, left something to be desired, and it was obvious that if full advantage was to be taken of the mistakes made in order to obviate or reduce the chances of repetition, then a detailed analysis was necessary. This was undertaken by H.Q.C.C. and on 24 April, the report with tracings of tracks flown by the aircraft concerned was forwarded to H.Q. No. 19 Group with the Air Officer Commanding-in-Chief's comments.

Of the standard of courage and devotion to duty, the A.O.C.-in-C. had no hesitation in proclaiming that this was in accordance with the best traditions of the Royal Air Force.

So far as the organisation of the strike itself was concerned, however, the A.O.C.-in-C. went on to state that it was normally desirable, other things being equal, for the torpedo aircraft to lead the combined formation because it was easier for high flying aircraft to follow the low flying ones, than vice versa. It was appreciated in this instance that the low speed of the Wellingtons might have caused some difficulty in co-ordinating their strike with the Hampdens, but co-ordination should not have been impossible given good organisation, and leadership. In any event a combined force should never be despatched without making sure that all the elements thoroughly understood who was the leader and deputy leader, and that they realised they must not break away to strike on their own.

As a general rule the chances of bringing off a rendezvous at sea more than 200 miles from base were poor to say the least of it. If it was impossible for the torpedo and bomber aircraft to remain in company for any reason it was preferable to despatch two forces to rendezvous at the target, despatching them so that the fighters arrived a little earlier than the bombers and torpedo aircraft. The actual attack should be almost simultaneous, the fighters taking on the escort vessels

(1) A D/F fix on an unknown unit at 1719B in 4330N x 1430W had been the first indication of a probable enemy blockade runner inward bound.

and the bombers, if possible, attacking slightly before the torpedo aircraft in order to divert and occupy the attention of the enemy flak gunners.

The fact that on this occasion the co-ordinated timing of the attack went adrift was no doubt partly due to the gap in the shadowing between P.L.E. of J/119 at 1346 hours and the sighting of O/58 at 1849 hours. It was appreciated that this may have been due to a shortage of aircraft in view of the heavy demands of operation 'Enclose', though verbal instructions were issued from H.Q.C.C. that 'Enclose' was to take second place.

The incident served, however, to emphasise the great importance of continuous shadowing since, if a shadowing aircraft had been available, homing procedure could have been used and the Beaufighters would have been able to escort the Hampdens, the distance to the target being only 295 miles if routed through a point sixty miles west of Ushant. (1)

Whilst on the subject of fighter escort, the possibility of seeking assistance of No. 10 Group (Fighter Command) to provide escort to strike aircraft, if it was necessary to route them near the enemy fighter aerodromes, should always be borne in mind. On this occasion the fact that the strike had to be despatched to search, of course precluded the possibility of their being provided with close fighter escort, which again emphasised the importance of continuous shadowing.

The A.O.C.-in-C. concluded by stating, that the most important lesson of this operation was the need for combined exercises to practice torpedo, bomber and fighter aircraft simultaneously. It was appreciated that the primary role of the aircraft in No. 19 Group was Anti-U/boat warfare. But the value of a combined bomber and torpedo attack against such targets as strongly escorted blockade runners was such that it should normally be possible on such occasions to turn out a small bomber formation from No. 547 Squadron to co-operate with the torpedo aircraft of No. 415. It was suggested that the A.O.C. No. 19 Group should consider, in conjunction with the Group Commanders concerned, the arrangement of periodical combined exercises for these two squadrons together with fighters of No. 248 Squadron and, if possible, of No. 10 Group.

H.Q.C.C. File
MS.15310
Encl. 69B

(v) A requirement for a directive on 'Sombrero Priority'

Experience with 'Sombrero' during the remainder of the second season's blockade running had showed there was a definite disinclination to divorce Anti-Submarine warfare from anti-blockade running even when the situation had become clear. The compromise was that neither was done as efficiently as it would otherwise have been.

Ibid
Encl. 70A

The Air Officer Commanding-in-Chief, Coastal Command was by no means satisfied with the existing policy or methods for dealing with blockade runners in the Bay and on 7 May 1943, after consultations with the Naval Staff at H.Q.C.C. a letter

(1) Beaufighters were capable of flying in company with Hampdens to a radius of 320 nautical miles, i.e. $2\frac{3}{4}$ hours out and $1\frac{3}{4}$ hours back - total $4\frac{1}{2}$ hours, allowing fifteen minutes fighting time in the target area.

containing a suggestion for clarification of the position was forwarded to the Admiralty, for the attention of the Vice Chief of the Naval Staff.

In this letter, the A.O.C.-in-C., stated that as Coastal Command had not and never would have enough aircraft to do everything at once, the Command should have a very clear indication of whether and when it should give priority to the blockade runner at the expense of the anti-submarine patrols. At that period all the attention of the Command was diverted to the latter, and a reluctance to draw off from the Anti-submarine patrols tended to result in half-measures, vis-a-vis the blockade runner.

To decide whether the importance to Germany of getting in a cargo of rubber outweighed the importance of unremitting pressure on the U-boats crossing the Bay of Biscay, was not, in the A.O.C.-in-Cs opinion, a matter for himself or C.-in-C. Plymouth, but one for the Chiefs of Staff advised by the Joint Intelligence Committee and the Ministry of Economic Warfare. If the Chiefs of Staff could agree that the blockade runners should have priority of Coastal Command's effort it could then become a matter for the Admiralty to deal with as one of routine. In the event of such a decision it would have to be accepted that this would most likely considerably reduce the value of the Bay Transit Area offensive for the period concerned. If the decision was in the opposite sense, the chances of Coastal Command dealing thoroughly and effectively with the blockade runner would be correspondingly reduced.

Ibid
Encl. 71A

In a reply dated 18 May 1943, V.C.N.S. stated that he did not consider the general question of priorities between anti-submarine and anti-blockade running was one for the Chiefs of Staff, but a normal decision for the Admiralty. It was not a matter on which any hard and fast ruling could be given and each case would have to be judged on its merits having regard to the state of the U-boat campaign, the surface and air forces available, the value of intelligence and the chance of interception.

With regard to the actual conduct of past operations against the blockade runner, V.C.N.S. considered there was every reason to be pleased with the results which the A.O.C.-in-C. Coastal Command and the C.-in-C., Plymouth had obtained with the minimum diversion from the Anti-U/boat campaign. Admittedly good fortune had played its part so far as surface ships were concerned. Nevertheless, the enemy had been taught a severe lesson which had already had far reaching results. This was always the way with blockade operations - vigorous action was required at the outset if the blockade was to be maintained subsequently with the maximum economy of force.

Concerning the formal priority signal, V.C.N.S. was inclined to think that this was hardly necessary; however, the A.O.C.-in-C. could accept the fact that in present circumstances the First Sea Lord would ask for a diversion of aircraft to blockade runners provided the intelligence was good, and the distraction from the U-boat campaign was not excessive or protracted. It was a matter which he would probably judge himself in the knowledge of the great importance of losing no chance to sink U-boats and the great value of each cargo to Germany and Japan respectively.

In acknowledging the offer of V.C.N.S. for a definite directive, the A.O.C.-in-C., pointed out there was a strong

feeling at Coastal Command that opportunities had been missed by falling into half-measures, and there was no doubt that the anti-blockade running operations during the concluding phase of the second season's activities had suffered from a certain indecision and reluctance to abandon A/U operations even for a short period.

The policy signal to be made by the Admiralty on each occasion of Far Eastern blockade running in future would be repeated to the Air Ministry so that C.A.S. would be kept in the picture.

(vi) The close season

M.E.W. Bay
of Biscay
Traffic Sum.
No.28

Although the threat of further arrivals and departures of blockade runners was present throughout the remainder of April and May 1943, there was every indication by early June that the close season had commenced.

In 1942 this interval had lasted from the beginning of June to the middle of August. There was then, little, if any, cargo available for shipment and all the potential blockade runners in the Biscay ports required either docking or refitting before they were available for the long voyage to the Far East. This year, cargo urgently needed in Japan was known to be awaiting shipment at Bordeaux and three suitable vessels at least had already undergone docking and refitting and even loading as well. The possibility could not, therefore, be excluded that one or all three could be passed out if circumstances seemed particularly favourable to the enemy.

Throughout the next three months, the usual P.R. sorties over the ports on the west coast of France kept the Allies in the picture and by September no less than seven known blockade runners were either ready or appeared to be preparing for sea.⁽¹⁾

M.E.W.
AS/205/2/2
Enemy Merchant
Shipping
Activity
Oct. 1943

Another factor which it was considered might well precipitate the departure of those vessels ready for sea was the setting-up of Allied air and naval Bases in the Azores during the autumn. When this newly formed group became fully operational it would, no doubt, prove to be a very formidable obstacle to the blockade runners; in consequence, it was

(1) The following table demonstrates clearly the advanced state of preparedness of the various blockade runners. All vessels were now suitably armed.

Ship	Stage I Inactive	Stage II Shipyard	Stage III Drydock	Stage IV Loading	Stage V Departure
<u>Tannenfels</u> - -	- - -	- - -	- - -	- *	
<u>Himalaya</u> - -	- - -	- - -	- - -	- *	
<u>Dresden</u> - -	- - -	- - -	- - -	- *	
<u>Pietro Orseolo</u>	- - -	- - -	- - -	(Possibly	
<u>Munsterland</u> -	- - -	- - -	- *	loading)	
<u>Elsa Essberger</u>	- - -	- - -	- *		
<u>Fusijama</u> - -	- - -	- - -	- *		

Another blockade runner, the Kulmerland, also well advanced in preparing for sea, was severely damaged by air raid on the port of Nantes by the U.S.A.A.F. on 22 September 1943.

anticipated that the enemy might well take advantage of the period of comparative inactivity before full status was achieved.

During October and the first few days of November there was a marked increase in the scale of internal activity among those ships known to be ready for sea, but there was no increase in the number of previously idle vessels being got ready for service. Among this internal activity which, incidentally stretched up as far as Brest and beyond, the movement of the Munsterland (6,434 tons) from the Gironde to the English Channel was not regarded as a definite fundamental change in the enemy's blockade running plans. She was idle throughout last winter's large scale movements and it had always been anticipated that this year's activity would be on a reduced scale, anyway. Another movement of interest was that of Dresden (5,567 tons) which was reported to have been damaged by mine when off Royan on 2 November. (1)

Of the Far East contingent nothing had been heard until October when it was reported that three blockade runners were ready to sail on 15 October from Saigon to Germany with cargoes of rubber.

(vii) The third blockade running season

The enemy's plans for the third season were dependent not on the amount of materials available, but on the amount of shipping to hand in Western France and East Asia. As this was limited, rubber and solids were to be given priority.

Plans made for the trip from Japan to Europe involved five ships all of whom were available in Japanese waters, and one other was being repaired. (2) It was suggested that these ships should be sailed in two equal groups, the first to arrive in European ports at the end of November, and the second at the end of December. The carrying capacity of this merchant armada was approximately 38,000 tons, which was to be allocated largely to rubber (14,000 tons), Tin (9,000 tons), Industrial oils (4,000 tons); and among the edible raw materials, pride of place was to be given to Lard (2,000 tons).

At the same time as these plans were formulated, the German Embassy in Japan was requested to provide for a further 3,000 tons of raw materials to be transported to Europe by Transport U-boats. Priority was to be given to rubber, then wolfram, opium and quinine in as concentrated a form as possible.

For the eastbound trip to Japan, plans were made for seven freighters (4 German and 3 Italian) to participate from the European end. They had a carrying capacity of 50,800 tons. (3)

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- (1) German records consulted since the end of the war confirm that the Dresden was damaged by mine on this date.
 - (2) The five ships in question were:- Alsterufer, Burgenland, Rio Grande, Weserland and Osorno. The ship undergoing repair, the Havelland was not mentioned again.
 - (3) Cargo sent to Japan is not given in detail in German documents, merely a statement that it consisted of:-
 - Specifications (or models) of weapons.
 - Machinery.
 - Industrial products.
 - Chemical products.
 - Raw materials.

SECRET

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The auxiliary ship Ostfriesland with a cargo space of 6,135 tons was also being made ready for sea.

Fusiyama, Himalaya, Tannenfels and Elsa Essberger were to leave Europe by September 1943, and Dresden, Kulmerland, Pietro Orseolo and Ostfriesland during the following month.

There were to be two routes outwards, one via Cape Horn (S. America) the other via the Cape of Good Hope (S. Africa). The same track was followed by both from Western France to the position 1500S x 2200W, where the track parted, one to the south-east for 'Good Hope' the other to the south-west for the 'Horn'.

For the ships returning to Europe a special route was also laid down. Osorno and Alsterufer were to attempt to effect an entry via the Bay of Biscay, and Rio Grande was to come north-about via the Iceland passage and Norway.

Before the blockade runners set sail, they were provided with full details of their disguise, wireless procedure, instructions for scuttling, and the procedure to be adopted on encountering enemy surface and air forces.

(viii) Operations - November 1943/January 1944

H.Q.C.C. File
MS. 15310
Encl. 87A

As early as 5 November, the Admiralty had warned all concerned that there were firm indications of the enemy's intentions to resume blockade runner operations, though it could not be forecast, as yet, when the movement would commence.

Headquarters, Coastal Command, was requested to hold one Beaufighter Torpedo-Bomber Squadron at short notice for transfer to operations in the Bay of Biscay, leaving two squadrons available for operations off the Norwegian coast, and to consider the use of Beaufighters with Rocket Projectiles.

Ibid
Encl. 88A

A prompt reply by H.Q.C.C. pointed out that there was no room for a Beaufighter T/B Squadron on any airfield within sufficiently close range of the Bay except by withdrawing an Anti-Submarine squadron. If a T/B squadron was withdrawn from the East-coast it would leave only one such squadron for operations off the Norwegian coast until No. 439 (R.N.Z.A.F.) Squadron was back in the line after re-equipment, about the end of December. The move would actually involve three squadrons and would leave nothing for operation off the Dutch coast. As the enemy was obviously aware of our permanent patrols it seemed more than likely that the blockade runners would proceed out of the Bay by hugging the Spanish coast, and if this route was followed it would be outside the range of Beaufighters armed with torpedoes. On this occasion it was, therefore, proposed by H.Q.C.C. to use three Halifaxes fitted with the Mark XIV bombsight, and in addition there were twenty Liberators available in No. 19 Group now fitted with R.P.

Though no blockade runner had, so far, actually put to sea, a break-out was anticipated at any moment and each interpretation of a P.R. sortie of the Gironde area was scrutinised for the long awaited clue which would set 'Sombrero' in action. It was, therefore, with a certain amount of enthusiasm that a P.R.U. report on 26 November was received which stated that the Pietro Orseolo (6,344 tons) was lying at anchor off Port Tudy (Ile de Groix), as she was known to be loaded and was last seen at Bordeaux. In the nearby port of Concarneau some destroyers had also been seen on a previous P.R.U. sortie. It was planned

H.Q.C.C.
Controllers Log

(17500)335

SECRET

to keep these enemy forces under close observation by regular P.R.U. sorties but the weather intervened and precluded any further sight of them until 1520 hours on 29 November when the Pietro Orseolo was found to be in exactly the same position but the destroyers had gone from Concarneau. It had been A.D.G.B. Command's intention to attack these destroyers in port as they were considered to be within range of the available aircraft in No. 10 Group, but as the Pietro Orseolo was lying some twenty-five miles to the south-eastwards, it put her out of range of this Group's aircraft. Meanwhile the Admiralty had made this ship a Class I target, (1) and the only air striking force immediately available was from aircraft of the 2nd T.A.F. On 1 December, one Mosquito armed with bombs, (2) escorted by twelve Typhoons (3) were despatched to attack, despite the failure of P.R.U. to obtain photographs at 1130 hours that morning owing to the cloud conditions. The target was found, however, and attacked, but no claims were made as the bombs were estimated to have fallen twenty feet short of the target. The loss of two aircraft - the Mosquito and one Typhoon, coupled with the fact that the possibility of slight damage might well make her put back to port, were the grounds put forward by H.Q.C.C. and the Admiralty for postponing any further attempts by aircraft of No. 10 Group or the 2nd T.A.F. The Pietro Orseolo remained at the same anchorage off the Ile de Groix until 11 December when she moved to a position some 2½ miles S.W. of Concarneau. Again an attack was contemplated this time by Coastal Command but for several days the weather was unsuitable. Then on 18 December a favourable period occurred and six Torbeaux with five Beaufighters armed with 20 m.m. cannon, (4) escorted by eight Typhoons of No. 10 Group (A.D.G.B. Command), (5) were despatched to attack the blockade runner. The attack developed from the south-west. The anti-flak Beaufighters made diving attacks from 1,500 feet to close range; the Typhoons also raked the target from stem to stern. The Torbeaux approached in fluid pairs at heights varying from 100 to 300 feet. Torpedoes were released at ranges from 1,000 to 1,200 yards and two hits were claimed, one amidships and one near the stern. After the attack black smoke poured from the vessel and she listed to starboard. (6)

No enemy fighters were encountered but there was considerable flak from the target and shore batteries. Two of the Beaufighters received slight damage but all aircraft returned safely to base.

On the following day i.e. 19 December, the Admiralty made a signal to all concerned to the effect that the detection of blockade runners was to take precedence over all anti-submarine

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- (1) The U.S. Eighth Air Force was also interested in this target and were trying to fit in an attack among their many other commitments; however, the weather finally ruled out any further action from this direction.
 - (2) Of No. 487 Sqdn. 2nd T.A.F.
 - (3) Of Nos. 196 and 266 Sqdns. No. 10 Group A.D.G.B.
 - (4) Of Nos. 254 and 248 Squadrons.
 - (5) Of No. 183 Squadron.
 - (6) The Assessment Committee at first awarded a 'Serious Damage' for this attack, but subsequently upgraded this to 'Sunk' when information came to hand which stated that the Pietro Orseolo had foundered soon after the attack in 4751N x 0356W.

operations. No specific anti-shipping patrols were laid on, but during the course of briefing aircrews for anti-submarine patrols within the Percussion area due emphasis was given to anti-blockade running procedure.

H.Q.C.C.
Controllers
Log

Several minor incidents occurred during the next few days which caused diversions from the routine patrols but at 1539 hours on 23 December an aircraft on patrol from the United States Escort Carrier Card (1) reported a suspicious surface vessel in 4745N x 1833W about 500 miles west by south of Ushant, which was regarded as a firm indication of a homeward bound blockade runner. Unfortunately, no further sighting reports were received from this source as the carrier had lost contact and was on her way to the Azores to refuel anyway.

The next sighting of an enemy force came during evening of the same day. At 2015 hours a Wellington (B/304) on a Percussion patrol, reported a radar contact probably surface vessels in 4539N x 0610W, with a request for instructions. This proved to be a force of twelve ships on a course of 300 degrees, speed twenty knots. It was not known whether there was a merchant ship amongst this party, but due to the reported high speed it was assumed that this was the escort force going out to meet the inward bound blockade runner. Between 2107 hours and midnight three further contacts were made by Wellingtons, all of which continued to shadow and sent reports to base as and when requested. (2) At 0008 hours on 24 December the first attack was delivered by one of the Wellingtons which had reached P.L.E. Owing to darkness no results were observed. (3) A Halifax next sighted five destroyers at 0025 hours /24 in position 4548N x 0725W on a course of 270 degrees, (4) and later saw the wakes of seven vessels on a similar track in 4548N x 0749W. In spite of the variation in the number of vessels sighted, it was still thought at H.Q.C.C. that they comprised the two sections of destroyers proceeding to meet the blockade runner.

H.Q.C.C.
Controllers
Log

By this time the intentions of the A.O.C. No. 19 Group were made known and were as follows:-

- (i) To shadow the destroyer force.
- (ii) To despatch two Leigh Light Liberators about 0200 hours to search for the blockade runner sighted by Card's aircraft.

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- (1) This United States Carrier Force had been sighted by German air reconnaissance on 22 December and a U-boat force known as Group Borkum was laid on to intercept. Between 2056 hours on 23 December and 0505 hours on 24 December several torpedo attacks were made by individual boats of the Group, and it was confirmed on 24 December that at least one U.S. Destroyer, Leary was sunk. The destroyers of the Carrier Force in turn attacked the U-boats and U.645 was sunk. See Chapter VI (xvii).
 - (2) The sightings were:-

Q/311	2107/23	Surface vessels	4525N x 0625W.
J/304	2110/23	4 vessels	4527N x 0628W.
G/304	2305/23	7 vessels	4530N x 0630W.

- (3) This was J/304 which released 6 x 250lb. D.Cs. from 400 feet.
- (4) This report was also intercepted by the Germans (Ref:- Bd. U. War Diary 23 December).

- (iii) To attempt to attack the incoming ship before the destroyer force joined-up. For this purpose all available aircraft of No. 502 Squadron were bombed-up and ready to take-off at 0700 hours.

Throughout the remainder of the dark hours of 24 December contact was maintained by a Halifax⁽¹⁾ and United States Navy and R.A.F. Liberators⁽²⁾ and at 0615 hours a second attack was made by one of the latter with depth charges, but again no results were observed.⁽³⁾

No. 19 Group
O.R.B. Appen-
dices

Between 0251 hours and 0635 hours four Liberators were airborne on a C.L.A. Search for the incoming blockade runner, but none of them made contact. On the other hand, several aircraft on Percussion patrols maintained contact with the out-going destroyer force during fore-noon period.⁽⁴⁾

It was expected that the enemy would provide additional protection by way of aircraft for this convoy during its passage through the Bay of Biscay,⁽⁵⁾ so to counter this move the heavy four-engined types engaged on the location and shadowing of this force were also provided with a protective cover in the form of three sections of Beaufighters which were sent out at thirty minute intervals from 0930 hours onwards.⁽⁶⁾

At 1135 hours the first section of Beaufighters visually sighted the enemy destroyer force still on a westerly course, the second section did likewise at 1220 hours, but in addition sighted another vessel five miles distant on a reciprocal course, which was described as of 5,000 tons with one very thin funnel amidships. The six Beaufighters circled this force at a range of 3 miles but were so heavily engaged by accurate flak that they lost formation during the course of evasive action, and did not succeed in joining-up again before reaching P.L.E.

Beaufighter C/248 having lost contact with the first-section came down to sea level and at 1230 hours visually sighted at five miles a merchant ship on an easterly course. There was also a white Sunderland in the vicinity which passed close to the merchant ship and soon after appeared to jettison its depth charges just before crashing into the sea. The Beaufighter

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- (1) This was R/58 Squadron on "Percussion M2 Night".
 (2) These were K and B/110 Squadron (U.S.N.) and H/53 Squadron (R.A.F.) also engaged on Percussion Night Patrols M3, T3 and T1 respectively.
 (3) This was K/110 which attacked with 4 x 250lb Torpex D.Cs.
 (4) The sightings were:-

Q/105 (USN) 0736/24	11 vessels Co.270 4550N x 1026W
P/105 (USN) 0812/24	11 vessels Co.270 4515N x 1025W
P/105 (USN) 0845/24(Radar)	7 vessels Co.260c ?
	(Visual) 6 vessels)
U/228 (RAF) 1109/24	9 destroyers Co.280 4535N x 1100W
G/461 (RCAF) 1114/24	10 ships Co.270 4538N x 1058W

- (5) This is confirmed by an entry in B.dU's War Diary dated 24 December which states:- "Air reconnaissance in centre half of BE for returning blockade runner Osorno. Fighter formations made ready".
 (6) These were 6/248 Squadron, 6/143 Squadron and 6/235 Squadron in that order.

circled the spot but only burning wreckage was seen. At 1250 hours C/248 set course for base having reached P.L.E.

Meanwhile, the third section of Beaufighters (6/235) had sighted the complete enemy force at 1244 hours on an easterly course. From this report it appeared that the rendezvous took place soon after 1230 hours. This section remained and shadowed the enemy until 1321 hours.

By this time No. 2 Section of Beaufighters had rejoined and was on its way back to base, when at 1330 hours in position 4651N x 1045W two HE.177s were sighted at sea level on an easterly course. The Beaufighter formation turned to engage and combat ensued until the ammunition was exhausted. One Beaufighter (N/143) was seen to disintegrate in the air and one HE.177 was claimed as destroyed.

During the forenoon a striking force of eight Halifaxes armed with 500lb M.C. bombs had been brought to readiness and were all airborne by 1333 hours.

There was a gap in the shadowing of the enemy from 1321 hours onwards, but it was regained by a U.S.N. Liberator (L/103) at 1433 hours and maintained with the assistance of another Liberator (M/103) until 1839 hours.

The major part of the striking force of eight Halifaxes reached the objective by 1700 hours and proceeded to carry out individual attacks from heights varying between 5,000 and 12,000 feet. The last of nine attacks was made at 1908 hours, but violent evasive action on the part of all aircraft engaged made it very difficult to observe any results, and no positive claims were made. Three more aircraft from Percussion patrols maintained contact with the enemy throughout the remainder of 24 December. Between 0100 and 0515 hours on 25 December eleven more sightings were made and eight attacks with bombs and machine guns were carried out,⁽¹⁾ but only one claimed a hit on the merchant vessel amidships.⁽²⁾ One of the Wellingtons (F/612 Sqdn.) failed to return to base.

(1) The sightings and attacks were:-

G/311	0120/25	- 2 destroyers	- Attacked and claimed hit.
Q/311	0100/25	- 6 probable destroyers	- Attacked.
F/58	0114/25	- 8 ships	- Attacked.
G/53	0115/25	- 9 escort vessels	- Attacked.
H/407	0148/25	- Radar contact & wakes	- Attacked.
M/224	0338/25	- 8 vessels	- Attacked.
Q/407	0355/25	- 8 vessels	- Attacked.
O/224	0400/25	- Radar contact	- Attacked.
L/58	0435/25	- Dim outline of ships only.	
K/612	0515/25	- 6 destroyers, 5 M/Vs.	
F/612	0230/25	- 2 destroyers	- Failed to return.

Liberator O/224 and Wellington Q/407 unknown at the time collided in mid air and the Liberator lost thirteen feet of its port wing. Both aircraft returned to base without further mishaps.

(2) There is no confirmation of this claim in German records consulted since the end of the war.

Contact was then lost until about 0830 hours when the enemy force was picked up again by two U.S.N. Liberators (A & E/103) who had been despatched to shadow as long as possible. They were eventually called off about 1030 hours as the convoy was by that time getting close enough to the French coast for Ju.88.s to come out and meet it. Meanwhile preparations were on foot to send out a strike force of Torbeaus, escorted by Beaufighters and Mosquitos to intercept the enemy. The weather was already deteriorating and by 1300 hours a signal was despatched to all aircraft engaged in operations in the Bay of Biscay to be back at base by 1600 hours. It was originally intended that the strike force should be formed up ready to leave at 1300 hours and be in a position to intercept the enemy at 1500 hours. However, owing to various delays (amongst others, uncertainty as to whether the strike force was to be despatched at all, and also the late arrival of two of the anti-flak squadrons), the complete force did not become airborne until 1341 hours.⁽¹⁾ An east to west search was carried out for the convoy between 0415W and 0447W along 4540N, but on finding nothing the strike force turned for home at 1534 hours, finally landing at base at 1700 hours. Visibility in the area of search was reported to be about twenty miles.

This concluded Phase I of air operations against this inward bound blockade runner which was later identified as the Osorno (6,951 tons). She was ultimately found by P.R.U. on 27 December beached in shallow water off Le Verdon with lighters alongside into which her cargo was being discharged.⁽²⁾

H.Q.C.C.
Naval Staff
Log

In order to guard against the possibility of a second inward bound blockade runner having passed longitude 30 degrees west during the rumpus of 25 December, the Admiralty attached great importance to an air search in the area between latitudes 50 degrees and 40 degrees north and longitudes 19 degrees to 22 degrees west during the following day. As the position of surface vessels were intimately related to the air patrols in force, very early confirmation was requested whether the above requirement could be met.

The possibilities of carrying out patrols in the area stipulated was discussed at H.Q.C.C., and it was finally decided that if the weather allowed, No. 15 Group and No. 247 Group (Azores)⁽³⁾ would fulfil this commitment for 26 December as No. 19 Group stations were expected to be unserviceable all day.

(1) The composition of the force was:-

15 Torbeaus	No. 254 Squadron (C.C.)
9 Beaufighters	No. 248 Squadron (C.C.)
2 Mosquitos	No. 248 Squadron (C.C.)
12 Mosquitos	No. 157 Squadron (A.D.G.B.)
10 Beaufighters	No. 143 Squadron (C.C.)
10 Beaufighters	No. 235 Squadron (C.C.)

(2) On 25 December, the Osorno hit a submerged wreck off the entrance to the River Gironde and had to be beached.

(3) With the object of locating, reporting and shadowing any enemy vessels attempting to run the Allied blockade in the central Atlantic No. 247 Group had already started to fly two special patrols known as "Charlie" and "Butter". It was intended that these patrols, which were of lower priority than convoy support requirements, should be flown continuously from first light. They commenced on 13 Dec. but were abandoned six days later and the search for suspicious shipping concentrated solely to the N.W. of the Azores.

Forms Orange
LAG/01/26 Dec.
LAG/03/26 Dec.
refers, also
BAL/04/26 Dec.

Forms Green
LV/G2/26 Dec.
PL/G3/26 Dec.
PL/G5/27 Dec.
PL/G10/27 Dec.
PL/G16/27 Dec.

In spite of adverse weather and convoy commitments this area was searched by two Fortresses, (1) and two Liberators, (2) but there was nothing of interest to report.

Immediate arrangements were made for the same patrols to be laid on for 27 December and to be carried out by aircraft of No. 15, No. 19 and No. 247 Groups. As No. 19 Group could not operate until daylight it was arranged that No. 15 Group would begin the patrols with six Sunderlands, all of which were airborne between 0112 hours and 0308 hours on 27 December. (3) These six sorties were followed by two Liberators of the same Group which were airborne at 0637 and 0739 hours respectively. (4)

Meanwhile at No. 19 Group there had been an improvement in the weather which allowed three Liberators to get off between 0500 and 0520 hours. (5) Then from 0715 hours onwards five more Liberators also managed to take-off. (6)

H.Q.C.C.
Controllers Log

It was around this time that considerable activity by enemy long range aircraft from Bordeaux was detected.

Form Orange
CA/01/29/Dec.
refers. Also
the Interrogation
Report in
C.C. Review
Jan. 1944

Within an hour of reaching the 'on patrol' position Sunderland T/201 sighted a modern cargo-type of vessel of approximately 4,000 tons, on a course of 090 degrees, speed 12 to 15 knots in position 4640N x 1930W. (7) The ship was challenged by T/201 several times but gave unsatisfactory replies. She was in fact the Alsterufer. At 1010 hours the ship opened fire with Oerliken using red and green tracer. (8) T/201 reported to base and began to shadow. (9) She remained in contact for four hours and carried out aircraft homing procedure. At 1302 hours in reply to the aircraft's repeated requests, permission was given to attack and this was achieved at 1345 hours with 2 x 500lb M.C. bombs and 2 x 250lb D.C.s. from 3,000 feet through cloud. No claims were made. The aircraft was holed in the bomb room bilge by gun fire, but the crew escaped injury.

No. 15 Grp.
O.R.B.
Appendices

In the meantime other aircraft in the vicinity had intercepted the first sighting report and were soon on the scene. By 1300 hours there were three aircraft in contact (10) in addition to T/201, two of which also made attacks with bombs and machine guns, but no claims were made. Shadowing continued.

- (1) They were Y/206 and C/220 Squadrons of No. 247 Group.
- (2) The Liberators were Y/86 and A/59 Squadrons.
- (3) The Sunderlands were:- Q/422, T/201, D/423, U/201, M/422 L/423.
- (4) The Liberators were:- L/86 and F/86 Squadron.
- (5) They were - N, A and P/224 Squadron.
- (6) They were - F/224, R and V/53 and G and R/311 Squadrons.
- (7) The master of the Alsterufer realised that he had been recognised, but held an easterly course, although his orders were to turn south if identified, as though he was a British ship independently routed to Gibraltar. (Ref.:- Interrogation Report).
- (8) The suggestion that she was a blockade runner was enhanced by a D/F of a surface vessel within 60 miles of 4630N x 1900W at 1017 hours.
- (9) As soon as she was sighted, the blockade runner broke W/T silence and signalled the German Operations Directorate, giving her position and asking for support. The Germans replied that support was being sent.
- (10) They were Q/422, V/201 and D/423.

Throughout these attacks the ship had been putting up a heavy barrage. (1)

H.Q. No. 19
Group O.R.B.
Appendices

Apart from the eight Liberators already airborne from No. 19 Group stations, another two Liberators managed to take-off at 1016 and 1059 hours respectively. (2) Just prior to take-off, the pilot of one of the Liberators (H/311) had telephoned H.Q.C.C. making a special request that he be allowed to choose his own weapons for attack if the target was found. This was approved. The aircraft was armed with 8 R.P.s., 1 x 500lb M.C. bomb and 1 x 250lb G.P. bomb. As the aircraft took-off the first sighting report from T/201 was actually being transmitted to base, and, after filtering, the details were re-broadcast to H/311 and received at 1150 hours. At 1535 hours when in position 4705N x 1832W a radar contact was obtained bearing 060 degrees red at 40 miles. The aircraft altered course and at 1605 hours the contact was identified as a merchant vessel. One Liberator was circling and was being engaged with accurate heavy and light flak, also parachutes on cables. A first sighting report was sent by H/311 immediately, but it was not heard by base. The Liberator then manoeuvred on to an attacking course, and according to eye witness accounts, went in to attack in such a manner as to make virtually certain of the destruction of the enemy as well as the aircraft. The approach was made from the starboard beam and in the face of intense flak and parachute cables, the first pair of R.P.s. was released from 800 feet at 600 yards range and the last pair was released from 600 feet at 400 yards range. Then followed the two bombs, the two-fifty pounder first, then the five hundred pound M.C., both released at 600 feet using the Mark III low level sight. During the run-in and throughout the attack, machine guns, with only one exception, were fired as they could be brought to bear. (3) Miraculously, the aircraft escaped

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- (1) According to the Interrogation Report, the 105 mm gun aft had fired about 30 H.E. shells, but they had missed so badly that the crew lost faith in what they afterwards described as "a cumbersome weapon". They relied on the two 37 mm and the four 20 mm guns, each of which used up a big quantity of ammunition. About 20 P.A.C. rockets had also been fired, but many of the projectiles had proved to be duds and were thrown overboard. Prisoners said that up to this stage the ship had not been damaged: not even by the machine gun fire, which passed well over them. But they were disconcerted when they saw bombs appearing out of the low cloud ceiling, imagining them to be directed by Radar.
- (2) H and J/311 Czech Sqdn. from Beaulieu.
- (3) As the morning passed, the situation on board the Alsterufer became tense. Hope rose when the crew learned that destroyers were on their way to help them. But vanished again later when told not to expect the destroyers until next morning. The crew then pinned their faith on the arrival of the promised aircraft, but even this hope began to wear thin as the set tuned to the aircraft wavelength remained silent. Of the final attack, the master and other prisoners said they had no doubt that both bombs struck the ship. They landed on the hatch over No. 4 hold, smashing through it, exploding on the rating's mess deck and killing two ratings who were resting. The men's kit, bedding, mattresses, grease and oil barrels began to blaze furiously. The bulkhead to the magazine had been started, and there was imminent danger of a major explosion. The deck hoses had been rent by the bombs and there was no water supply for fighting the fires. The guns aft were either jammed or wrenched from their mountings and were, therefore, quite useless. The main fuel supply line in the engine room was fractured irreparably and a bolt, sheered off by the concussion, struck the overhead lighting and extinguished it. The bomb explosion had brought down the aerials and the telegraphists were busy trying to make temporary repairs. They claimed they succeeded and that they managed to send off an emergency signal reporting the ship's position and that she had been bombed. No member of the crew appeared to have noticed the R.P.s., possibly due to the excitement of the moment. They could not say, therefore, whether the ship was holed aft below the waterline by R.P. or whether her hull was split open by the bomb explosions. Ref. Interrogation Report.

serious damage, but trouble was experienced with the starboard outer engine during the return flight. When the aircraft left the scene at 1615 hours the ship was burning furiously.

Contact was still maintained with the enemy vessel by a Liberator (F/86) of No. 15 Group which had been shadowing by radar since 1430 hours. On coming out of cloud at 1630 hours this aircraft sighted the target well alight and four lifeboats about to pull away from the ship's side.⁽¹⁾ Another Liberator (L/86) also joined-up at 1714 hours and followed aircraft 'F' in making four more attacks on the ship, but without further visible results.

ibid

Throughout the afternoon an air striking force of eight Halifaxes of No. 502 Squadron had been making its way towards the blockade runner, but arrived on the scene after the final blow had been delivered. Only five of the Halifaxes found the target which was blazing furiously from stem to stern, listing heavily to port and was well down by the stern. No further attacks were made. Four lifeboats containing about seventy survivors were standing-off about one mile from the blazing ship. Unfortunately one of the Halifaxes (D/502) failed to return. An S.O.S. was received at 1945 hours when the aircraft reported her position as 4848N x 1320W.

The last aircraft to leave the scene was Liberator L/36 Squadron, the pilot of which was quite confident that the ship was in a sinking condition when he left at 1900 hours.

R/59 Sqn.
Form Orange
Bal/03/28 Dec.

By 0930 hours the following morning only a large patch of oil some three miles long was visible, at the southern extremity of which four lifeboats - two under sail and two being towed, were making a southerly track at about one knot.⁽²⁾ These survivors drifted about the scene of the sinking until well into the next day. They were eventually sighted and picked up in the afternoon of 29 December by vessels of Escort Group 6 in 4606N x 1910W.⁽³⁾

- (1) On viewing the position, the master had ordered everyone to abandon ship immediately. No scuttling charges were exploded, but it was obvious that the ship had been holed aft, for she began to settle by the stern. Just prior to abandoning ship a Petty Officer Telegraphist had made a pyre of signal pads, code tables and gramophone records, swamped the whole with petrol and prematurely set it on fire. The floor of the office was covered in blazing petrol and the telegraphists had to abandon the transmitter to avoid being burned alive. The two senior telegraphists threatened the junior that he would be courtmartialled for this act. These sentiments were repeated by the Master when he learned that his private attaché case had also been flung into the flames under the impression that it contained secret documents, when, in fact, it held nothing more than an emergency kit for such an occasion as this. Ref. Interrogation Report.
- (2) According to the master and other prisoners it was four hours after the attack, (by Liberator H/311) before the ship finally sank. Towards the end, red and green very lights on the bridge and P.A.C. rockets were released in all directions. There were intermittent explosions from the magazine.
- (3) The only aircraft the German crew sighted during their time in the lifeboats proved to be another Sunderland. When all hope of rescue had faded they set course for Spain. They were cold and so miserably cramped that all surplus gear had been jettisoned.

SECRET

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BR.1738
The War at
Sea. Vol.IV

Having disposed of the Alsterufer, Allied air and naval forces were now free to deal with the enemy destroyers which were known to be at sea, presumably for the purpose of escorting her into port.

On receipt of the first sighting report of the inward bound blockade runner herself at 1018 hours on 27 December, the C.-in-C., Plymouth had at once directed the cruisers Enterprise and Glasgow towards a position to intercept. (1) A little later H.M. cruisers Gambia and Penelope received similar orders, and at 1241 hours the new minelayer Ariadne, homeward bound from the Mediterranean, was also placed by the Admiralty under the orders of the C.-in-C., Plymouth. The four ships constituted Force 3.

From previous experience the C.-in-C., Plymouth estimated that the enemy might send out five or six "Z" Class destroyers (5 x 5.9 inch) and a similar number of the Elbing Class torpedo boats (4 x 4.1 inch); and, on learning of the destruction of the blockade runner, he positioned the cruisers Glasgow and Enterprise so as to engage the enemy escorts at daylight on 28 December if they should not have turned back previously.

Form Green
PL/G23/27 Dec.

Preparations were also made for aircraft to patrol the enemy's possible line of retirement. (2)

H.Q. No. 19
Group O.R.B.
Appendices

At 0920 hours on 28 December a Liberator (V/105) of the United States Navy, was in 4700N x 1153W, when a radar contact was obtained bearing 005 degrees at twenty-two miles. The aircraft homed and visually sighted four destroyers on a westerly course at sixteen knots. A moderate amount of flak was soon forthcoming. In the first sighting report sent at 0925 hours the position of this party was given as 4655N x 1154W. Five minutes later, six more destroyers on a westerly course were sighted after a second radar contact at fifteen miles. The position of the second group was 4648N x 1157W. Control was informed of the second sighting at 0940 hours.

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The two British cruisers Glasgow and Enterprise were to the south of the enemy forces sighted, and immediately increased speed to 28 knots to cut them off. The weather was rough, with a Force 5 wind from the south-east, and a considerable sea running.

H.Q. No. 19
Group O.R.B.
Appendices

At 1100 hours, aircraft V/105 reported that the enemy had reversed course and was now heading east in 4646N x 1157W. The two enemy groups had joined-up, making a total of ten destroyers and torpedo boats. Some twenty-minutes later, however, a Sunderland sighted an enemy force in a reported position of 4637N x 1236W, which placed the destroyers many miles further to the westward. At this time air cover for the enemy force had arrived in the vicinity and as a result of evasive action the Sunderland lost contact which was never regained.

-
- (1) In accordance with Operation Stonewall, the successor to Operation Regulation.
 - (2) Percussion patrol "T" Day, was moved two degrees to the westward, and was to be flown by two Liberator aircraft of the United States Navy (V and X/105 Squadrons). To be on patrol at dawn 28 December.

(17500)344

SECRET

Form Green
PL/G4 and
PL/G6/28 Dec.
refer.

On receipt of the first sighting report, immediate action was taken by No. 19 Group to supply reliefs for the Liberator engaged in shadowing the enemy. (1) At the same time a strike force of Halifaxes and Liberators of the United States Navy was being organised and got ready for take-off by 1330 hours. In addition, air protection was required for the cruiser force.

Between 1246 and 1450 hours four Halifaxes and seventeen Liberators took off from airfields within No. 19 Group for the purpose of attacking the enemy destroyers. (2) The air cover for the cruiser force, totalling thirty-seven aircraft also took-off at intervals between 1309 and 1505 hours. (3)

BR.1738
The War at
Sea. Vol. IV

In the meantime the two cruisers, guided by aircraft sighting reports had sighted the enemy at 1335 hours. Eleven minutes later, H.M.S. Glasgow opened fire at a range of 18,000 yards, followed four minutes afterwards by H.M.S. Enterprise. Both ships were then on a southerly course at 30 knots. At 1400 hours a glider bomb, believed to have come from a F.W.200, fell astern of the Glasgow and twenty-minutes later the enemy destroyers attacked with torpedoes, all of which were evaded. On completion of the attacking manoeuvre, the enemy divided; four ships turned north-westward and the remainder disappeared southwards behind smoke. The two cruisers pursued the westward group.

H.Q. No. 19
Group O.R.B.
Appendices

Two Liberators of the United States Navy (V and X/105), both of whom had remained in contact with the enemy, had witnessed the naval action which ensued as the result of the sighting report by V/105.

By 1550 hours the first of the relief aircraft sent out by No. 19 Group arrived in the area, (4) and found the enemy force

-
- (1) Two Liberators of No. 224 Squadron and two Sunderlands of Nos. 10 (R.A.A.F.) Squadron and 228 Squadron were to take off as soon as possible to locate and shadow the enemy surface vessels reported in position 4648N x 1157W., at 0940/28 December. The aircraft were A and N/224, G/228 and J/10.
- (2) The force was made-up as follows:-

<u>Halifaxes</u>	<u>Liberators (U.S.N.)</u>	
A/58	N/110	D/103
F/58	S/105	J/103
O/58	J/110	K/103
L/58	M/110	W/105
	G/110	T/105
	C/110	Y/105
	E/110	P/105
	L/103	R/105
		U/105

- (3) The protective force comprised:-

S, U, B, G, L, X, H, C, N, Q/248 Squadron - Beaufighters (C.C.)
G, J, B, X, Q, W, C, E, P, K, A, U/235 Squadron -
Beaufighters (C.C.)
D, K, B, X, Q, Z, J/143 Squadron - Beaufighters (C.C.)
S, P, V, N, A, I, E, G/157 Squadron. - Mosquitos
(No. 10 Grp. A.D.G.B.)

- (4) This was Sunderland G/228 Squadron.

BR.1738
The War at
Sea. Vol. IV

scattered over a wide area. The surface engagement had been concluded as Glasgow had expended most of her ammunition and Enterprise was temporarily out of action owing to defective electrical gun circuits. All four enemy vessels had been claimed hit, three of which eventually sank, and one was believed damaged. (1)

No. 19 Grp.
O.R.B.
Appendices

The second Sunderland (J/10) was next to arrive and with G/228 remained in contact with the retiring enemy forces until P.L.E. which was about 1930 hours. G/228 had a brief encounter with a F.W.200. Throughout the sortie both Sunderlands gave accurate positions, courses and speeds at regular intervals. Of the four land-based aircraft sent out by No. 19 Group, only two found the enemy and remained to shadow until recalled to base at 1930 hours. One of the others, had engine trouble and was compelled to return, the fourth aircraft had frequent radar indications on what was believed to be enemy aircraft.

Of the strike force, none of the Halifaxes saw the enemy, but between 1810 hours and 1936 hours a series of attacks were made by six U.S.N. Liberators, but no claims were made. (2) Some of these attacks were carried out from 1,000 feet and below and a total of 57 x 350lb Depth Bombs were released. One of the Liberators E/110 Squadron crashed on return. There were no survivors.

During the course of their protective duties the Beaufighters and Mosquitos sighted the enemy on three occasions. One Beaufighter (N/235 Sqdn.) failed to return.

During the day, four F.W.200s, eight JU.88s, four He.177s and one He.111 were identified, in addition to which eighteen aircraft were unidentified but believed to be hostile. Air combats between the Mosquitos of No.157 Squadron and four enemy aircraft orbiting the two cruisers, resulted in a claim for one He.177 destroyed. Mosquito N/157 Squadron also failed to return to base.

Throughout the night of 28/29 December contact was maintained with the enemy by aircraft on Percussion patrols (3) and at 0001/29 Wellington H/407 attacked a radar contact believed to be four hostile ships with depth charges from 4,000 feet. No claims were made.

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- (1) According to German records, Z.27 (3,664 tons) - Destroyer and T.25 (1,780 tons) and T.26 (1,780 tons) - Torpedo Boats, were lost during this engagement in the Bay of Biscay on 28 December 1943.
 - (2) The attacks were made by R/105, Y/105, L/103; T/105, W/105 and P/105.
 - (3) Details of contacts were:-

2015/28 - C/407 - 2 DRS in 4618N x 0940W Co.210/25 knots.
2003/28 - H/407 - 4 contacts in 4640N x 0900W.
2140/28 - H/407 - 4 contacts in 4640N x 0820W - Co.090/20 kts.
2309/28 - H/407 - Contacts in 4629N x 0736W - Co.180/18 knots.
0001/29 - H/407 - Dropped DCS in 4626N x 0714W.
0424/29 - B/304 - Contact in 4346N x 1095W. probably surface vessel.

ibid
and A.C.H.Q.
Gib
O.R.B.
Appendices

During the following day a further three sightings were made (1) by aircraft engaged in anti-submarine patrols of single enemy destroyers, trying to find their way back to base via Spanish territorial waters. A Catalina from Gibraltar shadowed one destroyer from 0952 to 1551 hours, but found no suitable opportunity for attack.

Later reconnaissance showed that the expected breakout from the French west coast ports had not, so far, been made. Nevertheless it was considered unwise to assume that it had been cancelled. The rough handling received by the enemy during the course of these operations, however, could give the Germans a good excuse for holding up the sailings to the Far East in the meantime, if they so desired.

The enemy had indeed provided us with evidence of the importance of these cargoes to German Europe. In order to escort two blockade runners through the approaches to the Bay, on each occasion he had despatched five large and six small torpedo craft - a greater force than had been provided for any previous units of this type; thus showing his appreciation of the menace of the Allied air and sea forces operating in this area.

(ix) Lessons for the future

A.H.B./IHK/
54/11/364(B)
Encl. 90A

In view of the possibility of further blockade running operations during the next dark period, it was felt at H.Q.C.C. that an early examination of the recent intensive operations might well provide some useful lessons for the future. By 10 January 1944, a report had been prepared and was ready for consideration by all concerned with blockade running operations, including No. 19 Group.

Among the many subjects discussed in the report, Navigation was rated very high on the list. Errors in reported positions were on occasions so numerous as to promote extreme confusion in the minds of those engaged in controlling the operations. For instance, some of the reports of the Alsterufer's position, after she was hit and abandoned until last seen at 1900 hours on 27 December, were as much as fifty-seven miles apart. To enable all concerned to assess the value of a position given by an aircraft in future, it was suggested that one of the following terms should be added to the sighting report:-

- (a) Astro Fix.
- (b) Gee Fix.
- (c) Bearing and distance from a visible landmark.
- (d) Bearing and distance from own forces if in sight, followed by D.R. position of aircraft.
- (e) D.R. position.

(1) The sightings were:-

U/228 - 0951/29. 1 DR. 4350N x 0820W. Co. 065/20 knots.
H/110 - 1604/29. 1 DR. ? Co. 110/20 knots.
O/202 - 0952/29. 1 DR. 4323N x 0903W. Co. 050/18 knots.

Sighting reports and recognition was the next item for examination. In all phases of the operation, the descriptions given in sighting reports were generally at variance and it was not possible to ascertain with any degree of certainty exactly what ships were contained in the enemy groups seen. In this respect it was suggested that, at the expense of speed in getting off the first amplifying report, a delay was acceptable if it meant accurate information which was so essential to the conduct of this type of operation. The value of photographs was still not fully appreciated; only eight aircraft had taken photographs throughout the period under review. Emphasis should be laid on the very great value derived from this source of information for recognition purposes.

On the whole shadowing was done well, but it lost most of its value by inaccurate positions. Homing on 385 Kcs was again lacking; only one aircraft made successful homing signals. For surface forces to find the enemy in the shortest possible time there were two essentials - the correct position course and speed, and homing signals direct from the aircraft. The procedure already laid down in Coastal Command Operational Instruction No. 109 was to be closely followed.

In regard to attacks, it was appreciated that a large number of Coastal Command aircraft had no bombsights and few aircrews were trained adequately in the attack of well armed surface ships. It was suggested that the attention of all aircrews should be drawn to the fact that an attack should never be made using radar only, unless there could be no possible doubt as to the identity of the forces being attacked.

In conclusion the report mentioned that apart from homing, the sortie of Sunderland G/228 was regarded as almost perfect, giving accurate positions, courses and speeds, and correctly worded reports at regular intervals. Excellent sorties were also made by Wellington H/407 and Sunderland J/10. Without a doubt, the outstanding achievement of the whole air operation was the sinking of the Alsterufer on 27 December by the Liberator H/311 Squadron manned by a Czech crew, the Captain of which - P/O.O. Dolezal - by an outstanding example of bravery made virtually certain of its destruction. At a special parade held on the last day of January 1944, the C-in-C., Coastal Command decorated this pilot and his navigator (F/O Z. Hanus) each with the Distinguished Flying Cross.

No. 311 Sqn.
O.R.B.

(x) Surface blockade running abandoned

M.E.W. File
ES/70/Z
Vol. 2

Between 3 and 5 January 1944, United States Naval Forces in the South Atlantic accounted for three more inward bound blockade runners, Weserland, Burgenland and Rio Grande. Thus all the regular ships engaged in this trade known to have been present in the Far East were accounted for. A merchant vessel undergoing repairs and three supply tankers were, however, still regarded by the Ministry of Economic Warfare, as potential starters for Europe. (1)

Germany's intentions regarding the vessels which were known to be loaded in the Biscay ports and ready for sea were for the moment wrapped in mystery. That the Germans did not follow the

(1) The ships involved were:- Havelland, Brake, Rosback and Charlotte Schliemann.

Hitler
Conferences
On Naval
Affairs 1944

procedure of last spring, of synchronizing departures with anticipated arrivals, was regarded by M.E.W. as a pointer to a change of plans. Following the successful interception in January of the last three inward bound blockade runners, the interchange of merchandise between German Europe and the Far East had come to a complete standstill. By the end of February, however, it had become evident through photographic reconnaissance that at least four of the potential starters among the blockade runners in Biscay ports had discharged their cargoes. This was the direct result of a request made by the Commander-in-Chief, German Navy, to Hitler at a conference held on 18 January 1944. A decision was required concerning the departure of four blockade runners for Japan which had been planned for the next moon phase beginning on 22 January. The C-in-C., Navy expressed his belief that the advantages outweighed the great risk involved. After consideration of all the vital points, Hitler no longer considered the need for rubber was decisive enough to the war effort to justify the enterprise; buna tyres, if not driven at speeds over seventy kilometres an hour, lasted 40,000 kilometres, as compared with only 20,000 in the case of rubber tyres. On the whole, he did not consider the economic factors really worth while. The plan had so little chance of succeeding that even the importance of supporting Japan played no part here, since the ships would never reach that country anyway. His decision was, therefore, that no surface blockade runners were to leave port, and thereby all intentions of importing raw materials from Japan in the future with surface blockade runners was specifically abandoned.

Most of the surviving blockade runners came to an inglorious end by scuttling as blockships in the River Gironde in August 1944. (1)

(xi) Summary and review of enemy Far Eastern blockade traffic

1941 - 1944

The efforts made by Germany and Japan to exchange high priority merchandise by means of surface blockade runners occupied a period of approximately three years.

As a class, the ships chosen by the Axis for this trade varied sufficiently to make recognition a difficult task. They were on the average of about 5/6,000 tons, well armed and fast, but not too conspicuous in appearance.

It could not be forecast whether they would sail via the Cape of Good Hope or Cape Horn, but as the narrowest part of the South Atlantic was 1,000 miles wide, interception was a difficult problem for Allied surface and air forces. To pass

(1) Details of the shipping involved were:-

<u>Elsa Essberger</u>	- 6,103 tons	- At La Grange	- River Gironde
<u>Osorno</u>	- 6,951 tons	- At La Grange	- River Gironde
<u>Himalaya</u>	- 6,240 tons	- At La Grange	- River Gironde
<u>Dresden</u>	- 5,567 tons	-	River Gironde
<u>Fusijama</u>	- 6,244 tons	-	River Gironde
<u>Tannenfels</u>	- 7,340 tons	-	River Gironde
<u>Spichern</u>	- 9,323 tons	- In Brest	
<u>Kulmerland</u>	- 7,363 tons	- Abandoned at Nantes.	

in and out of the French Biscay ports the enemy ships could remain beyond a range of 400 miles from a British air base, and still avoid Spanish territorial waters. Again, the passage through the Bay of Biscay was invariably planned to take place during the period of the longest and blackest nights and the most unfavourable weather for interception purposes. Moreover, a fair proportion of the route was also under the protection of enemy fighters based in S.W. France.

Actual blockade running operations were not continuous throughout the period of three years, but were of a seasonal nature and action against this traffic was a series of unconnected episodes which had to be dealt with according to the current aircraft situation.

Eventually, the interception of these blockade runners involved the closest possible co-operation between sea and air forces, but there was never enough of either to enable them to be used solely for this purpose. By the intensity of Coastal Command's Anti-U-boat patrols in the Bay of Biscay, however, a continuous and effective threat was provided either at the conclusion or commencement of their voyage to the Far East.

For a time Allied submarines were on patrol in the southern part of the Bay, watching the traffic off the north coast of Spain, but met with little success as far as the Far Eastern blockade runners were concerned. Later, they were withdrawn because their presence proved to be an embarrassment to the Anti-U-boat air forces. This scheme was replaced by a standing cruiser patrol during the blockade running season; also the passage of the Gibraltar convoys across the mouth of the Bay provided opportunities for the surface escorts to intervene; both of which met with some measure of success.

From the air side, (1) the reasons for the lack of success of the strike aircraft were manifold. Apart from the fact that the heavy long range type of aircraft in use was, in itself, singularly unsuited for dealing with such well armed surface vessels, most of No. 19 Group's squadrons were not equipped with the necessary bombsights for the class of attack required; aircraft diverted from anti-U-boat patrols were invariably armed with depth charges to be used from very low levels and their sights were designed for this purpose. There were not enough specialised strike Beaufighters within the Command to meet all the requirements of the Dutch and Norwegian traffic, but a detachment was transferred and effectively used in the Bay towards the end of 1943; additional forces of this kind would in any event have been impracticable owing to the shortage of airfield accommodation in south west England. Moreover, the targets would have to be conveniently within range of the torpedo carrying Beaufighters.

However, in spite of all the difficulties the enemy did not, after the first season, have it all his own way. Reference to Appendix XVI will show that he did achieve an initial success but thereafter as the Allied countermeasures became increasingly effective, so the exchange between the Axis partners became correspondingly more difficult and less remunerative.

Of the twenty ships lost by the Germans during actual operations at sea throughout the period of three years, the

(1) At Appendix XVII there is a monthly Summary of the air effort employed against blockade runners.

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highest achievements were gained by the Allied Naval surface forces with seven sinkings and six scuttlings; this was followed by two sinkings each by aircraft at sea and their own U-boats; and lastly a single ship each for air forces in port, explosion in port and captured intact at sea. The final episode was the destruction by scuttling of the eight surviving blockade runners in the French Biscay ports during the summer of 1944 when France was liberated.

CHAPTER XI

FLEET RECONNAISSANCE AND THE MOVES OF GERMAN
MAJOR UNITS TO AND FROM NORWAY - JANUARY 1943 TO MAY 1944(i) Introduction

The policy governing fleet reconnaissance by Coastal Command remained as detailed in Volume III. Intelligence of movements of enemy major units was passed by the Admiralty to Coastal Command Headquarters and such reconnaissance was flown as other commitments permitted. Coastal Command long range aircraft were normally used for the task of Trade Protection - that is air escort and support to the Atlantic convoys against the U-boats. In the event of a serious threat of a break out by any major unit, or when Coastal Command protection was required for an important Home Fleet operation, the Admiralty sent the signal that Fleet Reconnaissance was to take precedence over Trade Protection. This signal remained in force until cancelled by the Admiralty. Details of the northern break out patrols, used in such emergencies, are given in Volume II, Chapter VII, section (iii) and Volume III, Chapter VII.

This chapter does not cover the day to day Rover patrols and anti-shipping strikes off the Norwegian coast, details of which will be found in chapters IX and XV, but only those operations directed specifically against the movements of German major units. Regular photographic reconnaissance sorties were flown to the Baltic and Norwegian ports to report on the state of shipping, U-boats, bomb damage and the position of major units. These, again, are only mentioned in connection with the specific operations considered in this chapter. Enemy units whose movements gave cause for alarm during the period under review are considered under separate headings in the following pages.

(ii) German policy regarding the major units.

The first few months of 1943 provide an interesting example of Hitler's indecision regarding the use and value of his major surface units. After the failure of the operation by the Lutzow and Hipper against the Russian convoy JW.51B at the end of December 1942, (1) Hitler informed Grand Admiral Raeder that it was his "firm and unalterable" resolve to have these ships laid up and to do away with the German Fleet. After an interview with Hitler on 6 January 1943 Raeder resigned his position as Commander-in-Chief of the German Navy. A memorandum on the "Significance of the German Surface Forces in the Axis War" was submitted by the German naval staff on Hitler's orders on 14 January 1943. The naval view that the German Fleet supported the U-boat war and tied down Allied forces was not accepted by Hitler. On 26 January he sent final orders to Raeder, through his successor Grand Admiral Doenitz, to the effect that all new construction or reconstruction was to be stopped immediately and all battleships, pocket battleships, heavy and light cruisers were to be brought home and laid up unless required for training purposes. The change in Naval Command was made on 30 January 1943. Grand Admiral Raeder was given a nominal appointment as Admiralinspekteur and chief adviser to Hitler on politico-naval

Admty. TSD/FDS
Publication
G.H.S.4.
German surface
ships pp. 120 -
127

(1) See Vol. III of this narrative. Chapter VIII part I section (x).

matters and was replaced by Grand Admiral Doenitz, until then Flag Officer U-boats.

ibid

Evidently Doenitz, in accepting the post of Commander-in-Chief, did not insist on retaining the German surface forces. On 8 February he placed before Hitler his scheme for de-commissioning the ships. The heavy guns were to be used on land in accordance with Hitler's wishes. Within a month, however, on 26 February, Doenitz confronted Hitler with a different plan. He stated that the Russian convoys offered opportunities for action to the heavy units and that he considered it his duty to assist the overburdened eastern front by using them. Instead of bringing the capital ships back from Norway he proposed to reinforce them with the Scharnhorst. No definite reason for this change of front is known. Possibly Doenitz' control over the entire navy led him to modify his views. Hitler at first rejected these proposals but Doenitz promised him a successful action within three months and Hitler finally withdrew his opposition. Only the construction of new capital ships and repairs to existing ones were suspended, chiefly owing to shortage of materials.

ibid

Doenitz issued new directives on 19 February 1943. The shore commands were to consider all decisions regarding the use of the major units before passing on instructions to the commanders afloat who would then act in accordance with tactical considerations. Additional orders stressed that the destruction of the northern convoys was to be regarded as a primary objective and was not to be overshadowed by precautions for the protection of Norway against invasion.

Doenitz would not commence surface operations until the Scharnhorst had joined the task force in North Norway. Any units that were redundant or not fully seaworthy were to be sent home since the number of units in Norway had to be limited owing to serious fuel shortage. It was therefore decided not to transfer the Admiral Scheer, nor, in the end, the Prinz Eugen to Norway.

(iii) The battle cruiser Scharnhorst.

After her escape up Channel in February 1942 in company with the Gneisenau and Prinz Eugen, the Scharnhorst passed into the Baltic where she remained for the rest of the year. She was sighted by photographic reconnaissance in Puck Bay off Gdynia on 12 December 1942.

(a) First attempt to move to Norway - January 1943

C.C.H.Q.
Controllers
Secret Log.

On the 5 January 1943 information was received from Intelligence sources that the Scharnhorst was under way in the Baltic. A certain amount of W/T traffic indicated that a movement to Norway might be imminent. It was further reported that enemy Naval units would be exercising in the Baltic from the 6 to 9 January. These exercises were regarded by the Admiralty as internal security cover for the main movement.

CH/GI/6 Jan.

All available operational aircraft of No. 236 Squadron in No. 16 Group were ordered to move to No. 18 Group on detachment. Eight Beaufighters finally arrived at Wick on 8 January. No. 16 Group were informed that there was a possibility of an important target between the Skagerrak and Heligoland, and that the task of these aircraft would be to carry out reconnaissance and shadow it, when located, as soon as weather permitted. During the next few days close attention, despite bad weather,

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was given to the South Norway and Skagerrak areas. However, cloud conditions nullified much of the photographic cover and several of the reconnaissance sorties had to be cancelled owing to the weather. Two Bomber Command Lancasters laid 12 mines in Bottle(1) on the night of 8/9 January.

C.C.H.Q.
Naval Staff
Log, Controller's
Log and Secret
Log.

Tension was kept up by the receipt of further scraps of information. Unusual enemy aircraft activity off the South Norwegian coast was noted on 7 January. The beacons at Hantsholm and Blaavanshuk (Denmark) and Farsund (Norway) were active on the night of 8/9 January. Early on 10 January intensive minesweeping east of Denmark was observed and was thought to indicate the movement of an enemy formation in the near future. Two destroyers seen by a photographic reconnaissance sortie on the 9 January in Rovde Fjord were believed to be on their way to reinforce the enemy formation. On 10 January it was learnt that the destroyers were due at Kristiansand South at 1300 hours to refuel. Further news was that sweeping in the Great Belt was to be finished by 1600 hours on 10 January and that all shipping, including merchant vessels, was to move out of the channel at that time. This meant that the force should reach Kristiansand at about 1200 hours on 11 January passing through the Belt to Norwegian waters on the night of 10/11 January.

C.C.H.Q.
Controller's
Secret Log.
C.-in-C. H.F.
signal. 11.1.43

The C.-in-C. Home Fleet considered that, if this movement was in accordance with previous ones, the force would be timed to pass Lister at about 1500/11, Stadtlandet about 0500/12 and would be in Trondheim Leads about 1000/12. Arrangements were made for the Norwegian submarine Uredd and the British submarine P.55 to patrol in the area and for destroyers to carry out an offensive sweep against the Scharnhorst.(2) This operation was abandoned on the night of 11/12 January owing to the weather.

C.C.H.Q.
Naval Staff log.

At 1326 hours on 11 January it was learnt from the Admiralty that the force, preceded by a Sperrbrecher, was in position 5730 N x 1130 E at 0850 hours proceeding at a speed of 18 or 19 knots. The Sperrbrecher was due to leave the formation in position 5754 N x 1048 E. Later came a message that the speed of the formation had been reduced and that the position at 1000 hours(3) was 5736 N x 1106 E. It was expected that speed would be increased from this point or from 5754 N x 1040 E. The approximate time of arrival in Kristiansand South would be 1700 hours.

No. 18 Group
O.R.B. Appendices
Appendices
January 1943.

Shortly afterwards the first aircraft sighting report of the force was received at C.C.H.Q. Beaufighter P/236 squadron, on shipping reconnaissance in the Stand area, had sighted at 1307 hours the battlecruiser Scharnhorst, one Hipper class cruiser and one "Z" class destroyer moving slowly in position 5748 N x 1024 E. The course was 280 degrees and the maximum speed was estimated at ten knots. One enemy single engine fighter over the battle cruiser did not apparently see P/236

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- (1) The minefield in the entrance to Haugesund.
 - (2) Operation F.C.
 - (3) Unless otherwise stated, times given in this chapter are all A times, that is British summer time, except during the period 4 April to 14 August inclusive, when they are B times, that is double British summer time.

but the cruiser fired red pyrotechnic signals. (1) A second Beaufighter U/236, airborne at 1300 hours to patrol the Stand area, was diverted to sweep along a line from Kristiansand South to the Skaw, but saw nothing. A Mosquito G/540, on a photographic reconnaissance sortie between Lister and the Great Belt at the time of sighting, saw nothing and reported that cloud prevented reconnaissance in the Skagerrak and Kattegat.

A strike was organised on receipt of the sighting report. Six Witleys of No. 612 Squadron with training flares were despatched at intervals from Wick to sweep the coast from Egero to Kristiansand South. These aircraft were later instructed to look at Kristiansand South and Kvaase Fjord if flying at above 4,000 feet. Hampdens from Wick, Leuchars and Sumburgh were to attack on report from the Witleys and their illumination. None of the aircraft could be in position before 1800 hours on 11 January. However the Wick Hampdens of 489 Squadron were cancelled owing to weather conditions after only two aircraft were airborne. One continued on patrol but saw nothing. Twelve Hampdens of No. 455 Squadron were airborne from Leuchars and six of No. 144 Squadron from Sumburgh but ran into bad weather and saw nothing. Hampden R/455 crashed soon after takeoff and P/455 crash landed on return in remote country in the north of Scotland.

The C.-in-C. considered that the enemy force might turn back for a few hours after being sighted. He therefore suggested reconnaissance off the South Norway coast during the night of 11/12 January. Two searchlight Wellingtons of No. 612 Squadron were ordered to be off Lister at 2330 hours and sweep north to Utsire. Two further aircraft were airborne four hours later. No. 18 Group reported on 12 January that the Norwegian coast was thoroughly covered during the night in conditions of good visibility. There was, however, a front 15 to 20 miles off the coast and conditions there were very bad. The enemy might have gone up through the front but this was not thought probable.

C.C.H.Q.
Controllers Log

No. 18 Group
O.R.B. App.

No results were obtained from Beaufighter reconnaissance or photographic cover of the South Norway coast on the 12 January. One Spitfire R/540 Squadron was missing on a photographic reconnaissance sortie to the Lister-Kvassefjord area. Patrols by Witleys and Wellingtons of No. 612 Squadron in the Stand and Bomelfjord areas during the evening and night of the 12th/13th were largely ineffective due to bad weather. A crossover patrol by a Catalina of No. 210 Squadron was similarly only 25 per cent effective due to weather conditions. No. 18 Group reported on the 13 January that there had been no real cover since the first Whitley sortie on the evening of 12 January.

Log of the
Scharnhorst

- (1) The sighting report was picked up by the enemy and Group North ordered the force to turn back at 1449 hours. The enemy calculated that if our strike aircraft took off on receipt of the report they could reach the force about 1600 hours. In view of the approaching dusk such an encounter was to be avoided, particularly since Group North expected strong air opposition during the passage round South Norway in the prevailing bad weather conditions.

C.C.H.Q.
Controllers
Secret log.

C.C.H.Q.
Controller's
log.

C.C.H.Q.
Controller's
Secret log.

Arrangements were being made for an armed reconnaissance in force by Hampdens of No. 489 Squadron on 13 January, when information was received that the Scharnhorst had definitely returned to the Baltic. There was no mention of the Prince Eugen which might well have continued on to Trondheim. Later came the news that the Scharnhorst was expected in Gdynia that day. The A.O.C. No. 18 Group was anxious to press on with the original plan for No. 489 Squadron but the C.-in-C. finally cancelled the Hampden strike. Photographic reconnaissance of the Baltic ports as far east as Swinemunde was required. However, no Mosquito was available for this task and attempts to recall the Mosquito on a sortie to Stavanger were unsuccessful. Nothing of importance was seen by Beaufighter reconnaissance patrols on 13 January. Photographic cover of Gdynia and the Baltic ports was ordered for the 14 January or as soon as possible. Early on 15 January information was received that the Scharnhorst and Prince Eugen anchored in Gdynia at 2000 hours on 13 January. Intelligence reported that defects, probably the Scharnhorst's shafts, were the cause of return.⁽¹⁾

(b) Second attempt by the Scharnhorst to move to Norway - January 1943.

C.C.H.Q.
Controller's
secret log.

The next scare came a couple of weeks later. Early on the 23 January it was learnt that a move of the Scharnhorst and Prince Eugen to the north was again imminent. The report stated that the Scharnhorst and Prince Eugen were due to be off Cape Arcona at 0630 hours on 24 January. They would proceed via the Great Belt and the suggested speed to allow from Arcona to the Skaw was ten to eleven knots. The escort would probably consist of two destroyers from Kiel backed up by destroyers from Kristiansand South where there were four at the time. Later in the day it was known that the Scharnhorst was told to rendezvous with the Prince Eugen in Danzig Bay at 1600 hours on the 23 January.

C.C.H.Q.
Controller's
log.

Strike aircraft available in No. 18 Group consisted of 12 Beaufighters of No. 489 Squadron and 12 of No. 455 Squadron. No. 144 Squadron were out of line owing to conversion from Hampdens to Beaufighter Torpedo aircraft but No. 235 Squadron had arrived at Leuchars. The C.-in-C. decided to retain No. 236 Squadron in No. 18 Group for the moment. Benson were requested to arrange photographic reconnaissance of Kiel and Swinemunde on the 24 January with special reference to the sea route between these two places. Two aircraft were required, one over Kiel at 1200 hours on 24 January and one at 1400 hours. Benson did not think conditions for Kiel and Swinemunde were likely to be good but had a Mosquito at Leuchars and a Spitfire at Benson standing by. On 24 January, since the sorties were of the utmost importance, the A.O.C. 18 Group insisted that some attempt be made although the weather was bad. One sortie by Mosquito S/540 Squadron was therefore airborne at 1113 hours after slight delay. The aircraft landed back at Leuchars at 1637 hours, having seen nothing, and reported heavy cloud conditions east of Kiel.

ibid

Bomber Command were sounded as to the possibility of an attack on the target if necessary between 1230 at the Skaw and dusk at Lister on 25 January. The C.-in-C. Bomber Command, however, wished to confine his efforts to mining in

(1) The log of the Scharnhorst does not confirm this supposition.

the track at Bottle as the weather, if suitable for shadowing, would be no good for bombing. In actual fact no further mines were laid in this area.

C.C.H.Q.
Controller's
secret log.

C.C.H.Q.
Naval Staff
log.

C.C.H.Q.
Controller's
log.

Meanwhile intelligence reported that the Scharnhorst and Prince Eugen were off Arcona at 0630 hours on 24 January. Unusual enemy air activity in South Norway early on 24 January and evening W/T beacons in Denmark and S. Norway later in the day confirmed suspicions of a breakout. Plans were therefore made with No. 18 Group for the 25 January. A high level photographic reconnaissance sortie was to be flown to Anholt at 0830 then north to position 5730 N x 1130 E through the Skaw and back. The main object was a visual sighting of the enemy major units with photographs if possible. W/T silence was to be observed and no sighting report to be made. A second Mosquito was to do the same track and be at the Skaw at 1400 hours. Sighting reports could be made. A strike force was to stand by from 1100 hours.

C.C.H.Q.
Controller's
secret log.

No. 18 Group
O.R.B. App.

The first Mosquito sortie by W/540 was airborne at 0640 hours on 25 January from Leuchars. During the sortie it was learnt at Coastal Command Headquarters that the Scharnhorst and Prince Eugen were ordered to continue their passage at 0600 hours on 24 January as weather conditions were expected to be better. Further information was received that the vessels were ten miles north east of Anholt at 0630 hours and had said they would be off the Skaw at 1330 hours. The force was not therefore behind schedule and the first photographic reconnaissance sortie was expected to sight. Y service reported that four destroyers were proceeding on 25 January from Kristiansand South to 5748 N x 1106 E and were expected to arrive at 1200 hours. The first Mosquito, which landed back at Leuchars at 1210 hours, saw three destroyers at 0945 hours 10 miles east south east of Kristiansand South proceeding on a south easterly course at 15 knots. The visibility was good but no other important sightings were made. The second Mosquito, S/540 squadron, airborne at 1239 hours, reported at 1415 hours one battle cruiser, one cruiser and five destroyers 45 miles west of the Skaw on a course of 294 degrees.(1) The enemy altered course to 100 degrees shortly after the aircraft sent a sighting report. Photographs were taken. The enemy force were ahead and to the south of the expected route but it was hoped that the Hampdens from Wick, due off Kristiansand South at 1605 hours, would meet.

Meanwhile a strike force of 23 Hampdens and 15 Beaufighters was airborne from Wick and Leuchars.(2) Aircraft were ordered to fly armed reconnaissance in the Skagerrak along the shipping route from Kristiansand South to the Skaw passing through position 5900 N x 0900 E at 1630 hours. The Beaufighters of No. 235 Squadron from Leuchars were airborne somewhat later than the rest of the formation and received a diversion signal to intercept the enemy force off Kristiansand South. They were also informed of the enemy's alteration of course. However, apart from flak ships and shore batteries, nothing was seen.

On the night of the 25/26 January crossover patrols off the South Norway coast were flown by Whitleys of No. 612 Squadron equipped with flares. Photographic reconnaissance of

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- (1) The force picked up this sighting report and was once again ordered to turn back
 - (2) The force consisted of 6/489, 5/455 (Hampdens) and 5/236 (Beaufighters) from Wick, 5/489, 7/455 (Hampdens) and 10/235 (Beaufighters) from Leuchars.

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C.C.H.Q.
Controller's
secret log.

the south Norway area on the 26 January was ineffective owing to 10/10th cloud conditions. However, early on 26th it was known that enemy air operational instructions for the Lofoten area had been cancelled owing to the fact that the movement of the Scharnhorst and Prince Eugen had been broken off. Further messages during the 26 January indicated that the enemy units were on the way to Kiel and were expected there at 1800 hours. Two Beaufighters of No. 236 Squadron despatched on North and South Stab patrols were therefore recalled. On the 27th it was known that the Scharnhorst and Prince Eugen were proceeding to Gdynia. The Admiralty commented that further attempts to breakout were likely.

(c) The Scharnhorst's successful passage to Norway - March 1943.

C.C.H.Q.
Controller's
secret log.

The situation with regard to the Scharnhorst remained quiet until the 6 March when indications of enemy fighter concentrations in south Norway, similar to those associated with previous naval movements, again caused anxiety. No. 18 Group were ordered to watch the Bergen to Kristiansand South area. On the 6 March two Beaufighters of No. 235 Squadron patrolled from Stavanger to Bergen and two from Bergen to Stadtlandet. Patrols were ninety per cent effective but nothing was seen.

Early on 7 March the Admiralty confirmed that the Scharnhorst was on the move, and might have passed the Skaw on 5 March. There was a possibility of a breakout by the Iceland Faeroes Channel or the Denmark Straits, probably the former. The maximum effort on the Norwegian coast to locate and crossover patrols to intercept were required. The first estimate indicated that the force would pass Iceland/Faeroes on the night of 7/8 March or possibly had already done so on 6/7 March. Various patrols were laid on but it was decided not to make the fleet reconnaissance signal for the moment. Aircraft were not to be withdrawn from threatened convoys.(1)

Nos. 15 and 18
Groups O.R.B.
App.

Since it was feared that the Scharnhorst had already broken out, steps were taken on 7 March to intercept her off Norway and to protect the Russian convoy RA53. Sunderland J/246, from No. 15 Group, was diverted from escort duty early on 7 March to the breakout patrol Rovik I and Catalina S/1477, on anti submarine escort to RA53, was diverted to a crossover patrol at right angles to a line from the convoy to Stadtlandet not less than a hundred miles from the convoy.(2) Two further Catalinas R/1477 and B/190 were despatched as reliefs on this crossover patrol during the period 7/8 March. No. 612 Squadron flew five sorties on the breakout patrol Sentry II on 7 March, and Iceland were asked to carry out Rovik II and Bear. Only one sortie on Rovik II by L/120 was possible from Iceland owing to weather conditions. No. 15 Group therefore flew a modified breakout patrol to cover the essential areas of Rovik I and II during the night of 7/8 March as well as covering Rovik I on 7 March.

Log of
Scharnhorst

- (1) Actually the Scharnhorst was still in the Baltic. She anchored for one day from 5 to 6 March off Fehmarn in Mecklingburg Bay. At 1538 hours she weighed anchor. She was joined by the destroyer Z.28 at 1950 hours and reached the southern entrance of the Great Belt at 2000 hours on 6 March.
- (2) Actually this aircraft could not decypher the diversion signal owing to bad W/T conditions.

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Reconnaissance of the Norwegian coast between Aalesund and Haugesund was also flown on 7 March, and photographic reconnaissance of Trondheim and Gdynia was attempted, although neither sortie was successful owing to cloud.

Reinforcements were sent to No. 18 Group from No. 16 Group. One Liberator, M/120 Squadron, was attached to Kinloss, three Hampdens of No. 415 Squadron were sent to join the detachment undergoing A.L.T.(1) training at Tain, eight Beaufighters of No. 143 Squadron, one of which crashed on landing, eight of No. 254 Squadron and two of No. 236 Squadron were sent to Sumburgh. All available aircraft of No. 455 Squadron were detached from Leuchars to Wick on 7 March.

C.C.H.Q.
Controller's
Log and Secret
Log.

In the meantime it was learnt that there had possibly been some delay and that the Scharnhorst had not passed out yet. The Scharnhorst might have passed the Skaw on a westerly course about 1500 hours on 7 March. Photographic or visual reconnaissance of the Naze to Skaw area was requested. No photographic reconnaissance aircraft were available but an attempt was made without success to divert the Mosquito on a sortie to Knaben. Two Beaufighters H and Z/235 Squadron were despatched on reconnaissance of the Kristiansand South to Skaw areas but ran into bad weather including thick mist and rain.(2)

It was decided to discontinue the Sentry and RA53 cross-over patrols for the night of 7/8 March. Photographic cover of the Grimstad to Kristiansand South, Trondheim to Grimstad, and Gdynia areas was ordered for 8 March. On 8 March, No. 18 Group flew four sorties on Sentry II and No. 15 Group two sorties on Frice and a crossover near RA. 53. Anti-submarine escort to this convoy was continued as usual.

C.C.H.Q.
Naval Staff
log.

Early on 8 March a further piece of information had been received. The pilot of a B.O.A.C. civil aircraft from Sweden which landed at Leuchars early on 8 March, stated that at 2100 hours on 7 March he had seen two large transports and one escort vessel 60 miles west of the Swedish coast in the Skagerrak. The vessels were in line astern and were proceeding on a course of 320 degrees magnetic at a high speed. The height of observation was 1,200 feet. The pilot did not think the vessels were naval types but the Admiralty considered that one might be the Scharnhorst.(3)

Log of
Scharnhorst

- (1) Attacks Light Torpedo.
- (2) At 0415 hours on 7 March the Scharnhorst reached Seelands Rev. She was joined by the destroyer Richard Beitzen at 0600 hours and at 1212 hours was northeast of Anholt. At 1523 hours two fighter aircraft joined her as escort. From 1458 to 1535 hours there was an air warning in the western Baltic. (This was probably R/540 on the Gdynia photographic reconnaissance sortie). At 1900 hours the Scharnhorst was joined by the destroyers Steinbrink and Friedrich Ihn. At 2159 hours Luftflotte V reported that enemy reconnaissance aircraft had been detected at 1940 hours in position ten miles west of Hirtshals. (These were probably H and Z/235). At 2303 hours the Scharnhorst was south of Kristiansand South.
- (3) According to German records this might have been the Scharnhorst since she arrived south of Kristiansand at 2303 hours. However, she was apparently only escorted by destroyers so that the other "large transport" mentioned by the pilot cannot be identified. The log of the Scharnhorst apparently gives no aircraft sighting report.

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It was thought possible that the enemy might be going north along the coast at the moment and would therefore be rounding Stadlandet on evening of 8 March.

No. 18 Group
O.R.B. App.

No. 18 Group reported that photographic cover of the Norwegian coast on 8 March was impossible owing to weather conditions. Two Beaufighters, however, were ordered to fly a shipping reconnaissance between Grimstad Fjord and Aalesund. J/143 made visual landfall at Slottero Light at 1134 hours. At 1135 hours one Beitzen class destroyer was sighted in position 5959 N x 0458 E. At 1150 hours aircraft reached position 6042 N x 0442 E and at 1202 hours set course for base from position 6129 N x 0439 E. The patrol was flown outside the Leads at visibility distance. The second Beaufighter Y/143 made landfall at 1129 hours in position 6145 N x 0440 E and patrolled at a distance of eight miles from the coast owing to complete lack of cloud cover until 1137 hours when patrol was abandoned. Two further sorties were flown later in the day. Beaufighter Y/236 pinpointed Bremanger Island at 1617 hours and patrolled until 1629 hours, and W/236 patrolled from position 6010 N x 0510 E at 1620 hours to position 6059 N x 0448 E at 1636 hours. W/236 saw one destroyer in position 6010 N x 0510 E. (1)

The Gdynia photographic reconnaissance on 8 March showed that the Scharnhorst had gone, although the Prince Eugen, Emden and dismantled hull of the Gneisenau were still present. Information was received from Intelligence sources of enemy aircraft reconnaissance in the Lofoten area on 8 March in connection with a naval movement. This was presumed to be the Scharnhorst.

C.C.H.Q.
Controller's
Secret log.

Sorties on Price and Sentry and escort to RA53 on night of 8/9 March were cancelled owing to icing conditions. Two further sorties were flown on Price on 9 March as a breakout was still expected. Photographic reconnaissance of the Trondheim to Bergen and Bergen to Kristiansand areas was made. By the night of 9/10 March an intelligence report was received that the Scharnhorst was off the Norwegian coast in the Trondheim area at 1000 hours on 9 March. (2) It was thought that she was going up to Narvik and might be going to break out. Photographic reconnaissance of the Narvik area proved impossible on 10 and 11 March owing to weather conditions. It was not until 13 March that the Admiralty received information from intelligence sources that the Scharnhorst had joined the other major units in Narvik.

Log of
Scharnhorst

- (1) At 0400 hours on 8 March the Scharnhorst was off Lister. At 0703 hours her position was 5905 N x 0435 E and at 0746 hours she was off Utsire. At 0900 hours she was joined by an air escort of two Me 110s. At 1605 hours the Scharnhorst was in position 6215 N x 0350 E (off Stadlandet). From 1657 to 1718 hours there was an aircraft warning in the area between Stadlandet and Kristiansund North. (No British aircraft can be traced in the area at this time). At 2000 hours the Scharnhorst had reached 6330 N x 0550 E.

The log of the Scharnhorst does not mention any air warning on account of the first two Beaufighters J and Y/143. The second pair of Beaufighters Y and W/236 were obviously too far south if the Scharnhorst was off Stadlandet at 1605 hours.

- (2) The time stated in this report was not correct. At 0100 hours on 9 March the Scharnhorst was in position 6450 N x 0835 E and by 0815 hours she was off the Trene Islands. At 1015 hours she reached the entrance to Westfjord. From 1035 to 1100 hours there was an aircraft warning in the Lofoten area. (No British aircraft were in this area). At 1636 hours on 9 March she anchored in Bogenbucht.

Log of
Scharnhorst

(17500)361

SECRET

(iv) Fears of a movement of the battleship Tirpitz and the pocket battleship Lutzow - March 1943.

At the time of the Scharnhorst's breakout to Norway in March 1943 it was feared that a large scale movement of enemy naval units was in progress in which the Tirpitz and Lutzow were involved.

Log of
the Lutzow

The Lutzow had been unable to join the Tirpitz and Hipper in Altenfjord in July 1942 since she grounded in Tjelsund on 3 July and had to be sent down to Kiel for repairs. During the 9 and 10 July 1942 she moved from the Narvik area to Lofjord near Trondheim. On the 9 August 1942 the Lutzow continued her passage south. Coastal Command had received warning of the movement from intelligence sources but the Lutzow successfully evaded all strikes and reconnaissance and arrived in Swinemunde on 12 August. On the 10 August a British reconnaissance aircraft⁽¹⁾ was shot down before it was able to make a sighting report. On 19 August the Lutzow left Swinemunde for Kiel where she remained in dock from 21 August to 5 November 1942. After a month in the Baltic the Lutzow began her return passage to Norway on 9 December 1942. She arrived in Bogenfjord on 12 December, once again without being sighted, although several air alarms were received on 11 December.

No. 18 Group
O.R.B. App.

In March 1943 it was suspected that the Lutzow might be coming south to Trondheim and possibly the Baltic.⁽²⁾ Accordingly on 10 March No. 18 Group ordered reconnaissance between Kristiansand South and Stadtlandet by six Beaufighters of No. 235 Squadron from Leuchars. Aircraft were instructed to make first sighting reports of naval units only. A strike force of twelve Hampdens of No. 455 Squadron was also airborne from Wick and ordered to proceed to Egero. No sightings were made by either force.

C.C.H.Q.
Controller's
secret log.

On 11 March the centre of interest shifted to the Tirpitz. At the beginning of the period under review the Tirpitz was known to be in Lofjord near Trondheim. Photographic reconnaissance during January and February had noted repair trials, provisioning and gunnery practice. On the 2 February it was reported that she had moved to Foettenfjord in the same area and was carrying out exercises. Tasks for enemy air reconnaissance units of the Norwegian coast on 20 February were regarded as preliminary to a movement south. On the 11 March a report was received that the Tirpitz, escorted by two destroyers and two torpedo boats, had passed Agdenes at the entrance to Trondheim Fjord at 0830 hours on 11 March. The course was not known but it was assumed that the Tirpitz was moving south.⁽³⁾

Log of
Tirpitz.

- (1) This aircraft was presumably Hudson M/48 Squadron which did not return from a North Bert reconnaissance patrol.
- (2) It appears that this supposition was groundless as Hitler agreed in March 1943 to a proposal by the Commander in Chief Navy (Grand Admiral Doenitz) for greater offensive activity on the part of surface forces in the Norwegian area against the Russian convoys. On 24 March 1943 the German Naval Staff repeated that this was the most pressing task.
- (3) This assumption was wrong as the enemy intended to transfer the Tirpitz north in order to strengthen the Narvik group. On 3 March the Tirpitz received a signal that she would be required to move in the near future so that plans for the operation of the battle group could be carried out. On the 9 March she was ordered to leave for Narvik on 11 March. She departed accordingly early on 11 March, anchored at Hamnesleira at 1935 hours, where she spent the night, moved up to Ofotfjord on the 12th and arrived in Bogenbucht at 0054 hours on 13 March.

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C.C.H.Q.
Naval Staff log.

It was estimated that she could be off Stadtlandet at 1630 hours if she proceeded outside the Leads.

C.C.H.Q.
Controller's
log.

No. 18 Group recalled all Whitley aircraft of No. 612 Squadron from the Flora A/U patrols in order to have aircraft available for Sentry patrols or shadowing as required. The detachment of No. 455 Squadron at Wick, which had just become airborne to return to Leuchars, was recalled. The two Beau-fighter squadrons (Nos. 143 and 254), borrowed from No. 16 Group for operations against the Scharnhorst had returned to North Coates on 10 March. On the 11th orders were given for No. 143 Squadron to return to Sumburgh but were subsequently cancelled.

Nos. 16 and 18
Groups O.R.B.
App.

Independent patrols in the Leads either side of Stadtlandet by Beaufighters of No. 235 Squadron on 11 March, and a reconnaissance in force by two waves of Hampdens of No. 415 Squadron (Tain) and No. 455 Squadron (Wick) produced no sightings. One Hampden, D/415, was missing. Crossover patrols off Sogne Fjord, during the night of 11/12 March, were flown by two Whitleys of No. 612 Squadron. The Admiralty were still uneasy as to the whereabouts of the enemy units. Two Beaufighters of No. 143 Squadron from North Coates accordingly patrolled the Stand area at first light on 12 March whilst No. 254 Squadron were stood by for a strike in the Skagerrak if necessary. Further Beaufighter reconnaissance was carried out later in the day. Cloud conditions frustrated the Trondheim photographic reconnaissance sortie and limited the cover of the Kristiansand to Bergen area.

C.C.H.Q.
Controller's
log.

Admy. War at
Sea 1943 p 46.

The tension was not relieved until the 13 March when the Admiralty received information that the Tirpitz, Scharnhorst, Nurnberg and Lutzow were in Narvik. However, the presence of this powerful concentration of enemy units, beyond reach of regular air reconnaissance, constituted a direct threat to the Russian convoys. These convoys would now need battleship escort into the Barents Sea, which the C.-in-C. Home Fleet did not consider justifiable. Moreover the destroyers and other A/S escorts tied up with these convoys could be better used to reinforce the Atlantic. Consequently convoys J.W.54 and R.A.54 due to sail on 27 March were postponed and on 16 April the Admiralty announced that the Russian convoys had been cancelled.

(v) The heavy cruiser Admiral Hipper comes south - February 1943.

C.C.H.Q.
Controller's
secret log.

From an agents report of 25 January 1943 it was learnt that the Hipper, the cruiser Koln and the three destroyers had anchored off Kvitnes in Fiskefjord in Vesteraalen north of the Lofoten Islands. Further reports stated that the Hipper and escorts turned back later in the day owing to a gale warning and finally left for the south at 0830 hours (G.M.T.) on 26 January.(1) On 29 January it was known that an important

Log of
Hipper

(1) The Hipper and Koln were ordered to leave Kaafjord on 24 January for Bogenbucht and then Trondheim. On 24 the units passed through Kaagsund. On the 25th they were forced to turn back near Gimsoy, 6819 N x 1416 E, owing to bad visibility and anchored for the night in Fiskfjord, Sortlandsund. On the 26th they continued their passage to Bogenbucht where they remained until 28 January. On 28th the units passed Rottvarsoere at the southern approach to Tjeldsund and on 29th entered the Leads. They anchored for the night of 29/30th in Arsetefjord, 6501 N x 1448 E, and arrived in Foettenfjord near Trondheim on 30 January. A continuous escort of from two to four fighters was provided during the passage.

unit, probably the Hipper, would be coming south from Narvik to Trondheim. Fighter protection had been ordered to cover the movement to Lat. 6540 north after which the vessel would go into an unknown anchorage for the night of 29/30 January. She would proceed the next day to Trondheim. On 30 January it was learnt that four units had arrived in Trondheim from the north. Two were definitely identified as the Koln and one destroyer, the others were probably the Hipper and another destroyer. Agents reports on 1 and 2 February confirmed that the Hipper and Koln were in Lofjord on 31 January.

C.C.H.Q.
Controller's
log.

No. 18 Group
O.R.B. App.

On 1 February news was received that four battleships had passed Flora at 0600 hours on a southerly course at 12 knots. The force was considered to be the Hipper and four destroyers.⁽¹⁾ At last light on 1 February No. 18 Group despatched a strike of Hampdens and Beaufighters with preliminary Beaufighter reconnaissance to the Karmoy-Grimstad area with no results. During the night of 1/2 February crossover patrols off Kristiansand South and the Naze were carried out at intervals by three aircraft of No. 612 Squadron. On the 2 February five Hampdens carried out a reconnaissance in force at first light in the Utsire-Obrestad area. Beaufighter reconnaissance was carried out in the Stavanger to Bergen and Grimstad to Stadtlandet areas. Photographic reconnaissance of Trondheim and Kristiansand was nullified by thick cloud. Crossover patrols by five Witleys of No. 612 Squadron during the night of 2/3 February off Kristiansand South were directed primarily against an enemy raider, known as A9, located off Cape Arcona on 31 January, which was at first suspected to be the Scharnhorst or Prince Eugen.

C.C.H.Q.
Controller's
secret log.

No. 18 Group
O.R.B. App.

Shipping reconnaissance off Stavanger by Hampdens at first light, and reconnaissance of the Norwegian coast from Stadtlandet to the Skaw by Mosquito aircraft during the day, was ordered for 3 February. The Hampden force made three sightings. At 0753 hours in position 5857 N x 0520 E Hampden X/489 squadron sighted four destroyers, one of which was considered to be a larger naval type, on course 340 degrees speed 15 knots. The aircraft attacked with one torpedo and M.G. fire. Intense light flak was experienced and no results were seen. Hampden T/489 sighted at 0759 hours in approximately the same position a naval force comprising three destroyers and probably one unidentified cruiser on a northerly course speed approximately 15 knots. Attack was broken off owing to intense flak. At 0753 hours S/489 reported four destroyers in position 5847 N x 0525 E on course 350 degrees speed 15 knots. The Naval Staff at Coastal Command regarded the identification of the force as four destroyers by S/489 as correct. The Commander-in-Chief Home Fleet considered that the Hipper and Koln were due to come south and that the four destroyers were going up to Bergen to meet them.

C.C.H.Q.
Controller's
log.

No. 18 Group
O.R.B. App.

Beaufighter and Mosquito reconnaissance failed to locate these destroyers. A strike force of 17 Hampdens and 10 Beaufighters from Wick and Leuchars which was to act on reports from reconnaissance aircraft was therefore recalled.

No. 18 Group were reinforced for this emergency. Two Beaufighters of No. 236 Squadron were detached from No. 16 Group to Wick on 2 February, and five more on 3 February. Eight Beaufighters of No. 143 Squadron were attached to Dyce from North Coates on 4 February.

(1) This was a false alarm as the Hipper did not leave Trondheim fjord until the evening of 4 February.

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Beaufighter reconnaissance on 4 February covered the area between Stadtlandet and Stavanger but no important sightings were made. One Beaufighter, C/236, was missing. Photographic reconnaissance of Trondheim was impossible owing to 10/10 cloud although the Leads were covered from 6330 north to 6130 north. The Grimstad sortie returned owing to interception and fuel shortage.

C.C.H.Q.
Controller's
secret log.

Early on 5 February it was learnt from intelligence sources that a formation of five vessels was due to leave Trondheim for the south on the night of 4/5 February.⁽¹⁾ It was also stated that the force might put into Nord or Sudgulen (6146 N x 0515 E), or Sorgulen in the same area. Fighter escort from Stadtlandet had been arranged.

No. 18 Group
O.R.B. App.

Three Beaufighters from Wick were despatched on reconnaissance at first light on 5 February. Beaufighter A/235, sent to the Kristiansund North to Stadtlandet area, made landfall at Kristiansund at 0827 hours. The aircraft was unable to cover the Leads owing to cloud. At about 6222 N x 0530 E aircraft set course for base. Beaufighters Y/236, ordered to patrol from Sogne Fjord to Stadtlandet, made landfall at Sande light in 6115 N x 0413 E at 0824 hours. This aircraft was also unable to enter the Leads owing to cloud. At 0836 aircraft reached Krakenes in 6203 N x 0500 E and set course for base. The patrol was only 15 per cent efficient. The third Beaufighter E/236 covered the area from Bergen to Sogne Fjord and reported that patrol was 100 per cent efficient.⁽²⁾

Three further reconnaissance patrols were flown later in the day. Y/235 was despatched to patrol from Lervik to the north point of Karmoy. At 1529 hours landfall was made at Bommlø. At 1531 the aircraft was instructed to extend patrol to 6025 N. At 1534 position 6010 N x 0500 E was reached and the aircraft turned on reciprocal to Haugesund owing to excess visibility of 15 miles. The aircraft set course for base from Bommlø fjord at 1542 hours. J/235 patrolled between Feisten Light and Lister from 1535 to 1602 hours, and T/235 was missing on patrol between Karmoy and Obrestad.⁽³⁾

A reconnaissance in force by Hampdens and Beaufighters between Kvitingsøy and Bommløfjord saw nothing.⁽⁴⁾ Beaufighter L/235 was instructed to carry out further reconnaissance in the Leads from Grimstad to Bergen. At 1723 hours the aircraft was

Log of
Hipper

Log of
Hipper

- (1) This intelligence was correct. The Hipper with the Köln and the destroyers Z.30, Z.29, and Richard Beitzen left Trondheim Fjord about 2149 hours on 4 February. She was in the Hustadviken proceeding at a speed of 12 to 15 knots from 0230 to 0315 hours on 5 February. At 0630 hours she passed Oksebaasen Narrows off Aalesund, and at 0840 hours passed Aramsund.
- (2) According to German records the Hipper left the Leads at Vanelvgabet at 0910 hours and was rounding Stadtlandet, where she was escorted by two fighter aircraft from 0928 to 1051 hours. Beaufighter A/235 was unable to cover the Leads north of Stadtlandet. The other two Beaufighters V and E/236 were too far south to make a sighting.
- (3) The Hipper passed Stabben Narrows at 1230 hours, Sognesjøen at 1500 hours and was off Bergen at 1700 hours. Thus all three Beaufighters were too far south to sight her. At 2030 hours the Hipper reached Haugesund and proceeded through Karmsund. At 2200 hours she left the Leads at Skudeenes.
- (4) The aircraft were too far south. They set course for base from Bommløfjord (5927 N x 0505 E) at 1632 hours whilst the Hipper was off Bergen (6024 N x 0519 E) at 1700 hours.

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in position 5950 N x 0445 E (dead reckoning) but was unable to cross the coast owing to nil visibility. At 1730 hours patrol was abandoned.(1)

Photographic reconnaissance of the Trondheim area on 5 February had proved impossible owing to 10/10 cloud conditions, so that even the departure of the Hipper remained unconfirmed. An attempt at further reconnaissance of the South Norway coast using Mosquitoes of No. 540 Squadron during the next two days was largely ineffective due to cloud. On the 7 February it was learnt from intelligence sources that the Hipper had entered Kiel and that the Koln was due there that night. On 14 February it was known that she had moved to Wilhelmshaven.(2)

(vi) Movements of other naval units.

(a) The pocket battleship Admiral von Scheer.

Log of Scheer

C.C.H.Q.
Naval Staff Log.

C.C.H.Q.
Controller's
secret log.

C.C.H.Q.
Naval Staff
log.

ibid

The Admiral von Scheer had passed down unseen from Norway between the 6 and 9 November 1942 for annual docking. From 10 November to 15 December 1942 she was in the Baltic and moved from Kiel to Wilhelmshaven on 15 - 16 December. The Scheer remained in dock at Wilhelmshaven from 17 December 1942 to 28 March 1943. She was first located in dry dock No. 5 off the Bauhafen, Wilhelmshaven, by a photographic reconnaissance sortie on 25 January. She remained until the end of March 1943 and was sighted on 23 March in the same position. A photographic sortie to Wilhelmshaven on 29 March showed that the Scheer had left. An intelligence report, received on the same day, stated that she had gone to Swinemunde. She was, in fact, sighted in this port by a photographic reconnaissance sortie on 22 April 1943.

There was some uneasiness as to the position of the Scheer at the beginning of May. On 7 May the Admiralty asked for reconnaissance of the Norwegian coast in case some unit, possibly the Scheer, left the Bight early on 6 May. No. 18 Group ordered a Beaufighter sweep from Aalsund to Bergen. This was cancelled in the light of further information. Various movements of the Scheer in the Baltic were observed but there was no further cause for alarm during the period under review. The Scheer was known to be in Copenhagen on 4 August, and was seen by photographic reconnaissance sorties in Swinemunde on 18 August, in Gdynia on 7 October and back in Swinemunde on 5 January 1944.

(b) The light cruiser Nurnberg comes south.

C.C.H.Q.
Controller's
secret log.

On 28 April 1943 it was learnt from intelligence sources that one cruiser, one destroyer and two torpedo boats were on passage to Trondheim from the north on 28 and 29 April.(3)

Log of
Hipper

Adm.
T.S.D./F.D.S.

Log of
Nurnberg

- (1) This aircraft was in approximately the right position but the Hipper would have been covered by the cloud inside the Leads.
- (2) The Hipper passed Kristiansand South at 0633 on 6 and at 1012 hours entered the Great Belt. By 0813 hours on 7 February she had entered Kiel. On 11th she passed through the Kiel canal and entered Wilhelmshaven on 12 February. She was paid off on 1 March 1943. She was later transferred to the Baltic.
- (3) The enemy had decided to transfer the Nurnberg to the Baltic as she was of little use operationally in Norway and required a large quantity of oil. The Nurnberg left Harstad on 27 April and anchored in Aasfjord near Trondheim for the night of 29/30 April. She left for the south on the 30 April, and on that day passed Lepso Island and Bred Sund.

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No. 18 Group
O.R.B. App.

C.C.H.Q.
Controller's
secret log.

No. 18 Group
O.R.B. App.

Mosquito T/540 was accordingly ordered to fly a photographic reconnaissance sortie to Trondheim on 29 April. This sortie had to be abandoned owing to 10/10 cloud. A further attempt at the Trondheim reconnaissance on 30 April was also unsuccessful owing to weather conditions. The same day information was received that one cruiser, one destroyer and three torpedo boats were due to leave Trondheim for the south that day. It was now considered that the cruiser was the Nurnberg. Four Beaufighters of No. 404 Squadron from Wick were ordered to take off as soon as possible on a shipping reconnaissance between Floro 6136 N x 0501 E and Smolen 6316 N x 0746 E. The Beaufighters reported excellent visibility which would have enabled them to sight any naval units in the patrol area, but made no sightings.⁽¹⁾ One Wellington of No. 192 Squadron was detached to Wick for a special duty flight off the Norwegian coast on the night of 30/1 May. Arrangements were made for photographic reconnaissance and a strike by Nos. 18 and 16 Groups on 1 May.

1 May

ibid

Reconnaissance early on 1 May by six Beaufighters of No. 404 squadron from Wick, of the leads between Kristiansand North and Kristiansand South and by two Catalinas of No. 190 Squadron from Sullom Voe, between Kristiansand South and the Naze produced no results. Two of the three photographic reconnaissance sorties, however, made sightings. Mosquito E/540, on a sortie to Trondheim, sighted at 1117 hours in position 6050 N x 0450 E a force consisting of the light cruiser Nurnberg, preceded by one MAAS destroyer and followed by one Elbing and two T class torpedo-boats. The force was on a southwesterly course proceeding at an estimated speed of ten knots. Mosquito G/540, on a sortie to the Stavanger to Nordefjord area, sighted at 1216 hours one cruiser and four naval escorts on a southerly course in the Leads north of Herlo in position 6039 N x 0451 E.⁽²⁾ The third photographic sortie by A/540 in the Kristiansand South to Stavanger area made no sightings of importance.

Two strike forces were despatched later in the day in the hope of intercepting the Nurnberg off Lister. The first strike force, from Wick, consisted of eight Torbeaus of No. 144 Squadron escorted by eight Beaufighters of No. 404 Squadron and 12 of No. 235 Squadron, and was timed to be off Lister at 2030 hours and sweep north. The second strike, from North Coates,⁽³⁾ consisted of 11 Torbeaus of No. 254 Squadron escorted by 12 Beaufighters of No. 236 Squadron and eight of No. 143 Squadron. Both strike wings were intercepted by a large number of Me. 109s and F.W. 190s off the south coast of Norway. The 18 Group force lost two Beaufighters⁽⁴⁾ and the 16 Group force three Torbeaus and two Beaufighters.⁽⁵⁾ No. 236 Squadron reported that casualties would have been even

Log of
Nurnberg

- (1) Two British aircraft were reported ten to fifteen miles north east of Stadtlandet and two more about twelve miles from Hustad.
- (2) The enemy picked up the sighting report by G/540.
- (3) Aircraft landed at Wick.
- (4) Beaufighters S/404 and U/235.
- (5) Torbeaus A, S, N/254 and Beaufighters Q, U/143.

heavier had it not been for the determined defence of No. 143 Squadron. No sightings were made by the strike forces. (1)

C.C.H.Q.
Controller's
secret log.

No. 18 Group
O.R.B. App.

C.C.H.Q.
Naval staff log.

It was known from intelligence sources that the enemy plan on 28 April had been for the Nurnberg to go straight through and enter the Kattegat early on 2 May. Allied air activity was to be considered, but, provided that navigational safety was assured, the passage was to be made without stopping. It was considered at Coastal Command Headquarters that the Nurnberg had passed Stavanger at about midnight and would therefore be out of range on the 2 May. The interception was accordingly abandoned. Y service reported that escort by four Arados had been arranged for an enemy naval unit proceeding from Kristiansand South to Skagen during the early hours of 2 May. Photographs taken by Mosquito V/540 on 3 May at 1010 hours in position 5456 N x 1052 E showed the light cruiser Nurnberg preceded by two Sperrbrechers and a small auxiliary and followed by one MAAS destroyer and one Elbing torpedo boat and another small auxiliary. The force was proceeding on a southerly course at an estimated speed of eight to ten knots. Photographs taken on 15 and 20 May showed that the Nurnberg had arrived in Kiel.

(c) Other major naval units.

C.C.H.Q.
Controller's
log and secret
log and Naval
Staff log.

The Prince Eugen did not accompany the Scharnhorst on her successful attempt to break out of the Baltic early in March. During the period under review she was observed exercising in Danzig Bay, or in Gdynia. The Emden similarly was observed in Danzig or Gdynia although it was known that she visited Copenhagen and Swinemunde in August 1943. Photographic reconnaissance of Gdynia on 7 October 1943 showed the Scheer, Prince Eugen, Emden, Leipzig, Nurnberg, Gneisenau and Schlesien.

Log of
Nurnberg.

- (1) The Nurnberg left the Leads at Haugesund at 2025 hours. Her commanding officer was informed that Sola airfield near Stavanger had reported 58 British aircraft approaching the Norwegian coast at 2015 hours, and, further, that at 2021 hours 68 British aircraft had been driven back by German fighters from the Stavanger area. As all the aircraft were reported further south, it was assumed that the Nurnberg's position was not known and that the British had not allowed for her leaving the Leads north of Karmoy. It was decided to halt the Nurnberg. At 2034 hours 20 torpedo aircraft were seen. The aircraft passed by on the port side of the Nurnberg on a course of 335 degrees and did not sight her. Many aircraft reports were picked up. The air alarm ended at 2127 hours. In the meantime it had grown dark. At 2134 hours Group North instructed the Nurnberg to turn back and put into Grimstad Fjord. It was considered, however, that the Group were not fully informed of the situation and it was therefore decided to continue. Early on 2 May the Nurnberg was instructed to continue on her passage if she had reached Kristiansand South by 0430 hours. Two hours later she was instructed to put into Kristiansand if she was detected by British reconnaissance at first light. At 0354 hours the Nurnberg was joined by her fighter escort. No further British aircraft were seen. The force proceeded through the Great Belt and arrived in Kiel on 3 May.

ibid

The Koln and Graf Zeppelin were both identified by photographic reconnaissance in Kiel on 7 March 1943. The Koln remained here, but the Graf Zeppelin was not seen by the P.R. cover of Kiel on 20 April. On 21 April Bomber Command reported a large vessel escorted by six small vessels in position 54.35 N x 11.10 E which, it was thought, was possibly the Graf Zeppelin. On 22 April the vessel was located by a photographic reconnaissance sortie in Swinemunde. At the end of May the Admiralty were uneasy about the movements of the Graf Zeppelin and requested cover of Hamburg to endeavour to locate her. Photographic reconnaissance of Gdynia was also flown on 21 June owing to a low grade intelligence report that the vessel was lying off the port. However, the Graf Zeppelin was finally located by photographic reconnaissance on 23 June off the west bank of the river Oder east of Stettin in position 53.25 N x 14.37 E.

(vii) Enemy major units in Norway.

(a) The summer months. Reliefs for Spitzbergen.

The Tirpitz, Scharnhorst and Lutzow had all moved up to the Alten Fjord area from Narvik in the late spring of 1943. They were located by Russian reconnaissance at intervals during the summer in various positions in Alten Fjord, Kaafjord and Langfjord. It was known that the Tirpitz was carrying out exercises in Alten Fjord in June and July but there was no undue cause for alarm during the summer.

C.C.H.Q.
Controller's
secret log.

C.C.H.Q.
Naval Staff
log.

Adm. The War
at Sea 1943.

At 0110 hours on 10 June the Admiralty signalled that special fleet reconnaissance was to take precedence over trade protection in Northern Waters. Trade protection was reinstituted at 1813 hours on 13 June. The signal was sent as a precautionary measure to cover a naval force of the Home Fleet which was conveying reliefs and supplies for Spitzbergen and North Russia.⁽¹⁾ There was no interference from the enemy during the operation.

(b) The Tirpitz and Scharnhorst raid Spitzbergen - 8 September 1943.

Adm. War at
Sea. 1943.
p. 297

At 0145 hours on 8 September the wireless station at Spitzbergen reported an enemy force consisting of three cruisers and seven destroyers off Ice Fjord. Nothing further was heard. The British submarine Tantalus, then south west of Bear Island, was ordered at 0427/8 to close Ice Fjord Spitzbergen with the utmost despatch. The submarine bombing restrictions were adjusted to cover her movements. The Home Fleet sailed from the Scapa practice area at about 1930 hours. The cruiser Belfast and destroyer Impulsive left Hvalfjord, Iceland in order to join the main force. Nothing was seen of the enemy and the naval operation was cancelled at 1600 on 9 September.

C.C.H.Q.
Naval Staff
log.

No. 18 Group
O.R.B. App.

At 1347 hours on 8 September the Admiralty ordered fleet reconnaissance to take precedence over trade protection. The signal remained in force until 1950 hours on 9 September. Coastal Command were requested to "maintain contact with the enemy force". A long range Catalina V/190 Squadron was ordered to carry out a search of Ice Fjord and its vicinity

(1) This was operation F.H.

for enemy naval units or other activity. The aircraft was to be on patrol at first light on 9 September and was to search until P.L.E. returning to Grasnaya, in North Russia, to refuel. Enemy units were to be reported and shadowed. If enemy units were not sighted in the vicinity of Ice Fjord the aircraft was to search back along track to Alten Fjord. V/190 was airborne at Sullom Voe at 1700 hours on 8 September, and waterborne at Grasnaya at 1532 hours on 9 September. The aircraft arrived at Ice Fjord at 0319 hours on 9 September and commenced a visual search in excellent visibility. Extensive damage was seen at Barentsberg, Grumantby and Long Yearby but no sign of the enemy apart from one Ju. 88 aircraft.

C.C.H.Q.
Naval Staff
log.

Russian reconnaissance of Alten Fjord on 7 September had noted that the Tirpitz and Scharnhorst were absent. It was later confirmed that these two major units and seven destroyers had made the raid. They were both back in Alten Fjord by the 12 September.(1)

C.C.H.Q.
Controller's
log.

Attempts were made to send another Catalina carrying Lieutenant Glen as a passenger to reconnoitre Spitzbergen. R/190 was airborne at Sullom Voe at 0551 hours on 13 September but was forced to return owing to weather conditions and was finally beached at Brough on the Humber at 0843 on 14 September after a hazardous return flight. X/190 was despatched on 22 September to land a small Norwegian party with wireless equipment on Spitzbergen. The operation was successfully carried out and further reconnaissance of the damaged areas was made.

No. 18 Group
O.R.B. App.

(c) The end of the task force in Norway.

Admy./G.H.S./4
p.132 - 136

Owing to the deterioration of the situation on land and the defeat of the U-boat campaign in the summer of 1943, Hitler ordered that the forces of all three services should be placed on the defensive. The Naval Staff accordingly stated that, in contrast to their directive six months before, the main task of the Fleet during the coming winter would be to guard against Allied landings. The Russian convoys were relegated to the background.

ibid
pp.132 - 133

On 22 September midget submarines carried out an attack on the Tirpitz in Alten Fjord causing serious damage to her engines. The Lutzow was due to return home for routine inspection(2) so that the Scharnhorst alone remained fit for action.

ibid

It was not at first intended to make use of the Scharnhorst during the winter months. Moreover, owing to fears of invasion, some of the destroyer escorts had been withdrawn from North Norway to the Skagarrak in mid-November leaving only five destroyers with the Scharnhorst. The acting Flag Officer of the Scharnhorst, Rear Admiral Bey, considered that the best

Admy./G.H.S./4
p. 131

- (1) German records state that the Task Force consisting of the Tirpitz, Scharnhorst and ten destroyers sailed from Altenfjord on the evening of 6 September 1943. They approached unobserved on 8 September and within six hours put the British and Norwegian installations in Ice Fjord out of action. They returned to Altenfjord on 9 September without incident.
- (2) See Section (viii) of this chapter.

plan of action, if any, against the Russian convoys during the winter months was to assemble a force of about 15 destroyers, divided into groups. He was against using the Scharnhorst since her speed and armament was inferior to the latest British battleship. Moreover she must be kept out of night action.⁽¹⁾ In any case the task would be difficult as the Germans had no efficient air reconnaissance capable of making a close radar search at night. He was supported in his views by the F.O. Northern Waters and F.O. Group North/Fleet.

Thus the Naval Staff acted in direct opposition to expert advice when they revised their cautious directive on 2 December. They now stated that it might be expedient to employ the Scharnhorst despite the experiences of 31 December 1942. They considered that in view of the threatening situation in the east and conditions generally, a valuable fighting force could not be withheld. On 19 December Doenitz informed Hitler that the Scharnhorst would attack the next convoy to Russia.

ibid
pp.136 - 142
and Admy. War
at Sea 1943.
pp.452 - 462.

The Scharnhorst put to sea from Langfjord on the evening of 25 December, evidently to attack the convoy J.W. 55B which had left Loch Ewe on 20th for North Russia. She was engaged and finally sunk by the battleship, cruisers and destroyers covering the convoys J.W. 55B and R.A. 55A at about 1945 hours on 26 December 1943.

(viii) Failure to intercept the Lutzow.

C.C.H.Q.
Controller's
secret log.

Between 21 and 25 September 1943 a number of intelligence reports were received which indicated a move to the south of one of the major enemy units in Alten Fjord. On 21 September it was reported that Bodo airfield was to be occupied for several days by a heavy fighter staffel. This was considered to be 13/J.G.5 (nine Me. 110s) which had been at Kirkenes. On 22 September the tanker Schleswig was known to be going up from Kiel to the battle group in Alten Fjord. The move of heavy fighters to Bergen indicated that the movement, when it took place, would be through to the Baltic and not only as far as Trondheim. About midnight on 25/26 September it was reported that the Lutzow and a number of destroyers were due to leave Westfjord for Trondheim. A B2 report on the same day stated that the Lutzow escorted by five destroyers and one seaplane had passed Raenga in 6637 N x 1308 E at 0810 hours 26 September on a southerly course at 15 knots.⁽²⁾

C.C.H.Q.
Controller's
log.

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report 13.10.43.

It was clear that the force would not come within striking distance on 26 September. Plans for the 27 September were discussed by Coastal Command Headquarters and the A.O.C. No. 18 Group. The detachment of No. 540 P.R. Squadron at Leuchars was put under the operational control of No. 18 Group with effect from A.M. 27 September to P.M. 29 September. It was decided that the use of Hampden aircraft, which were unsuitable for the task, was not justified, and that the

- (1) Presumably owing to her inferior radar.
- (2) On 10 September 1943 the Lutzow was instructed by Group North Fleet to move to Gdynia. She left Langfjord on 23 September and anchored in Skjomenfjord near Narvik from 24-26 September. On the 26th she passed Bogenbucht, Rorvik and passed between Boroyholmen and Rognan in 6334 x 0914 E.

North Coates wing was in no condition to reinforce No. 18 Group owing to extensive unserviceability caused by enemy action in a strike off the Dutch coast on 25 September. It was found impossible to operate any aircraft from No. 144 Squadron which was re-equipping with torpedo Beaufighters. No. 404 Squadron (Beaufighter fighters) were at a low state of serviceability owing to unavoidable causes. Thus the number of strike aircraft available was very limited.

ibid

Information was received that the Home Fleet was going to sea with the U.S. carrier Ranger P.M. on 26 September. This was later cancelled as it was found impossible, in the time available, to get the Fleet in a suitable position to make an attack on the following morning, 27 September, off Stadtlandet, where it was estimated that the Lutzow might be at 0900 hours. The C.O.S. Home Fleet, however, stated that he could provide six Tarpons (later increased to twelve) from the Victorious for a torpedo attack and asked for Beaufighter escort. The A.O.C. 18 Group said he could provide six Beaufighters but pointed out that these aircraft could give no effective cover against enemy single engine fighters and would have to be employed as an anti-flak escort only. The C.O.S. Home Fleet agreed.

It was agreed to operate the Tarpons and Beaufighters from Sumburgh as early as possible on 27 September. The Tarpons had to be prepared at Hatston and could not get to Sumburgh before 0830A on 27 September. Three Beaufighters were already at Sumburgh and three more would be moved from Wick. An attempt was made to send the leader of the Beaufighters to Hatston on the evening of 26 September to discuss tactics with the leader of the Tarpons. The A.O.C. No. 18 Group considered this discussion essential as the two forces had never operated together before. Owing to lack of a communication aircraft this discussion had to be postponed until the morning of the 27th when the Tarpons would arrive at Sumburgh. The C.O.S. Home Fleet agreed that the Tarpon-Beaufighter force should operate under the control of the A.O.C. No. 18 Group and should only attack if suitable cloud cover were available.

Plans were made for reconnaissance early on 27 September to obtain a sighting for the strike force. It was found necessary to use for this reconnaissance two of the Beaufighters of No. 404 Squadron which would subsequently be needed for escort to the Tarpons. The A.O.C. No. 18 Group arranged that the two reconnaissance aircraft should fly from Wick and land back at Sumburgh, whilst the two other Beaufighters available at Wick should fly to Sumburgh so as to arrive at first light on 27 September. Each of these aircraft was to carry a spare aircrew to man the two Beaufighters employed on reconnaissance. It was thus expected that seven Beaufighters would be available at Wick by 0830 hours on 27 September with seven fresh crews to fly them.

It was also found possible to produce one Mosquito of No. 333 (Norwegian) Squadron, although this squadron was not in the line at the time. The Home Fleet offered to send a Maryland to Sumburgh for reconnaissance duties.

At 0419 hours on 27 September the first Beaufighter Y/404 was airborne from Wick on reconnaissance of the area between Stadtlandet and Smølen. At 0624 hours Y/404 sighted one pocket battleship and five destroyers in position 6303 N x 0720 E steering a course of 315 degrees at an approximate speed of 25 knots. Inaccurate light flak was

No. 18 Group
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received from the two leading destroyers and Y/404 set course for Sumburgh landing at 0720 hours.⁽¹⁾ The second Beaufighter X/404 on patrol between Sogne Fjord and Stadtlandet made no sightings. Mosquito T/450 on a photographic reconnaissance sortie to the Trondheim to Stadtlandet area could take no photographs owing to oxygen failure. Weather reported was scattered intermittent showers with extensive clear patches giving general cover of not more than 6-8 tenths at 1,500 to 2,000 feet. The A.O.C. No.18 Group did not consider these conditions suitable for the despatch of the striking force but ordered Sumburgh to be ready to send the force off in case the weather became more favourable.

Meanwhile Wick reported at 0715 hours that the two Beaufighters which were to carry the spare crews had failed to take off owing to last minute unserviceability. No transport aircraft were available as all Hampdens had taken off on anti-submarine patrols in Moorings area. This reduced the Beaufighters available to five aircraft and three fresh crews. The A.O.C. No.18 Group was insistent that fresh crews were necessary for the exacting task of providing an anti-flak screen, and decided that the strike could not leave until the spare crews arrived. Whilst waiting to consult Sumburgh with regard to weather conditions, the A.O.C. No.18 Group was contacted by the C.O.S. Home Fleet, who suggested that weather conditions were suitable and that the Tarpons were well able to attack in the conditions expected. The A.O.C. then learnt from Sumburgh that the weather conditions were more favourable than had been thought and also that a Beaufighter carrying two fresh crews was just landing from Wick. The A.O.C. agreed to the reduction of the Beaufighter force by one aircraft and agreed that the strike should be despatched after discussion of tactics. The strike aircraft were ready at 1010 hours. In the meantime the A.O.C. No.18 Group had consulted the C.-in-C. Coastal Command who considered that five Beaufighters were inadequate as an anti-flak screen against five destroyers. The C.-in-C. decided that the chances of a successful torpedo attack were not good and that casualties were likely to be heavy. The A.O.C. No.18 Group therefore called off the attack.

At about 1020 hours the C.-in-C. Coastal Command was approached by Vice Admiral Moore acting on behalf of the C.-in-C. Home Fleet, who said that the Tarpons had experienced pilots and that he was not counting on the Beaufighters as anti-flak escort but only as protection against fighters. He stated that the Tarpons were trained for attacks without anti-flak cover and would have been sent off from the Ranger in such conditions. In face of such insistence the C.-in-C. withdrew his ban on the strike but repeated that he did not consider it a reasonable operation of war. The A.O.C.

Log of
Lutzow

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- (1) The Lutzow reported to Group North Fleet at 0632 hours that a British aircraft was over the force and that she had been recognised. She picked up the sighting report sent by Y/404 and prepared for an air attack. At 0930 hours eight low flying German aircraft were mistaken for British aircraft and fired on. Many reports of enemy aircraft in the Stadtlandet area were received but the alarm ended at 0933 hours. No British aircraft were in the area at the time so presumably all the reports related to movement of German aircraft.

No.18 Group was informed of the decision and orders were given at 1040 hours for the striking force to be brought to readiness again.

In view of the time lost the A.O.C. No.18 Group suggested that a point further south, for example the entrance to Sogne Fjord, should be selected for the attack. Admiral Moore and the C.O.S. Home Fleet considered, however, that the Lutzow would not maintain a speed of 25 knots all the way down the coast because part of the journey would probably be done through the Leads. It was calculated that the earliest time the Lutzow could pass Stadtlandet was 1030 hours and the latest 1600 hours. The C.O.S. Home Fleet felt that there was a reasonable chance of intercepting the Lutzow at Stadtlandet up to 1500 hours.⁽¹⁾ The A.O.C. No.18 Group concurred in this appreciation. Advantages of an attack off Stadtlandet were the greater likelihood of cloud cover, the most suitable water for torpedo attack, greater distance from enemy fighter airfields and an easier area in which to make landfall.

ibid

The force of 12 Tarpons with five Beaufighters as anti-aircraft escort was therefore ordered to take off as soon as possible, make landfall at Bremanger Island and patrol northwards to Sande. The Mosquito aircraft which was to be used on reconnaissance in advance of the striking force had now become unserviceable, therefore one further Beaufighter, V/404, was detached from the striking force for this purpose. In view of the Beaufighters' new role as anti-aircraft escort the A.O.C. felt this did not materially affect the operation.

The striking force of 12 Tarpons of No.832 F.A.A. Squadron was airborne at 1216 hours. Beaufighter V/404 went on ahead for reconnaissance and two Beaufighters accompanied the Tarpons. The next Beaufighter X/404, swung on take off and burst a tyre thereby delaying the take off of the last Beaufighter C/404 which failed to join up with the force and returned to base. The reconnaissance Beaufighter made landfall at Bremanger at 1310 hours and patrolled coastwise to Svino Light. No shipping was sighted. The Tarpons and remaining Beaufighters made landfall at Batalden Island at 1342 hours and patrolled to Krakenes Light which was reached at 1358 hours. Nothing was sighted and as there was no cloud cover and extreme visibility the Tarpons returned to base. The Tarpons and Beaufighters lost touch with each other while off the Norwegian coast.

The A.O.C. No.18 Group had decided that if no information about the enemy units had been received by 1500 hours, further reconnaissance should be flown. One Mosquito K/333 Squadron was airborne at 1600 hours on reconnaissance from Grip Light to Bremanger and two Beaufighters C and F/404 Squadron were airborne at Sumburgh at 1620 hours on reconnaissance from Holmengra to Bremanger. One Mosquito W/540 took off from Leuchars at 1605 hours on photographic reconnaissance of the Leads from Haugesund to Holmengra covering Grimstadt Fjord and Bergen.

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Arrangements were being made for the loan of Wildcats from Ranger to escort the Tarpons in a further strike on the 28 September when information was received that W/540 had made

Log of
Lutzow

- (1) In actual fact the Lutzow was off Stadtlandet at 0920 hours. By 1100 hours she was off Bremanger and by 1500 hours off Bornestangen light in 6010 x 0501E.

a sighting. At 1741 hours the Lutzow and four destroyers were sighted and photographed in Bomnel Fjord in 5934N x 0515E on a southerly course.⁽¹⁾ In view of this sighting it was decided to withdraw the Tarpons and Wildcats as it seemed clear that no further opportunity for an attack by these aircraft would arise.

Photographic reconnaissance from Kristiansand South to the Skaw, Anholt and Belts, and Beaufighter Reconnaissance of Kristiansand South was ordered for the 28 September. These patrols were flown but no further sightings were made. It had been hoped that the United States VIIIth Bomber Command might carry out an attack on 28, or on 29 September if the Lutzow proceeded to Kiel. Later on 28 September however, it was learnt that the Lutzow had not passed through the Belts, as the Admiralty had expected, but had proceeded via the Sound and was en route to Gdynia to refit.⁽²⁾ All hope of interception was now abandoned.

C.C.H.Q.
Controller's
log

C.C.H.Q.
Controller's
secret log.

(a) The report on the Lutzow incident

Owing to a rumour that the failure to intercept the Lutzow was due to a misleading report by Beaufighter Y/404 Squadron⁽³⁾ the A.O.C. No.18 Group was asked to draw up a joint report of the operation in conjunction with the C.-in-C. Home Fleet. The C.-in-C. wished the report to be made with a view primarily to extracting lessons of value and ensuring that any mistakes made by the Navy or Air Force on this occasion would not be repeated, and only secondarily to clearing Coastal Command of an accusation which he believed to be absolutely unwarranted. The C.-in-C. Home Fleet disclaimed all responsibility for the rumour and did not feel that a joint report on a purely air operation was necessary. He agreed, however, to the discussion of the report between the A.O.C. No.18 Group and his representatives and concurred in the final draft. In a letter to the Air Ministry, dated 16 October 1943, the C.-in-C. Coastal Command forwarded this report and observed that it raised major questions of policy. These, he considered should be discussed at a high level conference between the Air Ministry and Admiralty with

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Encl. 14A.
12.10.43.

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Encl. 17A

Log of
Lutzow.

Log of
Lutzow

- (1) The Lutzow reported two contrails over the ship at 1750 hours and stated that she had been sighted. She waited for a while in Karlsund in order not to leave the Leads too soon. At 2044 hours it was learnt from Group North Fleet that No.18 Group Headquarters had passed on the sighting report to the American bomber command and to surface forces. M.T.B. and air attacks were expected during the night. At 2200 hours the Lutzow left the Leads at Skudesnes. Early on 28 September she reached Kristiansand south and at 0614 hours was joined by her escort of eight fighters.
- (2) The Lutzow passed Anholt on the 28 September and anchored in the northern entrance to the Sound at 2056 hours for the night. On the 29th she continued through the Sound and passed Falsterbo. On 30th she reached Rixhoft. Owing to Bomber Command mining in Danzig Bay the Lutzow's entry into Gdynia was delayed. She was routed further to the north on passing Rixhoft owing to the mine danger and anchored east of Hela at 0744 hours because the inner roads were reported dangerous. On 1 October the Lutzow entered Gdynia after her path had been swept ten times by minesweepers.
- (3) The report by Y/404 appears to have been reasonably accurate

representatives of Coastal Command Headquarters and of the C.-in-C. Home Fleet.

The first point to be considered was the strength and disposition of the shore-based air striking forces available in Coastal Command for operations of this nature. The inadequate air forces available were one reason for the failure to strike at the Lutzow on this occasion. Coastal Command's torpedo and escort Beaufighter Squadrons were planned to comprise three strike wings; the Wick Wing to consist of No.144 Torbeau and No.404 Beaufighter Squadrons, the Leuchars Wing to consist of No.489 Torbeau and No.455 Beaufighter Squadrons and the North Coates Wing to consist of No.254 Torbeau and No.236 Beaufighter Squadrons. This represented a reduction, to which the Admiralty had agreed, in their previous planned strength in this class of unit, owing to the prior claims of fighter support for vital anti-submarine operations in the Bay, and the need to provide a Squadron (No.415) for anti-E-boat operations in the Channel and North Sea.

The C.-in-C. considered, however, that the total of 120 first line aircraft would be reasonably adequate when they were all re-equipped and redispensed as planned. During the recent operation No.144 Squadron had only just returned from operations in the Mediterranean where it had left all its aircraft. Further, owing to the requirements of the Mediterranean theatre, it had not yet been possible to provide the Beaufighters to re-equip Nos.489 and 455 Squadrons which were still equipped with Hampdens, an aircraft totally unsuited for daylight operations against a powerfully armed enemy naval force. No.404 Squadron had not completed re-equipment with the new mark of Beaufighter X and had a detachment on R.P. training at Tain. Therefore, only seven aircraft had been available. The North Coates Wing, which was normally able to reinforce No.18 Group on such occasions, had carried out a strike against a heavily escorted convoy off the Dutch coast on 25 September, in which it had lost two aircraft and suffered very widespread flak damage. Only six serviceable aircraft were available in this wing on the night of 25 September and it was consequently in no shape to move north on the 26th, to take part in the Lutzow operation on 27 September.

The second point was the system of deciding on priority as between operations against enemy surface forces and of notifying that priority to all concerned. The C.-in-C. considered that clarification of priorities was needed particularly with regard to the U-boat war and cited operation Leader⁽¹⁾ of which he received notification only on the day before the Fleet sailed. This happened to coincide with a rare occasion when three U-boats were believed to be present in the Moorings area.

The third point to be discussed was that of reconnaissance. The C.-in-C. noted several differences between naval and air staff views. He referred to a C.-in-C. Home Fleet signal which emphasised the need for sufficiently early air reconnaissance to enable the Fleet to move into position, for regular reconnaissance and location of the enemy at least every hour, and for the reconnaissance aircraft to home the striking force on to the enemy. The C.-in-C. observed that air

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(1) Operation Leader was the attack on the morning of 4 October by carrier-borne aircraft on shipping targets in the Leads off Bodo, Norway.

reconnaissance could rarely operate sufficiently far north to provide the warning required by the C.-in-C. Home Fleet and intelligence reports must be regarded as sufficient evidence. He pointed out that in the case of the Lutzow, action could have been taken on receipt of the agent's message about midnight on 25/26 September that the Lutzow was due to leave for Trondheim. With regard to regular reconnaissance the C.-in-C. observed that when torpedo aircraft were to be employed it was unwise to alarm the enemy since there were relatively short stretches of the Norwegian coast where the enemy was forced to leave the shelter of the Leads and thus be exposed to attack by torpedo aircraft. Once the enemy had been sighted it was best for only one further reconnaissance to be made, just before the strike, to pass a last sighting report. Homing by reconnaissance aircraft he considered impracticable in the face of enemy fighter cover.

The fourth point was the operational control of Fleet Air Arm units temporarily operating from shore bases as distinct from Fleet Air Arm Squadrons definitely loaned to Coastal Command. The C.-in-C. stated that the fact that it was necessary to discuss at all the question of who should control No.832 F.A.A. Squadron showed that the question was not clear beyond doubt.

Finally there was a need for a common tactical doctrine to govern the conduct of air torpedo attacks on an enemy naval unit. The C.-in-C. considered that adequate fighter support and also anti-flak escort were necessary. If there were differences in the tactical conditions influencing the use of R.A.F. and Naval torpedo aircraft these should be understood by all concerned. He agreed with the A.O.C. No.18 Group that any suggestion that an A.O.C. would readily send naval aircraft out in the face of greater risks than he was prepared to accept for his own aircraft or vice versa, would do untold harm to the morale of aircrews and to the relations between the two services.

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The C.-in-C. suggested that tactical questions should be discussed by a lower level committee under the Director of Operations (Anti-Shipping) to include representatives of the appropriate Admiralty and Air Ministry Departments, Coastal Command and Group Headquarters, officers with recent experience in command of torpedo strike squadrons and wings, Fighter Command and the Fleet Air Arm. This committee should report to a high level conference between the Air and Naval Staffs which would discuss policy.

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The ad hoc Tactical Committee met in the Air Ministry on 2 November 1943. It was agreed among other recommendations that a strike of less than twelve aircraft would not have much hope of success. A combined F.A.A. and R.A.F. low level attack would need constant combined practice whilst the synchronisation of the anti-flak escort and a dive attack would be difficult. Anti-flak and fighter escort were both considered essential. It was stated that without fighter escort there would, in clear weather, be little prospect of success against a target provided with single engined fighter cover. The question of whether Fighter Command was to provide such escort was under discussion in the Air Ministry.⁽¹⁾

The high level Admiralty-Air Ministry conference was held in the Admiralty on 9 November 1943. The final report

(1) See section (viii)(b).

on the findings of the meeting were circulated on 8 March 1944. Conclusions were noted under the following main headings.

1. Strength of forces

(a) Reconnaissance force

The Naval Staff pointed out that there would be a period of uncertainty of perhaps two days when the movements of enemy ships indicated by other reports would require confirmation by reconnaissance. During this period it would be desirable to carry out up to two reconnaissance sorties a day as far north as possible. The Air Staff stated that the resources of the P.R.U. detachment at Leuchars and the Norwegian Mosquito flight, if kept up to their full strength of six Mosquitoes each, would be sufficient to provide this effort to the extent of their radius of action and subject to weather conditions. Consideration would also be given to the use of a Catalina for more distant reconnaissance if suitable cloud cover could be found.

(b) Striking force

It was agreed that when the build up of three strike wings (each of a unit establishment strength of 20 Torpedo plus 20 twin engine fighter aircraft) was complete, the air striking force would be adequate. It was accepted that these wings could not be relieved of certain extraneous operations which were bound to delay their formation and training.

(c) Reinforcement of striking force

The Commander-in-Chief Coastal Command stated that arrangements had been made and instructions issued with the agreement of the United States Eighth Air Force, for the participation of United States Heavy Bombers at short notice in operations against important enemy naval units moving on the Norwegian coast.⁽¹⁾ Adequate information would have to be given in good time to enable the units to be brought to readiness. There would inevitably be occasions when the United States Air Force would not be available such as when some other important operation was in progress or imminent. A cloud base of 11,500 feet at the target was necessary.

(d) Single Engine Fighter Protection for Striking Force

It was agreed that this was normally necessary for Torpedo Striking Forces in the face of enemy fighter opposition. Coastal Command had already taken up the question of Single Engine Fighter Escort on the Norwegian Coast with the Air Ministry.

2. Priorities

(a) Notification by code word

It was agreed that the use of a preparatory code word would be of value as a warning that special operation of the type under discussion was probable.

(1) Operation Dormer - see section (ix)

(b) Conflicting requirements

The Commander-in-Chief, Coastal Command raised the question of the possible adjustment in timing of Home Fleet operations to ensure that opportunity for favourable anti-submarine operations was not lost. The C.O.S. Home Fleet appreciated that on occasions Coastal Command co-operation might not be forthcoming if other Air-Sea operations had priority.

3. Reconnaissance

(a) Frequency of reports required

If considering the special case of reconnaissance on the Norwegian coast, it was agreed that it should be as early as possible but that reconnaissance alone could not ensure sufficiently early warning to allow the Fleet to intercept. The Naval and Air Staff views on the question of the frequency of reports required were stated. It was concluded that if the torpedo strike only was attempting to intercept, reconnaissance should be limited to such as was necessary to obtain the general trend of the enemy's movements but that, when surface forces or Eighth United States Army Air Corps were trying to intercept reconnaissance should be as frequent as practicable but that no exact time interval could be laid down.

(b) Homing

It was agreed that homing the striking force by a reconnaissance aircraft was unlikely to be practicable but that the passing of frequent intermittent reports should be possible when required.

4. Common Tactical doctrine

The meeting generally endorsed the conclusions of meeting of the ad hoc tactical committee held in the Air Ministry on 2 November 1943.

On the question of air escort for the striking force, the meeting agreed that anti-flak escorts were an integral part of a torpedo striking force. In the face of enemy fighter opposition single-engined fighter support was generally necessary if the operation was to have a reasonable chance of success. The decision to undertake any particular operation must however be left to the responsible commander concerned. Exceptional risks to the Air Forces concerned would be justified in the event of a break out into the Atlantic or a combined operation in which surface forces were present to take advantage of results obtained by the Air Forces. It was recognised that the different characteristics of the Fleet Air Arm and R.A.F. aircraft were also factors to be considered in assessing the probability of success and the risk of casualties in any operation.

5. Operational control of Naval units temporarily disembarked

This subject had been raised among others in an official Air Ministry letter which the Admiralty had under reply. The existing arrangements for disembarked Fleet Air Arm Units were provisionally confirmed. Whenever a force of naval aircraft was operating from shore bases the operational control should rest with the appropriate Air Force Commander. It was understood that disembarked Fleet Air Arm squadrons would not normally

be available for operations unless placed at the Air Commander's disposal by the Naval Commander.

(viii) (b) Fighter escort for Coastal Command strikes against enemy major units.

The Lutzow incident brought into the foreground a question that was already under consideration in the Air Ministry that of single engine fighter cover for Coastal Command torpedo strike wings. After discussions between No.18 Group Coastal Command and No.13 Group Fighter Command in August 1943, an unsuccessful attempt had been made to obtain from Fighter Command a flight of Spitfire VB aircraft fitted with 90 gallon long range tanks for use as fighter escort for Coastal Command sweeps on the Norwegian coast. The matter was taken to a higher level and on 21 September C.-in-C. Coastal Command wrote to the Air Ministry requesting the allocation of two or three squadrons of long range Spitfires VB to No.13 Group Fighter Command. He stated that many opportunities for striking at enemy convoys on the Norwegian coast were missed because Beaufighters could not be sent unescorted in fine weather to attack enemy shipping under his single engine fighter cover. A more serious result was that the chance of a successful attack by strike wings on any important enemy unit moving on the Norwegian coast was really remote. He said that a torpedo strike on heavily defended warships was at the best of times a hazardous operation involving heavy casualties but when it had to be carried out unescorted under a hostile fighter umbrella it ceased to be a reasonable operation of war.

In reply the Air Ministry stated that the A.O.C. Fighter Command was averse to providing the fighter escort required for Coastal Command Beaufighters operating off the Norwegian coast. The A.O.C. gave as his reasons the serious psychological effect upon single-engine pilots when flying for three to four hours over the sea with the knowledge that they would have little chance of rescue if forced to abandon aircraft, the fatigue incurred on such lengthy flights, and the difficult and variable weather conditions on the Norwegian coast. He considered that the endurance of the long range Spitfire and Mustang fighters was not sufficient to allow a reasonable margin of safety.

Further discussion within the Air Ministry revealed that the Mustang was the only type suitable as it had the greater endurance and therefore greater flexibility. Certain squadrons in the Allied Expeditionary Air Force were shortly to be equipped with Mustang III aircraft for the long range escort of American heavy bomber forces. It was suggested that arrangements should be made with the Air Commander-in-Chief, A.E.A.F. so that these squadrons could be temporarily diverted to escort Coastal Command strikes should an important enemy Naval unit be known to be moving off the Norwegian coast. The first Mustang Squadrons were unlikely to be operational before early in 1944.

In an official reply to this proposal on 24 December 1943 the Air Commander-in-Chief A.E.A.F. stated that it would be impossible for the Mustang squadrons to be employed in a dual capacity without seriously prejudicing the training for and accomplishment of their primary role. The squadrons must be available in the south of England. Diversion to the north of Scotland for training or in time for an operation off the Norwegian coast might result in their not being present when required for their principal task. An attempt to satisfy the

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Encl. 10B

two requirements would entail a serious risk of the squadron being unprepared for either commitment.

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Encl. 6

The Commander in Chief Coastal Command was already aware of the situation and had pointed out on 22 December the serious consequences arising from it. Coastal Command would not be in a position to interfere effectively with any movement of enemy major units on the Norwegian coast and he felt that the Admiralty should be informed accordingly.

ibid
Encl. 10A

As a result of further discussions the Air Commander in Chief A.E.A.F. was requested on 6 January 1944 to re-examine the Air Ministry proposals. It was stated that the Air Ministry had agreed that the requirements only arose when a major German naval unit was expected or known to be moving up or down the Norwegian coast and that there was now no question of providing escorts for strikes against merchant shipping. In the event of a major German unit moving down from the north it would be necessary to move the Mustang squadrons to Wick but past experience had shown that they normally had at least 48 hours notice of such a move. If the target moved out of the Baltic they might well have to strike the same day as the news was received but, in this case, the attack would be carried out from North Coates which would involve only a very short move for the Mustang squadrons. It would seem that as the squadrons were to be trained to escort American heavy bombers little further training would be required to escort Beaufighters, particularly as their duties with the American squadrons would involve long flights over the sea. The Air Commander in Chief A.E.A.F. concurred in the proposals in this form and accepted responsibility for the provision of fighter escort for Coastal Command Beaufighter squadrons when operating against a major German unit moving off the Norwegian coast. Arrangements for this escort would be made between Headquarters Air Defence of Great Britain and Headquarters Coastal Command. Mustang III Squadrons of the Second Tactical Air Force would come under the operational control of Headquarters Air Defence of Great Britain for the particular mission or missions.

ibid
Encl. 11

ibid
Encl. 14

(ix) The Tirpitz - Operations Dormer and Kidson

A.H.B./IIK/54/
10/57
Encl. 23B

In a letter to the Commanding General United States VIIIth Air Force dated 25 October 1943, the Air Ministry stated that the damage which had been inflicted on the Tirpitz was likely to preclude any early attempt to move to a German port for repairs. The Admiralty considered, however, that the possibility of such a move should not be entirely excluded. It was in any case not improbable that the Scharnhorst might move south.⁽¹⁾ There were many long stretches between Alten Fjord and the Skagerrak where these units could not be attacked by torpedo aircraft but would be vulnerable to high altitude precision bombing. Although no striking force for anti-shipping duties was normally maintained by the VIIIth Air Force, it had been agreed that forces of the Command would be prepared to support Coastal Command in the attack of important enemy naval units. It was suggested that detailed plans for this contingency should be drawn up.

VIIIth American
Bomber Command
O.1.No.16

A.H.B./IIK/54/
11/252
Encl. 1.
C.C.O.1 No.118

The instructions for operation "Dormer" were issued on 16 November 1943. The intention was to assist the striking

(1) Not applicable after the Scharnhorst was sunk on 26 December 1943.

force of the VIIIth American Air Force to locate and attack enemy major units. The number of aircraft operating was expected to be up to 60 aircraft which might be increased to over one hundred aircraft depending on operational commitments, the importance of the target, and the amount of warning it was possible for Coastal Command to give. The Bomber Groups would normally operate from southern bases with Kinloss, Lossiemouth, and Banff(1) as diversionary airfields in case of bad weather. If 24 hours notice were given, a maximum of 60 of these aircraft could be moved to these northern stations and operate from there. The aircraft could take off and land during the dark hours but the time of the initial take off would be governed by rendezvous time soon after dawn in the Peterhead area. A minimum cloud base of 11,500 feet was necessary for successful operations since these groups bombed from 10,000 feet to 14,000 feet.

Coastal Command were to give the VIIIth Air Force the maximum amount of warning so that preparations for a strike could be made and inform them of any details known of the enemy force and its movements. Instructions were to be given to No.18 Group to make the necessary reconnaissance. The Commanding General VIIIth Air Force was to decide whether or not to employ the striking force but once the decision was made the Commander-in-Chief Coastal Command was to co-ordinate the American and Coastal Command forces. No.18 Group were to give frequent sighting reports when a strike had been arranged and these reports were to be broadcast every 30 minutes if possible as soon as the strike was airborne. Arrangements would be made to provide Norwegian observers or Coastal pilots to assist the strike leaders in recognising their landfall on the Norwegian coast.

A.H.B./IHK/54/
11/179
Encl. 1.
C.C.O.1.No.119

The operational instruction for operation "Kidson" was issued on 1 February 1944 to provide for the attack by Coastal Command torpedo aircraft on the Tirpitz or other enemy major naval units on passage between the Baltic and Norway. Three strike wings each consisting of 12 Torbeau aircraft and 12 R.P. and cannon Beaufighters(2) were available at Leuchars and Wick in No.18 Group and North Coates in No.16 Group. It was stated that three Mustang III fighter squadrons of the A.E.A.F. might be available late in March for escort duties. Naval units were vulnerable to attack by torpedo aircraft in the areas from the Skaw to Homborsund, from Homborsund to Stavanger, and in the stretch of open water approximately 30 nautical miles in length off Stadtlandet. In the case of a enemy naval force moving north from the Baltic only short notice could be given and the attack would be made by No.16 Group aircraft up to Karmoy Island where No.18 Group would take over. In the event of a force moving south from north Norway 48 hours notice of arrival off Stadtlandet could generally be given and the attack would be carried out by No.18 Group. Fighter escort would be assembled in the first

ibid
Encl. 11
12.3.44

ibid
Encl. 23

- (1) Amended on 11 November 1944 to Milltown and Tain.
- (2) No.144 Squadron (Torbeaus) and No.404 Squadron (Beaufighters) at Wick.
No.489 Squadron (Torbeaus) and No.455 Squadron (Beaufighters) at Leuchars.
No.254 Squadron (Torbeaus) and No.236 Squadron (Beaufighters) at north Coates.

case at Digby and in the second at Castletown or Drem.(1)
The operation instruction for the fighter escort squadrons was issued on 22 February 1944. Squadrons to be employed on these duties would be Nos. 19, 65 and 122 squadrons.(2)

Suspicious that the Tirpitz was about to move south in March 1944 provided an opportunity to test these arrangements. An intelligence report, classified B3, was received on 13 March that the Tirpitz and five destroyers had left Alten Fjord at 1230 hours on 12 March although details of a photographic reconnaissance sortie from North Russia received later in the day, showed that the Tirpitz was in her usual berth at 1030 hours on 13 March. Signals were issued from Coastal Command Headquarters stating that there was a strong possibility of the Tirpitz proceeding south within the next four days for return to a base in the Baltic and instituting preliminary preparations for operations Kidson and Dormer. In accordance with the decisions of the Admiralty-Air Ministry conference on 9 November 1943, the Admiralty issued two code words Helmet and Tinhat to give warning of the imminent movement of an enemy naval unit south or north. The signal Helmet was sent at 1533 hours on 14 March.

On 14 March the Commander-in-Chief Coastal Command reported to the Commander-in-Chief Home Fleet that preparations had been made for operations Kidson and Dormer and that A.D.G.B. had been warned that fighter escort might be required from Castletown. Catalina aircraft of Nos.210 and 333 Squadrons would be available for reconnaissance from the Lofoten Islands southward and P.R. Mosquitoes could cover up to Narvik. Mosquitoes of No.333 Squadron could be used for Trondheim and area to the south. An aircraft carrier would be necessary for reconnaissance further north.

Further intelligence was received later on 15 March that the Tirpitz had left Kaafjord at 1200 hours on 15 March for Stjærnsund Helsingfors but was returning at 1600 hours.(3) The North Coates strike wing was moved to Tain on 16 March and three Wellingtons of No.415 Squadron and four Warwicks of No.280 Squadron were ordered to move to Tain on 17 March. No further indications of a movement of the Tirpitz were received and Helmet was cancelled at 0315 hours on 21 March. Nos.143, 236 and 254 Squadrons and the detachments of Nos.415

A.H.B./IIK/54/
11/179
Encl. 12

ibid
Encl. 13
and
A.H.B./IIK/54/
11/252
Encl. 4

ibid
Encl. 6
and 7

Encl. 9

ibid
Encl. 8

C.C.H.Q.
Controller's
log.

A.H.B./IIK/54/
11/179
Encl. 22, 23
and 24.

Encl. 31
Encl. 32

ibid
Encl. 122
17.7.44 and
Encl. 140
14.11.44.

ibid
Encl. 98
9.7.44

Log of
Tirpitz

- (1) These stations were altered later to Coltishall for No.16 Group for the Beaufighter wing at North Coates, and Peterhead for No.18 Group. The Leuchars and Wick wings were transferred to Dallachy and a Mosquito anti-flak wing would operate from Banff.
- (2) Subsequently altered to the Polish Mustang III Wing comprising Nos. 129, 306 and 315 Squadrons.
- (3) There was apparently no intention of moving the Tirpitz at this date. After months of repairs in Kaafjord since the 28 November 1943 the Tirpitz left the fjord on 15 March 1944 to test her engines in Altafjord. She was back in the nets in Kaafjord on 16 March.

On 3 April 1944 the Tirpitz was attacked by 42 Barracudas from the Furious and Victorious covered by F.A.A. fighters from Emperor, Searcher and Pursuer. (Operation Tungsten). Four aircraft were lost. German records establish that the Tirpitz received 13 hits on deck, one underwater and one near miss. The necessary repair time was estimated as three to four months.

and 280 Squadrons were ordered to return to their home stations on 22 March.

(X) Conclusion

The results of air action against enemy major naval units during the period January 1943 to May 1944 can hardly be called successful. Intelligence reports gave a reasonable accurate guide to the movements of enemy units and were several times followed by sightings from reconnaissance aircraft. However, on no occasion did a strike force, despatched on receipt of these sightings, make contact with the target. Moreover, in view of the weak condition of the strike wings, all of which were undergoing training or conversion to new types of aircraft for some portion of this period, successful results from any attack were unlikely. The uncertain weather conditions on the Norwegian coast made reconnaissance difficult and flying hazard casualties heavy. Cloud conditions sufficient to provide cover without hindering reconnaissance were necessary for effective daylight operations. On a clear day German fighter units based in South Norway made the task of a strike force without adequate fighter escort (and there was none available during most of this period) extremely dangerous as was shown by the abortive attack on the Nurnberg on 1 May 1943.

Summary

However, post war evidence shows that the enemy did fear air attack on these units. Thus, twice in January 1943, the Scharnhorst was ordered to turn back because she had been sighted. A heavy concentration of fighters drove off the strike force despatched against the Nurnberg in May and all precautions were taken by the enemy against air attack when the Lutzow was sighted in September. Fighter escort was provided for the units where they had to leave the shelter of the Leads at Stadtlandet and Stavanger. In fact the enemy apparently overestimated the strength and efficacy of our strike forces both during the period under review and in the earlier years of the war. At Appendix XVIII is given a list of all the movements of the German major naval units since the outbreak of war. Of the 58 journeys which should have been detected at sea by Coastal Command's air reconnaissance, twenty were actually sighted. On only seven occasions were air strike forces able to follow up with an attack and in only one case was the target seriously damaged - the Lutzow off S.W. Norway in June 1941.

Although this record is much below the pre-war expectations from air reconnaissance it is fair to remember the difficulties attending any interception off such a coast as Norway once it had fallen into enemy hands. Fighter cover or journeys planned for bad weather conditions were generally successful in thwarting discovery. Once clear of the North Sea, the location of these units in ocean waters to the northeastward of Iceland was made doubly difficult by the paucity of long range reconnaissance aircraft.

CHAPTER XII

BOMBING POLICY AND OPERATIONS AGAINST ENEMY

PORTS AND NAVAL OBJECTIVES, MARCH 1943 TO MAY 1944

(i) Introduction

Bombing policy during the first six months of 1943 was governed by the decisions of the Casablanca Conference held during the second part of January. Owing to the critical losses inflicted on shipping by U-boats at that time, the defeat of the U-boat menace was declared to be a first charge on the resources of the United Nations. The current directive which ordered the maximum effort to be expended against German civilian morale and industry was superseded by a new directive giving priority to naval targets. The Casablanca Directive to the British and United States Bomber Commands in the United Kingdom approved by the Combined Chiefs of Staff on the 21 January 1943, gave priority to the attack on German submarine construction yards. The German aircraft industry, transportation, oil plants and other targets in the enemy war industry followed in that order.

A.M.File
C.39432/49
Encl.95A

Furthermore, under the main heading of security of sea communications the conference agreed to intensified bombing of the U-boat operating bases. The War Cabinet had given their approval to the policy of area bombing of the Biscay U-boat bases, and area attacks had commenced on the night of the 14/15 January 1943.⁽¹⁾ The Casablanca Directive stated that these attacks should be continued so that an assessment of their effects could be made as soon as possible. If it were found that successful results could be achieved, these attacks should continue whenever conditions were favourable for as long and as often as was necessary. These objectives had not been included in the order of priority which covered long term operations, particularly as the bases were not situated in Germany.

(ii) Operations March to June 1943

(a) Bombing of the Biscay U-boat bases. March to June 1943

Details of attacks on Lorient and St.Nazaire during January and February 1943 are given in Volume III of this

(1) For a summary of events leading to the decision to carry out area bombing of the Biscay U-boat bases, see the R.A.F. in Maritime War Volume III, Chapter IX, Section (viii) (c).

narrative. Footnote (1) below gives details of Bomber Command night area attacks, Bomber Command No.2 Group light bomber day attacks, and U.S. VIIIth Air Force day attacks during the period March to June 1943.

The War Cabinet decision to bomb the Biscay U-boat bases had been taken as a result of Admiralty pressure. The Air Staff were not optimistic as to the likely results of such a policy whilst the Air Officer Commanding-in-Chief, Bomber Command (Air Chief Marshal Sir Arthur T. Harris) regarded the whole plan as a complete waste of effort. The practical experiment did little to lessen this divergence of opinion. On the 22 March the First Sea Lord, in a Memorandum on the Battle of the Atlantic, maintained that the bombing of Lorient and St. Nazaire had diminished the number of U-boats at sea. (2) He advocated the bombing of all the U-boat bases to obtain cumulative effect. It was not suggested that the bombing of the U-boat bases should be continued indefinitely but, in view of the seriousness of the situation during the next few months, it was considered that each base should be given a thorough bombing and, as time was vital, that the bombing of these bases should have first priority.

AU(43)90

(1) Attacks on the Biscay U-boat bases, March to June 1943.

Date	Objective		Com- mand	No. of A/C	Tons		Type of Bomb	Loss
					H.E.	I.B.		
6 Mch	Lorient	Docks	USAAF	63	140.2		315-1000lb.GP.	3
6 Mch	Brest	U/B pens	USAAF	15	40.2		90-1000lb.GP.	-
22/23 Mch	St. Nazaire	Harbour instal- lations and U/B base	BC	277	585.7	265.2	(8-8000lb.HC. 18-2000lb.GP. (168-4000lb.HC. 440-1000lb.GP. 200-500lb.GP.	1
28/29 Mch	St. Nazaire	" " "	BC	291	350	325	(54-4000lb.HC. 253-1000lb.GP. (15-2000lb.GP. 337-500lb.GP.	2
2/3 Apr	St. Nazaire	" " "	BC	48	167.9		332-1000lb.GP. 83- 500lb.GP.	1
2/3 Apr	Lorient	Docks	BC	40	117		(3-4000lb.HC. 9- 500lb.MK. (222-1000lb.GP. 44- 500lb.GP.	-
3 Apr	Brest	Dockyard	BC	11	12.5		33- 500lb.HC. 44- 250lb.GP.	-
5 Apr	Brest	"	BC	12	13.4		36- 500lb.HC. 48-250lb.GP.	4
16 Apr	Brest	U/B pens	USAAF	18	43.8		196- 500lb.GP.	3
16 Apr	Lorient	U/B pens	USAAF	59	131.3		294-1000lb.GP.	1
1 May	St. Nazaire	Harbour instal- lations and U/B base	USAAF	29	50.9		57-2000lb.GP.	7
17 May	Lorient	U/B pens and power station	USAAF	118	258		395-1000lb.GP. 368- 500lb.GP.	6
17 May	Bordeaux	U/B instal- lations	USAAF	34	75.9		342- 500lb.GP.	1
29 May	La Pallice	U/B instal- lations	USAAF	34	88.4		99-2000lb.GP.	-
29 May	St. Nazaire	Harbour instal- lations and U/B base	USAAF	147	247.3		277-2000lb.GP.	8
28 June	St. Nazaire	Lock Basin Entrance	USAAF	158	267.9		300-2000lb.GP.	8
TOTAL				1,354	2,590.4	590.2		45

(2) This was not the case. U-boat traffic figures do not show any decrease in numbers leaving the Biscay bases.

AU(43)96

On the 29 March the Air Officer Commanding-in-Chief Bomber Command reacted to the Admiralty proposals for further bombing of the U-boat bases and the increased employment of Bomber Command aircraft on anti-submarine patrols in the Bay of Biscay. He felt that if the Bomber offensive was diverted from its primary task of striking directly at Germany, the whole brunt of fighting Germany would be thrown on to the Russians. The number of U-boats which would be eliminated by accepting the Admiralty proposals would be negligible compared with the number which the enemy could operate. The effect on the Bomber offensive would be catastrophic. He felt that at no distant date the Admiralty would recognise that the U-boats could be effectively dealt with only by attacking the sources of their manufacture but by then much time would have been lost.

AU(43)105

AU(43)102

The Admiralty and Air Staff views were further shown in two papers assessing the results of the bombing of the U-boat bases so far as was known. A Memorandum by the First Lord of the Admiralty gave an analysis of results achieved up to date and proposed two heavy night attacks as soon as possible on La Pallice, Bordeaux and Brest and day bombing of certain vital points in the Biscay ports. A note by the Chief of the Air Staff, commenting on the results achieved, recommended the discontinuance of the night attacks.

AU(43)
13th Meeting

On the 31 March the Cabinet Anti-U-boat Warfare Committee met to consider these papers. The Air Officer Commanding-in-Chief Bomber Command was pessimistic about the likely results of bombing the other U-boat bases. La Pallice in particular was a small target and facilities were duplicated at La Rochelle. Attacks would be made at the expense of bombing Germany. He maintained that great damage was done by the attacks on the U-boat construction yards and accessory factories⁽¹⁾ and that the output of U-boats would increase if such attacks were discontinued. The Chief of the Air Staff agreed with these views. He suggested that a certain number of inexperienced crews should be employed on night harassing attacks on the Biscay bases where the ground defences were not very strong. He recommended that by day the United States Bomber Command should concentrate on the vulnerable point in the U-boat servicing system at Lorient, subject to conditions being unfavourable for the bombing of targets in Germany. The meeting agreed with the measures proposed by the Chief of the Air Staff.

A.M.File
C.39432/49
Encl.109A

On the 6 April 1943, Bomber Command were informed that the employment of their main bomber effort in this form of attack was for the moment to be discontinued. The effort thus released was to revert as far as possible to the bombing of Germany. Harassing attacks on suitable occasions were to continue. Freshman crews might profitably be employed.

Ibid
Encl.113A

The United States Eighth Air Force were similarly informed of the decisions on the 7 April. They were to continue their daylight attacks when conditions were unsuitable for bombing Germany and to direct their efforts against vulnerable points in the servicing systems. They were to concentrate in the first place on the destruction of the turntable and slipway at Lorient.

The Eighth Air Force continued their daylight attacks until June 1943. Apart from a couple of attacks on La Pallice on the

(1) In actual fact this was not the case. See section iv(b) of this chapter.

4 July and 16 September⁽¹⁾ bombing attacks on U-boat installations in the Biscay ports then ceased until the summer of 1944. In all, during the first six months of 1943, 5,518 tons of H.E.s and 3,633 tons of incendiary bombs were dropped by Bomber Command and the United States Eighth Air Force on the U-boat bases of Brest, Lorient, St.Nazaire, La Pallice and Bordeaux. Of this total 2,564 tons of H.E. bombs and 2,453 tons of incendiary bombs were dropped on Lorient, and 2,498 tons of H.E. bombs and 1,180 tons of incendiary bombs on St.Nazaire. The total number of aircraft attacking was 3,764 and 106 aircraft were lost. Forty nine and 47 aircraft were lost on raids on Lorient and St.Nazaire respectively during these six months.

Bureau
Scientifique
de l'Armée

B.C. O.R.S.
Final Night
Raid Reports
2/3 April 1943

Quoted in
U.S.S.B.S.
German Sub.
Industry
Report P.19

A.H.B.6
Translation
No.VII/VIII

As a result of this effort the towns of Lorient and St.Nazaire were flattened. A report issued by the French Army states that 3,500 out of 4,500 houses in Lorient were completely destroyed by the 16 February. A summary of all offensive operations against St.Nazaire up to May 1943 says that whilst no direct damage was caused to the submarine pens, the usefulness of St.Nazaire as a harbour for shipping and as a base had probably been reduced by the havoc caused to the shipyard and dock installations, communications and living facilities in the town. German evidence confirms the damage to civilian property. At a meeting of the Central Planning Office, held on 4 May 1943, Admiral Doenitz said that the towns of St.Nazaire and Lorient had been rubbed out as accommodation bases. No dog or cat was left in these towns. He went on to say, however, that nothing but the submarine shelters remained. The Todt organisation had built them because of the far-sighted orders of the Fuehrer and the submarines were repaired in them. He concluded that the enemy had shifted his fight since he had realized that he could not effectively achieve anything by the air raids. A German survey of Anglo American operations from 1942 to 1944 stated that although little damage was caused to U-boat pens, the auxiliary plants, workshops, shelters and so on without reinforced concrete protection received devastating hits and that some bases were temporarily put out of action.

B. d U.
War Diary

Despite immense damage to civilian property the main object of the intensified raids was not achieved. No U-boats were destroyed by bombing in the Biscay bases, and U-boat traffic across the Bay continued uninterrupted during the months of the heaviest bombing.⁽²⁾ The U-boat shelters remained undamaged and servicing and maintenance of the U-boats was carried on beneath heavy reinforced concrete protection. Workers lived in isolated rest camps several miles inland and were transported to and from work in the morning and evening.

A.H.B./IIH/241/
3/823
Encl.1A

Bomber Command themselves were under no illusions as to the likely results of these operations. The Bomber Command Report for the first quarter of 1943 stated that it was safe to say that the activity which had had no effect whatever on the U-boat war was the decanting of 7,000 tons of bombs on the small and formerly pro-British Breton ports of Lorient and St.Nazaire. Both

- (1) See section iv(c) of this chapter.
(2) U-boat arrivals and departures in Biscay bases.

	Brest	Lorient	Nazaire	Pallice	Bordeaux	Totals
Jan.1943	26	27	21	12	3	89
Feb.1943	29	21	32	14	Nil	96
Mar.1943	30	32	33	16	8	119
Apr.1943	26	34	32	16	9	117
May.1943	27	26	30	13	18	114
June1943	18	16	16	10	12	72

of these had been annihilated in accordance with instructions, but it was doubtful whether a single U-boat (except one which was sunk by mine⁽¹⁾ while Lorient was being bombed) had even been seriously inconvenienced by this misuse of air power.

Six small vessels totalling 914 tons and a tanker of unknown tonnage were sunk during the course of these raids on the Biscay ports. Details can be found in footnote (2) below. The two vessels sunk on the 1 March were the result of the Bomber Command raid on the night of the 28 February/1 March, when 407 aircraft dropped 533 tons of H.Es and 590 tons of incendiaries on St.Nazaire for the loss of five aircraft.

(b) Bombing of German Ports March to June 1943

In accordance with the Casablanca Directive considerable effort was directed against submarine construction yards in German ports. Most of the raids were precision attacks by the United States Eighth Air Force with the various U-boat yards as primary targets. In addition, there were a few Bomber Command night area attacks on ports. Light harassing attacks by Bomber Command Mosquitoes and small quantities of bombs dropped on alternative targets have been included in the summary below.⁽³⁾ Major attacks on the various ports are examined in detail in the next few pages. Enemy shipping casualties through air raids on German ports are in footnote⁽⁴⁾.

(1) U.526

(2) The following vessels were sunk by air raid in the Biscay ports during the period March to June 1943.

Date	Name and type	Flag	Tonnage	Position	By whom
1 March	<u>Jean Charrier</u> f.v.FN08	Fr	35	St.Nazaire	BC
	<u>Keradio</u> f.v.FN10	Fr	55		
23 March	<u>Magoud</u> tug	Fr	50	St.Nazaire	BC
	<u>Pornic</u> tug	Fr	171		
16 April	<u>Emile Allard</u> Buoylayer	Fr	500	Brest	USAAF
30 May	<u>Korrigan</u> tanker	?	?	La Pallice	USAAF
28 June	<u>Louissette M.</u> trawler FN05	Fr	103	St.Nazaire	USAAF

In addition Monsun (Ge) 8,038 tons was damaged at Nantes on the 22 May.

(3) Monthly tonnage of bombs dropped on German ports March to June 1943.

Month	No. of A/C	Tonnage		A/C Lost
		H.E.	I.B.	
March	540	877	487	15
April	935	1170	1655	43
May	540	1021	125	32
June	352	661	-	34
Total	2367	3729	2267	124

(4) The following vessels were sunk in German ports March to June 1943.

Date	Name and Type	Flag	Tonnage	Position	By whom
22 March	<u>Eurosee</u>	Ge	10,327	Salved since 11 April 1942	USAAF
21 May	(<u>Mariensiel</u> Tug <u>Elster</u> Tug)	Ge Ge	109) 138)	Sunk again in Wilhelmshaven	
Total	3 Vessels		10,574	Wilhelmshaven	

In addition the following vessels were damaged:-

11 June	<u>Tanganjika</u>	Ge	8,540	Wilhelmshaven severe damage	USAAF
13 June	<u>Karin Noreg</u>	Swe Swe	1,474 1,431	Bremen slight damage	USAAF
Total	3 Vessels		11,445		

Hamburg

B.C. O.R.S.
Final Night
Raid Reports

U.S.S.B.S.
Area report
No.1 Table 6.

There was only one major raid on Hamburg before the July catastrophe raids.⁽¹⁾ On the 3/4 March 354 Bomber Command aircraft claimed to have attacked the city area and to have dropped 432 tons of H.E. bombs and 482 tons of incendiaries. From photographic evidence, however, it was estimated that only 17 aircraft bombed within three miles of the Aiming Point at Altona Railway Station. A German decoy in the form of a dammed up lake at Wedel resembling the Aussen Alster, misidentification by some of the Y aircraft and an apparent error in track marking led to the main effort being planted at Wedel ten miles west of the Aiming Point. German records show that only 33 H.E. bombs and 3,000 incendiaries were dropped in the Hamburg area.

The only other raids during this period were small harassing attacks by Mosquitoes of Nos. 2 and 8 Groups.

Vegesack

AM.File S.6706
Encl.52A.
23.3.43

On the 18 March under favourable weather conditions 73 Fortresses and 24 Liberators carried out an attack on the U-boat yards of the Bremer Vulkan Schiffbau and Maschinenfabrik at Veegesack on the Weser about seven miles north of Bremen.⁽²⁾ Bombing was accurate and only two aircraft were lost although fighter opposition was heavy. In a minute to A.C.A.S. (Operations) the Director of Bomber Operations considered that the success of this raid in penetrating through the most highly organised German fighter defence system, bombing the target successfully, destroying so many enemy fighters and returning with such small loss to themselves went a long way towards substantiating the soundness of the American day bombing principles. He noted that the force might have been considered dangerously small even for night operations and concluded that when the Americans could operate 400 or 500 bombers at a time they could expect to achieve similar success regularly. The attack on Wilhelmshaven on the 22 March confirmed the soundness of the tactics.

AU/43)
14th Meeting
7.4.43

Given in
Interpretation
Report S.25.
2.4.43

Post-war evidence shows, however, that the effect of the bombing in the Veegesack raid was greatly over-estimated at the time. At a meeting of the Anti-U-boat Warfare Committee held on the 7 April 1943, the Prime Minister read out a statement by the Chief of the Air Staff on the satisfactory results of the attack on Veegesack. He stated that a detailed study of photographs of the shipping and shipbuilding at Veegesack showed that of 15 U-boat hulls on the slips, seven had almost certainly been damaged severely, while six others appeared to have sustained some damage. The damage to buildings was probably sufficient to reduce efficiency to a minimum, if not to cause

(1) Attacks on Hamburg March to June 1943.

Date	No. of A/C	Command	Tonnage		A/C Loss
			H.E.	I.B.	
3/4 March	354	BC.	432	482	10

(2) Attack on Veegesack 18 March 1943.

Date	No. of A/C	Command	Tonnage		A/C Loss
			H.E.	I.B.	
18 March	97	U.S.A.A.F.	239	-	2

complete dislocation. It was thought that this yard might well be of little importance for at least 12 months. The Prime Minister asked Admiral Stark to convey his congratulations to General Andrews and General Eaker on this outstanding success by the United States Eighth Bomber Command.

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Sub. Plant
Report
No.9

The Plant Report of the Bremer Vulkan shipyard states, however, that Intelligence greatly over-estimated the effect of air attacks, but correctly identified area of strike and the targets affected in this raid. The day attack of 18 March 1943 was the first time the yard really experienced a heavy raid. Seventy six bombs hit the plant, and of these 14 were either low order detonations or duds. Work shops, utility net works of pipes and cables and buildings, all were damaged in this attack. The damage suffered by boats on ways was slight, because most of the bombs that hit the ways either broke open with resulting low order detonations or penetrated below the concrete and were dissipated underground. The damage apparent to the camouflage over the submarines caused the damage to them to be over-estimated from air cover. Actually only a few fragment holes resulted. This was the first raid in which any casualties occurred: there were 108 killed and 103 injured. Compensation claimed by the yard for this raid was R.M.4,365,470. Records show that considerable productive activity was resumed at the yard after one week, and that in six weeks normal activity was being carried on.

Wilhelmshaven

Interpretation
Report K.1515

Interpretation
Report K.1569

Interpretation
Report K.1575

Immediate
Interpretation
Report K.1577

The Eighth Air Force delivered three major attacks on Wilhelmshaven during this period.⁽¹⁾ Enemy shipping sunk and damaged can be seen in previous footnote⁽⁴⁾, page 373. Assessment of damage to naval installations is difficult as no enemy evidence is available as to the date when damage occurred. The first attack took place on the 22 March 1943, the primary target being the pocket battleship Admiral Scheer in Dry Dock No. 5. No damage was inflicted on the Scheer but photographs showed considerable damage to buildings in the naval shipyards of the Bauhafen. Residential damage was also heavy. On the 21 May the Kriegsmarine U-boat yards were attacked. Final interpretation of photographs assessed some 13 buildings in the Marine Werft as damaged most of them severely. About 42 business and residential buildings north and south of the Bauhafen were demolished. On the 11 June the port area at Wilhelmshaven was attacked as a secondary target. No aircraft attacked the primary at Bremen. Damage seen was nearly all in the harbour area. The Engine Assembly Shop in the Marine Werft sustained the only severe damage.

On the same day 30 Fortresses bombed the last resort target at Cuxhaven damaging industrial buildings, marshalling

(1) Attacks on Wilhelmshaven March to June 1943.

Date	Objective	No. of A/C	Command	Tonnage		Loss
				H.B.	L.B.	
22 March	Admiral Scheer	84	USAAF	200	-	3
21 May	Kriegsmarine U/B yards	78	USAAF	172	-	7
11 June	Port area	168	USAAF	271	-	7
Total		330		643	-	17

yards and residential property. Sixty seven tons of H.E. bombs were dropped and one aircraft was missing.

Kiel and Flensburg

B.C. O.R.S.
Final Night
Raid Reports

On the 4/5 April Bomber Command delivered a heavy attack on the city area of Kiel.⁽¹⁾ Aircraft were instructed to bomb on ground-markers dropped by Y-type aircraft. Unfortunately conditions proved unsuitable for this technique since the target was covered by two layers of ten-tenths cloud. The confused glow of markers, fires and possibly dummy markers below cloud led to a scattered attack. Photographic reconnaissance revealed only negligible fresh damage to Kiel.

Information
from A.H.B.6

German evidence, however, reports considerable material damage to buildings. Ten hours work was necessary to repair a stretch of the Kiel-Hamburg main railway line destroyed by H.E. bombs and there was a large fire in the old Kolbe dockyard, used as a Naval dockyard. Fifty five H.Es., six of them duds, and over 2,000 incendiaries including stick type and phosphorous rubber bombs were reported. Civilian casualties were 25 dead, 54 wounded.

Interpretation
Report K.1555
24.5.43

U.S.S.B.S.
Sub.Plant
Report No.5

U.S.S.B.S.
Sub.Plant
Report,
Exhibit H.I.D.

A.H.B.6

The Eighth Air Force delivered three precision attacks on Kiel during this period. On the 14 May the primary target was the submarine and warship shipbuilding yard of Friedrich Krupp Germania Werft. Part of the attack spilt over onto the neighbouring Deutsche Werke shipyard. The interpretation report claimed widespread and severe damage concentrated in the Germania Werft. Nearly all buildings were reported damaged in some degree including four boiler houses and both power stations. The post-war plant report states that 86 H.Es. fell in the shipyard of which 55 hit buildings. Damage was claimed to five 740 ton and two 500 ton U-boats on the slipways and fitting out in the Germania Werft and the neighbouring Deutsche Werke shipyard. One of these was possibly U.474, an almost completed Type VII boat launched on 17 April 1943, and now known to have been sunk or badly damaged and abandoned at Deutsche Werke in the summer of 1943. Damage claimed to buildings in the Deutsche Werke cannot be checked as figures for this raid are not available in the plant record of attacks. According to German evidence this was by far the worst of this series of raids. The Germans reported 505 H.E. bombs, (62 duds) and 5-6,000 incendiaries. The latter included new types: fluid-incendiary stick bombs, cylindrical stick type, and small 6-edged stick incendiaries. There was considerable damage to buildings including the eastern Fire Station, and the Railway Station. In the Gaarden district near the shipyards, electric power, gas and water systems were seriously damaged as was the telephone network and tramway wires and line. The passenger ship "Stadt Kiel" was sunk and two motorships burned out. Wharves and a hospital were badly damaged. Casualties were 325 dead, and 762 wounded.

(1) Major attacks on Kiel March to June 1943.

Date	Objective	No. of A/O	Command	Tonnage		Loss
				H.E.	I.B.	
4/5 April	City area	519	B.C.	701	670	13
14 May	Germania Werft	125	USAAF	236	24	8
19 May	Deutsche Werke	101	USAAF	151	55	6
13 June	Deutsche Werke	44	USAAF	89	-	22
Total		789		1177	749	49

Negative
Damage Report
No.161

U.S.S.B.S.
Sub. Plant
Report No.3

A.H.B.6

Interpretation
Report K.1565

RE/H 34
Included with
Interpretation
Reports of
Mission 59

AM.File S.6706
Encl.56A
14.6.43

Immediate
Interpretation
Report K.1587
U.S.S.B.S.
Sub.Plant
Reports Nos.3,5
A.H.B.6

Interpretation
Report
No.S.A.355

On the 19 May the target was the shipyard of Deutsche Werke Kiel. This raid was less successful. No further damage to the shipyards was visible from photographs obtained after the attack. The Deutsche Werke plant report records no damage from the attack, whilst the Germania Werft report states that 15 H.Es. fell in the shipyard, 10 of which hit buildings. The Germans reported 205 H.E. bombs of which 32 were duds, and 1,000 stick type incendiaries including 200 duds. Houses, gas and water supplies, electric current and telephone lines in the Elmschenhagen district were damaged. No public buildings or industrial installations were damaged. Total casualties were only 22.

On the same day 55 Fortresses attacked the Flensburger Schiffsbau yards at Flensburg on the Kiel canal, dropping 120 tons of H.E. bombs. No aircraft were lost. Damage was claimed to buildings and slipways in the Old and New Shipyards. Damage claimed to U-boats fitting out cannot be confirmed by post-war evidence. The Ministry of Home Security estimated at the time that delay due to damage would be nearly equivalent to the loss of one U-boat.

On the 13 June a force of 76 Fortresses was despatched to attack the Deutsche Werke shipyards at Kiel. Forty four aircraft attacked the primary target, 16 attacked targets of opportunity and 22 were lost. The attack was planned as a diversion from the main attack on Bremen in order to divide the enemy fighters. In fact the enemy devoted his major fighter effort to the diversion and overwhelmed the smaller force which was first intercepted 50 miles from the coast. Thereafter it was subjected to very heavy fighter opposition on the way to the target, and over the target experienced concentrated and accurate flak. The leading aircraft was shot down and the formation, which was dodging about trying to find gaps in the clouds through which to bomb, became disorganised and therefore suffered heavily. The leader was inexperienced. Eighth Air Force Headquarters felt that in view of the relatively small size of his force, the success of his diversion and the unfavourable bombing conditions, he should have abandoned the task and returned before reaching the target.

Damage from this raid was assessed as small. Neither the Deutsche Werke nor the Germania Werft record any damage. The Germans reported 73 H.E. bombs but little damage to Kiel. Civilian casualties were 66.

Bremen

There was only one major attack on Bremen on the 13 June 1943.⁽¹⁾ The Eighth Air Force precision attack of 17 April has not been included in this chapter since the target was the Focke-Wulf works and bombing did not spillover into the dock areas. The main force attack on the Deschimag U-boat yards on the 13 June benefited by the ill-fated diversion raid on Kiel and only four aircraft were lost out of 102 attacking. Enemy air opposition to the Bremen raid was weak. The main weight of the attack fell in the central area

(1) Attack on Bremen 13 June 1943.

Date	Objective	No.of A/C	Command	Tonnage		Loss
				H.E.	I.B.	
13 June	Deschimag U/B yard	102	USAAF	227	-	4

U.S.S.B.S.
Sub.Plant.
Report No.4

Supplementary
Report to
No. S.A.355

Interpretation
Report S.A.317

Interpretation
Report S.A.319

Interpretation
Report S.A.336

B.C. O.R.S.
Final Night
Raid Reports

around Basin I, and several direct hits were registered on the Atlas Werke shipyards. The Deschimag submarine yards were situated to the northwest of the city although the corporation held repair facilities in the central area. The Plant Report does not record any damage to the yards from this attack. Photographs showed that bombs from an early wave of the attack, directed towards the yards, fell short and burst among residential property in Gropelinger.

Emden and Heligoland

The Eighth Air Force delivered two attacks on Emden.⁽¹⁾ The target on the 15 May was the railroad yards but photographs showed a concentration of bomb bursts on the Grosses Meer and Die Hiwe, two lakes about four miles north east of the city. On the same night 76 Fortresses attacked Heligoland as a target of opportunity in place of the primary target at Wilhelmshaven. The main weight of the attack fell on the island with concentrations on the barracks, artillery depot and residential area and in the submarine harbour. Many bursts were also seen on the airfield and runways on the neighbouring island of Dune. On the 21 May the target was the Nordsee Werke U-boat yard. The greatest concentration of bursts was seen in a residential area about 1,500 yards northwest of the target area with possibly two hits on the main railway line.

Stettin and Rostock

On the 20/21 April Bomber Command carried out a highly concentrated attack on Stettin whilst a small force bombed Rostock.⁽²⁾ Target indicators were placed extremely accurately several being within a few hundred yards of the aiming point and the attack was carried out almost exactly according to plan. It was estimated from photographs that 256 out of 326 aircraft which attacked, bombed within three miles of the aiming point. Reconnaissance sorties revealed that 100 acres of closely grouped industrial buildings were devastated in the Pommerensdorf district, including the whole of the important Pommerensdorf-Milch chemical factory. The Sachsenberg, Kruger and Stettiner Oderwerke shipbuilding yards and the naval base Bredower-Werder all sustained damage from direct hits. Military installations, public buildings and residential property suffered considerable damage.

(1) Major attacks on Emden and Heligoland March to June 1943

Date	Objective	No. of A/C	Command	Tonnage		Loss
				H.E.	I.B.	
15 May	Emden	59	USAAF	77	46	1
15 May	Heligoland	76	USAAF	166	-	5
21 May	Emden Nordsee Werke	45	USAAF	99	-	5
Total		180		342	46	11

(2)

Date	Objective	No. of A/C	Command	Tonnage		Loss
				H.E.	I.B.	
20/21 April	Stettin	326	B.C.	415	904	22
20/21 April	Rostock	77	B.C.	42	82	8
Total		403		457	986	30

B.C. O.R.S.
Final Night
Raid Reports

The target at Rostock was the Heinkel aircraft factory. However a smoke screen started on the approach of the aircraft attacking Stettin had become effective by the time the Rostock force arrived. The factory was obscured and most aircraft attacked the town. Photographs showed that damage was well centred about the docks and built-up area. In the Neptun Werft submarine yards an area of four and a half acres was reported devastated, including a boiler house, a factory building and some sheds. The Heinkel works apparently escaped damage.

(c) Attacks on Transportation Ports, March to June 1943

2 Op. O.O.
No. 84
16.12.42

B.C. O.1.
No. 65

Attacks on French Channel, Belgian and Dutch ports were on a small scale. These were mainly Circus and Ramrod⁽¹⁾ operations by Venturas, Bostons and Mitchells of No. 2 Group. In many cases the target selected, although situated in a port, was not a naval one. Thus the iron and steel works at IJmuiden, the powerhouses at IJmuiden and Amsterdam, the oil refinery at Flushing and similar targets were attacked. Under No. 2 Group Operational Order No. 84 for the attack on the German railway system in Belgium and North France, railway centres and marshalling yards were attacked in ports such as Boulogne. No Moling operations, that is harassing attacks by single aircraft under cloud cover, were carried out on naval targets. Orders for such operations were cancelled on 30 April 1943.

B.B.S.U.
Sea Communi-
cations
Report
Appendix A

The chief naval target was the docks at Rotterdam which were attacked in March, April and May⁽²⁾. The United States Eighth Air Force also delivered two attacks on Rotterdam in March. Two vessels were sunk. On the 27 April 1943 the Reichskommissar for shipping (Kaufmann) reported that the recent air attacks on the shipyards at Rotterdam had led to a considerable decrease in output, which in some shipyards attained the scale of 50 to 60 per cent. The damage which the shipyards had received was, at the moment, not excessive, but the absenteeism of workers from the shipyards was very considerable.

B.C. O.R.B.

Docks and shipping in Cherbourg were attacked by light bombers of No. 2 Group, twice in April and twice in May. The total tonnage dropped on Cherbourg was 42 tons. On the 15 April the attack was directed against the whale oil factory ship Soglint and a merchant vessel of 360 feet which were lying in dry docks Nos. 5 and 6. The attack had no success. Docks and shipping at Dieppe were attacked once in April. On the 1 June 1943 No. 2 Group were transferred to the

2 Op. O.O.
No. 28

O.R.B. App.
B. 923

- (1) Circus operations were intended to draw enemy fighters into combat with the fighter escort of a small bombing formation. Targets were selected in France, Belgium or the Netherlands within fighter range.

Ramrod operations were attacks by similar bomber formations with fighter escort, on targets of importance to the enemy. In this case bombing was the main object.

- (2) Attacks on Rotterdam March to June 1943.

Date	No. of a/o	Command	Tonnage	Loss
4 March	28	USAAF	62	5
28 March	23	BC. 2 Gp.	26	-
29 March	34	BC. 2 Gp.	38	-
31 March	33	USAAF	88	1
4 April	23	BC. 2 Gp.	25	2
22 June	12	FC. 2 Gp.	21	-
Total	153		260	8

Tactical Air Force and came under the operational control of Fighter Command. Circus and Ramrod operations continued but after the Pointblank Directive of 10 June mainly G.A.F. targets were selected.

Enemy shipping casualties in the transportation ports are given below(1). The Eighth Air Force attack on Antwerp was directed against the Ford Motor Works. The 2 Group attack on Flushing was directed against the oil refinery. The attack on Rouen was a Circus operation on the power station.

(iii) Revision of Bombing Priorities. The Pointblank Directive

During the late spring and summer of 1943 the U-boat menace was decisively defeated at sea by Allied air and surface forces. This change in the strategical situation led to a revision of bombing priorities as laid down by the Casablanca Directive. A new directive, known later as the Pointblank directive, was issued to R.A.F. Bomber Command and the United States Eighth Bomber Command on the 10 June 1943. The directive stated that the increasing scale of destruction which was being inflicted by our night bomber forces and the development of the day bombing offensive by the Eighth Air Force had forced the enemy to deploy day and night fighters in increasing numbers on the Western Front. Unless this increase in fighter strength was checked our bomber forces might be unable to fulfil the tasks allotted to them by the Combined Chiefs of Staff. First priority was therefore accorded to the attack of German fighter forces and the industry upon which they depended. The primary object of the bomber forces remained the progressive destruction and dislocation of the German military, industrial and economic system and the undermining of civilian morale. Within this general conception, however, the intermediate objective for the Eighth Air Force was German Fighter strength. Primary objectives were German submarine yards and bases, the remainder of the German aircraft industry, ball bearings and oil. Secondary objectives were synthetic rubber and tyres and military motor transport vehicles. While the forces of the British Bomber Command would be employed in accordance with their main aim in the general disorganisation of German industry their action would be designed as far as practicable to be complementary to the operations of the Eighth Air Force. It was emphasised that the reduction of the German fighter force was of primary importance and that any delay in its prosecution would make the task more difficult. At the same time it was necessary to direct the maximum effort against the submarine construction yards and operating bases when tactical and weather conditions

(1) Enemy vessels sunk by air raid on transportation ports March to June 1943.

Date	Name and Type	Flag	Tonnage	Position	By whom
28 March	Ceuta	Ge	2719	Rotterdam	BC
28 March	Niedersachsen (Fv.VP2009)	Ge	259	Rotterdam	BC
14 May	One Siebel ferry	Ge	60	Antwerp	USAAF
31 May	Balidar tug	Fr	134	Cherbourg	BC
	Rapid tug	Fr	20		
12 June	One dredger	Fr	100	Rouen	BC
Total	Six vessels		3292		

In addition three barges, two ferry boats, and one buoylayer (tonnage unknown) were sunk in Flushing on 31 May.

precluded attacks upon objectives associated with the German Fighter Force.

(iv) Operations July to December 1943

(a) Operations against German ports

The submarine construction yards still remained a primary target although of lessened priority. However, part of the effort directed against German ports during the next six months⁽¹⁾, in particular the Hamburg catastrophe raids, must be considered as directed chiefly against civilian morale and industry rather than naval targets. An attempt has been made in the text to discriminate between the various targets. A few purely Pointblank attacks, such as the raid on the Arado aircraft factory at Warnemunde on the 29 July have been omitted.

Hamburg

The series of attacks on Hamburg between the 24 July and the 3 August 1943, known as the Catastrophe Raids, were directed against the enemy war potential as a whole. The Operation Order issued in May in preparation for the Battle of Hamburg considered that the total destruction of the city would achieve immeasurable results in reducing the industrial capacity of the enemy's war machine. Owing to the weight of the four night attacks, however, it is impossible to distinguish the proportion of the attacks which fell on naval targets from that directed against other areas in the city. Moreover in Hamburg many of the principal industries were situated in the port area. The attacks are therefore included in this chapter. The primary target for the two daylight precision raids was the Blohm and Voss shipyards. Tonnage of bombs dropped in raids on Hamburg during the period July to December 1943 is shown in footnote (2) below

B.C.O.O. No.173
27.5.43 in
B.C. O.R.B.
App. May 1943

- (1) The following table gives the monthly total of bombs dropped on German ports during the period July to December 1943. Any discrepancy between these totals and the combined totals of the separate operations described in the next few pages can be explained by a number of light harassing attacks delivered by Bomber Command Mosquitoes which are not considered in detail, and by small numbers of bombs dropped on alternative targets.

Month	No. of a/c	Tonnage		Loss
		HE	IB	
July	2548	4081	3645	90
August	457	743	775	30
September	198	412	61	7
October	992	1487	689	43
November	1221	1768	1203	61
December	2146	2895	2126	62
Total	7562	11386	8499	293

- (2) Major raids on Hamburg July - December 1943

Date	Objective	Command	No. of a/c attacking	Tonnage		Loss
				HE	I.B.	
24/25 July	City	BC	740	1372	986	12
25 July	Blohm and Voss shipyard	USAAF	68	89	50	15
26 July	Blohm and Voss Shipyard	USAAF	54	87	26	2
27/28 July	City	BC	739	1141	1241	17
29/30 July	City	BC	726	1126	1216	28
2/3 August	City	BC	426	674	748	30
13 December	Harbour dock area	USAAF	116	172	64	2
Total			2869	4661	4331	106

Details of shipping sunk and damaged during the same period are given in footnote(1).

B.C.O.R.S.
Final Night
Raid Reports

A similar plan of attack was used for each of the four area night raids. Routemarkers were dropped at a given point off the mouth of the Elbe. The target was then marked by H2S aircraft and a large force of backers up maintained the marking throughout the attack. Crews expert in the use of H2S were to check the accuracy of previous Target Indicators at intervals and recentre the attack if it began to creep back. A few Mosquitoes were despatched to other targets on each occasion to divert the fire-fighting services from the main attack. Large scale attacks were continued on the Ruhr during the intervals to prevent enemy defences from concentrating at Hamburg. Bomber Command Mosquitoes carried out light harassing attacks on the city in the intervals between the major raids.

B.C. O.R.B.
17.7.43

An innovation was the introduction of Radio Countermeasure Window. This was a method of producing misleading echoes on enemy radar apparatus by means of strips of aluminium dropped from aircraft. Instructions for the use of Window were issued by Bomber Command on 17 July 1943 and all heavy and medium operational squadrons were ordered to be ready to discharge it by 23 July. Rates of dropping for use in orders were laid down and a map of areas of discharge was issued. Window was only to be discharged on the occasions and at the rates ordered by Bomber Command. The first occasion was the first of the Hamburg Catastrophe raids on the night of the 24/25 July. Radio countermeasure Ground Cigar intended to jamm the VHF/RT frequencies beginning to be employed by enemy night fighters was also introduced on 30/31 July.

O.R.S. Final
Night Raid
Reports

In the first night raid on the 24/25 July Target Indicators placed by visual markers were somewhat scattered round the aiming point, and bombing was concentrated in four distinct

(1) The following vessels were sunk in Hamburg during the period July - December 1943

Date	Name	Flag	Tonnage	Position	Command
24/25 July	Hein Godenwind	Ge	2,270	Hamburg	BC
13 December	Friedrich Bischoff	Ge	1,997	Hamburg	USAAF
	Ile d'Aix	Fr	5,028		
Total	Three vessels		9,295		

The following vessels were damaged in Hamburg. July - December 1943

Date	Name and Type	Flag	Tonnage	Extent of damage	Command
24/25 July	<u>Rotesand</u>	Ge	4,107	Just launched. Completed by 26 Dec. 1943	BC
	<u>General Artigas</u>	Ge	11,254		
	<u>Frundsberg</u>	Ge	364		
	<u>Vela</u>	Ge	18,000		
25/26 July	<u>Gapern</u>	Swe	920	Severe " "	USAAF
	<u>Pitea</u>	Ge	962		
	<u>Haakon Jarl</u>	Nor	2,102		
	<u>Ditmar Koel</u>	Ge	4,479		
	<u>Leuna</u>	Ge	6,856		
	<u>Magdalena Vinnen</u>	Ge	4,594		
13 December	<u>Marianne</u>	Ge	802	slight damage	USAAF
	<u>Vienti</u>	Fi	1,715		
	<u>Greth</u>	Swe	1,551		
Total	13 vessels		57,706		

areas, one of which was in the region of the docks. Backers up kept the bombing well centred at first but later, owing to undershooting, there was a marked creep back. Owing to the use of Window the loss rate was extremely low for a raid on a target of importance. R/T traffic and the low attack and interception ratio indicated that fighter efficiency was impaired. Many of the searchlights wandered aimlessly about the sky, and only minor flak damage was reported by returning aircraft.

ibid

On the 27/28 bombing was well concentrated in the commercial and industrial districts of Billwarder Ausschlag and St. Georg, spreading north, west and east as the raid progressed. There was little creep back. Some change in enemy defence tactics was noted due to the interference caused by Window. Much of the flak was in barrage form, and ground stations issued running commentaries to fighters regarding bomber movements, instead of the usual brief instructions. A higher proportion of incendiaries were dropped in this raid, causing the phenomena known as fire storms.

ibid

On the 29/30 July the mean point of impact of Target Indicators was two to three miles east of the aiming point and the whole attack was concentrated on the eastern part of the city. Spoof markers were also dropped to divert enemy fighters and some non-marker P.F.F. aircraft carried anti-personnel bombs to discourage ground defences. Flak was more intense on this occasion and the number of searchlights had been greatly increased. Fighters operated as free lances owing to the interference caused by Window to the ground control system.

ibid

The fourth and last raid on the 2/3 August was the least successful from the point of view of area attack. The weather forecast was doubtful and conditions proved worse than had been expected. Only 426 aircraft bombed out of 740 despatched. The report stated that in view of the confusion caused by the arctic conditions experienced over Hamburg it was impossible to reconstruct the course of the attack in any detail. More aircraft were lost than on the other raids. Insufficient concentration of Window was achieved to obtain effective protection and accurate predicted flak was more in evidence than in previous Window raids.

U.S.S.B.S
Sub.Plant
Report No.2

It does not lie within the scope of this chapter to assess the effect of the area raids on German industry and civilian morale. Post war evidence indicates that the first and last of the area raids had the chief direct effect on naval targets. The Blohm and Voss Plant report records 55 HE bombs and 60 incendiaries in the yard area on the night of the 24/25 July. Of this total 29 HE.s and 40 incendiaries hit buildings. There were four unexploded bombs. On the 2/3 August 15 HE.s and 50 incendiaries hit the yard area, of which 8 HE.s and 30 incendiaries hit buildings. No hits were recorded by the Howaldts Werke Plant Report on either night. A survey of the effects of bombing on the German submarine industry is given in section iv (b) of this chapter. The same section considers the effect of the Catastrophe Raids on labour.

Interpretation
Report SA410

The two Eighth Air Force daylight precision raids took place on the 25 and 26 July 1943. In each case the target was the Blohm and Voss shipyards. On the 25 July aircraft attacked in three waves and bomb bursts were grouped in three major concentrations. The most northern was in the area of the Blohm and Voss yards and immediately to the south. At least ten hits were claimed in the Blohm and Voss yard area.

U.S.S.B.S.
Sub.Plant
Report No.2

The Plant Report states that there were actually 30 hits from HE bombs in the area including 25 hits on buildings. Hits were claimed on at least one vessel, two floating docks and a number of buildings on the quay. Vessels damaged have been given in a previous footnote. The plant report does not indicate any damage to floating docks. One U-boat was sunk and two others damaged and later scrapped. The second main concentration of bombs was in the area of railway sidings and basins near the Neuhof Power Station. The Howaldts Werke Physical Damage Division Report records 13 HE hits, and a number of 100 lb. gasoline gels in the yard area. Two of the HE bombs struck cranes for slipway No.4 but one did not explode and the other caused little damage. The third concentration was in open fields south of Hamburg. In its effects on the U-boat war this was by far the most successful of the attacks delivered against submarine construction yards in 1943.

Interpretation
Report SA 417

On the 26 July the attack was in two waves. For all practical purposes this raid was equivalent to a precision attack on Howaldts shipbuilding yards since the heaviest concentration of the first wave of bombs fell on the yards and buildings of the neighbouring M.A.N. Diesel engine works. The

U.S.S.B.S.
Physical Damage
Division Report
No. 50

Howaldts Werke Physical Damage Division report records 22 HE hits and a number of 250 lb. oil incendiaries in the area. Sixteen buildings were damaged, some of them seriously. Considerable damage was done to plant railroads, quays and cranes. The water system was temporarily cut and the electric system damaged by bombs which severed the underground cables. Hits were claimed on the merchant vessel Leuna 6,856 tons which was in fact severely damaged. A total of 44 HE hits were recorded on the Howaldts Werke yards during the Catastrophe Raids including ten hits on buildings, two on the west slipway and one on the submarine shelter. The second wave of the attack produced a group of bombs in the area east of Howaldts Werke. Several direct hits were claimed on the Neuhof Electric Power Station. Bombing spilt over into congested industrial districts east of Blohm and Voss and north of the Elbe in the town of Hamburg proper. Blohm and Voss record 30 incendiary and five HE hits in the yard area, including 18 incendiary and two HE hits on buildings.

U.S.S.B.S.
Sub. Plant
Report No.2

U.S.S.B.S.
Area Report
No.1.pp. 12,27

As a result of these attacks the harbour was completely closed from 28 July to 3 August 1943. About 20 per cent of the harbour installations - mostly in the northern part - were destroyed, the greatest damage being done to wooden warehouses and sheds vulnerable to incendiaries. In addition, 122 (about 16 per cent of all) cranes were destroyed and 33 per cent of the total number were damaged. By October 1943 about 20 per cent of the damaged cranes were repaired but sufficient funds were not allocated for the minimum necessary repairs to other harbour installations. Despite this damage, sea traffic after 3 August continued actively. On the whole, it was but slightly affected by the big raids because the great loading wharves remained generally intact. However, the port's efficiency was impaired by the raids; by the end of the year it still suffered from a serious shortage of skilled workers and from the fact that available manpower had to use damaged equipment involving personal risks. Under these conditions, the average work performance remained about 25 - 30 per cent under normal.

Supplement to
Interpretation
Report K.1862
10.2.44.

Only one other major attack on Hamburg took place during these six months. On the 13 December 116 Fortresses attacked the Harburg dock area as a last resort target for the Kiel operation on the same day. The target was entirely obscured by cloud but later photographs revealed damage to the Harburger Gummiwaren Fabrik Phoenix A.G., the railway station, business

and residential property, dockside buildings and warehouses. It is now known from German records that two vessels were sunk and a further two damaged as a result of this attack. Blohm and Voss record four HE and 74 incendiary bombs of which three HE and 32 incendiaries hit buildings. Howaldts Werke record six HE hits and 100 lb. gasoline gels.

Other German Ports

Over 10,000 tons of bombs were dropped on other German ports including Gdynia during the last half of 1943. These are considered under separate headings in the next few pages. Details of enemy shipping casualties are given in footnote(1). Shipping sunk in the attack on Gdynia is given on a later page.

Kiel

Interpretation
Report SA 411

U.S.S.B.S.
Sub. Plant
Report No.3.

On the 25 July 67 Fortresses from a force despatched against Warnemunde attacked Kiel as a target of opportunity(2). The attack was in two parts. One force attacked from the east, most of the bombs falling on and near the Deutsche Werke shipyards. The other force attacked from the north east dropping a heavy concentration of bombs on and near the Kriegsmarine Werft. At Deutsche Werke the main weight of the attack fell near the quay and the floating dock. The Plant report notes 25 hits on buildings and docks. At the Kriegsmarine Werft a very great concentration of bomb bursts was seen just north east of the fitting out basin.

(1) Enemy shipping sunk in German ports, excluding Hamburg and Gdynia, July to December 1943.

Date	Name and type	Flag	Tonnage	Position	By whom
25 July	<u>S.46</u> E-boat	Ge	90	Kiel	USAAF
	<u>S.66</u> E-boat	Ge	90		USAAF
2 October	<u>Olaf</u>	Da	1,920	Emden	USAAF
8 October	<u>Svend Pii</u>	Da	1,809	Bremen	USAAF
13 December	<u>T. 15</u> Torpedo-boat	Ge	1,192	Kiel	USAAF
	<u>R.306</u> R-boat	Ge	90		
16 December	<u>Alexandra</u>	Ge	720		
	<u>Ivan Kondrup</u>	Da	2,369	Bremen	
	<u>Vulcan</u>	Ge	594		
	<u>Granada</u>	Swe	1,781		
Total	Ten vessels		10,655		

The following vessels were damaged at Bremen

16 December	<u>Kalmarsund</u>	Swe	1,225	slight damage	USAAF
	<u>Venern</u>	Swe	1,171	very slight damage	USAAF
Total	Two vessels		2,396		

(2) Attacks on Kiel July to December 1943

Date	Objective	No. of a/c	Command	Tonnage		Loss
				HE	TE	
25 July	Deutsche Werke Kriegsmarine	67	USAAF	103	46	4
29 July	Deutsche Werke Kriegsmarine	91	USAAF	133	53	6
13 Dec.	Germania Werft, town area	349	USAAF	362	426	3
Total		507		598	525	13

There is no plant report to confirm this. Two E-boats were sunk in Kiel by this raid, S.46 and S.66.

On the 29 July a further attack was delivered. The Kriegsmarine naval dockyard and the Deutsche Werke U-boat yards were the primary targets. No new damage was seen in the Deutsche Werke. Further damage was claimed to buildings in the Kriegsmarine Werft including the large Engine shop, the Naval Arsenal and the Torpedo Equipment Depot.

Immediate
Interpre-
tation
Report
K.1638

There were no further attacks until the 13 December 1943. Targets for the large scale attack on this date were the Germania Werft and the town area. No observation of bombing was possible owing to low cloud conditions. Later photographs showed two main areas of damage in the centre of the city near the lake called Kleiner Kiel and in the district of Gaarden near the Deutsche Werke shipyards. The Deutsche Werke Plant Report records 150 HE and 35 IB hits in the area including 76 hits on buildings and docks and five on shipping. There was also a large number of small four to six lb incendiaries. Plant officials considered this one of the four most damaging attacks of the war. Incendiaries were very effective on this target especially in this attack when 22-100 lb. incendiary bombs made direct hits on buildings as well as a heavy concentration of four pound incendiary bombs. The Germania Werft Plant Report records five HE and 700 incendiary hits in the area including three HE and 450 incendiary bomb hits on buildings. This total of incendiaries presumably includes small weight bombs. Congestion of buildings made the Germania Werft extremely vulnerable to fire. The incendiary bomb was a greater hazard than the H.E. bomb. The report states that approximately 70 per cent of the damage to this target was from fires, the majority of which were started by incendiary bombs.

U.S.S.B.S.
Sub. Plant
Report No.3

U.S.S.B.S.
Sub. Plant
Report No.5

Bremen and Vegesack

On the 8 October the Eighth Air Force carried out a large scale raid on targets in the Bremen area⁽¹⁾. Forty four aircraft attacked the Deschimag U-boat yards; the remainder attacked the Weser Flugzeugbau in the dock area and the town of Bremen. At the same time forty eight aircraft attacked the Bremer Vulkan submarine yards at Vegesack. Bomb bursts were seen directly north west of the yard and on the Abbrusks shipyard on the opposite bank of the river. The Bremer Vulkan Plant Report records one hit on a fuel tank. There is no report of any fire or other substantial results.

Interpretation
Report SA 617

(1) Major attacks on Bremen and Vegesack. July to December 1943

Date	Objective	No. of a/c	Command	Tonnage		Loss
				HE	IB	
8 October	Bremen. U/B yards					
	A/C factory, town	315	USAAF	222	387	27
8 October	Bremer Vulkan, Vegesack	48	USAAF	127	-	3
8/9 October	Bremen	107	BC	178	117	3
13 November	Bremen	114	USAAF	4	229	16
26 November	Bremen	422	USAAF	739	337	25
29 November	Bremen	138	USAAF	248	118	13
13 December	Bremen	174	USAAF	204	204	-
16 December	Bremen	518	USAAF	898	448	13
20 December	Bremen	465	USAAF	436	546	27
Total		2,301		3,056	2,386	127

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B.C.O.R.S.
Final Night
Raid Reports

On the night following this attack Bomber Command carried out a diversionary raid on Bremen. The main force attacked Hanover. The target at Bremen was covered by cloud and bombing was scattered although much fell in the built up area of the port.

Interpretation
Report K.1783
O.R.S. Final
Night Raid
Reports

Damage caused by these two raids was largely confined to 10 industrial works in the Neuenlander district, south of the town centre, and in the area of the west docks. The Plant Report of the Deutsche Schiff and Maschinenbau Aktiengesellschaft (Deschimag) states that the yard received 52 hits from HEs and 62 from incendiaries during the American attack, which was one of the most successful of the whole war on this target. No damage is recorded from the Bomber Command night attack.

U.S.S.B.S.
Sub. Plant
Report No.4

The Eighth Air Force delivered six large scale and medium attacks on Bremen during November and December 1943. The primary target given in three cases was the Deschimag shipyards but overcast cloud conditions made all the raids equivalent to area attacks on the city of Bremen⁽¹⁾.

Interpretation
Report SA 669

On the 13 November a large proportion of incendiary bombs were used in the attack. A total of 229 tons of incendiaries were dropped as compared to only four tons of H.E. bombs. Five hundred and seventy six 500 lb. incendiary bomb clusters were included in the total of incendiary bombs dropped. On the 26 November the target was obscured by cloud and smoke screen. Bombs were reported to have fallen in the south and south east sections of the city. The primary target for this large scale attack, the Deschimag shipyards, were situated in the north west section of the city. On the 29 November and the 13 December bombing was carried out by PFF methods through ten-tenths cloud. The attack on the 13 December was a diversion for the main force raid on Kiel. No observation of bombing results was possible. The heaviest attack on Bremen for the whole of 1943 was delivered on the 16 December. Once again the entire target area and surrounding country were obscured by heavy cloud. Post war evidence shows that four merchant vessels were sunk and two damaged as a result of this raid. The last of this series of raids took place on the 20 December. Bomb bursts were seen in five general groups, three on the city of Bremen, one in the outskirts to the south west and one in the vicinity of Delmenhorst airfield eight and a half miles to the south west. In the city there was a concentration in the centre in the old residential and warehouse section and north of Hafen I. Other concentrations were in the Vorstadt district one and a half miles east of the centre, and the Hastedt and Seebaldsbrücke industrial district approximately four miles from the centre.

Interpretation
Report SA 697

Supplement
to Interpreta-
tion Report
K.1831

Photographs taken after this series of raids showed that a number of warehouses along Hafens I and II had been gutted. There was some damage to buildings in the Atlaswerke shipyards. The Deschimag plant report records two hits from HEs and 29 from incendiaries on the 13 December, and 17 hits from incendiaries on the 16 December.

U.S.S.B.S.
Sub Plant Report
No. 4

The increase in intensity of air attacks on Deschimag is shown by the fact that during the months of October, November and December 1943, 250,000 man-hours were required to repair

ibid

The Army Air
Forces in World
War II.
Vol.III P.19

(1) This target, as was the case with Wilhelmshaven and Kiel, was chosen for attack in late 1943 to give the Eighth Air Force experience in radar bombing.

bomb and incidental damage. Plant officials stated that approximately 335,000 workhours were required to repair damage received during the whole war prior to the attack of 8 October 1943. After December 1943 the rate of damage was always in excess of the rate of repair.

Other ports on the Jade Weser estuary were also visited, without much success.⁽¹⁾ On the 26 July the ports of Wilhelmshaven and Bremerhaven-Wesermunde were attacked by small forces as last resort targets on the Hanover operation. Neither raid had any success. Bombs at Bremerhaven fell on the bank of the river opposite the port and in the water at the entrance to the port. At Wilhelmshaven bombs were seen to have fallen in the shoal water by the reclaimed land north of the city.

The one large scale attack on Wilhelmshaven on 3 November was also affected by overcast cloud conditions. Bombing was on P.F.F. through ten-tenths cloud. Later photographs showed damage to workshops in the Bauhafen area and one or two hits on buildings by the New Inner Harbour.

Interpretation
Report K.1802

Emden

A considerable proportion of German reciprocal iron ore and coal trade with Sweden passed through the port of Rotterdam which was convenient for the delivery of iron ore to the Ruhr and the export of coal and coke from that area. The increasing scale of air attacks in the spring of 1943 on convoys along the Dutch coast, however, led to a falling off of this trade through Rotterdam. There was a consequent increase in turnover in the German North Sea ports, in particular Emden which, as the terminal port of the Dortmund-Ems canal, was the most convenient port after Rotterdam. A further increase in trade was noted after the bombing of Hamburg in July 1943.

B.B.S.U.
Sea Communica-
tions Report

A paper on the "Present Importance of the port of Emden" issued by the Ministry of Economic Warfare on the 27 August 1943 noted the increasing reluctance of Swedish shipowners to sail to Rotterdam despite financial inducements offered by the Germans under the German Swedish Shipping Agreement for 1943. The paper put the case for the bombing of Emden. So long as the Swedes were willing to use this port the German iron ore shipping programme was unlikely to be appreciably affected. The paper considered that such relief of the shipping situation as could be afforded by diversion to the Baltic ports would be more than compensated for by the resulting dislocation in internal transport arrangements. To obtain the best results maximum damage should be caused to shipping at the iron ore quays, approximately half of which was likely to be Swedish, and the transhipment facilities on these quays.

A.H.B./II/70/236
MEW.2603/0

(1)

Date	Objective	No. of a/c	Command	Tonnage		Loss
				HE	LB	
26 July	Bremerhaven	15	USAAF	2	13	3
26 July	Wilhelmshaven	18	USAAF	2	14	3
3 Nov.	Wilhelmshaven	540	USAAF	775	519	7
Total		573		779	546	13

Interpretation
Report SA602

Immediate
Interpretation
Report K.1756

B.C. O.R.S.
Final Night
Raid Reports

Interpretation
Report K.1828

B.B.S.U.
Sea Comm-
unications
Report

D.I.S.N.E.

The Eighth Air Force delivered a major attack on Emden on 27 September 1943.⁽¹⁾ This was the first H2S mission by the Eighth Air Force. Bombing was not accurate. Only three bursts were seen near the industrial area, north of the Nordsee Werke. Many bursts were seen two to four miles from the target. The attack on the 2 October, also an H2S mission, was more successful. The New Workshops in the Nordsee Werke received several direct hits causing a good deal of damage. A large number of buildings round the Binnen Hafen were destroyed and dock facilities extensively damaged. One merchant vessel was claimed sunk; this is confirmed by post-war evidence.

In addition two small scale attacks were carried out on the 22/23 and 27/28 September by Mosquitoes of No. 8 Group Bomber Command. These operations were intended as range tests for Oboe Mark I at the height of 31,000 - 35,000 feet. Emden was 290 miles from the releasing station near Dover. None of the aircraft were able to receive signals at the release point.

The final attack for 1943 was on the 11 December. The main weight of this large scale attack appears to have fallen on business and residential property on the west side of the town.

These attacks cannot be considered particularly successful. The general conclusion of the British Bombing Survey Unit Report on the efficacy of air attack on port facilities and shipping in port, may be applied to this case. The mechanical and transport facilities available in ports were far greater than was required for the level of wartime trade. The few intermittent heavy raids caused only minor delays to the enemy's overall trade, as shipping activity in attacked ports usually returned to normal after a period of a few days to a few weeks.

Gdynia

There was one attack on enemy naval units in port during this period. Photographic reconnaissance of Gdynia on the 7 October showed that the Pocket Battleship Admiral Scheer, last seen in Swinemunde on the 18 August, was now being manoeuvred by tugs off the port. The heavy cruiser Prinz Eugen was lying off the port. The Pocket Battleship Lutzow and the light cruiser Emden were lying at Polish Wharf, and the light cruisers Nurnberg and Leipzig at Roumanian Wharf. The Battle Cruiser Gneisenau had been completely camouflaged since the last reconnaissance on 27 July. Two Schlesien class battleships were also present.

On the 9 October the Eighth Air Force bombed the U-boat yards at Danzig and the port area of Gdynia⁽²⁾. The greater

(1) Main attacks on Emden July to December 1943

Date	No. of a/c	Command	Tonnage		Loss
			HE	IB	
22/23 Sept.	11	BC	16	-	-
27 Sept	178	USAAF	391	61	7
27/28 Sept.	9	BC	4	-	-
2 October	336	USAAF	624	186	2
11 December	523	USAAF	821	436	17
Total	1057		1856	683	26

(2)

Date	No. of a/c	Command	Tonnage		Loss
			HE	IB	
9 October	150	USAAF	320	-	8

Immediate
Interpretation
Report K.1771.

part of the effort was directed against the major naval units in Gdynia. Damage in Danzig was confined to the port area and railway communications. Enemy vessels sunk and damaged in Gdynia are given in footnote (1) below. Dense smoke from a smoke screen and the burning liner Stuttgart obscured part of the port and no assessment of damage to naval units was possible. In fact none were damaged. Severe damage was claimed to dock installations particularly on the Swedish and Silesian Wharves. Reconnaissance showed that the Admiral Scheer had moved prior to the raid from Gdynia to Swinemunde where she was photographed on the 9 October.

Immediate
Interpretation
Report K1770

(b) The Effects of Bombing on the Production of Conventionally Built Submarines. March 1943 to May 1944.

Effort expended against submarine targets

U.S.S.B.S.
German Sub.
Industry
Report P.31

During the whole of 1943 the Eighth Air Force dropped a total of 20,362 tons of bombs⁽²⁾ on submarine installations of various kinds, which represented 41.8 per cent of the total dropped. Under the terms of the Casablanca Directive in force until June 1943, submarine construction yards and operating facilities constituted the primary target for R.A.F. Bomber Command and the Eighth Air Force. Of the total air

(1) The following vessels were sunk in Gdynia.

Date	Name and type	Flag	Tonnage	Position	By whom
9 October	<u>Wilhelm Huth</u> -Trawler	Ge	437	Gdynia	USAACF
	-(Schiff 47)				
	<u>Nordpol</u> ex Siegfried	Ge	563		
	<u>Eupen</u> U-boat tender	Ge	700		
	<u>KUJ13</u> - (UJ1210)	Ge	500		
	<u>Vipjoern</u>	Fi	1,045		
	<u>Cuxhaven</u>	Ge	1,923	afterwards salvaged	
	<u>Stuttgart</u>	Ge	13,387	total loss fire	
	<u>Atlantik</u> tug	Ge	872		
	<u>Reva</u> tug	Ge	50		
	<u>Saspe</u> tug	Ge	98		
	<u>A.K. Fernstrom</u>	Swe	868		
Total	Ten vessels		20,443		

The following vessels were damaged at Gdynia

Date	Name and type	Flag	Tonnage	Extent of damage	By whom
9 October	<u>Axel</u>	Fi	1,076		USAACF
	<u>Northumbria</u>	Ge	1,396		
	<u>Neidenfels</u>	Ge	7,838	Repaired by June 1944	
	<u>Jongen</u>	Da	891		
	<u>Torfrid</u>	Swe	633	Severe	
	<u>Atalizz</u>	Swe	2,680	"	
	<u>Nordia</u>	Swe	1,847	"	
	<u>Ostbris</u>	Swe	978	"	
Total	Eight vessels		17,339		

(2) These figures include the tonnage dropped on the Biscay operating ports, but exclude tonnage dropped in area raids on Hamburg, Bremen and so on.

effort, therefore, 63.5 per cent of the Eighth Air Force and 30 per cent of the R.A.F. tonnage dropped during the first quarter of 1943 was on submarine facilities. In the second quarter 30 per cent of the R.A.F. and 52 per cent of the Eighth Air Force tonnage was thus expended. By June 1943 the submarine had been substantially defeated at sea and the principal effort was shifted to other targets with only 16 per cent of the Eighth Air Force tonnage directed against submarine activities. In the first quarter of 1944 the percentage of Eighth Air Force tonnage dropped to 4.4 per cent.

Results

The results of this effort on the Biscay bases has been dealt with in section ii(a) of this chapter. The actual number of bomb hits on the various yards, so far as is known from plant reports, have been given with the account of the various raids. This section attempts to summarise the effects of bombing on U-boat production. The Hamburg catastrophe raids had more effect than any other raids.

Only one commissioned U-boat was sunk by air raid in a German port during the whole of this period. (1) This was Type IX U-boat U.108, an old boat which had been withdrawn from active service in May 1943 and sent home for use as a school boat. The boat was sunk in the Eighth Air Force raid on Stettin on 11 April 1944. (2) One almost completed Type VII C boat, U.474, which had been launched on 17 April 1943, was sunk in Deutsche Werke Kiel, probably on 14 May 1943. The boat was not recovered and was finally blown up by the navy in 1945. One Type VII C boat U.996, launched a few days before, was sunk in the Eighth Air Force attack on Blohm and Voss shipyard Hamburg on 25 July 1943.

In addition, two half completed U-boats Type VII C, U.1011 and U.1012, which had been under construction since 12 March 1943, were so seriously damaged in the Eighth Air Force raid of 25 July 1943 on Blohm and Voss that they were scrapped. The British Bombing Survey Unit report states, further, that one almost complete boat was abandoned in Howaldts Werke Kiel after damage sustained in August 1943.

Claims for U-boats destroyed in excess of those listed above, represent U-boats not in existence but merely denied to the enemy by production delays. The chief case to be considered is that of Blohm and Voss Hamburg. The argument runs as follows. Type VII C submarines continued to be built for 11 months after the Catastrophe Raids, but only 26 boats were built during that period while for the two 11 month periods immediately preceding a total of 54 and 48 submarines were delivered. However, following the orders issued in the new submarine building programme of 6 November 1943 Blohm and Voss were engaged in the assembly of prefabricated sections into Type XXI submarines. The United States report states that it remains problematical whether an energetic prosecution of the old programme for Type VII C U-boats would have resulted in a larger output. A minimum potential production loss of 20 boats is suggested as the result of the Catastrophe bombing on the Blohm and Voss shipyard. It is however significant that no new keels were laid at Blohm and Voss after the

B. d U.
War Diary

U.S.S.B.S.
Sub. Ind.
Report
Exhibit Q

B.B.S.U.
Effects of
Strategic
bombing on the
Production of
German U-boats

U.S.S.B.S.
German Sub.
Industry
Report P.21

U.S.S.B.S.
Sub. Plant
Report No.2

U.S.S.B.S.
Sub. Ind.
Report

-
- (1) One other commissioned U-boat U622 was sunk at Trondheim on 24 July 1943. See section iv(d).
(2) See section vi(a).

Catastrophe Raids although a number had been laid immediately before. The 26 U-boats completed after the raids were among the 36 boats on the slipways at the time of the raids. Of the remainder two were damaged and scrapped, the last two were cancelled and six were launched and towed to Flensburg for completion. This fact suggests that the raids were a contributing factor in forcing the adoption of the section or prefabricated method of building as an effective means of dispersal of submarine production. But the Catastrophe Raids could only have hastened the conversion of the industry to new methods. The decision had already been taken by Merker on his appointment as head of the Hauptausschuss Schiffbau in June 1943. The primary reasons for the decision were the vastly increased number of U-boats demanded for the new submarine offensive planned by the navy, and the need to offset losses received on the high seas due to improved Allied submarine detection methods and air cover during the late spring of 1943.

The same reasoning applies to other claims for the production loss of conventionally built submarines. The British Bombing Survey Unit report claims that three Type IX boats were lost at Deutsche Werft Hamburg since only one U-boat instead of the usual two were delivered in each of the three months September 1943, October 1943 and February 1944. Further at Stuelken Sohn Hamburg there was appreciable damage to buildings in the Catastrophe Raids, and as a result, three boats were delayed from two to four months and one, due in April 1944, was not completed. Three or four more boats might therefore have been delivered from this yard, before the Type VII programme was stopped, if the raids had not taken place.

No reports were made on the Schichau works at Danzig but the bombing effort against this yard was very slight. The Deschimag works at Bremen suffered no damage from air attack to any submarine built by conventional methods. At Bremer Vulkan, Vegesack, several U-boats were hit by fragments in the heavy attack on 18 March 1943. Repairs were made and none were lost to production.

Output

Planned and actual output of U-boats per month from all yards remained very closely together prior to, and immediately following the advent of the Combined Bomber Offensive.⁽¹⁾

Labour

The Hamburg Catastrophe Raids resulted in a serious drop in total and productive labour due to absenteeism.

- (1) The following figures compare for June to December 1943 plans for the 30 boat a month programme and actual monthly production in the same period. In the meantime, Otto Merker, who assumed leadership of the Hauptausschuss Schiffbau in 1943, was content to let submarine building continue at the prevailing rate of approximately 24 boats per month. On that basis the total of approximately 168 boats required for seven months production was practically achieved.

1943	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Planned	25	25	27	31	26	28	30	192
Actual	27	23	22	20	24	24	25	165

U.S.S.B.S.
Sub-Plant
Report No.2

U.S.S.B.S.
Physical Damage
Division Report
No.50

German Sub.
Industry
Report P.32

Otto Merker and Rudolph Blohm stated that four to six weeks were lost in Hamburg due to the Catastrophe Raids. Blohm and Voss state that many of the foreign workers did not return after the raids and recovery in labour was slow. Howaldts Werke note a marked drop in labour due to absenteeism. The situation was aggravated by an Army order requiring the company to furnish 700 workers to clear up the city. Other area raids on Hamburg, as was the case with Bremen, produced little measurable effect on output. The priority of the work was so high that unusual efforts were made to rehabilitate the workers and to replace those who were casualties. Moreover, even in the case of the Catastrophe Raids, Howaldts Werke state that the drop in productive workers did not affect submarine production. The yard was never engaged exclusively on submarine production and the drop in productive workers was absorbed by other activities. Normally the Army furnished prisoners of war for bomb clearance work or labour was diverted from lower priority work. Nuisance value of even light attacks, however, caused serious loss of work time. Scheduled working hours lost due to air raid alarms was estimated at two per cent during 1942 rising to three per cent during 1943 and to five per cent during 1944. These figures were for the shipbuilding industry as a whole and were not necessarily reflected in loss of submarine production.

Physical Damage

Ibid

Fuehrer
Conferences on
Naval Affairs
19.8.43

Investigation revealed that to reduce production effectively by the destruction of machine shops and other productive units a very high density of attack was required. Such density was only obtained in the last few months of the war. Shipyard buildings were chiefly a protection of labour and equipment from the weather and damage did not necessarily entail loss of production. In this context it is interesting to note the following remarks of Doenitz in August 1943 after a tour of the Hamburg shipyards. He stated that he believed the air raids could hardly endanger their essential industries in a material way. He had seen machines standing right next to a bomb crater in the machine shops of the Hamburg shipyards. Even though a bomb scored a direct hit on a shop, the machines were absolutely undamaged, since the effect of the explosion seemed to act not horizontally but vertically. It seemed that steel construction with glass roofs was advantageous because the roofs shattered immediately and thus had no concentrating effect. He believed it possible and necessary to maintain ship construction in the large western shipyards, in spite of the air raids. In his view the chief danger was that the morale of the worker might suffer and lead to a decrease in production.

U.S.S.B.S.
Sub-Plant
Report No.5

Slipways were more vulnerable to attack but during the period under review bombing actually had little success in damaging them. Blohm and Voss reported that slipway number VII was out of commission for four months during the winter of 1943-44 because the main girder was damaged. As already stated about 16 per cent of all cranes in Hamburg were destroyed and 33 per cent damaged in the Catastrophe Raids. Items of particular vulnerability varied from yard to yard, and their importance was not always correctly assessed at the time. For example the power houses at Deutsche Werke and Germania Werft Kiel were extremely vulnerable since the plants were interconnected but had no external source of power. However the Germania Werft plant was not wrecked until July 1944 and was then completely rebuilt. Blohm and Voss in Hamburg, however, were connected to the Neuhoof central station power plant, which was in turn connected with other Hamburg generating stations and with the grid extending to the Ruhr.

The Attack on Components

The attack on U-boats under construction was at the best a long term policy which would not affect the strength of the operational fleet until about a year later. More rapid effects could be obtained from an attack on repair and service installations. In particular German battery production was vulnerable to attack. No precautions had been taken by the enemy to disperse production, although this would have been a simple matter, and production was concentrated in the three towns of Hagen, Hanover and Posen. Batteries were needed not only for new boats but for frequent replacements in operational boats. The Hagen plant was destroyed in the area raid of 2 October 1943 but was rebuilt and no further attacks took place until 2 December 1944 when the plant was again destroyed. The result that could have been obtained from a more continuous attack on existing battery plants at this time was under-estimated. With the change over to Type XXI and XXIII construction in early 1944 the demand was increased. Even with no further bombing the shortage of batteries began to give concern in November 1944. The bombing of the Siemens-Schuckert electric motor works at Berlin in the autumn of 1943 had quick results particularly on the early stage of the Type XXI programme.⁽¹⁾ By contrast the M.A.N. diesel engine works at Augsburg were not such a remunerative target. Increased output from the many licensees of M.A.N. in Europe could easily compensate for any loss of output at Augsburg. Thus although the attack of 25/26 February was highly successful from the point of view of destruction, the effect on German production was very little. The plant was not operating at capacity and a potential rather than an actual production loss was suffered. On the other hand, the Commander-in-Chief Navy reported in April 1944 that engines at M.A.N. were not completed because too few construction workers were employed to repair bomb damage. This hold-up had delayed the welding together of completed submarine sections.

The Karl Zeiss works at Jena, one of the chief producers of periscopes, were also attacked on the 27 May 1943, when a small Mosquito force attacked naval armament and optical works in the town. Seven tons of bombs were dropped by eight aircraft for the loss of three Mosquitoes. Damage to buildings was claimed but the attack was not repeated.

Conclusion

The conclusion can hardly be avoided that bombing had little effect on the production of conventionally built U-boats.⁽²⁾ The war against the U-boats in 1943 was won at sea. Bombing had only a slight effect on U-boat construction until late in the Type XXI programme in the winter and spring of 1944-45. The effects of bombing on the early part of the Type XXI programme are considered in section vi(b) of this chapter.

(c) Operations against Biscay ports

Bombing operations against naval targets in the Bay of Biscay were confined to daylight precision raids by the United States Eighth Air Force on La Pallice and Nantes, and attacks on airfields near Bordeaux and Lorient used by F.Ws and JU 88s operating against our anti-submarine patrols in the Bay.

(1) See section vi(b).

(2) In summary, the B.B.S.U. estimate that the 'Catastrophe Raids' sank one incomplete U-boat, forced the ~~SECRET~~ scrapping of two more and denied a further 26 which might have been completed during the next 12 months. The U.S.S.B.S. consider this figure of 26 as much too high. Both Survey Units agree that the air raids on Kiel after early May 1943 sank one incomplete U-boat and possibly denied another two boats coming into existence.

U.S.S.B.S.
German Sub.
Industry
Report

B.B.S.U.
Effects of
Strategic
Bombing on
Production of
U-boats

U.S.S.B.S.
Sub.Plant
Report No.1

Fuehrer
Conferences
April 12,
13, 1944

La Pallice

There were two attacks on U-boat installations at La Pallice. On the 4 July 71 Fortresses dropped 123 tons of bombs for the loss of one aircraft and on the 16 September 72 Fortresses dropped 161 tons of bombs for the loss of four aircraft. There is no record of damage to U-boat installations. Four small vessels were sunk.(1)

Nantes

A.M. File
C.39432/49
Encl.143A

ibid
Encl.113A

The Admiralty were anxious for an attack to be made on the submarine supply ship Kerto Sono in dock at Nantes. In a letter to A.C.N.S.(H) (Admiral Brind), A.C.A.S.(Ops) stated that General Eaker considered that the attack would necessarily lead to heavy casualties among the civilian population in Nantes. The target was a small one and would require a considerable force to ensure effective damage. Under the terms of the existing bombardment directive dated the 7 April 1943, which limited targets in Occupied Countries to those not likely to cause heavy civilian casualties, General Eaker did not feel justified in launching the attack. Special clearance would therefore be necessary if the Admiralty considered the target sufficiently important. The Admiralty were requested to raise the matter in the Chiefs of Staffs Committee.

ibid
144A

ibid
Encl. 145A

On the 29 August the Air Ministry received a signal from the Admiralty informing them of an Intelligence report that the Kerto Sono undocked at Nantes on the 27 August. On the 31 August an Air Ministry signal gave authority for an attack by the Eighth Air Force on the Kerto Sono. It was stated that the importance of the target justified the risk to the civilian population which was involved.

The Eighth Air Force accordingly delivered two daylight attacks on port facilities at Nantes in September. On the 16 September 131 Fortresses dropped 292 tons of bombs for the loss of seven aircraft, and on the 23 September 107 Fortresses dropped 275 tons of bombs for the loss of two aircraft.

ibid
Encl.149B

There were political repercussions in the form of a letter from the Commander in Chief of the French Forces, General Giraud, on 11 October, protesting against recent civilian casualties in France. General Giraud recognised that some bombs must inevitably fall wide of the target but cited the last raids on Paris and Nantes as particularly bad cases. He stated that at Nantes dispersion of bombs resulted in impacts on very densely populated quarters situated far away from the target, and that casualties were numerous. He asked for further consideration of targets and the use of particularly experienced crews against objectives near inhabited districts.

(1)

Date	Name and type	Flag	Tonnage	Position	By whom
16 Sept.	<u>La Tortue</u> Barge	Fr	74	La Pallice	USAAF
	<u>Kibo</u> Tug	Ge	150		
	<u>Charles Babin</u> (buoylayer)	Fr	700		
	<u>Hirondelle III</u> - (M.4461)	Fr	100		
Total	Four vessels		1024		

ibid
Encl.158B
Encl.166A

In reply an Air Staff Memorandum was sent to the Air Officer in Command, Mediterranean Air Command on the 1 December 1943 for transmission to General Giraud. The Air Ministry were unable to take cognisance of the matter officially since the original protest had not yet reached the Chiefs of Staff. The Memorandum outlined the policy behind the selection of objectives in France. It was stated that naval targets of particular importance had appeared in Nantes consisting of a large U-boat supply ship and several vessels which the enemy intended to use as blockade runners. The outstanding importance attached to these targets had compelled the Chiefs of Staff to waive existing limitations and to authorise a daylight attack. The results were as feared, serious damage and most regrettable loss of life was occasioned in parts of the city of Nantes. The Air Ministry claimed, however, that the object of the attack was achieved and that most of the above mentioned vessels were sunk together with a floating dock upon which much of the enemy's naval activity in the Bay of Biscay was based. The actual results ascertained from enemy documents are given in footnote(1) below.

B.C. File
S.46368/IV
Encl. 40A

Airfield targets

On the 10 September A.C.A.S. (Operations) informed Bomber Command that the Target Committee had agreed to the request made by the Bomber Command representative for the night attack of additional targets in the south of France during the moon period. Targets selected for attack were the Chateau-Bernard airfield at Cognac, the Merignac airfield at Bordeaux, the Kerlin Bastard airfield at Lorient, and the rubber tyre factory at Montlucon. The aero engine repair and assembly factory at Limoges was added later. The airfields were used extensively by JU 88s and long range fighters of the G.A.F. to attack Coastal Command aircraft on anti-submarine patrols in the Bay off the coast of Spain and are therefore considered as naval targets in this chapter. The directive stated that German fighters had

(1) Enemy vessels sunk in Nantes. September 1943

Date	Name and Type	Flag	Tonnage	Position	By whom
16 Sept.	<u>Bernisse</u> - (Sperr 184)	Du	951	Nantes	USAAF
	<u>R. 19</u> R boat	Ge	90		
	<u>Heisterest</u> Experimental	Ge	318		
	(ex Polsudski) Command Vessel				
23 Sept.	<u>Anniok</u> trawler	Gr	250	Nantes	USAAF
	<u>Notre Dame de Lagnet</u> "	Fr	286		
	<u>Ermland</u>	Ge	11,282		
	<u>Nordstern</u>	Ge	6,994		
	(ex British Advocate)				
	<u>Uranus</u> - (SG2 Escort V)	Ge	1,750		
Total	Eight vessels		21,921		

In addition the following vessels were damaged:-

16 Sept.	<u>Kertosono</u>	Ge	9,289	Nantes slightly damaged	USAAF
	<u>Monsun</u>	Ge	8,038		
	<u>Wangeland</u>	Ge	4,800		
23 Sept.	<u>Kulmerland</u>	Ge	7,363	Nantes	
Total	Four vessels		29,490		

recently increased their success and that the number of submarine kills had therefore been reduced⁽¹⁾. In addition F.W. 200s were based in the Bordeaux area and had recently achieved some success against convoys off the coast of Spain. Special consideration of the airfield targets in the next moon period was requested.

However, the only attacks on these targets were carried out by the United States Eighth Air Force. On the 24 August 1943, 58 Fortresses dropped 127 tons of GP bombs on the FW airfield at Merignac, losing three of their number. On the 16 September, 21 Liberators dropped 47 tons of bombs on the Chateau-Bernard airfield at Cognac. On the 23 September, 53 Fortresses attacked the Kerlin Bastard JU 88 airfield at Lorient whilst 55 Fortresses attacked the Meucon airfield near Vannes, dropping 138 and 146 tons of bombs respectively. One aircraft was lost on the Lorient mission. No further operations took place until December. On the 5 December, 216 aircraft were despatched against the Merignac airfield and 94 against Chateau-Bernard but both missions were abandoned since heavy cloud over France prevented positive identification of targets, and Eighth Bomber Commands policy precluded indiscriminate bombing of targets in occupied countries. On the 31 December, 172 Fortresses were despatched against the Merignac airfield but owing to ten-tenths cloud conditions only one aircraft attacked the primary dropping 2.6 tons of GP bombs, whilst 131 Fortresses attacked the secondary target at Cognac. Fifty eight Fortresses attacked the Chateau-Bernard airfield at Cognac as a primary target, and 55 Liberators and one Liberator attacked the same target as secondary targets to La Rochelle and St Jean d'Andely respectively. A total of 494 tons of GP bombs and 59 tons of incendiaries were dropped on Cognac Chateau-Bernard airfield for the loss of 23 aircraft. The four Combat Wings of the First Bomber Division that were unable to bomb their primary target at Bordeaux and flew to the secondary at Cognac sustained 15 of these losses since the late enemy fighter reaction to the first and second Cognac bombings was concentrated against them. These operations were continued in January and March.

(d) Operations against Transportation Ports and Norwegian Ports, July to December 1943.

The effort directed against French Channel, Belgian and Dutch ports was very slight. Most of the targets selected by No. 2 Group, now under the Tactical Air Force were in accordance with the Pointblank Directive such as aircraft factories at Flushing and Amsterdam and the Maupertuis airfield near Cherbourg. The only specifically naval target was in connection with Operation Starkey⁽²⁾. On the 4 and 6 September No. 2 Group light bombers attacked the harbour, shipping and E-boats at Boulogne. Altogether 99 aircraft dropped 134 tons of bombs in the harbour area. There were no shipping casualties in Boulogne.

F.C. O.R.B.
App. September
1943

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- (1) This was not the case. The reduction in U-boat kills in the Biscay area was due entirely to the readoption of maximum diving tactics day and night on passage.
 - (2) Starkey was the first part of Operation Cockade; the mock invasion exercise in the summer of 1943.

VIIIth B.C.
Narrative
Mission No.75

U.S.S.B.S.
Light Metal
Industry of
Germany

An important operation against targets in Norway took place on the 24 July 1943.(1). U-boat workshops and harbour installations at Trondheim and the Nordisk Lettmetal aluminium, nitrate and magnesium works at Heroya were attacked. U-boat and harbour installations at Bergen were also to have been attacked but cloud obscured the target and the mission was abandoned. Damage inflicted at Heroya disrupted the nitrate plant work for three and a half months. After this date the Germans abandoned the unfinished aluminium and magnesium works. The aluminium situation was not so critical and the cost of defending the plant outweighed its use. Two small vessels were sunk at Heroya(2). Bombing at Trondheim was accurate and resulted in the destruction of one U-boat-U 622. Much damage was caused to shipyard buildings.

(v) Revision of target priorities - January 1944

Discussion during the autumn and winter of 1943, of the Combined Bomber Offensive Progress Reports and of bombing policy for the pre-Overlord period had revealed serious divergence of outlook between the British and American Chiefs of Staff and the Air Officer Commanding-in-Chief of Bomber Command. In brief, whilst the Air Staff believed that intelligence was adequate and bombing aids sufficiently accurate for Bomber Command to undertake precision bombing of selected targets by night, the Commander-in-Chief advocated blind bombing of built up areas of Germany by night and day. The difference of opinion came to a head over the question of attacking Schweinfurt, the centre of the German ball bearing industry, which the Commander-in-Chief considered too small to be an economic target. Details of this disagreement over policy are given in another narrative(3).

A.H.B./IHH/241/
3/599(F)
Encl. IA

As a result of these discussions a directive signal was sent to Bomber Command and the United States Strategic Air Force in Europe on the 28 January 1944. The directive stated that, pending further ruling by the Combined Chiefs of Staff, it had been decided that to ensure best possible use of the short time before Overlord, maximum effort of strategic bomber forces was to be concentrated upon key installations in the German fighter aircraft industry and ball-bearing industries and the towns associated with these key installations. A revised list of target priorities for the United States Eighth Air Force and R.A.F. Bomber Command was given and amended at intervals during the next few months. Bomber Command first priority targets were Schweinfurt, Leipzig, Brunswick, Regensburg, Augsburg and Gotha in that order.

ibid
Encl. 24A

The full directive as approved by the Combined Chiefs of Staff was issued to Bomber Command and the Eighth Air Force on

(1)

Date	Objective	No of A/C	Command	Tonnage	Loss
24 July	Trondheim U/B installations	41	USAAF	72	-
24 July	Heroya-aluminium works etc.	167	USAAF	370	1

- (2) Familjens Hopp (Swe) - 66 tons.
Irene (Ge) - 761 tons.
(3) The R.A.F. in the Bombing Offensive against Germany.
Volume V. Chapters 17 and 18.

the 17 February 1944 and superseded the Pointblank directive of June 1943. The overall mission remained the progressive destruction and dislocation of the German military, industrial and economic system, the disruption of vital elements of lines of communication and the material reduction of German air combat strength by the successful prosecution of the Combined Bomber Offensive from all convenient bases. The primary objective was the depletion of the German Air Force with primary emphasis upon German fighter forces by all means available. German single engine and twin engine airframe and component production and Axis controlled ball bearing production were stated to be of equal first priority. Of second priority were installations supporting the German Fighter Air Forces.

Other objectives were Crossbow operations to neutralise the threat developing under Crossbow.(1) Berlin and other industrial areas were to be attacked whenever weather or tactical conditions were suitable for such operations and unsuitable for operations against the primary objective. Targets should be selected so as to cause maximum assistance in achieving the primary aim of reducing the strength of the German Air Force.

Thus there was no mention of naval targets in the new directive. Such attacks as were delivered during the next five months were mainly deception attacks like the raid on Stettin on the 5/6 January, attacks on secondary targets, when the primary target was abandoned, diversionary or harassing raids. The attack on IJmuiden on 26 March was the result of a specific Admiralty request.

(vi) Operations - January to May 1944

(a) Attacks on German Ports January to May 1944

Only a marginal effort was devoted to the attack of naval targets in Germany. Many of the operations were small diversionary or harassing attacks. The Eighth Air Force carried out major attacks on Kiel, Wilhelmshaven and Stettin. Total monthly tonnage dropped on German naval targets is given below(2). Enemy shipping casualties are given under the heads of Kiel and Stettin.

- (1) Crossbow was the code name covering enemy long range weapon development.
 (2) Tonnage dropped on German naval targets January to May 1944.

Month	No. of A/C	Tonnage		Loss
		HE	IB	
January	1060	1305	869	41
February	1015	1464	474	14
March	116	193	-	9
April	384	548	183	32
May	568	643	451	18
Total	3,143	4,153	1,977	114

SECRET

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Kiel

Interpretation Report SA 740
U.S.S.B.S. Sub.Plant Report No.5
Interpretation Report SA 749
U.S.S.B.S. Sub.Plant Report No.5

There were two large scale attacks by the Eighth Air Force on the 4 and 5 January (1). On the 4 January most of the bombs burst north west of the harbour, and extended northward to the naval base at Wik, on the south side of the entrance of the Kiel canal. A smoke screen prevented definite assessment. The Germania Werft Plant Report records five HE hits and 45 incendiary hits including two HE and 25 incendiary hits on buildings. On the 5 January bursts were seen in the north and south of the city. Considerable numbers of four lb. incendiaries were dropped. Forty eight HE bombs and 300 incendiaries fell in the area of the Germania Werft yard; 15 HE and 75 incendiary hits on buildings were obtained, inflicting severe damage to an administrative building, drill shop and boiler shop, and medium damage to one of the slipways. The Deutsche Werke Report does not note any hits on either night.

Bomber Command Mosquitoes carried out several small diversionary and harassing raids during February and March, the largest of which was on the 29/30 March.

Interpretation Report SA1790
Interpretation Report SA1825

On the 19 May bombing was through eight-tenths cloud cover. No accurate assessment of results was possible. The Germania Werft Report records one H.E. and 200 incendiary hits. The large scale attack on the 22 May produced bursts in Kiel Harbour extending in to the Deutsche Werke shipyard. Concentrations

(1) Major attacks on Kiel January to May 1944.

Date	No. of A/C	Command	Tonnage		Loss
			HE	IB	
4 Jan	445	USAAF	389	336	16
5 Jan	215	USAAF	179	278	10
29/30 March	30	BC	36	-	-
19 May	49	USAAF	42	54	2
22 May	289	USAAF	270	297	6
Total	1028		916	965	34

Enemy vessels sunk in Kiel January to May 1944.

Date	Name and type	Flag	Tonnage	Position	By whom
4 January	<u>Prinzessin Irene</u>	Ge	162	Kiel	USAAF
22 May	<u>Netztender 54</u> - net tender	Ge	180	Kiel	USAAF
22 May	<u>Elbe I</u> - tug (VS 115)	Ge	100	Kiel	USAAF
Total	Three vessels		442		

Enemy vessels damaged in Kiel January to May 1944.

Date	Name and type	Flag	Tonnage	Position	By whom
4 January	<u>Grano</u>	Swe	1,885	Kiel slight damage	USAAF
5 January	<u>Storo</u>	Swe	1,256	Holtenau, Kiel slight damage	USAAF
19 May	<u>Lilli</u>	Swe	93	Kiel	USAAF
22 May	<u>Erwin Wassner</u> (U/B depot ship)	Ge	3,866	Kiel severe	USAAF
Total	Four vessels		7,100		

U.S.S.B.S.
Sub.Plant
Report No.3

of incendiaries were seen on business and residential areas north and west of Deutsche Werke and extending across the harbour and shipyard. The Deutsche Werke Plant Report records 29 HE and 30 incendiaries hits in the area, including 24 hits on buildings and docks. The Germania Werft Report records six HE and 15 incendiary bombs, with four HE and nine incendiary hits on buildings.

Wilhelmshaven and Emden

Interpretation
Report K1860

On the 3 February a large scale attack was delivered on U-boat and shipyards at Wilhelmshaven⁽¹⁾. Bombing was with the aid of P.F.F. aircraft through ten-tenths cloud. Later photographs showed no great concentration of fresh damage in the harbour or town although there were scattered incidents round the Bauhafen area. The Engine Assembly Shops, Boiler Shop and Carpenters Model Room and other buildings in the Marine Werft were reported severely damaged.

On the same night one combat wing of Fortresses bombed an area just north of Emden. Bombing was carried out visually through a break in the cloud, as the P.F.F. aircraft leading the wing had an equipment failure. Strike attack photographs showed generally poor results.

On the 3 March a large scale operation against the Erckner ball bearings works near Berlin was abandoned owing to adverse weather conditions. A small number of Fortresses attacked what was believed to be Wilhelmshaven through ten-tenths cloud. No positive identification of the target was possible.

Interpretation
Report SA1372

On the 18 April a small number of Liberators from the main force operation on Arado plants at Brandenburg and Rathenow bombed the port area of Cuxhaven. The weight of the attack fell on factory type buildings between the railway yards and the Amerika Hafen, among which were buildings on the Emperor Quay reported to be occupied for the storage of mines.

Stettin and Rostock

The only other major raids during this period were on Stettin. On the 5/6 January Bomber Command delivered a

(1) Attacks on Wilhelmshaven, Emden and Cuxhaven January to May 1944.

Date	Objective	No. of a/c	Command	Tonnage		Loss
				HE	IB	
3 February	Wilhelmshaven	552	USAAF	812	338	4
3 February	Emden	56	USAAF	77	33	-
3 March	Wilhelmshaven	54	USAAF	123	-	9
18 April	Cuxhaven	12	USAAF	19	-	-
Total		674		1031	371	13

B.C. O.R.S.
Final Night
Raid Reports

Information
from A.H.B.6

large scale night attack on Stettin⁽¹⁾. This target was chosen to deceive the enemy defences after two heavy attacks on Berlin in the first two days of the month. The approach was made as for an attack on Berlin with a last minute turn to Stettin. Mosquitoes made a diversionary attack on Berlin. Enemy fighters were successfully distracted by these tactics. Bombing started accurately then spread westward as some of the target indicators had fallen short. Photographic reconnaissance showed heavy fire damage in the centre of the town and scattered incidents in the dock area. The Germans stated that the attack was centred on the dock area. A total of 1,194 fires was reported with 34 industrial and 31 military installations destroyed or damaged.

Rostock was attacked twice in February as an alternative to aircraft production targets, which were covered with ten-tenths clouds. No assessment of bombing was possible on either occasion owing to cloud conditions. The mission report of the 24 February claims that considerable damage was inflicted to dockyards and the Heinkel aircraft works on the 20 February.

Interpretation
Report K2013

Interpretation
Report K2015

The Eighth Air Force bombed Stettin and Rostock on the 11 April 1944. Results at Stettin were reported as excellent and damage was claimed to the Stettiner Vulkan-Werft, the Admiralty Base and to shipping. Later photographs showed direct hits on the plate working shops and damage to storage sheds at the Vulkan-Werft. In Rostock the chief damage appeared to be to business and residential property in the south east of the city including the Heinkel Flugzeugwerke.

On the 13 May one Bomber Division on an operation against aircraft plants and oil refineries in eastern Germany and

(1) Major attacks on Stettin and Rostock. January to May 1944.

Date	Objective	No. of A/C	Command	Tonnage		Loss
				HF	IB	
5/6 January	Stettin	348	BC	634	236	15
20 February	Rostock	138	USAAF	175	109	5
24 February	Rostock	255	USAAF	385	169	5
11 April	Stettin	127	USAAF	164	94	14
11 April	Rostock	172	USAAF	270	89	17
13 May	Stettin	215	USAAF	313	96	10
Total		1255		1941	793	66

Enemy vessels sunk in Stettin January to May 1944.

Date	Name and type	Flag	Tonnage	Position	By whom
11 April	<u>Emily</u>	Swe	1,567	Stettin	USAAF
	<u>Mars</u> (ex Samoa Gunnery ex Altair) Training V.	Ge	1,522	Stettin	USAAF
	<u>Emma</u>	Ge	159	Stettin	USAAF
	<u>Sturm</u> - tug	Ge	100		USAAF
Total	Four vessels		3,348		

In addition two vessels were damaged:-

Eva (Swe) - 2,109 tons - was slightly damaged in the Bomber Command raid of 5/6 January, and Usambara (accommodation Ship) (Ge) - 8,690 tons - was damaged on 11 April.

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Interpretation
Report SA.1763

Poland found its primary targets cloud covered and attacked Stettin and Stralsund on the Baltic Coast instead. At Stettin the largest concentration of bursts was seen near the Stettiner Oderwerke. Later photographs showed that damage was not severe, consisting chiefly of the destruction of one medium size quay-side building.

Other German Ports

B.C. O.R.S.
Final Night
Raid Reports

On the 27/28 January Bomber Command made a diversionary attack on Heligoland whilst the main force attacked Berlin. Twenty-three Halifaxes dropped 70 tons of bombs. No aircraft were lost. The main concentration of bombs fell in the dock area which was identified by flarelight.

The only raids on Hamburg during the first five months of 1944 consisted of small diversionary and harassing operations by Bomber Command Mosquitoes. Such raids were carried out on the 1/2 January, 11/12 March, 6/7, 26/27, and 28/29 April. A total of 121 tons of bombs was dropped by 106 aircraft in these raids. One Mosquito was lost on 6/7 April.

B.C. O.R.S.
Final Night
Raid Reports

On the 12/13 May, 12 Bomber Command Mosquitoes attacked the lock gates at Brunsbüttel at the North Sea end of the Kiel canal. Fourteen tons of bombs were dropped. The target was clear and easily identified and a good concentration was obtained. No aircraft were lost. On the same night other Mosquito aircraft mined the canal.

(b) The Effect of Bombing on the Early Stages of the Type XXI Programme

B.B.S.U. Report
Effects of
bombing on
production of
U/Bs. Table 8

The production of the 300 ton Type XXIII prefabricated U-boat is not considered in detail. Practically all production in Germany in 1944 was from Deutsche Werft in the Finkenwarder district of Hamburg, which did not receive serious bomb damage until March 1945. Under the programme of 24 January 1944 planned production was two Type XXIII U-boats in February. Actual production commenced with one Type XXIII in May. Delays were due to the same difficulties that beset the Type XXI programme considered below.

Ibid
Table 7

U.S.S.B.S.
German Sub.
Industry
Report

B.B.S.U. Report

Under the programme of 6 November 1943 the production of prefabricated Type XXI (1,600 ton) U-boats from the three selected assembly yards at Blohm and Voss Hamburg, Deschimag Bremen, and Schichau Danzig, was scheduled to commence in April 1944 and to build up to a full output of 33 boats per month by August 1944. One Type XXI U-boat was launched by Schichau on 20 April 1944 as a birthday gift to Hitler, but this was only a token launching as the navy immediately returned the boat for further work. Blohm and Voss produced the first really complete Type XXI in June 1944. Deschimag and Schichau⁽¹⁾ followed with two Type XXIs each in July. The programme was revised on 1 June and 21 July, and later in September and October 1944 when production did not come up to schedule.

Thus the programme for Type XXI submarine started late. There was very little bombing on submarine construction yards during the first five months of 1944 and there is no evidence

(1) According to B.B.S.U. figures. The U.S.S.B.S. report does not show any deliveries from Schichau until September.

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of hits on Type XXI U-boats under construction until August 1944. A postponement of one month in reaching the full output of 33 boats per month, which was agreed at an unknown date early in 1944, was stated by Otto Merker, head of H.A.S. to be due to the fact that the necessary steel plate was not available. This shortage was not the result of a drop in production but the greatly increased demand under the new programme. Moreover arrangements had not been made early enough for the production of sufficient quantities of the particular types and sizes of steel plate needed for the new U-boats.

B.B.S.U. Report
P.14

German documents, however, show that at a discussion between Doenitz and Hitler on the 26/27 February 1944, it was stated that the bombing of the Siemens-Schuckert electric motor works at Berlin had been the main factor in delaying the Type XXIII programme by two months and Type XXI by one month.

Fuehrer
Conferences on
Naval Affairs
1944

In his Memorandum to the Gauleiter of Hamburg dated 4 September 1944, Rudolph Blohm former head of H.A.S. and partner of Blohm and Voss Shipyard at Hamburg, complained of administrative incompetence since the beginning of the programme. He stated that design work was supposed to have been finished by the Glueckauf Bureau at Halberstadt on 9 December 1943, but in actual fact the design bureau remained busy until February 1944 and even later. Many designs had to be changed. The steering mechanism, for example, was a complete failure and had to be re-designed at Blohm and Voss. Such alterations caused loss of time. Moreover the Procurement Division did not place its orders with the sub-contractors early enough, so that some parts could not be manufactured in time to be installed by the section assembly yards. This work had to be done instead by the ship assembly yards. Blohm and Voss even had to manufacture valves for the first eight boats. Similar difficulties had occurred with other parts. The Production Planning had also started too late and sufficient control had not been exercised over the section yards. The result was that sections were delivered incomplete and that shipbuilding tolerances were not adhered to by steel fabricators. This led to considerable difficulties in welding the sections together. The assembly yards were in fact burdened with a far greater share of the work than had originally been planned.

U.S.S.B.S.
Sub.Plant
Report No.2.
Exhibit E

Blohm mentioned bombing as one of the fundamental objections to the concentration of U-boat building at two or three assembly yards but he did not enlarge on the subject. The Memorandum was written after the raids of July to September 1944 when some damage was caused to Type XXI U-boats under construction. His explanation of the delays in the Type XXI programme in this early stage is chiefly administrative inefficiency.

The plant report of various section yards confirm Blohm's explanation of the delays. Howaldts Werke, Hamburg attributed delay in deliveries of Section V, already noticeable in June and July 1944, to shortage of parts not to bombing. Bremer Vulkan Vegesack stated that there was no interference to section production from bombing; delays were due to raw sections being incomplete. Deutsche Werke, Kiel kept up with planned production from March until May 1944. The first delays in delivery in June and July were due to delay in steamer transport and to cranes not working. Director Immich stated, however, that the first bow section was delivered about three weeks late; the Report suggests this delay might have been caused by damage received during the raid of 13 December 1943.

U.S.S.B.S.
Sub.Plant
Report No.6

Sub.Plant
Report No.9

Sub.Plant
Report No.3

Ibid
Exhibit H.2.D

(17500)420

SECRET

Fuehrer
Conferences on
Naval Affairs
1944

Nevertheless, the Commander-in-Chief of the German Navy did consider bombing a threat to the new programme. At a conference with Hitler from the 4 to 6 May 1944, Doenitz pointed out the completely inadequate protection of submarines under construction. Since thirty to forty parts of one kind were built simultaneously in one shipyard, a loss of thirty to forty submarines might be caused by a single air raid. The same condition existed in the assembly plants. In Hamburg for instance, thirteen submarines were assembled each month. Since it took more than two months to complete assembly, more than thirty boats were always under construction on the building slips. Assembly in Hamburg and Danzig was entirely unprotected. He stated that shelters were being built for the assembly yards in Bremen but would not be ready before the spring of 1945. Excavations were being made in Hamburg for shelters but they would not be completed before 1946. No plans had been made for Danzig. Moreover the Navy had no raw material quotas for these shelters. He feared that the British would wait until the construction of the new type submarine was quite advanced and would then begin systematic bombing of all plants. They were in danger of seeing their new submarines destroyed before they had even been finished. Hitler agreed that more shelters must be built and that anti-aircraft and smoke screen protection should be increased.

(c) Attacks on Biscay Ports January to May 1944

Operations against Biscay targets were confined solely to attacks on airfields. The F.W. Merignac airfield at Bordeaux was attacked twice on the 5 January and 27 March. A total of 136 Fortresses attacked, dropping 492 tons of bombs for the loss of 14 aircraft. On the 5 March the Chateau-Bernard airfield at Cognac was attacked by 60 Liberators as an alternative target; 124 tons of H.Es. and 19 tons of incendiaries were dropped.

(d) Attacks on Transportation and Norwegian Ports January to May 1944

A.M.File
C.39432/49
Encl.171A

On the 11 February 1944 the Plans Division Naval Staff, Admiralty wrote to the Directorate of Bomber Operations Air Ministry regarding new E- and R- boat pens under construction at IJmuiden. E- and R- boats from IJmuiden operated against our convoys and were used for minelaying against south coast ports. At present accommodation in the pens was insufficient for all the E- and R- boats stationed there and a large number were berthed under camouflage alongside the various quays. With the successful completion of the 18 pens under construction the facilities of the port would be greatly increased. The pens would also be capable of housing channel type and midget submarines which were almost certain to be used for anti-invasion purposes. It was considered that a heavy attack now on these uncompleted pens would so retard the work that they could not be repaired in time to be used against Overlord.

ibid
Encl. 172A

On the 18 February A.C.A.S. (Operations) wrote to the Commanding General of the United States Strategic Air Forces in Europe, suggesting that the target might profitably be attacked by their Medium Bombers operating in a diversionary role in connection with major operations of the United States Strategic Bomber Forces. Alternatively it might constitute a useful secondary target for the United States Heavy Bombers. Consideration of an attack was requested at an early date. A similar letter had been sent to the Air Commander-in-Chief, Allied Expeditionary Air Force on the 17 February.

ibid
Encl.173A

I.D.4.88

On the 13 March 1944 D.C.A.S. noted that the A.C.-in-C. A.E.A.F. had now placed this target first in priority of tasks. He did not think that they were in a position to press the American Strategic Air Force to place this task in a high order of priority in view of the need for pressing on with Pointblank operations. On the 22 March delay in attack on this target was referred to at the D.C.A.S. Conference. D.C.A.S. undertook to discuss the matter with the A.C.-in-C. A.E.A.F.

ibid
Mins. of
D.C.A.S.
Conference
22.3.44.

The attack was actually delivered by Marauders of the American Ninth Air Force on the 26 March 1944⁽¹⁾. Aircraft of the Tactical Air Force also attacked the port. Enemy shipping casualties are given below.⁽²⁾ F.d.S. noted in his diary that the base was attacked by more than 100 bombers. He said that the old bunker remained undamaged by bombs, but that damage to the new bunker would cause a building delay of about eight weeks. S.129 and S.93 were hit outside the bunkers and became total losses. This emphasised the importance of sheltered berths in bunkers.

F.d.S.
German E-boat
Ops. and Policy
X237/48 - Admty.
P.36

Apart from this raid the effort directed against the transportation ports was very slight. The Tactical Air Force was chiefly engaged on Pointblank targets. Other small attacks in port areas were more in the nature of anti-shipping operations. On the 28 February 30 aircraft of T.A.F. and A.D.G.B. attacked the harbour at Boulogne, dropping 13 tons of bombs. Two German ferry barges (MFP 215 & MFP 260) each of 200 tons were sunk in Dieppe on 25 May. The Eighth Air Force attacked coastal gun batteries at St. Valery-en-Caux 15 miles from Dieppe on this date and also carried out strafing attacks.

One attack on 28/29 April, was carried out by Bomber Command against a Norwegian target. This was directed against the Kjeller airframe factory at Oslo and was a Pointblank rather than a naval operation. Fifty aircraft of No. 5 Group attacked dropping 179 tons of HE bombs and 29 tons of incendiaries.

(1) Attack on Ijmuiden

Date	Objective	No. of A/C	Command	Tonnage	Loss
26 March	E boat pens	338	US IXth AF	594.4	1
" "	Port	43	T.A.F.	61.8	-
Total		381		656.2	1

(2) Vessels sunk in Ijmuiden 26 March 1944.

Date	Name and type	Flag	Tonnage	Position	By whom
26 March	Cornelis trawler (H.I. 06 (HD))	Du	193	Ijmuiden	US IXth AF
	Azimuth " (VP.1416)	"	229		
	Elie Cheneviere - trawler (HI.03 (HD))	"	164		
	Jenny Elsa " (HI.02 (HD))	"	164		
	Adrian II - f.v. (HI.07 (HD))	"	124		
	Geziana Catharine - trawler (torp. battery)	"	164		
	S.129 - E.boat	Ge	90		
	S. 93 - E.boat	Ge	90		
Total	Eight vessels		1,218		

(e) Suggestions for the development of a concrete piercing bomb

A.H.B./ID4/
243
Mins of Meeting
22.12.43

At a meeting in the Admiralty on the 22 December 1943 the development of a rocket-assisted bomb was discussed. The Admiralty wanted the development of a bomb capable of piercing thick slabs of reinforced concrete, for use against U-boat and E-boat shelters. According to Admiralty calculations, a 4,000 lb semi-armour piercing bomb with rocket assistance would penetrate the 20 feet of reinforced concrete with which some of the U-boat shelters were now protected. The terminal velocity required was estimated to be 1,470 feet per second. The D.C.A.S. questioned whether, even assuming a bombing accuracy of five to seven per cent, the operational effort required to get a reasonable number of hits on the U-boat shelters would be worth while, bearing in mind the possible conflict with the bombing of Germany. However, the meeting agreed that the bombs should be developed as a priority service, but without an over-riding priority in relation to other rocket projects. It was recognised that it would have to be dropped by Fortresses of the U.S.A.A.F. and that some modification to these aircraft might be required.

ibid
2.1.44

The decision of the meeting did not reflect the extent of Air Ministry opposition to the project. In a minute to the C.A.S., the D.C.A.S. stated that even under optimum conditions only 35 strikes on the pens could be obtained for every thousand sorties. This would involve the modification of a large number of aircraft and the diversion of effort would doubtless conflict with "Pointblank" or Overlord requirements. It was intended to use Fortresses to carry the bomb and it would therefore be wise to obtain the views of the Commanding General, U.S.A.A.F. before any development or production effort was diverted. C.A.S. in a minute to the Secretary of State considered it an ill-advised project, and did not feel that the state of the U-boat war in one or two years time would justify the diversion.

ibid
3.1.44

ibid
6.1.44

On the 6 January the Commanding General, American Strategic Air Forces in Europe, was asked to state his views on the use of American aircraft for such a project. His reply on the 12 January, was substantially in agreement with Air Ministry views.

ibid
12.1.44

ibid
D.C.A.S. to
C.A.S.
4.3.44

An exchange of letters between the Air Council and the Admiralty followed but no agreement could be reached. There was considerable difference of opinion as to the technical feasibility of the weapon, its carriage and length of time before it could be put into production. Development of the bomb would inevitably interfere with other high priority work which was more likely to contribute effectively towards the success of Pointblank and Overlord. A report from the Ministry of Aircraft Production on these technical points was awaited.

ibid
S.6.
5.5.43
D.C.(s) (44)
5th Meeting

The Admiralty continued to press for development. In April the Air Ministry drafted a paper for discussion by the Defence Committee (Supply). At the beginning of May, however, the Prime Minister directed that the question should be discussed in the first instance by the Minister of Production and Lord Cherwell with the Ministers directly concerned. On the 18 May the matter came up before the Defence Committee. The diverging views were discussed and

the possibility of using Tallboy⁽¹⁾ instead of developing a new weapon. The Committee agreed that the research, development and trials of the rocket-assisted concrete-piercing bomb should continue with priority P+ provided that it did not interfere with various Ministry of Aircraft Production items.⁽²⁾ If there was a clash between claimants for dropping trials the Ministry of Aircraft Production items should have priority. The Secretary of State for Air was asked to examine the possibility of arranging for an operation in the very near future to test the efficacy of Tallboy against an E-or U-boat pen. It was noted that the Admiralty would continue their arrangements for the production of 2,000 bomb bodies at Hadfields.

(vii) Summary

During the period March 1943 to May 1944, 19,268 tons of H.Es. and 12,743 tons of incendiaries were dropped on naval targets in Germany, 5,012 tons of H.Es. and 668 tons of incendiaries on the Biscay ports, and some 1,200 tons on naval targets in transportation and Norwegian ports. The majority of these operations were undertaken by the United States Eighth Bomber Command. The total R.A.F. Bomber Command contribution amounted to some 8,600 tons of H.E. and 7,350 tons of incendiary bombs. In the whole period, enemy shipping casualties in all areas through air raids on ports, totalled 70 vessels of 84,353 tons sunk and 37 vessels of 144,313 tons damaged. Of this total ten vessels of 5,813 tons were sunk and six vessels of 43,872 tons were damaged by R.A.F. Bomber Command.

At the beginning of the period the bombing of submarine construction yards and operating bases was a top priority commitment; at the end, only a marginal effort was devoted to these targets. Bombing cannot claim more than a very minor part in the victory obtained against the U-boat campaign in 1943. Nevertheless, the fear of what bombing could do to their submarine construction programme was sufficient to persuade the enemy that shelters were necessary to protect the assembly of the new prefabricated U-boats. Unfortunately for them, their preparations were not complete when bombing struck a telling blow at submarine construction in the winter and spring of 1944-45.

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- (1) Tallboy was the 12,000 lb. M.C. bomb.
 - (2) The 250 lb. target indicator bomb, the anti-ricochet bomb, Jefferis K bomb (bouncing type), M.10 smoke bomb for the Typhoon, cluster projectiles, 1000 lb. M.C. forged bomb, 8 lb. fragmentation bomb.

CHAPTER XIIIAERIAL MINELAYING - APRIL 1943 to MAY 1944(i) Introduction

A.M. File
S.1636/II
Encl. 115A

Ibid
Encl. 118A

A.H.B./IIk/
67/533

During the period April 1943 to May 1944 Bomber Command was responsible for all aerial minelaying in home waters. The directive to Coastal Command, dated 26 March 1942, did not preclude minelaying by the Command as incidental to night flying training or for special operations. However, early in April 1943, No. 836 Squadron, the last of the Fleet Air Arm Swordfish Squadrons loaned to Coastal Command for minelaying operations, returned to the R.N.A.S. No more mining operations were carried out by Coastal Command and on the 23 November 1943 the Command was officially released from the commitment. All minelaying operations during the period now considered were the work and responsibility of Bomber Command.

(a) Stocks and Provisioning

A.M. File
S.1636/II
Encl. 186A

Ibid
Encl. 185A

In February 1943 Bomber Command aircraft were being fitted with H2S (10 cm radar) as a navigational and blind bombing aid. At a meeting held in the Air Ministry on 5 March, at which representatives from the Admiralty were present, Bomber Command reported that owing to these new navigational aids the Command would be able to bomb on nights on which previously, owing to weather conditions, they would have resorted to mining. They did not, therefore, expect to lay more than 1,000 mines per month. The Admiralty expressed their disappointment since they had hoped for an expenditure of 1,000 per week. It was agreed, however, that, subject to a review of the position in three months time, the requirements of Bomber Command would be met by a supply of 1,600 mines per month, including Mark V mines. This figure would cover normal and occasional large scale efforts and also permit of an increase in the reserve holdings in units to facilitate the staging of the larger operations.

Ibid
Encl. 193A

On the 2 June the Admiralty confirmed their agreement to the revised figures, provided that the full holding capacity of the R.A.F. Maintenance Units and Stations was utilised and that the size of reserves held were such as to bridge the gap between expenditure and production should a sudden increase in mining operations be required. On the 20 July the Air Ministry informed the Admiralty that a maximum number of 7,000 Mark A mines could be held in the United Kingdom by R.A.F. Maintenance Units and Stations at which units at present engaged in sea mining operations were located. (1) In view of this build-up of reserve stocks the Air Ministry informed the Admiralty on

Ibid.
Encl. 198A

- (1) On 27 August the actual stocks held were 6,360 mines, located as follows:-

	Marks I-IV	Mark V
Bomber Command	4,296	325
Maintenance Units	1,247	492
Total	5,543	817

SECRET

410

Encl. 204A

25 September that a monthly provision of 1,200 mines would be adequate to meet the future mining commitments of Bomber Command.

(b) Types of Mines

A.H.B./II/70/107
3.3.43

Mining O.Os and O.I.s
A.H.B./IIH/241/3/563

B.C. Group
O.R.B. Appendices
and Sqdn. O.R.B.s

A.H.B./II/70/107
L.M. 8/12/43

A.H.B./IIH/241/3/
516(F) Encl. 1A

A.M. File S. 1636/II
Encl. 186A.

The types of mine in use for aerial minelaying in April 1943 were the standard A Marks I to IV magnetic mines of 1,500 lb. weight with parachute attachments and the A Mark V magnetic mine of 1,000 lbs. The minimum depth of water in which all mines could be dropped was 30 ft. All types were carried on the 2,000 lb. bomb racks. The heights and speeds of release were revised from time to time. Within certain limits, and provided that accuracy was not impaired, the A.O.Cs at Group Headquarters were often authorised to fix the dropping heights on the day of the sortie with regard for the weather conditions at the time. During the whole period, the speed of release was generally under 200 miles per hour. Until the end of 1943 no mines were laid from above 6,000 feet or from under 400 feet. Modifications in the minimum height of release were made in December when the low level mining of inland waterways was being considered. In the same month, as a result of successful trials of high level mining, the maximum height of release was increased to 15,000 ft.

At the Air Ministry meeting on 5 March 1943 the Admiralty stated that three new types of mine were under development. The A type G mine⁽¹⁾ of 2,000 lb weight was fitted with a bomb fuse which operated on land, and was intended to replace the standard A Mark I to IV mines. It had a parachute and could be dropped from any height into a minimum depth of 40 ft. It was not expected to be in operational use before August. The other two types, the A type J of 2,000 lb weight and the A type H of 500 lb weight, were also fitted with bomb fuses. They had no parachutes. The technical difficulties in producing the A type J mine⁽²⁾ were considerable and it would be a long time before it came into operational use. The A type H mine⁽³⁾ was intended for the mining of inland waterways and had to be dropped from a low height. It was designed to fit into the standard 500-lb bomb stowage.

(c) Aircraft and carriage of mines

B.C. Group
O.R.B.
Appendices and
Sqdn. O.R.B.s

Minelaying operations were carried out by squadrons of Nos 1, 3, 4, 5, and 6 Groups of Bomber Command. No. 8 P.F.F. Group made occasional sorties. The aircraft used were Wellingtons, Halifaxes, Lancasters, and Stirlings.⁽⁴⁾ Wellington aircraft carried two 1,500 lb or 1,000 lb mines; Halifax aircraft carried two 1,500 lb or four 1,000 lb

25/D.B.Ops
6.6.44

- (1) Known later as the A Mark VI mine. It was first used operationally in April 1944.
- (2) The Air Ministry cancelled their requirement for the A type J. Mine on 6 June 1944 in view of the developments in high level mining.
- (3) There were considerable delays in the production of this mine - see section (v). It did not come into operational use during this period.
- (4) Mosquito aircraft of No. 692 Squadron, No. 8 Group carried out one operation against the Kiel canal on the 12/13 May 1944.

SECRET

SECRET

411

Ibid

mines until a modified bomb carrier was introduced in February 1944 when they were able to carry four 1,500 lb mines; Stirling and Lancaster aircraft carried two to six mines depending on the distance of the dropping area and the weight of petrol necessary.

(ii) Minelaying - April to June 1943

(a) Operations - April to June 1943

A.H.B./IIH/
241/3/563
B.C.O.O.170

On 3 March a new operational order was issued which stated that the minelaying effort of Bomber Command had caused serious embarrassment to enemy seaborne traffic and was affecting the transport of raw materials to his heavy industries. The enemy was now being forced to maintain a large and widespread minesweeping force, the personnel and materials of which were drawn from limited resources. Further, shortage of shipping was driving him towards the uneconomical use of small coastal merchant vessels in place of large and economic freighters. The intention was to increase the dislocation to enemy shipping by extensive and repeated minelaying. Three large scale plans were provided for use when weather conditions and circumstances permitted one of the plans to be covered on a single night.

A.M. File
S.1636/II
Encl. 188A

On 6 April 1943 the Admiralty informed the Air Ministry that aircraft mines embodying a firing unit designed to defeat the enemy's sweeping technique were in production and that delivery had commenced to R.A.F. Maintenance Units. This assembly, known as G.708, consisted of a combination of acoustic and magnetic fuses. It was fitted to the standard A Mark III and IV mines. To exploit the element of technical surprise it was desirable that the mines should be laid initially in one large scale operation in a similar manner to that adopted for the acoustic mine in 1942. (1) It was further stated that the mines might not function correctly if dropped from heights above 1,000 ft. and definitely must not be dropped from above 3,000 ft.

B.C. Group O.R.B.
Appendices and
Sqdn. O.R.Bs.
Figures provided
by the Admiralty
Mining Department
are used, in all
cases, for the
number of mines
laid

In conformity with the Admiralty request, and using two of the plans incorporated in the recent operational order, two large scale operations followed at the end of April. On the night of the 27/28 April Plan I "Pruning" was put into effect. Out of 160 aircraft which flew to gardens in the Bay of Biscay and off the Dutch and German North Sea coast, 122 laid 459 mines successfully. One aircraft was detected by searchlights and shot down by light flak near the garden off Bayonne. (2) Fifty-eight mines with the new acoustic-magnetic assembly were laid. On the night of the 28/29 April 226 aircraft took part; 181 were successful. The night's operations were in accordance with Plan 2 "Weeding" of Operational Order 170. Five hundred and sixty eight mines were laid in a wide selection of gardens in the Baltic including Kiel Bay, the Belts, Sound, Kattegat and West Baltic areas.

A.H.B./IIH/
241/3/881

- (1) This was operation "Bobbery" which took place on the nights of 19/20, 21/22, 23/24 September 1942 when a total of 457 mines were laid.
- (2) Lancaster "T"/101 Squadron, No. 1 Group.

(17500) 427

SECRET

No. 1 Group
Summary
April 1943

No. 4 Group
Summary
April 1943

A.H.B./II A1/21
A.C.A.S. (Ops)
to C.A.S.
29.4.43

B.C. Group
O.R.B.
Appendices
and Sqdn.
O.R.B.s

Only 397 mines had been laid in these areas during the whole of the first quarter of 1943. Twenty five mines were laid off the Dutch and German coasts, making a total of 593 mines, including 226 with the new assembly. Twenty one aircraft were reported missing⁽¹⁾ from sorties in the Baltic. No. 1 Group reported that the weather was unexpectedly bad over distant areas making navigation difficult and ground defences hard to avoid. No. 4 Group reported considerable light flak off Kiel against later arrivals.⁽²⁾ A further two aircraft were missing from operations in the Heligoland Bight.⁽³⁾ Mines were laid, as instructed, from a low level on both nights, many from under 1,000 ft (presumably those with assembly G.708), the rest from under 3,000 ft. The Commander-in-Chief Bomber Command had arranged large scale mining operations on these two nights since weather conditions over Germany were unsuitable for bombing but were satisfactory for mining in the required areas.

Apart from these two large scale operations, mine-laying in April was on a fairly small scale. It was directed against the U-boat bases in the Bay and the Frisian islands.⁽⁴⁾ Seven hundred and fifty seven mines were laid on 12 nights apart from the 27/28 and 28/29, making a total of 1,809 for the month - the largest monthly total since aerial minelaying commenced in April 1940. Two hundred and forty-eight out of 287 sorties were successful and a further nine aircraft were lost⁽⁵⁾ eight in the Bay and one off the Dutch coast. One aircraft was hit by flak off Brest, caught fire and crashed after a successful sortie.⁽⁶⁾

A.H.B./II/70/
107
O.R.S.
Report No. S.105
Losses on
Minelaying
Operations

(1) Aircraft missing were:-

- No. 1 Group - HZ 278/166 (Wellington) Ed 733/103, J/12, A/12, D/12, V/12 (Lancasters)
- No. 3 Group - M/213, F/218, O/218, G/90, M/75, W/75, G/75, X/75 (Stirlings)
- No. 4 Group - He 220/196, He 170/196, He 395/196 (Wellingtons) A/158 (Halifax)
- No. 5 Group - Z/207, W 4898/61 (Lancasters)
- No. 6 Group - Jb. 923/419 (Halifax).

(2) Minelaying in the Baltic was always more hazardous than in other areas owing to the location of many of the gardens in narrow channels between the islands which were defended by light flak. Throughout this period aircraft casualties in the Baltic formed a very high percentage of total casualties.

- (3) No. 6 Group - B/428, D/428 (Wellingtons).
- (4) Lancasters of Nos. 49, 50 and 57 Squadrons of No. 5 Group flew 21 sorties against Spezia in conjunction with a bombing attack on the nights of 13/14 and 13/19 April. 15 sorties were successful and 60 mines were laid. These figures are not included in any statistics given since this volume is only concerned with North West Europe.

(5) No.1 Group - He631/166, Bk.299/166, L/199, V.291/300 (Wellington)

- No.3 Group - Z/214 (Stirling)
- No.5 Group - Ed/482/50, Ed 799/9 (Lancaster)
- No.6 Group - G/405 (Halifax), U/425 (Wellington).
- (6) No.6 Group - He414/429 (Wellington).

No. 4 Group
Summary
April 1943

No. 4 Group emphasised the necessity of carrying out drill to prevent hanging-up and also the need for a careful check on new aircraft. A number of Halifaxes had returned during the month with their two 1,500 lb mines hanging-up on the I.A. position. A small bolt in the bomb floor, slightly over-length, had fouled the single hook release slip when the carriers were raised on to the carriers suspension.

During May and June long range sorties were not possible due to the short hours of darkness, and mines were laid once more in the Bay and off the German and Dutch North Sea coasts. In May 1,148 mines were laid on 12 nights on 320 out of 363 sorties for the loss of eight aircraft, (1) three in the Bay and five off the Frisians. Two aircraft crashed. (2) There was one large scale operation on 21/22 May when 87 out of 99 aircraft despatched laid 276 mines in the Frisians, La Pallice and Gironde areas. In June 1,174 mines were laid on 17 nights by 372 out of 426 aircraft despatched. Seven aircraft were lost, (3) all in the Bay. One reported engine trouble and crashed on return. (4) There were no large scale operations.

(b) Tactics

B.C. Group
O.R.B.
Appendices
Order Forms B.

In the Bay aircraft were usually ordered to lay their mines from visual pinpoints using Gee only to get an accurate pinpoint and to cross check their dropping positions. For the Frisian Islands, however, aircraft were often instructed to drop on Gee if they could obtain a fix within a given number of miles from the dropping point. They were sometimes ordered to bring back their mines if unable to get a Gee fix and to run no risk of passing over the islands. Warnings were given against flak ships in the area. Aircraft were also told to avoid long D.R. runs as there was more chance of inaccuracy.

A.H.B./II
H/241/3/620(A)
Encl. 94A.

Mining was often used to give experience to "freshmen" crews. Nos 1 and 6 Groups made particular use of newly trained crews during this quarter. Instructions from Bomber Command were received by all Groups on the 2 June, that new crews should be sent on a minelaying operation instead of a normal cross-country exercise. When necessary, experienced crews were requested particularly in the order forms.

A.H.B./II/
70/107 O.R.S.
Report No. S.105
Losses on
Minelaying
Operations

On 31 May 1943 Bomber Command Operational Instruction No. 169 was issued. The instruction stated that the enemy had been forced to increase his defences and augment his minesweeping in the Baltic owing to the continual embarrassment caused to his seaborne traffic by

-
- (1) No.3 Group - EF 340/75,G/149,P/149,U/218. (Stirling)
No.4 Group - HE 386/466,HZ257/466,P/431 (Wellington)
No.6 Group - B/428 (Wellington).
 - (2) No.3 Group - L/149 (Stirling)
No.6 Group - G/428 (Wellington)
 - (3) No.1 Group - Y/199,(Wellington) Q/101 (Lancaster)
No.3 Group - N/75 (Stirling) R/115,C/115 (Lancaster)
No.4 Group - HF 481/466 (Wellington)
No.6 Group - Y/432 (Wellington)
 - (4) No.4 Group - HE 163/196 (Wellington)

A.H.B./II
H/241/3/563
Min. 10

Bomber Command minelaying. Early in 1943 several heavy bombing attacks on Berlin, Rostock and Stettin had been routed through the Baltic which had also caused the enemy to strengthen his defences in Denmark and the Sound. At the suggestion of the C.-in-C. Bomber Command and with the concurrence of the Admiralty, the boundaries of certain of the Baltic gardens were enlarged and revised and a number of new gardens were added. The intention was to give greater tactical freedom and to reduce casualties in the areas concerned. Details of new and revised areas were given in the new instruction.⁽¹⁾ Mining in these areas was not possible however until the hours of darkness lengthened.

A.H.B./IIH/
241/3/563
B.C.O.O. No. 170
12.6.43.

Ibid
Min. 19

On 12 June 1943 Operational Order No. 170 was revised and re-issued. A slight increase was made in the number of aircraft taking part in all plans which was necessary in view of the recent revision of the Baltic gardens. The height of release was amended to 6,000 ft instead of 4,000 ft for all assemblies.

(o) Statistics April to June

During these three months Bomber Command flew 1,462 sorties on minelaying operations of which 1,243 were successful. Forty-eight aircraft were lost and four crashed. A total of 4,131 mines were laid in gardens stretching from St. Jean de Luz to the Gulf of Danzig. This widespread effect was due to the two large scale operations in April. Apart from these operations minelaying was directed against the U-boat bases in the Bay of Biscay and the North Sea Coasts of Holland and Germany. Approximately half the total number of mines were laid off the Biscay ports and 1,408 mines were laid in Nectarines, the extensive garden off the Frisian Islands.

Forty-eight vessels totalling 60,522 tons of enemy shipping were sunk and a further seven vessels of 15,385 tons were damaged. A summary of mines laid and enemy shipping casualties is given in Table I.

Table I

No. of mines laid

	No. 1 Area W. Baltic, Belts, Sound, Kattegat.	No. 2 Area Haugesund and Oslo Fjord	No. 3 Area N. Sea Coasts of Germany and the Low Countries.	No. 4 Area North Coast of France	No. 5 Area Off the Biscay Ports	Casualties	
						A/C Miss- ing	A/C Crashed
April	568	5	397	0	839	33	1
May	0	0	651	0	497	8	2
June	0	0	431	0	743	7	1
Total	568	5	1,479	0	2,079	48	4

(1) The new areas were Silverthorns 10 to 15. Details of gardening areas are given in Appendix XIX and location on Map No. 55.

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Enemy vessels sunk by mine⁽¹⁾

	No. 1 Area No. Tons	No. 2 Area No. Tons	No. 3 Area No. Tons	No. 4 Area No. Tons	No. 5 Area No. Tons
April	12-17,612	nil	2-3,107	1-30	1-75
May	14-23,670	nil	4-5,925	nil	nil
June	4-1,428	nil	4-5,849	3-200	3-2,626
Total	30-42,710	nil	10-14,881	4-230	4-2,701

Enemy vessels damaged by mine⁽¹⁾

	No. 1 Area No. Tons	No. 2 Area No. Tons	No. 3 Area No. Tons	No. 4 Area No. Tons	No. 5 Area No. Tons
April	nil	nil	2-2,745	nil	nil
May	4-7,671	nil	nil	nil	nil
June	1-4,969	nil	nil	nil	nil
Total	5-12,640	nil	2-2,745	nil	nil

Two thirds of the number and tonnage of enemy shipping losses were sunk in the Baltic. Part of this success in the Baltic may be attributed to the two large scale operations in April and the new G.708 assembly. However, nine ships were sunk in the area prior to the night of the 27/28th by mines which must have been laid before April. It is difficult to elucidate exact effects of any new invention in mining, since each garden contained mines of many different assemblies and of different "vintage". Before May 1941 aircraft mines were not fitted with sterilizers and might remain active for years. After this date mines were usually fitted to become inactive after a fixed period of time.

A.H.B. Narrative.
The R.A.F. in
Maritime War,
Vol. III P.382,
Note 1.

The total of 48 vessels sunk includes 21 small craft of under 1,000 tons (mainly fishing vessels). The chief prize was the modern German liner "Gneisenau" of 18,160 tons, used as a troop transport between Germany and the Russian Front, which was sunk in the Cadet Channel in the Baltic on the 2 May. Ten merchant vessels of over 1,000 tons, ⁽²⁾ the ferry Malmo of 1,588 tons and eight minor naval war vessels were sunk. The latter include a large Boom Defence experimental vessel, ⁽³⁾ a smaller experimental vessel, two Sperrbrechers, ⁽⁴⁾ one Vorposten-boat, one R-boat and two harbour defence vessels. The balance is composed of smaller merchant vessels and tugs.

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- (1) All figures relating to enemy merchant and warship casualties are compiled from German documents held in the Admiralty, the German Shipowners records and Lloyds Shipping Branch statistics.
- (2) Rygja (4,001), Emanuel (1,290), Abisko (3,088), Ammerland (5,381), Aegir (4,500), Sirvall (1,469) Bygdoy (1,252), Gondul (1,234) Narvik (5,750) and Sigrid (1,196).
- (3) Dorpat (3,554) sunk in Aarhus Bay on 11 April.
- (4) Westland. Sperr.173. (1,259) sunk N. of Terschelling on 23 May.
Nestor. Sperr. 21. (2,446) sunk off the Gironde on 14 June.

Aircraft engaged on minelaying operations during the quarter were Wellingtons and Lancasters of No. 1 Group, Lancasters and Stirlings of No. 3 Group, Wellingtons and Halifaxes of Nos. 4 and 6 Groups, and Lancasters of No. 5 Group. Stirlings of No. 8 Group took part in one operation. (1)

(iii) Mining against the U-boats. April to December 1943

There was a heavy and continual lay of mines outside the U-boat bases in the Bay of Biscay. During these nine months 4,298 mines were laid in all gardens in the Biscay, out of a grand total of 10,201 mines laid. Thus an average of 480 mines per month were laid in the area, the highest monthly figure being 839 mines in April, the lowest, 181 mines in December. The heaviest lay was at the mouth of the Gironde where 1,503 mines were laid during the period. La Pallice came second with 744 mines. Bordeaux was being developed as a major U-boat base and was first used for this purpose in January 1943. Other traffic was also considerable, including blockade runners and Spanish iron-ore ships. The two southernmost gardens outside St. Jean de Luz and Bayonne received less attention. They were out of range during the summer months and were not used by U-boats. The three chief U-boat bases at St. Nazaire, Lorient and Brest received constant attention. The totals for the nine months were 614, 640 and 474 mines respectively.

B. d U.
War Diary

The result of this effort, however, was only one U-boat. On the 14 April U.526 was sunk by mine whilst entering Lorient escorted by a Sperrbrecher. B.d U. (Doenitz) thought the mine had been laid by a vessel from Lorient and that it was a case of sabotage. He said that no laying of mines by aircraft outside Lorient had been observed during the past year and that it was considered a very difficult task in view of the heavy flak defences. (2) As a result of the loss of U.526 fresh safety instructions were issued for all incoming and outgoing U-boats.

B. d U.
War Diary
14.4.43

The Admiralty Naval Intelligence Division reported on the 9 May that the minesweeper escort for U-boats entering and leaving Brest had been increased to two Sperrbrechers instead of one. B.d U., himself, said in August that, although the mining situation off the harbours and in the approach routes was still under control, the situation with regard to defence forces had become strained in the extreme. The use of very varied firing units had made it necessary to include several types of minesweepers in each escort group. Two important

B. d U.
War Diary
5.8.43

(1) Squadrons were:-

No. 1 Group	-	199,166,300, 305 (Wellingtons), 101,460,103, 100, 12,104 (Lancasters).
" 3 "	-	115 (Lancasters), 15,90,218,75,149,214, 620 (Stirlings).
" 4 "	-	466,196,431 (Wellingtons),158,73,76,102, 10,77, 51 (Halifaxes).
" 5 "	-	50,61,106,97,207,467,49,57,44,9 (Lancasters).
" 6 "	-	425,426,424,427,428,429,432 (Wellingtons), 405,408,419 (Halifaxes).
" 8 "	-	7 (Stirlings).

(2) In actual fact Bomber Command had laid mines outside Lorient every month since March 1942.

minesweepers were sunk in the Bay during these nine months. These were Nestor, Sperrbrecher 21 (2,446 tons) on the 14 June and the M class minesweeper, M.152 (750 tons) on 23 July, both off the Gironde.

The other centre of U-boat activity, which could be attacked by mine, was the Baltic. The U-boat training and testing grounds were situated in the Gulf of Danzig and off the island of Bornholm. These areas⁽¹⁾ were always at extreme range for minelaying aircraft and impracticable during the summer months. A total of 97 mines were laid in these areas in April and September. On the 13 December U.345 was sunk by mine off Warnemunde in another part of the Baltic. Only one U-boat had been sunk by mine in the training grounds from the outbreak of the war to December 1943. This was U.446 sunk off Danzig on the 9 September 1942.

A.H.B./II A1/21

C.A.S. 1843B
A.U. (43) 13th
Meeting

A.H.B./II A1/21

On the 7 April 1943 Sir Henry Tizard wrote to C.A.S. (Sir Charles Portal) from the Ministry of Aircraft Production. He referred to a meeting of the Cabinet Anti U-boat Committee on the 31 March, when it was decided that the diversion of bombing effort caused by the bombing of the U-boat bases, which had been carried out in the spring of 1943 under the terms of the Casablanca directive of January 1943, was not justified by the results. He suggested an increase in the scale of mining as being more economical of aircraft and a planned attack on the minesweepers. He also proposed increased mining in the Baltic training grounds. After discussion with Air Ministry and Admiralty departments C.A.S. replied on the 20 April that owing to the lack of evidence of the destruction of U-boats by mine the Air Council did not feel justified in concentrating Bomber Command's efforts on mining to the detriment of bombing operations. The Air Staff considered that the most effective ways of interfering with the U-boat campaign were by bombing the submarine building yards and their associated factories, by mining suitable places and by operating V.L.R. aircraft round the convoys.⁽²⁾ He went on to say that the numbers of mines laid were being increased constantly and that they were investigating improvements in tactics.⁽³⁾ He pointed out that the Baltic training grounds could not be reached during the summer months. With regard to the attack on minesweepers, the special anti-minesweeper mines⁽⁴⁾ had had considerable success, and they planned to use Beaufighters armed with R.P. (60 lb. head) against the Sperrbrechers⁽⁵⁾ as well as fighter and fighter-bomber attacks as at present.

The view of C.A.S. that it was not worth while increasing the scale of anti-U-boat mining is borne out by post war knowledge. During the whole war only 17 U-boats were sunk by R.A.F. air laid mines; four of these were sunk during the last four months of the war when the minesweeping organisation

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- (1) The gardens were Pollock, Spinach, Privet and Tangerine.
 - (2) In actual fact, at this time (April 1943) the latter method was easily the most remunerative but by May 1943 the U-boat transit area air patrols had overtaken the convoy cover aircraft score. Air-raids and air mining remained very low in the scale. See table on the next page.
 - (3) High level mining.
 - (4) Assembly 42.
 - (5) Beaufighters of No. 236 Squadron armed with R.P. carried out some attacks on minesweepers commencing in September 1943.

was breaking down. The following table gives the numbers of German and Italian U-boats destroyed by R.A.F. controlled aircraft in Atlantic and West European waters from the start of the war until the end of May 1944 classified according to task:-

By aircraft escorting or supporting convoys	60 plus 8 shared with surface craft
By aircraft patrols in the U-boat transit areas	73 plus 8 shared
By air-raids on enemy ports	2
By mines laid from aircraft	8

In the spring of 1943 W/Cdr. Collier of the Directorate of Bomber Operations, Air Ministry, initiated investigations of the possibility of high level mining generally and off the U-boat bases in particular. On the 25 June he drafted a paper on the subject. He noted that current mining of the Biscay ports must of necessity aim primarily at delaying rather than sinking U-boats, since, owing to the heavy flak defences, only the outer channels could be mined. High level mining from a minimum safety height of 10,000 ft. would reduce the danger from light flak⁽¹⁾ and permit mines to be laid in the inner channels and even in the actual ports. He suggested that P.F.F. aircraft using Oboe or H2S should be used for marking and hoped that the new Mark VI mine would be available as it would lessen the risk of inaccurately placed mines falling into enemy hands.⁽²⁾ Trials of high level mining were carried out by Bomber Development Unit from September on the basis of a Bomber Command directive of the 21 September.⁽³⁾

(iv) Minelaying - July to September 1943

(a) Operations July to September 1943

During July and August when the hours of darkness were still short, minelaying was limited to the Bay of Biscay, excluding the two southernmost gardens outside Bayonne and St. Jean de Luz, and the North Sea coast of Holland and Germany. In July 313 sorties were flown on 16 nights, 275 were successful and 927 mines were laid. Six aircraft were lost⁽⁴⁾ three in the Frisians and three in the Bay and one crashed on take off to return from its advanced base at Chivenor.⁽⁵⁾ In August, 501 sorties were flown on 16 nights, 418 were successful and 1,103 mines were laid. Ten aircraft were lost,⁽⁶⁾ seven in the Bay, two off the Frisians, and one in Heligoland Bight.

- (1) The O.R.S. report on aircraft losses on minelaying operations considered light flak to be the chief cause of casualties.
- (2) The Mark VI mine was fitted with a bomb fuse which would explode on land
- (3) Continued in Section (vi)
- (4) No. 1 Group - W4363/103 (Lancaster), Hf453/166 (Wellington)
No. 3 Group - J/214, V/15, A/75 (Stirlings)
No. 4 Group - Hf601/466 (Wellington)
- (5) No. 4 Group - H2532/196 (Wellington)
- (6) No. 1 Group - He 578/166, Hf483/166, N.768/300, Hf596/166, He901/166 (Wellingtons)
No. 3 Group - G/620, H/75, Q/75 (Stirlings)
No. 4 Group - Lnh42/466 (Wellington)
No. 6 Group - P/432 (Wellington)

A.H.B./II/
69/172

A.H.B./IIK/
67/759
BDU/S.136/ARM.
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No. S.105

One crashed on return owing to engine trouble. (1) No. 6 Group reported that defences at Brest had been considerably strengthened during the previous six weeks. Aircraft P/432 Squadron was seen to be shot down whilst straying at a low level over the outer defences of Brest. On 15/16 and 24/25 August two slightly larger scale operations took place when more than 60 aircraft were employed and 139 and 164 mines respectively were laid.

No. 5 Group
Summary
September

In September operations were extended to the Katteg Kattegat, where 78 mines were laid and at the end of the month to the Gulf of Danzig. This last operation took place owing to a sighting report of the German pocket battleship Lutzow which was expected in the Eastern Baltic from Norway. Sixty one mines were laid in the area. During the whole month 396 sorties were flown on thirteen nights, 341 being successful and 1,188 mines were laid. Three aircraft were missing (2) two in the Baltic and one in the Bay and two crashed on return. (3) There was one large scale operation on 2/3 September when 73 out of 89 aircraft despatched laid 303 mines in the Bay and Frisian areas.

(b) Tactics

The tactics employed were similar to those of the previous quarter, except that aircraft were occasionally instructed to pinpoint in the Frisians area and make a Timed Run. Halifax aircraft of No. 6 Group were using Radio Countermeasures Monica and Mandrel on minelaying sorties in August.

(c) Statistics July to September

Bomber Command flew 1,210 sorties of which 1,034 were successful and laid 3,218 mines. A summary of results is given in Table II.

Table II

No. of mines laid

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area	Casualties	
	W. Baltic, Belts Sound, Kattegat	Haugesund and Oslo Fjord	N. Sea Coasts of Germany and the Low Countries	North Coast of France	Off the Biscay Ports	A/c missing	A/c crashed
July	0	0	538	0	389	6	1
August	0	0	529	0	574	10	1
September	139	0	662	0	387	3	2
Total	139	0	1,729	0	1,350	19	4

Enemy vessels sunk by mine

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area
	No. Tons	No. Tons	No. Tons	No. Tons	No. Tons
July	10-2,753	nil	8-3,181	nil	4-1,152
August	4-256	nil	nil	nil	nil
September	1- 11	nil	6-1,427	nil	nil
Total	15-3,020	nil	14-4,608	nil	4-1,152

- (1) No. 1 Group - Hf 455/166 (Wellington)
 (2) No. 3 Group - Group - G/199, K/15 (Stirling)
 No. 5 Group - Jb 143/50 (Lancaster)
 (3) No. 3 Group - K/623, D/199 (Stirling)

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Enemy vessels damaged by mine

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area
	No. Tons	No. Tons	No. Tons	No. Tons	No. Tons
July	1-1,592	nil	1- 37	nil	nil
August	2-1,862	nil	1- 39	nil	nil
September	2-4,436	nil	1-17,001	nil	nil
Total	5-7,890	nil	3-17,077	nil	nil

Nineteen aircraft were lost and four crashed. A larger number of mines were laid off the North Sea Coast of Holland and Germany than in the previous quarter, and considerably less in the Bay. One hundred and thirty nine mines were laid in the Gulf of Danzig and the Kattegat.

Thirty three enemy vessels totalling 8,780 tons were sunk and eight vessels of 24,967 tons damaged. This was considerably less than the amount sunk during the previous quarter.(1) Very little was sunk in August - four vessels of 256 tons - and only a small amount in September.

The total of 33 vessels sunk includes 14 very small craft of under 100 tons. The largest ship was the Swedish Merchant Vessel Vidar (2,104 tons) sunk off the German North Sea Coast. The only other vessel of over 1,000 tons was Gebweiler (ex Balmung) now Sperrbrecher 165 (1,481 tons) sunk in the Cadet Channel. Nine other minor naval war vessels were sunk, one M class minesweeper (750 tons), three M-boats, two Vorposten-boats, one R-boat and two harbour defence boats. The balance consists of small merchant vessels, tugs, trawlers and larger fishing vessels. The Baltic sinkings tailed right off and in September only one fishing vessel of 11 tons was sunk. No mines had been laid in the area between April and September.

Aircraft employed on mining operations were Wellingtons and Lancasters of No. 1 Group, Stirlings and Lancasters of No. 3 Group, Wellingtons and Halifaxes of No. 4 Group, Lancasters of No. 5 Group, and Halifaxes, Wellingtons, and Lancasters of No. 6 Group.(2)

(v) The Mining of Inland Waterways

In August the mining of inland waterways in Germany was being considered in the Air Ministry and Admiralty. On the 12 August the Director of Bomber Operations asked the Admiralty Mining Department whether they had a mine suitable for laying in the Dortmund and Mittelland canals. The depth of water would be approximately 10 ft. He understood that the A type H-mine, designed for this type of operation, would not be

II/70/107
12.8.43

- (1) Forty eight vessels of 60,522 tons.
(2) Squadrons were:-

No. 1 Group - 166, 300, 305, (Wellingtons) 101, 460,
103, 12, 100 (Lancasters)
No. 3 Group - 115 (Lancasters), 15, 90, 218, 75, 149,
214, 623, 622, 196, 199, 620 (Stirlings)
No. 4 Group - 466, 196, 431 (Wellingtons) 73, 76,
(Halifaxes)
No. 5 Group - 619, 61, 106, 50, 207, 467, 49, 44, 9
(Lancasters)
No. 6 Group - 432 (Wellingtons), 426 (Lancasters), 419,
434, 408, 428, 427, 429 (Halifaxes).

(17500)436

SECRET

A.H.B./II/
70/107
17.8.43

ibid
O.R.2(a)
13.8.43

ibid
table
22.9.43

ibid
20.8.43

available in any quantity for six months and wished to know whether the A Mark V was suitable. He proposed using Lancaster aircraft and specially trained crews for the operation. The Admiralty replied on 17 August that the A Mark V would not stand up to a 10 ft minimum depth but that trials might show that it functioned in 15 ft. A minute to the Directorate of Bomber Operations from the Directorate of Operational Requirements dated 13 August however, stated that 40 to 60 per cent of A Mark V mines laid in 12 ft depth functioned correctly. By 22 September this figure was again modified to 9 to 11 ft minimum depth.

On the 20 August the Admiralty Mining Department produced a paper on "The Mining of Inland Waterways", which was sent to the Air Ministry. They examined the mine circuits available, enemy countermeasures, mining against these countermeasures and the effect on traffic. The conclusion reached was that a heavy widespread attack was more effective than a small scale attack or an attack concentrated geographically.

ibid

At approximately the same date the U.S. Naval Forces submitted to the Joint Chiefs of Staff a paper on "The Mining attack against the Inland Waterways of North West Germany", which had been compiled by Admiral Stark. This was a detailed study of the importance of canal transport to the enemy, German canal construction, the effect of a surprise mining attack, and enemy defensive countermeasures. They proposed using the American Mark XIII mine⁽¹⁾ and incorporated a report on this mine by an American mining expert.

A.H.B./II/
70/107
M.E.W. papers
summarised in
Air Staff Note
of 22.10.43

In September the Ministry of Economic Warfare produced, at the request of the Naval Intelligence Department Admiralty, a paper on the importance to the enemy of the Kiel canal. They had previously published on the 4 September a paper on the Dortmund - Ems and Mittelland canals.

A.H.B./II/
70/107
22.10.43

As a result of these papers on the 22 October an Air Staff note was produced on "The Mining of Inland Waterways in Germany and Enemy Occupied Europe." The Air Staff paper made a summary of the information produced so far. It stated, however, that a large scale mining operation against the whole system of enemy waterways was not practicable at that time. The A type H mine, designed for this type of operation, was not yet available. The American Mark XIII mine, owing to its size, would not fit into British aircraft⁽²⁾. The A Mark V had been modified for dropping into shallow water but was far less economical than the A type H⁽³⁾. The most serious problem, however, was the scale of effort involved. In order to obtain decisive results, it would be necessary to divert a substantial part of Bomber Command heavy and medium bomber aircraft from

A.H.B./II/
70/107
14.8.43

A.H.B./II/
70/107
27.11.43.

- (1) Mark XIII mine of 1029 lb. weight. Tests indicated that 50 to 60 per cent of these mines dropped at 200 m.p.h. from 100 to 200 feet into 6 to 12 feet of water would be operative.
- (2) In actual fact installation trials held at the A. and A.E.E. on 4 November showed that the American Mark XIII mine could not be installed in British aircraft without a major modification to the 2,000 lb. bomb carrier.
- (3) Moreover it would not fit into Mosquito aircraft - the only type of aircraft which the Air Council proposed using for the operation.

their existing targets. This could only be achieved by reducing the size of striking forces despatched against German cities and G.A.F. targets, which was incompatible with bombing policy under existing directives, and therefore impracticable. The alternative was to substitute inland mining for the present sea mining effort of Bomber Command. Tactical reasons weighed against this solution, since "Freshman" crews, who undertook a large part of sea mining operations, could not be employed on the difficult task of mining inland waterways in highly defended areas. The possibility of using small forces of heavy and medium bombers, from time to time, to mine the more important of the waterways had also been considered. The experience of the recent bombing attack on the Dortmund-Ems canal(1) had shown that losses on such operations, necessarily in moonlight conditions and at a low level, were likely to be serious. The Air Staff concluded that the best way of carrying out such an operation would be to use lighter aircraft of higher performance. Mosquito aircraft could carry 4 A type H mines; Marauder aircraft of the U.S.A.A.F. carrying the American Mark XIII mine could be used in daylight with fighter aircraft to mine the Rhine-Waal and Dutch Island areas and the Sambre - Meuse waterways. However, neither the A type H mines, nor the Mosquito aircraft were likely to be available at that time, and economic considerations pointed to the spring, after the thaw, as the most profitable time to initiate operations. C.A.S. proposed to have plans drawn up for mining the Mittelland, Dortmund and Kiel canals and the mouth of the Rhine - Waal river, early next year.

Meanwhile trials of the A type H, or the A Mark VIII mine as it was now called, were continued. Dropping trials at Weston in August had established that the mine functioned satisfactorily when dropped into 12 ft of water. After further trials with Mosquito aircraft, the limiting figures were revised to a minimum depth of 8 ft, release heights of 150 to 300 ft and speeds of release up to 320 m.p.h.

At the same time the minimum release heights for the other Mark A mines were revised to 100 ft. This was the minimum release height to ensure the proper functioning of the mines. To achieve the absolute safety of the aircraft against the very occasional explosion of mines on impact, the minimum height was increased again on 15 February 1944 to 600 ft, and on 21 April 1944, in connection with the fragment danger from Mark VI mines, to 700 ft. This last figure was made standard for all mines except the A Mark VIII, which, by its design, required low release, and the special low dropping assemblies of the A Mark V mine.

Despite the recommendations of the Mark VIII mine by the experts of the Mine Design Department Admiralty, and the definite requirement by the Air Staff for such a mine, large scale production was delayed. Bomber Command had given an initial order for 100 mines as far back as May 1943 and at a meeting in the Admiralty on the 4 June priority A had been given to production. On the 25 September the Air Council sent an official request to the Admiralty for a minimum of 2,000 mines for all theatres of war, with a possible increase in

(1) By No. 617 Sqdn. on the 15/16 September. Five Lancasters were lost out of eight despatched.

A.H.B./II/
70/107 O.R.2(a)
13.8.43

ibid
M.D.D.
9.12.43

ibid
R.D. Arm. 4
8.12.43

ibid
R.D. Arm. 4
15.2.44
and 21.4.44

A.M. File S.1636/II
Encl. 200A
1.9.43

A.H.B./II/70/107
Appendix A to
minutes of meeting
on 4.1.44

A.M. File S.1636/II
Encl. 204 A

A.H.B./II/
70/107
14.10.43

A.H.B./II/
70/107
25.10.43

A.H.B./II/
70/107
27.10.43

ibid
D.B.ops
7.12.43

A.H.B./II/
70/107
C.M.S.263
D.Ops Tac.
7.12.43

ibid
D.B. Ops
10.12.43.

ibid
M.D.D.
9.12.43

ibid
B. Ops. 1
10.1.44

their order later on. On the 14 October the Directorate of Bomber Operations asked the Admiralty, for planning purposes, how many mines they could expect by the following March. The Admiralty replied on the 25 October that the Director of Torpedoes and Mines could not give a date, and asked whether the use of existing mines and Marauder aircraft had been abandoned. The Air Ministry repeated on 27 October that the A Mark VIII mine was necessary for Mosquito aircraft which were the only type available for the operation. The use of Marauder aircraft was a question for the United States VIIIth Air Force authorities.

A meeting was called at the Admiralty on the 29 November to discuss these delays. It was stated that tooling-up for the Mark VIII mine had been delayed due to the diversion of the contractors to the production of "Foxers" against acoustic torpedoes. The mine was now laid on but tooling up usually took five months, so that production on a mass scale would not commence before April 1944. Production would then be about 400 mines per month. There were only one or two of the mines in existence at the time. The Director of Torpedoes and Mines said that he could only promise 40 or 50 specially made mines before April. In the circumstances these were not ordered. It was suggested that the Air Ministry should use their influence with the Ministry of Aircraft Production to get a higher priority. The highest priority the Admiralty could give would not secure production before April. There was even a danger that the Ministry of Aircraft Production might divert labour from the contractors to other firms. The Allied Expeditionary Air Force was also involved since the mining of inland waterways had been suggested as part of the "Overlord" invasion plans. The Director of Tactical Operations, Air Ministry, informed the A.O.C-in-C of the A.E.A.F. on the 7 December of the details of the Mark VIII mine and its production, and was asked by the Directorate of Bomber Operations on the 10 December to ascertain the requirements of A.E.A.F. so that the Directorate could get an overall figure.

Meanwhile the Director of the Mine Design Department had informed the Directorate of Bomber Operations on 9 December of the details of the delays in production. He complained of obstruction by The Director of Torpedoes and Mines and stated that tooling up in this case was a simple process and should certainly not take five months. This information was passed to those concerned and an informal meeting was called in the Directorate of Bomber Operations on 4 January 1944 to discuss the position.

(vi) Minelaying - October to December 1943

(a) Operations October to December 1943

In October 367 sorties were flown on 11 nights, 318 were successful and 1,076 mines were laid. Four aircraft were lost, (1) two in the Baltic, one in the Bay of Biscay and one off the Frisian Islands. One aircraft crashed on return. (2) Fewer mines were laid in the Bay and more in

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- (1) No. 1 Group - O/300 (Wellington)
 - No. 3 Group - K/15, O/149 (Stirlings)
 - No. 4 Group - C/51 (Halifax)
 - (2) No. 3 Group - Ef. 142/75 (Stirling)

the Baltic, 245 out of the 279 mines in the latter area were laid in the Kattegat. On the 2/3 October 117 aircraft took part in a large scale operation and 292 mines were laid in gardens from St. Nazaire to Sassnitz. On the 7/8 October 79 aircraft laid 194 mines in gardens in the Bay, off the North Sea Coasts of Holland, Germany and Denmark and in the Kattegat. Bad weather at the end of the month limited operations. Minelaying was suspended in a few of the Baltic gardens, namely Daffodils I, Nasturtiums, Silverthorns V and XIV, during the period 9 to 24 October, owing to the exchange of wounded prisoners of war with Germany, which was taking place in these areas.

In October trials were carried out at Snaith using a modified No. 3 Bomb carrier to install four 1,500 lb. mines in Halifax aircraft with the bomb doors open by about 26 inches. No difficulty was found on take-off and mines were dropped successfully on Spaldington Bomb Range. A few of the new carriers arrived in No. 4 Group Squadrons in January 1944. The carrier was first used operationally by No. 4 Group on the 11/12 February. No. 6 Group did not receive any of the new carriers until May 1944.

In November 352 sorties were flown, 319 were successful and 976 mines were laid. Eight aircraft were lost, (1) four in the Kattegat, three in the Bay and one in the Frisians. One aircraft crashed. (2) This month the majority of mines were laid in the Bay, less off the North Sea coast of Germany and only very few in the Kattegat. Mines were laid off Le Havre and Cherbourg for the first time since March 1943. Coastal Command, who had previously mined these areas, were released from all mine-laying commitments on the 23 November.

In December 256 sorties were flown, 204 were successful and 800 mines were laid. Five aircraft were lost (3) two in the Kattegat, two in the Frisians area, and one in the Bay. Three aircraft crashed (4). The majority of mines were laid off the North Sea Coast of Germany, and the lowest number in the Bay for the whole of 1943. A small number were laid in the Baltic and off the North French Coast.

No. 6 Group had carried out no mining operations in November because the Air Staff at Bomber Command Headquarters had decided that Stirlings of No. 3 Group would be used primarily for minelaying for the time being and No. 300 Polish Squadron of No. 1 Group would be used solely for minelaying whilst equipped with Wellington aircraft. A large number of Mark IV mines were therefore sent from No. 6 Group bomb dumps to No. 3 Group. A considerable number of Mark V mines still remained in stock. This of mine was considered particularly suitable for

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- (1) No. 1 Group - A/300 (Wellington)
No. 3 Group - F/199, G/75, U/75, E/623, L/149
(Stirlings)-
No. 4 Group - O/102 (Halifax)
 - (2) No. 1 Group - U/300 (Wellington)
 - (3) No. 3 Group - H/90, V/199, P/623, K/218, Q/149
(Stirlings)
 - (4) No. 3 Group - J/75, L/75 (Stirlings)
No. 4 Group - Hx235/466 (Halifax)

A.H.B./IIA1/21
Admiralty Signal
MS 20041
Air Min.
Signals
AX 456 and
AX 395

No. 4 Group
Summary
October 1943

No. 6 Group
Summary
May 1944

A.H.B./IIk/
67/533

No. 6 Group
Summary
November 1943

the Frisians area. On the 24/25 December Halifaxes of No. 6 Group planted 67 Mark V mines in the area. This was the only minelaying operation carried out by No. 6 Group during the month.

B.C. O.R.B.
Naval Staff
January 1944

The Photographic Reconnaissance Unit reported that the merchant vessel Osorno, a blockade runner with a cargo of rubber from the Far East, was aground off Le Verdun on the 28 December. The cargo was being unloaded into small vessels alongside and A.A. protection was given by a number of escort vessels. On the 29/30 December 12 Stirlings of No. 3 Group⁽¹⁾ were despatched to lay special mines in the entrance of the Gironde, to delay the discharge of the cargo. Three aircraft were successful in laying 10 mines.⁽²⁾

A.H.B./IIK/83
Adm. Signal
M.S. 22760

To assist in harassing enemy convoys who might be forced to enter the Molen Gat approach to Den Helder to avoid sea and air attack, the Admiralty suggested on the 26 November that Bomber Command should lay mines in a given area off Texel. The mines should contain magnetic assemblies only and should be fitted with eight day sterilizers. No. 3 Group laid 18 mines off Texel on 30/31 December.

(b) Tactics

A.H.B./IIH/
241/3/619(C)
Encl. 13B
No. 3 Group
O.I. No. 69

There was one innovation at the end of the quarter. On the night of the 30/31 December three Stirling aircraft of No. 149 Squadron No. 3 Group made the first operational sorties on high level mining. Eleven miles were laid off the Gironde from a height of 12,000 ft., one mine hung up. Visual pinpointing and a D.R. run were used according to instructions given in Appendix A to No. 3 Group Operation Instruction No. 69 dated the 20 December 1943.

(c) Statistics October to December

Bomber Command aircraft flew 975 sorties of which 841 were successful. Seventeen aircraft were missing and five crashed. A total of 2,852 mines were laid, more than half off the North Sea Coast of Germany and Holland. Considerably less mines were laid off the Biscay ports than in the previous quarters. A summary of results is given in Table III.

Adm. TSD/EDS
KTB. Gruppe
West
PG/37569

- (1) 75, 149, 199 and 90 Squadrons.
- (2) The mining of the Gironde does not appear to have had any effect on the discharge of the Osorno cargo. The work was completed on the 10 January 1944 and in spite of the difficult conditions in the Le Verdon Roads, the unloading of the Osorno and the despatch of the cargo went on smoothly and without interruption.

Table III

No. of mines laid

	No. 1 Area W. Baltic, Belts, Sound, Kattegat	No. 2 Area Haugesund and Oslo Fjord	No. 3 Area N. Sea Coasts of Germany and the low countries	No. 4 Area N. Coast of France	No. 5 Area Off the Biscay ports	Casualties A/c missing A/c crashed	
October	279	0	588	0	209	4	1
November	34	0	376	87	479	8	1
December	35	0	550	34	181	5	3
Total	348	0	1,514	121	869	17	5

Enemy Vessels sunk by mine

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area
	No. Tons	No. Tons	No. Tons	No. Tons	No. Tons
October	4-3,271	nil	2- 300	nil	1- 91
November	7- 919	nil	nil	nil	nil
December	5- 455	nil	1- 113	nil	2-1,719
Total	16-4,645	nil	3- 413	nil	3-1,810

Enemy Vessels damaged by mine

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area
	No. Tons	No. Tons	No. Tons	No. Tons	No. Tons
October	1- 44	nil	nil	nil	nil
November	2-1,377	nil	nil	nil	1-5,567
December	nil	nil	nil	nil	nil
Total	3-1,421	nil	nil	nil	1-5,567

Twenty-two enemy vessels totalling 6,868 tons were sunk and a further four of 6,988 tons damaged. The total sunk includes nine small craft of under 100 tons. Only three ships (all cargo) of over 1,000 tons were sunk, the largest being the Eifel (Ge) - 1,429 tons sunk off Lorient. Six minor naval units were destroyed comprising one torpedo boat, one patrol boat, one minesweeper, one torpedo tender, one R-boat and a harbour defence craft. The balance consisted of a salvage tug, a ferry, a lighter and a small cargo coaster.

The whole of No. 1 Group's minelaying was done by Wellingtons of No. 300 Polish squadron who received on 2 December a signal from the Admiralty congratulating them for laying 300 mines during November and on reaching a total of 2,000 mines laid. The Stirlings of No. 3 Group bore the brunt of the minelaying during the quarter. The Halifaxes of No. 4 and 6 Groups only flew occasional sorties.(1)

The total enemy shipping sunk during this period was less than the previous quarter not only because 350 fewer mines were laid but because by now the Germans were definitely on top as regards minesweeping. This improvement had made itself felt as early as June 1943. April and May had been good months for us because a much increased total lay was mainly directed into the West Baltic and Kattegat areas. These were always the weakest spots in the enemy's organisation and at this particular time the lays were made more deadly than usual by the introduction of the new Acoustic/Magnetic Assembly No. G.708. Between June and

(1) The B.C. squadrons used on minelaying operations during this quarter were:-
 No. 1 Group - Wellingtons of No. 300.
 No. 3 Group - Lancasters of Nos. 115, 514. Stirlings of Nos. 15, 75, 90, 196, 149, 199, 214, 218, 620, 622 and 623.
 No. 4 Group - Halifaxes of Nos. 10, 51 and 102.
 No. 6 Group - Halifaxes of Nos. 429, 431, 432 and 434.

December inclusive few mines were laid in the distant easterly gardens owing to the short summer nights and later to the general scaling down of mining sorties in the last quarter. Moreover by midsummer the enemy's planned expansion of his mine protection fleet was coming to fruition and the sweeping technique improved rapidly after July. These various factors combined to reduce their losses to an average of only 1,700 tons per month. It was during this latter half of 1943 that the tonnage sunk by direct attack at sea, which for most of the war to date had lagged so far behind, started to catch up and in 1944 surpassed the mining score. However, the sorties flown and aircraft lost were always much greater for the direct attack operations than for those of the minelayers.

(vii) The development of High Level Mining September 1943 to February 1944.

A.M.B./IIK/
67/759
Report No.
EDU. 27,
Part I

On the 21 September 1943 Bomber Development Unit received a directive from Bomber Command instructing them to carry out trials on High Altitude Mining. The directive stated:-

- (i) That heights of release up to 15,000 ft. were required
- (ii) That the ballistics of the mine were to be determined
- (iii) That aiming at markers and also timed runs from visible landmarks were to be investigated.
- (iv) That the accuracy of marking targets by dropping target indicators with the aid of H.2.S. were to be investigated.

The type of mine used was the standard A Mark I to IV mine.

Trials proved that the mine had remarkably consistent ballistics and a terminal velocity of 275 feet per second. However, the Mark XIV Bombsight, which Bomber Command proposed using when not mining entirely by Radar, was not designed to deal with bombs of a lower terminal velocity than 1,000 feet per second nor did it deal with cross trail(1), a factor of considerable magnitude with a bomb or mine of low terminal velocity. The adjustment to the bombsight necessary to counteract these two factors was calculated and tested.

The average operational mining error in mining direct from 15,000 ft. was estimated at less than 1,000 yards from the Mean Point of Impact of Target Indicators, allowing for inexperienced crews and a wind error of 15 m.p.h. Including the error from H.2.S. aiming of the Target Indicators, the maximum average error from the target was likely to be about one and a half miles and would often be considerably less. The average error of mining from 15,000 feet by means of a timed run from a landmark up to six miles away, would be less than one mile. The visibility must be good enough for the landmark to be clearly defined.

Ibid
Report No. EDU.
27, Part II

The Bomber Development Unit Report No. 27, Part II, dated the 22 February 1944, gave full instructions for various methods of high altitude mining. In order of accuracy these were:-

1. A straight forward bombsight run. This method was suitable for mining a narrow channel between an island and the mainland or a narrow river estuary. Conditions necessary were a moonlit target with a wind speed of less than 45 m.p.h.

(1) The downwind travel of the mine after it had left the aircraft.

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2. A timed run from a landmark, making use of the bomb-sight. The landmark should be within eight miles of the target, and must be moonlit. There were no restrictions on windspeed.

3. A bombsight run on to Target Indicators placed by marking aircraft with the aid of H.2.S., G.H., Gee or Oboe. This method was suitable for any weather provided the Target Indicators could be seen. There were no restrictions on windspeed. A few Radar aircraft were required. If H.2.S. was used, an unmistakable point on the coastline between five and fifteen miles from the target was required.

4. Dropping purely with the aid of H.2.S., G.H., Gee, or Oboe. Any weather was suitable. All aircraft must be equipped with the Radar device used. There must be a competent Radar Operator in each aircraft.

The report concluded that, by these methods, high level mining could be carried out with equal accuracy, and under certain conditions with considerably greater accuracy than low level mining. The technique was not difficult but must be varied to suit the conditions.

(viii) Minelaying - January to March 1944

(a) Operations and Tactics January 1944

In January, 227 low level and 136 high level sorties were flown on eleven nights.(1) Successful sorties were 207 and 121 respectively. One aircraft was missing from a low level sortie to the Baltic(2) and two on high level sorties to the same area.(3) A total of 1,101 mines were laid, 465 from a high level. More than half were planted off the North Sea Coast of Holland and Germany. The remainder was divided between the Biscay ports and the Baltic. A small number of mines were laid off the North French Coast.

After the first successful operational trial of high level mining on the 30/31 December 1943 by No. 3 Group, by means of a D.R. run from a visual pinpoint, other methods were tried in January 1944. These preliminary trials were on a small scale at first. On the 4/5 January six H.2.S. Halifaxes of No. 6 Group(4) successfully laid 12 mines from 14,000 to 15,000 ft. off Brest, some by means of H.2.S. homing. On the following night five out of six H.2.S. Lancasters despatched from No. 5 Group(5) laid 25 mines from 12,000 ft. by H.2.S. and visual identification off the approaches to Swinemunde. They were detached from the main stream which bombed Stettin. On the 6/7 two groups of six H.2.S. Halifaxes from No. 6 Group(6) laid 11 and 12 mines respectively from 13,000 to 15,000 ft. off

- (1) For the purpose of statistics, sorties when the aircraft was instructed to lay its mines from above 10,000 ft. are counted as high level sorties.
- (2) No. 3 Group - E/149 (Stirling).
- (3) No. 3 Group - R/199, M/90 (Stirlings).
- (4) No. 428 Squadron.
- (5) No. 49 Squadron.
- (6) Nos. 428 and 419 Squadrons.

B.C. Group
O.R.B. Appendices and
Sqdn. O.R.B.s

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Brest and St. Nazaire, some of the aircraft identifying the target by means of H.2.S. No. 6 Group aircraft carried cameras on the nights of the 4/5 and the 6/7 January. Photographs showed that all No. 419 Squadron aircraft laid their mines within one and three quarter miles of the aiming point on the night of the 6/7 January. On the 27/28 a large scale mining operation from a high level was carried out by 58 Stirlings from No. 3 Group. Fifty two aircraft laid 269 mines in Heligoland Bight from heights between 10,500 ft. and 15,000 ft. This operation was combined with a bombing attack by Halifaxes from No. 8 Group on Heligoland, which enabled the minelaying aircraft to establish their position in thick cloud and make their run to the minelaying area. The Pathfinder Force illuminated Heligoland with Target Indicators and Skymarkers and the main force used these as a check on their position and as a mark from which to make a D.R. run. On the same night other Stirlings from No. 3 Group and Wellingtons from No. 1 Group were laying mines in the Kattegat and off the Dutch and Danish coasts. A total of 326 mines were laid during the night and no aircraft were lost. On the 28/29 January No. 3 Group carried out another high level mining operation. A total of 160 mines were laid off Kiel and off the Danish coast, mainly from a high level. Two aircraft were lost on high level mining sorties this night. The minelaying aircraft flew ahead of the main force which was detailed on Berlin on the same course. Four H.2.S. Halifax aircraft of No. 8 P.F.F. Group⁽¹⁾ marked Aero Island by Target Indicators and flares green. One Halifax also laid a mine.

No operational aircraft from No. 3 Group were fitted with H.2.S. at this time therefore they were forced to rely on marking by other H.2.S. aircraft. H.2.S. had been used occasionally by aircraft on minelaying operations as far back as September 1943.⁽²⁾ The use of H.2.S. on minelaying operations was chiefly developed in connection with high level minelaying. The sorties by No. 6 Group on the 4/5 and 6/7 January and by No. 5 Group on the 5/6 January were the first high level mining sorties using H.2.S.

After these successful operational trials of high level mining, two Operational Orders were issued incorporating the method. On the 27 January 1944 Bomber Command Operation at Order No. 170 was revised and reissued. The main object of the order was to increase the minelaying effort in the Baltic and thus dislocate enemy sea borne military traffic between Germany and Norway and Germany and the Russian Front. The order also aimed at interfering with the training of U-boat crews and assisting towards the decline in their morale. Two large scale plans were provided, one covering the Biscay and North Sea areas, the other Baltic areas, to be used when circumstances permitted one plan to be covered on a single night. As far as possible aircraft detailed were to carry H.2.S. All mine assemblies could be released from heights up to 15,000 ft. at the discretion of the A.O.C's Groups. These plans were not implemented during the period under consideration.

A.H.B./IIH/
241/3/563
B.C.O.O.
No. 170
27.1.44

B.C. O.R.S.
Final Night
Raid Reports
(17500)445

- (1) No. 35 Squadron.
- (2) H.2.S. was first used for minelaying on the 27/28 September 1943 by one Stirling of No. 3 Group.

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Ibid
B.C.O.O.
No. 184
27.1.44

On the same day, Bomber Command Operational Order No. 184 was issued to provide for the high altitude mining of enemy inner harbours. The order claimed that enemy minesweeping technique was probably unsuited to dealing with mines in restricted waters. The operation would be known as operation "Young" and would take place in areas specified in the order when aircraft were available and tactical and weather conditions were suitable. It was stated that H.2.S. aircraft should be used as far as possible. Mines could be released from heights up to 15,000 ft. at the discretion of the A.O.C's Groups. Pinpointing and procedure for estimating times of release was to be according to the latest technique evolved by Bomber Development Unit for high altitude minelaying. Operation Young was executed on several occasions during February.

Ibid
Encl. 26A

On the 3 February as a result of a conference on high level minelaying held at Bomber Command Headquarters, Groups were requested to draw up their own instructions for this method of minelaying, covering the various types of operational conditions that would be encountered, and to submit them to Bomber Command Headquarters. A consolidated instruction would then be issued.

(b) Operations and Tactics February 1944

B.C. Group
O.R.B. Appen-
dices and
Sqdn. O.R.B.s.

In February 475 high level and 198 low level sorties were flown of which 405 and 160 respectively were successful. Six aircraft were missing from high level sorties in the Baltic⁽¹⁾ and three from low level sorties, one in the Bay and two on sorties in the Frisians.⁽²⁾ Two aircraft crashed.⁽³⁾ A total of 1,661 mines were laid, 1,043 from a high level. Nearly half the total number of mines were laid in the Baltic, including 644 in Kiel Bay. The remainder was divided between the Biscay ports, the North Sea Coasts of Germany and Holland, and the North French Coast. A small number of mines were laid in Oslo Fjord for the first time during this period.

B.C. O.R.B.
March. Naval
Staff

The technique of high level mining was fully developed in February, and the majority of the sorties were flown at high level. These were mainly carried out by H.2.S. Halifaxes of Nos. 4 and 6 Groups using individual H.2.S. homing methods. On the 2/3 February fifty H.2.S. Halifaxes were detailed to lay mines by H.2.S. in Kiel Fjord. Seventy six mines were laid in the required area and two in the Cadet Channel. This was the first occasion when H.2.S. was used for a medium size operation, as distinct from operations of only a few H.2.S. fitted aircraft. On the night of the 5/6 February ten H.2.S. Halifaxes of No. 6 Group⁽⁴⁾ were successful in laying 20 mines from 15,000 ft. in Oslo Harbour. Mines were

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- (1) No. 3 Group - Q/75, E/149, R/149 (Stirlings)
No. 4 Group - D/102 (Halifax)
No. 6 Group - G/419, X/431 (Halifaxes).
 - (2) No. 1 Group - F/300 (Wellington)
No. 3 Group - J/218 (Stirling)
No. 6 Group - R/419 (Halifax).
 - (3) No. 3 Group - H/90 (Stirling)
No. 4 Group - LV817/78 (Halifax).
 - (4) Nos. 419 and 428 Squadrons. This night's minelaying was in accordance with Operation Young.

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B.C. O.R.B.
February 1944
Photographic
Section

B.C. O.R.B.
February 5/6

laid by visual and H.2.S. homing and aircraft carried cameras to obtain photographs off the coast in order to check their position. It was decided that this photography would be undertaken as a general rule by all Groups in future, subject to the discretion of the Group Commanders. On the same night Halifaxes of No. 4 Group laid 10 mines from a low level off Frederikstadt. This night's minelaying was intended to disorganise the two main Norwegian ports used by the Troop Ferry Service between Norway and Germany. On the 11/12th the modified bomb carrier⁽¹⁾ was used for the first time by Halifaxes of No. 4 Group. Each aircraft laid four 1,500 lb. mines from 12,000 ft. off La Pallice. On the 15/16th and 19/20th February Stirlings from No. 3 Group accompanied by marker aircraft from P.F.F.⁽²⁾ laid a total of 299 mines in Kiel Bay. The marker aircraft also laid mines.

There were two large scale high level operations in the Baltic at the end of the month. On the night of the 24/25 February Stirlings of No. 3 Group accompanied by six Halifax markers from No. 6 Group⁽³⁾ laid 133 mines off Kiel. Four aircraft from No. 6 Group were used as spoof to draw off enemy fighters. Halifaxes from No. 6 Group also laid 18 mines in Kiel harbour, and Halifaxes from No. 4 Group mined in the Kattegat and the Sound. Skymarkers were dropped by aircraft of No. 102 Squadron to assist non H.2.S. aircraft mining in Silverthorn areas. On this night the inner approach to Aarhus was mined for the first time to dislocate the Ferry Service transporting German troops to Norway. Flensburg Fjord was also mined to discourage the use of that area by U-boats exercising. On the following night Stirlings from No. 3 Group accompanied by nine Halifaxes from No. 6 Group⁽⁴⁾ as markers, laid 84 mines in the Sound, whilst other aircraft from Nos. 4 and 6 Groups laid 136 mines off Kiel.

Mines were laid for the first time off St. Malo and Morlaix on the 3/4 February. Routine mining off Le Havre and Cherbourg was continued. These were mainly low level operations. The technique of high level mining was frequently used during the month to mine the inner approaches to the Biscay ports in accordance with Operation Young. On the 15/16 February six Stirlings from No. 3 Group⁽⁵⁾ laid 18 mines in the canalised river leading to Bayonne. On this occasion a slightly lower height of release at 3,000 ft. was ordered.

No. 4 Group
Summary
February 1944

No. 4 Group reported that the modified No. 3 bomb carrier, used for the first time in February was awkward to load but that bombing up had been shortened by a modification to the E type Bomb Trolley. The type A 2,000 lb. carrier was also being modified so that four mines could be carried without using the No. 3 carrier.

No. 6 Group
Summary
February 1944

No. 6 Group reported that their stocks of mines were very low and that the Lancaster and Halifax III Squadrons

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- (1) See Section (vi) (a).
 - (2) No. 35 Squadron.
 - (3) No. 419 Squadron.
 - (4) No. 428 Squadron.
 - (5) No. 75 Squadron.

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had been denuded of their stocks. In their survey of the month's mining operations the Group stated that the number of abortive sorties was partly due to the failure of the navigational aid (H.2.S.) on which many operations were now planned. Navigational errors had also caused non-H.2.S. aircraft to arrive late in the target area when flare dropping had actually finished.

A.H.B./IIH/
2/3/516(F)
Encl. 9A

On the 28 February the Senior Air Staff Officer at Bomber Command Headquarters wrote to the A.O.C. No. 4 Group stating that the Naval Attache Stockholm had reported that eight mines were dropped in Sweden on the night 24/25 February. Some of the mines were 30 miles east of the target, the rest 14 miles southeast of the target. In view of the satisfactory report of the operation given by No. 4 Group, he requested an investigation as to whether a few aircraft had not sighted the marker flares and had dropped their mines inaccurately, or whether the flares had been inaccurately placed by many miles, and the whole effort directed onto Sweden. On 15 March No. 4 Group sent a detailed report of the operation to Bomber Command Headquarters. The A.O.C. No. 4 Group pointed out that high level mining was a recent development and had not yet achieved a precision comparable with mining by visual methods; in consequence it was less suitable for mine-laying operations in restricted waters where absolute precision was essential. He understood that the Naval Staff were willing to accept the risk of mines being laid on land provided that certain types of mine only were used. On the night of the operation the forecast weather was 10/10 cloud. The area to be mined had been altered at the last moment from Kiel Bay to part of the Sound. Since only a proportion of the aircraft available were fitted with H.2.S. it was decided that non-H.2.S. aircraft should release their mines over marker flares dropped by special marker H.2.S. aircraft. Only a limited number of P.F.F. marker flares were available and had been collected by air that morning from P.F.F. The plan of operations included the dropping of track markers off the Danish coast to assist aircraft to maintain the correct heading, and flares at the release point covering a period of ten minutes. This should have given a margin for navigational error to ensure aircraft arriving at the prescribed time and point. The causes of inaccuracy were first the insufficient use of marker flares, which were not entirely reliable, and the insufficient duration of the flares to allow for late arrivals. Moreover conditions were aggravated by a cloud base of 8,000 feet. Finally, the immediate blame must rest on a few aircraft who arrived late and released their mines, contrary to instructions, without correct sighting of the marker flares. The A.O.C. made proposals to eliminate these factors. He stated that adequate stocks of flares were now available. On the 19 March Bomber Command concurred in the findings and conclusions of the report and stated that the incident could be regarded as closed.

Ibid
Encl. 14A

Ibid
Encl. 7A
No. 4 Group O.I.
No. 45
para. 2(b)
26.2.44

Ibid.
Encl. 16A

Ibid.
Encl. 10A

On the 22 February the Naval Staff Officer at Bomber Command Headquarters noted that aircraft chiefly employed on minelaying at the moment were 81 Stirlings from No. 3 Group, none of which were fitted with H.2.S., and 106 Halifax IIs and Vs from Nos. 4 and 6 Groups of which 55 were fitted with H.2.S. The methods used on high level mining were:-

(a) Individual aircraft using H.2.S.

(17500)448

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(b) A force of aircraft mining in the vicinity of markers placed by a small Pathfinder Force.

(c) Visual mining on clear and dangerous nights.

Thus all the Stirlings and about half of the Halifaxes were limited to mining on clear nights only unless assisted by P.F.F. But P.F.F. commitments were such that no promise of even meagre assistance for mining could be given when the main force was bombing a major target.⁽¹⁾ He therefore suggested that Maintenance Units and Stations of Nos. 4 and 6 Groups should be provisioned with sky markers, ground markers and marine markers in sufficient quantities to enable H.2.S. aircraft of these Groups to act whenever required as Pathfinders to the remaining mining force. This would enable full scale minelaying to take place freely in weather conditions unsuitable for enemy fighter activity but very suitable for penetration to dangerous areas by our aircraft. It would also allow minelaying forces to dispense with assistance from No. 8 Group. He suggested that sky, ground, route and marine markers sufficient for 100 sorties should be accumulated at Maintenance Units and Stations. H.2.S. Lancasters of Nos. 1 and 5 Groups would cover distant areas. On the 9 March Bomber Command informed Nos. 4 and 6 Groups that their best crews, using H.2.S. aircraft, would be used as markers and that supplies were being arranged. Technical instructions would be forwarded. On the 13 March Bomber Command wrote to the Ministry of Aircraft Production giving details of the quantities of pyrotechnics required by Nos. 4 and 6 Groups and requesting that Groups be advised as to their use. Operational trials of this use of Halifaxes from Nos. 4 and 6 Groups as Pathfinders had already been made on the nights of the 24/25 and 25/26 February.

Ibid
Encl. 12A

Ibid
Encl. 13A

(c) Operations and tactics March

In March 337 high level and 181 low level sorties were flown, of which 310 and 157 respectively were successful. Two aircraft were missing on low level sorties to the Bay⁽²⁾ and one ditched after a high level sortie to the Baltic.⁽³⁾ One aircraft crashed.⁽⁴⁾ A total of 1,472 mines were laid, 838 from a high level. The majority of the mines were laid off the North Seas coasts of Holland and Germany, and in the Bay of Biscay. Minelaying in the Baltic was on a moderately large scale but less than half the previous month's effort. The mining of the North coast of France was continued as part of the routine minelaying preceding the commencement of special mining operations for Overlord.

There were two large scale high level mining operations. On the night of the 18/19 March Halifaxes of No. 6 Group and Stirlings of No. 3 Group laid 265 mines

-
- (1) P.F.F. aircraft marked for minelaying on only four occasions during the first quarter of 1944. These were on the 27/28 and 28/29 January and the 15/16 and 19/20 February. No. 35 Squadron marked on each occasion.
 - (2) No. 3 Group - S/199, H/75 (Stirlings).
 - (3) No. 6 Group - W/419 (Halifax).
 - (4) No. 6 Group - R/434 (Halifax).

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from high level in Heligoland Bight. Halifaxes from No. 4 Group laid 66 mines in the same area from a slightly lower level. Fifteen H.2.S. Halifaxes from No. 6 Group⁽¹⁾ marked for other aircraft. The markers dropped flares green steady, and other aircraft were instructed to aim at the centre of the flares, set bomb sights, True Air Speed and Height, and zero wind, and make a D.R. run to the release point. On the 22/23 March Halifaxes and Stirlings laid 254 mines in Kiel Bay, 65 in Fehmarn Belt and two off the Danish coast. Fifteen Halifax markers from No. 6 Group were instructed to drop flares and then make a Timed Run to release their mines. Some aircraft were instructed to garden on the markers, others on an H.2.S. bearing. Wanganui skymarking technique was used on this nights operations.

On the 23/24 March ten mines were laid east of Ushant for the first time as part of the preparations for Overlord. On the 19/20 March mines fitted with a new type of sterilizer, known as the resistance unit, were laid off Texel. The resistance unit was fitted to the electric battery which set off the mine and gradually ran down the current until, after a set period of time, the mine would no longer function. Resistance units P, Q, R, S and U, covering various periods of time, were frequently fitted to mines laid in Overlord target areas during the next few months.

(d) Statistics January to March 1944

Bomber Command flew 606 low level and 948 high level sorties, of which 524 and 836 respectively were successful. Six aircraft were missing from low level sorties and nine from high level. A greater effort was expended on high level operations, and aircraft were sent to the most dangerous area. All the high level casualties were on sorties to the Baltic. Three aircraft crashed. A total of 4,234 mines were laid, 2,344 on high level sorties. A summary of results is given in Table IV.

Table IV

No. of mines laid

	No. 1 Area W. Baltic, Belts, Sound, Kattegat	No. 2 Area Haugesund and Oslo fjord	No. 3 Area N. sea Coasts of Germany and the Low countries	No. 4 Area North Coast of France	No. 5 Area Off the Biscay Ports	Casualties	
						A/C Missing	A/C crashed
January	176	0	599	30	296	3	
February	826	30	280	137	388	9	2
March	319	0	548	165	440	3	1
Total	1,321	30	1,427	332	1,124	15	3

Enemy vessels sunk by mine

	No. 1 Area		No. 2 Area		No. 3 Area		No. 4 Area		No. 5 Area	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
January	6-	7,987	nil		1-	5,094	1-	245	2-	1,246
February	9-	551	1-	257	2-	418	nil		nil	
March	10-	8,182	nil		7-	10,474	1-	300	1-	540
Total		25-16,720	1-	257	10-	15,986	2-	545	3-	1,786

(1) 419, 428 Squadrons.

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Enemy vessels damaged by mine

	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area
	No. Tons	No. Tons	No. Tons	No. Tons	No. Tons
January	nil	nil	1-1,668	nil	nil
February	3-3,520	nil	1-4,162	nil	1- 441
March	4-4,929	nil	nil	nil	nil
Total	7-8,449	nil	2-5,830	nil	1- 441

A total of 41 enemy vessels of 35,294 tons were sunk and a further 10 of 14,720 tons were damaged. Nearly equal amounts in tonnage were sunk off the North Sea Coast and in the Baltic, although the Baltic figures include more small vessels. Eighteen small craft of under 100 tons were sunk. The largest victim was Vigo-Sperrbrecher 10 (7,358 tons) sunk in the Nectarines Garden on 7 March. Twelve other minor naval war vessels were sunk. These included three Sperrbrechers(1), two V.P. boats, two M-boats, four harbour defence boats and one R-boat. Seven merchant vessels of over 1,000 tons were sunk.(2) The balance consists of small merchant vessels and two buoylayers.

With the development of the high level mining technique a much greater effort was expended on minelaying. In the number of sorties flown, mines laid and, more particularly, in the amount of enemy shipping sunk by mine, this quarter shows a marked improvement when compared with the last six months of 1943.

Stirlings from No. 3 Group carried out most of the mining during this quarter, laying 2,654 out of a total of 4,299 mines laid. The remaining Wellingtons of No. 300 Squadron No. 1 Group continued their minelaying operations until March when the whole squadron was converting to Lancasters. Halifaxes from Nos. 4 and 6 Groups were particularly active on high level operations using their H.2.S. fitted aircraft individually or as markers. A few sorties were flown by Lancasters of No. 5 Group and Halifaxes of No. 8 (P.F.F.) Group.(3) During this quarter Nos. 3, 4 and 6 Groups were using Window, when instructed, on minelaying operations.

(e) Mining against U-boats January to May 1944

Continual minelaying off the Biscay U-boat bases achieved no more success than in 1943. A total of 2,121 mines were laid off the U-boat bases at Bordeaux,

- (1) Botilla Russ-Sperr. 137 (996 tons),
Friesland-Sperr. 163 (1,029 tons)
Lies-Sperr. 141 (465 tons).
- (2) Johann Schulte (5,094 tons), Hanau (5,892 tons),
Ruhrort (1,080 tons), Desdemona (1,304 tons),
Strauss (1,756 tons), Wierpi (1,227 tons),
Erfurt (4,201 tons).
- (3) Squadrons were:-

No. 1 Group - 300 (Wellingtons)
No. 3 Group - 90, 149, 199, 75, 214, 218 (Stirlings)
No. 4 Group - 466, 78, 10, 102, 77, (Halifaxes)
No. 5 Group - 49 (Lancasters)
No. 6 Group - 433, 428, 419, 434, 431, 429, 424
(Halifaxes)
No. 8 Group - 35 (Halifaxes).

La Pallice, St. Nazaire, Lorient and Brest, the heaviest lay of 535 mines being in the Gironde. In accordance with Bomber Command Operational Order No. 184 of the 27 January⁽¹⁾ the inner approaches to the U-boat bases were also mined on a number of occasions from a high level. Approximately 850 mines were laid from a high level off these ports during these five months.

B. d U.
War Diary

Only one U-boat was sunk by mine in the Biscay. This was U.263 sunk off La Pallice on the 20 January. U.263 sailed from Pallice on the 19 January. She reported on the 20 January that an external fuel tank on the port side had caved in during a deep dive, and that she was unable to submerge. The reason was not known. Two fast motor minesweepers and two patrol boats were sent to meet her and four Ju. 88s were to give aerial protection. However, the search proved unsuccessful and the boat was considered lost. B. d U. (Doenitz) said there was no evidence of enemy activity and that the cause of loss was probably the breakdown of submerging apparatus. It is now known that U.263 was sunk by air-laid mine in position 46° 10' N. 01° 14' W.

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Committee

B. d U.
War Diary

On the 2 February B. d U. stated that U.364 must be assumed lost. He considered it was possible that she had run onto a mine. Actually U.364 was sunk on the 30 January by a Leigh Light Wellington K/172 on a night patrol in the Bay of Biscay.

ibid

On the 25 May U.618 was damaged by a ground mine after a deep diving trial off St. Nazaire. The boat managed to put into port.

A.H.B./II H/
241/3/563
Encl. 32A

On the 20 February A.C.A.S. (operations) wrote to the D/C-in-C. Bomber Command regarding a plan for increased minelaying in the Baltic to dislocate U-boat training and prevent their breaking out from the Baltic, which he had received from A.C.N.S. (H) (Rear Admiral Brind), the Admiralty. The effort required was the laying of approximately 1,400 mines per month in Baltic areas. A.C.A.S. stated that there would be no question of diverting aircraft from the bomber offensive against Germany to meet this mining plan, but suggested that Halifax IIs and Vs and Stirlings might be used in non-moon periods. He understood that the requirement was in addition to the normal Frisian and Biscay mining. For the period immediately before Overlord, the Admiralty considered, however, that mining in the Baltic should have priority over other mining operations. On the 28 February the D/C-in-C. Bomber Command replied that the C-in-C. was not in favour of the plan. Recent German tactics had greatly increased the value of feint or diversionary attacks to get their fighters into the air and draw them into the wrong place and for that they relied on their Stirlings and Halifax IIs and Vs. There were enormously increased demands for S.O.E. work⁽²⁾ and although most of this took place during the moon period, it reduced the number of operational sorties which aircraft could do in the dark period. There were as yet

ibid
Minute 29.
ibid
Encl. 32A

ibid
Encl. 33A

(1) See Section (viii) (b).
(2) Special Operations Executive.

ibid.
29.2.44

Fuehrer Con-
ference on
Naval Affairs
26.2.44

A.H.B./II
H/241/3/563
B.C.O.O.
No. 185.
29.3.44

undefined but very large commitments in support of Overlord which, the C-in-C. considered, threatened to ruin or stop the bomber offensive against Germany. On the 29 February A.C.A.S. replied to Admiral Brind that the Prime Minister had ruled that S.O.E. operations to help the Maquis had priority over mining by Stirlings of Bomber Command which mitigated against a full out mining effort. He stated that, as a result of the new technique, (1) Bomber Command had stepped up their effort and some 1,600 mines had been laid in February, including several hundred in the Baltic. (2) However a plan had been sent to Bomber Command although there was no guarantee that it could be completed in full before Overlord. (3) Bomber Command with the United States Second Tactical Air Force were under a Combined Chiefs of Staff directive for the Combined Bomber Offensive recently issued, which directed their joint efforts on to the neutralisation of the German Air Force and made this their primary object. Any diversion from this directive to complete the Admiralty's Baltic mining plan would not be possible without the sanction of the Combined Chiefs of Staff. However, in actual fact this mining from the air of the Western Baltic was causing serious concern to Doenitz. At a meeting with Hitler at the end of February, he brought up the subject and said that all the U-boats training in the Baltic (at that time numbering 190 new and 90 school boats) would be useless if the exits into the Kattegat could not be kept open, not to speak of the danger now present to the considerable ship traffic amounting to $1\frac{3}{4}$ million freight tons per month which had to move through the western part of the Baltic. There would be, he continued, a critical period until the April 1943 Programme of increased construction of minesweepers started to bear fruit; moreover this in turn would aggravate the already acute shortage of naval personnel.

On the 29 March a new Bomber Command Operational Order No. 185 was issued. This embodied part of the Admiralty request in that it provided for the mining of the Gulf of Danzig. The order stated that approximately 150 U-boats were stationed in the area and were working up prior to breaking out for offensive action in the Atlantic or Indian Ocean or against the future Allied Amphibious expedition. (4) In addition the ports of Gdynia, Danzig and Pillau were used for the embarkation and disembarkation of material from Scandinavia and the Russian front. The plan, known as Operation "Butcher", required 100 H.2.S. Lancaster aircraft from Nos. 1 and 5 Groups. Operation "Butcher" was carried out on 9/10 April (5) but with no success in so far as the destruction of U-boats was concerned. Only two U-boats were sunk by R.A.F. laid mines in the Baltic during these five months, U.854 on the 4 February and U.803 on the 27 April. Both were sunk off Swinemunde.

-
- (1) High level mining.
 - (2) In February 826 mines were laid in the Baltic out of a total of 1,661 mines.
 - (3) In April however, Bomber Command laid 1,357 mines in the Baltic out of a total of 2,643.
 - (4) Overlord.
 - (5) See Section (x) (a).

(f) The development and delays in production of the A Mark VIII mine

A.H.B./II/
70/107
Minutes of
Meeting of
4.1.44. dated
7.1.44

At an unofficial meeting in the Directorate of Bombing Operations on the 4 January, it was agreed that the A Mark VIII mine, designed for the mining of inland waterways, was of exceptional value for Overlord and the mining of the Danube. It was further agreed that the mine was unlikely to be ready for Overlord unless energetic action was taken to increase and speed up production. The Directorate of Armaments Research stated that they had received information that only empty mines would be available in May and that possibly two or three more months would be necessary for the filling. The Deputy Director of Operations (Tactical) reported that the A.E.A.F. considered the mine tactically suitable but that they were not in a position to press for its development since they were already heavily committed for the use of their Mosquito aircraft for other purposes. If the mine was ready, its use would be extremely desirable. The meeting authorised the Directorate of Bomber operations to co-ordinate the requirements for the mine for all theatres of war.

ibid
18.1.44

On the 18 January the Director of Bomber Operations informed A.C.A.S. (Operations) of these requirements. It was difficult to get a firm figure from the A.E.A.F., but they had stated that the attack of communications was bound to be a very important factor in Overlord operations, especially during the later phases when our forces were established on the Continent. He felt that Overlord should have priority over overseas requirements since existing mines could be used for mining the Danube. He suggested a total order of approximately 10,000 mines. On the 20 January A.C.A.S. (Operations) informed the Directorate of Equipment that there was an urgent requirement for 2,000 mines before the 30 June. The highest priority would be necessary to get the maximum number possible well before that date and extraordinary measures would have to be taken.

ibid
20.1.44

Meanwhile the Director of the Mine Design Department had written to the Directorate of Bomber Operations on the 18 January, stating that progress was still slow. The Chief Inspector of Naval Ordnance had said that the drawings were not suitable. Trials of the production model might be delayed because the Torpedo Development Unit were trying out circuits for the Mark VI mine and some new Mark IV circuits now came first in the queue. He thought that real drive might help in tooling up. If no special measures were taken, 200 mines might be produced by the end of April but he was rather sceptical.

ibid
18.1.44

ibid
4.3.44

On the 4 March the Directorate of Armaments Research informed the Directorate of Bomber Operations of the latest position. The mine was expected to be available at the end of May and then production would soon be at the rate of 400 mines per month. It was stated that the mine had been cleared for internal stowage on Mosquito aircraft. Four mines could be carried in aircraft modified to take the 4,000 lb. bomb otherwise only two. A further two mines could possibly be carried on the wings instead of long range tanks. Dropping trials could be arranged if necessary. On the 8 March, the Directorate of Armaments Research was requested to arrange

ibid
8.3.44

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ibid
D. Ops (Tac)
to Arm. R.1 (b)
8.3.44

ibid
9.4.44

ibid
6.6.44

for this external carriage. The Director of Tactical Operations also stated that the A.E.A.F. were keen to have trial installations of two mines externally since none of the Mosquito aircraft in No. 2 Group was modified to carry the 4,000 lb. bomb. On the 9 April, however, the Directorate of Armaments Research reported that the Mark VIII mine could not be carried safely on the wing stations owing to its poor aerodynamic shape. The Royal Aircraft Establishment were designing a break-off nose fairing which might permit carriage but this development might take considerable time. The carriage figures stood at two for the Mosquito VI and four for the modified Mosquito aircraft. On the 6 June the Director of Armament Research reaffirmed the requirement for external carriage of the mine in spite of the modifications necessary. Existing and future Mosquito bomber aircraft fitted with the 4,000 lb. bomb doors were required to carry four mines internally and two externally. He understood that other Mosquito bombers would only carry two internally and two externally. Existing and future Mosquito fighter bombers, (all Mosquito aircraft in No. 2 Group) were required to carry two mines externally. It was now understood that internal carriage was not possible in this mark of Mosquito because the distance between the lug and the nose of the mine was greater than the distance between the release slip and the 20 mm. gun installation in the aircraft.

Thus at the end of the period under consideration the Mark VIII mine was still not in production and further difficulties regarding its carriage had appeared. On the two occasions when inland waterways were mined - the mining of the Konigsberg Seekanal on the 9/10 April⁽¹⁾ and the Kiel Canal on the 12/13 May⁽²⁾ - standard mines were used. On the latter occasion Mark III and VII mines⁽³⁾ were modified for stowage in Mosquito aircraft.

A.H.B./II
A1/21
Signal AX 433
24.11.44

(g) The development of the Mark VI mine

In contrast with the history of the Mark VIII mine, the Mark VI mine was produced and used successfully in operations for Overlord.

A.H.B./II
70/107 -
28.12.43

ibid
30.12.43

ibid
1.2.44

On the 28 December 1943 the Admiralty informed the Air Ministry of a new type of firing mechanism, known as K Assemblies, to be used in the A Mark VI mines. The assemblies needed a larger parachute than the standard A Mark I - IV mines. These parachutes were needed at high priority for the general minelaying offensive for Overlord, and the Admiralty therefore requested the Air Council to consider the allocation of A priority. The Directorate of Bomber Operations was informed of the above letter on the 30 December. The Admiralty stated that the probable number of parachutes required for the A Mark VI mine was 3,000. One thousand were required by mid-March 1944, a further 1,000 by mid-April and the final 1,000 by mid-May. On the 1 February 1944 the Director of Bomber Operations

A.H.B./II
K/67/819
22.9.43

(17500)455

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- (1) See section (x) (a).
(2) See section (x) (c).
(3) The Mark VII mine resembled the Mark V mine of 1,000 lb. weight but had larger pockets to accommodate components.

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requested the Directorate of Equipment to formulate an official requirement for 3,000 parachutes. He understood that development was now very advanced. The parachutes were required by the 1 April if possible. The K Assemblies were first used on operations on the night of the 21/22 May.⁽¹⁾ The Mark VI mine with other assemblies was first dropped on the 17/18 April.⁽²⁾

A.H.B./II
H/241/3/516 (F)
Encl. 15A
15.3.44

ibid
Encl. 18A

ibid
Encl. 15A

ibid
Encl. 20A

ibid
Encl. 21A

ibid
Encl. 23C

ibid
Encl. 23A

ibid
Encl. 25A

A.H.B./IIK/
67/759
8.4.44

BDU/S. 151/ARM.
Report No. BDU.
46, Part I

A.H.B./IIK/
67/759

BDU/S. 151/ARM
Appendix B. to
Report No. BDU
46, Part I

A successful trial had been made by No. 4 Group to ascertain if four of the new Mark VI type mines could be installed in a Halifax aircraft fitted with the modified carrier. On the 20 March No. 4 Group were requested to carry out flying trials with a full load of four Mark VI mines slung on the modified carrier. If the trials were satisfactory Halifaxes would be able to carry four of the special mines for Overlord. On the 23 March No. 4 Group replied that the four Mark VI mines at present held at R.A.F. station Pocklington were not suitable for flying trials since they had not the filling to give the requisite weight of 1,850 lb. On the 26 March Bomber Command replied that No. 80 Maintenance Unit now held Mark VI mines for use on flying trials. Particular warning was given against dropping the mines in the sea. If it should be necessary to jettison, the mines should be dropped on the nearest bombing range or in open country so that they could be retrieved. On the 12 April the trials were successfully carried out by a Halifax Mark II aircraft of 102 Squadron, at Pocklington. It was not considered necessary to repeat the trials with a Halifax Mark III, since the latter type of aircraft had a greater load carrying capacity. On the 18 April No. 4 Group stated that carriage was practicable. The limits were that the all-up load of the Halifax II carrying four Mark VI mines limited the fuel load to four and a half tanks giving a safe operational range of about 1,050 miles. Mark III Halifaxes could operate with full tank capacity (six tanks), giving a safe range of 1,270 miles. On the 1 May No. 6 Group were informed by Bomber Command of the results of these trials. On the 10/11 May two Halifax Mark II aircraft of 102 Squadron No. 4 Group each dropped four Mark VI mines off le Havre.

Bomber Development Unit received a directive to carry out high level aiming trials of the Mark VI mine on the 8 April. There was some delay before the trials were carried out as the first supply of mines arrived with unmodified parachutes. Trials of the mine with the modified parachute were started on the 7 May and completed on the 13 May. Results showed that the ballistics of the mine were remarkably consistent. The terminal velocity of the mine was 200 feet per second. The methods for aiming the Mark IV mine from a high level, as detailed in Appendices C to E of Report No. BDU27 Part II, could be used for aiming the Mark VI mine, when adjustments were made to the formulae. These adjustments were now calculated. The straightforward bombing attack method, as detailed in Appendix B of Report No. BDU27 Part II, was not recommended for the Mark VI mine, since no false wind setting obtained from a true wind of more than 33 miles per hour could be set on the Mark XIV Bombsight. In addition, the angle between the real track and that

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- (1) See end of Section (x) (a)
(2) See Section (x) (c)

indicated by the bombsight was likely to be so great as to make the bomb-aimers work difficult. Mark VI mines were dropped successfully from a high level on operations during the second half of May.

(ix) Minelaying in support of Overlord

(a) Preliminary discussions

Plans for the general minelaying offensive in support of Overlord were being considered at the beginning of 1944. On the 15 February a meeting was held at Norfolk House at which representatives of the A.N.C.X.F., the Admiralty and Bomber Command were present, to discuss a preliminary mining plan. As a result of these and subsequent discussions the final minelaying plan, known as Maple, was produced at the end of March. Owing to the opposition of Bomber Command a proposal to detail two particular squadrons of heavy bomber aircraft for Overlord mining was withdrawn. Bomber Command pointed out that such earmarking of squadrons was uneconomical and impracticable, and would in any case be of no assistance in the execution of what was required. Secondly, Bomber Command were opposed to general control of Overlord minelaying being exercised by the A.N.C.X.F. and insisted that this control should be exercised through the usual Admiralty channels. These amendments were agreed to and incorporated by the 7 April 1944. The Admiralty, on their side, requested the Air Ministry on the 10 March, to reduce to the minimum the use of Operational Training and Heavy Conversion aircraft for Overlord minelaying, since accuracy was vital to obtain the maximum possible results.⁽¹⁾

A.H.B./IIH/241/3/
624(A)
Encl. 6B

A.H.B./IIH/241/3/
624(B)
Encl. 7A

A.H.B./IIH/241/3/
624(A)
Encl. 9A
and Minute 12

ibid
Encl. 5B

(b) Details of the Overlord Minelaying Plan (Short title Maple)

Object

The object of Maple was to assist:-

(a) In the immediate protection of the bombardment and assault forces against attack by E and R boats, and in particular by those operating from Le Havre and Cherbourg.

(b) In the general protection of forces operating in the Channel area.

Special Requirements

Special requirements were:-

(a) Entry into Cherbourg must be clear of live British mines by D+3 and into le Havre by D+14.

(b) The risk of new types of mine being compromised prior to the assault must be avoided as far as possible.

A.H.B./IIH/241/3/
624(A)
Minute 8

- (1) The N.S.O. Bomber Command considered this request redundant. He noted that the Command had always appreciated the need for accuracy in laying mines.

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(c) The laying plan must not give an indication of the intended date or area of the assault.

(d) Minelaying must generally conform to the requirements for Rankin (Case C) but where these requirements conflicted, those of operation Neptune must take precedence. Any resultant lowering of the efficacy of the minefields must be accepted.

Flexibility

In order to take advantage of any intelligence of enemy movements, or of the laying of defensive minefields by him, flexibility in the disposition of minelaying forces would be essential, particularly in the last phases of the operation.

Forces taking part

These included surface forces and heavy bombers from Bomber Command.

Mines

Special types of mine would be used, having the following general characteristics:-

Ground Mines(1)

- (a) Effective against E and R boats in depths up to 15 fathoms.
- (b) Difficult to sweep by methods at present in use by the enemy.

Moored Mines(2)

- (c) Effective against surface craft at all states of the tide.
- (d) "Delayed Release" from sinkers.

The effective lives of both types of mines would be capable of restriction. A proportion of normal types would continue to be used in certain areas in order to cloak the use of special types.

General intention

It was the general intention to divide the mine-laying operations into six phases during which the laying

(1) Laid primarily by aircraft.
(2) Laid by surface forces.

of special mines⁽¹⁾ would be gradually introduced and concentration on Neptune targets effected unobtrusively. Further, as soon as possible after D - 10 special type mines would be laid by aircraft on the maximum practicable scale in the standard areas in the Baltic, Kattegat, Heligoland Bight, Frisian Islands and Biscay ports.

This operation⁽²⁾ was designed to make the maximum use of these special mines before the enemy had time to put the appropriate minesweeping technique into full use.

Aircraft were to take part in the first four phases. Aerial minelaying would be as follows:-

Phase I to Y - 43

Routine laying off the Dutch Coast,⁽³⁾ Le Havre⁽⁴⁾, Cherbourg⁽⁵⁾, St. Malo⁽⁶⁾, Morlaix⁽⁷⁾ and Chenal du Four⁽⁸⁾.

Phase II (Y - 43 to Y - 22)

Routine laying where applicable as in Phase I. Laying of Mark VI mines, Assemblies D 410 and G 706 off the Frisian Islands (North).⁽⁹⁾

Annexe 4 to
Maple Plan

(1) The following types of Ground Mines for aerial minelaying might be included in the plan:-

A. Mark VI

Assemblies:-

Special Firing
Units

Acoustic/
Magnetic
Firing Unit

- K. 1002 - General purpose, primarily for use outside the Channel area (Sterilizer)
- K. 1008 - General purpose, primarily for use inside the Channel area (Sterilizer)
- K. 1010 - Primarily for use against E boats at speeds above 15 knots and R boats at speeds above 10 knots in depths up to 15 fathoms (Sterilizer)
- D. 410 - Designed to be effective against fast targets (Sterilizer)
- D. 412 - Designed to be effective against ships proceeding in company, and to be complementary to the K assemblies (Sterilizer)
- G. 706 - General purpose standard (Sterilizer)

A. Mark IV

Assemblies:-

- B. 230 - Magnetic Assembly with Arming Clock (Sterilizer)
- D. 412 - Acoustic Assembly (Sterilizer)
- D. 414 - Acoustic Assembly (Clock)
- M.X.C. 16 - Special Anti-E boat assembly (Clock)
- (2) Code word Dahlia.
- (3) Code name Trefoil. For details of areas see Appendix XIX and Map No. 55.
- (4) Code name Scallops.
- (5) Code name Greengages.
- (6) Code name Hyacinth.
- (7) Code name Upas Tree.
- (8) Code name Sultana.
- (9) Code name Nectarines Plus.

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Phase III (Y - 22 to Y - 1)

(a) (i) As in Phase II plus laying of A Mark VI mines, assemblies D 410 and G 706, and A Mark IV assembly D 414 off Le Havre and Cherbourg.

(ii) Take over laying off Ijmuiden, (1) Hook (2) and W. Scheldt (3) areas when nights became too short for operation of Coastal Forces.

(b) On or as soon as possible after Y - 8 laying of A Mark VI assemblies K. 1002, G. 706, D. 410 on the maximum possible scale in standard areas outside the Channel plus the Frisian Islands (North) and of A Mark VI assemblies K. 1008, K. 1010 off Ijmuiden, Hook, W. Scheldt, Cherbourg, Brest and Chenal du Four.

Phase IV (D - 2 to D - 1)

Laying of A Mark IV assembly MXC. 16, and A Mark VI assembly D 412 off Ijmuiden, the Hook, W. Scheldt, Chenal du Four and Brest.

Phase V (D - 1 to D day)

No aerial minelaying.

Phase VI (D day onwards)

Aerial minelaying as for Phase IV or as required.

Timing

Phases II and III were to be related to Y day. (4) Phases IV and V were related to D day, that is the operations planned for these phases would be initiated in conjunction with the assault. Similar operations would be continued in Phase VI as necessary during the period after the assault. (5)

(x) Minelaying - April to May 1944

(a) Operations April 1944

In April 305 low level and 550 high level sorties were flown on 20 nights, of which 278 and 501 respectively were successful. Nineteen aircraft were missing on high level sorties all in Baltic areas (6) and one aircraft crashed. (7) A total of 2,643 mines were laid, 1,660 on

-
- (1) Code name Whelks.
 - (2) Code name Iris V.
 - (3) Code name Iris II.
 - (4) A directive from S.H.A.E.F. dated 6 March 1944 designated the 1 June 1944 as Y day. This directive was sent to the A.O.C. Bomber Command on the 20 May 1944.
 - (5) For the execution of Maple see operations April and May.
 - (6) No. 1 Group - Me663/460, Jb600/460, Jb734/460, Nd420/103, Nd625/166, O/12, S/100 (Lancasters)
No. 3 Group - K/75, K/149, E/75, P/149 (Stirlings)
No. 4 Group - M/102, L/77, P/77 (Halifaxes)
No. 5 Group - Me688/207, Jb725/57 (Lancasters)
No. 6 Group - U/428, T/419, Z/428 (Halifaxes)
 - (7) No. 6 Group - O/428 (Halifax).

A.H.B./IIH/
241/3/556
Encl. 18B

high level sorties. Of the total mines laid 1,357 were planted in the Baltic, the highest number ever laid in this area in one month. Thus the Admiralty's request for increased laying in the Baltic was carried out.⁽¹⁾ Mining off the North French coast was continued and there were high average lays in the North Sea and Biscay areas.

On the 9/10 April Bomber Command Operational Order No. 185 was put into force.⁽²⁾ Forty seven H.2.S. Lancasters from No. 1 Group laid 187 mines off Gdynia, whilst 56 H.2.S. Lancasters from No. 5 Group laid 120 mines off Danzig and 164 off Pillau. These operations were carried out from a high level except for six Lancasters of No. 5 Group who were instructed to mine the Konigsberg Seekanal from a low level. Three aircraft of No. 106 Squadron were successful in locating the canal; each dropped five mines from 150 ft. One aircraft was damaged by light flak. One aircraft of No. 49 Squadron identified the canal and dropped its mines from 200 ft. in the eastern half. Another made two runs, one at 150 ft. and one at 500 ft. but was unable to locate the canal in time to mine properly. The third aircraft map-read on to the canal but was engaged by half a dozen guns which forced the aircraft to go down to zero feet under cover of one of the islands. The aircraft was coned on this side and again engaged by accurate flak, causing it to abandon the effort. In the last two cases mines were jettisoned live in the area and the sorties were counted as successful. Nine aircraft were lost on this nights operations.

25/D.B. Ops.
Sictel No. 71
8.8.44

Air Ministry Intelligence claimed that no less than forty per cent of German naval personnel were now employed on minesweeping and escort duties⁽³⁾ but that after a heavy lay the minesweeping forces were unable to cope expeditiously with the sweeping of the necessary channels. They claimed that after this operation Danzig Bay was closed to traffic for 15 days and the ports of Konigsberg and Pillau for 13 days.

Adm.TSD/FDS
KTB. B.S.O.
PG/39805-8
KTB. 3 Siche.
FL
PG/73632-3
ISKL.Akte IX,3
PG/32527
General Referat.
IIia
PG/33590

Captured German Naval records show that this mining operation undoubtedly caused considerable disruption in the Gulf of Danzig but this appears to have had a more acute effect on U-boat training, torpedo-firing and so on, than on the actual movements of shipping. Delays in clearing the mined areas resulted from inability to provide adequate numbers of suitably equipped minesweeping

- (1) See Section (viii) (c).
- (2) See Section (viii) (e).
- (3) Captured German records give the following data on the strength of the German Navy (personnel) on 1 July 1944:-

Total strength (all areas)	755,500
Total strength (all areas) of Naval forces employed on minesweeping, minesweeping/escort duties (including staffs)	204,000
	(approximately 27%)

However probably only a small proportion of this percentage was permanently engaged in minesweeping. The remarks in the summary to this Chapter (see Section (xi)) on the strength of German mine-sweeping forces apply equally to personnel. The maximum number of officers and men employed on British minesweeping was reached in mid 1944. It was 57,000. But this was a permanent minesweeping force.

vessels. Because of commitments in other areas of the Baltic it was impossible to transfer minesweepers to the Gulf of Danzig. The emergency was such, however, that a number of R-boats, M-boats and smaller craft had to be taken from training commands to assist in the clearing of the U-boat exercise areas. Deep water areas could only be swept by Sperrbrecher but there was only one immediately available.

In spite of the difficulties, specified parts of the exercise areas were re-opened - subject to restrictions as to speed and depth - on 14 April 1944. It was estimated that the remainder of the exercise areas could be re-opened in stages in from eight days to four weeks.

Immediately after the mining operation on 9/10 April 1944 the whole of Danzig Bay was closed to shipping. On 11 April 1944, however, the swept channel from Helsingør to Gotenhafen (Gdynia) was re-opened but naval vessels and merchant shipping were compelled to have an escort. Ships were limited to specified speeds.

On 13 April 1944 the Pillau swept channel was re-opened to shipping but shipping over 2,000 tons was allowed to proceed only with an escort. On the same day the canal approach to Danzig (the Neufahrwasser) was also re-opened.

It was not until 19 April 1944 that shipping was again entering and leaving Königsberg and that, only with the aid of minesweeping escorts.

Minesweeping escorts were continued in the Königsberg canal until 1 June 1944 and, in the swept channel between Gotenhafen and Pillau until 11 June 1944. After these dates escorts were considered necessary only for ships over a certain tonnage.

Three ships were sunk in April as the result of the operation on 9/10. These were R.27 in the Königsberg Canal on 11 April, the Torpedo Recovery Vessel Drachenkopf sunk north of Oxhöft on 22 April and M.553 sunk in the Gulf of Danzig on 28 April. During the period 10 - 30 April the Germans swept a total of 83 mines (including seven swept by M/S aircraft) in the Gulf of Danzig. A daily average of 15 minesweepers were employed in sweeping the Gulf of Danzig. The table given below, however, shows that shipping movements were not greatly affected by the mining operation of 9/10 April.⁽¹⁾

On 11 April the Admiralty were informed that Phase II of operation Maple would commence on 16 April. Accordingly, on the night of 17/18 April six Stirlings from

A.H.B./IIH/241/
3/624(A)
Encl. 10A

- (1) Shipping movements from Gdynia, Danzig and Pillau.

	Gotenhafen		Neufahrwasser		Pillau	
	In	Out	In	Out	In	Out
March 1944	161	155	300	294	202	196
April 1944	194	185	295	308	230	229

- (2)

No. 3 Group⁽¹⁾ laid 24 Mark VI mines in the Frisians North area. Mark VI mines were laid in the area on five other nights during the month. A total of 226 mines were laid in April in this area. Routine laying was carried out in April as specified in Phases I and II of Maple.

There were two large scale high level operations in the Baltic during the second half of the month. On the night of 18/19, 497 mines were laid in Baltic areas. Lancasters from Nos. 1 and 5 Groups laid 36 mines off Sassnitz and 160 off Swinemunde, whilst Halifaxes from Nos. 4 and 6 Groups laid 131 mines in the Sound and 22 in the Cadet Channel. Stirlings from No. 3 Group and Halifaxes of No. 4 Group laid 148 mines in Kiel Bay. On the 23/24 April 113 aircraft laid a total of 311 mines in Baltic areas, including Bornholm, Swinemunde, Fehmarn Belt, Cadet Channel and Sassnitz. Twelve Halifaxes from No. 6 Group marked for non H.2.S. aircraft.

B.C. O.R.B.
April 1944.
Photographic
Section

Following the decision in February that cameras were to be used on high level mining operations, it was decided to issue technical instructions giving the standard procedure for obtaining a photograph of the point of coast crossed on the timed run for mine release. Hitherto Groups had been using their own procedure. These instructions were issued on the 13 April. Following a letter from No. 4 Group stating that it was considered inadvisable, for security reasons, to use photoflashes on blind mining operations, since the photoflash explosion might draw attention to the operations, revised instructions for night photography with minelaying were issued to all Groups on the 23 April. On high level visual mining attacks, an F 24 camera and photoflash was to be carried by each aircraft. The camera should be operated and the flash released prior to the release of the mine, to obtain a photograph of the coastline from which the run was made. On high level blind mining attacks, using "Y" aircraft and H.2.S. equipment the 35 m.m. H.2.S. cameras might be carried by aircraft and used at the discretion of Group Commanders. On high level blind mining attacks, when sea, sky, or ground markers were used, the F.24 camera and composite film (in addition to the H.2.S. camera as and when available) was to be carried by each aircraft to record markers, but photoflashes were not to be used for blind minelaying, nor minelaying by Wanganui⁽²⁾ or Paramatta methods.⁽³⁾ Cameras and photoflashes should not normally be used on low level mining operations.

A.H.B./II
H/241/3/563
B.C.O.O.
No. 186
30.4.44

On the 30 April Bomber Command Operational Order No. 186 was issued. The intention was to prevent enemy U-boats and naval forces making use of routes through Kiel Bay and thence through the canal to break out of the Baltic. The operation, known as Invicta, was thus designed to assist Overlord, and was in fact used on the 21/22 May as part of the increased minelaying effort⁽⁴⁾

-
- (1) Nos. 149 and 90 Squadrons.
 - (2) Wanganui method was minelaying without visual identification of the target by means of sky markers placed by H.2.S. aircraft.
 - (3) Paramatta method was minelaying without visual identification by means of ground markers placed by H.2.S. aircraft.
 - (4) Operation Dahlia

required during Phase III of Maple. Lancasters of No. 5 Group, and Halifaxes of Nos 4 and 6 Groups were to carry out the operation. All aircraft were to be fitted with H.2.S. Halifaxes from No. 4 Group were to be Mark III aircraft because of the petrol load necessary for the Baltic. No. 6 Group Halifaxes were to mine nearer areas in the Frisians and Heligoland Bight. New assemblies for the Mark VI mine⁽¹⁾ had been designed specially for the operation and were to receive preference over other types.

(b) The Mining of the Kiel Canal - Policy

On the 19 April A.C.N.S.(H) (Rear Admiral Brind) wrote to A.C.A.S. (operations) with reference to a paper on the Kiel Canal produced by the Ministry of Economic Warfare on the 22 March. The Admiralty proposed that a mining attack on the canal should be carried out and wished to know whether the Air Ministry considered it practicable before Overlord. The aim was to dislocate traffic through the canal involving the movement of warships, particularly of U-boats, through additional mined waters when passing from the Baltic to the North Sea. On the 14 April the Director of Bomber Operations had suggested in this connection that an attack should be carried out by means of the high level mining technique. He pointed out that the technique had been well proved and actually employed with success against the canalised river leading to Bayonne⁽²⁾ which was of approximately the same width as the Kiel canal. After consultation with Bomber Command, however, A.C.A.S. (Operations) replied to Admiral Brind on the 21 April, that Bomber Command considered a very large effort would be needed to mine the Canal effectively if the high level mining technique was used. They were examining the practicability of carrying out the operation with Mosquito aircraft, which they were modifying to carry the 1,500 lb. mine. They proposed to carry out the operation from a low level and were examining questions of limiting speeds and heights of release. The Kiel Canal was mined on the night of the 12/13 May by Mosquitoes of No. 8 Group.⁽³⁾

(c) Operations May

In May 361 low level and 451 high level sorties were flown on 26 nights, of which 335 and 415 respectively were successful. Two aircraft were missing⁽⁴⁾ from low level sorties to the Kiel Canal and Hook of Holland, and seven on high level sorties, six in Kiel Bay and one off Lorient.⁽⁵⁾ One aircraft crashed.⁽⁶⁾ A total of 2,760 mines were laid, 1,551 from a high level. The majority of mines were laid off the North Sea Coast of Holland and Germany, about three times the previous months effort was expended

-
- (1) The K assemblies.
 - (2) On the 15/16 February.
 - (3) See next section.
 - (4) No. 3 Group - H/149 (Stirling)
No. 8 Group - Dz 638/692 (Mosquito)
 - (5) No. 1 Group - T/625, D/103, X2/576 (Lancasters)
No. 5 Group - Nd 960/57, Nd 522/207, LL950/630 (Lancasters)
No. 6 Group - C/424. (Halifax)
 - (6) No. 3 Group - M/90 (Stirling).

A.H.B./IIA1/21
19.4.44

25/D.B. Ops.
M.E.W. Paper
Z 603/0
22.3.44

A.H.B./IIA1/21
19.4.44

25/D.B. Ops.
14.4.44

25/D.B. Ops.
21.4.44

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on the North Coast of France in connection with Overlord, and there were reasonably heavy lays in the Baltic and Bay of Biscay.

No. 692 Squadron O.R.B.

On the 12/13 May thirteen Mosquitoes of No. 692 Squadron No. 8 (P.F.F.) Group were detailed to mine the Kiel Canal in a three and a half mile stretch⁽¹⁾ along which were thought to be no defences. To ensure accuracy crews were briefed to make the attack from 300 ft. Mosquitoes of No. 139 Squadron P.F.F. fired Green Verey cartridges as route markers near Heligoland, and marked the beginning of the final run to the target by red spot flares. On reaching the spot flares, minelaying aircraft were instructed to start a dive down from 8,000 ft on to the target. This dive had been practised. The distance was 14 nautical miles and it was found that with I.A.S. 250 knots and reduced boost and revolutions the aircraft could be brought on to the target at the right height after a dive lasting three minutes. The attack was carried out in two waves. The first wave of six aircraft all located the canal and successfully laid their mines, practically without opposition. Flares were dropped by No. 139 Squadron to assist the second wave of seven aircraft; these were reported, however, to have been very scattered. Five aircraft located the canal and dropped their mines, two of these were delayed since they arrived at the coast north of the correct point and did not see the spot fires. One aircraft could not identify the target and brought back its mines as instructed. One aircraft was missing. The length of canal where the mines were laid was practically undefended but crews reported many guns firing at point blank range from the banks further up towards Kiel. Eleven mines were laid in the canal, each aircraft carrying one Mark III or Mark VII mine modified for stowage in Mosquito aircraft. Aircraft used had already been modified to carry the 4,000 lb bomb. Mine assemblies were set to become active at varying intervals.

A.H.B./IIA1/21
Signal AX433
24.11.44

B.C. O.R.B.
Overlord
Supplement to
June 1944.
Naval Staff

Adm. TSD/FDS
KTB Gruppe Ost.
PG/38775
KTB B.S.O.
PG/39807/8
KTB. 1 Sich.Fl.
P6/73622

The Germans estimated that a total of eight mines had been laid by four Mosquitoes each carrying two mines. Two of the mines fell on land and were dismantled by a mine disposal party. The remaining six mines were cleared by minesweepers by 16 May 1944. During the sweeping operations the Canal tug Schlei was sunk by mine on 14 May 1944.

The C. in C. Naval Group Command, East reported in his War Diary on 16 May 1944 that the mining of the Kiel Canal on 12/13 May by a small force of enemy aircraft caused most serious disorders and blocking of shipping. He said that if a large scale mining attack on the Canal were carried out, as they must expect, shipping might be held up and disorganised to an extent which could be vital.

ibid

B.C. O.R.B.
Overlord
Supplement to
June 1944.
Kiel Canal

On this occasion German shipping was held up from 13 May to 1000 hours on 16 May. Shipping was afterwards escorted through the mined area. Photographic reconnaissance showed that as late as 24 May, approximately 63 ships were held up off Holtenau and a further 16 off Brunsbüttel. Other merchant vessels were observed at anchor in Kiel Fjord.

(1) Between 54° 08'N x 09° 21'E and 54° 11'N x 09° 26'E.

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Phase III of Maple commenced on 7 May. Mark VI mines assemblies D 410 and G 706 were laid off Le Havre and Cherbourg during the rest of the month. Bomber Command took over minelaying off IJmuiden on 26/27 May, West Scheldt on 30/31 May and Hook of Holland on 31/1, from surface forces. On the night of the 21/22 May increased minelaying effort commenced as required by Dahlia with maximum laying of the new Mark VI assemblies. This nights operations were in accordance with Bomber Command Operational Order No. 186 for operation 'Invicta'. A considerable number of Mark VI mines fitted with the new 'K' assemblies were laid for the first time. Lancaster from No. 5 Group laid 382 mines in Kiel Bay of which approximately 300 were Mark VI mines. Halifaxes of Nos 4 and 6 Groups laid 119 mines in the Kattegat, Heligoland Bight and Frisian areas. The laying of the K assemblies was extended, as required, to other areas during the rest of the month. Altogether 1,561 mines were laid from the night of the 21/22 May to the end of the month.

(d) Statistics April and May 1944

Bomber Command flew 666 low level and 1,001 high level sorties of which 613 and 916 respectively were successful. Two aircraft were missing from low level sorties and twenty six from high level sorties. Two aircraft crashed. All except one of the high level casualties were on sorties to the Baltic. A total of 5,403 mines were laid, 3,211 on high level sorties. A summary of results is given in Table V.

Table V

No. of mines laid

	No. 1 Area W. Baltic, Belts, Sound, Kattegat	No. 2 Area Haugesund and Oslo Fjord	No. 3 Area N. Sea coasts of Germany and the Low Countries	No. 4 Area North Coast of France	No. 5 Area Off the Biscay Ports	Casualties A/C missing A/C crashed	
April	1,357	0	643	127	516	19	1
May	671	0	930	380	779	9	1
Total	2,028	0	1,573	507	1,295	28	2

Enemy vessels sunk by mine

	No. 1 Area No. Tons	No. 2 Area No. Tons	No. 3 Area No. Tons	No. 4 Area No. Tons	No. 5 Area No. Tons
April	12-6,043	nil	4-1,856	1- 31	nil
May	12-7,443	nil	8-10,034	1- 90	1-750
Total	24-13,486	nil	12-11,890	2-121	1-750

Enemy vessels damaged by mine

	No. 1 Area No. Tons	No. 2 Area No. Tons	No. 3 Area No. Tons	No. 4 Area No. Tons	No. 5 Area No. Tons
April	2-10,432	nil	1- 60	nil	nil
May	1- 649	nil	1-2,273	nil	nil
Total	3-11,081	nil	2-2,333	nil	nil

Thirty nine enemy vessels totalling 26,337 tons were sunk and a further five vessels of 13,414 tons damaged. The largest number of sinkings was in the Baltic, eight of these being small vessels of under 100 tons. A nearly equal amount in tonnage was sunk off the North Sea coast of Holland and Germany. Only two vessels were sunk off the French Channel ports, including one R-boat. One M class minesweeper was sunk in the Bay of Biscay.

The largest vessel sunk was the Sabine Howaldt (5,956 tons). Five other vessels of over 1,000 tons were sunk.⁽¹⁾ Eighteen minor naval war vessels were sunk. These included three M class minesweepers,⁽²⁾ two torpedo recovery vessels and a Luftwaffe Training Vessel, a survey vessel, two VS boats, three M boats, two R-boats,⁽³⁾ a Mining Experimental Vessel and three harbour defence boats. Sixteen small craft of under 100 tons were sunk. The balance consists of small merchant vessels, large fishing vessels and a trawler.

Fuehrer Con-
ferences on
Naval Affairs.
1944

At a conference at the Berghof from the 4 to the 6 May 1944 the Commander-in-Chief of the German Navy (Doenitz) noted that allied minelaying was intensified in the North Sea and Baltic in April. He stated that the Navy had only been able to control the aggravated situation by using all school flotillas for mine defence. As a result training in this most important field had suffered greatly. No improvement could be expected before the autumn when the naval building programme of 1943 would begin to show results. The Commander-in-Chief pointed out that this minelaying was a very serious threat to the submarine training regions, the supply service to Norway, and ore imports from Sweden.

Aircraft employed on long distance minelaying operations were H.2.S. Lancasters of Nos. 1 and 5 Groups. No. 1 Group laid the whole of their remaining stock of mines and thus completed their spring offensive. Stirlings and Lancasters of No. 3 Group and Halifaxes of Nos. 4 and 6 Groups carried out routine laying in nearer areas. Mosquitoes of No. 8 Group were used for the attack on the Kiel canal.⁽⁴⁾

(xi) Summary.- April 1943 to May 1944

During the period April 1943 to May 1944 Bomber Command flew 6,868 sorties on mining operations and laid 19,838 mines for the loss of 127 aircraft. The largest number of mines, 7,722, was laid off the North Sea coast of Holland and Germany, 6,717 were laid off the Biscay ports, 4,404 in the Baltic, 950 off the North French coast and 35 off South Norway. Sixty-seven aircraft were missing on operations to the Baltic, and 39 and 21 on operations to the Bay of Biscay and the North Sea respectively. Shipping totalling 182 vessels of 137,711 tons was sunk by airlaid mines during the whole period. Of this total 110 vessels of 80,581 tons were sunk in the Baltic, 48 of 47,778 tons in the North Sea, 15 of 8,199 tons in the Bay of Biscay and 8 of 896 tons off the North coast of France. One vessel of 257 tons was sunk in Oslo.

-
- (1) Kejserinde Dagmar (1,599), Jammeri (2,522), Tento (4,917), Medea (1,246), Werner Vinnen (2,342).
 - (2) M.553 (750), M.515 (750), M.13 (750)
 - (3) In addition R.27 was sunk in the Konigsberg Canal on the 11 April.
 - (4) Squadrons were:
 No. 1 Group - 460, 100, 103, 166, 12, 625, 576 (Lancasters)
 No. 3 Group - 90, 149, 199, 75, 218 (Stirlings)
 15, 622, 75 (Lancasters)
 No. 4 Group - 78, 10, 102, 77 (Halifaxes)
 No. 5 Group - 106, 207, 57, 49, 44, 630 (Lancasters)
 No. 6 Group - 433, 428, 419, 434, 424 (Halifaxes)
 No. 8 Group - 692 (Mosquitoes)

Adm. TSD/FDS

It is impossible to separate enemy minesweeping forces from escort forces. The German 'minesweeping' forces were not confined strictly to minesweeping duties. For example M class minesweepers, R-boats and Sperrbrechers were used for A/A escort duties as well as for minesweeping. On the other hand the number of vessels employed on harbour and coastal defence (H.D. and Vp-boats) includes many ships carrying out mine-sweeping duties.

Adm. TSD/FDS
KTB of relevant
Commands.
Files of
Kriegsgliederung

Enemy minesweeping and minesweeping escort forces increased during the period under review from 1,825 vessels in April 1943 to 2,343 vessels in April 1944. The minesweeping escort force in April 1943 comprised 119 M-boats, 111 R-boats, 320 auxiliary minesweeping vessels, 41 Sperrbrechers, 317 Vp-boats, 870 Harbour Defence boats and 47 U-Jager. In April 1944 the force consisted of 177 M-boats, 129 R-boats, 349 auxiliary minesweeping vessels, 46 Sperrbrechers, 342 Vp-boats, 1,248 Harbour Defence boats and 52 U-Jager.(1) Owing to the mixed nature of the force however, it is impossible to say how far this increase in strength was due to the threat caused by aerial minelaying as distinct from that caused by direct air attack or attack by surface forces.

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- (1) The strength of the British minesweeping force in about April 1944 was approximately 1,520 vessels. However this was purely a minesweeping force. To obtain comparable figures it would be necessary to add to the British mine-sweeping strength various types of vessels employed on coastal escort, loop patrols, harbour defence, river patrols and so on. It is estimated that the strength of British and German 'minesweeping' forces at this period would then be approximately the same.

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CHAPTER XIV

THE U-BOAT WAR IN THE ATLANTIC - JANUARY TO MAY 1944

PART I - ON THE CONVOY ROUTES

(i) - U-boats concentrated in N.E. Atlantic

B. d U.
War Diary
See Map No.48

At the beginning of January 1944 the U-boats were still disposed almost solely in the northeast part of the North Atlantic. The majority were grouped under the name Ruegen totalling 20 boats in sub-divisions of three strung out loosely to the south of Iceland and west of Ireland so as to catch the transatlantic convoys. Two U-boats were permanently stationed early in the month in mid-Atlantic to make weather reports for the benefit of the German Meteorological Service. A smaller group under the name Borkum, consisting of ten boats was disposed in an east/west line some 500 miles northeast of the Azores to intercept convoys bound to or from the Gibraltar and West Africa area. Both groups spent much of their patrol submerged by day owing to the air menace.

No. 247 Group
O.R.B.
Appendices

Admty.
Statement of
Losses H.M.
Stationery
Office

B. d U.
War Diary

Group Borkum had been frustrated at the end of December 1943 in their attempts to attack convoys by the shore-based air support from the Azores aided by carrier borne aircraft from U.S.S. Block Island and Core. Pressure on this Group was maintained during the first week of January by frequent sweeps over the area by Azores based Fortresses and L/L Wellingtons in co-operation with surface support groups during which four U-boats were sighted by the aircraft. Two attacks were made, one of which resulted in serious damage to U.270 who was forced to return to port but the attacker - Fortress U/206 Sqdn - was shot down by the U-boat's flak just after the release of depth charges. A support group contacted another of the Borkum boats on 7 January but during the subsequent hunt the U-boat (U.305) retaliated and sank H.M. frigate Tweed with an acoustic torpedo and afterwards made good her escape. No convoys having been sighted up to 8 January, the Group now only seven strong was moved southward to between Portugal and the Azores while G.A.F. reconnaissance was flown to locate convoys. On the 9th this reported a large convoy to the west of Gibraltar steering northwest. Group Borkum was warned to expect W/T directions for attack depending on subsequent daily air locations. However, nothing was seen of this convoy on the 10th in spite of maximum efforts by the long range reconnaissance unit which was specially strengthened to six J.U. 290s and two BV.222s. On 11 January the reconnaissance was a failure owing to breakdowns both of aircraft engines and the search radar equipment. Finally at 1819 hours the westernmost boat of the Group caught a glimpse of a north bound convoy. The rest were immediately ordered to close but none contacted it. U.758 was badly damaged by planes from the supporting escort carrier U.S.S. Block Island, and U.953 and 382 merely sighted escort vessels. Both missed with acoustic torpedoes. Doenitz observed that the operation failed entirely through poor air reconnaissance and noted that at least twice the number were necessary so as to guarantee against failures in maintenance and equipment.

No. 247 Group
O.R.B.
Appendices

While giving distant air support from the Azores to a south bound convoy on 13 January, L/L Wellington L/172 Sqdn. detected, attacked and sunk U.231. As only five boats remained in the Group it was dissolved and the units instructed to proceed northwards into the Group Ruegen area. While doing so, on the 14th both U.377 and 641 were sighted on the

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surface by Fortresses A/220 and R/206 Squadrons respectively. The latter attacked U.641 but inflicted no damage.

(ii) The end of closely grouped U-boat dispositions

Meanwhile the Rügen grouplets had sighted nothing up to 7 January and, with no G.A.F. reconnaissance available in the Northern Atlantic, Doenitz abandoned even these small group tactics and distributed the 19 boats into individual static attack areas. These were scattered in the general area from latitude 61° to 50°N between longitudes 17° and 21°W. As each boat was at least 30 miles from its neighbour the chances of combined attack on any shipping sighted became even more remote; moreover the risk increased of single boats being overwhelmed by either surface or aircraft attack from convoy support. Both these suppositions became unpleasant facts for Doenitz during the next three months.

B. d U.
War Diary

On 9 January, U.757 proceeding towards her new billet, ran across convoy OS 64/KMS 38 where she was detected and sunk by the surface escorts in 5033N x 1803W. During the afternoon of 13 January, V.L.R. Liberator A/59 Squadron on a supporting sweep near convoy SL 144/MKS 35 sighted a U-boat on the surface. It made no attempt to dive and in face of intense flak the aircraft made two depth charge attacks and then several runs using machine guns while the U-boat was turning in tight circles. Finally the boat dived very slowly. This was U.621 outward bound having just been fitted with a 3.7 cm. flak gun in addition to the normal two twin 20 mm cannon. She was badly damaged by the depth charges and had to make an immediate return to harbour.

No.15 Group
O.R.B.
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(iii) The start of G.A.F. reconnaissance in the Western Approaches

No more shipping having been sighted by 15 January, Doenitz moved the Rügen boats (now reinforced to 24) closer to the British Isles on diving patrol in a ribbon extending from the latitude of the Faeroes to that of Brest and distant only some 250 miles from our coasts. Daily G.A.F. reconnaissance was flown to locate convoys approaching the area. In addition, one U-boat (U.260) was stationed off Reykjavik and one (U.386) close in off N.W. Ireland to report convoy movements. The two weather reporting boats were kept in their mid-Atlantic billets and one of them (U.960) provided the only success of the month. This was the sinking on 16 January in 5235N x 3500W of S.S. Sumner I. Kimball - 7,176 tons who was a straggler from convoy ON 219.

B. d U.
War Diary
See Map No.56

Admty.
B.R.1337

Early on 15 January, U.377 at the southern end of the Rügen ribbon reported a group of surface craft and that she had missed with a torpedo. No further signals were ever received from her and, with no specific claim on our side, it is not known how she met her end.⁽¹⁾ On 17 January, H.M. Ships Wanderer and Glenarm, part of the escort to an outward bound convoy, detected and sank U.305 also at the southern end of the ribbon in 4939N x 2010W. Later during the same day a German meteorological aircraft sortie reported an outward bound convoy of 25 to 30 ships off the N.W. corner of Ireland. All those Rügen boats favourably placed were

Admty.
C.B.04050/44(1)

(1) At about this time another U-boat (U.972) vanished in the Northern Atlantic without trace.

Ibid and
B. d U.
War Diary

ordered to take up attacking positions ahead of the convoy by P.M. 19th. The JU.290 reconnaissance on the 18th sighted some shipping in 55°N x 17°W but the report gave no course or speed and weather conditions on the 19th prevented any air reconnaissance at all so that Doentiz was without knowledge of the whereabouts of the target. It was probably the south bound OS 65/KMS.39 as late on the 19th the surface escorts to this convoy detected and sank U.641 in 5025N x 184.9W. JU.290 sorties on the 20th, 21st and 22nd failed to locate any convoys and on 23 January the Ruegen ribbon was closed in still nearer to the Irish coast between longitudes 15° and 17½°W. Air reconnaissance still had nothing to report and U.386 in the North Channel area was detected by H.M.S. Portchester. She escaped the subsequent U-boat hunt without damage claiming erroneously to have sunk her assailant with an acoustic torpedo after which she retired westward into the Ruegen ribbon.

No.19 Group
O.R.B.
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The fairly regular appearance of G.A.F. long range aircraft together with the positions from occasional D/F.s of U-boat W/T transmissions had warned us that U-boats might be closing towards Ireland and No.15 Group received an increasing number of convoy support sorties from No.19 Group followed in the third week of January by the move of part of No.53 L/L Liberator Squadron from Cornwall to Ballykelly in Northern Ireland. Finally at the end of January two whole L/L Wellington Squadrons (Nos. 407 and 612) were moved up from Cornwall to Limavady, also in Northern Ireland.

B. d U.
War Diary

On 26 January at 1220 hours the JU.290 reconnaissance located a convoy steering southward in 5545N x 1030W but owing to faulty W/T equipment, the report did not reach the U-boat Command until the aircraft landed at 1600 hours. As it was not apparent whether this convoy would prove to be transatlantic or southbound to Gibraltar the Command made provision for both alternatives. The Ruegen boats were formed into two new groups:- Group Hinein⁽¹⁾ of eight boats to take up a line 53½°N x 15°W to 52½°N x 12°W against a southbound convoy. Group Stuermer⁽²⁾ of eleven boats to occupy a sector between lines 270 miles N.W. and W. of Malin Head (N.Ireland) for a west bound convoy.

(iv) - The submerged U-boat disposition near our western coast defeated

Ibid and
No.19 Group
O.R.B.
Appendices

These dispositions were nearer to our coast than any since the early days of 1941 but with the big difference that now the U-boats had to keep a diving patrol with corresponding limited search range. Short of fortuitous contact they were entirely dependent on air reconnaissance to reach an attacking position. On the 27th sorties by three JU.290.s and one BV.222 confirmed two convoys off Ireland. These aircraft were, of course, seen by the convoys and, as it was expected that U-boat action would follow, No.19 Group stepped up the scale of supporting sweeps both by night and day from 28 January onwards. In addition a detachment of No.235 Beaufighter Squadron was sent up to Northern Ireland to escort convoys as far out as possible to frustrate the long range G.A.F. aircraft. Fleet Air Arm

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- (1) Group Hinein - U.650, 571, 281, 271, 212, 592, 764 and 441.
(2) Group Stuermer - U.989, 547, 984, 545, 309, 406, 762, 390, 731, 386 and 666.

fighters were also embarked in escort carriers accompanying convoys for the same purpose.

To return to the sighted convoys - one of them was reported off Blacksod Bay steering southwest which would track clear of the western end of Group Hinein and the other was a north bound convoy advancing up longitude 12°W past the southwest corner of Ireland and tracking inside the eastern end of the Group. Doenitz chose the former as the target which in fact was ON 221. He signalled the Hinein boats to surface and chase to the west at utmost speed keeping W/T watch for beacon signals from the shadowing aircraft. However, these signals were not heard by any boats during the day and the BV.222 who was to give the vital bearing signals at dusk had to return early because of engine trouble. The night sortie JU.290 found the convoy at 0023/28th but soon afterwards lost contact owing to a breakdown in the search radar. Bearing signals during the night were thus impossible and the precious dark hours were wasted in blind searching by the U-boats. This searching was rashly carried on into the daylight of 28 January. Two boats were sighted by the air support to the convoy. At 1147 hours, U.271 was attacked and sunk by U.S.N. Liberator E/103 Squadron followed at 1303 hours by U.571 being sunk by Sunderland D/461 Squadron. This latter attack was in face of violent flak which was finally reduced by the excellent front gun fire from the Sunderland. As the aircraft passed over the U-boat on the attacking run ten bodies were counted strewn about the bridge and gun platforms. Two other searching boats (U.764 and 212) had to dive for aircraft but were not themselves sighted.

The Group was told to continue chasing to the southwest but Doenitz had little hope of locating the convoy. In his War Diary he wrote off the operation as a failure due, once again, to the inadequate number of reconnaissance aircraft and the poor state of their search radar and W/T equipment.

On 29 January, distant air cover was still being given to ON 221 and at 1332 hours, U.592 was sighted and attacked by U.S.N. Liberator N/110 Squadron; serious damage was inflicted on the U-boat which necessitated a start homeward on the 30th. During the day the fruitless chase after ON 221 was given up and, as the moonlight period was approaching, Doenitz moved both the Stuermer and Hinein boats further out to some 350 miles off the British Isles and opened up the spacing between boats to 50 or 60 miles.

(v) No better results for U-boats disposed further from our Coast

While this move out was taking place, two escort carriers (H.M.S. Nairana and Activity) screened by the 2nd Escort Group (Starling, Wild Goose, Woodpecker, Magpie and Wren) started operations as a support group to convoys in the area westward of Ireland. By dawn/31 January they were about 330 miles southwest of Ireland awaiting the arrival of a Sierra Leone convoy from the south. The carriers had their Swordfish aircraft flying but nothing was sighted. At 1015 hours, the Wild Goose obtained an asdic contact and after several depth charge attacks unmistakable evidence of a destroyed U-boat came to the surface. This was U.592 returning homeward damaged after the air attack on 29 January. Later on the same day Liberator T/120 Squadron on an operational transit flight from Northern Ireland to Reykjavik sighted U.283, one of the Stuermer Group, in 5933N x 1346W. The U-boat had

Ibid and
No.15 Group
O.R.B.
Appendices.

Ibid
See Map No.57

Admty
C.B. 04050/44
(1) and (2)

already disappeared by the time the depth charges were released and no damage was inflicted.

Ibid and
B. d U.
War Diary
and
Nos. 15 and 19
Group O.R.B.
Appendices.

During the full moon period from 29 January to the 3 February no G.A.F. reconnaissance was flown and Doenitz took the opportunity to reorganise the U-boats. Groups Stuermer and Hinein were dissolved and the time expired boats in them started homeward. Fresh boats, which were arriving out from German and Biscay ports, were formed into a new Group Igel of 22 boats. This Group was disposed by signal in much the same area as before. While moving to their appointed billets on 4 February, three of them reported having sighted portions of different convoys but no action was taken by Doenitz. Coastal Command's general air cover in the area sighted others but the only air attack made was by L/L Liberator T/53 Squadron on the night of the 4/5th. In this the aircraft was shot down by U.963 with no damage to herself.

By 6 February the Igel Group had taken up their positions and G.A.F. reconnaissance was flown in the area off Ireland by two JU.290.s. Three convoys were reported - one large one in 4100N x 1600W steering north which was SL147/MKS.38 and two close off the coast of Ireland steering south. Once again Doenitz had to choose which to operate against and once again he split his disposition into two. Group Igel I of 15 boats was signalled to spread between 55°N x 19°W and 61°N x 12°W in case the southbound convoys should turn westward for America and Group Igel II of 11 boats was ordered to spread between 52½°N x 21°W and 49½°N x 15°W to catch the north-bound convoy. G.A.F. reconnaissance was to search the next day for the latter convoy.

Ibid

At 0705 hours on 7 February, two JU.290s located and reported this convoy in 47°N x 18°W. At 1600 hours the two escort carriers screened by the 2nd Escort Group joined the convoy. Carrier borne fighters attempted to bring down the shadowing enemy aircraft but without success. Group Igel II, still far away, were told to surface at dusk and get closer on the convoy's line of advance. After dark, shorebased air cover was given ahead of the convoy by Nos. 15 and 19 Groups, U.238 was attacked by Halifax P/58 Squadron and U.762 by both O and W/407 L/L Wellington Squadron but in no case was damage inflicted.

During 8 February, the convoy was again shadowed by JU.290s and after dark the aircraft still in contact sent out bearing signals for the benefit of the U-boats until 0300/9th. However, only two boats appear to have reached the vicinity of the convoy - U.238 who sighted some of the outer surface escorts and U.762 who was contacted by asdic by the 2nd Escort Group some ten miles from the convoy at 2300/8th. She was immediately attacked and destroyed by them half an hour later.

(vi) Offensive action by convoy supports both air and surface

As no reports of actual sighting of the convoy by any U-boat had reached Doenitz by dawn/9th he cancelled further G.A.F. sorties and abandoned the operation because in face of the intense air activity in the area all U-boats had to dive during daylight. However, the escort's offensive had not finished with his boats. Shortly after daybreak the 2nd Escort Group detected a submerged U-boat off the convoy's beam and ensuing attacks destroyed U.238 at 0940 hours. Almost simultaneously another U-boat was located ahead of the convoy and at 1502 hours the Group destroyed U.734.

Ibid

The only slight success for the enemy occurred at the northern end of Group Igel I when at 0145/8 February, U.985 ran across and sank S.S. Margit - 1,735 tons in 61 $\frac{1}{2}$ °N x 10 $\frac{1}{2}$ °W. This ship was a bad straggler from a small convoy (UR.108) bound from Iceland to the United Kingdom. (1)

Early on 10 February, U.256 erroneously claimed to have sunk a destroyer with an acoustic torpedo. From the position given by the U-boat, this must have been one of the outer screen to convoy HX 277 which was coming into Group Igel II's area from the southwest well behind the SL convoy and on its port quarter because shortly afterwards L/L Liberator G/53 Squadron, who was escorting HX 277 sighted two U-boats and attacked one of them. The attack, which was harmless, was on U.608 and it appears likely that the other U-boat was U.256. Neither boat attempted to follow the convoy.

Ibid

Unknown to the enemy, the outward bound ON 223 containing the escort carrier H.M.S. Fencer was crossing the general area between the two groups of U-boats. At 1430 hours on 10 February, the Fencer's Swordfish aircraft sighted U.666, the southernmost boat in Group Igel I and sank her five minutes later in 5356N x 1716W. Further to the south, two U-boats fresh out from France were approaching Group Igel II. Both reported smoke trails and later a convoy steering southwest in 4915N x 1730W. This was OS67/KMS 41. Doenitz ordered any boats who were favourably placed to operate against it. These two boats (U.413 and U.731) together with U.437, also fresh out from France, remained in contact with the convoy for 24 hours before being driven off and losing touch. During this time they fired several acoustic torpedoes and signalled a wholly imaginary claim of three destroyers and a merchant ship sunk. (2) An attempt was made on 12 February to attack this convoy with He.177s but was frustrated by F.A.A. fighters from the escort carrier H.M.S. Pursuer. They shot down one He.177 and the shadowing FW.200 at 2010 hours in position 4256N x 1750W.

Ibid

Meanwhile the burst of U-boat signalling around the OS convoy had resulted in the 2nd Escort Group leaving the now safe SL convoy in order to sweep down towards such a promising area for kills. Strong shore based air cover was flown during the night of the 10/11th and at 2350 hours on 10 February, L/L Wellington O/612 Squadron detected and attacked a U-boat. This was U.545 who was so seriously damaged that she had to be abandoned and scuttled after informing the U-boat Command. Doenitz ordered the neighbouring U.714, 984 and 549 to close and rescue the crew. U.984 was shortly afterwards attacked by L/L Wellington C/407 Squadron but not damaged. (3) Another U-boat (U.283) was

- (1) The convoy itself was receiving night air support and continued to do so on subsequent nights. At 0020A/10 February, the aircraft then giving cover (L/L Liberator D/120 Sqdn) detected and sighted U.984, also of Group Igel I, near the little convoy. Faulty homing prevented an attack being made before the U-boat dived but U.984 lost contact with the convoy.
- (2) Subsequently, U.413 was detailed by Doenitz to go back and operate inshore in the Scilly Islands/North Cornwall area and to report on the conditions of traffic.
- (3) During the following day, U.714 reached the position and picked up the survivors. U.549 and 984 were then sent back to their positions in Group Igel I.

attacked but shot down her assailant - L/L Wellington N/612 Squadron. She was again attacked at 04:10/11th and this time was sunk by L/L Wellington D/407 Squadron. By this time the 2nd Escort Group were nearing the area from which the previous U-boat signalling had come and an asdic contact was obtained. After several depth charge attacks copious evidence of a kill came to the surface. This marked the end of U.424. No more locations were made and late on 12 February the Escort Group proceeded towards the next incoming convoy - HX.278.

(vii) Decisive action around convoys ON.224 and ONS.29

Although unaware as yet of his full losses during the past fortnight, (1) Doenitz realised that the air and surface opposition was unusually strong and at dawn on 11 February he re-disposed Groups Igel I and II some 150 miles still further to the westward with orders to proceed to the assigned positions at economical speed. From the 13th he started G.A.F. reconnaissance to the north of Ireland for the next ON transatlantic convoy. (2) Nothing was sighted this day except that U.445 in Igel II claimed a destroyer sunk at 2056 hours in 53¹/₂°N x 21¹/₂°W. She reported a subsequent heavy depth charge attack and had to start home in a badly damaged condition. There was no truth in her destroyer claim.

On 14 February at 1807 hours, the G.A.F. reconnaissance reported ~~Convoy ON.224~~ off N.W. Ireland steering west with two escort carriers in company. (3) On this date the Igel Groups were scattered in the general area 61° to 50°N between longitudes 20° and 29°W and on receipt at base of the G.A.F. report Group Igel I of nine boats was sent at utmost speed to the southeast while Igel II of eleven boats was told to close eastwards. On the 15th, the G.A.F. reported ON 224 as steering southwest and Igel I was re-directed so as to get across the convoys line of advance as soon as possible. Igel II was spread in an area across its presumed track further on. By this time the 2nd Escort Group had joined the incoming HX 278 (now in 48°N x 25°W) together with the 7th and 10th Escort Groups and early on 16 February two escort carriers (Striker and Fencer) also

B. d U.
War Diary

Ibid
also
Admty
C.B.04050/44(2)
and (3)
and
No.15 Group
O.R.B.
Appendices

- (1) Most U-boat kills, whether by air or surface craft, occurred under conditions which prevented a signal being sent by the U-boat to base. Unless a U-boat on patrol had a sighting message to transmit, W/T silence was kept so that the mere absence of signals was not significant. It was only when a U-boat's fuel endurance was considered to be at an end that such a silence became ominous. Thus U-boats at sea could be dead for weeks before the U-boat Command was aware of it. This did not apply in the transit areas because when on passage through them U-boats were required to send a short signal either before starting into or after clearing from those areas.
- (2) The widely scattered and submerged U-boat dispositions were, Doenitz decided, quite incapable of intercepting incoming convoys soon enough to permit of planned concentrations against them; moreover they were outside the range of his air search. He preferred to gain early knowledge by G.A.F. reconnaissance of outward bound convoys clearing from the North Channel, keep them under air observation and base his attack disposition on shadowing reports finally bringing the U-boats into contact with the convoy by beacon signals from the shadowing aircraft. -
Ref. B. d U. War Diary.
- (3) B.d.U. assumed this convoy to be ON.224, but in fact it was OS.68/KMS.42.

joined up. Sunderland W/201 Squadron, on support ahead of the convoy, sighted and attacked U.546 at 1222 hours as she was hurrying southeastwards on the surface. Some damage was inflicted but the boat signalled base later that it could be repaired with her own resources.

The first two JU.290s sent out on the 16th to re-locate the supposed ON convoy again found OS.68/KMS.42 with its escort carrier. Both were shot down - one by a F.A.A. fighter from the carrier H.M.S. Biter and the other by Beaufighter N/235 Sqdn escorting this convoy. No genuine ON convoy was found by the G.A.F. until 1610 hours and this was in fact ONS.29 located in 5240N x 1500W. Later on the 16th after dark, U.984 who was returning homeward⁽¹⁾ was attacked but not harmed by L/L Liberator U/53 Squadron engaged on general air cover to both ON.224 and HX.278.

So far Doenitz was satisfied with his preparations and decided on action against ^{the supposed} ON 224 during the night of the 17/18th. Maximum G.A.F. reconnaissance was planned for the afternoon of the 17th which was intended to shadow the convoy throughout the night and by sending beacon signals from dusk onwards to bring the U-boats into actual contact during the dark hours. However, the afternoon G.A.F. sorties on the 17th separately reported both ONS.29 and, further eastwards, the genuine ON.224 but the enemy control did not realize that there were thus two outward convoys involved. Anyway, feeling

sure of interception, Doenitz combined the 1gel groups in a Group Hai of 20 U-boats disposed in a treble line from 52 $\frac{1}{2}$ °N x 25°W to 49°N x 23°W. However, the two vital night sorties both returned early owing to defects and the waiting U-boats received no beacon signals. Moreover by the morning of 18 February the actual situation was not what Doenitz supposed. Not one but two westbound convoys had cleared from the North Channel. The first was the slow ONS 29 followed much later by the faster ON.224, which by the early morning of the 18th was still about 150 miles away to the northeastward of convoy ONS.29. ~~of ON 224.~~ Knowing that both convoys were entering dangerous waters they were given strong shore-based air cover while the 2nd, 7th and 10th Escort Groups were detached from the now safe HX.278 and sent, the latter to ONS 29 and the other two to ON 224. Furthermore during the night ON 224 had been re-routed southwards and by dawn/18th was tracking to the eastward of the Hai Group. These facts remained unknown to Doenitz because the low availability of G.A.F. sorties did not allow reconnaissance during daylight on the 18th and sorties were being conserved for a maximum effort from dusk onwards.⁽²⁾

However, early in the afternoon of the 18th, the German Radio Intelligence Branch reported that from D/F fixes on ON 224's radio guardship the convoy's position was approximately in 50°N x 21°W which indicated a drastic evasion southwards. Accordingly Doenitz told the Hai Group at 1400 hours to dive in a south easterly direction and on surfacing at dusk to steer due south at eleven knots. Shortly after, at 1523 hours, the 10th Escort Group with ONS 29 obtained an asdic contact. After depth charge attacks, a U-boat surfaced and was finished off by H.M.S. Spey in 4832N x 2336W. This was U.406 from

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- (1) This boat also, had erroneously claimed a destroyer sunk on 15 February in 55°N x 20 $\frac{1}{2}$ °W.
 (2) This effort amounted to three JU.290s, one BV.222 and two FW.200s.

Ibid

Ibid

which 45 survivors were picked up.⁽¹⁾ By 2200 hours Doenitz had received no air reports from the night G.A.F. sorties and all U-boats were told to steer east at 13 knots so as to get at ON 224 as soon as possible. L/L Liberator S/53 Squadron, on the way out to escort ONS 29, attacked two of these boats but, although doing them no damage, they were forced to dive. No locations were made by the G.A.F. until 0110 hours on the 19th but subsequently both ON 224 and ONS 29, who by this time were not far apart, were reported and beacon signals on both were transmitted which resulted in some confusion among the U-boats. Only two were faintly detected by ON 224's outer screen and in neither case was contact firm enough to press home an attack.⁽²⁾ Later, still in darkness, at 0605 hours L/L Liberator G/224 Squadron returning from escorting ONS 29 sighted and attacked a U-boat about 25 miles west of ON 224. This was one of about eight boats in this vicinity. No damage was inflicted but the forced dive ensured no subsequent contact with the convoy before daylight.

See Map No. 58

Ibid

At first light on 19 February, the 2nd Escort Group left ON 224 and swept back over the convoy's track to find the two U-boats which had been faintly detected a few hours before. Asdic contact was gained at 1007 hours and after a seven hour hunt U.264 surfaced and abandoned ship under gunfire.⁽³⁾ Meanwhile ONS 29 was considered clear of the most dangerous area and the 10th Escort Group was detached to join ON.224. While on passage at 1426 hours an asdic contact was made and after a few depth charge attacks U.386 broke surface. She opened fire on her assailants while trying to escape on the surface at full speed. She was soon sunk by combined gunfire and shallow set depth charges by H.M.S. Spey. Sixteen survivors including the captain were picked up.

After sinking U.264, the 2nd Escort Group remained hunting in the vicinity. At 2155 hours a U-boat W/T signal was D/F-ed about 15 miles distant. The Group went off in pursuit but 40 minutes later the Woodpecker was hit by an acoustic torpedo in 4849N x 2231W and had her stern blown off.⁽⁴⁾ This was by U.764 who got away unscathed.

B. d U.
War Diary

In his comments on the operation, Doenitz gave as reasons for failure firstly, the aircraft defects which prevented location and beaconing of the convoy during the decisive night of 17/18th and which also resulted in the convoy's more southerly course not being appreciated in time to get the boats across; secondly, the failure to locate the convoy until 0200/19th when the beacon signal procedure was too late to be of value to most of the U-boats. He said that this type of combined operation would be tried again and again as he was convinced that if there was adequate air reconnaissance it was perfectly feasible to move the U-boats into attacking lines despite any evasive measures by the convoy and in time to get the boats up to the convoy early in the night on which action was

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- (1) U.406 carried a special radar countermeasure party under a scientist Dr. Greven. He was among the survivors and provided much valuable information as to the state of enemy progress in this direction.
 - (2) One of these boats (U.437) made a mistaken claim to have sunk a destroyer.
 - (3) U.264 was the first operational U-boat to put to sea fitted with the new Schnorchel apparatus. Fifty one of the crew were picked up.
 - (4) H.M.S. Woodpecker was taken in tow but when nearly home she capsized and sank off the Scilly Isles at 0706/27 February. There was no loss of life.

planned.⁽¹⁾ He also intended to keep a few U-boats on the surface to shadow the convoy by day but this could only be tried if certain initial defects in the 3.7 cm. flak gun had been overcome in a later design now coming into service.⁽²⁾

Fuehrer Confer-
ences on
Naval Affairs
19.12.43

On many occasions in the past, Doenitz had complained of the paucity of long range aircraft allocated to the Fliegerfuehrer Atlantik for co-operation with the U-boat arm. This had been stressed by him to Hitler at the end of 1943 at a conference in which, after reiterating his request, he said that aside from the shortage of planes, insufficient training in navigation and communications hampered the effective employment of air search and showed the need for a co-ordinated training programme. He ended by demanding that the whole output of the new JU.290 should be used exclusively for this task and not for bombing. Hitler promised to speak to Goering in support of this proposal.

ibid
26.2.44

Doenitz returned to this subject during one of his frequent visits to Hitler at Berghof and soon after this abortive attempt to attack ON 224. This failure he ascribed as being due basically to the shortage of long range aircraft. He also made the point that the inability of the U-boats to change position rapidly on the surface because of Allied shore-based and carrier borne air cover would vanish when the Type XXI boats were available with their high sustained underwater speed. It proved that the revolutionary change of type was rightly adopted but it was vital that their construction should be expedited especially as the schedule was already more than a month in retard because of bomb damage to the Siemens-Schuckert electrical motor factory in recent Allied air raids on Berlin.

(viii) The U-boats retire once more to mid-Atlantic

As explained before, Doenitz was still unaware of his full U-boat losses. In fact, during the eleven days from 8 to 19 February no less than ten U-boats had been sunk by air cover or surface support group without a single merchant ship in the numerous convoys traversing the area being even attacked. His U-boat claims to have sunk six destroyers in this period amounted actually to the torpedoing of one sloop. He was, however, sufficiently aware of failure to dissolve the Hai Group and send those with good reserves of fuel out to mid-Atlantic there to await reinforcement before attempting another operation.

B. d U.
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- (1) On 14 February, the strength of Fliegerkorps X in long range aircraft was 11 - JU.290s, 2 - BV.222s, 5 - FW.200s and 4 long range JU.88s. Up to 19 February there were 17 sorties by JU.290s of which four turned back for engine trouble, two for radio or radar breakdown and two for compass defects. Losses were two shot down in the convoy area on the 16th and one shot down on its return journey in the Bay of Biscay on the 19th by one of No. 19 Group's Mosquito interception patrols.
- (2) The reports from U-boats during January and early February as to the effectiveness of the 3.7 cm guns disclosed certain minor constructional defects due to inexperience in firms engaged on their massed production but the main shortcoming was caused by rust during the long periods of submergence. Steps were being taken to overcome this by the use of rustless steel in the more intricate moving parts of the automatic mechanism.

B. d U.
War Diary

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 Nos. 15 and
 19 Groups
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While giving these instructions on 20 February came one of the few genuine claims against destroyers. U.413 in the North Cornwall area torpedoed and sank the destroyer Warwick. Her subsequent signal to base reported little worth while traffic in the area and she received discretion as to whether to remain there or go with U.333 (then outward bound in the Bay) to the North Channel on inshore reconnaissance patrol. She elected for the latter but her success against the Warwick resulted in the diversion of No. 19 Group's convoy sorties to the area between Cornwall and S.W. Ireland for the next week. As nothing was sighted they were reverted once more to the Biscay Percussion Area patrols.

By 23 February sufficient U-boats were in or approaching the mid-Atlantic waiting position for Doenitz to re-group them under the name of Preussen. They were disposed in 18 individual patrol billets pepper-potted over a huge area between latitudes 53° and 47°N from longitudes 30° to 23°W, the centre of which is approximately 700 miles W.S.W. of Ireland. The fatal weakness of a scattered patrol was again exemplified during the next fortnight.

Ibid

See Map No. 59

U.257, returning from a rendez-vous with a German blockade runner in mid-Atlantic, ran across convoy SC.153 on 24 February and was immediately sunk by the 6th Escort Group supporting the convoy. One officer and 18 ratings were rescued. On the night of the 25th/26th the 1st Escort Group supporting a westbound convoy came across U.91 and sank her, afterwards picking up 16 survivors. A few days later on 1 March this Group located and after a long hunt forced U.358 to the surface where she torpedoed and sank H.M.S. Gould before being herself overwhelmed by gunfire and depth charges from the rest of the Group. Later on the same day U.S. destroyers supporting another convoy sank both U.709 and 603. This was followed on 6 March by the surface escorts to HX.280 sinking U.744. The convoy system was demonstrating its offensive character with a vengeance.

Ibid

As no sighting reports of convoys had been received by the U-boat Command, the Preussen boats were instructed to move slowly northwards in search of shipping and on 9 March two minor successes were registered against the escorts of the numerous convoys traversing the area. At 0154 hours, U.575 ran into Escort Group B.4 who were supporting SL.150/MK5.41. She hit and sank the corvette Asphodel and survived the subsequent 18 hour hunt. Further north, U.255 at 2200 hours contacted convoy CU.16 inward bound from New York. She fired at and sank U.S.S. Leopold who was one of the screening destroyers and she also escaped from the subsequent hunt. A day later she was attacked by L/L Liberator K/120 Squadron on escort to a liner, and sustained two men badly wounded.

Ibid

On the 10th March the surface escorts to SC.154 detected and sank U.845. A few hours later, Sunderland U/422 Squadron on a supporting sweep ahead of the convoy attacked a U-boat on the surface in broad daylight. In face of severe flak an accurate stick of depth charges was dropped which mortally injured U.625. She dived after the attack but soon re-surfaced obviously in a bad way. The Sunderland circled for 1½ hours occasionally exchanging gunfire at the end of which time the U-boat made by visual signal to the aircraft 'Fine bombing' and then foundered while the crew scrambled into small dinghies. They were never found but before abandoning ship U.625 had signalled her plight to base and Doenitz instructed U.741 and 256 to rescue the crew. They searched in vain for two days and nights during which U.741 was

attacked and slightly damaged by carrier borne aircraft.⁽¹⁾
U.256 sustained two attacks without damage by Coastal Command
 aircraft finally shooting down her last assailant - L/L
 Wellington H/407 Squadron.

For the next fortnight the Preussen boats were kept moving short distances to avoid their precise location becoming known to the Allies. Several isolated incidents occurred mostly to the disadvantage of the widely scattered U-boats. For instance, early on the 13 March, L/L Wellington B/172 Squadron on night support to ON.227 from the Azores attacked and damaged U.575. A follow-up Fortress R/206 Squadron, also from the Azores, attacked and further damaged her after daylight. Together with Fortress J/220 Squadron this aircraft homed to the spot one of the surface escorts from ON.227 and the U.S. escort carrier Bogue who was in support. Between them all, U.575 was re-located and sunk later on the same day.

U.262 was attacked but not damaged by carrier borne aircraft on the night of 13th/14th and the next night U.653 was contacted by one of the Vindex's Swordfish aircraft. The U-boat dived but the 2nd Escort Group, accompanying the Vindex, followed up, gained asdic contact and at 0305/15 March destroyed U.653.

U.415, after reporting an apparently isolated hunting group on 17 March was heavily depth charged which rendered the boat unfit for deep diving, wrecked the main periscope and compelled an immediate start for home.

U.311 reported hydrophone evidence of a convoy on 16 March. She followed some distance astern but was soon forced to dive for aircraft. Surfacing at dusk she gained on the convoy but came up against the escort screen astern. She erroneously claimed a hit on one of these, was depth charged for four hours, and had to abandon the chase. On 19 March at 1230 hours she sighted escort vessels and a portion of convoy CU.17. She fired a long range salvo at these and sank S.S. Seakay of 10,342 tons. This was the only merchant ship sunk in the Northern Atlantic during March.

(ix) Doenitz admits the final defeat of U-boat action against ocean convoys

By 22 March, Doenitz was aware of most of his recent losses and noted in his War Diary that they had apparently all occurred in the area 54° to 48°N between longitudes 16° and 30°W. He decided to evacuate this large area altogether and moved seven of the boats to the north of it where they were to patrol 60 miles apart in an east/west direction. The four others were detailed to patrol a narrow strip to the southwest of it. Homeward bound boats were instructed to avoid the area in spite of the detour which necessitated two to three extra days on passage. He also cancelled further combined operations against convoys for the following reasons:-

(1) During most of March three British escort carriers (Vindex, Biter and Tracker) were operating with convoy support groups in the general area 500 miles west of Ireland.

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and
for the foot-
notes

(a) Owing to the February/March re-inforcement of the Arctic Flotilla⁽¹⁾ and the build-up of a force at immediate readiness in Norwegian ports⁽²⁾ only two new Type VII U-boats had joined the Atlantic Fleet since early February.

(b) The losses among Type VII boats in the Atlantic had been so high that there were only 18 still operational. Of these, five were in special inshore billets and one on weather reporting duties.⁽³⁾ This left only 12 available for convoy operations which was not sufficient.

(c) The total strength of Long range aircraft available was 8 - JU.290.s, one BV.222 and a few long range JU.88.s. This was totally inadequate.

See Map No. 61

All serious opposition to the passage of convoys thus came to an end. Doenitz gave up even the fiction of labeling his scanty U-boat disposition by a group name. Events during these first three months of 1944 have been described in detail because they illustrate how the attempt to attack by combining air reconnaissance with U-boats on diving patrol even close to our western coast was defeated by the prolific use of air cover and surface support aided by good intelligence.

During the three month period, 105 convoys containing 3,360 merchant ships traversed the area occupied by U-boats and only three of them were sunk. The U-boat losses in the same area amounted to 29 with six more badly damaged. Had all the U-boats been fitted with Schnorchel it is unlikely that the result would have been any different because to hope for any worthwhile success against well supported convoys, U-boats must be grouped closely and possess high mobility.

Of the 29 U-boats sunk, surface craft killed 18 outright, six by Coastal Command and one by carrier borne aircraft. Two more were shared among the above participants and two vanished without trace. The grand total of flying hours by

-
- (1) Because of the importance attached by the German High Command to attacks on convoys bound for North Russia, which had been resumed in December 1943, orders were given on 29 December to increase the Arctic U-boat flotilla from 18 to 24 boats. On 10 January 1944 this was raised to a requirement of 33 boats. Of the 27 new Type VII boats leaving Kiel during January and February, 14 went north.
 - (2) So as to have U-boats ready for immediate action in case of Allied landings in Jutland or South Norway orders were given on the 16 February that new Type VII boats were to be held in Norwegian ports up to a minimum of 10 and to be known as Group Mitte. Not until this number had been reached were any to be released for the Arctic or North Atlantic.
 - (3) U.413 and 333 in the North Channel, U.621 off the Butt of Lewis, U.448 off the north coast of Iceland and U.744 detailed to proceed to Reykjavik but had already been sunk unknown to Doenitz. U.552 was on weather reporting duties 350 miles east of Cape Farewell (Greenland).

Coastal Command aircraft is given below⁽¹⁾ and further details as to monthly distribution among the Groups is at Appendix XX.

(x) The North Atlantic abandoned by active U-boats

During April the number of U-boats dotted about in mid-Atlantic fell progressively to five by 1 May. This fall was brought about not only by losses incurred but by the setting up of a harbour group in Biscay ports similar to that in South Norway. It was instituted in the third week of March under the name of Group Landwirt and its strength was built up by ceasing to sail U-boats and co-opting those returning from sea.⁽²⁾

The widely scattered units in mid-Atlantic presented little or no threat to the numerous convoys and on the few occasions when U-boats reported the sighting of ships, their signals were D/F-ed and they were ruthlessly hunted to death. In this manner four were sunk by surface craft and ~~one~~ by Coastal Command aircraft at a cost of two ships sunk in convoy.⁽³⁾ Similar tactics continued in May. No merchant ships were lost but two U-boats were sunk, both by escort groups.

Doenitz abandoned all pretence at further offensive action and moved the two surviving U-boats further westward for purely weather reporting duties where they were joined by a third in mid-May. Continued complaints by these boats on the amount of air activity over their billets brought a sharp rejoinder from the U-boat Command that their meteorological reports were essential for weather forecasting in connection with invasion estimates. If necessary they could shift billet without further orders but were to avoid contact with the enemy by:-

(a) Proceeding at high speed to a different position after each report

(b) If under continued air activity they were to keep submerged for several hours after each report.

Somewhat naturally no further action of any kind eventuated for the remainder of May and on 1 June 1944 there were

(1)

Task	Effective Hours	Total Hours	A/C Lost	U - B O A T			
				Sights	Attacks	Sunk	Dam.
Convoy Escort	Day 975	2,301	-	1	1	-	-
	Night (213 (N) (168 L/L)	(1,113 (N) (468 L/L)	1 N -	- 9 L/L	- 5 L/L	- -	- -
Convoy Support	Day 4,771	7,896	2	13	12	3+1sh.	3
	Night (1,431 (N) (2,313 L/L)	(3,198 (N) (3,780 L/L)	1 N 5 L/L	3 N 18 L/L	2 N 15 L/L	- 3 L/L	- -

(2) On 1 May Group Landwirt numbered 32 including six boats fitted with Schnorchel. On the same date Group Mitte in South Norway numbered 15.

(3) The two ships (S.S. South America - 6,246 tons and Ruth I - 3,531 tons) were in convoy SC.156. They were torpedoed by U.302 on 6 April. She was herself sunk immediately after by the counter-attack from the surface escort. The other boats sunk by surface craft were U.962, 448 and 986. Coastal Command aircraft sank U.342 and 341 when on general convoy support, and U.311 vanished without trace in the North Atlantic during April.

See Map No. 66

only the three self-effacing weather reporting U-boats on the erstwhile main U-boat battle ground. Anti-U-boat warfare had, meanwhile, shifted to the area north of the Shetlands and to a lesser degree to the northern part of the Biscay coast.

PART II - IN THE TRANSIT AREAS

(A) - BISCAY Operations - January to May incl. 1944

(i) - January operations

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The immunity from air attack enjoyed by U-boats in the Bay of Biscay during the last half of December 1943 seems to have resulted in a more careless attitude both as regards the timing of the battery charging during the night hours and the number of hours spent on the surface, particularly in the eastern part of the Bay. Additional causes for this attitude were the recent fitment of some U-boats with a fully automatic model of the 3.7 cm. flak gun, the general equipment with the Naxos aerial system of A.S.V. detector and a few models of the Hohentwiel search radar for picking up hostile aircraft. It also happened that in the first week of 1944 a second Liberator Squadron (No. 224) became operational on Leigh Lights and an increased proportion of night flying was being done by No. 19 Group in the middle and inner Bay area.

This combination of circumstances resulted in a sudden burst of sightings and fierce night battles during the first week of January. No less than 25 sightings were made, all at night, followed by 14 attacks. Several of these encounters were on the same U-boat but in total they affected 12 different individuals. None were sunk but four were seriously damaged.⁽¹⁾

Ibid

Doenitz made an admonitory signal to all U-boats deploring the over-confidence and stressing that the danger from air patrols was as great as ever and only cautious tactics would circumvent it. He gave orders that the hours utilised for charging batteries were to be kept to a minimum and varied from night to night so that the enemy could not assume certain periods of the dark hours were devoted to charging on the surface. He did, however, give permission for daylight charging to those boats fitted with the new model 3.7 cm. gun, provided that an exceptionally good watch was kept both visually and on the search receiver. He hastened the provision of radar decoy buoys⁽²⁾ and outlined the procedure for their introduction into the Bay waters. Regarding the increased flying by British aircraft in the Inner Bay, he pressed for G.A.F. night fighter interception patrols.

On 8 January, U. 426 (outward bound) was sunk in broad daylight on the surface by Sunderland U/10 Squadron in spite of its 3.7 cm. gun but it was not till after U. 621, also fitted with the new gun, was badly damaged early in the afternoon of

(1) U. 629, 415, 445 and 373

(2) The Thetis radar decoy buoy consisted of a thin wooden pole five metres long fixed to a float weighted underneath by a steel tube. On the wooden pole were fitted small metal di-poles which gave the same echo to A.S.V. as a surfaced U-boat. These buoys were scheduled to be laid from the next ten outward bound U-boats. Each boat was to lay 10 to 15 buoys at intervals of 25 miles from the 100 fathom line out to about longitude 10°W. See also section (iii).

13 January by Liberator A/59 Squadron that Doenitz gave orders that the 3.7 cm. gunned boats were also to abandon daylight charging. Two more outward bound U-boats were attacked but not harmed during the night of 14 January by Liberator F/224 Squadron and Halifax H/58 Squadron respectively.

Thereafter Doenitz's admonition appears to have taken effect because the next fortnight passed with no sightings at all in the Bay although it is true that the scale of flying from No. 19 Group fell off owing to the rising number of sorties directed to ocean convoy support westward of Ireland. Towards the end of January the dearth of sightings in the Bay prompted a trial of special night sweeps in the Inner Bay covering the outer focal points of the enemy swept channels into Biscay ports where it was hoped U-boats would be surfaced and unwilling to dive. This policy was immediately successful and during the last three nights of the month six separate U-boats were sighted and attacked. Three of the attacks were made by Halifaxes with the aid of flares but inflicted no damage. The other three were by Leigh Light; two failed to harm the U-boat but the third, by K/172 Squadron, sank U.364. Unhappily the aircraft was shot down in the moment of success with no survivors.

January Summary

The night effort was almost double the day flying hours. With considerably fewer total flying hours than December 1943 the results were much better. The average strength in A/U aircraft was 233 plus 76 long range fighters.⁽¹⁾ During January, 66 U-boats crossed the Percussion areas of which 20 individual boats were sighted and 17 of them were attacked resulting in two being sunk and four seriously damaged.

(ii) - February operations

The diversion of flying effort from the Percussion areas to convoy cover off Ireland continued for most of February but, in spite of this and the temporary transfer of two and a half Leigh Light squadrons to No. 15 Group, the better weather enabled No. 19 Group to equal January's flying hours in the Percussion areas. This did not, however, carry with it such good results. The conditions in the Bay were very different to those in the convoy area. In their efforts to attack convoys the U-boats were required to be on the surface all night and on occasions during daylight hours as well. The opportunities for aircraft sightings were, therefore, much greater than in the Bay where boats on passage were continually admonished by Doenitz to remain submerged and only

(1) Analysis of January flying hours in the Bay

		Effective hours	Total hours	A/C loss	Sights	Attacks	Results
No. 19 Group	Day	1,702	2,334	2	1	1	U.426 Sunk
	Night	(1,578(N) (1,589L/L)	2,422(N) 2,209L/L	2N 1L/L	15N 19L/L	11N 11L/L	U.415, 445 damaged (U.364 Sunk (U.629, 373 damaged
Gibraltar in Finisterre area	Day	206	306	-	-	-	
	Night	(176(N) (90L/L	233(N) 130L/L	- -	- -	- -	

N.B. (N) signifies night hours by ordinary aircraft and L/L those by Leigh Light aircraft.

charge batteries with the utmost caution. Sightings by aircraft when they did come were apt to occur spasmodically either through specially flak-minded captains or unserviceable search receivers.

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One such combination took place on the nights of 4 and 5 February when U.763 first shot down L/L Liberator F/53 Squadron and subsequently was twice attacked by other aircraft, the second of which she also shot down (Halifax R/502 Squadron). On the same two nights, U.437 was sighted twice and attacked once. No more sightings were made until the nights of the 11th and 12th when U.170 was attacked twice, and U.731 once. After this only U.984 was attacked on the night of the 18th and U.744 on 29 February. In no case was any damage inflicted by any of these attacks so that for an expenditure of more flying hours the results were nil.⁽¹⁾ It was during this month that the contribution from Gibraltar and Morocco based aircraft in the Finisterre area ceased owing to their preoccupation with U-boats endeavouring to get through into the Mediterranean. The average strength of A/U aircraft in the Bay was 156 plus 70 long range fighters. During February, 50 U-boats crossed the Percussion areas of which only six were sighted. Five of these were attacked with no damage.

(iii) - Countermeasures now possessed by U-boats against aircraft

(a) Guns and armour

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War Diary
Pages 131
and 132

By the end of February 1944 nearly all U-boats had been fitted with the improved 3.7 c.m. automatic flak gun Type M.42 and a number of action reports had been received on its performance. Although it had had some successes, the reports revealed several shortcomings mainly resulting from inaccurate workmanship inherent in massed production but also due to unskilled maintenance by the guns crews and the liability to rust rapidly under conditions of prolonged submergence. Energetic steps were being taken to rectify the standard of workshop output, to give special training to the guns crews when in harbour and to substitute rustless steel in the automatic mechanism of the gun.

Doenitz was still convinced that the U-boat flak could be made more than a match for aircraft when attacking. He had discarded the quadruple 20 m.m. cannons, not for faulty operation, but because he considered the calibre too small. He thereby sacrificed both volume and rapidity of fire. In capable hands the old armament

(1) Analysis of February flying hours in the Bay

		Effective hours	Total hours	A/C loss	Sights	Attacks	Results
No. 19 Group	Day	2,236	2,995	2	1	0	Nil
	Night	(1,652(N)	2,611(N)	2N	2N	2N	Nil
		(1,546L/L	2,041L/L	1L/L	7L/L	6L/L	Nil
Gibraltar	Nil Nil						

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could be formidable as had just been shown by U.763 who was so equipped and had, early in February, shot down two four engined aircraft.

Additional to the flak gun armament, rockets were still being developed in trials. An improved form of trainable rocket battery had been successfully tested in U.986 and she had put to sea early in February but as yet no operational experience had been obtained.

ibid

Bridge armour was standardised by now but, although giving protection against the aircraft's front gun fire at relatively long range, it was of little use at close quarters when the aircraft was coming over the boat. Gunshields had been introduced but the total top weight involved in these and the side armour limited the former to thin sheet steel which was not bullet proof at close range even to the 0.303" calibre. In an attempt to get better protection for both guns crews and bridge personnel a new mark of conning tower with the guns pointing ahead was being installed. Only one boat (U.973) had had any operational experience with it and she reported that, although efficient in moderate weather on the surface, the stability of the boat in heavy seas was poor; moreover depth control when crash diving and fully submerged was adversely affected.

(b) Radar Countermeasures

During the months following the initial use in January 1944 of the Thetis IIC radar decoy buoy in the Bay of Biscay, large numbers were laid by U-boats on passage through this area. This early mark of Thetis was designed in the autumn of 1943 and had by the end of the year only just reached quantity production. Like its balloon borne counterpart (Aphrodite) it was designed against metric A.S.V. Tests on reconstructions from captured specimens established that little or no echo was given from centimetric radar transmissions.⁽¹⁾ It is, therefore, unlikely that these decoys had any success. Although there were from early 1944 increasingly frequent cases of A.S.V. contacts vanishing just as the aircraft was expecting to sight a surfaced object they are explainable by the fact that many more U-boats were using their Naxos (or later models) search receivers or the Hohentwiel search radar and diving on the warning so obtained.

The German technical branch must have known that Thetis II was of little use but the laying from U-boats continued up to the end of May. Much later they designed efficient centimetric corner reflectors (Thetis S and Thetis US) which could be laid from U-boats both surfaced or submerged and also could be dropped from aircraft. Fortunately none reached operational use because in theory they could have been a considerable nuisance both in transit areas and around convoys.

Professor Kuepfmüller, who it will be remembered was put in charge of the Scientific Directional Staff concerned

(1) Reference C.C.D.U. Report No.44/14 at Appendix 14.9 of Coastal Command O.R.B. Appendices for March 1944.

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with all radar and radio matters, having realised at once that 10 c.m. radar was in general use in Allied maritime aircraft took steps to standardise the Naxos/Borkum detector receiver set for all operational U-boats. It was still a fragile piece of equipment easily damaged by careless handling and subject to serious loss of efficiency by spray on the aerial which still had to be rotated by hand when searching. It was, however, gaining in popularity among the hitherto disillusioned U-boat captains and was on increasingly frequent occasions the means of warning against approaching aircraft.

See Part I (vii)

Kuepfmuller was not at all sure that 10 c.m. A.S.V. was the only form of location used against U-boats and he continued the despatch of highly trained technical parties in operational U-boats to intercept all possible types of Allied search transmissions.⁽¹⁾ It was one of these watching parties under a Dr. Grevin which was rescued from U.406 after she had been sunk on the 18 February by H.M.S. Spey.

Serial Order
No. 7 B. d U.
War Diary
Pages 126
and 127.

Concurrently, new search radar equipment was being fitted to a few operational U-boats. The old Gema set, originally designed for surface ship gunnery control, had been tried in U-boats but was unsuitable because of its complicated nature, liability to break-down and poor range. The new set was called the Hohentwiel and had been adapted from the G.A.F. airborne model. At the end of February 1944, Doenitz issued a serial order in which the attention of all U-boats was drawn to the value of this set as a sure means of warning against approaching aircraft whatever type of location they happened to be using. He stressed the fact that it was more important for boats on passage to be warned of aircraft and so not surprised than to try to remain entirely unobserved by keeping radar silence and reliance on a possibly faulty Naxos set.⁽²⁾ Where, however, it was vital not be detected themselves even with adequate warning, such as in a patrol disposition against convoys, the U-boats were not to use the Hohentwiel set.

Although Kuepfmuller had recognised the nature of Allied airborne search radar he was under no delusion that the Naxos/Borkum set was an efficient answer. Its standardisation was essentially a stop-gap measure until a better model was designed. In due course a more robust aerial of greater sensitivity was produced under the name of Cuba Ia or Fliege which increased the range of detection of airborne 10 c.m. A.S.V. to 35 miles. This was being fitted in U-boats during April 1944. Meanwhile the enemy had obtained from one of our crashed bombers the 3 c.m. blind bombing ~~set~~ H2X. An extra aerial fitting

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- (1) For instance research was still proceeding to counter possible location by infra-red methods and ways were being tried to deaden radar echoes by coating parts of the U-boat with various substances.
 - (2) Soon after this order, on the night 11/12 March, U.311 fitted with Hohentiel reported that she had picked up an aircraft, held it on approach and had her flak armament trained ready so that immediately the aircraft was sighted an accurate fire was opened resulting in the destruction of the aircraft (Halifax L/58 Squadron). Ref. B.d U. War Diary.

called Mücke was designed against this wavelength and combined with Cuba Ia into a standard equipment known as Tunis which was being fitted to U-boats at the end of May. It still had the disadvantage of having to be unshipped from the bridge every time the U-boat dived and, in order to obtain the necessary sensitivity, the property of all-round looking had to be sacrificed so that the aerials still had to be continuously rotated by hand by the bridge watchkeeper. Further refinements to surmount these shortcomings were produced after "D" day and are recounted in the next volume.

(iv) - Aircraft measures against U-boats

(a) Armament

The main offensive armament carried by A/U aircraft had not altered much since mid-1943. The chief weapon was the Mark XI Torpex filled 300 lb. depth charge fitted with a pistol ensuring detonation at 25 feet depth and aimed with the Mark III Low Level Bombsight. On occasions the Liberators carried the Mk. 24 Mine for use against U-boats who dived over 60 seconds before depth charges could be released. One squadron (No. 502 Halifax) was armed with the 600 lb A/S bomb for release above 700 feet with the Mark XIV bombsight. Now that surfaced U-boats were so rarely encountered by day the Rocket Projectile was not much in use. After the withdrawal from the front line of the three Hudson squadrons, who were so armed, and with the exception of some Liberators in Nos. 224 and 311 Squadrons fitted with R.P. rails, this weapon was used only by the Beaufighter and Mosquito anti-ship squadrons.

For a short time during the autumn of 1943 a few Liberators of No. 224 Squadron had experimented on operations with sticks of small 35 lb. hollow charge contact bombs but results had been disappointing. As has already been mentioned there was one flight of Mosquitoes in No. 248 Squadron armed with a 6 pdr. automatic gun. This flight carried out special sorties close to the Biscay coast.

All type of A/U aircraft carried machine gun armament either 0.303" or 0.5" in calibre for use against the U-boat bridge and flak gun personnel. These were mounted in a variety of ways and positions either single free guns or in turrets. In the hands of a well trained crew they not only reduced the accuracy and volume of a U-boat's flak on the attacking run-in but inflicted many casualties and sometimes entirely smothered such fire. There was a special section in the A/U Division at H.Q. Coastal Command who studied and advised on gun armament and the tactics calculated to upset the aim of U-boat gunners. Opinion among squadron commanders varied on the subject of type of guns, mounting and calibre. To some extent this personal faith was allowed expression in fitments in individual squadrons and it is of interest that after battle experience many preferred the smaller calibre but high rate of fire obtained from the 0.303" to any larger type.

(b) A.S.V. location

By March 1944, all Liberator, Halifax and Wellington squadrons were equipped with centimetric A.S.V. Some of the latter had been fitted with the high power attenuator

model (Mark VI A.S.V.) which enabled the operator to obtain a long range location and then to reduce the power when homing so as to give the U-boat's detector the impression that the aircraft was opening instead of rapidly closing the range.

The flying boat and Fortress squadrons were up to April still only equipped with Mark II metric A.S.V. but from the middle of the month Sunderlands fitted with 10 c.m. Mark III were being fed into Nos. 201 and 228 Squadrons. These metric fitted aircraft only used their A.S.V. for navigational purposes and in conditions of bad visibility or darkness.

Somewhat naturally the continuance of maximum diving tactics, particularly by day, by the U-boats even in convoy areas favoured a preponderance of initial A.S.V. locations. Taken generally, however, visual look-out was still superior in daytime to even centimetric A.S.V.⁽¹⁾ This was borne out in May when the northern transit patrols encountered a batch of U-boats under conditions of no dark hours and clear weather in which visual range was greater than A.S.V. pick-up.

(c) Illumination of target at night

The change-over by U-boats from day surface tactics to maximum submergence with surfacing only at night placed a heavy premium on night flying. Convoys now received almost as much cover by night as during the daytime but the actual close escort was usually given by Leigh Light aircraft because the narrow searchlight beam momentarily shown when identifying an A.S.V. contact was far less likely to inadvertently betray ship positions to lurking U-boats than the widely diffused illumination from flares.

In the Bay of Biscay the proportion of night flying had been growing since the autumn of 1943 and was by early 1944 considerably more than that devoted to daytime patrol. The night operations were almost equally divided between Leigh Light and flare equipped aircraft. Leigh Light procedure has already been described and there was nothing new except in the growing number of Liberator squadrons permanently or on occasion carrying Leigh Lights.⁽²⁾ The flare technique of night attack was by now fully developed and was at its highest standard in the .

(1) Analysis of initial locations of U-boats by aircraft using their A.S.V.

Month	Atlantic Convoy Area			U-boat transit areas		
	Initial location by		A.S.V. % age	Initial location by		A.S.V. % age
	Visual	A.S.V.		Visual	A.S.V.	
January	4 Day	4 Night	50	4 Day + 2 Night	36 Night	86
February	NIL	1 Day + 15 Night	100	3 Day + 1 Night	9 Night	70
March	1 Day	1 Day + 6 Night	87	4 Day	2 Day + 11 Night	76
April	1 Day	1 Night	50	2 Day	2 Day + 15 Night	90
May	1 Day	1 Night	50	15 Day + 4 Night	4 Day + 12 Night	46
Total	7 Day	2 Day + 27 Night		28 Day + 7 Night	8 Day + 83 Night	

(2) Nos. 53 and 224 Lib. Squadrons operated in the Bay permanently fitted. Nos. 86 and 120 Lib. Squadrons carried Leigh Lights only when on convoy night cover duties.

C.C.
T.S. 30 Part III
Encl. 4A

Halifax squadrons Nos. 58 and 502. An efficient slow dropping parachute flare had been provided. (1) Normal homing was carried out on the initial A.S.V. contact while losing height to 700 feet. When the range had closed to $1\frac{1}{2}$ miles, four flares were dropped as close together as possible. No. 58 Squadron was armed with depth charges and unless the aircraft was fitted with a radio altimeter further height was only lost if the surface of the sea could be clearly seen in the light of the flares. On sighting the U-boat a normal depth charge attack was carried out. No. 502 Squadron being armed with the 600 lb. A/S bomb, their aircraft lost no further height and on sighting the U-boat carried out a relatively high level attack using the Mark XIV bombsight. In either case, if the U-boat was not sighted on this run-in the pilot continued on a steady course for 10 minutes, then turned on to the reciprocal track and endeavoured to re-establish contact for another run. If this failed the search was abandoned.

Besides the two Halifax squadrons, the three U.S.N. Liberator and two R.A.F. Liberator squadrons (not yet equipped with the Leigh Light) also used the flare procedure. This technique was not applicable to flying boats and when engaged on night operations they carried small 1.7 inch flares giving three million candle power for three seconds which were dropped in rapid succession through a flare tube just before releasing depth charges. In all cases, should moonlight be considered by the pilot to be bright enough he was given discretion to dispense with any form of artificial illumination.

(v) March operations

The U-boat threat to convoys westward of Ireland having subsided, all No. 19 Group's availability was once more employed in Percussion areas. During the first nine days of the month five separate U-boats were sighted, all at night, in the middle area of the Bay. Four were attacked but no damage was inflicted. (2) On 10 March two Tsetse Mosquitoes together with two Liberators of No. 311 Squadron supported by eight Mosquito fighters on an anti-shipping sweep sighted a large submarine steering east off the North Spanish coast escorted by four Elbing class torpedo boats with at least eight Ju.88.s circling around. Actually this was an incoming Japanese U-boat which for policy reasons was given this unusually strong escort.

A general action followed. The Tsetses attacked and claimed several hits on the submarine, the Liberators bombed the torpedo boats in spite of very heavy flak and a dog-fight ensued among the fighters in the course of which four Ju.88.s were shot down. Except for some splinter damage no harm was done to the torpedo boats and German records make no mention of the submarine's condition. However, such an experience almost on their host's front door step can hardly have impressed the Japanese favourably.

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- (1) This was the 4 inch A/U High Intensity Flare which gave a light of two million candle power for 50 to 70 seconds.
 - (2) Although one of them (U.629) turned back to port soon after being attacked with her port main switchboard out of action, the German records make no mention that this was due to damage inflicted by the aircraft.

During the next three days, three more U-boats were sighted. One of these (U.311) was sighted on three occasions and attacked twice without harm, in one case she shot down her assailant (Halifax L/58 Squadron). Another (U.629), once more outward bound, was severely damaged by L/L Wellington C/612 Squadron and for the second time had to return to harbour. Thereafter until the 23 March there was only one encounter and in this the aircraft (L/L Liberator F/224 Squadron) was shot down by the inward bound U.256.

ibid

Unknown to us, Doenitz on 22 March recalled four outward bound U-boats then halfway across the Bay in order to form the nucleus of Group Landwirt which was to be kept in harbour at immediate readiness against possible invasion landings on the French coast.⁽¹⁾ No further Type VII boats sailed in March, only three in April and none in May by which time Group Landwirt numbered 40 U-boats.

ibid

From 23 March, No. 19 Group carried out intermittent daylight sweeps close off the Biscay coast using the Tsetse Mosquitoes accompanied by Mosquito fighters. Some of these proved successful in surprising U-boats on the surface in the swept channels with their minesweeper escort. Five were sighted altogether and the Tsetse aircraft delivered attacks on two occasions in which U.976 inward bound was sunk on the 25th off St. Nazaire and U.960 also inward bound was damaged with nine men wounded on the 27th off La Pallice. Twenty two other casualties were inflicted on the crews of the escorting minesweepers. In his War Diary, Doenitz commented on these attacks in the approach channels to ports where the danger from ground mines forced U-boats to proceed on the surface. He gave orders for the inner surface escorts to be re-inforced but noted that, because of the shortage of escort craft allocated to the Flag Officer West, it would mean that U-boats would have to be restricted to night surface passage without escort along the outer swept channels. For U-boats carrying out deep diving trials after refit this entailed two nights and a day spent submerged beyond the outer point instead of the normal 12 hours all told. He pressed the Fliegerfuhrer Atlantik to take more active steps against British aircraft. This took the form of periodic sweeps by formations of JU.88 fighters. One of these sweeps, on 31 March, intercepted and shot down Liberators M and L/110 U.S.N. Squadron.

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C.C. File
S.17062
Encl. 3A

See Map No. 67

ibid
Encls. 5A, 5B

The success of the daylight inshore sweeps in locating surfaced U-boats led on 30 March to the institution of a new Percussion area W lying between the French coast and the 100 fathom line roughly between latitudes 48° and 45°N. By day the area was to be swept by Liberators escorted by Mosquito fighters with R.P. Beaufighters for use against the escort craft. By night the area was to be covered by Leigh Light and flare equipped aircraft. Actual details and organisation of the patrols was left to the A.O.C. No. 19 Group. These were promulgated on the 4 April as numbered patrols in the general Percussion W area for night patrols but the difficulty in finding sufficient fighters for daytime Liberator patrols limited action to the existing occasional sorties by the Tsetse aircraft.

(1) A similar concentration under the name of Group Mitte had been started in Southern Norwegian ports on 16 February in case of Allied landings in South Norway or on the Jutland coast of Denmark.

March saw the highest number of flying hours in the Bay transit area since September 1943 but the submerged tactics of the U-boats on passage continued to prevent commensurate results in spite of the initiation of daylight sweeps close inshore. The average strength in aircraft participating was 222 A/U types plus 60 long range fighters. During the month 53 U-boats crossed the Percussion areas of which 14 individual boats were sighted and 11 of them were attacked resulting in one being sunk and two damaged.⁽¹⁾

(vi) - First operational experience with the Schnorchel

Of interest at this time is the record in B. d U's War Diary, dated 24 March, of the collated experiences signalled from the first three Schnorchel fitted U-boats (U.264, 575 and 667) who had put to sea on various dates in February and March.⁽²⁾ They had all found the device satisfactory for charging batteries without the need to surface and had passed out through the Bay with no trouble from air location. When in use it had been found possible to proceed on both Diesel engines up to 270 revolutions per minute giving a speed of $6\frac{1}{2}$ knots or at 240 revolutions with a light charge of 700 amperes on both motors and giving a speed of advance of 5.8 knots. To charge at a high rate, one Diesel was disconnected from the propeller shaft and at 400 revolutions maintained a charge of 1,500 amperes while a slow ahead speed of about three to four knots was maintained on the other Diesel. It had been found possible to use the Schnorchel in seas up to Force 3 on the Beaufort scale but, because of the exhaust smoke, it was advisable to use it only at night. In fact in later months a Schnorchel technique was developed which enabled U-boats to use the device continuously day and night for long periods and in seas up to Force 6.

(vii) - Special training to restore the efficiency of night attacks.

Since the adoption of daytime submergence by U-boats both in patrol dispositions and on passage through the transit areas the number of night attacks by aircraft had naturally far outstripped those delivered by day. It had for some time been noted in Coastal Command Headquarters that, while the observed lethality by day remained proportionately as high as during the Summer of 1943, the results from night attacks appeared disappointingly low. Even after allowance for the difficulty in seeing promising after effects in darkness it was by the end of February 1944 beginning to be felt that night attacks were

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C.C.
March O.R.B.
App. 135

(1) Analysis of March flying hours in the Bay

		Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results
No. 19 Group	Day	5,044	6,885	6	9	5	U.976 Sunk U.960 Damaged
	Night	(1,909 (N) (2,293 L/L)	(2,984 (N) (2,854 L/L)	3N 2 L/L	3N 8 L/L	3N 6 L/L	NIL U.629 Damaged
Gibraltar in Finisterre area	Day	NIL	44	-	-	-	NIL
	Night	(16 (N) (43 L/L)	(33 (N) (66 L/L)	- -	- -	- -	NIL

(2) After signalling their outward passage experiences both U.264 and 575 had been sunk when on patrol, the former on 19 February and the latter on 13 March (see convoy section) U.667 was still intact on patrol. She returned to harbour in May after Schnorchelling continuously for nine days through the Bay from longitude 15° W.

largely harmless to the U-boat.⁽¹⁾ Moreover there were many cases of the initial A.S.V. location leading either to hurried last second alteration of track in order to release what inevitably were inaccurate sticks of depth charges or abandonment of the attack owing to the aircraft being completely out of position when the U-boat was sighted.⁽²⁾

It was realised that most if not all this decline in effectiveness resulted from poor homing, lack of co-operation between the radar operator and the pilot, and failure by the latter to make allowances for wind drift so as to make the final run-in on a collision course over the U-boat. All these causes stemmed from the rapid expansion of Coastal Command which allowed too little basic training and the recent pressure to increase operational night flying which prevented adequate squadron training. In any case realistic practice was difficult to obtain owing to the chronic shortage of target submarines. Synthetic training and the use of moored radar buoys for exercise were not the answer.

ibid
App. 136

No. 19 Group
April O.R.B.
App. 32R

C.C.
March O.R.B.
Apps. 162
and 163

Representations to the Flag Officer Submarines resulted in agreement by the Admiralty and C.-in-C. Western Approaches to the allocation of H.M.S./M. Viking for extensive night exercises in the St. George's Channel and it was decided to withdraw Leigh Light squadrons from the line at the rate of a half squadron at a time for intensive training. Between 6 and 14 March, sixteen Leigh Light and seven other night trained aircraft carried out exercises against the Viking. Only half of the initial A.S.V. contacts were converted into sightings and of these, less than half might have resulted in good attacks. This poor result fully confirmed the opinion previously held at Command Headquarters and the A.O.C.-in-C. put in train a scheme of very intensive radar training with considerable curtailment of operational flying in order to have the night squadrons, particularly those fitted with Leigh Lights, at a high standard of efficiency by the end of May. At the end of March, another two nights' exercise was done in which slightly better results were obtained. Of the 14 aircraft taking part, nine found the submarine and it was judged that at least four of the run-ins would have been good attacks.

The exercises were, however, still being conducted on a static submarine which did not dive and early in April it was decided to take advantage of the Viking's presence to stage a realistic trial similar to a U-boat's journey on passage. The Viking started at dawn (0630 hours) on 6 April from position 5045N x 0957W with her batteries and H.P. air fully charged and was required to make for a position 90 miles distant either surfaced or submerged at her best speed but was to try and avoid being sighted or attacked by air patrols while on passage. The air patrols were scheduled to start at the same zero hour at a density of one aircraft leaving datum every 30 minutes.

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- (1) This is confirmed by post-war evidence from German records. Between 1 December 1943 and 30 April 1944, there were 86 night attacks. In 73 cases no damage at all resulted. Of the other thirteen, six were sunk and seven seriously damaged. In the same period, of the 32 day attacks eight were lethal and five inflicted serious damage.
 - (2) In the same period, 22 attempts to attack came to nothing because of this bad homing.

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C.B.04050/44
(4) Page 6

At one time or another during the trial nearly all the squadrons in No. 19 Group took part. Owing to fog at the land bases, aircraft were late in taking off and it was not till 0753 hours that the Viking was first forced to dive. In the event this 1 hour 20 minutes grace was a vital factor in the completion of her task. Nevertheless from then on she was continuously harried, only being able to surface in the next 28 hours for a total of two hours made up of nine periods averaging $13\frac{1}{2}$ minutes each before having to dive for approaching aircraft detected on her search radar. This was quite inadequate for her to charge batteries or top-up the H.P. air. She was, however, only sighted twice by aircraft - once in daylight by a Liberator but was able to dive in sufficient time to avoid an attack and once at night by a Leigh Light Liberator when she was seen to dive by the aircraft at three miles range so an attack might have been made.

ibid

The Viking was at the end of her diving endurance at 1205 hours on 7 April still ten miles short of her objective. She had, therefore, to surface and hope for the best. At 1243 hours, her search radar located an aircraft closing her at nine miles range but it turned away and the range opened. At 1302 hours, the aircraft closed again to within five miles but again turned away without detecting the submarine which was during this time a sitting target unable to dive. At 1308 hours the objective was reached and she signalled "Exercise completed."

The experience and conclusions were of the utmost value in the planning of Coastal Command's block patrols in the mouth of the Channel preparatory to Operation Overlord. Briefly these conclusions were:-

(1) Air flooding, if of sufficient density in a broad enough area, will produce a surfaced target unable to dive.(1)

(2) Even a short breakdown in the scheduled flying due to weather and any individual low standard of efficiency in radar or visual look-out may be fatal to success.

(3) Intensive air patrols are exhausting and demoralising to an enemy and would seriously reduce his fighting efficiency even if, thanks to a breakdown in the patrol system, he did get through unattacked.

(4) Although of the nineteen aircraft taking part only two actually sighted the submarine, she was by the end of the exercise exhausted and no longer a fighting unit. That state was brought about by the combined effort of the whole patrol and went far towards refuting the opinion that without tangible results the air patrols on a U-boat passage route were a waste of time and effort.

(viii) - April operations

Owing to the intensive training being given to the night squadrons, the flying during the month was considerably less than for March. However, frequent sweeps were made in the Percussion W area and from 9 April another Percussion area

(1) This was of course not reckoning with a Schnorchel fitted U-boat, of which at that time we knew very little.

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was instituted. This in effect combined the existing R, S and T areas and, following the experience gained in the Viking Exercise, was broadened to 140 miles across.⁽¹⁾ Aircraft were fed into the northern end and did their patrol in the form of a creeping line ahead search to the southward and back again.

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The drop in flying hours happened to coincide with a drastic fall in U-boat traffic. Owing to the build-up in Biscay harbours of Group Landwirt, only overseas bound Type IX U-boats traversed the Bay outwards and, there being few inward bound boats until the latter part of April, the Percussion areas were unusually empty. Only nine U-boats were in the Bay during the first half of April. Two of these were sighted by night but the attack in both cases was frustrated by flak damage to the aircraft. A third was located and attacked by day off St. Nazaire by a Tsetse Mosquito with fighter escort on 11 April. The U-boat (U.255) was being escorted by four M. class mine-sweepers and a Sperrbrecher with air escort by JU.88.s. The Tsetse did not hit U.255 but in the ensuing dog fight among the fighters seven JU.88.s were shot down for the loss of four Mosquito fighters.

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The latter part of April saw an influx of seventeen home-ward bound U-boats and seven outward bound. Of these, U.546 was sighted four times, shot down one Liberator (H/53 Squadron) and was not damaged by any of the attacks. Four others were attacked several times without damage involving the loss by flak of another aircraft (O/53 Squadron) and in only one case was the attack accurate - that delivered by L/L Wellington W/612 Squadron who sank the outbound Type IX U.193 on the night of 27/28 April.

During April the average strength in Bay operations was 228 A/U aircraft plus 60 long range fighters. Only 33 U-boats crossed the Percussion areas, of which 13 individual boats were sighted and ten of them attacked resulting in one being sunk.⁽²⁾

(ix) - May operations

During the first week of May the U-boat traffic started once more to dwindle. One particularly flak minded boat (U.846) shot down her assailant (Halifax H/58 Squadron) on the night of the 1st/2nd, was attacked again on the next night without damage and on the third night was sunk by L/L Wellington M/407 Squadron. Two other U-boats were each attacked twice during this period but were not harmed. For the next 14 days there were only nine U-boats on passage and no sightings at all were obtained. One of these boats was the returning

(1) The new area was called Percussion Disable and lay roughly between latitudes 4715N and 4400N from Longitudes 0800W to 1100W - See Map No. 67.

(2) Analysis of April flying hours in the Bay

		Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results
No. 19 Group	Day	3,840	5,452	7	4	3	NIL
	Night	(974 (N) (1,594 L/L	1,771 (N) 2,040 L/L	1 N 4 L/L	4 N 15 L/L	4 N 7 L/L	NIL U.193 Sunk
Gib. in Finisterre area	Day	NIL	3	-	-	-	NIL
	Night	4 (N)	7 (N)	-	-	-	NIL

Schnorchel fitted U.667. On arrival in harbour her captain reported enthusiastically on the device as giving peaceful immunity on an otherwise harassing journey.

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The last ten days of May saw a recrudescence of activity resulting from a special operation initiated by the enemy. On 18 May, Doenitz gave orders that five Schnorchel fitted boats from Group Landwirt were to be deployed north of the Brittany Coast in the approaches to the English Channel. This operation was mainly directed against the night sweeps being carried out by our destroyers and light craft to harass the German coastwise shipping but was also designed to give U-boats experience in these waters in case of invasion. The area of patrol selected lay between the French coast and latitude 4930N from longitudes 0440W to 0320W. The five U-boats received the cover name of Group Dragoner and were to remain submerged as much as possible by recharging their batteries when Schnorchelling. They were to keep continuous W/T watch for orders from the shore control who would inform them when enemy surface craft were detected by the shore radar stations. The first boat (U.764) sailed from Brest on the night of the 18th followed on the 20th by U.441, on the 22nd by U.984 and 953 and on the 23rd by U.269.

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Unfortunately for Doenitz's hope of surprise in this area, No. 19 Group had for some time been flying night anti-shipping patrols around the Brest peninsula and, shortly before the 18th, had occasionally diverted night A/U aircraft specifically against German E-boats who were operating from St. Malo and Cherbourg. At 0156 hours on the 20th, one of these aircraft (L/L Wellington A/304 Squadron) detected, homed on and illuminated a U-boat in the act of diving in position 4901N x 0409W C° 080°. This was U.764 just arriving in her area. The subsequent depth charge attack did no damage but night sorties to this area were promptly laid on till further notice. On the next four nights, six sightings were obtained on one or other of the five U-boats now in their patrol area. Four attacks were delivered which inflicted no damage but in view of the marked air activity Doenitz realised that we were aware of the disposition and he recalled Group Dragoner on 25 May. His main objective was never achieved as only on the night 24th/25th were British surface craft detected approaching. The waiting U-boats were ordered to surface but the sweep turned for home before reaching any of their positions. In his comments Doenitz admitted that the operation was not a success mainly owing to there not being a sufficiently attractive bait on the coastal route to tempt the English close inshore and to the discovery of his U-boat disposition by aircraft. He claimed, however, valuable experience in Schnorchel patrol tactics, reception of W/T orders while submerged and shore control in co-operation with ground radar stations.

While this little burst of activity was taking place, one of the normal Bay night sorties (L/L Wellington L/612 Squadron) detected and attacked the inward bound U.736 inflicting serious damage but unhappily was shot down with no survivors. No further sightings were made and May closed with only one U-boat being on passage in the Bay. During the month the traffic fell further, only 20 U-boats having crossed the Percussion areas. Of these, four were sighted and all were attacked resulting in one sunk and one damaged. In the Dragoner operation between the 18 and 27 May, five U-boats left Brest, patrolled for six days and returned to harbour.

A total of seven Leigh Light sightings were made on them of which four were attacked without damage. (1)

(x) - Summary of Bay operations - July 1941 to May 1944

The end of May saw the virtual finish of exclusive air operations over the Bay of Biscay transit area. They had started in July 1941 with relatively ill equipped measures and had for nearly three years been prosecuted almost entirely by No. 19 Group. The passage of U-boats had never been wholly denied neither were U-boat convoy war dispositions in the North Atlantic affected at any time but, as aircraft weapons and methods improved, the U-boats had been forced to change their passage tactics several times, generally to their disadvantage. U-boat losses up to April 1943 were small but the heavy casualties during the period of 90 days between early May and August 1943 when Doenitz attempted to fight through on the surface forced him to adopt maximum diving time day and night. Thereafter no addition of flying hours by night or day could do more than inflict minor losses quite tolerable to the enemy although he was forced to sacrifice much time wasted on submerged passage. Had the Schnorchel been in more general fitment early in 1944 it is likely that even this minor loss would have been avoided. (2)

There remains, however, a credit to the Bay operations subsequent to August 1943 expensive though they were in flying effort. This is the intangible and difficult to assess effect they produced on U-boat crews in terms of weariness, nerves and

(1) Analysis of May flying hours

			Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results
No. 19 Group	Bay	Day	4,318	6,174	-	-	-	NIL
		Night	(562 (N) (1,787 L/L	(1,090 (N) (2,252 L/L	1 N 3 L/L	2 N 7 L/L	2 N 6 L/L	NIL (U.846 Sunk (U.736 Damaged
	North of Brittany	Day	128	203	-	-	-	NIL
		Night	(24 (N) (266 L/L	(45 (N) (334 L/L	- -	- 7 L/L	- 4 L/L	NIL NIL
	Gibraltar		NIL	-	-	-	-	-

(2)

OPERATIONS IN THE BAY OF BISCAY

Period	Base to Base Total hours Day and Night	A/C lost	U-boats		No. of U/Bs. crossing Bay
			Sunk	Dam.	
1 July 1941 to 30 Apr. 1943 (22 months)	80,003 79,998	172	10	24 25	1,562
1 May 1943 to 2 Aug. 1943 (3 months)	32,243	57	28	22	270
3 Aug. 1943 to 31 May 1944 (10 months)	113,082 116,588	124	12	10 9	480
TOTAL 35 months	225,328 226,821	353 353	50	56 60	2,312

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loss of fighting efficiency caused by the nine day harassment on putting to sea and, apart from their constant pre-occupation with the air menace while on patrol, the prospect of another nine days before regaining harbour. Here again, the Schnorchel would probably have avoided this as later in the war U-boats Schnorchelled continuously for nine and ten weeks on end with little loss of aggressive morale.

That service in No. 19 Group on Bay operations was no sinecure is borne out by the heavy losses amongst their aircraft. Of the 353 lost, 135 are known to be due to crashes unconnected with enemy action. Of the remaining 218, 28 are known to have fallen to U-boat flak and 118 were shot down by enemy aircraft leaving 72 missing from either enemy action or flying hazard.

(B) - The Northern Transit Area

(i) January to April - Little flying effort and no U-boat sightings

At the turn of the year 1943/44 the flying hours in this area had dropped to a very low figure because towards the end of December both the U.S.N. Ventura squadron and No. 269 Hudson squadron had been withdrawn from Iceland owing to their short range and relative uselessness in the almost continuous dark and stormy conditions. This left only No. 120 Squadron of Liberators in operation from Iceland and a squadron and a half of flying boats in No. 18 Group, much of whose time was occupied in convoy support.

A.M. File
CMS. 326
Encls. 1A to
20A
and
C.C. File
TS.105
Encls. 36A to
55A

As a replacement in Iceland, negotiations had been in progress since November for a Canadian Canso squadron to be transferred from Newfoundland. These were agreed between the United Kingdom and Canadian Governments on 6 December. No. 162 R.C.A.F. amphibian Canso Squadron was designated and arrived at Reykjavik during the first ten days of 1944, starting operations on 24 January.

Very early in January the U-boat traffic through the Northern Transit area fell away following a decision by Doenitz to reinforce the Arctic U-boat flotilla now that he was aware of our resumption of convoys to and from North Russia.⁽¹⁾ Half of the January and February output of new Type VII U-boats were accordingly sent up to Narvik via the Inner Leads.

The flying hours devoted to the Iceland/Faeroes passage area fell still further during the first two months of the year. Both Iceland and No. 15 Group were fully occupied in giving air escort and support to the Northern Atlantic convoys during what proved to be the last organised effort of the U-boats against them. Only No. 18 Group was able to fly somewhat sparse patrols in the Hancox and Moorings areas.⁽²⁾

From 16 February, the U-boat traffic fell still further because of the decision by the German High Command to set up a reserve of U-boats in southern Norwegian harbours ready for

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- (1) On 29 December 1943, orders were given to increase the Arctic flotilla from 18 to 24 U-boats and on 10 January 1944 this number was raised to 33.
 - (2) See Map No. 53 for the situation of these areas.

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immediate action in case of Allied landings in South Norway or on the Jutland coast of Denmark. Doenitz ordered that the next ten to fifteen Type VII boats leaving Kiel were to be held in Kristiansand South, Stavanger and Bergen under the cover name of Group Mitte. Not until an adequate strength had been built up were any to be sailed for Atlantic or Arctic waters and then only as new arrivals came up from Kiel. The time spent in Group Mitte was to be occupied in further training, deep diving trials and familiarisation with the Schnorchel apparatus which was just starting to be supplied to newly constructed U-boats.

ibid and
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Under these conditions it is not surprising that no sightings were made of the ten U-boats clearing into the Atlantic during January or the five going through in February. With the lessening of the tension round convoys in the Northern Atlantic during March, more flying hours were given to the transit area but six U-boats cleared through unseen by the 21st.⁽¹⁾ Towards the end of the month sailings of Type VII boats to the Atlantic recommenced from Norwegian ports and a batch of five entered the air patrolled area in the last week. One of these (U.961) was detected and sunk by the 2nd Escort Group on 29 March when supporting convoy JW.58 to the northeast of the Faeroes but the remaining four and nine further boats cleared into the Atlantic unseen during April. In addition one boat (U.552) went back unseen from the Atlantic arriving at Bergen on 22 April.

Maximum submerged tactics were of course being practised during these four months and at the end of April there was still sufficient darkness during night-time to allow of a battery charge on the surface with impunity having regard to the relatively few night hours flown by the air patrols.⁽²⁾

(ii) A dramatic change in May

During the first half of May similar conditions prevailed and three U-boats cleared unseen into the Atlantic. On the 15th, two more were in the air patrolled area and no sightings

(1) One of these boats (U.766) made the passage from Bergen straight across between the Shetlands and Faeroes islands thus saving at least four days passage time.

(2) Analysis of flying hours in the Northern Transit Area

		Effective hours	Total hours	A/C loss	Sights	Attacks	Results		No. of U-boats in the patrolled area
							Sunk	Dam.	
Jan	Day	44	109	-	-	-	-	-	10
	Night	64(N)	180(N)	-	-	-	-	-	
Feb	Day	158	241	-	-	-	-	-	5
	Night	80(N)	128(N)	-	-	-	-	-	
Mar	Day	370	594	-	-	-	-	-	11
	Night	(59(N) 27L/L	(148(N) 42L/L	-	-	-	-	-	
Apr	Day	372	586	1	-	-	-	-	14
	Night	84(N)	175(N)	-	-	-	-	-	
May	Day	2,458	3,874	1	19	13	6	3	29
	Night	(160(N) 14L/L	275(N) 24L/L	-	2N	1N	-	1N	

occurred. The whole aspect then changed with dramatic suddenness precipitated by the following causes:-

(a) Doenitz required the Arctic flotilla to be still further reinforced and for the older boats to be replaced by new ones held in Group Mitte.

(b) The outflow of new U-boats from Kiel increased rapidly after the thawing of the Baltic ice. This also permitted the resumption of minesweeping to clear the passage channels.

(c) These new arrivals in Group Mitte enabled a large batch to be sailed for the Atlantic and Arctic waters.

(d) Recent operations by British carriers off the coast of West Norway resulted in instructions from Doenitz that U-boats reinforcing the Arctic flotilla at Narvik should, instead of proceeding up the Inner Leads, be employed on operational sweeps en route, well out from the Norwegian coast, so as to intercept and attack the carriers.

(e) Following the long dearth of sightings in the Hancox and Moorings areas, Coastal Command decided to shift the air patrols to the eastward and try No. 18 Group's flying boats nearer the Norwegian coast where the U-boats' passage routes might not be so diffused.

The picture on 16 May was as a result very different from the preceding months. There were four U-boats well off-shore abreast Stadtlandet sweeping northward en route for Narvik followed between the 18th and 22nd by seven more.⁽¹⁾ To the northwest of Stadtlandet were two boats bound for the Atlantic followed in the next week by seven more also bound for the Atlantic.⁽²⁾ The really significant factor was that there was little real darkness in these high latitudes so that the charging of batteries had to be done mostly in naked daylight on the surface as only four of these outgoing U-boats had received their Schnorchel apparatus.

The new patrols by No. 18 Group were rewarded at 1725 hours on 16 May by a sighting of a surfaced U-boat in 6305N x 0310E by Sunderland V/330 Norwegian squadron. Under intense flak which killed the front gunner and wounded two others of the crew, depth charge attacks were pressed home which mortally damaged U.240. The Sunderland only just managed to reach base with extensive damage and U.240 foundered soon after the aircraft had left the scene. Later, just after midnight, a Norwegian Catalina C/333 Squadron sighted another surfaced U-boat in 6226N x 0154E. This was U.668, also en route to Narvik. In failing light and under less intense flak a depth charge attack was made which inflicted damage but in the subsequent short period of total darkness all contact was lost. While searching, another U-boat was sighted but lost almost immediately. U.668 reached Narvik in a damaged state four days later.

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- (1) U.240, 668, 742 and 965 followed by U.394, 995, 997, 476, 344, 921 and 990.
 (2) U.857 and 241 followed by U.675, 292, 862, 719, 1191, 767 and 988. The four latter boats were equipped with Schnorchel.

~~B-d-U.~~
 War Diary
 Capt. U-boats
 Norway P.851

ibid
 Pages 895
 863 and 895

See Map No. 53

For U-boat
 Positions on
 16 May
 See Map No. 65

War Diary of
 Captain U-boats
 Norway and
 No. 18 Group
 O.R.B.
 Appendices

ibid

Air patrols in the area were intensified and at 0942 hours on 18 May, Catalina S/210 Squadron sighted a surfaced U-boat in 6336N x 0142E. This was U.241 bound for the Atlantic. An excellent attack was made in face of continuous flak which sank the U-boat outright, twenty to thirty bodies being counted in the water before the aircraft left the scene. On 21 May, U.995 was attacked twice - by Catalina M/210 Squadron at 0322 hours which did no damage and at 1248 hours by Sunderland S of No. 4 Operational Training Unit. No serious damage was done by the depth charges but casualties caused by the aircraft's front gun fire forced U.995 to set course immediately for Trondheim where she arrived next day. Another of the Narvik bound boats (U.394) was attacked on the 22nd by Catalina M/210 Squadron but no damage was inflicted.

(iii) Reinforcement from No. 15 and Iceland Groups

Ibid and
No. 15 Group
O.R.B.
Appendices

This prolific area was now exploited by every long range aircraft that could be spared from Iceland and No. 15 Group. On 24 May at 0719 hours Catalina V/210 Squadron sighted and attacked U.476. The U-boat was very seriously damaged and signalled her plight to base. Four other U-boats in the vicinity were told to go to her assistance and two patrol boats⁽¹⁾ with U.276 left Trondheim on the same task. At 1428 hours, U.921, hurrying towards the signalled position, was attacked by Sunderland S/423 Squadron. The depth charges missed but again the casualties inflicted by the aircraft's machine guns forced the U-boat to give up and make for Trondheim. At about this time another Sunderland (R/422 Squadron) sighted and attacked the crippled U.476 but was shot down on the run-in by the U-boat's flak. There were no survivors.

Meanwhile further south, Sunderland R of No. 4 O.T.U. at 1349 hours had sighted U.675 who was bound for the Atlantic. In face of heavy flak this aircraft of a training unit delivered an excellent depth charge attack which destroyed U.675 outright, much wreckage including bodies being seen after the explosion subsided.

ibid

Late in the day at 2258 hours, U.990 found the derelict U.476. After vain efforts to get her in tow, she was sunk at 0102 hours and the 21 survivors taken aboard U.990 who set course for Trondheim. Not far away and half an hour later, Liberator C/59 Squadron sighted a surfaced U-boat steering west in rough sea and poor light conditions. After a duel between flak and M/G, two depth charge attacks were made but in each case they were dropped at 'safe'. Contact was subsequently lost in bad visibility. This was U.276 from Trondheim also closing U.476's signalled position. At 0400 hours on 25 May, the patrol vessel (VP.5901) met U.990 but the survivors of U.476 could not be transhipped owing to the sea conditions and the two proceeded in company towards Trondheim. At 0630 hours they were sighted by Liberator S/59 Squadron who cleverly manoeuvred in low rain clouds until a squall partially masked the patrol vessel and then, under only the U-boat's flak, a depth charge attack was pressed home which mortally damaged U.990. As the aircraft left the scene, VP.5901 had closed up almost alongside the U-boat. German records

(1) The four U-boats nearby were U.344, 394, 921 and 990. The patrol vessels were VP.5901 and M.132. Ref. War Diary of Captain U-boats Norway.

establish that soon after this U.990 foundered and a total of 52 survivors were picked up. The patrol vessel continued homeward meeting U.276 at 1002 hours and together arriving at Trondheim at about 1930 hours.

Commenting in his War Diary on the recent events, the Captain of U-boats/Norway observed that, in face of the intensified air activity and certain loss of two U-boats with others damaged, all future passages of U-boats to Narvik would have to be made via the Inner Leads under close escort. This was, however, only applicable to his local command. Disaster continued to follow the U-boats bound for the Atlantic. Having thus uncovered a weak spot in their line of transit and aided by the by now complete absence of darkness, Coastal Command diverted as many sorties as possible to the area off the Norwegian coast and out to the longitude of the Faeroes.

On 26 May, two Norwegian Mosquitoes/333 Squadron sighted U.958 who had just left Bergen bound for the Atlantic. Several cannon fire attacks were made on her before they ran out of ammunition. U.958 sustained damage to the external fuel tanks and one man killed with two others badly wounded. She was forced to put back immediately into Bergen. On 27 May Liberator S/59 Squadron sighted U.292 also en route for the Atlantic and sank her with an accurate stick of depth charges. All these U-boats had relied on their flak to drive off or at least upset the aim of the depth charge attack. The verve and determination shown by the air crews, reminiscent of the previous summer in the Bay of Biscay, forced more cautious tactics upon them. Although five more sightings were made up to 31 May on another batch of U-boats bound for the Atlantic, only one developed into an attack and this could only be made some seconds after the U-boat had disappeared under water. One of this batch (U.Kreutzer U.862) was so harried by continual sightings of aircraft and forced crash dives that the captain put back into Bergen and requested permission to proceed via the Inner Leads to Narvik and from there to break into the Atlantic north-about Iceland through the Denmark Strait. This was approved by Doenitz⁽¹⁾ who at the same time instructed some of the U-boats then on passage south-east of Iceland to make direct for Biscay ports so that the Schnorchel apparatus could be immediately installed because 'it seemed no longer possible to keep boats in operational areas unless equipped with this fitment'.

(iv) Sightings continue into the first three days of June

Caution was the keynote during the first three days of June during which there were five Schnorchel fitted U-boats still traversing the Iceland/Faeroes Channel. In due course they cleared into the Atlantic without having been located at all during their passage. By this time there was another batch, including two fitted with Schnorchel, slowly making their way northwards between Norway and the Shetland Isles. The captain of the leading boat (U.477), although Schnorchel fitted, was apparently impatient at the submerged tactics.

(1) This approval was given in view of her despatch to the Indian Ocean; moreover her size made her particularly unsuited to the rapid diving necessary to survive the normal passage route. She left Narvik on 3 June, passed through the Denmark Strait on the 10th and reported clear into the Atlantic when in 58°N x 35°W on 14 June.

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No. 18 Group
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He was sighted on the surface three times on 2 June but on the only occasion when an attack was possible a faulty release gear resulted in the depth charges missing astern. However, on 3 June when sighted yet again at 0213 hours, he decided to fight it out on the surface. The aircraft concerned - Canadian Canso T/162 Squadron - went straight in under intense flak and accurately straddled the U-boat with four depth charges. U.477 disappeared in a mass of oil and wreckage. Many of the crew both alive and dead were seen in the water before the aircraft left.

(v) Summary

No further ~~sightings~~ ^{attacks} occurred until 11 June, a date which falls into the next volume. The complete change in the aspect of the Northern Transit area is apparent by comparing the nil results during the first four and a half months of 1944 with the period 16 May to 3 June during which 17 of the 32 U-boats in the area were sighted. Of these, 15 were attacked resulting in seven being sunk and four compelled to return to harbour. It is, however, of significance as a lesson of war that, even in conditions of continuous daylight and fairly dense air patrol, only one of the Schnorchel fitted U-boats was located and then only because the captain rashly decided to defy air attack on the surface.

(C) - The Gibraltar Strait - January to May 1944

(i) January Operations

Chapter VII
Part II
Section (iv)

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It will be remembered that the last passage attempts in 1943 were successful in that U.952 and 343 both got clear into the Mediterranean during the first week of January 1944 without being sighted. Two nights after U.343 made the passage she was sighted on the surface by L/L Wellington P/179 Squadron, who was on a sweep eastward of the Strait, in 3640N x 0200W steering 045°. Heavy flak was opened and an attack was made during which the aircraft was seriously damaged and had to leave for base immediately. The depth charges missed astern. On the following night at 2211/8 January, L/L Wellington N/179 again sighted U.343 on the surface. Once more the intense flak caused the depth charges to miss but the aircraft shadowed and brought up R/179 Squadron who dropped a stick just astern of the U-boat putting the port main motor out of action and setting the main switchboard on fire. Just after releasing the depth charges, R/179 became unmanageable and crashed into the sea ahead of the U-boat. Only the pilot got clear of the wreckage and climbed into the dinghy which a few minutes later was nearly rammed by U.343.⁽¹⁾ Another aircraft also hunting this area (Catalina J/202 Squadron) saw gunflashes six miles away and closed the position. Flak was immediately opened from U.343 which on the attacking run-in caused extensive damage in the aircraft who had to set course for base. Actually the stick exploded close astern of the U-boat, jammed the rudder hard a starboard and put the whole electrical installation out of action. In addition the external tanks were riddled with machine gun bullets. U.343 was unable to move or dive until three hours later when she crept away towards the Spanish coast. Meanwhile N/179, who had witnessed J/202's attack, contacted two destroyers some 40 miles away

(1) The pilot (P/O W. F. Davidson) was picked up by H.M.S. Active at 0830 hours on 9 January.

ibid

Log of U.343

and informed them by R/T of the situation. By 2330 hours, N/179 was back at the scene of attack but nothing was seen of U.343 by her or the destroyers in the subsequent search. U.343 succeeded in reaching shallow water off the Spanish coast and spent the next three days, mostly on the bottom, repairing the damage received. She ultimately reached Toulon on the 19 January. Her experience has been given in some detail to illustrate how tough a determined U-boat can be and how difficult to re-locate even when seriously damaged.

(ii) Arrival of a U.S.N. Catalina squadron fitted with M.A.D.

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In view of the passage of at least two U-boats through the Strait the air patrols were intensified on both sides of Gibraltar. To allow of this the contribution of flying in the Percussion V area off Cape Finisterre was temporarily discontinued but as nothing more was sighted by 11 January these sorties were resumed. Meanwhile No. 63 U.S.N. Catalina squadron fitted with the Magnetic Air Detector had arrived at Port Lyautey from No. 19 Group. It had been decided that the magnetic detection method was far better suited to the enclosed waters of the Gibraltar Strait than to the open sea of the Bay of Biscay. The squadron started operations in co-operation with the A.C.H.Q. at Gibraltar on 18 January and another intensification of A/U patrols both sides of the Strait was mounted concurrently.

Log of U.455

U.455, who had left Lorient on 6 January bound for the Mediterranean, arrived in the western approaches to the Strait on 19 January. She was sighted west of Cape Spartel at 1315/20th by a Hudson and at 1838/21st to the south of this Cape by an R.A.F. Catalina but on both occasions only momentarily at periscope depth and no attacks could be made. Surface craft were homed to the position but nothing further was detected. Actually she succeeded in diving unseen through the Strait during the night of 21/22 January. Unaware of this, the A.C.H.Q. maintained the scale of patrols until the 26th after which they reverted to normal. The American M.A.D. Catalinas, however, continued their daily patrol in the area immediately west of the Strait and from the 24 January till the 12 February Leigh Light sorties were provided by No. 36 Wellington Squadron of the Mediterranean Coastal Air Force shuttling between Algeria and Gibraltar.⁽¹⁾

(iii) February operations

During the last ten days of January U.969, 967 and 586 left Biscay ports bound for the Mediterranean. The first arrival west of Gibraltar was U.969 on 1 February. She was

(1) Analysis of Flying hours from Gibraltar in January

	Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results	U-boats getting through the Strait
Ocean Convoy escort	Day 121	188	-	-	-	-	
	Night 32(N)	104(N)	-	-	-	-	
Patrols off Gib. Strait including U.S.N. Sqdns.	Day 1,562	2,018	-	2	0	-	U.952
	Night (557(N) (924/L/L	(707(N) (1,058/L/L	1N 2L/L	1N 4L/L	1N 3L/L	U.343 dam.	U.343 U.455
Patrols off Cape Finisterre	Day 206	306	-	-	-	-	
	Night (176(N) (90L/L	(233(N) (130L/L	-	-	-	-	

momentarily sighted in a rough sea west of Cape Spartel by a Hudson at 0842 hours on the 2nd. The air patrols were immediately increased but she got through the Strait unseen that night.

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The two other boats reached the approach area on the 7 and 10 February respectively. U.967 was attacked at periscope depth off Cape Trafalgar at 1548/8th by one of No. 132 U.S.N. Squadron Venturas operating from the Moroccan Sea Frontier. Although unharmed she shifted her approach down to southwest of Cape Spartel where her periscope was glimpsed at 1206/10th by Hudson A/48 Squadron. U.586 approaching past Cadiz was spotted and attacked on the surface without damage by L/L Wellington R/179 Squadron at 0616/11th. She cleared through the Strait during the night of 11/12 February, followed the next night by U.967 both undetected.⁽¹⁾ Air patrols continued to be flown at high intensity until 17 February when Nos. 48 and 233 Hudson squadrons ceased operations prior to their withdrawal to England for special duties in Operation Overlord.

(a) - U-boat passage tactics and air countermeasures

See Map No. 68

This loss of two squadrons was a blow to the A.C.H.Q. at Gibraltar in view of the recent successful U-boat passages and the poor prospects of future interceptions with even fewer aircraft available for patrols. The U-boat tactics were correctly diagnosed as relying on a submerged passage through the narrowest part of the Strait. To do this they had to work up as close to the westward as possible preserving a full battery before starting the long dive through. Their approach was either past Cape Trafalgar or from the southwest past Cape Spartel but the actual dive through was in the deep 200 to 300 fathom channel running almost centrally through the Strait for 35 miles before debouching into the Mediterranean. From the surface of this channel down to 150 feet depth the prevailing current is easterly but below this the deeper water flows west out into the Atlantic. The U-boats therefore kept at about 100 feet depth but had very deep water under them in which to evade should they be detected and hunted. Temperature and density layers at all depths made Asdic conditions extremely difficult. It was over the western end of this deep channel that the U.S.N. Catalinas with M.A.D. equipment operated. By reason of the limited range (350 feet) of the magnetic detector the aircraft had to patrol at very low altitude which made night operations impracticable. If, therefore, a U-boat happened to choose dusk for the start of her dive through there was little chance of her detection. Hence the necessity for another barrier of air patrols to the east of the Strait.

The Allied tactics were to keep day and night air patrols as dense as possible westward of the Strait to prevent the U-boats charging their batteries or if they came to the surface to do so to ensure they would be attacked. When sufficient aircraft were in hand a second air barrier patrol was maintained eastward of the Strait on a line where a U-boat who had succeeded in diving through would have to surface in order to re-charge batteries and H.P. air. These tactics had not been very successful because the aircraft availability had only been sufficient for short periods of intensive patrols.

(1) This brought the total strength of U-boats inside the Mediterranean to 18.

(b) - The first M.A.D. kill

It was in order to compensate for the loss of the two Hudson squadrons that the A.C.H.Q. at Gibraltar asked Commorseafron (The U.S. Commander of the Morocco Sea Frontier) if he would undertake the day patrols in the Gibraltar Strait area. He immediately agreed but on his own terms which were in effect independent of and not co-ordinated with the reduced operational flying from Gibraltar. Curiously enough this independence did not affect the flying done by the M.A.D. Squadron. Although nominally based at Port Lyautey, the aircraft spent much of their time operating direct from Gibraltar under control by the British A.C.H.Q. This was another facet in the peculiar operational control muddle in this area, none of which had any logical explanation. The desirability of a quick compromise with Commorseafron was underlined by the sighting at 0414 hours on the 19 February of a southbound U-boat off the Portuguese coast by I/L Wellington B/179 Squadron. This was U.761, who had left Brest on 12 February bound for the Mediterranean. The attack made after this sighting inflicted no damage.

Increased air patrols to the west of Gibraltar were laid on. The more distant day effort as far as Cape St. Vincent was now confined to the Catalinas of No. 202 Squadron with nearer sorties by some of the U.S.N. Venturas from Port Lyautey. Closer in still were the M.A.D. Catalina patrols but no air effort was available for the eastern barrier. No further evidence of U.761's presence was obtained until 1600 hours on 24 February when the two U.S.N. Catalinas on patrol got firm M.A.D. contacts in position 3555N x 0546W. The procedure of laying a line of markers over successive contacts and ultimately flying up the line to release retro-bombs ahead of the last marker is described in Appendix V. On this occasion two destroyers were co-operating in the hunt and through over eagerness to join in nearly spoilt the M.A.D. tracking attack. Finally at 1700 hours both aircraft made their attacking runs with retro-bombs and almost simultaneously one of the destroyers dashed in to drop a pattern of depth charges at the positions of the retro-bomb splashes. Two minutes later the conning tower and bow of a U-boat broke surface directly ahead of the line of markers. The U-boat, which was U.761, submerged again slowly and was attacked by the other destroyer after which she surfaced and started to abandon ship. Both destroyers opened gunfire, a U.S.N. Ventura which had arrived on the scene straddled the U-boat with a stick of depth charges and finally a Catalina of No. 202 Squadron also straddled with depth charges. At 1720 hours U.761 sank leaving 48 survivors in the water who were then picked up by the destroyers.

Thus after a little over a month's operations the M.A.D. patrol had justified itself. It was a method of detection and attack peculiarly suitable for this area which was notoriously bad for Asdic tactics; moreover the narrowness of the deep channel reduced the necessary M.A.D. patrol area to a practicable size and above all a U-boat could be detected, tracked and finally attacked in complete ignorance of the presence of assailants. The experience gained in this success showed that surface craft co-operation was essential but that the A/U vessels must keep their distance while the tracking was developed, not only to avoid scaring the U-boat into drastic evasive measures,⁽¹⁾ but because their hulls might upset the

(1) For instance, if the U-boat went deep to avoid suspected surface craft it soon got out of magnetic range from the M.A.D. aircraft.

magnetic field and their propellor noise defeat the sonobuoy evidence if they had to be used to regain a temporarily lost magnetic contact.

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As it was thought probable that more U-boats were about to attempt the passage, the scale of A/U flying was maintained as high as possible. Aided by the better understanding with Commorseafron effected by the good offices of Sir John Slessor (C.-in-C. M.A.A.F.) and No. 52 Baltimore squadron loaned by him the flying hours for February were slightly in excess for those for January.⁽¹⁾

(iv) - March operations

Early on 2 March an attack by L/L Wellington B/179 Squadron on a southbound U-boat off Lisbon confirmed the supposition that more U-boats were going to attempt the passage into the Mediterranean. This was U.421 and no damage was inflicted but the aircraft was hit several times by flak and had to leave the scene immediately. No further sighting eventuated, except for a possible periscope sighting off Cape Trafalgar on 9 March, until 16 March when a good magnetic contact was obtained by two M.A.D. Catalinas in 3555N x 0545W at 0855 hours.

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By this date, two more U-boats (U.392 and 618) had arrived off the Strait.⁽²⁾ It subsequently transpired that the M.A.D. contact was on U.392. After establishing the U-boat's track with markers, both aircraft attacked at 0930 hours but no after results were seen. Surface forces were lying off ready to participate and having laid a further line of markers, the attack was turned over to them. H.M.S. Affleck (1st Escort Group) gained Asdic contact when close to the end marker and made a Hedgehog attack. Three explosions followed, after which much debris and parts of human bodies came to the surface marking the destruction of U.392.

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Two days later an unarmed transport aircraft sighted a U-boat, probably U.618, some 35 miles S.S.W. of Cape Spartel and on the same night German records establish that U.421 signalled base from near Cape Trafalgar that she was being continuously menaced by air patrols. The U-boat Command gave her discretion to retire altogether but she elected to try again along the northern route and managed to get through undetected during the night of 19/20 March. Meantime another boat (U.466) had arrived via the sweep out into the Atlantic and late on the 19th was creeping up the Moroccan coast towards Cape Spartel. She succeeded at her first attempt and went

(1) Analysis of flying hours in the Gibraltar area for February

	Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results	U-boats getting through the Strait
Ocean Convoy escort	Day 22	27	-	-	-	-	
	Night 3(N)	5(N)	-	-	-	-	
Patrols off Gib. Strait including U.S.N. Sqdns.	Day 1,828	2,255	-	5	3	<u>U.761</u> shared sunk	<u>U.586</u> <u>U.969</u> <u>U.967</u>
	(165(N) Night (1,046L/L	(320(N) (1,210L/L	- 1L/L	- 2L/L	- 2L/L	-	
Patrols off C. Finisterre	NIL			NIL			

(2) Both these U-boats had taken a wide sweep out into the Atlantic after passing N.W. Spain so as to avoid location on the Portuguese coast. They made land-fall well down the Morocco coast and approached Cape Spartel from the south.

through undetected during the night of 21/22 March leaving only U.618 backing and filling south of Cape Spartel.

The number of aircraft available in the area was slowly increasing. No. 114 U.S.N. Liberator Squadron fitted with G.E.C. searchlights had recently arrived at Port Lyartey pending permission from the Portuguese Government to operate from the Azores. Although still untrained and largely unserviceable, a few night sorties were flown from the 18 March onwards. Other sorties were provided by a newly established Free French Sunderland squadron based in the Morocco Sea Frontier area. It was at last possible therefore to resume the air barrier to the east so as to catch U-boats surfacing after the long dive through the Strait. On 21 March, Baltimore Y/52 Squadron on this eastern patrol sighted the conning tower of a U-boat at 1206 hours in 3628N x 0406W. This was almost certainly U.421 but she got well under before the depth charge explosions and was not harmed.

On the 23 March at 1306 hours a Liberator of No. 112 U.S.N. squadron sighted U.618's conning tower westward of Cape Spartel but it had disappeared before an attack could be made. The constant harrying she had received since her arrival ten days before decided her commanding officer to give up the attempt. He set course for home and was momentarily sighted on the 27 March 50 miles southeastward of Cape St. Vincent by a Free French aircraft. On the following day he signalled base reporting his failure and the fact that he was returning.

Meanwhile U.471 had left Brest on 16 March and, proceeding down the Portuguese coast, arrived in the Gibraltar approaches about 29 March. No sightings or contacts were made on her by air or surface craft and she went straight on to make the passage of the Strait between the 30 and 31 March.

Thanks to the energetic measures taken to maintain the scale of air patrols, the number of flying hours for March was not far below the previous months.⁽¹⁾ The results were somewhat better although once again the successful U-boats made their passage at night when it was impossible to fly the M.A.D. patrols.

(v) - A re-disposition of squadrons in April

Although since the 1 January nine U-boats out of twelve had got through the Strait, casualties inflicted inside the

(1) Analysis of flying hours in the Gibraltar area for March

	Effective Hours	Total Hours	A/C loss	Sights	Attacks	Results	U-boats getting through the Strait
Ocean Convoy escort	Day 52	97	-	-	-	-	
	Night 25(N)	75(N)	-	-	-	-	
Patrols off Gib. Strait including U.S.N. Sqdns.	Day 1,035	1,374	-	4	3	<u>U.392</u> shared sunk	<u>U.466</u>
	Night (811(N) (862L/L	(964(N) (1,000L/L	-	-	-	<u>U.618</u> returned	<u>U.421</u> <u>U.471</u>
Patrols off C. Finisterre	Day Nil	44	-	-	-	-	
	Night (16(N) (43L/L	(33(N) (66L/L	-	-	-	-	

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Mediterranean had by the end of March reduced their total strength to 15 and in April another batch received orders to raise this figure. Departures from Biscay ports took place in the latter half of the month and none arrived to the westward of Gibraltar till May so that during April there were no U-boats for the air patrols to intercept. This was just as well because the responsibilities of Coastal Command in the coming Operation Overlord required the recall home of No. 179 L/L Wellington squadron and for the same commitment No. 52 Baltimore squadron was relinquished by the M.A.A.F. Command. Once again Sir John Slessor initiated measures to prevent the collapse of the barrier patrols. A detachment of No. 500 Ventura squadron was sent from Algiers to Gibraltar, more help was promised by the Morocco based U.S.N. Ventura squadrons and, after consultation with the U.K. authority, agreement was secured from Cominch (Admiral King U.S.N.) for participation by No. 114 U.S.N. searchlight Liberator squadron on a more permanent base seeing that there was no immediate likelihood of their transfer to the Azores. In addition the loss of night effort was partially made up by equipping five Catalinas of No. 202 Squadron with Leigh Lights. By these means and a delay in the departure of No. 179 Squadron the total hours flown during April only dropped by some 750. (1) As yet, however, there were no U-boats present.

(vi) - May operations - Doenitz abandons all further attempts

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O.R.B.
Appendices

Late on 5 May two fleeting glimpses of possible southbound U-boats were obtained, one by a transit Fortress and the other by a Catalina of No. 202 Squadron in positions 100 miles west of the Strait. In fact, both were of U.731. She had left Lorient on 18 April and was making a very slow and cautious approach. She did not reach the decisive area for another six days and was joined about 11 May by U.960 who had not left La Pallice until 27 April. U.960 seized a chance on the 14th and dived through the Strait undetected in the next 24 hours. U.731 was located at 1615 hours on 15 May by two of the M.A.D. Catalinas in 3554N x 0545W abreast of Tarifa Point. Both aircraft immediately marked her track with the line of light floats. At 1630 hours, a retro-bomb attack was made without visible result nor were any explosions heard in the sonobuoy which was released simultaneously. Another retro-bomb attack at 1652 hours was also without result. Tracking was continued and at 1730 hours the waiting surface craft were asked by R/T to attack at the eastern end of the long line of markers. H.M.S. Blackfly followed by H.M.S. Kilmarnock both did so with depth charges but again with no result. Tracking with markers was resumed and at 1851 hours the Kilmarnock delivered a Hedgehog attack. One explosion followed and soon afterwards quantities of bubbles and diesel oil appeared on the surface. After an hour the oil had spread over a mile and by the following day extended throughout the length of the Strait. It was assumed, rightly, that the U-boat subsequently known to be U.731 had been destroyed.

B. d U.
War Diary

Having heard nothing from U.731 since 22 April and being unable to raise her on W/T after U.960 reported clearing into the Mediterranean on 17 May, Doenitz gave her up as lost. He ordered that no more U-boats were to attempt the passage on

- (1) No. 52 Squadron ceased operations on 8 April.
No. 500 Squadron started operations on 16 April.
No. 179 Squadron ceased operations on 23 April.

account of the strong defences in the Gibraltar area.⁽¹⁾ So ended a transit phase which had continued intermittently since September 1941.

(vii) - Summary - September 1941 to May 1944.

Taken over the whole phase, the air forces based in the Gibraltar area were never sufficient to put down any consistent barrier against U-boats breaking into the Mediterranean. Even after July 1943 when the strength had risen to 120 aircraft, the contribution off Cape Finisterre to the Bay Operations and the lack of co-operation from the Morocco Sea Frontier prevented adequate air patrols. From February 1944 onwards, the situation improved largely through the arrival of the U.S. Navy M.A.D. Catalinas and a better understanding with the American Force Commanders in Morocco and North Africa.

In all, from September 1941 to the end of May 1944 a total of 95 U-boats had been detailed to sail for the Mediterranean.⁽²⁾ Eleven of these had either been cancelled or returned early because of defects on passage. Five more were sunk and one returned badly damaged before arriving in the western approaches to Gibraltar leaving 78 who actually made the attempt to get through. Of these, six were sunk, six were forced to retire through damage inflicted by the defence and four gave up because of constant harrying. A total of 62 got

(1) Analysis of flying hours in the Gibraltar area for May

	Effective hours	Total	A/C loss	Sights	Attacks	Result	U-boats getting through the Strait
Ocean Convoy escort	Day 57	76	-	-	-	-	
	Night 9(N)	27(N)	-	-	-	-	
Patrols off the Gib. Strait including U.S.N. Sqdns.	Day 1,388	1,690	-	2	2	U.731 shared sunk	U.960
	Night(226(N) (679L/L	(382(N) (780L/L	-	-	-	-	
Patrols off Finisterre	NIL		NIL				

(2) Table showing U-boats despatched to the Mediterranean

Year	No. of U/B.s detailed	While en route in Atlantic				In Gibraltar area				Sunk inside Med.	Total in Med. at end of year
		Sunk	Dam. and returned	Defects and returned	Sailing cancelled	Sunk	Dam. and retired	Gave up attempt	Got through		
1941	36	1 (A) 1 (U)	1 (A)	1	-	1 (A) F.A.A.	5 (A) F.A.A.	-	26	4 (S) 1 accident	21
1942	23	-	-	6	-	-	-	1	16	1 Mine 4 (S) 6 (A) 3 (SA)	23
1943	22 24	3 (A)	-	1	3	1 (S) 1 (SA)	1 (A)	2	10	10 (S) 4 (A) 5 (SA) 1 unknown	13
1944	14 12	-	-	-	-	3 (SA)	-	1	10	4 (S) 11(A) 4 (SA) 3 scuttled 1 unknown	NIL
Totals	95	5	1	8	3	6	6	4	62	62	

N.B. (A) = Air attack. (S) = ship attack. (SA) = shared. (U) = cause unknown.

SECRET

495

through into the Mediterranean but continual losses in this area prevented their strength at any time from ever rising above 26 and by the end of May 1944 they had been reduced to eleven. There was little further operational activity by these few and they were all accounted for during the next four months.

SECRET

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CHAPTER XV

THE ANTI-SHIPING WAR IN NORTH-WEST EUROPEAN WATERS -
JANUARY TO MAY 1944

(i) Introduction

During the first three months of 1944, No.18 Group came into its own as far as the anti-shipping war was concerned. In January 1944 the Wick wing and the torpedo half of the Leuchars wing were fully operational and achieved notable success in sinking four enemy vessels of 15,659 tons - the highest monthly tonnage sunk by any Group since the peak month, April 1943, (1) of the period covered in this volume. During January to March 1944, nine vessels of 21,397 tons were sunk off the Norwegian coast causing, in particular, heavy casualties to the German/Norwegian coal trade. M.E.W. calculated that the increase in enemy traffic in this area would not have been more than ten per cent over tonnage in any period of 1943, so that the increased sinkings were due mainly to the greater weight of attack. These successes were obtained despite the fact that No.18 Group had no fighter escort and their operations were therefore limited. No.16 Group, operating off the Dutch coast, still suffered from lack of targets in the accessible area between Borkum and Hook owing to the continued diversion of traffic from Rotterdam to Emden. This situation was aggravated by the practice of the more easterly enemy convoys of taking shelter in Den Helder. Thus in January and February only one small vessel of 90 tons was sunk in this area. More success was achieved in March, when four vessels of 11,492 tons were sunk - one by day attack off Den Helder, one by night torpedo attack and two by day attacks with Mustang escort slightly further east. Despite the gradual creeping east of anti-shipping operations the Ems-Elbe traffic was never really touched before the Overlord campaign changed the situation. In preparation for Overlord, the strike wings were redeployed on either flank of the Channel area in April and May 1944 and operations off Norway ceased.

(ii) Night torpedo attacks and operation Gilbey

A.H.B./IIHL/104/
1/7
Encl. 77A

On 5 November 1943, No.16 Group reported to C.C.H.Q. that they proposed using small numbers of torpedo Beaufighters on night sorties on the Dutch coast. These sorties would be flown during moon periods and also in the non-moon period with the assistance of flare dropping aircraft. Since Beaufighters could only carry four flares it was requested that a small allocation of suitable flare-dropping aircraft should be made to North Coates. Wellingtons could carry up to seventy flares. It was suggested, therefore, that three surplus Wellingtons should be drawn from No.547 Squadron, which was re-equipping with Liberators, and stationed at North Coates. Diversionary high level bombing might be a secondary role for these aircraft.

Various night Rover patrols had already been carried out by Beaufighters of No. 254 Squadron. The outcome of these trials and the suggestion that Wellington aircraft should co-operate were the basis for a new tactical instruction known

(1) In April 1943 No.16 Group sank five vessels of 19,293 tons, No.18 Group sank three vessels of 17,398 tons.

as Operation "Gilbey" which was issued on 18 January 1944.⁽¹⁾ It was now decided that Wellingtons of No.415 Squadron should co-operate with Torbeaus.

A.H.B./IIH/54/
11/115
Encl. 3

- (iii) Fighter Command transfer a Typhoon strike force to No.12 Group

A.H.B./IIH/240/
10/9
Encl. 79A

On 29 November 1943 No.12 Group forwarded to H.Q.A.D.G.B. a detailed report of their daily "Jim Crow" operations during the past five weeks and the number of attacks carried out by No.16 Group as a result of these operations. They noted that, of eight possible targets reported, only one was attacked on 23 November. The next day, an extremely attractive target of 11 vessels N.W. of Scheveningen was missed because No.16 Group were always released on the day following a strike. A permanent striking force always available at short notice to operate immediately on information of suitable targets was necessary to cause maximum dislocation of the enemy's coastal trade off the Dutch coast. No.12 Group therefore requested that a Rocket Projectile Squadron should be given to them for this work if Coastal Command could not provide such a force.

Ibid
Encl.97A

H.Q. A.D.G.B. replied on 18 December that they were fully in agreement with the view expressed by No.12 Group and that it had been decided to move No.3 Typhoon Bomber Squadron to their Group shortly. Its role would be to attack shipping off the Dutch coast between Den Helder and the Hook. In view of the limited accommodation at Coltishall the squadron would be stationed at Wittering but would operate from Coltishall. Action was being taken to accelerate the fitting of R.P. and long range tanks to No.3 Squadron.

A.D.G.B.
Order of Battle
6.1.44
in F.C. O.R.B.
App.January

No.3 Typhoon Bomber Squadron had moved to Swanton Morley in the Coltishall Sector by 6 January 1944, and operated from Coltishall until the middle of February. Owing to the limitation of range of Bomphoons the stretch of coast was to be split into two areas, namely Texel to IJmuiden and IJmuiden to Hook, a total journey in each case of about 310 miles. A force of four Typhoons fitted with long range tanks and eight Bomphoons were to carry out an armed reconnaissance, whenever the weather was suitable, in one or other of the areas. If shipping were sighted one vessel was to be selected for attack which was to be carried out by steep dive-bombing. Typhoons were to act as fighter protection and provide top cover during the attack. No.3 Squadron carried out six operations in January⁽²⁾ and five in February.⁽³⁾ On 30 January and

A.H.B./IIH/240/
10/10
No.12 Op.
O.I.No.65
31.12.43.

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- (1) A copy of these orders embodied in No.16 Group Tactical Instruction No.1/1944 is given at Appendix XXI to this volume. These orders were amended and re-issued on 6 April as No.16 Group Operational Instruction No.5/1944. The earlier version has been given in this volume since most of the operations on "Gilbey" flown during the period under review came under its provisions. The revised order provided for attack by Beaufighters with bombs as well as torpedoes, and also for reconnaissance by No.12 Group aircraft on request.
- (2) In January 71 sorties were flown on this type of operation and 16 attacks were made.
- (3) In February 53 sorties were flown, 26 attacks made and one Bomphoon was lost.

A.H.B./IIH/54/
11/115
Encl.10

3 February shipping was attacked at Brouwershaven and in the Scheldt area, on 8 February in Den Helder Gap and on 13 February off the Hook. No results can be confirmed from enemy documents.

Ibid
Encl.102A

On the 7 February 1944, however, No.12 Group were informed that No.3 Squadron would have to return to No.11 Group. The situation had changed and the dual requirements of operations in support of Fortresses and on targets in Northern France were imposing heavier and heavier commitments on No.11 Group. If not engaged in support of Fortress operations the squadron might still be available to escort the Coastal Command Beaufighters in the same way that Nos.198 and 609 Squadrons had done. The C.-in-C. A.D.G.B. proposed moving No.3 Squadron south in about a week's time. He emphasised that the aspirations of No.12 Group were not being ignored.

Ibid
Encl.103A

No.12 Group replied on 9 February that they did not feel justified in retaining No.3 Squadron since the enemy shipping trade in the Den Helder to Hook area had dropped to practically nothing by day. "Jim Crows" had produced only negative reports during the past few weeks. No.16 Group operated so little that they were not justified in keeping a Typhoon Squadron for escort work alone. No.12 Group had arranged that No.16 Group should warn them a day before they operated so that the Typhoon wing with long range tanks could be borrowed from No.11 Group. In addition, the Coltishall Wing was now fully equipped with 15 gallon tanks and could do practically all the escort work required by No.16 Group.

No.3 Squadron had returned to Manston in No.11 Group by 17 February 1944.

(iv) (a) No.16 Group Operations January to March 1944.

January 1944

No.16 Op.
O.R.B. App.
January
1944

Sorties rose slightly to 123 but there was only one attack. Three aircraft were lost and three crashed.⁽¹⁾ No enemy shipping was sunk or damaged. All sorties except two by Wellingtons of No.415 Squadron were flown by Beaufighters of Nos.236 and 254 Squadrons.

One wing strike on 4 January had to be abandoned owing to bad weather. Two Coastal Roadstead operations by the Wing on 24 and 28 January failed to find targets. The one attack of the month was a cannon attack by R/236 on a small coaster in 5336N x 0617E on 9 January.

Operation Gilbey⁽²⁾ was first tested on the night of 21/22 January. Wellington A/415 was ordered to take off and proceed through position 5345N x 0500E to 5330N x 0525E at 2300 hours. The aircraft was then to sweep westward along the convoy route using A.S.V. Six Beaufighters of No.254 Squadron were ordered to be on waiting line 5340N x 0450E to 5317N x 0420E at 2300 hours

-
- (1) Beaufighters P and M/236 crashed on take off on 1 January. One aircraft was burnt out and one seriously damaged. Beaufighter W/254 crashlanded on 4 January. Beaufighter Y/236 was missing on reconnaissance on 26 January. Two Beaufighters, O/236 and F/254, were lost on Roadstead strike on 28 January. O/236 was hit by flak from land and hit F/254 which ditched.
- (2) See section (ii) of this chapter and Appendix XXI.

armed with torpedoes set to 8 foot depth setting. The object was to locate and attack a westbound convoy consisting of two merchant vessels and six escort vessels. The probable position of interception was given as between 5324N x 0453E and 5312N x 0437E. However, the Wellington made a nil report at 2335 hours and all aircraft returned to base. Reconnaissance for operation Gilbey was flown by G/415 on 31/1 January but again no sightings were made. Anti-E-boat operations were also carried out during the month.

February 1944

No.16 O.R.B.
Appendices
February 1944

Sorties rose to 165 with 25 attacks and three aircraft lost.⁽¹⁾ One enemy vessel of 90 tons was sunk.

F.C.Form Y

One major strike was carried out on 21 February. Thirty eight Beaufighters of Nos.254, 236 and 143 Squadrons took off on reconnaissance in force with object of attacking any enemy shipping seen. No.254 Squadron were armed with torpedoes set to 10 foot depth with contact pistols, the remaining Beaufighters with cannon. Fighter escort was provided by 29 Spitfires V of Nos.64, 234 and 611 Squadrons of No.12 Group Fighter Command. Twelve Beaufighters returned early because they could not contact the formation and three more with engine trouble. The remaining Beaufighters, namely eight of No.236 Squadron, nine of No.143 Squadron and six of No.254 Squadron, all took part in an attack on a convoy sighted at 0842 hours in position 5257N x 0434E. The convoy consisted of 14/16 vessels on a north easterly course and was turning into Den Helder. The disposition of the convoy appeared to be one M class mine-sweeper ahead, four R-boats to starboard and port of four merchant vessels with two M class minesweepers bringing up the rear and astern of this three more R-boats in line ahead formation. Four other R-boats inshore crossing the mouth of the Helder from north to south were not involved in the attack. The aircraft attacked two merchant vessels, the rear mine-sweepers and R-boats and achieved some surprise. Flak was late but heavy and intense from the shore positions. Considerable light flak was encountered from R-boats on break away. No balloons or fighters were seen. Beaufighter Q/143 was hit by flak and ditched one to four miles west of convoy. The only result, confirmed by enemy records, was the sinking of R.131 of 90 tons.

No.16 Op.
O.R.B. App.
Feb.1944

A reconnaissance in force on 29 February failed to find any shipping. Operation Gilbey was carried out on twelve nights of the month and two attacks were delivered. On 12/13 February the object was to attack a convoy located by Jim Crow reconnaissance. Wellington C/415 located the convoy and at 0145 hours dropped 24 flares and one Beaufighter was homed on to the convoy. This was J/254 who sighted marker flares 20 miles ahead at 0108 hours. Aircraft orbited from 0115 until 0150 hours and at 0152 hours in position 5238N x 0430E sighted convoy of one merchant vessel of about 5,000 tons with 15 escort vessels. The pilot turned away as he considered flares still too high, made second run in at 0155 and carried out attack with one 10 foot contact torpedo.

A.H.B./IIH1/
104/1/13
Encl.8A

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- (1) Wellington A/415 missing on operation Gilbey on 7/8 February
Wellington N/415 missing on operation Gilbey on 8/9 February
Beaufighter Q/143 missing from strike on 21 February.
This aircraft was hit by flak and ditched.

Of the other three Beaufighters, one received only the signal 41 from the Wellington and failed to recognise it as 414, one found that VHF was unserviceable and one received a distorted VHF message thought to be "Not a thing".

On 22/23 Gilbey was carried out by one Wellington of No.415 Squadron and four Beaufighters of No.254 Squadron. Wellington C/415 sighted convoy of ten vessels at 2109 hours in position 5310N x 0435E. The aircraft orbited and dropped flame floats. At 2252 hours in position 5315N x 0442E, it sighted another convoy of two merchant vessels, two minesweepers and three to four R-boats on each flank. Flares were dropped in two sticks at 2315 hours on the landward side of convoy. The four Beaufighters sighted flame floats at 2257 - 2303 hours and orbited. However all aircraft considered flares too high to locate convoy. R/254 fired a torpedo although the pilot could only see the convoy indistinctly. These two operations have been described in detail to show the difficulties involved in execution of this type of operation.

No.143 Sqdn.
O.R.B. Feb.

No. 143 Squadron returned to North Coates on 12 February from No.19 Group. The Squadron was rearming at wastage rates with Beaufighter X instead of Beaufighter XI C. Its primary role was described as fighter support to No.254 T/B Squadron, secondary role anti-shipping operations with cannon or R.P., and occasional role reconnaissance. No.236 Squadron carried out some training this month on moonlight R.P. attacks against H.M.S. Sherwood.

March

No.16 Op.
O.R.B. App.
March 1944

Sorties rose again to 239 with 103 attacks and three aircraft lost.(1) Four enemy vessels of 11,492 were sunk.

FC.Form Y

No.254 Sqdn.
O.R.B.

Nearly all the attacks were delivered in three Wing strikes on 1, 7 and 29 March. On 1 March, 23 Beaufighters, escorted by 24 Fighter Command Spitfires V (LR) of Nos.64 and 611 Squadrons from No.12 Group, took off on reconnaissance in force to attack any enemy shipping sighted. At 1202 hours a convoy consisting of one merchant vessel, one to two tugs and five to six escort vessels was sighted off Den Helder. The merchant vessel was being towed stern first. Attack was made at once from sea to land at 1000 feet and the convoy was apparently taken by surprise since there was no flak until the attack developed. Three Beaufighters of No.236 Squadron attacked with R.P., and nine Beaufighters of No.143 and nine of No.254 Squadron with cannon. A formation of six cannon Beaufighters of No.236 Squadron, six of No.143 Squadron and eleven torpedo Beaufighters of No.254 Squadron took off later to attack the same target. Escort was provided by 24 Spitfires V and VB of Nos.234 and 402 Squadrons. The merchant vessel was sighted stationary at 1736 hours with no other vessels. The vessel was smoking amidships before attack. All aircraft attacked, except T/254, which jettisoned its torpedo due to undercarriage trouble. Many crews reported two torpedo hits and serious damage was claimed. As a result of the attack the Dutch merchant vessel Maasburg of 6,415 tons was sunk. There was no damage to aircraft.

FC.Form Y

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- (1) Two Beaufighters Y and M/254, were missing from the Wing strike on 7 March.
Beaufighter T/236 was missing from the Wing strike on 29 March.

FC Form Y

On 7 March reconnaissance in force was carried out by six Torbeaus of No.254 Squadron, eight cannon Beaufighters of No.254 Squadron, one of No.236 Squadron, nine of No.143 Squadron and six R.P. Beaufighters of No.236 Squadron. Fighter escort was provided by 31 Mustangs of Nos.19, 65 and 122 Squadrons from No.83 Group. At 1720 hours the Wing sighted and attacked north west of Borkum a convoy consisting of three armed trawlers, three coasters, one tug and a pilot cutter. Aircraft claimed that a concentrated and well timed attack was delivered with torpedoes, R.P. and cannon. Photographs showed several vessels on fire. However, no damage to this convoy can be confirmed from post war evidence. One torpedo Beaufighter, Y/254, and one cannon Beaufighter, M/254, failed to return. Both were seen to be hit by flak and ditch.

The last strike of the month escorted by 25 Mustangs of Nos.19 and 122 Squadrons on 29 March was more successful. The formation consisting of six Torbeaus and three cannon Beaufighters of No.254 Squadron, nine cannon Beaufighters of No.143 Squadron and nine R.P. and cannon Beaufighters of No.236 Squadron, attacked a convoy in position 5358N x 0658E at 1706 hours. The convoy consisted of 16 merchant vessels of 1,500/4,000 tons in two lines of eight, led by three M class minesweepers with a possible torpedo boat astern and one Sperrbrecher. Two vessels were claimed sunk and in fact post war records confirm the loss of the merchant vessels Hermann Schulte 1,305 tons and Christel Vinnen 1,894 tons in position 5338N x 0628E.

Three other Wing strikes were planned but one was abandoned owing to the weather, one was cancelled owing to fighter escort not being available, and the third found no target except merchant vessels inside Marsdiep.

Operation Gilbey was carried out on three nights. On 5/6 March the first success on this type of operation was obtained. Wellington M/415 Squadron picked up four blips on ASV at 2142 hours in position 5340N x 0635E which proved to be one merchant vessel estimated about 5,000 tons, escorted by three probable minesweepers. At 2156 hours the aircraft sent position message 5343N x 0615E to four waiting Beaufighters and set course there. On reaching the position the aircraft dropped six marine markers and circled while sending message to Beaufighters "vector 040 degrees". When all Beaufighters had made contact, M/415 set course for convoy. At 2220 hours the Wellington was over the convoy and dropped four flares on course 040 degrees. At 2222 hours, M/415 attacked with 3x500 lb. M.C. bombs the last of which undershot. The convoy opened fire with fairly accurate light and heavy flak. At 2224 hours the Wellington dropped 20 flares on course 040° and then set course for base. Meanwhile the Beaufighters, after contacting M/415, circled until 2218 hours when the message "Now" was received from the Wellington. Three Beaufighters then sighted and attacked merchant vessel with torpedoes. One Beaufighter did not make a sighting. As a result of the operation, the Swedish merchant vessel Diana (1,878 tons) was sunk.

The anti-shipping effort for March was very creditable considering that the whole of the North Coates wing was detached to No.18 Group on 16 - 22 March to operate against the Tirpitz in the event of her putting to sea.(1)

(1) See chapter XI on Fleet Reconnaissance.

(iv) (b) No.18 Group operations January to March 1944

January

No.18 Op.O.R.B.
App.Jan.
1944

January produced some results from the development of strike wing tactics in No.18 Group. Out of 186 sorties 65 attacks were made for the loss of five aircraft.⁽¹⁾ Sixteen P.R. sorties were flown. A total of four enemy vessels of 15,659 tons were sunk and two of 2,379 tons were damaged.

Two strike wing operations on 14 and 20 January were responsible for all these successes. On 14 January nine Beaufighters of No.404 Squadron and seven of No.144 Squadron acted as anti-flak escort to eight Torbeaus of No.144 Squadron on a shipping strike to the Naze. A convoy of three merchant vessels and two escort vessels was sighted off Lister in position 5810N x 0625E with a second convoy astern. All aircraft attacked, No.404 Squadron with R.P. and cannon, and No.144 with cannon and torpedoes. No.144 Squadron stated that they attacked a 4,000 ton merchant vessel in pairs whilst anti-flak aircraft made a diversion. One Beaufighter, J/404, was shot down over the convoy and one, W/404, ditched on the way home. Torbeau C/144 also failed to return. After the attack was over seven Me.109s were sighted and made attacks. No.144 Squadron said that rain showers and not enough continuous low cover to prevent the interference of fighters made the operation less successful than it should have been. Beaufighters of No.489 Squadron from Leuchars also operated for the first time in this operation and seen to have attacked the second convoy off Lister consisting of a merchant vessel of 5,000 tons, a smaller merchant vessel and four escort vessels in position 5808N x 0625E. Five anti-flak Beaufighters acted as escort to three Torbeaus of the squadron. There were no casualties to No.489 Squadron aircraft. As a result of these attacks on 14 January the German merchant vessels Wittekind (4,029 tons) and Entre Rios (5,179 tons) were sunk and the Norwegian merchant vessel Maurita (1,569 tons) slightly damaged.

A.H.B./IIA1/1/
1/3(B)
Jan/Feb 1944

Both the Wittekind and Entre Rios were engaged in iron ore shipments. It was considered that their loss might set back the good start which the enemy's iron ore import trade had received owing to another abnormally mild winter. Shipments to Germany in January totalled 450,000 tons, - 339,000 via Swedish ports and 111,000 via Narvik.

The other successful operation was on 20 January. Six R.P. Beaufighters of No.404 Squadron escorted by six anti-flak Beaufighters of No.144 Squadron and one photographic Beaufighter of No.144 Squadron were despatched on Rover. One merchant vessel and escort vessels were attacked with R.P. and cannon in position 6208N x 0505E. There were no casualties to aircraft. The photography was unfortunately not very successful owing to a mechanical defect. The

-
- (1) On 14 January Beaufighters J and W/404 were lost on Rover strike. J/404 was shot down over the target, W/404 ditched on way home. Beaufighter C/144 failed to return from the same attack. On 16 January Beaufighter N/404 was hit by flak from shore and ditched. On 26 Beaufighter G/404 successfully attacked a merchant vessel and was then shot down by three Me.109s.

German merchant vessel Emsland of 5,170 tons was sunk in the attack.

The same day eight Beaufighters of No.489 Squadron, four acting as anti-flak escort, carried out a Rover patrol in the Egero area. One small merchant vessel was the first target at which Y and M/489 dropped their torpedoes just as the formation leader said "Hold torpedoes" having decided that the target was too small and having seen smoke on the horizon which might have been a better target. The anti-flak aircraft also attacked and the vessel was left burning. Torbeaus S and W/489 dropped their torpedoes at a larger vessel escorted by two M-class minesweepers. The anti-flak aircraft attacked the escorts. There were no casualties to aircraft beyond very slight damage. The German Radio on 21 January admitted a torpedo hit on a vessel off Egersund. In fact the Skagerack I (ex Norwegian) a minelayer of 1,281 tons was sunk and the Norwegian merchant vessel Susanna of 810 tons damaged. Congratulations from the A.O.C. No. 18 Group were sent to No.489 Squadron following this success.

One other operation by the Wick strike wing on 26 January does not seem to have had any results.

Most of the operations during the month were carried out by the Wick strike wing. No.489 Squadron, based at Leuchars, returned to the line on 14 January and carried out a number of operations, providing its own anti-flak escort. No.333 Squadron (Mosquitoes) provided reconnaissance aircraft.

February

No. 18 Op.
O.R.B. App.
February 1944.

Sorties remained at the same level at 185 although attacks dropped to 20. Wastage was two aircraft.⁽¹⁾ P.R. sorties totalled 30. Two enemy vessels of 3,596 tons were sunk.

On 1st February the Wick strike wing carried out a successful operation. Nine Beaufighters of No.404 Squadron, two acting as anti-flak escort, and five anti-flak Beaufighters of No.144 Squadron were despatched on R.P. Rover to the Stadtlandet area. Details of armament are given in footnote.(2) On arrival, weather conditions in the area were too bad for any kind of work, so the leading aircraft of No.404 Squadron, on his own initiative, led the formation north until better weather was found. A convoy of two 4/5000 ton merchant vessels and three escort vessels was sighted and attacked in position 6211N x 0503E. Two rocket projectiles were fired from escort vessels as the formation went in to attack. Intense heavy and medium flak from convoy and shore was reported but there were no casualties and only slight damage to two aircraft of No.404 Squadron. As a result of the attack the merchant vessel Valencia of 3,096 tons and escort trawler - U.J.1702 of 500 tons were sunk.

- (1) On 5 February Beaufighter S/144 was missing on Rover in the Egero area.
On 23 February Mosquito L/333 was missing on reconnaissance in Lister Area.
- (2) Strike aircraft. { Three armed 8 x 60 lb R.P.
 { Four armed 8 x 25 lb R.P.
Anti-flak aircraft. { Five armed cannon (144 Sqdn)
 { one armed 8 x 60 lb R.P.
 { one armed 8 x 25 lb R.P.

The remainder of the attacks were all carried out by No.489 Squadron, two on first light Rovers on 23 February and four at first light on 25 February. No results were obtained.

No.489
Sqn. O.R.B.

Aircraft employed were the same as January, namely, Beaufighters of Nos.144 and 404 Squadrons at Wick and of No.489 Squadron at Leuchars and Mosquitoes of No.333 Squadron. No.489 Squadron reported that daylight Rovers during the month produced no successes nor did a series of moonlight patrols. The shipping was not there. New tactics were therefore employed. Aircraft arrived on the coast just before dawn, since the enemy prepared to move shipping on days too fine and clear for daylight patrols and the convoys had by then just started to move. Six attacks had been carried out using these tactics.

March

This month both the Wick and Leuchars strike wings were complete and sorties rose to the peak figure of 308. Forty one attacks were made and five aircraft lost.(1) P.R. sorties by No.544 Squadron were 32. Three small enemy vessels of 2,142 tons were sunk and the troopship Monterosa (13,882) damaged.

Four Beaufighters of No.489 Squadron flew a last light Rover on 5 March, the first pair in the Feisten area and the second (M and K/489) in the Egero area. M/489 attacked with torpedo a stationary merchant vessel in a convoy south of Egero but no results were seen. K/489 attacked a 3,000 ton merchant vessel in a convoy about three miles away. A dark orange glow with sparks and a column of smoke were seen from amidships. The escort trawler - UJ.1703 (250 tons) was sunk by one of these attacks three miles west of Lindesnes.

On 6 March the first operation of the new Leuchars strike wing took place. Four Torbeaus of No.489 Squadron with anti-flak escort of eight Beaufighters of No.455 Squadron were despatched on a Rover in the Obrestad area. Owing to the absence of cloud cover there, the formation turned north and sighted an exceptionally large convoy of probably 16 merchant vessels and escort vessels covered by four Me.109s and one B.V.138. Torbeau Z/489 was met head on by two Me.109s on the run in and had to climb into cloud cover. K and F/489 attacked a 4,000 ton merchant vessel but reported that target took avoiding action and torpedoes might have missed. Torbeau T/489 attacked and saw a hit on a merchant vessel. All Beaufighters of No.455 Squadron raked merchant and escort vessels with cannon fire. The result of this attack from German records was one small German merchant vessel (Rabe of 994 tons) sunk west of Obrestad.

On 23 March a last light Rover was flown by the Leuchars wing. Six Torbeaus of No.489 Squadron, escorted by nine anti-flak Beaufighters of No.455 Squadron, were despatched along the coast from Feisten to Lister, but the formation broke up owing to bad visibility and low cloud. Near Lister,

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- (1) On 23 March Torbeau B/144 was shot down over target
On 25 March Beaufighter C/455 crashed. Burnt out.
On 30 March Beaufighters A and P/404 were missing after Rover strike. P/404 was seen to ditch after attack.
On 31/1 April Torbeau S/489 was missing on Rover.

P/489 sighted a merchant vessel estimated to be of 2,000 tons and attacked with torpedo. An explosion was seen off its port beam. Photographs showed however that the vessel was of passenger type and of less tonnage than estimated. The vessel was in fact the Norwegian Ryfylke of 898 tons which, after attack off Lister, was beached in position 5803N x 0636E.

A Rover strike by the Wick Wing on the same day on a convoy in position 6155N x 0456E had no results. Torbeau B/144 was shot down by flak over the target.

The other main operations of the month were the search for and attack upon the troopship Monterosa (13,882 tons) on southward passage along the Norwegian coast. An intelligence report, graded B.1., had been received that the Monterosa had passed Tjelsund near Narvik at 0800 hours (G.M.T.) on 25 March southbound. A further report graded B.2., stated that a 20,000 ton vessel passed Skorpen (6130 North) at 0900 hours G.M.T. on 29 March. A strike of 22 Beaufighters of Nos.404 and 144 Squadrons on 29 March had failed to make any sighting as had a last light Rover by eight Beaufighters of No.489 Squadron in the Karmoy area. On 30 March three reconnaissance sorties were carried out by Mosquitoes of No.333 Squadron and two special P.R. sorties by Mosquitoes of No.544 Squadron. Mosquito H/544 located the Monterosa at 1145 hours in Grimstad Fjord in position 6019N x 0516E. The next sighting was by Mosquito O/333 at 1536 hours. The Monterosa and three escort vessels believed to be M-class minesweepers were seen in position 6004N x 0519E steering a course of 180 degrees through the Leads at a speed of 12 knots. One B.V.138 was giving close escort. Mosquito L/333 located the vessel again at 1808 hours in position 5937N x 0516E on course of 220 degrees at 12 knots. Meanwhile the Wick strike wing had taken off about 1703 hours on a Rover from Utsire to Karmo then through the Leads to Bommel Fjord in order to attack the troopship. The force consisted of five Torbeaus and four cannon Beaufighters of No.144 Squadron with nine R.P. Beaufighters (armed with 25 lb.R.P.) of No.404 Squadron. The formation made landfall at Utsire Light and almost immediately sighted the Monterosa escorted by three escort vessels and aircraft escort of approximately nine Me.109s and F.W.190s, five Me.110s, two Arados and one B.V.138. The formation came in low and as it approached, the enemy aircraft escort turned towards the shore and waited for the formation to attack. Following the instructions of the leading aircraft A/404, the formation climbed to the predetermined altitude, and in the face of terrific flak from all vessels and shore batteries, proceeded to attack the target. Attack took place at 1840 to 1852 hours in position 5926N x 0514E. The enemy aircraft then came in low, climbed up behind our aircraft and attacked. All aircraft of No.404 Squadron attacked with R.P. and cannon, disregarding flak and not taking evasive action until the attack was over. The five Torbeaus of No.144 Squadron all attacked with torpedoes from a range of 1100 to 1500 yards and at least two hits were claimed. Two anti-flak Beaufighters, E and M/144, were detailed to deal with enemy aircraft and P/144 made a separate cannon attack on a destroyer. The leading aircraft of the formation A/404, flown by the Squadron commander, Wing Commander C. A. Willis, and P/404 failed to return. P/404 was seen to ditch and survivors were reported. As a result of the attack the Monterosa (13,882 tons) was damaged. No.404 Squadron claimed one Me.110 shot down.

Later on 30 March, three pairs of Torbeaus were ordered to carry out night Rover patrols from Egero to Hvidingso Light at ten minute intervals. The first pair was to be on the coast

C.C.H.Q.
N.S.O.Log.

C.C.H.Q.
N.S.O.Log.

at 2359 hours. Owing to unserviceability only four Torbeaus took off and of these only one, P/489, sighted and attacked the Monterosa at 0010 hours. The vessel was in position 5855N x 0535E, escorted by four probable minesweepers, and steering a southerly course at eight knots. The aircraft had to make three circuits of the convoy and Stavanger/Sola airfield before dropping torpedo in the face of accurate and intensive heavy and light flak from shore and convoy. Owing to the need for evasive action results were not observed. However German records state that the Monterosa was damaged a second time after midnight which must have been due to this attack.

C.C.H.Q.
N.S.O.Log.

The next morning No.18 Group flew early morning reconnaissance with Mosquitoes off the Norwegian coast. An extra reconnaissance sortie, by Y/544, was laid on owing to complaints from Coastal Command Headquarters that a gap was left between Stavanger and Lister. However, Y/544 was unable to cover Stavanger. Mosquito O/333 Squadron sighted the Monterosa at 0825 hours approaching Kristiansand South but this report was not at first accepted at Coastal Command Headquarters. Photographs unfortunately proved a total failure. Afternoon reconnaissance by Mosquitoes of No.333 Squadron produced no sightings. Night Rovers were flown by three Torbeaus of No.489 Squadron in the area between Kristiansand and the Skaw on the night of 31/1st April. Nothing was reported and one Torbeau, S/489, failed to return. The Monterosa was finally located by a P.R. aircraft in Kristiansand South at 1415 hours on 1 April. At 1020 hours on 2 April it was reported that she had left. German records state that she arrived in Aarhus on 3 April.

March saw two fully operational strike wings in No.18 Group. No.455 Squadron, now equipped with Beaufighters, also carried out R.P. training. On 16 March 15 Beaufighters of No.455 Squadron and ten Torbeaus of No.489 Squadron proceeded to Skitten on detachment from Leuchars and wing operations were carried out from there. On 26 March a signal was received from H.Q.C.C. transferring Nos.455 and 489 Squadrons complete to Langham in No.16 Group by 15 April 1944.

No.489 Squadron reported that the tactics developed during February continued to achieve success in the early part of the month. In two days, on 5 and 6 March, four convoys were sighted and attacked by No.489 Squadron. It was considered that success was reflected in the fact that the last of these convoys, a large one of at least 16 vessels, was escorted by four single engine fighters. Then there was a lull. Many sorties were carried out from Skitten during the last part of the month but sightings were disappointing.

One strike on 21 March was carried out by the North Coates Wing (Nos.254 and 236 Squadrons) on detachment to No.18 Group because of the scare that the Tirpitz was about to move south.⁽¹⁾ The strike was detailed to attack a convoy sighted by a Mosquito of No.333 Squadron on first light reconnaissance. However, owing to a misunderstanding in signals communications the strike returned early to base.

(iv) (c) No.19 Group Operations January to March 1944

No.19 Group
O.R.B. App.

Six sorties were flown on 16 January by Beaufighters of No.235 Squadron from Portreath owing to a report that four

(1) See Chapter on Fleet Reconnaissance.

enemy destroyers had put to sea from Brest. Individual searches were carried out but nothing was seen. There were no further anti-shipping operations in January. Eight P.R. sorties were flown.

During February only two sorties were flown on anti-shipping operations. There were 24 P.R. sorties. Five sorties were flown in March. In addition attacks by Tsetse Mosquitoes of No.248 Squadron on offensive anti-U-boat patrols on 7 and 14 March resulted in the sinking of the auxiliary minesweeper Marie Anne (M.4405) of 286 tons and fishing vessel Per CC 2960 of 250 tons.

(iv) (d) Fighter Command Operations January to March 1944

January

F.C. Form Y

Fighter Command flew 627 operations on anti-shipping sorties, made 57 attacks and lost three aircraft.⁽¹⁾ No enemy shipping was sunk or damaged.

The Munsterland arrived in Boulogne harbour from the westward early on 1 January. She was attacked twice during daylight by Nos.11 and 83 Groups on 1 January, first by two R.P. Typhoons of No.198 Squadron escorted by 13 Typhoons of Nos. 198 and 609 Squadrons, and secondly by eight R.P. Typhoons of No.181 Squadron escorted by two fighter Typhoons of the squadron. A further eight R.P. Typhoons of No.181 Squadron (No.83 Group) took off to attack, but sighted the vessel in the entrance channel to the inner harbour, and, therefore, no attack was made.

ADGB File
S.31523

Shore radar detected one large vessel, presumably the Munsterland, and eight escorts leaving Boulogne northwards at 1754 hours on the same date. Surface striking forces sailed to intercept, but, when south of Cap Gris Nez, the vessel turned back and entered Boulogne and was later located in the inner harbour. Four Typhoon Bombers of No.486 Squadron (No.11 Group) were despatched to attack the Munsterland on 2 January but weather conditions prevented an attack from being carried out.

It was not until 0428 hours on 20 January that radar detected two vessels, one large and one medium, with about thirteen escorts leaving Boulogne northwards. M.T.B.s, at short notice at Dover, sailed to intercept off Gravelines and coastal batteries engaged the force as it rounded Cap Gris Nez. At 0530 hours the plot indicated that the main target had become stationary one and a half miles west of Cap Blanc Nez. The vessel then drifted slowly eastward as though with the tide and finally became stationary off Sangatte. The escort split into small groups, one of which proceeded at a noticeably slow speed close inshore towards Calais. At 0840 hours, nineteen Typhoons of Nos.609 and 198 squadrons, including five R.P. aircraft, attacked the vessel about one mile off Sangatte. Aircraft stated that the vessel was already sinking with its funnel and

(1) Estimate of Group flying

January 1944	Sorties	Attacks	Wastage
No.10 Group	89	8	0
No.11 and 83 Groups	407	33	3
No.12 Group	131	16	0

superstructure above water. Twelve Typhoon Bombers and eight Typhoon fighters of Nos. 197 and 486 Squadrons, escorted by 12 Spitfires of No. 41 Squadron, were detailed to attack the same target but were recalled shortly after becoming airborne owing to unsuitable weather conditions. German records confirm the loss of the Munsterland (6,408 tons) owing to fire from coastal batteries.

Ibid.

At 2110 hours on 20 January two medium and four small vessels were detected off Gravelines proceeding west at eight knots. M.T.B.s failed to intercept and coastal artillery engaged the force with no results. Albacore aircraft of No. 415 Squadron were diverted from anti-shipping patrols to intercept. One failed to return. Two others attacked the vessels off Berck-sur-Mer with 12 x 250 lb bombs. One claimed hits, the other a near miss. The vessels were the two Elbing torpedo boats located by P.R. aircraft in Le Havre on 21 January. No damage was inflicted by the air attacks.

At 1940 hours on 29 January one large and about six smaller vessels were detected five miles west of Dunkirk proceeding westwards. M.T.B.s attacked off Gravelines and Wissant but no hits were claimed. Coastal batteries engaged the force but made no claims. Two Albatrosses of No. 415 Squadron attacked with 12 x 250 lb bombs off Berck-sur-Mer and claimed near misses on escort vessels. The large vessel was believed to be a 370 foot Sperrbrecher which departed from Dunkirk on this night. German records show no damage to shipping.

Six M.class minesweepers also passed through the Straits on night of 30/31 January.

Movements of enemy naval units through the Straits were on a larger scale than in previous months with the majority of them proceeding westwards. The volume of coastal traffic was on a much smaller scale than usual. This was possibly due mainly to unfavourable weather. On fifteen nights no enemy shipping was detected moving in the Straits.

February

Fighter Command sorties dropped to 495 with 95 attacks and six aircraft missing.⁽¹⁾ Two enemy vessels of 802 tons were sunk. The M.class minesweeper M.156 (750 tons) was sunk in L'Abervrach on 5 February. It is possible that this date is incorrect since eight Typhoon bombers of No. 266 Squadron escorted by eight Typhoon fighters of No. 193 Squadron attacked a minesweeper in the Abervrach estuary north of Landeda on 6 February, and claimed one direct hit. Aircraft reported that the vessel was left listing and on fire. One Typhoon bomber was missing.

The other vessel was Air Sea Rescue Launch 506 of 52 tons sunk in position 5234N x 0434E on 24 February. This vessel was possibly sunk by Typhoons of Nos. 198 and 3 Squadrons on a fighter sweep over Holland. Aircraft reported that they shot up one river vessel, one coaster and two tugs.

(1) Estimated Group flying:

February 1944	Sorties	Attacks	Wastage
No. 10 Group	65	17	2
No. 11 Group	299	49	2
No. 12 Group	131	29	2

ADGB File
S.31523

At 0300 hours on 1 February, R.D.F. detected one medium vessel and about ten escorts leaving Boulogne northwards. The vessel was believed to be a small tanker which had entered Boulogne the previous night. M.T.B.s failed to intercept off Wissant and Dunkirk, and Coastal batteries were unable to engage as the enemy kept unusually close inshore and was out of range of the 9.2 inch batteries. The 15 inch guns were temporarily non-operational. Weather conditions prevented Albacore aircraft from taking off. It was believed that the vessel entered Dunkirk.

Ibid.

On the night of 22/23 February, two medium and about twelve small vessels were detected off Gravelines proceeding west. The force was thought to include a Sperrbrecher whose movement westward was anticipated. Two Albacores of No.415 Squadron attacked with bombs off Calais. Flak made results difficult to observe. Coastal batteries engaged but made no claim. Three M.T.B.s failed to intercept and the enemy entered Boulogne. The vessels continued southward on the night of 24/25th.

On the morning of 28 February, one large vessel, later identified by P.R. aircraft as the 410 foot tanker Rekum (5,540 tons) last seen in Cherbourg, was plotted entering Boulogne with several escorts from the south. Two Albacores of No.415 Squadron had attempted to attack south of Boulogne but were driven off by intense flak. Fourteen Typhoon bombers of Nos.197 and 257 Squadrons escorted by eight antifiak Typhoon fighters attacked the vessel in Boulogne harbour with bombs and cannon. A second wave of 16 Typhoon bombers of Nos.174 and 182 Squadrons also attacked with 32 x 500 lb. bombs. No damage can be traced in post war records.

Albacores maintained the mid-channel patrols during the month. R.P. fighter aircraft found no targets during the light period. On thirteen nights no enemy shipping was detected in the Straits.

March

F.C.Form Y

Fighter Command flew 541 sorties, made 33 attacks and lost one aircraft.(1) No enemy vessels were sunk. One vessel of 4,404 tons was damaged.

ADGB File
S.31523

The tanker Rekum (5,540 tons) made two attempts to leave Boulogne, on 1 and 18 March, and finally left on 20 March. M.T.B.s, which intercepted off Ambleteuse were driven off by the escort screen. The vessel was engaged and sunk by coastal batteries off Boulogne.

At 2127 hours on 19 March one medium vessel and six escorts were detected eight miles east of Dunkirk proceeding westwards. Two Albacores of No.415 Squadron attacked off Gravelines and Coastal artillery engaged the enemy. M.T.B.s sighted escort vessels but no torpedo target and were forced to withdraw owing to heavy fire from enemy batteries. One Albacore attacked the force off Berck-sur-Mer but made no claims.

(1) Group flying totals are not given for March, April, May 1944 as A.D.G.B.H.Q. records do not usually state which Groups were operating.

At 0240 hours on 21 March one large vessel, later identified as the Italian vessel Atlanta (4,401 tons), and eight escorts were detected entering Boulogne from the south. The vessel left northbound the same day with one medium sized and twenty smaller escorts and was engaged by Coastal artillery. German records establish that the vessel was damaged by this fire. A force of M.T.B.s and Albacores were detailed to intercept between Calais and Dunkirk, but were recalled when the vessel entered Calais. On 24 March the Atlanta proceeded east from Calais at 0145 hours accompanied by twelve or more escorts. Four Albacores of No.415 Squadron attempted to attack with bombs off Gravelines. Two were driven off by A.A. fire but the others attacked successfully with 12 x 250 lb. bombs, one claiming two direct hits on the main target. The Atlanta was, in fact, further damaged by this air attack. Another Albacore successfully illuminated the convoy by dropping a line of flares to landward, enabling one unit of M.T.B.s to attack with torpedoes. Another unit of M.T.B.s also approached and attacked, and one single M.T.B., lying off Dunkirk, attacked the main target at 0400 hours just off the harbour. It was reported that the last two attacks were pressed home entirely unobserved and that the diversionary attacks by the Albacores were of great value. The Atlanta and escort left Dunkirk at 0010 hours on 25 March. Three M.T.B.s waiting near the Zuydecoote Pass were unable to intercept owing to continuous star shell from shore batteries which precluded visual sighting and too many confused echoes which prevented radar interception.

Albacores carried out the usual mid-Channel anti-shipping patrols and attacked patrol boats and minesweepers. Fighter aircraft found no targets during the light period. It had become most unusual for enemy shipping to move in the Straits during the period immediately preceding and subsequent to full moon. The volume of small coastal traffic during the dark period was normal, with a predominance of movements to the west. The enemy was also expending considerable effort on minesweeping.

(v) The development of strike wing tactics in No.18 Group

II k/54/11/115
Encl.29

In report to C.C.H.Q. on 6 March 1944 No.18 Group stated that strike wing tactics were in a continuous process of evolution and consequently varied at different stations. The only complete wing so far was the one at Wick (Nos.404 and 144 Squadrons) which had had experience of R.P. and torpedo attacks during the last three and a half months.

Ibid
Encl.29A

1. The Wick R.P. strike was based on 14 aircraft which could be increased or decreased according to circumstances. Aircraft were split up into sub-sections of seven aircraft, known as "Green" and "Red" respectively, each composed of four antifiak aircraft (one armed with R.P. 60 lb. H.E. and three with cannon) and three strike aircraft (all armed with R.P. 25 lb. A.P.) The two sub-sections on becoming airborne formed up in one large vic formation and searched for shipping at a height varying from 100 feet in good visibility to 500 feet in poor visibility.

Ibid

2. The leader of the entire formation, which was the R.P. 60 lb. H.E. aircraft of "Green" section, on sighting shipping, broadcast the position and disposition if possible on V.H.F., on receipt of which "Red" and "Green" sections acted as follows:-

- (i) 60 lb. R.P. aircraft flew to a height of approximately 1,000 feet, cannon aircraft to 900 feet and R.P. strike aircraft to approximately 1,100 feet.
 - (ii) When aircraft were in position, the formation leader gave the order to attack. Cannon aircraft broke off into a shallow dive, opening fire at 1,500 yards and pressing home their attack. "Green" section led and attacked the second escort vessel, allowing "Red" section to concentrate on the nearest escort vessel covering the merchant vessel which had been selected for attack.
 - (iii) On reaching a distance of not less than 500 yards from the escort vessels cannon aircraft broke off their attack and turned out to sea.
 - (iv) Meanwhile the R.P. anti-flak leaders maintained their approach on the escort vessels at 1,000 feet until they were in a position to carry out a 10° R.P. attack. This attack was intended to finish the work of the cannon aircraft or at least create a diversion while they broke clear.
3. The strike force of R.P. aircraft were then in a position to carry out their attack.
- (i) Aircraft opened fire with cannon in a 100 plus dive from 1,000 feet and when they had closed range to 800 yards or less and cannon hits on the merchant vessels were observed, a salvo of eight 25 lb. R.P. were fired.
4. Aircraft carrying the 25 lb. A.P. heads had their sights harmonised for both cannon and R.P., the racks being staggered to give 20 foot spacing between each pair. Tests had shown that when cannon hits were registered on the target and the range was closed to 800 yards or less and a salvo of 25 lb. R.P. was fired, two hits would be obtained 15 to 20 feet below the cannon cone, two 20 feet short, two 40 feet short and two 60 feet short of the target. Thus in the case of a merchant vessel two hits would be in the proximity of the water line and the remaining six would be underwater hits. These results could be obtained even if the reflector sight became unserviceable.
5. Torpedo strike. The same tactics were employed for anti-flak aircraft as during an R.P. strike.

Torpedo strike aircraft - the main differences in a torpedo attack were:-

- (i) R.P. strike aircraft might be increased in multiples of one, torpedo aircraft must be increased in multiples of two.
- (ii) On receipt of a message from the R.P. anti-flak leader of the formation that shipping had been sighted, the torpedo aircraft should not gain height but remain low down and deploy into position for the attack and only climb to a height of 150 feet for the actual drop.

No.18 Group Headquarters noted that the tactics of the Wick Wing, employing sub sections of seven aircraft, were unorthodox. However, pre-selection of targets for anti-flak aircraft was very definite.

The torpedo half of the Leuchars Wing (No.489 Squadron) had now been operating by itself and providing its own anti-flak escort since 8 January 1944. No.489 Squadron described their tactics as follows:-

Ibid
Encl.29B

The squadron normally employed four torpedo bombers and six anti-flak aircraft. On the way to the Norwegian coast the squadron moved with the torpedo bombers in the centre in fluid pairs, with three anti-flak aircraft on either side and slightly astern. The formation kept as low as possible. Just before the enemy coast was reached, a gradual turn would be made in the direction of the patrol area. Anti-flak aircraft then moved into position some 2/300 yards in front of the torpedo aircraft. The squadron then flew at deck level in inverted Vio formation with torpedo aircraft at the rear. Immediately a target was sighted the torpedo bomber leader gave the order to prepare for the attack. Anti-flak aircraft then climbed to 5/600 feet and attacked effective flak ships. The torpedo bombers remained as low as possible and climbed only to drop torpedoes.

Ibid
Encl.29

No.18 Group noted that the tactics employed by No.489 were more orthodox. Pre-selection of targets for anti-flak aircraft, however, was rather vague. It was emphasised that tactics were in a state of flux and were likely to remain so until considerably more experience had been gained. It was considered undesirable that any rigid instructions on tactics to be employed by the Strike Wings should be issued.

The system of dawn, dusk and moonlight torpedo attacks which was being tried out by No.489 Squadron, was also mentioned.⁽¹⁾ Aircraft operated in pairs (with navigation lights on at night until some 50 miles from the Norwegian coast) and remained together throughout the whole operation if possible. If aircraft became separated they operated independently in the allotted area. All aircraft carried torpedoes and no anti-flak aircraft were employed. Dusk and moonlight patrols covered a stretch of coast line but first light patrols necessarily only made a landfall and then returned. Timing was a critical factor in dusk and dawn operations in order that aircraft might avoid enemy fighters and yet be able to see their targets.

(vi) The attack on enemy convoys in Den Helder

A.H.B./Iik/54/
11/361
Encl.54
and Min.55

Arrangements had been made in the autumn of 1943 for Marauders of the American VIIIth Bomber Command to attack shipping in Den Helder. Unfortunately the squadron were never available during the winter, as they were either on other missions or there was insufficient time to change the bomb load, or fighter cover was not available.

Ibid
Encl.69

On 21 February No.16 Group reported to C.C.H.Q. that with the increase in the hours of daylight, the enemy was again likely to make regular use of the Den Helder anchorage as a refuge for his westbound convoys from the Elbe

(1) See also section on No.18 Group operations February and March 1944.

to Rotterdam. It was suggested that the American IXth Bomber Command or the Tactical Air Force might be able to attack the anchorage, when convoys were present, if weather was unsuitable for normal targets in the Pas de Calais area.

Ibid.
Mins. 55 and
56

Both the A.O.C. No.2 Group and the Air C.-in-C.A.E.A.F. were willing to take on this target but felt they were unable to do so because it was outside the terms of the Tripartite Pact. It was suggested that the matter should be raised again on the Targets Committee who could insert it in the A.O.C.-in-C.'s directive.

A.H.B./Iik/54/
3/363(B)
Encl.85

Encl.86

At the meeting of the Bombing Targets Committee on 10 March it was agreed that this target should be examined from the point of view of tactical problems and the risk to civilians. On 24 March an appreciation by the M.E.W. was mentioned which concluded that a denial of the use of Den Helder to the enemy would substantially improve the opportunities for intercepting his convoys and might lead to a complete cessation of traffic to Rotterdam. It was pointed out that present priority commitments were Pointblank, (1) Crossbow, (2) and operations in preparation for Overlord. The attack on Den Helder would have to take priority below that of targets in the above three categories. On this understanding there would be no objection to A.E.A.F. making an attack on convoys in Den Helder.

(vii) Preparations for Overlord

In preparation for Overlord the Beaufighter strike wings in No.18 Group were moved south and disposed on either flank of the Channel area. Thus the anti-shipping squadrons of Coastal Command were disposed as follows during the pre-Overlord period:-

Under No.16 Group - a Wing of three Beaufighter strike squadrons at North Coates (Nos.254,236 and 143 Squadrons)
- a Wing of two Beaufighter strike squadrons at Langham (Nos.489 and 455 Squadrons)

Under No.19 Group - a Wing of two Beaufighter strike squadrons at Davidstow Moor.
(Nos. 144 and 404 Squadrons).
- one Beaufighter (L.R. fighter) Squadron No.235 Squadron at Portreath.
- one Mosquito (L.R. fighter) Squadron (No.248 Squadron) at Portreath.

The primary role of these squadrons was the attack of German light surface craft, that is, destroyers, E.-boats,

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- (1) Pointblank was the code name for the combined bomber offensive against Germany with the German fighter industry as priority objective.
 - (2) Crossbow was the code name covering enemy long range guided weapon development.

R-boats and W-boats. (1) These were considered a serious threat to the success of Overlord. However, should the threat not materialise or some crisis occur in the land battle, it was agreed, by the First Sea Lord and the Chief of the Air Staff, that these Beaufighter and Mosquito squadrons might be switched from their anti-shipping role to the attack of land targets.

Ibid
Encl.6
and 27

Owing to the shallow draught of destroyers and the small target presented by E and W-boats, it was decided that the torpedo would not be used during Overlord. Reliance would be placed on R.P. and bombs as primary weapons against destroyers with cannon as the anti-flak weapon; on cannon against E and R-boats with bombs as a secondary weapon, and on bombs against W-boats with cannon as a secondary weapon. Torpedo racks were to be removed from Nos.254, 144 and 489 torpedo Beaufighter squadrons and aircraft were to be employed using cannon and bombs. R.P. was to be retained in Nos.236 and 404 Squadrons only. Nos.143 and 455 Squadrons were to remove rails and cease training with R.P. Two 250 lb. wing bomb racks and two twin 500 lb. fuselage racks were to be fitted to all Beaufighters. (2)

Coastal Command Headquarters stated on 19 April in a letter to No.18 Group that recent trials had shown that cannon could be used against surface targets by night and no difficulty from glare was experienced. R.P. could also be used without danger at night but the glare from the first pair of R.P. would obscure the target and prevent realignment of sights. Pilots should, therefore, fire one pair only or a complete salvo during a dive. Bombs to be used on anti-shipping operations would be the M.C. type because of its high charge weight ratio and good fragmentation effects. Trials had shown that M.C. bombs with selected fusing of No.44 (Air Burst) Pistol and tail delay fusing were the best compromise for a bombload to be used against E, R and W-boats. The minimum safety height of release was 1,000 feet. Fusing instructions for other forms of attack were detailed in Coastal Command Tactical Memorandum Part II No. 1/1944. Tactical instructions for the attack on destroyers, E/R boats and W-boats using R.P., cannon and bombs were also given in this letter.

A.H.B./IIK/54/
11/117
Encl.40

At a strike squadron commander's conference on 25 April 1944, it was decided that No.236 Squadron was to adopt the R.P. harmonisation and tactics used by No.404 Squadron, namely that in using the 25 lb. head R.P., the racks were set

A.H.B./IIK/54/
11/188
Encl.33

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- (1) The term W boats was used to cover all kinds of small battle units such as one man torpedoes, W/T directed motor boats and midget submersibles. Although we were aware of developments in this field, nothing was known as to their readiness for operations. In the event none were used until early July 1944.
 - (2) The position of fitting the 500 lb. bomb carrier to Beaufighters on 15 May 1944 was as follows:-
 - 60 Beaufighters (three squadrons) fitted at North Coates.
 - 16 Beaufighters out of 40 (two squadrons) fitted at Langham.
 - 15 Beaufighters out of 40 (two squadrons) fitted at Davidstow Moor.

It was expected that the outstanding aircraft at Langham and Davidstow Moor would be completed within a week.

to space a salvo two to hit, two to fall 25 feet short and two to fall 50 feet short when launched while cannon strikes above the target's freeboard were being made from 700 yards or less in a seven to ten degrees dive. The 25 lb. head was to be used during "Overlord" because its trajectory coincided with that of the cannon and the sight could be harmonised primarily for cannon. The 60 lb. head would be an effective anti-flak weapon if supported by its own cannon firing aircraft, against destroyers but cannon alone was adequate for smaller escort vessels. Nos.236 and 404 Squadrons were to continue training hard on R.P.

(vii) (b) Revision of the Tripartite Pact

A.H.B./IIH/240/
10/9
Encl.107A

Ibid.
Encl.114A

On 16 May 1944 in view of the changes in the strategical direction of Bomber Command and VIIIth Bomber Command and of the general reorganisation affecting particularly Fighter Command and No.2 Group, a meeting was called to discuss necessary amendments to the Tripartite Pact during the Overlord period. The revised orders were issued on 29 May 1944. The chief amendments were that aircraft operating under S.H.A.E.F. might be called upon to assist in anti-shipping operations, that No.10 and 11 Groups Fighter Command would operate certain aircraft of Coastal Command as well as F.A.A. aircraft by ground control interception methods to attack ships plotted by radar, and that the Home Fleet would be responsible for action against enemy major surface forces unless such forces directly threatened Overlord.

(viii) (a) No.16 Group Operations April and May 1944

April 1944

No.16 Op.
O.R.B. App.
April 1944

Sorties rose once again to 388 although the number of attacks fell slightly to 90. Three aircraft were lost.⁽¹⁾ Six enemy vessels totalling 4,429 tons were sunk and two of 5,740 tons were damaged. Four wing strikes carried out attacks during the month and achieved all these successes.

On 18 April six torpedo and eighteen anti-flak Beaufighters⁽²⁾ took off on reconnaissance of the outer enemy convoy route from 0700E to 0620E. The wing operated without fighter escort on this occasion. At 1715 hours the formation sighted two armed trawlers in position 5405N x 0640E. Attack was carried out by six R.P. Beaufighters, seven cannon Beaufighters and one Torbeau. One trawler was claimed sunk outright and the other left in a sinking condition. In fact the two patrol trawlers Vooruit-(VP. 1223) (165 tons) and Augusta-(VP.1236) (193) were sunk in position 5350N x 0630E.

On 19 April nine Beaufighters of No.143 Squadron and nine R.P. Beaufighters No.236 Squadron, escorted by 11 Spitfires of No.611 Squadron, were despatched on reconnaissance in force further west to attack any shipping sighted. All aircraft attacked one coaster followed by two armed trawlers in position 5330N x 0511E at 1256 hours. The patrol trawler

No.236 Sqn.
O.R.B.

-
- (1) Beaufighter W/489 was missing on special reconnaissance on 20 April.
Beaufighter F/236 was missing from wing strike on 20 April.
Beaufighter V/254 was missing from Coastal Roadstead on 26 April.
 - (2) 7/254, 9/143, 9/236 Squadrons.

Notre Dame des Dunes (V.P.1237) of 482 tons and the buoylayer Hast II of 536 tons were sunk in this attack.

On 20 April six Torbeaus of No.254 Squadron, ten R.P. Beaufighters of No.236 Squadron and eight cannon Beaufighters of No.143 Squadron attacked at 1802 hours a convoy of merchant vessels and armed trawlers in position 5337N x 0611E. Aircraft E/236 failed to return. The Condor-(Sperrbrecher 102) of 889 tons was sunk and the Swedish merchant vessel Storfors of 924 tons was damaged in this attack.

On 26 April eight cannon Beaufighters of No.143 Squadron, eight R.P. and one cannon Beaufighter of No.236 Squadron, and six Torbeaus of No.254 Squadron took part in an attack on a convoy of about fourteen vessels in 5341N x 0535E. The Wing was escorted by 24 Spitfires of Nos.611 and 64 Squadrons. Aircraft reported that surprise was not achieved and intense heavy and light flak opened early. Beaufighter V/254 Squadron failed to return and P/236 Squadron crashlanded but crew were safe. However, the German merchant vessel Lasbek of 2,159 tons was sunk and the Luise Leonhardt of 4,316 tons was seriously damaged in this attack.

No.489 Sqdn.
O.R.B.

Of eight other strike wing operations during April, six found no target to attack, one was recalled because the fighter escort was cancelled due to weather conditions and one was abandoned because the Wing leader lost contact with the formation. Nos.455 and 489 Squadrons, who had moved from No.18 Group to Langham in No.16 Group carried out four of these Wing operations. No.489 Squadron reported that operations from Langham had been disappointing as few ships had been sighted and those had been of low tonnage. The squadron was also training in night flying and day and night bombing in preparation for the equipment of aircraft for bombs as alternative armament to torpedoes.

Operation Gilbey was carried out once, on 10/11 April. Wellington I/415 attacked a convoy of 16 E/R boats with 3 x 500 lb. bombs but was unable to home the Beaufighters on to the convoy.

May 1944.

Sorties rose to the peak point of 516. These were 94 attacks and four aircraft lost.⁽¹⁾ A total of four enemy vessels of 4,150 tons were sunk.

Two successful wing strikes were carried out on 6 and 14 May. On 6 May six torpedo and five cannon Beaufighters of No.489 Squadron together with 12 cannon Beaufighters of No.455 Squadron were ordered to attack a convoy of 15 vessels expected in position 5347N x 0630E. At 1810 hours the convoy, consisting of eight escort vessels and seven merchant vessels, was sighted and attacked in position 5344N x 0620E. All aircraft attacked. The torpedo aircraft stressed that lack of flak was due to the excellence of attacks on the leading escort vessels by anti-flak aircraft. Beaufighter M/455 failed to return. Photographs showed two possible torpedo hits on merchant vessels. One escort vessel at the rear of

(1) Beaufighter M/455 was missing from strike on 6 May. Wellington G/415 crashed with extensive damage on 7 May. Beaufighter B/489 was missing from strike on 14 May. Avenger Q/848 was missing on Avenger patrol on 19 May.

the convoy was seen to be using a flame thrower from the masthead. Twelve R.P. and cannon Beaufighters of No.236 Squadron and 12 cannon Beaufighters of No.143 Squadron were ordered to attack the same convoy half an hour after the Langham Wing. No fighter escort was provided. Three Beaufighters returned early but the remainder⁽¹⁾ of the wing attacked the convoy in position 5348N x 0627E. Aircraft reported that no surprise was achieved. Flak was considerable, both heavy and light. P.A.C. rockets were fired before aircraft went in to attack. Eight Beaufighters were damaged by flak. As a result of the attacks the German merchant vessel Edouard Geiss of 1,456 tons was sunk.

On 14 May six torpedo and six cannon Beaufighters of No.489 Squadron and 12 cannon Beaufighters of No.455 Squadron were ordered to attack a convoy of 20 vessels in estimated position 5335N x 0630E at 1300 hours. Escort was provided by 12 Mustang III of No.316 Squadron. The convoy, consisting of four merchant vessels and 16 escort vessels, was sighted at 1315 hours in position 5340N x 0543E. Ten cannon aircraft of No.455 Squadron and the six torpedo aircraft of No.489 Squadron attacked. The six cannon Beaufighters of No.489 Squadron lost formation and did not attack. Flak was intense. One cannon Beaufighter B/489 failed to return. As a result of the attack the Dutch merchant vessel Vesta of 1,854 tons and the M-class minesweeper M.435 of 750 tons were sunk.

Five other anti-shipping strikes were despatched during the month. Four found no target - the Langham Wing attacked two allied M.T.B.s on 4 May by mistake - and one was recalled.

CH/G9/6 May

Special anti-shipping patrols for the pre-Overlord period were instituted on 6 May. The patrols were known first of all as Green, Purple and Blue, changed on 7 May to Red, White and Blue. The three patrols were intended to be flown at the same time, each by one pair of Beaufighters. Aircraft were ordered to attack stray shipping in patrol area from which intense opposition would not be expected. Fishing vessels were not to be attacked. Convoy sightings were to be reported in the usual manner. These patrols were flown from 6 - 13 May inclusive and 94 sorties were devoted to them. Two attacks were made on coasters.

CHG9/8 May
CHGZO/8 May

Special Avenger patrols off the Belgian and Dutch coasts were flown by Avengers of No.848 F.A.A. Squadron, loaned to Coastal Command for the pre-Overlord period, which operated from Manston. Fifty one sorties were flown on these patrols, eighteen cannon, depth charge and bomb attacks were delivered and one Avenger was lost. In a bombing attack on 29 May by Avenger K/848 at 0106 hours in position 4934N x 0001W on three M-class minesweepers and one small unidentified vessel, the R-boat R.123 (90 tons) was sunk.

No.143 Sqdn.
O.R.B.
April and
May.

No.143 Squadron were ordered to exchange their Beaufighter XIc aircraft for Beaufighter X aircraft of No.235 Squadron at the end of April. A detachment of 16 aircraft of the squadron had arrived at Manston by 1 May and

(1) 11/236 and 9/143. One Beaufighter of No.143 Squadron had complete electrical failure and no cannon fired.

night armed reconnaissance patrols in the Channel area were flown during the month. The whole squadron was moved to Manston from North Coates on 23 May in order to form part of the newly established 155 G.R. Wing consisting of Nos. 848 and 849 F.A.A. Squadrons. The role of the Wing was primarily anti-E-boat patrols covering the eastern Channel area.

(viii) (b) No.18 Group operations April and May 1944

April

No.18 Op.
O.R.B. App.
April 1944

Owing to the departure of the Leuchars wing to Langham in No.16 Group, sorties dropped to 172 with 14 attacks and two aircraft missing. (1) P.R. sorties by No.544 Squadron totalled 18. Mosquito Q/544 was lost on P.R. to Swinemunde on 7 April. One enemy vessel of 3,324 tons was damaged.

All attacks were delivered in a strike by the Wick Wing on 7 April. Four Torbeaus of No.144 Squadron were escorted by two cannon Beaufighters of No.144 Squadron and eight R.P. anti-flak Beaufighters of No.404 Squadron on a Rover patrol in the area Svinoy to Ytteroeene. At 1132 hours the Wing sighted and attacked a convoy of three merchant vessels and seven escort vessels in 6210N x 0505E on a course of 180°. A formation torpedo attack was made by No.144 Squadron in the face of moderate flak from the convoy. No torpedo hits were claimed, but anti-flak aircraft claimed R.P. and cannon hits on merchant and escort vessels. The German (ex French) merchant vessel Cornouaille of 3,324 tons was damaged by this attack.

Nos.489 and
455 Squadron
O.R.Bs

No.489 Squadron moved to Langham on 6 - 11 April. Several night patrols were flown from Leuchars along the south Norway coast before the squadron left the group but no shipping was sighted. No.455 Squadron were withdrawn from operations on 2 April for R.P. training prior to the move to Langham on 6 - 14 April. (2) No.144 and 404 Beaufighter Squadrons and No.333 Mosquito Squadron were left to carry on operations.

A.H.B./Iik/54/
11/188
Encl.27

No.18 Group were informed on the 19 April that Nos.144 and 404 Squadrons would be moved at an early date to Davidstow Moor under No.19 Group control. Both squadrons were to be fitted with twin 500 lb and 250 lb bomb racks as soon as possible and to undertake training in bombing fast moving surface craft from heights of 1,000 feet to 1,500 feet as a matter of urgency. No.404 Squadron also carried out R.P. training during the last part of the month.

May

No.18 Op.
O.R.B. App.
May 1944

There were 43 anti-shipping sorties from No.18 Group with five attacks and one aircraft lost. (3) Two P.R. sorties were flown. Beaufighters of Nos.144 and 404 Squadrons flew night Rover patrols in shifts on the nights of 5/6 and 6/7 May. In the course of these operations five attacks were made on merchant vessels and armed trawlers but no results have been confirmed.

- (1) Beaufighter N/489 was missing on Rover on 1/2 April. Beaufighter K/144 failed to return from strike on 18 April.
- (2) It was later decided that this squadron was not to be employed in the R.P. role during Overlord. See section (vii) (a) of this chapter.
- (3) Beaufighter L/404 was lost on Rover patrol on 5/6 May.

On 7 May instructions were received that the two Beaufighter squadrons were to move to Davidstow Moor in No.19 Group on 10 May. No.333 Mosquito Squadron carried out a few shipping reconnaissance patrols during the rest of the month.

(viii) (c) No.19 Group operations April and May 1944

Only two sorties were flown during April. One trawler Fladengrund (V.606 (258 tons) sank on 25 April in position 4706N x 0258W. This was possibly one of four armed trawlers attacked with M.G. fire by Halifax B/502 on anti-submarine patrol at 0055 hours (double British summer time) on 26 April in position 4602N x 0302W.

During May, No.19 Group flew 173 sorties, made 27 attacks and lost one aircraft(1) in connection with anti-shipping operations. Post-war evidence has failed to reveal, however, that any enemy vessels were sunk or damaged in the course of these attacks.

A.H.B.
IA1/1/3/B

Iron ore shipments continued and reached approximately 63,000 tons in March 1944. This represented an increase of 24,000 tons on the February figures. The Midsland was added to the fleet during the month. On 12 March the Baldur, Hochheimer, Scharlachberger and Midsland all sailed in one convoy from Bilbao escorted by seven patrol vessels and a number of aircraft. In April, imports fell to 51,000 tons principally on account of difficulties with the provision of rolling stock at the French ports. In May, following the sinking by one of H.M. submarines of two of the larger vessels engaged, (2) imports further decreased to 44,000 tons.

Ibid
Six monthly
report Jan-
June 1944

(viii) (d) Fighter Command operations. April and May 1944

April

Fighter Command flew 533 sorties, made 50 attacks and lost four aircraft. Two enemy vessels of 850 tons were sunk off Lezardrieux on 29 April. (3) These vessels were presumably sunk in one of the attacks described below.

On 29 April seven Typhoon bombers of No.263 Squadron escorted by nine Spitfires of No.165 Squadron were ordered to attack an enemy torpedo boat on fire seven miles east of Ile Vierge. The damaged vessel was located and also another enemy torpedo boat surrounded by escort vessels. (4) The second torpedo boat was attacked with 14 x 500 lb. bombs. No hits were observed. Later seven more Typhoon Bombers of No. 263 Squadron attacked the torpedo boat aground seven miles east of Ile Vierge with 14 x 500 lb. bombs and claimed two direct hits. A third attack on the disabled vessel was carried

F.C.Form Y

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- (1) Beaufighter J/144 was shot down by flak on an offensive sweep on 19 May.
 - (2) The Hochheimer (1,766 tons) was sunk by H.M. S/M Sceptre at 0400 hours on 20 May off Bilbao. The Baldur (3,594 tons) was sunk by H.M. S/M Sceptre at 1409 hours on 23 May in position 4322N x 0311W.
 - (3) These were Xavier Dorsch (750 tons) and Constant 5 (100 tons)
 - (4) These were in fact two German torpedo boats (Nos. T.27 and T.29) who had beached themselves to the eastward of the Ile de Vierge after being badly damaged by H.M. ships on the 26 April.

out by nine R.P. Typhoons of No.137 Squadron and 16 R.P. Typhoons of Nos.181 and 182 Squadrons (A.E.A.F.). Aircraft attacked with 12 x 60 lb. R.P. and claimed several direct hits. Twenty seven Spitfires acted as escorts. (1) The following day four Typhoon Bombers of No.263 Squadron, despatched on armed reconnaissance to Lezardrieux harbour, dive bombed small craft in the estuary and, although not claiming any specific result, probably sank the two vessels given in the previous footnote which the German records state as having occurred on this day off Lezardrieux.

ADGB File S.
31523

Only one vessel of appreciable size attempted the passage of the Straits. This was a 310 foot tanker which sailed north from Boulogne on night of 20/21 accompanied by at least 15 escorts. M.T.B.s which intercepted off Calais were driven off by heavy fire from the E/R boat screen. Coastal artillery engaged the vessels. One Albacore of No.415 Squadron attacked the convoy off Gravelines. Unfortunately a P.R. report that the tanker had arrived in Boulogne on 20 April was not received at Dover until 21 April and the vessel was thought still to be in Dieppe on the 20th. Further attacks by coastal craft and fifteen inch batteries would have been planned if her move had been known. The tanker entered Dunkirk at 0220 hours on 21 April and proceeded to Flushing the following night. On 26 April, P.R. aircraft located the sister ship to this tanker in Dieppe. She had been seen previously in Cherbourg, and it was expected that she, too, would attempt the passage of the Straits during the next dark period.

Albacores of No.415 Squadron maintained the usual patrols. Typhoon aircraft of No.137 Squadron were made available for anti-shipping operations for a longer period than usual, the 1 - 15 April inclusive. The first aircraft sortie on 1 April against minesweepers failed to return. No other targets were found. Movements of coastal shipping were on the normal scale but the predominance of movements to the westward was again most marked.

May

F.C.Form U.

Fighter Command flew 893 sorties, made 122 attacks and lost six aircraft. (2) Three enemy vessels of 3,253 tons were sunk by aircraft under Fighter Command control. Two further vessels of 450 tons were sunk by Swordfish of No.819 F.A.A. Squadron and one by an Avenger of No.848 F.A.A. Squadron. (3)

On 3 May eight Typhoon bombers of No.263 Squadron attacked a beached vessel off the Pontusval area with 16 x 250 lb. bombs. (4) Aircraft reported four near misses. The Kochelsee (196 tons) was sunk in 4840N x 0423W presumably by this attack.

-
- (1) Eight Spitfires VII of No.131 Squadron
Eleven Spitfires of Nos.887 and 894 Squadrons
Eight Spitfires IX of No.165 Squadron.
 - (2) Sorties and attacks by No.819 F.A.A. Squadron are not given in either Fighter Command or No.16 Group records, and are not included in the above figures. No.819 Squadron sank one E-boat in addition to the two vessels mentioned above.
 - (3) Operations by No.848 Squadron are in No.16 Group records and are described in the section on No.16 Group operations May 1944 in this chapter.
 - (4) Again, this was one of the two beached German torpedo boats.

On 23 May eight Typhoon Bombers of No.263 Squadron, escorted by eight Spitfires of No.610 Squadron, attacked one merchant vessel of 2/3,000 tons and five of 1,000 tons stationary in Lezardrieux estuary with 16 x 500 lb bombs. Four pairs of very near misses were claimed on the large vessel and two pairs of near misses on one smaller vessel. A second attack by eight Typhoons of No.263 Squadron, again escorted by No.610 Squadron, reported that 14 x 500 lb. bombs were dropped but all undershot. The minesweeping trawler Ludwig Janssen - (M.4623) (470 tons) was sunk in one of these attacks.

On 24 May the Greif - torpedo boat (2,587 tons) was sunk in Seine Bay in position 4925N x 0025W, presumably by an Albacore of No.415 Squadron which reported an attack with 6 x 250 lb. bombs on several scattered vessels in the Channel. A large red explosion was reported by the aircraft. (1)

~~Sunk by No.819
F.A. Squadron
were the
ferrybarges~~

The two vessels sunk by No.819 F.A.A. Squadron were the ferrybarges - MFP 251 (200 tons) sunk at Dieppe on 21 May, and the gun carrier AF 12 (250 tons) sunk in position 5100N x 0210E on 24 May.

ADGB File
S.31523

The second of these two vessels was probably sunk in the attempt by Swordfish of No.819 Squadron and M.T.B.s to intercept a tanker on passage through the straits eastwards from Boulogne. This was the Spramex type tanker whose departure from Dieppe was anticipated in April. She was detected entering Boulogne on 23 May and leaving Boulogne at 0005 hours on 24 May. M.T.B.s sailed to attack off Gravelines in conjunction with four Swordfish under Swingate ground control. One aircraft dropped flares. The illumination was satisfactory but only one of the bombing aircraft sighted and attacked the tanker. M.T.B.s attacked with three torpedoes and coastal artillery engaged the force. Unfavourable weather prevented further action being taken when the force proceeded eastward from Dunkirk on the night of 25/26 May.

A.H.B.
IIA1/1/1/3(B)
Six monthly
report
Jan to June
1944.

Possibly a combination of casualties and a temporary increase in the oil deliveries to Norway at the beginning of the year had resulted in a shortage of tanker tonnage for from the end of February until the Allied landings, three tankers and an Italian cargo vessel attempted the eastward passage of the Straits. All except one tanker succeeded. Increasing use was being made of Swedish tankers to carry oil to Oslo Fjord. The transfer of tankers from south of the Straits of Dover may have been partly inspired by a desire to create a tanker pool as an emergency reserve against any intensification of Allied operations against Norway.

The Air Forces available for anti-shipping operations in the Channel were strengthened during May by the arrival of No.819 F.A.A. Squadron (Swordfish) and No.848 F.A.A. Squadron (Avenger), based at Manston. These squadrons were intended primarily to act as an anti-E-boat Wing. (2) No.415 Squadron, Albacores, was temporarily withdrawn from the Dover command early in the month when these two squadrons became available.

The volume of enemy coastal traffic was on a smaller scale than usual although strong patrols appeared to have been maintained from Etaples to Gravelines during the dark period.

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- (1) The Greif, together with four other torpedo boats, was engaged in transporting mines across the Seine Bay in readiness for intended defensive mine barrages.
Ref. Admty/F.D.S./2/53
- (2) See section on No.16 Group operations May 1944.

(ix) Conclusion

A.H.B./IIA1/1/
1/3(B)
Six monthly
report
Jan - June
1944

In their six monthly report on enemy merchant shipping activity, January to June 1944, M.E.W. considered that the intensification of Allied anti-shipping operations had completely transformed the situation. On 1 January, Germany possessed 183,000 G.R.T. in excess of the 2,450,000 G.R.T. (dry cargo) needed for the fulfillment of her military maintenance and priority economic programmes. However, not only had the economic supply programme fallen considerably into arrears but Allied operations against shipping in three distinct categories had reduced the ability of the enemy's mercantile marine to meet its commitments. Firstly, there had been an increase in sinkings particularly on the Norwegian coast. Secondly, the routine sea-mining of the approaches to Germany's North Sea and Baltic ports had been intensified. Thirdly, special operations such as minelaying in the Kiel and Koenigsberg canals and bombing of locks at Brunsbuttel had been carried out. M.E.W. estimated that by the end of June the performance of the enemy Mercantile Marine would be 20 per cent, or in terms of cargoes (import and export) $2\frac{3}{4}$ million tons in arrear of the total programme. It was calculated that between the beginning of the year and the beginning of April the amount of overseas shipping operating to the north of Bergen had fallen by at least 70,000 tons.

During the period January to May 1944 Coastal Command flew 2,910 sorties on all kinds of anti-ship operations. Attacks totalled 487 and aircraft wastage 43. (1) Fighter Command flew 3,330 sorties, made 381 attacks and lost 22 aircraft. Enemy shipping sunk by Coastal Command totalled 31 vessels of 43,692 tons. (2) Fighter Command sank six vessels of 2,318 tons.

Admty.
FDS/2 and 3/53

It is interesting to note from Admiral Kranoke's War Diary that during May his naval forces in the English Channel were almost invariably attacked with damage from the air as soon as they left harbour. This contributed largely to his failure to lay the intended mine barrages in the Seine Bay.

- (1) Total figures for the various Coastal Command Groups during the period January to May 1944 were as follows:-

	<u>Sorties</u>	<u>Attacks</u>	<u>Wastage</u>
No.16 Group	1,698	315	23
No.18 Group	992	145	16
No.19 Group	220	27	4

- (2) Enemy shipping sunk by Coastal Command Groups during the period January to May 1944 was as follows:-

	<u>Numbers</u>	<u>Tonnage</u>
No.16 Group	19	21,501
No.18 Group	9	21,397
No.19 Group	3	794

N.B. The three vessels sunk in No.19 Group area were sunk by aircraft on anti-submarine patrols.

CHAPTER XVI

AIR DEFENCE OF ALLIED SHIPPING IN HOME WATERSPART I - THE ANTI-E-BOAT CAMPAIGNMARCH 1943 TO MAY 1944(1) Introduction

The protection of coastal shipping in Home Waters against enemy sea-borne torpedo attack and mines laid by surface craft, continued to occupy a substantial part of the maritime air forces available for anti-shipping operations throughout the period under review, i.e. March 1943 to May 1944.

TSD/FDS/X.237
page 217
German E-boat
Operations and
Policy

As German naval forces of the destroyer and torpedo boat types were largely engaged in defensive tasks such as escorting convoys, supply ships, blockade runners, minelayers and minesweepers in enemy coastal waters, the E-boat arm was the only offensive naval surface weapon employed against British coastal trade in the West. (1)

C.C. File
S.15206
Encl.42A.

From past experience surface forces were undoubtedly one of the best means of dealing with E-boats, (2) but there had been, and still remained, insufficient numbers available to deal decisively with this small but effective component of the German Navy.

TSD/FDS/X.237
page 207

Since the earliest days of E-boat activity aircraft of Coastal Command had been pressed into service as an auxiliary to the limited naval forces available, and were joined in May 1941 by aircraft of Fighter Command. (3) Apart from co-operating with naval forces to the extent of detecting and illuminating the targets, aircraft of these two Commands had made, up to the early autumn of 1942, 187 direct attacks on E-boats at sea, on their own account; but their efforts had not been crowned with a single success. Their presence, however, had compelled the E-boats to operate more and more in the dark hours, a factor which subsequently determined the type of aircraft which could be used against them with some hope of success.

F.C. File
S.29500
Encl. 18A

The unsuitability of existing fighter and fighter-bomber types for operations on dark nights and the almost total lack of available aircraft in Coastal Command to meet the threatened resumption of E-boat activity after the summer recess, decided the Admiralty in the late summer of 1942 to place under the operational control of Fighter Command some A.S.V. Mark III fitted Albacores of the Fleet Air Arm

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- (1) Apart from torpedo activities, E-boats were used to lay offensive minefields on our coastal convoy routes, while other German minelaying craft laid the defensive fields.
 - (2) Of the nine E-boats lost since the commencement of offensive operations in May 1940, surface craft of the Royal Navy had accounted for four E-boats. See Appendix XXIV.
 - (3) It was not until January 1942 that aircraft of Fighter Command were specifically employed in the Anti-E-boat campaign. Attacks made by fighters prior to this date were carried out by aircraft engaged on other duties but which fortuitously sighted E-boats.

for working under ground control. These were in addition to some Swordfish of the Fleet Air Arm already under the operational control of Coastal Command.

Throughout the winter of 1942/43, the Anti-E-boat campaign was largely maintained by these Albacores and Swordfish, but despite their ability to detect and attack the enemy, the wholesale destruction of the E-boat from the air still remained a problem for solution.

(ii) Enemy forces and tactics

TSD/FDS/X.237
page 210

On 1 March 1943, the ports in general use as E-boat bases were:- IJmuiden, Rotterdam, Ostend, Boulogne and Cherbourg.

The disposition and numbers of boats varied between these ports according to operational requirements. For instance on 18 March 1943, a re-grouping of forces had just been completed to meet the possibility of an Allied landing in the Channel Area so that the available operational boats were disposed as follows:-

Cherbourg - six boats
Boulogne - eight boats
Ostend - six boats

A week later when the full moon period was past and the danger of Allied landings was considered to have receded, fresh dispositions were made. Six boats of the 2nd Flotilla with two boats of the 6th Flotilla moved to IJmuiden, and the 4th Flotilla (5 boats) was sent to the Hook, all of which were for operations against East coast convoys; while the 5th Flotilla (6 boats) remained at Cherbourg to continue activities against the PW and WP convoys in Lyme Bay.

To facilitate the direction of operations in the respective areas of activity, the Senior Officer E-boats (F.d.S) had permanent battle headquarters in bunker installations at Wimereux (near Boulogne) and at Scheveningen.

Ibid
page 218

Although losses among E-boats so far had remained slight, replacements could not be made good by training within the operational flotillas alone, therefore the E-boat Training Flotilla had been formed. The first E-boats to be manned by personnel from this flotilla were those of the newly formed 8th Flotilla. The formation of this Flotilla and its immediate transfer to Norwegian waters was only made possible by taking some crews from the operational flotillas and by bringing into operational use boats intended by the Naval High Command as reserve boats for the western area.

New construction was now coming off the production line at the rate of three boats per month and the formation of another Flotilla was planned to take place on 1 October 1943. Shortage of officers, however, was causing a bottleneck in the manning of E-boats at this time.

Ibid
page 210

The torpedo was still the chief weapon of the E-boat, although such attacks near the Straits of Dover during periods of full moon could not be carried out from now on, as British night flying aircraft with radar had made E-boat operations very difficult.

Technical developments in British radar and the strength of the convoy escorts and air forces, had compelled E-boats

to alter their tactics completely by the end of 1942. No longer was it possible for a pair of boats to lurk near the convoy route and await the oncoming traffic. The concerted attack in which all available boats took part had superseded the lurking tactics. In this new type of operation the Flotillas proceeded in close formation to a point about ten miles from the convoy route, where they split up into separate parties until about five miles from the operational area. From this point the boats continued in pairs to the attack, with a distance of one or two miles between each pair. To create the maximum amount of confusion all torpedoes were fired at the same time. The fact that E-boat movements were now quickly detected meant that each operation had become a direct attack at a definite time and place in which instant contact with the enemy was essential.

Ibid
Page 220

Under these conditions there was a real and pressing need for accurate G.A.F. reconnaissance, for such reports gave the only picture of the daily state of British coastal convoy traffic. Reconnaissance aircraft of the G.A.F. in the past had met the demands of the E-boat arm in this respect as far as weather and the number of available aircraft had permitted, but owing to the relative weakness of the G.A.F. in maritime operations compared with the Royal Air Force, there had been gaps in the reconnaissance network which, on occasions, had made the location of convoys impossible.

Development of British defensive tactics had led to a temporary improvement in the co-operation between E-boats and the German Air Force and the following methods were tried out:-

- (a) Bomber attacks on convoys one or two hours before E-boats were due to arrive. The bombers gave the E-boats at sea reconnaissance reports.
- (b) Close contact with the convoy was maintained by Fighter reconnaissance aircraft which dropped flares to show E-boats the position of the convoy.

However, both of these methods proved unsatisfactory on account of the difficulties encountered by the aircraft concerned in locating the convoy at night, and in the accurate placing of the flares.

Ibid
Page 211

Mining operations by E-boats were carried out when torpedo operations were impossible, especially on moonlight nights, or when it was desirable to alternate between torpedo and mining attacks in order to maintain the surprise element.

The area considered most favourable for minelaying was that stretching north of Cromer to the Humber, where it was possible to detect and attack on the alternative routes chosen. Several minelaying operations with ground mines had been carried out in the Straits of Dover, Brighton Bay and to the east and west of the Isle of Wight. These operations were quickly detected and the convoy routes moved accordingly, but there was no opportunity for torpedo attacks as the convoys from then onwards proceeded during the day. West of St. Albans Head the water was too deep for ground mines. Moored mines had been laid at random in Lyme Bay, and resulted in the convoy route being shifted. Operations with moored mines were not expected to be highly successful, but

they restricted navigation, made great demands on minesweeping forces and caused the British much uncertainty.

A third role for E-boats, which was steadily gaining ground as the British offensive increased, was that of escort duties in connection with convoys and minelaying.

(iii) The requirements and provision of own air forces

C.C. File
S.15256
Encl. 69A

Though the need was apparent, there had not been so far, any allocation within the Royal Air Force of a suitable type of aircraft for the Anti-E-boat role either defensive or offensive. The demands of the anti-submarine war had had the tendency to overshadow all other requirements for the prosecution of the maritime war.

A.H.B./IHK/67/
563 Encl. 7A

As it was apparent that moderately low level attacks must be made in view of the speed and manoeuvrability of the E-boat, a fast aircraft would not be suitable for comparatively low altitude work over the sea at night. Furthermore the use of cannon-fighters had so far proved ineffective and as R.P. had not yet been used successfully at night, bombing appeared to be the only worth while method of attack when dealing with E-boats. Another difficulty in using fast aircraft was that under the existing system of vectoring and control of the aircraft a first class controller and staff as well as experienced pilots were essential.

Ibid
Encl. 6A

The ideal aircraft to meet current needs was, therefore, considered to be one which was comparatively slow, had a good view ahead and below with reasonable endurance and bomb capacity and fitted with radar.

Among existing operational aircraft only the Albacore and Swordfish could be regarded as approaching this specification. As mentioned earlier, some of these types were actually under the operational control of the appropriate R.A.F. Commands for Anti-E-boat operations, having been loaned by the Admiralty for this purpose since the late summer of 1942.

CS/14415/I
Encl. 19A

At the time this arrangement was brought into effect it was made clear by the Admiralty that the attachment of shore-based Fleet Air Arm aircraft could only be of a temporary nature. Throughout the intervening period of nine months there had been frequent appeals by the Royal Air Force for the retention of these aircraft for the Anti-E-boat role and an equal number of reminders by the Admiralty that these aircraft could not be made permanently available to the R.A.F.

Ibid
Encl. 57A

By 23 April 1943, the Admiralty had named a definite date i.e. 1 June 1943, for the withdrawal of one Albacore squadron, and a month later informed the Air Ministry and all Naval Commanders-in-Chief at Home and Overseas that in view of the large Naval air expansion programme to meet the needs of carriers now building it was expected that before the end of 1943, all Naval aircraft and personnel would be withdrawn from services which were not a specific Admiralty commitment. The communication went on to state that the R.A.F. supply position was now improving and Commanders-in-Chief should discuss requirements for shore-based maritime aircraft with their local A.O.C.-in-C with a view to agreed requirements being formulated for submission to the Air Ministry. A precis of this signal dated 19 May 1943 was promptly despatched by the Air Ministry to all Air Officers Commanding-in-Chief at home and overseas for information.

A.H.B./IHK/67/
563

C.C. File
S.17286 Encl.6A

F.C. File
S.29500
Encl.110A

F.C. File
S.29500
Encl.109A

F.C. File
S.29500
Encl.115A

F.C. File
S.29500
Encl.123A

F.C. File
S.29500
Encl.117A

In the meantime negotiations between the Admiralty and the Air Ministry to find a possible solution to the dilemma created by the withdrawal of the Albacores and Swordfish, continued apace. At the Admiralty Staff meeting held on 30 May 1943, at which the Director of Naval Co-operation was present, the subject was raised and V.C.N.S. stated that investigation had shown the possibility of supplying eight to twelve Albacores for continuing Anti-E-boat operations, but neither aircrews nor maintenance personnel could be made available. He asked whether it would be possible for the R.A.F. to utilise these aircraft, bearing in mind that since there were no replacements they would have to be regarded as a wasting asset. This matter was further discussed at the thirteenth meeting of the Admiralty/Coastal Command Committee held on 16 June 1943, at which it was decided that it was not a practicable proposition to equip one flight of a squadron with these aircraft since only twelve were available with inadequate spares and no backing.

Meanwhile the A.O.C.-in-C. Fighter Command was being pressed by the appropriate Naval Commanders-in-Chief as to what steps were being taken to train the Royal Air Force in the ground controlled interception of E-boats at night. In view of the fact that the existing demands for light surface craft abroad were so heavy, it was unlikely that sufficient surface forces would be allotted to the Naval Commands at home during 1943 to protect the coastal convoys adequately from E-boats. It was therefore vital that air co-operation should be available in order that the small resources could be employed to the best advantage.

On 18 June 1943, the A.O.C.-in-C., Fighter Command informed the Air Ministry that the effect of the decision to withdraw all Fleet Air Arm aircraft would mean that, as far as Fighter Command was concerned, all night operations against E-boats and other enemy shipping would be discontinued. It was clearly important that such operations should not only be continued but actually intensified, and it was suggested that the Admiralty be asked to reconsider their decision or that special units should be formed and suitably equipped to continue the operations so ably performed by the Fleet Air Arm units using Fighter Command control facilities.

Whilst the importance of continuing operations against E-boats was fully appreciated by the Air Ministry, the A.O.C.-in-C. Fighter Command was informed on 23 July 1943, that since there were no aircraft in the Royal Air Force entirely suitable for the task and as the Admiralty had indicated that they were unable to continue the loan of Albacore or Swordfish aircraft in sufficient numbers it was not possible, at the present time, to replace the Fleet Air Arm squadrons which were being withdrawn.⁽¹⁾ Anxious that operations should not lapse in support of coastal convoys, and not entirely convinced that suitable aircraft could not be found to undertake the commitment, the A.O.C.-in-C., Fighter Command suggested to the Air Ministry that perhaps the Anson or Oxford might be tried out in the Anti-E-boat role.

(1) The text of this letter was communicated to the Naval Commanders-in-Chief, Plymouth and Portsmouth and Vice-Admiral, Dover.

C.C. File
S.17286

C.C. File
S.15206
Encl.74A

To revert to the proceedings of the Admiralty/Coastal Command Committee it will be remembered that at the thirteenth meeting it was decided not to proceed with the proposition of equipping one flight of a squadron with eight to twelve Albacores without adequate backing. By the time the fourteenth meeting was held on 1 July 1943, second thoughts on this matter had prevailed and the suggestion was re-examined. It was decided that if the Admiralty could allocate to Coastal Command ten U.E. Swordfish or Albacore and back their wastage it would be possible to re-equip one Flight of No. 415 (R.C.A.F.) Squadron at the expense of the torpedo role of this squadron. After further discussion had taken place between the A.O.C.-in-C. Coastal Command and the newly appointed Naval C.-in-C. The Nore, the proposal was submitted officially to the Air Ministry. The C.-in-C., Coastal Command in a letter dated 5 August 1943, stated that he had never been satisfied that operational policy required or consideration of economy justified Coastal Command having an establishment of five Fighter and five Torpedo squadrons for the Anti-Shipping role. In particular he had always been doubtful of the need for a torpedo squadron at Thorney Island, which was theoretically intended to reinforce either No. 19 Group for action against blockade runners in the Bay or No. 18 Group or Iceland in the event of a break-out by enemy surface forces in the North. In default of any other profitable employment, No. 415 (R.C.A.F.) Squadron at Thorney Island had recently been used to reinforce the A/U patrols in the Bay of Biscay. Sufficient Beaufighters were unlikely to be available to re-equip this squadron until May 1944 before which time their Hampdens would certainly be unfit for employment on any sort of active operations. It was, therefore, proposed that No. 415 Squadron should be withdrawn from the torpedo role and re-equipped primarily for the Anti-E-boat commitment with the Wellington XIII fitted with Mark III A.S.V. (with Lucero) and V.H.F. for co-operation with our own light coastal forces.⁽¹⁾ If sufficient sets of A.S.V. Mark III were not immediately available, Mark II would serve, but not so well. It was realised that this arrangement would not provide for air attack on E-boats, but a possible alternative would be to re-equip one flight of the squadron with Swordfish or Albacore. To this course the A.O.C.-in-C. was not particularly attracted and considered that the provision of ample and regular reconnaissance and co-operation with light coastal forces would adequately meet the requirements by night. By day, no doubt cannon fighters of the Tactical Air Force would be available for this purpose.

If the foregoing proposals were approved the A.O.C.-in-C. requested that Wellington XIIIIs should be allotted at an early date in order that the squadron could be withdrawn from the line to train on the new equipment before the E-boat season was in full swing. Three days after the letter containing these proposals had been sent, the A.O.C.-in-C., Coastal Command again communicated with the Air Ministry and suggested the matter of air attack against E-boats might also be included in the agenda of the conference already arranged on the subject of air action against Dutch coast convoys.

C.C. File
S.15206
Encl.76A

(1) As a further aid to strengthening the existing weakness of aircraft/ship communications, "Rooster" was also to be included. This was a modified I.F.F. beacon to facilitate rendezvous, mutual identification, station-keeping and inter-communication.

F.C. File
S.29500
Encl.128A

The Air Ministry approved this suggestion and at the same time informed the A.O.C.-in-C., Fighter Command that his proposal regarding the use of Anson or Oxford aircraft for the Anti-E-boat role would also be discussed at this conference.

F.C. File
S.29500
Encl.131A

On 20 August 1943, the conference was held at the Air Ministry under the chairmanship of D.C.A.S. Having agreed that a considerable degree of importance should be attached to Anti-E-boat operations, the meeting went on to discuss what force was considered necessary to maintain this commitment. The suggestion made by the A.O.C.-in-C., Coastal Command that No. 415 Squadron should be re-equipped for this role was now closely examined. In subsequent discussion it was generally agreed that although the Wellington XIII would be satisfactory for the reconnaissance role, it would not be suitable owing to its size for the actual attack on E-boats and it would therefore be necessary to provide, if possible, some other type of aircraft. At this juncture, A.C.N.S.(Air) stated that he would after all be able to provide sufficient aircraft to equip a unit of twelve Albacores and support it for a year provided he received some assistance in the provision of Oxford or Anson for training purposes. After a further exchange of views it was finally agreed that:-

- (i) No. 415 Squadron should be re-armed with one Flight of Wellington XIII equipped with Mark III A.S.V. Lucero and V.H.F., for the reconnaissance role; and with one Flight of Albacores for the strike role.
- (ii) The squadron would be a Coastal Command squadron, but the Albacore Flight would operate under the control of Fighter Command.
- (iii) The allocation of the aircraft as between the various areas would be decided by the Admiralty.
- (iv) The re-equipment of the squadron should proceed at the earliest possible moment.

Ibid
O.6202 dated
15.9.43

On 15 September 1943, authority was given by the Air Ministry for No. 415 Squadron (R.C.A.F.) to be re-equipped with 8 + 2 Wellington XIII and 8 + 2 Albacore.

O.R.B.
No. 415 Squadron

During the remainder of the month and throughout October the re-equipment and training proceeded with but few hitches. By the end of October the Wellington Flight was virtually complete, the tactical methods to be employed had been studied by the local Naval and Air Commanders and the necessary operational orders issued. On 3 November 1943, No. 415 Squadron became operational and the first sorties were made by two Wellingtons from Docking on Operation "Deadly". Although the Albacore Flight did not officially cease attachment to No. 841 Squadron (F.A.A.) until 22 November, their first operational sorties were also made on 3 November when three Albacores, under the operational control of Fighter Command, were airborne from Manston.

ADGB File
S.36446/Ops.2
dated 9.11.43

Meanwhile, the squadron's commitment had been reviewed and it was considered by the A.O.C. No. 16 Group that the minimum operational requirement, if the demands of the Naval Cs.-in-C. were to be adequately met, was four aircraft at Manston, three at Tangmere and three at Coltishall, to be at readiness each night with the exception of four nights on

CS.14415/II

A.H.B./IHK/67/
563Ibid
191456AIbid
Encl.90A

either side of full moon. Such a commitment could not be met with the U.E. of 8 + 2 Albacores at present sanctioned. It was, therefore, suggested to the Air Ministry by the C.-in-C., Coastal Command that the Admiralty should be approached to provide additional aircraft so as to bring the establishment of the Albacore Flight to 12 + 3. When submitting this proposal to the Admiralty it was pointed out that No. 841 Squadron had hitherto met the Anti-E-boat strike commitment with a U.E. which varied between twelve and twenty aircraft and averaged seventeen. To add weight to the proposed increase, the C.-in-C., Portsmouth informed the Admiralty on 17 November 1943, that the resumption of E-boat attacks on south coast convoys had made the presence of an air striking force essential in his Command and he hoped there would be no delay in establishing this force. On 19 November, the Admiralty informed all concerned that arrangements had now been made to increase the establishment of Albacores to fifteen. By 2 December 1943, No. 415 Squadron (R.C.A.F.) were in possession of twelve Wellington and twelve Albacore aircraft, (1) and from that date officially took over the whole of the Anti-E-boat commitment from No. 841 Squadron (F.A.A.).

(iv) Tactical methods employedOperation "Roadstead" (Night)F.C. File
S.29500

Since the attachment of Naval Albacores to Fighter Command in the late summer of 1942, for the location and attack on E-boats by night, two tactical methods had been developed from the procedure already in existence, and were still in use at the commencement of the period under review, i.e. March 1943.

No. 11 Group
Operation
Instruction
No. 95

The first method was a controlled interception attack by A.S.V. fitted aircraft operating under C.H.L. control and vectored out to the surface vessel plot picked up by Naval Type 271 R.D.F. stations. The aircraft, armed with 12 x 100 lb A/S bombs, used A.S.V. for picking up the target at the point of interception and after gaining visual contact attacked in a shallow glide from astern. When the enemy plots were close to the enemy occupied coast and under threat of enemy fighters an attack by Albacore aircraft was confined to dark nights only. When the plots approached our own coast attacks were permitted on dark or moonlight nights. This method was largely employed in the Dover and Portsmouth Command areas with the aircraft under the control of No. 11 Group. By March 1943, this method had been extended to the Plymouth Naval Command where Fleet Air Arm Swordfish aircraft fitted with A.S.V. and based at Exeter were controlled by No. 10 Group.

F.C. File
S.29500
Encl.57A

Action to send off the aircraft to attack was initiated by the Naval Command who, after locating the target by Type 271 R.D.F. decided whether it came under the terms of reference of Albacore attack. If so the Naval Command then requested the Fighter Group concerned to carry out an attack and also informed the appropriate Coastal Command Group of the action being taken. The Fighter Group proceeded to order the aircraft to the operational area providing that the controlling

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- (1) Both types of aircraft were fitted with ASV.MK.II and I.F.F. MK.III. To give "Rooster" facilities on I.F.F., MK.III modification kits were distributed later and incorporated by the Squadron's own technical personnel.

C.H.L. Station was available and was not employed on air to air interception.

Ibid
Encl. 33A.
No. 12 Group
Operation
Instruction
No. 50/42

The second method was one of co-operation between the Albacore aircraft using A.S.V. and light coastal forces of the Royal Navy. The aircraft were despatched on routine night patrols covering prearranged patrol lines to seaward of the swept convoy channels. Making use of A.S.V. beacons as the primary means of fixing their positions, the aircraft located and reported the enemy and subsequently dropped flame floats or flares to the eastward in order to silhouette E-boats and thereby assist our own surface forces to develop their attack.

This method was for use largely in the Nore Command where the lack of Type 271 R.D.F. with a range capable of picking up E-boat plots, made impracticable the existing method of vectoring the aircraft out to the position of attack under C.H.L. control. In the Yarmouth-Lowestoft-Harwich area, our own light surface forces maintained a night patrol line some twelve miles to seaward of the convoy route, (1) while destroyers patrolled on the convoy route itself at night. Provision was also made for aircraft to intercept and destroy E-boats on passage from their base to the East coast war channel and after they had left the area and were returning to their base. Aircraft engaged in operations in the Nore Command came under the control of No. 12 Group, Coltishall sector.

Both of these methods continued to be used throughout the spring and summer of 1943. When No. 415 Squadron (R.C.A.F.) took over the commitment in the autumn of 1943, no change in procedure was necessary for the Albacores at work in the Dover, Portsmouth and Plymouth Commands. In the Nore Command, however, where a different type of aircraft and equipment was to be used a change of procedure was necessary.

CC/No. 16 Grp/
S.5278/107/Ops.

Operation "Deadly"

For the purpose of working out the tactical methods to be employed by the Wellington Flight of No. 415 Squadron in their purely reconnaissance role, a meeting was held on 6 October 1943, which was attended by the Commander-in-Chief, The Nore and the Air Officer Commanding No. 16 Group, Coastal Command. It was appreciated in the early stages of co-operation that it would be necessary to keep the procedure as simple as possible and, therefore, the methods evolved at this meeting were on trial and could be amended in the light of training and experience gained.

Four patrols were to be established to the east of the convoy route and the Wellington aircraft fitted with Mark II A.S.V. was to be prepared to fly any two whenever the weather conditions favoured the employment of E-boats against our East coast convoys. The patrols, details of which will be found at Map No. 69 had been designed with a view to providing approximately half to three quarters of an hour's warning of the enemy's approach to our "Z" line.

(1) This was known as the "Z" line.

On making contact with E-boats the aircraft was to report by V.H.F./R.T. to enable its position to be calculated by voice fix. The aircraft was also to signal the composition, course and speed of the enemy by W/T. The omission of a sighting position was intentional so as to avoid confusion by giving a D.R. position of unknown reliability whereas a more accurate position fixed by Fighter Command's methods would be available almost at once. These reports would be broadcast by The Nore Command for the benefit of our own light coastal forces lying in wait.

The aircraft was then to shadow the E-boats and switch on "Rooster" which would enable coastal forces to maintain their own radar plot of the aircraft.⁽¹⁾ It was planned to obtain V.H.F. voice fixes of the aircraft over the E-boats every fifteen minutes, which would be signalled to the coastal forces. When the shadowing aircraft picked up our own coastal forces on radar it was to commence illuminating the enemy with flares dropped to the eastward of the targets.

After an exercise had been held to test these arrangements No. 16 Group issued, on 24 October 1943, an Operations Order No. 6/1943, to which was allocated the code word "Deadly".⁽²⁾

By 11 March 1944 changing conditions had rendered this order obsolete and a new version was issued. Most of the changes incorporated had come about through the installation of 'Gee' in the aircraft which was thus enabled to fix its own position with sufficient accuracy for inclusion in the first sighting and subsequent amplifying reports. Four additional patrols had also been added to the original plan.

On 1 April 1944 it was decided to allow the aircraft to carry 8 x 100 lb A/S bombs, so that if our own coastal forces were unable to effect an interception the Wellingtons could, with the aid of the recently fitted Mark XIV bombsight, attack the enemy from medium height with bombs.⁽³⁾ An attack was only to be carried out, however, on instructions from A.C.H.Q. Bombs were to be dropped in sticks spaced at 100 feet.

This change of tactics made it necessary to issue yet another version of Operation "Deadly" which was dated 5 April 1944.⁽⁴⁾ By the end of the month, however, the large scale effort to which Coastal Command was committed in the plans for Operation Overlord caused "Deadly" to be suspended till further notice.

Operations "Pearce" "Conebo" and "Marksman"

To enable the light forces of the Nore Command to have preliminary warning of E-boats approaching our East Coast shipping routes, it was arranged that aircraft of the North

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- (1) For full details of the "Rooster" technique see "R.A.F. Signals Monograph Vol. VI. Chapter VI."
 - (2) A copy of this instruction is included at Appendix "XXII".
 - (3) This load was increased to 4 x 500 lb. M.C. bombs on 21 May 1944 in preparation for 'D' Day and subsequent activities against E-boats.
 - (4) A copy of this instruction will be found at Appendix XXIII.

C.C. File
S.15206
Encl. 63A

Coates Wing would reconnoitre the coastal waters off the Dutch coast with a view to locating E-boats as they left their bases just before dusk. Four aircraft and crews were to be made available daily and two out of four prearranged patrols were to be flown. If E-boats were sighted, no reports were to be made by W/T., but all sightings were to be reported immediately on landing back at base. This operation was given the code name of "Pearce".(1) The four patrols concerned with this operation are shown at Map No. 69.

In an effort to catch the returning E-boats before they arrived back at their bases soon after first light, cannon-firing Beaufighters of No. 16 Group were generally made available, when favourable conditions prevailed for this task, throughout the period under review. Under the terms of Operation "Conebo", up to four aircraft were held at readiness two hours before first light. When information indicated large scale enemy activity a larger force of aircraft could be made available on orders from H.Q., No. 16 Group. Patrols were arranged in two areas of probability off the enemy's coastline, details of which will be found in Map No. 69.

Aircraft were instructed to attack on sight any E-boat or similar craft proceeding on a north-easterly or easterly course within the pre-arranged patrol areas. Exception to this rule was to be only in the case of a stationary craft which could be our own vessel damaged after combat with the enemy. In such circumstances the pilots were to identify the target before making an attack. Aircraft were not to proceed nearer the enemy coastline than twenty miles unless engaging the enemy.

C.C. File
16G/S.5023/1/
Air Encl.12A

It was also arranged that day fighters of No. 12 Fighter Group would be available as escorts to the Coastal Command Beaufighters if E-boats were suspected of being provided with enemy fighter escort. Up to squadron strength would normally be available for this task. On the occasions that Beaufighters of No. 16 Group would be unable to fulfil this commitment, the Coastal Group could ask No. 12 Group to take on this task, under the terms of Operation "Marksman". In such an event, day fighters would be despatched(2) but the following conditions were always applied:-

- (i) Not less than six fighters to be despatched. When possible eight or twelve.
 - (ii) If six or less E-boats were met, they should be attacked and the attacks pressed home.
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- (1) The patrols were only flown a few times and when it became obvious that the E-boats showed no desire to leave their bases before dusk, the operation was discontinued and finally cancelled on 7 April 1944.
 - (2) Owing to navigational and range limitations single engined fighters could not be expected to find their quarry without aid, and it was therefore proposed to lead them to the reported position of the E-boats by an aircraft of Coastal Command. When there was no information available about E-boat positions or no Coastal Command aircraft to take part in the operation, cannon-equipped fighters were to sweep one of two areas of probability, both of which are shown at Map No. 69.

(iii) If more than six E-boats were encountered they were not to be attacked unless stragglers could be picked off which were outside the fire cover of the remainder.

(v) Weapons for attacking enemy light surface craft

To attack and sink small high speed surface craft from the air obviously required a technique quite unlike that employed against comparatively slow moving merchant ships.

The target had in addition to speed a high degree of manoeuvrability, the combination of which made it a target particularly difficult to knock out from the air.

Up to the end of February 1943, weapons in use against the E-boat at sea had been chiefly cannon and a variety of bombs ranging from 40 lb to 500 lb H.E., but none had achieved any kills.

During the period under review, the rocket projectile with a 60 lb High Explosive Semi Armour Piercing head was introduced as from August 1943, but achieved no success by way of E-boats killed. Of the three kills made at sea during this period, two were by cannon and one by bombs.

CC/16G/TS.5023
Encl.19A

In view of the impending invasion operation Overlord, the A.Q.C.-in-C., Coastal Command asked the appropriate Group Commanders on 25 March 1944, for recommendations as to the correct weapon for use against the E-boat at sea. Bearing in mind that the weapon was largely for use at night, there were four possibilities to be considered; Rocket Projectiles, Bombs, Depth Charges and Cannon. The C.-in-C. was most anxious that R.P. should be tried seriously although he was not particularly optimistic. Trials on the use of cannon at night were to be carried out on an urgent priority and if need be at the expense of operations. Conferences between Station Commanders, Wing Leaders and Squadron Commanders were convened and trials set in motion without delay. By 2 April 1944 an interim report was made available to Coastal Command, and this was amplified by a subsequent report six days later.

Ibid
Encl.22A

Ibid
Encls.24A
and 26A

As the chief protagonist in the war against the E-boat, No. 16 Group had been largely responsible for the trials carried out and a summary of the recommendations submitted to Coastal Command were as follows:-

R.P. It was considered unlikely that R.P. would be a suitable weapon for use at night. The low free board of the E-boat together with difficulties of aiming on moonless nights made the prospect of a hit problematical. In addition the shallow draft of the E-boat would undoubtedly result in projectiles passing underneath if fired according to the existing technique.

Cannon. There was no bar to the use of cannon at night, practically the only proviso being that aircraft used in this way must be fitted with A.Y.D. altimeters. Although the flash from cannon when fired at night was dazzling, training was being carried out to get the pilots accustomed to its use. The type of ammunition to be employed to eliminate dazzle effect as much as possible was at present under trial. Cannon had proved the most successful weapon in attacks by day.

Depth Charges: would require placing with a high degree of accuracy bearing in mind that they have a three second delay and would have to be dropped from at least 800 feet when attacking a number of E-boats capable of putting-up a high concentration of defensive fire. In addition, they were dependent upon underwater action alone to achieve destruction. In view of the shallow draft of the target it was considered that unless the Depth charge exploded immediately underneath, it would be unlikely to achieve serious damage.

Bombs. After discussions with the Chief of Staff, Nore Command, it was considered that a direct hit or very near miss was necessary to destroy or substantially damage E-boats. It was to be remembered that the E-boat was a light craft of wooden construction. Unlike a merchant ship which could be badly damaged as the result of blast from a large bomb which misses, the E-boat being very light was simply rocked by blast but not seriously damaged. To achieve the maximum destructive effort it was desirable that the bomb should be fitted with a No. 44 pistol which would burst six inches above the surface of the water, providing a high degree of fragmentation.

In conclusion the Air Officer Commanding No. 16 Group stated he was satisfied it was practicable to attack E-boats by night with cannon and bombs. The choice of the type of bomb would be decided when the extra trials being carried out were completed, but in the meantime he was training the Beaufighter pilots in the shallow glide bombing technique. It must be pointed out, however, that the effectiveness of attack at night would depend to a large extent on illumination. So far it had been found that the flares carried in Beaufighters did not provide sufficient light. In this respect the training of Beaufighters in co-operation with Wellington flare dropping aircraft was being accelerated.

C.C. File TS.114.
Encl.52A.

After due consideration had been given to all the reports of the weapon trials, it was finally decided by Coastal Command that for the purpose of attacking E and R-boats at sea by day and night, reliance would be placed on cannon with bombs as a secondary weapon. The best compromise for a bomb load was M.C. bombs with selected fuzing of No. 44 (Air burst)⁽¹⁾ nose pistol with No. 52 (Inst.) detonator and No. 30 tail pistol with No. 50(0.14 sec. delay) detonator. When the air burst fuzing was selected the minimum safe height for release was 1,000 feet, which was also the safety height for the tail fuzing in the case of bombs which may be dropped with the nose pistol 'safe'. The fragmentation area from 2 x 500 + 2 x 250 lb M.C. bombs was between 75 and 100 yards in diameter which was considered to be sufficient to cause damage to the hulls of E and R-boats.

CC/16G/TS.5023/
1/AIR
Encl.42A

A memorandum on the use of M.C. bombs for the attack of E and R-boats was issued by Coastal Command on 22 May 1944 for the guidance of all concerned.

(1) The function of the air burst pistols was to obtain above water detonation of the bombs and inflict damage to surface targets by fragments.

(vi) Operations - March 1943 to May 1944March

During the month of March 1943, there was an increase in the number of torpedo attacks attempted by E-boats on Allied shipping in Home Waters, but minelaying had declined to a very low level. (1) There were no fatal casualties inflicted on the shipping attacked.

Our own aircraft activity also increased but the weather remained a deciding factor and on occasions a good target did not always coincide with suitable flying conditions. However, eighty-one sorties were flown by aircraft of Coastal and Fighter Commands, ten of which resulted in attacks on E-boats at sea. A further six attacks were made by fighter type aircraft which, during the course of other duties, sighted E-boats and made attacks with cannon and machine gun.

The major conflicts of the month as far as aircraft were concerned took place on the morning of 5 March and during the nights of 25/26th and 28/29th.

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On the night of 4/5 March an Albacore of No. 841 Squadron was despatched to attack six probable E-boats approaching Boulogne from the south, but when the aircraft had crossed the Straits of Dover the E-boats were too close to port to be a worth while target.

There was also some E-boat activity off the East coast convoy route. At 0327 hours on the morning of 5 March, H.M. destroyer Windsor on patrol off Lowestoft engaged three E-boats but lost touch in position 100 degrees Lowestoft 22 miles. Meanwhile, H.M. corvette Sheldrake in the vicinity drove three E-boats to the eastward at 0400 hours. A third enemy group was heard by H.M. destroyer Southdown escorting convoy FS.1035 when near No. 55A Buoy at 0508 hours. A unit of M.G.Bs from Lowestoft was not in time to engage the enemy owing to the difficult sea conditions, but at 0740 hours sighted a large patch of fuel oil and some wreckage.

Fighter Cmd
Form 'Y'

Under Operation "Marksman", No. 12 Group (Fighter) despatched at daylight four Spitfires of No. 118 Squadron and two Typhoons of No. 56 Squadron to intercept this enemy force before it reached its base. The interception was effected in 52.30N - 04.20E where two groups of E-boats were sighted and attacked with cannon. The Spitfires claimed one probably destroyed and one damaged while the Typhoons claimed to have left their two targets awash and sinking. The Assessment Committee made awards of three seriously damaged and one damaged. (2)

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(1) E-boat sorties for the first quarter of 1943 were:-

	Torpedo		Minelaying	
	Desp.	Attkd.	Desp.	Mines laid
January	31	Nil	Nil	Nil
February	31	26	12	72
March	63	30	5	30

See Appendix XXIV for complete statistics - 1940 to May 1944.

(2) Concerning this operation, the entry in the War Diary of German E-boat Operations stated: 'Sudden decision to send 2nd, 4th and 6th Flotillas to make torpedo attack. Operations had been previously cancelled owing to Meteorological reports, but as the German 'Y' service reported British M.T.Bs preparing to attack in the Texel, F.d.S. decided on sending the flotillas to sea, to attack the east coast convoy route. Fifteen boats took part but no contact was made with the convoy. Slight engagement with destroyers S.70 was sunk by a mine. On the homeward journey S.75 sunk and S.74 damaged by Spitfires. German fighter cover arrived too late.'

On the night of 25/26 March an Albacore of No. 841 Squadron on a routine Anti-E-boat patrol off Le Touquet was diverted to attack four E-boats southbound from Boulogne. The enemy force was sighted and attacked after which only three boats were reported as visible. A claim was made for a probable sunk which the Assessment Committee upheld.(1)

At least twelve E-boats were detected off Smiths Knoll on the night of 28/29 March for the purpose of attacking the F.S. convoy, which would have been located had it not been two hours ahead of schedule. At 0005/29, M.G.Bs engaged eight E-boats of which they claimed to have sunk two and seriously damaged two others. At 0204 and 0337 hours aircraft of No. 841 Squadron located by radar and attacked E-boats in the vicinity and a near miss with bombs was claimed for which an assessment of 'damaged' was made.(2)

April

An increase in minelaying was the main feature of E-boat operations during April with a corresponding fall in torpedo attacks; all of the latter were concentrated on the West Channel convoys resulting in the loss of one merchant ship of 1,742 gross tons and H.M. destroyer Eskdale. Minelaying took place on three nights and was distributed throughout the areas Lyme Bay - Bassurelle - Lowestoft.(3)

For the second month in succession our own aircraft activities increased, one hundred and nineteen sorties were flown by aircraft of Coastal and Fighter Commands of which ~~fourteen~~ ~~sixteen~~ developed attacks, with an additional ~~sixteen~~ ~~eight~~ attacks by fighter aircraft not engaged in the Anti-E-boat commitment. Two aircraft failed to return from these operations.

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The most successful attack of the month from the enemy's point of view took place between 0300 and 0330 hours on the morning of 14 April in about 060 degrees Lizard Head 12 miles. The Norwegian manned destroyer Eskdale and the British merchant ship Stanlake were torpedoed and sunk. The convoy took refuge in Falmouth and proceeded later in the morning. Two Beaufighters of No. 141 Squadron, No. 10 Group were airborne before first light in an effort to locate and attack the enemy force but failed to make contact.(4)

- (1) The four E-boats were those of the 5th Flotilla proceeding to Cherbourg, but no mention is made in the War Diary of any air attack whilst on passage.
- (2) The comments of F.d.S. in his war diary were:- 'Fifteen boats made an attack on the F.S. convoy between 57 and 57F Buys. Beaten off by M.G.Bs and destroyers. S.29 was rammed by an M.G.B. and later sunk by the 2nd Flotilla.' No mention is made of the air attacks.
- (3) E-boat sorties for April 1943 were:- Torpedo - 29 sorties, 14 attacks. Minelaying 32 sorties, 192 mines laid.
- (4) Extract from the War Diary of F.d.S. states:-

13/14.4.43. 'Six boats of the 5th Flotilla made a successful attack on the WP convoy off Falmouth. Intended to use radar carrying aircraft for the first time, but impossible owing to the fact that the machine was not ready. As an alternative a low flying aircraft was ordered to drop a flare over the convoy. Results claimed two Hunt class destroyers (one Eskdale) sunk, one tanker of 4,000 tons and one cargo vessel of 4,000 tons sunk; one small vessel sunk; one patrol vessel badly damaged. The success of the attack was regarded as being due to the good air co-operation on this occasion; the convoy being well shadowed.'

Up to the previous night the Anti-E-boat air commitment had been maintained regularly by Swordfish of Nos. 833 and 834 Squadrons (F.A.A.) based at Exeter; these aircraft had then been stood down, however, in preparation for their return to R.A.N.A.S. for duty in aircraft carriers.

Of the three minelaying operations, two were uninterrupted but the third which took place off Lowestoft in the early hours of 15 April was detected by our own destroyers after H.M. Trawler Adonis had been sunk by torpedo. During the course of the encounter H.M. destroyer Westminster claimed to have sunk two E-boats and damaged two others and H.M. corvette Widgeon also claimed two damaged. An Albacore and two Swordfish of No. 841 Squadron on patrol off the Norfolk coast detected by radar and followed twelve E-boats eastward; made two attacks with 100 and 250 lb A/S bombs and claimed a near miss but the Assessment Committee made no award. (1) Mines were detonated in the area later in the day.

During the phase of the full moon lasting from the night of 15/16th until the night of 20/21st, Whirlwind bombers and Typhoons of Fighter Command were in action against E or R-boats and, although many claims were made, the Assessment Committee disallowed them all and no confirmation of losses or damage has been found among enemy records made available since the end of the war.

May

For the first time in twenty-one months there were no torpedo attacks by enemy light surface forces, the whole of the E-boat effort being concentrated on minelaying. Forty-three sorties were made and 228 mines were laid on the convoy routes between Lyme Bay and Selsey Bill, during the course of three operations.

Albacore aircraft of Nos. 841 and 823 Squadrons (F.A.A.) during the dark periods and R.A.F. Whirlwind bombers of No. 137 Squadron during the moonlight period maintained attacks against E-boats in general whenever the weather was suitable. Eighty-two sorties were flown at sea during May of which ~~eighteen~~ developed attacks; in addition a further five attacks were made against E-boat movements in daylight by fighter types not engaged in the Anti-E-boat task.

Twice during the month the battle was carried to the enemy's doorstep by way of strafing attacks on E-boats in St. Peter Port and Boulogne Harbour by cannon-firing Spitfires and Typhoons. Claims for damage to E-boats were made which the Assessment Committee upheld. (2)

Early on the morning of 5 May six E or R-boats were visually detected after vectoring by two out of three Albacores of No. 823 Squadron (F.A.A.) some six to eight miles south of Selsey Bill. Each aircraft attacked with bombs but only one

- (1) The entry in the German E-boat War Diary covering this operation states: '2nd, 4th and 6th Flotillas laid mines on the convoy route south of No. 54B Buoy. Boats were attacked by destroyers, M.G.Bs and aircraft. Mines laid according to plan. One patrol vessel claimed sunk.'
- (2) There is no mention of either of these raids in the War Diary of the Senior Officer E-boats (F.d.S.).

aircraft made a claim for one E-boat probably destroyed, which claim was disallowed by the Assessment Committee.(1)

Fighter Cmd.
Form 'Y'

On two nights of the full moon phase, attacks were made on E or R-boats at sea close in to the enemy occupied coast by Whirlwind bombers of Fighter Command and various claims were made amounting to one E-boat sunk and four seriously damaged. These claims were upheld by the Assessment Committee but there is no evidence in the German E-boat Command records to confirm these assessments.

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Form 'Y'

During the night of 23/24 May two groups of about ten and five E-boats approached the convoy route between the Needles and Portland and mines were laid off the Isle of Wight and S.W. of St. Albans Head. Destroyers were unable to make an interception, but three Albacores of No. 823 Squadron (F.A.A.) after vectoring pursued the returning enemy force and attacked them with bombs. Claims were entered for one E-boat seriously damaged and another damaged.(2)

There were two engagements in the Channel area early on the morning of 29 May in which aircraft were involved. An enemy force having been detected by radar and attacked at 0026 hours by an Albacore N.E. of Cherbourg was later located by M.G.Bs which had left their patrol line off the Portsmouth Eastern Approach for this purpose. During the engagement one of the M.G.Bs was set on fire and considerably damaged. Claims were made for damage to four enemy craft. Albacore aircraft from Tangmere in subsequent attacks delivered between 0106 and 0335 hours claimed to have sunk four E-boats and damaged two others.(3)

The final attack of the month was made at 0215 hours on the morning of 31 May by a Swordfish of No. 816 Squadron from Exeter under Kingswear control. After various vectors a radar contact was obtained at 0134 hours at a range of eight miles. Three minutes later a visual was made on three

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- (1) The entry in F.d.S. war Diary covering this operation states: '5th Flotilla laid mines at random across the convoy route between EA.1 and EA.5 buoys. This they were able to do as the minefields north of Cherbourg had been destroyed by self-detonation and there was a free passage. Boats were bombed by aircraft, but sustained no damage.'
 - (2) The entry in the War Diary of F.d.S. concerning this operation states:- '19 boats were sent to lay mines on the convoy route in Lyme Bay. Orders from F.d.S. H.Q. based on evaluation of 'Y' reports enabled the E-boats to avoid British forces which had been sent to cut them off. British aircraft attacked them but bad visibility prevented the aircraft from pressing home the attacks.'
 - (3) In the War Diary of F.d.S. the following entry appears in connection with this operation:- '19 boats ordered to lay mines in Lyme Bay area. 5th Flotilla (7 boats) was engaged by M.G.Bs south of EA.5 Buoy, and also attacked by aircraft. 2nd, 4th and 6th Flotillas (5, 3 and 4 boats respectively) were fired on by coastal batteries but were not hit, and after laying mines according to plan, withdrew. They were then attacked by aircraft, M.G.Bs and Destroyers. Reconnaissance planes were sent out to see whether the convoy routes had been altered to run close in shore. The torpedo attack planned for the night 29/30th was cancelled as the convoy had been diverted north of the minefield. No mention of any loss.'

E-boats steering S.S.E. at an estimated speed of thirty knots. The aircraft shadowed this force for thirty minutes, during which time a further three E-boats joined up, and eventually a glide bombing was made from the north west. No hits were observed and the only evasive action was an alteration in course of ten degrees to starboard. The Swordfish continued shadowing for a further thirty minutes and prior to returning to base made an M.G. attack on the leading boat in the port column. No reaction of any kind was experienced.(1)

TSD/FDS
X.237/48

Although successes by aircraft had, so far, only totalled one E-boat sunk at sea, the Senior Officer E-boats (F.d.S.) was nevertheless at this time becoming very disturbed over the effect that air attacks were having on E-boat operations.

An entry in his diary dated 30 May 1943 states: 'In all areas there is increased enemy air activity against E-boats. In the Channel, E-boats were attacked a total of sixteen times during three operations, even though there was no moon and visibility was bad. This showed that in all probability the aircraft themselves were fitted with radar. Also aircraft attacks had been made on E-boat flotillas before they were in range of the shore-based radar. It was considered that E-boats could not counter these attacks successfully when using their own armament only, as this would attract enemy vessels, and lead to further air attacks. It was certain that E-boats would in future be located by night-fighters as soon as they left port and that E-boat losses would mount accordingly. The only way to assist the boats would be to give them air support during operations, thus forcing the British to use faster aircraft, Swordfish and Albacore aircraft being too vulnerable to Luftwaffe attack. The use of faster aircraft by the enemy would make his attacks on E-boats more difficult as it was known to be easier for slow aircraft to attack E-boat targets than the faster types.'

From subsequent remarks in this entry it appeared that the E-boat Command had suffered far greater losses by air attack in the Black Sea and Mediterranean areas than in N.W. Europe.

June, July and August

TSD/FDS
X.237/48

During the three summer months of June, July and August E-boat operations were at their lowest ebb, and owing to the short periods of darkness could only be carried out in the Central Channel area. There were no torpedo attacks during June and July and minelaying became the main feature though the torpedo was used on occasions when the E-boats were intercepted by our surface craft and resulted in the loss of one of our minesweeping trawlers off Harwich during the early hours of 8 August.(2) There were no aircraft on patrol at the

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- (1) An entry in the E-boat Command War Diary dated 30 May 1943 states:- 'All four flotillas (19 boats in all) laid mines with cutting floats at random in Lyme Bay. 4th and 6th Flotillas off Start Point and 2nd and 5th Flotillas west of Berry Head and north of the convoy route. In spite of aircraft attacks the operation was successfully and quickly concluded. No action with British coastal forces.'
 - (2) This was H.M.S. Red Gauntlet of 338 tons.

Fighter Cd.
Form "Y"

time of this occurrence. Continued sorties by Allied aircraft⁽¹⁾ off the enemy occupied coast had resulted in a few attacks on E-boats during passages between bases, and on one occasion eight Whirlwind bombers escorted by twenty Spitfires penetrated L'Abervrach harbour and sunk one E-boat.⁽²⁾

September

There were no torpedo attacks on coastal convoys by E-boats during September, but once again an intercepting patrol craft was counter-attacked by this means resulting in the loss of H.M. minesweeping trawler Franc Tireur of 314 tons off Harwich during the night of 24/25 September. This was the only Allied casualty for the month.

Mines were actually laid by E-boats on three nights during September and dummy mining operations were carried out on three other nights.⁽³⁾

Fighter Cd.
Form Y

Air activity on the part of the Allied forces increased during the month and totalled 118 sorties resulting in fourteen attacks. In addition twenty-one chance encounters with E-boats, during which attacks were carried out, were made by aircraft other than those engaged in the Anti-E-boat role. There was no wastage of Allied aircraft during the month.

Albacore aircraft of No. 841 Squadron had an unusually busy time during the first week of September making attacks on E-boats on every night except one. Especially promising claims were made for the night of 4/5 September when four E-boats were detected by radar proceeding from Boulogne to the South Varne Buoy. Here they were attacked by an Albacore after which they returned to a position just off Boulogne, remained stationary for a short time and then resumed in the direction of Calais. They were repeatedly attacked during this passage by Albacores who claimed direct hits on three vessels one of which was seen to be on fire. The Assessment Committee awards for these encounters were two E-boats sunk and two damaged.⁽⁴⁾

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- (1) Operations by R.A.F. aircraft including those under the operational control of Fighter Command were:-
June - 59 sorties - 11 attacks and 22 chance encounters
July - 48 sorties - 5 attacks and Nil chance encounters
Aug. - 98 sorties - 17 attacks and 10 chance encounters
 - (2) This occurred on the 11 August and S.121 was sunk.
 - (3) On 15 September, F.d.S. comments on an increase in Allied air and sea activity. He states that "as a result of this feature and the capitulation of Italy, enemy landings in the Channel were to be expected in the near future. It was therefore necessary for E-boats during the period to be employed mainly on defensive duties, in spite of the unsuitability for such work, because of the shortage of other suitable craft.
 - (4) The entry in the E-boat Command War Diary for this night states:- "Enemy aircraft caused superficial damage to one boat of the 2nd Flotilla during a patrol off Boulogne."

Of the remaining attacks for this first week of the month only one other, that on the night of 6/7th, was awarded the category of 'sunk'. (1)

The resumption of E-boat minelaying took place in the Harwich - Lowestoft area during the night of 24/25 September and naval forces engaged the enemy with a measure of success on several occasions, but no aircraft were involved.

October

German E-boat activity during October was confined to two major offensive operations, one of minelaying and one of torpedo attack. (2) The latter had no success, although in some publications the sinking of H.M. cruiser Charybdis and H.M. destroyer Limbourne had been attributed to German E-boats but this is not the case. (3) Aircraft were not involved in any of these operations, but five attacks were made by aircraft engaged in the Anti-E-boat role at other times during the month and in addition eight chance encounters also resulted in attacks. Although assessments for two E-boats sunk were awarded to aircraft, there was no mention of casualties by this cause in the E-boat Commands War Diary.

November

Although only two torpedo operations were made by E-boats during November they succeeded in sinking four

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- (1) F.d.S.'s War Diary states:- "4th Flotilla attacked by aircraft whilst on passage to Le Marne. One boat suffered damage as a result of a near miss." On the subject of E-boats carrying out a defence role F.d.S. states "this operation had proved so far that even such small targets as E-boats could not safely remain within radar range of the English coast without being attacked by aircraft and it was a matter of pure luck that damage had been so slight."
 - (2) Details of E-boat sorties for October 1943 were:-
Torpedo Attack - 28 sorties, 28 attacks.
Minelaying - 29 sorties, 126 mines laid.
 - (3) Early in the morning of 23 October a force composed of H.M. cruiser Charybdis and the destroyers Grenville, Rocket, Limbourne, Talybont, Stevenstone, and Wensleydale were on patrol (Operation "Tunnel") proceeding on a westerly course at 14 knots, about 7 miles north of Triagoz Island, when the cruiser obtained a radar contact with two units almost right ahead. She fired starshell, but before these burst she was torpedoed amidships on the port side, and was hit again on the port side soon afterwards and sank quickly. The destroyer Limbourne was hit about the same time; her bows were blown off and after two unsuccessful attempts to tow her she finally had to be sunk. No enemy ships were seen by any of the British vessels. There is no mention of this encounter in the War Diary of the German E-boat Command.
German records reveal that these two ships were torpedoed by Torpedo-boats of the 4th Flotilla who were acting as outer escort screen to the Munsterland proceeding from Brest to Cherbourg (following the German swept channel which kept close along the North Brittany coast). The T.Bs. concerned were T.22 - 23 - 25 - 26 - 27. (Ref:- The War at Sea, Vol.IV. (BR.1738), and Admiralty TSD/FDS.).

TSD/FDS
X.237/48

Allied merchant ships totalling 8,538 gross tons. This was the first time for seven months that merchant shipping had featured under the E-boat cause in the casualty list which was also the highest total of any month in the year. After 6 November no further torpedo operations were possible owing to bad weather. Only two minelaying forays were attempted during the month and both were completed with but little interference from Allied surface craft.

Fighter Cmd.
Form 7 and
H.Q.C.C. O.R.B.
Nov. 1942.

There was increased Allied air activity during the month but attacks fell off by almost 50% on the previous month. One hundred and sixty-one sorties were flown but only six attacks were made. The large increase in aircraft sorties was partly due to the introduction of the newly equipped No. 415 (R.C.A.F.) Squadron into Anti-E-boat operations. From the Allied air side the month was also noteworthy in as much as some Beaufighters of Coastal Command scored their first success against E-boats at sea.

Admiralty
B.R.1738
Vol.IV.

The first convoy to be attacked was CW.221 at 0205 hours on 3 November in the English Channel (East), during which three ships totalling 3,957 gross tons were sunk. H.M. destroyer Whitshed on patrol engaged the enemy for about two hours and claimed two E-boats damaged. An Albacore aircraft on patrol some ten miles off the French coast between Boulogne and Dieppe failed to make contact. The C.-in-C. Portsmouth observed that as there had been no attack on the C.W. convoys for eighteen months, there was no doubt that we were in some measure surprised. It was recommended that future surface escort of these convoys should be at least two destroyers.(1)

No. 16 Group
O.R.B.

The second E-boat torpedo operation against a coastal convoy took place after the completion of a minelaying sortie at 2350 hours on the night of 4 November between Cromer and Yarmouth. Two ships of the northbound convoy FN.1170 were torpedoed, one of which became a total loss.(2) H.M. destroyers Vega, Fernie and Eglinton engaged the E-boats and hits were claimed. Under operation 'Conebo' six Beaufighters of Coastal Command were despatched in time to catch the enemy before he arrived back at his base, and made a successful interception of one group of four E-boats. Both starboard and port leading vessels were struck amidships with heavy and concentrated cannon fire and left smoking. The rear starboard and port vessels were also claimed damaged by cannon fire. Heavy return fire was encountered and one Beaufighter failed to return.(3)

- (1) F.d.S.'s comments on this operation were:- '5th Flotilla (9 boats) attacked the C.W. convoy between Dungeness and Beachy Head. Two ships claimed sunk. One E-boat (S.141) damaged by 4 cm hit in engine.'
- (2) This was the tanker British Progress-4581 gross tons.
- (3) From F.d.S. War Diary:- '2nd, 6th and 8th Flotillas (20 boats) left IJmuiden to carry out minelaying operation i.e. laying of ground mines and moored mines between 3A and 3B Buoys and between 57E and 59A Buoys and at random in the area northeast of the convoy route. The first group of the 2nd Flotilla encountered two destroyers on patrol north of Smith's Knoll, but laid their mines, after which they unsuccessfully attacked the destroyers with torpedoes. This group then claimed to have probably sunk two ships of the FN convoy. The second group of this same Flotilla after laying some twenty mines also attempted to attack the convoy but were chased off by destroyers. The first and second groups of the 6th Flotilla laid their mines at random on the convoy route but were not able to attack the convoy. The second group, however, fired their torpedoes at patrol vessels without success. On the return passage to Den Helder this group was attacked by six Beaufighters. As a result of damage sustained, S.74 became unmanageable and was scuttled; S.91 suffered engine damage and S.116 was also slightly damaged in this air attack.'

December

Owing to unfavourable weather conditions during December, E-boat activity was confined to two torpedo operations only in the English Channel area. During the first encounter which took place on the night of 1 December, H.M. minesweeping trawler Avanturine in tow of a tug was sunk with all hands. An Albacore of No. 415 (R.C.A.F.) Squadron was on patrol in the Straits of Dover at the time but did not make contact with the enemy. The second torpedo operation took place on the night of 23 December when a group of E-boats made an unsuccessful strike against a west channel convoy in Weymouth Bay. They chose to make the attempt just as two destroyers were taking over escort duty with the convoy and were therefore effectively driven off.

For the first time in eleven months there were no attacks on E-boats by Allied aircraft although 123 sorties were flown during the month.

January 1944

During the first month of 1944, the continuing menace of enemy E-boats was brought into focus by two successful torpedo attacks and two attempted attacks, all of which took place in the English Channel. Aided by unfavourable weather from the aircraft's point of view the E-boats had to contend mainly with surface opposition. They suffered no losses but inflicted fatal damage on five merchant ships totalling 6,420 gross tons and two of H.M. minesweeping trawlers of 1,090 tons, during the course of two operations, one of which occurred on 6 January and the other on 31 January. (1) An attempt to attack the convoy FW. 461 off the Lizard during the early morning of 17 January was beaten off by the escorting destroyers, while heavy seas on 21 January caused an attack on another FW convoy off Plymouth to be abandoned.

In spite of unfavourable flying weather conditions throughout the month, aircraft flew 57 sorties and were in action against E-boats on two occasions; once against an abortive torpedo sortie in Lyme Bay when two Beaufighters of Fighter Command strafed one group of three E-boats during the dark hours of 21 January, and again eight nights later when an Albacore of No. 415 (R.C.A.F.) Squadron attacked six E/R-boats off Le Treport with bombs. A damage claim was made by the Fighters (2) but no claim was entered on the Albacores behalf. The only minelaying operation of the month took place on the night of 20 January in the vicinity of Smith's Knoll when five boats laid mines with delay clocks.

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- (1) During January 1944 E-boat operations were:- Torpedo sorties - 48 with 24 boats attacking; Minelaying sorties - 5 with 30 mines laid.
 - (2) F.d.S.'s comments on this operation were:- 5th Flotilla (7 boats) were ordered to attack the FW convoy off Plymouth. Owing to heavy seas from the west, this was cancelled in favour of an attack against the Eastbound convoy in Lyme Bay. The convoy however, was not attacked. The first group of the Flotilla was shot up by a twin-engined fighter and boats were hit. The enemy must have some special radar equipment, and if by this device air attacks on E-boats can be made on dark nights, then our operations within radar range will be restricted.

February

During February the E-boats doubled their torpedo sorties and changed the operational area from the Channel to the East Coast convoy route. Combined torpedo and minelaying operations were carried out in this area with a limited amount of success. Three attempts were made however, to attack the Channel convoys, but two were abandoned owing to bad visibility and one was frustrated by aircraft attacks. Minelaying took place on four nights of the month - 12/13th, 13/14th, 14/15th and 23/24th - off the Humber, Southwold and in the Smith's Knoll area. (1)

At about 0125 hours on the morning of 13 February H.M. minesweeping trawler Cap d'Antifer of 500 tons was torpedoed by one of these minelaying parties and sunk off the Humber. A patrol of Coastal Force Units sighted the enemy but action could not be joined owing to lack of speed. A Wellington aircraft of No. 415 (R.C.A.F.) Squadron was on a 'Deadly' patrol at the time but it was too far south to be of any use.

On the night of 14 February H.M. corvettes Mallard and Shearwater, on patrol off Southwold, engaged five E-boats which turned about one mile short of the swept channel and appeared to retire to the north-eastwards. (2) Wellington aircraft were delayed from reaching patrol by the weather until after the E-boats had passed through their patrol lines.

The following night a group of E-boats located by a patrolling Albacore off Barfleur was attacked with bombs and a claim for serious damage to one boat was made. (3)

Four times during the week ending 26 February E-boats operated off the coast of East Anglia. At 2330 hours on the night of 24 February the convoy FS.1371 was attacked by about twelve E-boats when 25 miles east of Yarmouth. One British merchantman was torpedoed and sank (4) near Hearty Knoll with the loss of six of her crew of twenty-five. H.M. destroyers Vivien and Eglinton each drove off a group of E-boats. The Wellington aircraft of 'Deadly' was too far to the northward to be involved. On the following

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- (1) During February details of E-boat operations were:-
Torpedo sorties - 99 with 26 attacks; Minelaying sorties 49 with 174 mines laid.
 - (2) These boats were of the 2nd and 8th Flotilla. The 2nd Flotilla were ordered to lay mines on the East coast convoy route. They were supported by the 8th Flotilla which had been instructed to attack M.G.B.s with the object of capturing one to bring back to base. When the 2nd Flotilla encountered a destroyer working with M.G.B.s, F.d.s. signalled the 8th Flotilla to proceed further south; and while the latter were chased by the M.G.B.s on the return journey the 2nd Flotilla were able to lay their mines without further interruption. The 8th Flotilla were brought to action off Ijmunden and there were casualties among the personnel on both sides (Ref: F.d.S. War Diary).
 - (3) These boats were of the 5th Flotilla which left Cherbourg with 15 boats to attack the CW convoy between Dungeness and Beachy Head. They were attacked by British bombers according to F.d.S. and returned to harbour.
 - (4) This was the British ship Philip M. of 2,085 gross tons.

night a further effort was made to contact the FS. convoy but failed. The enemy was chased away by destroyers and M.G.B's.

On the night of 28 February, E-boats were located in the Smith's Knoll area by a Wellington aircraft but contact was lost after three quarters of an hour.(1) The last attempt of the month by E-boats to contact a west channel convoy was abandoned in the Plymouth area owing to the rapid deterioration in visibility.

Sorties flown by Allied aircraft were about the same as in the previous month i.e. 58 with five attacks. One aircraft failed to return.

March

Although during the month of March, 102 torpedo sorties were made by E-boats not a single attack on Allied shipping was delivered, neither were there any minelaying operations. Allied aircraft patrols were stepped up to 107 sorties with eight attacks but there were no casualties on either side.

The presence of E-boats as far west as Lands End was discovered on the night of 15 March, when a Halifax of No. 502 Squadron, Coastal Command, located seven E-boats by radar during the course of an Anti-submarine patrol in the South western approaches. Two attacks were made with 7 x 250 lb D.C.s but there were no visible results. A Wellington aircraft of No. 172 Squadron was diverted to attack and also made to attacks with depth charges but apart from seeing the explosion nothing further was observed. Before the enemy escaped to the southward, they were intercepted by H.M. destroyers Brissenden and Millbreak. One E-boat was claimed sunk, two were hit by 4 inch shell, and others damaged by close range weapons. From ten to twelve boats were believed to have been operating.(2)

Three further attempts were made during the latter half of March to attack the PW convoys between Portland and Plymouth but in each case no convoys were found. The same results were experienced during four attempts to find the East coast convoys on the nights 25/26th, 29/30th, 30/31st, during the course of which there were several brushes with Allied naval and air forces.(3)

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- (1) These were boats of the 2nd and 8th Flotillas which according to F.d.S's War Diary were ordered to operate against the FS convoy off Smith's Knoll. They were located by aircraft on the way out. Operation broken off owing to bad visibility.
 - (2) F.d.S's War Diary states:- 15th and 9th Flotilla (10 boats) ordered to attack WP convoy off Lands End. Boats were located and shadowed by British aircraft when 15 miles NNW. of Ouessant. Large enemy force (Destroyers, minesweepers and Landing Craft) between Lands End and Lizard Head presumably awaiting E-boat attack in Mounts Bay. Convoy remained to the north of E-boats. During a chase by destroyers, S.143 was hit in the forecastle, but after jettisoning two torpedoes reached harbour safely. 5th Flotilla was bombed three times.
 - (3) Note by F.d.S re second half of March 1944. Nine operations were undertaken, five on the British East Coast and five in the Channel. None of these torpedo attacks was successful. Reasons - insufficient reconnaissance reports, bad weather, strong enemy defences and prompt warning of convoys. All these factors made surprise attacks impossible. The course of these operations showed clearly that in contrast to 1940 and 1941, success no longer came easily to E-boats. Owing to the superior Radar system, strong escorts and air patrols of the British and the German dependence on good visibility, each success must be paid for by many fruitless attacks.

Of rare occurrence was a raid directed specifically against E-boat shelters, but during this month the first large scale operation against this type of target was made by the U.S. Ninth Air Force. On 26 March, 338 Marauders attacked the port of Ijmuiden with 594 tons of G.P. bombs, the main weight of which was directed on the E and R-boat shelters. In the damage assessment for this raid it was stated that pens under construction had received three direct hits with at least ten hits on buildings concerned with the structural work. Only one aircraft failed to return. (1)

April and May

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B.R. 1738
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During April and May large numbers of Allied vessels were gathering in south coast ports in readiness for the forthcoming invasion of Europe, and these assemblies and the exercises which were essential so that they might know their respective parts in the undertaking, naturally constituted an incentive to enemy attack. E-boat torpedo operations, however, were scaled down but minelaying showed a substantial increase. No Allied merchant ships in trade convoys were lost during the period by E-boat torpedo but a Dutch tug (2) on passage to Portsmouth fell a victim to this cause, during the first attack made by E-boats in the Dover Straits since the night of 2/3 December 1943. In addition a United States military convoy consisting of eight L.S.T.s and two pontoons with only one corvette as close escort, was proceeding independently as a follow up convoy in exercise 'Tiger' and ran into trouble when 33 miles from Slapton beach-head. A group of E-boats searching for W.P. convoy came across this weakly escorted convoy and managed to penetrate the covering force with little difficulty. The U.S. L.S.T.s 507 and 531 were sunk and 289 was damaged and towed to Plymouth. Destroyers and coastal craft rescued 290 survivors and recovered 97 bodies. On the return journey the enemy was sighted by H.M. destroyers Offa and Orwell but escaped by the use of smoke and high speed. (3).

Mines were laid by E-boats on two nights in April and six nights in May largely in the Channel area as an anti-invasion measure, (4) but not without frequent interruptions by naval and

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- (1) F.d.S.s. comments on this raid were:- 'On 26 March Ijmuiden was attacked by more than 100 enemy bombers. The old bunker remained undamaged by bombs. Damage to the new bunker would cause a building delay of about eight weeks. Outside the bunkers S.93 and S.129 were hit and became total losses. This emphasised the importance of sheltered berths in bunkers'.
- (2) This was the Rode Zee of 468 gross tons lost with all hands.
- (3) F.d.S.s. comments on this encounter were:- 5th and 9th Flotillas (9 boats) left Cherbourg to attack W.P. convoy ten miles west of Portland Bill. Before reaching the convoy two boats engaged a destroyer, which they claimed torpedoed and sank. Remaining E-boats contacted a convoy of six vessels, like landing craft, weakly escorted. The 9th Flotilla claimed 2 L.S.T.s. sunk and 1 L.C.T. torpedoed. The 5th Flotilla was fired on by a small vessel but not hit. On the return journey the 9th Flotilla encountered a scattered group of L.C.T.s escorted by 'PC.74'. About the same time the 5th Flotilla ran into three or four destroyers (Force 27) which had left a patrol off the Brittany coast to intercept the E-boats. No boats were lost.
- (4) A situation report by F.d.S. dated 15 May 1944 states:- 'Apart from increasingly lively activity of the Allied naval and air forces in the Channel and the practice landings reported by the German 'Y' service, there had been no changes in the E-boat area of operations to indicate that the invasion would soon begin. Orders from Naval War Staff and Group West for a more intensive minelaying offensive in the Isle of Wight area, and for a third E-boat flotilla to operate in the Channel, led to the order being given to move the 4th Flotilla to Boulogne en route for Le Havre. It was then recognised that the Allied defences in the restricted waters round the Isle of Wight would give very little opportunity for minelaying, and the 4th Flotilla was ordered to remain in Boulogne. The following dispositions were planned for the summer:-
 Cherbourg - 5th and 9th Flotillas.
 Ostend - 8th Flotilla
 Boulogne - 4th Flotilla
 Ijmuiden)
 Rotterdam) 2nd Flotilla (now undergoing conversion)

air forces including 'Lightnings' of the United States Fighter Command.(1)

H.Q.C.C. O.R.B.

&
H.Q. F.C.
Form 'Y'

Eighty-six sorties were flown specifically on Anti-E-boat patrols in April by aircraft of the Royal Air Force or others under their operational control, and ninety-five in May. Ten attacks against E-boats in April did not produce any substantial claims, but of the twenty-three attacks in May, one made by a Swordfish of the Fleet Air Arm recently placed under the operational control of Coastal Command appeared to be very promising and earned the award of 'serious damage'.(2)

(vii) Conclusion.

See Appendix
XXIV

From the R.A.F.'s point of view, the period had been one of increased air action against the E-boat with an exchange rate of four kills for the price of ten aircraft. Four other kills had been obtained by the United States VIIIth and IXth Air Forces by daylight raids on ports. At sea, however, although the location of the E-boat had been made easier by radar, it was still as difficult as ever to sink it. A variety of aircraft, including Albacores and Swordfish, with an almost equal variety of weapons, had been used in the Anti-E-boat role, but none could be said to have completely solved the problem of killing E-boats at sea from the air. So far the cannon had accounted for two of the three boats sunk at sea, while bombs had destroyed one E-boat at sea and one in port. Recent trials had also confirmed the cannon and bomb as being the two most suitable weapons for use against this type of surface craft during the forthcoming major operations in support of the invasion landings.

A.H.B./IHK/67/
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The provision of aircraft for anti-E-boat operations was also brought to a head during the period. It had been agreed by the Air Ministry and the Admiralty that it was an R.A.F. commitment but the lack of a suitable type of strike aircraft within the R.A.F. had led the Admiralty, as a temporary measure, first to loan Albacores and Swordfish to carry out these operations, and secondly, to hand over all the available Albacores so that in conjunction with some Wellington XIIIIs, a composite squadron could be formed for use solely in the Anti-E-boat role pending the development of a suitable strike aircraft.

Although earlier in 1943 it had been declared within the Air Ministry that a fast moving type of aircraft would not be suitable for Anti-E-boat operations on dark nights, the Beaufighter had now been placed on trial as a night fighter of

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- (1) During these two months, surface forces of the Royal Navy accounted for two E-boats, S.147 by destroyer action and S.141 by M.G.B. action. In addition a Swordfish of the Fleet Air Arm under the operational control of Coastal Command sank S.87 with bombs.
 - (2) An entry dated 19.5.44 in F.d.S.s. diary states:- '8th Flotilla (7 boats) laid mines off Orfordness between 52 and 3A Buoys. Mining carried out in spite of enemy attacks. Boats reported that British patrols were stronger, and destroyers followed the E-boats until they were 12 miles east of the convoy route. M.G.B.s also attacked. Boat S.87 damaged and set on fire by aircraft attack, and later sunk.'

E-boats and first results appeared to be encouraging. However, it will be seen in the next volume to what extent these early hopes were realised and what contribution the Beaufighter made to the defeat of the E-boat at sea.

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From the enemy's side E-boat operations during the past fourteen months had not progressed as favourably as expected. By the end of the period under review, i.e. May 1944, the superiority of Allied naval and air forces was compelling the German E-boat arm to curtail its purely offensive activities in spite of an increase in the number of craft available for operations. The main operational tasks for E-boats had remained unaltered during the period, i.e. torpedo attacks against coastal convoys and minelaying, but their efforts had been less successful.(1)

The causes of this setback were manifold but the main reasons given in a report issued by the Senior Officer E-boats (F.d.S) dated 31 December 1943, were:-

- (i) Allied air superiority had made daylight operations impossible for the German E-boat forces which were finally restricted to operating on moonless nights only.
- (ii) Apart from air superiority, the Allied destroyers and coastal forces escorting convoys had been increased and measures against E-boats had been perfected.
- (iii) The development of Allied radar equipment on land, at sea and in the air was particularly worthy of consideration. E-boats were often fired on before the enemy was in sight.

The report went on to state that, while the threat of air attacks on E-boats by the Royal Air Force did not increase as much as expected, attacks by aircraft were, nevertheless, a grave danger to E-boat operations and if sufficiently strong, could eliminate the night operations altogether.

Owing to the air requirements of the Eastern campaign, co-operation between the E-boat arm and the German Air Force had also suffered a serious setback. The E-boat, through lack of air support, had been left to carry out offensive operations in the West unaided, and with growing Allied pressure on the German convoy routes an increase in defensive operations had been found necessary at the expense of offensive activities. It was considered by F.d.S. that if E-boat operations were to be successful, air support was essential.

In a review of operations during 1943, it was mentioned that E-boat losses had been the largest since the commencement of E-boat operations in 1940. The rise was due mainly to increased aircraft attacks and hits scored by surface forces, all of which had been used in greater numbers than hitherto. Of the twelve E-boats lost during the year, six had been sunk by surface forces, two by air raids, three by direct aircraft attack at sea, and one by mine. Seven of the total number lost were engaged in torpedo attack and two on minelaying. The remainder were sunk in harbour or on

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- (1) In 1942, two hundred torpedo attacks by E-boats had resulted in the loss of Allied shipping to the extent of 28 ships totalling 38,397 gross tons, whereas in 1943, one hundred and ~~forty-eight~~ ^{two} attacks had accounted for 16 ships totalling 26,024 gross tons.

passage between bases. During the first five months of 1944, the E-boat arm suffered further losses to the extent of eight boats; three by surface forces, two by air raids, one by direct aircraft attack at sea and two by collision.

As a result of altered operational conditions E-boats had been improved as regards engines, types of torpedoes and gun armament. They were now fitted with cupola bridges and armour plating. The E-boat production programme had, up to November 1943, provided up to three E-boats per month. This was speeded up to produce five in December and six thereafter. It was proposed to increase production to twelve, then seventeen and finally twenty-five per month by establishing a third E-boat yard at Gotenhafen. The bottleneck to the building up of the E-boat arm was the supply of trained personnel, especially Commanders. The requisite number of officers had not been supplied so far, by the personnel department of the Naval High Command, and as a result some E-boats had to be taken over by Warrant Officers. The E-boat Training Division had been formed on 1 November 1943, and recently enlarged to cope with the situation. Further plans for forming new Flotillas were dependent upon the fulfilment of the accelerated building programme and the supply of trained personnel.

To sum up. Taking all the difficulties of both sides into consideration it appeared that the Allied Anti-E-boat operations were beginning to take toll of the German E-boat arm and unless a prompt and substantial increase of E-boats and personnel could be effected, there was every likelihood that the growing superiority of Allied measures in this field of the sea war would continue to stifle the enemy's efforts to dislocate our coastal traffic. Of special significance was the fact that although aircraft could not by any means be regarded as killers of E-boats the mere threat of air attack was having a psychological effect on the enemy which was compelling him to act with extreme caution.

PART II. THE ANTI G.A.F. CAMPAIGN - MARCH 1943 TO MAY 1944.

(i) Introduction

Despite a most consistent effort on the part of the German Air Force in maintaining a close watch over coastal shipping in Home Waters only twelve attacks were made at sea; all these occurred during the first four months of the period under review and as far as the sinking of ships was concerned they proved to be quite ineffective. Meanwhile in the Royal Air Force, both Fighter and Coastal Commands continued to afford protection for coastwise shipping during the period, but in view of the apparent non-aggressive attitude of the enemy, and the increasing commitments resulting from the build-up for 'Overlord', their total effort in aid of the routine convoys was far below that of the previous period. As aircraft were withdrawn from the task of direct convoy protection so alternative measures were introduced to safeguard shipping in the event of the renewal of the offensive by the G.A.F. The latter, however, never materialised.

(ii) Demands for increased participation of G.A.F. in sea War.

At the commencement of the period under review the G.A.F. specialist anti-shipping forces in North West Europe stood at the lowest level of strength and efficiency which had yet been

H.Q.F.C.
O.R.B.s
Mar. 43 to
May 44.

H.Q.F.C. &
H.Q.C.C.
O.R.Bs
Mar. 43 to
May 44.

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reached.(1) Since the Spring of 1942, the strengths of Fliegerfuhrer Atlantik and Flieger Korps IX had steadily declined; first, by the transfer of the newly equipped and trained torpedo bomber units to Norway for action against the Allied convoys to and from Russia; secondly, by their subsequent transfer to the Mediterranean theatre to oppose the Allied landings in North Africa; and thirdly, by the squandering of the bomber units on reprisal raids against Great Britain. In consequence, Allied shipping in coastal waters around the United Kingdom became virtually immune from direct attack and comparatively free from the hazards of aerial mines.

A.H.B.6
Translation
No.VII/37

In September 1943, yet a further reduction in the Anti-shipping forces of Fliegerfuhrer Atlantik was projected in a proposal to withdraw Kampgeschwader 6; a move which induced General Kessler - then in command - to place on record a critical account of the manner in which the G.A.F. anti-shipping campaign had been conducted from the higher levels. In a letter dated 5 September 1943, addressed to the Chief of the General Staff of the Luftwaffe (Generaloberst Jeschonnek), Kessler requested that the post of Fliegerfuhrer Atlantik be dissolved and recommended that the few air units remaining in the Command be either incorporated in Fliegerkorps IX or alternatively placed under the command of F.d.L.(2) General Kessler then proceeded to review the whole situation and commenced by pointing out that in no other area was so great a volume of shipping moved with such regularity and such concentration over such clearly defined shipping lanes as in the coastal areas around Great Britain.

On taking over command in the Spring of 1942, he had assumed that his forces were destined for operations solely against Allied shipping. In his opinion systematic attacks against these targets would have had the most favourable indirect effect on the German position at other fronts. Such operations were, from the very beginning, never properly carried out; instead, his bombing units had been used to an ever increasing extent for attacks on targets on the English mainland. Especially of late, all periods suitable for anti-shipping operations, i.e. periods of bright moonlight, had been misused by directing the bombers to English cities. Much as he appreciated that the terror raids of the Allies against German cities must be answered by stern counter measures, he could never understand why these had to be directed solely against English inland cities. He was

(1) In February 1943, the strength of the G.A.F. units available for anti-shipping operations in N.W. Europe were:-

Fliegerfuhrer Atlantik			Strength	Serviceable
Long range recce.	3(F)123.	JU.88	12	8
Twin-engined fighters	V/KG.40.	JU.88c.b.	29	13
Bombers	III/KG.40.	FW.200	11	7
Coastal	5/196	Ar.196	16	16
Totals:			68	44
Attached Bombers	KG.6	JU.88	12	8
Atlantik Totals:			80	52
Fliegerkorps IX				
Short range recce.	1 and 2 (H) 13	FW.190	33	27
Long range recce.	3 and 4 (F) 123	Me.109	27	20
Bombers	I and III/KG.6	JU.88	63	25
	I and III/KG.2	Do.217	53	39
France and Belgium			Total: 176	111

(2) Führer der Seeluftstreit Kräfte = A.O.C. Sea Strike Forces.

convinced that the 'Achilles heel' of the British was their shipping, and that only in this domain could a deadly blow be struck.

Then followed an account of the domestic problems that had to be solved before operations could be carried out by the motley assortment of units that had, from time to time, come under the command of Fliegerfuhrer Atlantik. Lastly, he endeavoured to deal with the expressions of dissatisfaction made by the High Command on more than one occasion, relative to the many unsuccessful sorties flown.

In conclusion, General Kessler expressed his firm belief that the question of shipping space was the deciding factor in this war. If the German air and naval forces could sink 500,000 gross tons of Allied shipping per month there would be no need to worry about the industrial potential of England and America. It was not too late for a new lease of life to be infused into the Anti-Shipping Command which could only be achieved, however, by the arrival of new formations, especially a torpedo-bombing Gruppe, and by the realisation that the sole task must be the war against shipping. This would necessitate help being given to the submarine fleet, by attacking more shipping and shipbuilding yards and a strengthening of defences by night fighters in particular.

Hitler
Conferences
on Naval
Affairs.
1943.

Coupled with General Kessler's criticism of the conduct of the Anti-shipping campaign were the incessant demands of Admiral Doenitz, C.-in-C., Navy, for increased air support in pressing home the attacks against Allied merchant shipping. Among these was a memorandum submitted to Hitler at a conference held on 21 April 1943 in which the Naval Staff had stated that the Allies could not stand an overall loss of 500,000 to 600,000 tons per month of merchant shipping for any length of time. Germany with her submarines, E-boats and Air Force, and her allies Japan and Italy, must exert every possible effort to achieve this objective. C.-in-C. Navy emphasised the necessity to force the British to maintain escorts along the English coastline in order to keep them from attacking German convoys, and to supplement the submarine war by sinking the many ships moving in English coastal waters.

A development of the last named objective was the subject of a further conference between the Fuhrer and C.-in-C., Navy held on 8 July, 1943, when Admiral Doenitz submitted his plan to intensify minelaying operations. It contained the proposal to lay 3,000 mines per month off the coasts of Britain. Planned in conjunction with the G.A.F. as a surprise attack for August, a new mine was to be used. The Fuehrer expressed his misgivings as to the use of this new weapon by the Air Force because he was afraid that the mines might be dropped on land thereby compromising the details of construction and purpose before the full benefit of the new mine could be realised. In defence, the C.-in-C. Navy explained that only 500 mines per month could be laid with the surface vessels at his disposal within the area, which was too small a number to achieve his objective. At least 3,000 mines must be laid, and for such a large operation the co-operation of the G.A.F. was indispensable; besides the use of aircraft on minelaying would be less costly since the Air Force did not have to reckon with such high losses as in the case of an attack on an English city. Therefore, as many aircraft as possible should be set aside for minelaying operations because the Allies would be hit at their most vital spot. An increase in sinking through mines would be particularly welcome at this time (i.e. summer 1943).

in order to cover the period of few submarine sinkings, so that the Allied relief could be kept at the lowest possible level.

A.H.B.6
Translation
No.VII/17

There was nothing new in the way of plans for the direct attack of shipping in coastal waters, but pressure had been brought to bear by C.-in-C. Navy for more active air support specifically against merchant-shipping in the Atlantic; in consequence, a directive was issued by Reichsmarschal Goering in September 1943, to Fliegerfuhrer Atlantik, containing detailed orders for the further participation of the Luftwaffe in such attacks. It was stated that as U-boats and aircraft were pursuing the same aim, Fliegerfuhrer Atlantik should, therefore, co-operate with the C.-in-C., U-boat Fleet. Although only limited forces were available at present, considerable successes could still be achieved.

(iii) G.A.F. preparations to meet the Allied invasion.

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Rise and Fall
of G.A.F.
P.316 - 321

By the summer of 1943, the overriding need to prepare against the expected Allied invasion of occupied Western Europe had begun to influence G.A.F. policy and operations.

The first sign in the change of emphasis was the transfer of General Major Peltz from Italy in August 1943, to command FliegerKorps IX, the bomber force on the Western front. He was given control of all bomber units, including anti-shipping forces, in Northern France and the Low Countries. At the same time FliegerKorps IX was notably reinforced by the withdrawal of the whole of the long range bomber force from Italy. Concurrently, a large programme for the expansion of the anti-shipping force was put in hand and the development of new weapons urgently pressed forward. By the autumn of 1943, three new units had been formed, one equipped with the long awaited He.177, the others with Do.217s, all of them using remote control missiles, viz. either the HS.293 glider bomb and/or the FX. radio controlled bomb. Simultaneously, an existing long range bomber unit was converted for torpedo operations, and more of such conversions were projected during the winter of 1943 - 1944. By this means it was hoped that by June 1944, there would be a balanced force of some five Gruppen of torpedo-bombers and a similar number of units operating with remotely controlled missiles. Experiments were also undertaken with a view to the development of the Me.410 as a torpedo-carrying aircraft, possessing higher speed and greater manoeuvrability than the Ju.88, but for technical reasons it was found that this aircraft was not suitable for such employment. A completely new innovation was also devised but only very small numbers became available in time to oppose the Allied invasion. The device consisted of a 'pick-a-back' type of composite aircraft known as the 'Mistel', consisting of a Ju.88 heavily loaded with explosive charges surmounted by a Me.109, so arranged, that the pilot in the latter controlling the two aircraft coupled together, could release the Ju.88 at close range against the selected target. The intention was to use these novel weapons against Allied battleships or other major naval units supporting the landing.

Ibid and
A.D.G.B. File
S.20042/INT
22 April 1944

By February 1944, further preparatory measures had been taken towards the building up of the necessary Command organisation to meet the Allied landings, again at the expense of the Italian theatre; in particular they were concerned with the development of airfields, communications, supplies and ground organisation generally.

The third major step occurred in the middle of March 1944 when the Luftwaffe Anti-Shipping Command was absorbed into FliegerKorps X which had recently returned to N.W. Europe from the Mediterranean theatre. At the same time the torpedo-bomber units based in southern France, where they were strategically placed in order to guard against an Allied landing in that area or alternatively on the western front, came under the control of Flieger Division 2 which was subordinated to the new FliegerKorps X. General Leutnant Holle was transferred to this Command, and was selected for this task in view of his long standing experience in anti-shipping operations, not only in the eastern Mediterranean, but previously in Norway as Fliegerfuhrer North and Fliegerfuhrer North-east from 1941 to 1943.

These measures completed the basic preparation for the conduct of operations on the western front and finally eclipsed the Mediterranean as a major theatre of Luftwaffe operations.

(iv) G.A.F. strength and dispositions - April 1944

To meet the Allied seaborne assault, the Luftwaffe had planned for a strong force of up to 450 aircraft, which would also serve as a powerful and formidable complement to the long range bomber force; circumstances were, however, to be such that the full expansion envisaged was never achieved owing to the interruption of the bomber programme in favour of concentration on fighter production for the defence of the Reich. Moreover those units which had been engaged on land bombing operations throughout the winter of 1943-44 had incurred heavy losses, the torpedo-bomber units in particular proving notably vulnerable. In consequence, by April 1944 the total anti-shipping forces had been built up to not more than 200-250 aircraft and even this strength was not maintained, dropping to approximately 190 aircraft by early June.

There had also come about an acute shortage of crews with the highly specialised training and experience necessary for the effective employment of the Torpedo-bomber arms in particular. The numbers could be achieved but not the vital element of quality. As the losses at the various fronts began to rise in 1943 and early 1944 so the standard of training fell and the pilots sent to the respective fronts lacked general flying experience. Among the many factors which contributed to this lowering of quality in aircraft crews, one of the principle causes was that the Luftwaffe was no longer able to train its flying personnel in the more consistently good weather conditions found in Southern France and Italy. Consequently the changeable northern weather played an important part in the failure of programme fulfilment. The effects of the various shortcomings and weaknesses of the G.A.F. training programmes eventually imposed increased preoccupation on the more experienced unit and formation leaders, and so further detracted from their efficiency.

The disposition of the anti-shipping forces during the period leading up to the Allied landings undoubtedly depended upon the general strategic situation and therefore could not be decided upon in detail, but the broad intention was to have an anti-shipping force under FliegerKorps IX in northern France and the Low Countries with the anti-shipping forces under FliegerKorps X in southern and south-western France - the movement of these forces being dependent upon those of the Allied shipping concerned with the landings.

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Ibid
P.314-316

It was not until the last week of April that air operations began to be directed against Allied invasion preparations in United Kingdom ports, which included a determined attack with radio-controlled bombs on major fleet units at Plymouth; however, no important objective was hit and no further operations with missiles of this type were undertaken against the United Kingdom.

(v) A reduction in Allied Fighter Protection

H.Q.C.C.
File
S.15011
Encl.16A

During the first four months of the period under review the general arrangements for the provision of anti-aircraft patrols for the protection of coastal shipping on passage within forty miles of the coast of the British Isles and Northern Ireland, remained as laid down in Fighter Command Operational Instruction No.37/1942.

The ineffectiveness of the G.A.F's operations against this shipping already in evidence by the summer of 1942, was continued throughout the following winter, so that it had been possible for Fighter Command to reduce its defensive effort accordingly, without trepidation.(1)

Since the introduction of the existing instructions for the 'Protection of Shipping' in August 1942, numerous minor amendments had been made in fact, so much so, that by May 1943 it was obvious that a new instruction, embodying all the amendments, was required. At the same time the opportunity was taken to simplify the procedure whenever possible, bearing in mind the need to conserve aircraft to meet the additional commitments necessitated by the preparations for 'Overlord'. The new operational instruction, introduced on 15 July 1943, agreed with its predecessor in all the essential details with but few exceptions. The most important change was in the degrees of protection which could be given in future, instead of four(2) there were now to be three only.(3) In actual practice, however, the economies in terms of aircraft sorties were barely noticeable from this cause alone.

11G/S.500/5/
Ops.
Encl. 44A

A much larger contribution in conserving aircraft was effected by downgrading the degree of protection given to certain categories of shipping. For instance, in the Dover Straits area the Category 3 shipping which had formerly been given 'Fighter Escort' was from 10 June 1943 to be protected by 'Fighter Watch' from sections of Typhoons held at 'standby' or 'readiness' on the ground. Two of the reasons given for this reduction in the scale of fighter protection in this particular area were:-

- (i) The abandonment by the enemy of attacks on shipping.
- (ii) The improved low flying R.D.F. cover now in operation in this area.

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- (1) See Appendix XXV.
 - (2) See Volume III, Chapter XIV.
 - (3) Fighter Escort - Aircraft giving direct protection by flying in the vicinity of the shipping to be protected.
Fighter Cover - Aircraft on defensive patrols or defensive sweeps maintaining air superiority over a given area.
Fighter Watch - Aircraft at readiness on the ground, able to take-off immediately on warning of attack or a call for 'Help' being received.

Provision had been made, however, for an immediate increase in the scale of fighter protection should the enemy resume his attacks on shipping.

Appendix XXV

Reference to Appendix XXV will show the extent of the reductions made in aircraft sorties by day during the fourteen months under review compared with the preceding equivalent 1942/43 period when the G.A.F. was more active. It will also be observed that a drastic reduction in night sorties had been made as well, but this was not done for the same reason. Experience had shown that close fighter escort over convoys during the hours of darkness was seldom successful in intercepting enemy aircraft without some form of aided control. Moreover the presence of our own fighters had the tendency to confuse the A.A. defences of the ships, which could not easily distinguish between friend and foe, and in consequence were liable to withhold their fire until too late or engage friendly fighters and thereby give away the position of the convoy to the enemy.

H.Q. F.C.
Operational
Instruction
No.61/1942
Encl. 45A
HQCC/S.15011

In a statement of policy on the protection of shipping at night laid down for the guidance of Fighter Groups, due emphasis was given to the procedure of fighters remaining with the convoy as long as possible at dusk as this was a favourite period for enemy attack. Likewise at dawn, escort was to be resumed so that fighters were over the convoy at first light. Fighter Groups were to continue to make every possible effort to intercept the enemy on his way to or from the convoy area at night, and the use of A.I. for this purpose was to be developed wherever experience proved that results were obtainable. Fighters were to keep clear of the convoys during the hours of darkness. On bright moonlight nights the policy was to remain the same unless the Naval authorities considered that a particular convoy would be better protected by retaining the fighter escort.

(vi) V.H.F. Broadcasts to Ships at sea - 'Legacy'

HQ. No.11 Grp.
File
S/500/5/Ops/III
Encl. 81A

By the autumn of 1942, escort vessels with coastal convoys were able to intercept the V.H.F. R/T messages passing between forward relay stations and our own fighters, and were thus able to maintain their own plot of hostile aircraft and thereby gain valuable warning of the direction of their approach.

F.C.O.I.
No.58/1942

It was considered by the Naval authorities concerned that such information would be of even greater value to the Naval escorts when our own fighters were unable to be in the vicinity, so it was decided to institute trials whereby the position of hostile aircraft shown on Sector Operations Room tables would be broadcast by V.H.F. R/T for the special benefit of the escort vessels and their convoys.

In the first series of trials commenced on 28 November 1942, two sea areas were selected in the southern North Sea and Straits of Dover. The eastern area was covered by broadcasts from Hornchurch Sector Operations Room, the western area by broadcasts from Biggin Hill Sector Operations Room through their appropriate forward R/T relays.

The Duty Controller at the Sector Stations initiated a broadcast and was guided by the following instructions in making a decision:-

- (i) Broadcasts were normally to be made:

(a) At all times, day and night, when suitable hostile plots were observed, irrespective of what shipping was shown on the Sector Operations Room table.

(b) When it was evident that a raid was making direct progress towards one of the sea areas, and was already on its way across the Channel.

(c) At all times, irrespective of the direction of flight, when a raid was first identified inside the boundaries of the sea area.

(ii) Broadcasts were not to be made:

(a) Unless the raid was identified as hostile.

(b) At times when our own fighters were carrying out offensive operations in strength, when non-operational signals of this nature were undesirable.

(c) In cases when hostiles were flying at high altitudes and it was not considered that they would attempt to interfere with shipping.

110/S.500/5/Ops/II
Encl. 113A,
128A, 129A & 163A

Frequent broadcasts were made during the trials which lasted for forty-two days, but no further action appeared to have been taken, so that by 19 March 1943, the scheme had lapsed and was finally cancelled.

110/S.500/5/Ops/III
Encl. 10A

Ibid
Encl. 22A, 28A,
29A & 48A

Ibid
Encl. 49A

Ibid
Encl. 50A

However, by May 1943, with the prospect in view of a planned reduction of protecting fighters, the Naval authorities requested the reintroduction of the 'Legacy' broadcasts. This was approved by H.Q.F.C. and further trials were commenced early in the same month. At first frequent broadcasts were made by Hornchurch and Biggin Hill but later the broadcasts were centralised from Swingate. By 26 June 1943, HQ. No. 11 Group had found that to have one transmitter and a Controller permanently allotted to a non-operational task was a handicap on a key station like Swingate. It was also understood that practically no use was being made of the broadcasts by the Naval authorities, and very few ships were equipped to receive them. In the circumstances, permission was requested to discontinue this warning system. The matter was taken up by Fighter Command with the C.-in-C. Nore, who agreed on 7 July 1943 that, in view of the unreliability of the reception by ships and the handicap which these broadcasts imposed on No. 11 Group, the scheme could be abandoned.

(vii) The establishment of additional practice areas

F.C./Ops.INSTR
No.37/1942

For surface craft operating or exercising in the vicinity of, or anchored outside, a major harbour or port there was already in existence as part of Fighter Command's normal routine the facilities and organisation for their protection from enemy aircraft attack.

11G/S.500/S/Ops
1.
Encl. 19A & 27A

By May 1943, however, requests were beginning to trickle-in to Headquarters Fighter Command from the appropriate Naval Commands for the establishment of additional practice areas within which Combined Operations exercises with landing craft could be carried on. These vessels were to be provided with fighter protection of a category which would be decided on consideration of the number engaged in the exercise and the degree of attention that the enemy was thought likely to give such movements.

Ibid
Encl. 59A

Four months later as the build-up for 'Overlord' took shape, this trickle had grown into a flood of applications all of which were labelled as an urgent requirement. Each request was examined on its merits and normally permission was granted for the setting-up of additional practice areas. It was left to the local Naval and Air Force authorities to make their own arrangements for letting each other know what shipping would be operating and what protection could be provided.

It was of the utmost importance that the appropriate Fighter Groups and Sectors should receive up-to-date information concerning the position of units they were protecting. Times of arrival and departures, alterations to sailing programmes and all 'fixes' were to be passed from the Naval Command plot to the appropriate Naval Fighter plot at the earliest moment for onward transmission to the Fighter Command Group and sector as required. Unless this was done in good time, aircraft might well be in the air or at readiness for unnecessary periods, or despatched to incorrect positions. In order to avoid such wastefulness, the form of notification of convoy plots and the methods of communication had been standardised throughout Fighter Command by September 1943. As each new additional area came into force, so further air cover was required, sometimes a standing patrol was necessary and at other times 'Fighter Watch' would suffice.(1)

FC/Ops. INSTR
No. 11/1943

(viii) Operations - March 1943 to May 1944

HQ.FC. File
FC/S. 30270
H.Q.F.C.
Form Y. &
H.Q.C.C.
O.R.B.
March 1943

March 1943

Enemy attacks on coastal shipping continued to be spasmodic and incidental to other targets, but there was a considerable increase in the enemy's day and night reconnaissance round our coastline during the month of March, (2) in fact it was the highest on record since October 1942. There were nine attacks, four of which took place in the Thames Estuary/Dover Straits area, three in the Plymouth area and one each off the East and North-East coasts. No Allied ships were sunk. One enemy aircraft was claimed destroyed by ships guns but the protecting fighters did not make any claims. The enemy continued to make the best of a low flying technique and no new tactics came to light. The reversion to attacks by night in two isolated cases was of passing interest. Minelaying by the G.A.F. was on a reduced scale.

Weather was operational for fighters for 75% of the month, although there was a considerable amount of low cloud and fog off the south coast areas. Protection for coastal shipping

HQFC. ORB.
Appendices
Form "Y"
Jan - May 1944

- (1) During the first five months of 1944, when the various exercises preparatory to "Overlord" were in full swing the number of special defensive sorties flown in aid of the forces engaged were:-

January - 1070	March - 1301
February - 1043	April - 1198
	May - 1768

- (2) G.A.F. Anti-Ship Operations - March 1943.

<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
565	75	7	2	1	52

was provided by Fighter and Coastal Command aircraft during the hours of daylight to the extent of 1,612 sorties, of which the wastage amounted to three aircraft.

Ibid

April, May and June 1943

During the next three months, the enemy made only three attacks on shipping plying around the United Kingdom coastline, none of which proved fatal to the vessels attacked.

With no incidents against coastwise shipping during April, the month proved to be very dull.⁽¹⁾ Minelaying by the G.A.F. was higher than in March and took place on four nights in areas between the Thames Estuary and Flamborough Head.

There were claims for six enemy aircraft destroyed by ships guns, all of which were presumed to be minelayers, but again the protecting aircraft made no claims.

Weather during April was suitable for operations for most of the period and did not hamper air activity. Compared with March, there was a substantial reduction in protective sorties flown by Fighter and Coastal Commands whose total effort only amounted to 793, of which two were wastage.

The enemy's effort devoted to shipping reconnaissance over Home Waters during May showed only a small variation from the previous month.⁽²⁾ There were two attacks, however, both off Lowestoft during daylight hours. It was considered that as they were made by Fighter-bombers both attacks were secondary to the primary operation of attack against land targets. No ships were sunk, but ships guns claimed five enemy aircraft destroyed. Enemy minelaying was on a reduced scale and was suspected to have taken place in areas between the Thames Estuary and the Tyne. There was yet a further reduction of sorties by Fighter and Coastal Commands for ship protection during the month with a wastage rate of only one aircraft.⁽³⁾

Regular reconnaissance off the east and south coasts continued to be flown by the enemy during June.⁽⁴⁾ There was

(1) G.A.F. Anti-ship operations - April 1943.

<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
443	110	-	-	6	70

(2) G.A.F. Anti-Ship operations - May 1943.

<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
399	119	2	-	5	58

(3) Fighter and Coastal Command Operations - May 1943.

<u>Despatched</u>		<u>Wastage</u>	
<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
269	24	1	-

(4) G.A.F. Anti-Ship Operations - June 1943.

<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
413	114	1	-	-	25

no indication in the existing disposition of the enemy's anti-shipping air forces to suggest the likelihood of any resumption of intensive operations against our coastal shipping. There was only one attack by the G.A.F. during the month which occurred off Cromer on 13 June by a single aircraft probably on armed reconnaissance. Minelaying was 50% below the May effort. The enemy suffered no casualties from ship's guns or fighter aircraft. Our own shipping protection sorties were substantially increased during the month, and again only one aircraft was lost.(1)

H.Q.F.C. File
FC/S.35169
H.Q.F.C.
Form Y
& H.Q.C.C.
ORB
July, August
& Sept. 1943

July, August and September

Although there were no attacks on Allied coastal shipping in Home Waters by the G.A.F. during the third quarter of 1943, the enemy consistently maintained a good average of reconnaissance and minelaying sorties each month.(2) Some of the latter were suspected to have been training flights and it was, therefore, difficult to state whether mines were laid by all the aircraft recorded. There was a marked increase in minelaying sorties in September but there was no significant increase in ships sunk. Throughout the period there were only three claims by ships guns for enemy aircraft destroyed. Fighter and Coastal Commands kept pace with the demand for ship protection but lost four aircraft in the process.(3)

Ibid
Oct. Nov. &
Dec. 1943.

October, November and December

For the last quarter of 1943, the enemy's reconnaissance and minelaying activities in Home Waters were on a lower scale than the preceding quarter and again no direct attacks on coastal shipping were made.(4) October was the outstanding month for minelaying when 120 sorties were flown, but no increase in ship sinking resulted.

Ship's guns were the only claimants for two enemy aircraft destroyed, throughout the period. Our own defensive

(1) Fighter and Coastal Command Operations - June 1943.

<u>Despatched</u>		<u>Wastage</u>	
<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
768	16	1	-

(2) G.A.F. Anti-Ship Operations - July, August, September 1943.

	<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
	<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
July	465	146	-	-	1	70
Aug.	530	96	-	-	-	30
Sept.	474	74	-	-	2	180

(3) Fighter and Coastal Command Operations - July, August, September 1943.

	<u>Despatched</u>		<u>Wastage</u>	
	<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
July	571	14	2	-
Aug.	300	14	1	-
Sept.	322	13	1	-

(4) G.A.F. Anti-Ship Operations - October, November, December 1943.

	<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u>	<u>Minelaying</u>
	<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>	<u>Wastage</u>	<u>Despatched</u>
Oct.	387	97	-	-	2	120
Nov.	423	90	-	-	-	20
Dec.	354	95	-	-	-	5

operations fluctuated between 300 and 400 for the first two months of the period but dropped off heavily in December.(1) Three aircraft were lost. Adverse weather conditions throughout these three months possibly accounted for some reduction in the scale of effort on both sides.

Ibid
Jan., Feb. &
Mar. 1944

January, February and March 1944

Daylight reconnaissance by the G.A.F. over Home Waters for the first two months of 1944 was on very much the same scale as the preceding months. During March there was an upward trend and the sorties rose to over 500, but still there was no attempt to attack the shipping sighted. Claims for enemy aircraft destroyed totalled seven; two by our own fighter aircraft and five by ships' guns. One other claim for an enemy aircraft destroyed was shared between the Army and ships' guns.(2) Own sorties for shipping protection reacted from February onwards to the enemy's increased effort, but only two aircraft were lost.(3) Minelaying by the G.A.F. was entirely absent during January and February, but in March they managed 43 sorties. No Allied shipping was sunk within coastal waters from mine causes during this quarter.

Ibid
Apr. & May
1944

April and May 1944

Enemy reconnaissance over Home Waters was maintained at a reasonably high level by day during April, and stepped-up sharply in May to reach 535 sorties, the highest figure recorded since March 1943. Night reconnaissance and minelaying also showed a decided upward trend but still no attempts were made to attack shipping under way, nor did the increased minelaying produce any significant results. There were four claims for enemy aircraft destroyed, one by ships' guns and three by fighters.(4)

(1) Fighter and Coastal Command Operations - October, November, December 1943.

	<u>Despatched</u>		<u>Wastage</u>	
	<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
Oct.	298	6	-	-
Nov.	384	20	-	-
Dec.	190	17	1	2

(2) G.A.F. Anti-Ship Operations - January, February, March 1944.

	<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u> <u>Wastage</u>	<u>Minelaying</u> <u>Despatched</u>
	<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>		
Jan.	379	202	-	-	2	-
Feb.	446	10	-	-	3	-
Mar.	533	45	-	-	3	43

(3) Fighter and Coastal Command Operations - January, February, March 1944.

	<u>Despatched</u>		<u>Wastage</u>	
	<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
Jan.	244	10	1	-
Feb.	378	106	1	-
Mar.	593	42	-	-

(4) G.A.F. Anti-Ship Operations - April, May 1944.

	<u>Despatched</u>		<u>Attacked</u>		<u>Allied Claims</u> <u>Wastage</u>	<u>Minelaying</u> <u>Despatched</u>
	<u>Day</u>	<u>Night</u>	<u>Day</u>	<u>Night</u>		
Apr.	435	31	-	-	2	35 +
May	535	97	-	-	2	67 +

Our own protective sorties for coastal shipping were about the lowest on record, as most of the defensive fighters were covering the various exercises and assemblies of shipping taking place in the Channel and adjacent areas in preparation for 'Overlord'. Own losses for the two months amounted to two aircraft.(1)

Despite the reinforcement of FliegerKorps IX since December 1943, it was not until the last week in April 1944, that enemy air operations were directed against Allied preparations for the invasion of Western Europe, when two attacks on the nights of 23/24 and 25/26 April were concentrated mainly in the Portsmouth area and against shipping assemblies at the Solent and Poole/Swanage anchorages. Although a total of some 200 aircraft were engaged in these two operations, and smaller numbers on three succeeding nights,(2) all the attacks proved wholly ineffective, their failure was attributed by the Germans to interference with navigational aids by British counter-measures. One further and more determined attack was made on major fleet units at Plymouth on the night of 29/30 April, when FliegerKorps IX was supplemented by some fifteen specialised anti-shipping aircraft of FliegerKorps X with 'Fritz-X' 1,400 Kg. radio controlled bombs; once again, no important objective was hit. Nine enemy aircraft were claimed destroyed during these attacks. After the latter attack, no further operations with missiles of this type were undertaken during the remainder of the period under review.

(ix) Conclusion

The Luftwaffe's lack of a long term policy in its anti-shipping campaign in British coastal waters was woefully apparent during the period under review, i.e. March 1943 to May 1944. During the latter part of the period, in particular when the preparations for 'Overlord' were in an advanced stage, the amount of shipping in addition to the normal routine convoys must have reached record totals in both numbers of vessels and tonnage; yet it remained virtually unmolested. By failing to prevent or even appreciably to hinder the Allied build-up, either by direct attack or aerial minelaying, the G.A.F. permitted the establishment of overwhelming Allied material superiority. At the same time it also failed to provide adequate protection for its own sea transport.

(1) Fighter and Coastal Command Operations - April, May 1944.

	<u>Fighter</u> <u>Over Assemblies</u>	<u>Despatched</u>		<u>Wastage</u>	
		<u>Fighter</u>	<u>Coastal</u>	<u>Fighter</u>	<u>Coastal</u>
Apl.	90	194	10	2	-
May	1,135	188	24	-	-

(2) G.A.F. Operations - 23/24 to 29/30 April 1944.

<u>Nights</u>	<u>Despatched</u>	<u>Wastage</u>
23/24th	40	-
25/26th	{ 100	4
	{ 50	
26/27th	34	-
27/28th	25	-
28/29th	10	2
29/30th	22	3

There is no doubt that the G.A.F. commitments and casualties sustained during 1943 in the Mediterranean and Russian campaigns had repercussions in the framing of policy for shipping attacks in N.W. Europe. When, added to this, the decision was made in the Spring of 1944 by the German High Command to concentrate all possible resources on fighter production, the result was a major decline in the Luftwaffe's bomber strength, including the anti-ship element, which crippled any attempt to oppose an Allied invasion by air action.

Although the scale on which Allied air cover was provided in Home waters during the period was reduced systematically in accordance with prevailing circumstances, it may at first appear to have been somewhat out of proportion to the size of the enemy force employed, especially as the enemy so seldom displayed any aggressive intentions. However, the consistency of his reconnaissance over Home waters did not permit any risks being taken, and the Allied policy of ample protection was vindicated by the freedom enjoyed from any serious interruptions during the build-up of so vital an expeditionary force. Moreover this protection denied any consistent aerial scrutiny of the progress in this build-up during April and May 1944. This was a major contributory factor to the surprise effected by the Normandy landing on 6 June 1944.

(X) G.A.F. operations against ocean convoys off the Portuguese coast

From March 1943 the long range F.W.200.s based near Bordeaux were used primarily for reconnaissance in co-operation with U-boat dispositions but the aircraft occasionally attacked convoys on their own account. A few of such incidents occurred during March in the area 250 miles Southwest of Cape Finisterre. After the first defeat of the U-boats and their withdrawal to the Azores area towards the end of May, the F.W.200 aircraft were encouraged to increase offensive action in order to make up for the absence of U-boat operations in the Eastern Atlantic. A dead set was made on small local convoys southbound from Lisbon round Cape St. Vincent. This latter being within fighter range from Gibraltar, a detachment of Beaufighters from No. 248 Squadron plus six more manned by crews from the Gibraltar Hudson squadrons were sent out to provide fighter escorts for these little convoys. After some indecisive combats in June, a determined attack by six enemy aircraft on a convoy off Cape St. Vincent on 9 July was broken up by the fighter escort during which two F.W.200 were shot down and two more seriously damaged. Thereafter the enemy aircraft abandoned this coast in favour of their former area well southwest of Cape Finisterre where they were lucky enough on 11 July to locate the transport convoy D on its way to Freetown. Although the convoy was receiving Catalina anti-U-boat escort, the slow undergunned flying boat was no match for the six F.W.200.s who attacked. Both the California - 16,792 tons and Duchess of York - 20,021 tons were set on fire and had to be sunk by the surface escort but the third ship, the Port Fairy - 8,337 tons, though damaged, was able to make Casablanca with the survivors.⁽¹⁾ Similar attacks in the same area took place at the end of July and again in mid-August resulting in further loss and damage to two merchant

(1) The two transports were only carrying 500 Service personnel each and there were no casualties but 57 of the crews of the two ships lost their lives. The loss of these ships delayed the transport of troops who were to have embarked in them at Freetown bound for the Middle East.

convoys. Here again it was the same story of the slow cumbersome A/U air escort being unable to ward off the attackers who released their bombs from a high altitude out of effective range from the A/A guns of the surface escort. However, these attacks by long range enemy aircraft ceased in September 1943 when their whole effort was required once more for purely reconnaissance duties with the redeployed U-boat formations. Subsequent enemy air action was confined to spasmodic sorties by He.177 carrying glider bombs which are recounted in the U-boat War chapters VI and XIV.

Ships sunk and damaged by F.W.200

Convoy

4 March - Chateauroux - 4,765 - dam. in 4110N x 1510W	-	XK.2
14 March - Duchess of York - 20,021 - dam. in 4100N x 1124W		
21 March - City of Christchurch - 6,009 - Sunk in 3935N x 1246W	-	KMS.11
22 May - Alpera - 1,777 - Sunk 15 miles N.W. of C. St. Vincent		
30 May - Llancarvan - 4,910 Sunk just S. of C. St. Vincent		
18 June - Lalande - 7,453 - dam. just S. of Lisbon		
23 June { Volturno - 3,424 } { Shetland - 1,846 }	Sunk close off C.St.Vincent	
9 July - Stanhope - 2,337 - dam. close off C.St.Vincent		
11 July { California - 16,792 } { Duchess of York - 20,021 }	sunk in 4115N x 1524W	D
12 July - Port Fairy - 8,337 - dam. in 3718N x 1437W		
26 July { El Argentino - 9,501 - sunk } { Empire Brutus - 7,233 - dam. }	in 3950N x 1338W	OS.52
27 July { Halizones - 5,298 - sunk } { Empire Highway - 7,166 - dam. }	in 3804N x 1259W	
29 July - Empire Darwin - 6,765 - dam. in 4452N x 1600W		MKS.18
15 Aug. { Warfield - 6,070 - sunk } { Baron Fairlie - 6,706 - dam. }	in 3959N x 1258W	KMS.23
{ Ocean Faith - 7,173 - dam. in 3905N x 1254W }		
13 Sept. - Fort Babine - 7,135 - sunk in 4131N x 1439W		XK.11 straggler

CHAPTER XVII

POLICY IN THE AIR WAR AT SEA PRIOR TO OPERATION OVERLORD -JANUARY TO 31ST MAY 1944(i) The situation at the end of 1943

The U-boat war had died down to one of unsuccessful sniping at convoys from scattered grouplets of submerged U-boats in the Northern Atlantic and a cessation of practically all overseas U-boat action. Ultra cautious diving passage through the transit areas had resulted in relative immunity from air attack but at the expense of greatly increased passage time.

The war against German coastwise shipping along the borders of the North Sea was in active prosecution by the established Beaufighter strike wings but corresponding action by the enemy against our East coast and Channel traffic registered no success by the G.A.F. and only occasional loss from E-boat attack.

The threat to our ocean shipping from enemy major naval units based in North Norway was almost non-existent following the crippling in the autumn of the Tirpitz and the sinking of the Scharnhorst in the last days of 1943 by naval action.

(ii) Policy and plans for the liberation of France

These assumed a major importance during the first five months of 1944. Details of this operation under the cover name of Overlord had been in preparation since early in 1943 directed by the Chief of Staff to the Supreme Allied Commander (designate) whose short title was COSSAC.⁽¹⁾ Up to January 1944 the planning concerned the Army and Air Forces in the actual invasion together with the provision of transport, assault craft and beach support by the Navies. No specific plan for the protection at sea of this undertaking on passage or subsequent to the assault was in existence as yet. As far as Coastal Command was concerned the policy to effect this started to assume a major importance late in January and became intimately bound up with a concurrent proposal to reduce the strength of the air forces engaged in the war at sea. These will therefore be recounted as one story

(iii) Mutual clash of two proposals(a) Proposal to reduce the air forces engaged in sea warfare

Extract from
P.M.'s Frozen
1078 in A.M.
File C.M.S. 545
Encl. 1A

Resulting from the recent quiescence in the U-boat war the Prime Minister on the 3 January minuted the First Lord, the First Sea Lord and the Chiefs of Staff Committee that in view of the improvement in the anti-U-boat campaign, it ought to be possible to divert a proportion of the air forces so employed to transportation duties in the critical phase of

(1) COSSAC was Lieut. General Sir F.E. Morgan. The post of Supreme Allied Commander of the Expeditionary Force was not designated to General Dwight Eisenhower till December 1943. He arrived in London on 15th January 1944 and received the official directive from the Combined Chiefs of Staff on 14 February.

Overlord adding that "we must be careful not to make the dangers of the future greater by overprovision against a recurrence of dangers we have largely surmounted."

A.M.
C.M.S. 250
Minutes 27
to 29

The C.A.S. in turn minuted the Secretary of State for Air and certain Air Ministry Departments that he thought the time had come to reduce the resources locked up in Coastal Command and elsewhere for the U-boat war. On receiving agreement from the S. of S. he directed a framing of proposals to cut down the A/U effort so as to provide towing aircraft and certain other re-inforcements to Transport Command.

A.M. File
C.M.S. 545
Encl. 2A

The Director of Operations (M) protested in a letter dated 4th January to other Air Ministry Departments that in face of a still growing U-boat fleet and its rising morale due to fewer casualties he strongly advised against any reduction in the A/U effort. Moreover any withdrawal of British squadrons would probably result in American pressure to release more of their squadrons at present operating from this country. If aircraft must be made available for towing purposes, the question of withdrawing them from Coastal Command should be left to the latest possible date. In this opinion the D.C.A.S. concurred. A.C.A.S. (P) was inclined to agree but advised examination of the question in conjunction with the Admiralty Staff.

ibid
Minute 6
11/1/44.

A few days later the C.A.S. minuted A.C.A.S. (P) to the effect that the pressure on manpower would not allow the continuance of the rather lavish scale of squadrons provided for the war at sea in the earlier part of the war when Admiralty demands were irresistible. The U-boats' tails were now well down in all areas and he wished a review made of the situation with suggested reductions in strength and target plan for air forces engaged in the war at sea so as to increase those available for the war in the air and over land against Germany.

Thus to a comparatively minor requirement for re-inforcement to Transport Command was added a much larger commitment to find surplus manpower for the other Air Commands.

C.O.S. (44)
10th Meeting (O).
13.1.44.

At a Chiefs of Staff meeting on 13 January there was a feeling against any diminution of the A/U effort but the C.A.S. said that, before subscribing to any statement that it was impracticable to withdraw air forces from anti-U-boat operations, he would like the opportunity to examine the total strength particularly from a manpower point of view and that the possibility of a reduction should be studied by the Air and Naval Staffs. Accordingly the Committee invited the Air Ministry and Admiralty in consultation to review the position and make recommendations.

Extract from
Grand 1353
in A.M. File
C.M.S. 545
Encl. 8A.

Later the same day when replying to the Prime Minister's minute, the First Lord and First Sea Lord stated that in their view it was essential that the offensive against the U-boats should not be reduced. Aircraft could not be withdrawn for conversion to transport duties without relaxing the pressure on the enemy which was keeping him subdued. Moreover any reduction in Coastal Command would increase the difficulties of the all too few surface escorts. However, while this was the opinion of the Admiralty and the Chiefs of Staff Committee in general, the C.A.S. wished to reserve his agreement pending a review of the whole position.

A draft paper on the numbers of aircraft required for the war at sea was prepared by the 19 January by the Air Staff. This endorsed the opinion already expressed by the D. of Ops. (M)

ibid
Encl. 9B

that a reduction in effort against the U-boats was unwise although it might be possible to release the two Coastal Command Halifax squadrons by the 1 March for training in towing gliders. It was not recommended to reduce Coastal Command's anti-ship strike force since enemy coastwise shipping was an essential element in German transportation and would assume even added importance if the pre-Overlord bombing of German railways was successful.

However, in the Mediterranean the limited U-boat strength could permit of the G.R. force being reduced by four squadrons and since the need for anti-ship operations had decreased following the surrender of the Italian Fleet it should be possible to recall two Beaufighter squadrons. The West and South Africa Commands could each reduce by one Squadron but no reduction was recommended in the Indian Ocean.

A.C.A.S. (P) File
No. 57 Part I
Encl. 5811
20.1.44.

A.M. File
C.M.S. 545
Minute 11.
21.1.44.

This draft was sent to the C.A.S. on 20 January for approval before any approach was made to the Admiralty Staff. It represented the furthest that the Air Staff considered reduction in the air forces at sea should go until after operation Overlord. The C.A.S. replied that it was not at all what he wanted as it ignored certain changes in the war at sea since 1942 which were of permanent advantage to us. The paper he required must be based on the fundamental strategy that Overlord was the supreme Anglo-American offensive operation for 1944 and therefore only the minimum forces should be devoted to other operations. Guidance was then given in the method to assess requirements and when these had been related to existing strengths there should appear large surplus manpower resources which could be used to strengthen the Bomber, A.E.A.F. and Maintenance Commands.

ibid
Encls. 12A, 13A
and 15B

After further interdepartmental correspondence a meeting was held on 31 January with the V.C.A.S. in the chair, and at which a representative of Coastal Command was present, to discuss the method of presentation of the new paper. This was drawn up under various headings and D. of Ops. (M) was made responsible for co-ordinating a first outline to be submitted to the meeting on 10 February.

Ibid
Encl. 19A

In the Operations (M) department of the Air Ministry it was realised that any possibility of cuts in the strength of the air forces employed at sea was dependent on what was considered to be the scale of Coastal Command's commitment both prior to and during operation Overlord. Accordingly the first draft of the new paper called for by the C.A.S. took full note of both Admiralty and Coastal Command opinion. The conclusions were summarised that to meet its commitment during Overlord it would be necessary to have in the Command at home at least six more squadrons than at the present. No reduction in overseas Commands could be recommended to make up this deficiency other than two squadrons from South Africa and possibly one from West Africa at a date closer to the mounting of Overlord.

(b) Coastal Command and Admiralty views on the Commands commitment in Overlord.

C.C.
TS. 15,322
Encls. 1 to 5

Meanwhile Coastal Command had received no official intimation from the Admiralty regarding any special role or requirements in Operation Overlord but from late in January the Headquarters Staff prepared appreciations on what was likely to be needed for protecting the sea borne passage of the expedition against U-boat and surface craft attack. Preliminary calculations were drafted as to numbers and means of implementation.

This delay in direction was partly due to Admiralty uncertainty as to the nature and extent of reductions fore-shadowed by the C.A.S.'s remarks in the Chiefs of Staff meeting but early in February a summary was made of the probable Coastal Command commitments in Operation Neptune, the cover name for the sea transportation of the assault forces.⁽¹⁾ In this, Coastal Command backed up by surface support groups was required to block U-boat entry to the English, Bristol and North Channels while continuing to safeguard certain Atlantic convoys which were and would continue to carry material vital to the success of Overlord. The Admiralty Staff opinion was that Coastal Command at home would need strengthening and if the two Hudson squadrons at Gibraltar could be spared from that area they should be made available for inshore patrols at home. The summary was sent on 8 February to the First Sea Lord with a covering minute from the V.C.N.S. to the effect that no detailed planning could proceed until the Air Ministry requirement for transport aircraft was clear and recommended first, that they should be asked to state their precise requirement and second, that the Admiralty in consultation with Coastal Command should assess the U-boat threat and the force required to deal with it.

On 11 February the Admiralty sent the Air Ministry and Coastal Command an advanced copy of their appreciation of the U-boat threat and the measures to be taken against it. Briefly the conclusions were:-

- (A) - Vigorous countermeasures to the U-boats must be maintained in the months prior to Overlord.
- (B) - Offensive air patrols must be instituted just prior to and during Overlord in the outer approaches to the English, Bristol and North Channels.
- (C) - A/U air and surface escort were required for all invasion convoys.
- (D) - Coastal Command in home waters was not of sufficient strength. Re-inforcement could come from the Azores and Gibraltar provided replacements could be arranged with the Canadian and American authorities. The Admiralty would also assist with shorebased Fleet Air Arm squadrons.

Further appreciations followed on the 13th on the probable scale of attack by enemy light surface forces and measures desirable against them but these did not affect the overall conclusion that the main effort to the Command must be directed against the U-boats.

- (c) Preparation of a paper on Coastal Command's role in Overlord

There was thus little difference between the Air Ministry and Admiralty appreciations on the requirements for Overlord from Coastal Command. Upon the initial specific provision of aircraft for Transport Command, the A.O.C. in C. Coastal

(1) This together with the whole organisation of sea transport, supply, naval support and beach landings was the responsibility of the Allied Naval Commander (Admiral Sir Bertram Ramsay - short title ANCKF.)

ibid
Encl. 8A

Command(1) informed the First Sea Lord on the 14 February that he had discussed the matter with Rear-Admiral Brind (A.C.N.S.(H)) and considered that his last remaining three Hudson squadrons could be relinquished without compromising the effectiveness of present operations provided the Americans could be persuaded to send two Catalina or two Ventura squadrons to Gibraltar to operate under Coastal Command control.(2) There was however the question of Overlord to consider. He was not yet fully in the picture as to his Command's commitments in this operation but with the loss of three squadrons there would be few if any aircraft available for offensive operations in the Bay itself or anywhere else if these were required in addition to the task of blocking the approaches to the English Channel and Irish Sea together with air cover to a proportion of the Atlantic convoys.

C.C. File
S.15,187
Encls. 1 to 9.

On the following day it was jointly agreed between the Admiralty and Air Ministry that, anticipating some assistance from the American squadrons in the Moroccan Sea Frontier, Nos.48 and 233 Hudson squadrons at Gibraltar should be recalled forthwith and turned over to Transport Command. The third Hudson Squadron - No.269 in Iceland - would transfer its experienced personnel to Transport Command and would then be reformed as a composite meteorological and air sea rescue squadron stationed in the Azores.

C.C. File
MS.114 Part I
Encls. 11A and 12A

Work proceeded at H.Q. Coastal Command on the detailed preparation of a paper on the requirements and employment of the Command prior to and during Overlord. One of the conclusions was that the tasks could only be met if the manning state of all squadrons was raised to 100% of establishment, that Planned Flying schedules were stepped up to maximum and squadron training suspended for two months before D day. The final draft was referred to the Admiralty at a meeting there on 17 February and the agreed paper put before an Air Ministry meeting on 25 February. Here also there was agreement that the Command was under-strengthened in maintenance and certain strike aircraft categories. Regarding the requirement for towing aircraft, Sir Sholto Douglas said he was particularly anxious not to lose the two Halifax squadrons as they were highly trained in the night A/U effort. He would much prefer to lose Sunderland personnel if he had to surrender any further manpower. The V.C.A.S. (chairman) suggested that direct or indirect re-inforcement of Coastal Command operational squadrons might be obtained from United States or Canadian sources so as to make up the A/U requirement which in the paper was shown to be deficient by 1,456 sorties per month. Finally the meeting asked the A.O.C.-in-C. to consider:-

Ibid
Encl. 15A

- (1) Air Marshal Sir John Slessor had left Coastal Command on 12 January to take up the post of Deputy C.-in-C. Mediterranean Allied Air Force and A.O.C.-in-C. of the R.A.F. Mediterranean Middle East Command. His successor, Air Chief Marshal Sir Sholto Douglas, did not take over as A.O.C.-in-C. Coastal Command till 20 January, 1944.
- (2) A request for this was sent direct to Cominch (Admiral King) by the Admiralty and, as might have been expected, stirred up more high feeling over the touchy matter of operational control in the Gibraltar area. A full account is given in Section (iv).

- (i) How many personnel were required to bring maintenance and squadrons up to 100% establishment.(1)
- (ii) How many additional squadrons would be needed if Gibraltar, Iceland and the Azores were drawn upon.
- (iii) How many if some replacement could be arranged by the allocation of U.S. squadrons.

The paper was issued on 29 February under the title of the Role and Commitments of Coastal Command in Operation Overlord with a plan of deployment of 29 squadrons (414 aircraft) for A/U operations and 11 squadrons (176 aircraft) on anti-ship and long range fighter duties. An attached chart showed the location of the A/U and anti-ship patrols together with the number of sorties per day on each. It was made clear that the achievement of the sortie task was dependent on 100% establishments, maximum flying schedules and suspension of squadron training. It included provisional assistance by Fleet Air Arm squadrons and escort carriers. The actual invasion area was called the Battle Zone and extended between the Straits of Dover and a line from Portland Bill to Jersey. Inside this zone the protection of the expedition was left to Naval forces and the Allied Expeditionary Air Force (short title - A.E.A.F.). Coastal Command would thus hold the ring around the assault area. Copies of the paper were sent to the Admiralty, Air Ministry and A.E.A.F.

ibid
Encl. 16A

- (d) Preparation of a new Air Ministry paper on the reduction of the Maritime Air Forces.

Meanwhile in the Air Ministry the review called for by the C.A.S. was still in the course of preparation. On 20 February a draft on this subject was circulated by the Air Planning Staff. This was drawn up on the lines laid down by the C.A.S. and stressed the fact that Overlord had been given over-riding priority over all other operations. The minimum requirements for the Air Forces in Overlord were estimated and taking into account all the promised reinforcements from overseas commands the as yet unmet needs amounted to:-

A.M. File
C.M.S. 545
Encl. 20A

- (a) The crews of three Hudson squadrons and ten Halifax aircraft for the airborne forces.
- (b) Personnel to meet the deficiency in manpower of the A.E.A.F. approximating 27,000 men.

It appeared that these could only come from resources at present allotted to the defensive role of anti-U-boat and anti-shipping warfare. After a detailed examination of world wide strengths in the Air Sea War the paper concluded that the following squadrons could be relinquished:-

- (1) From Coastal Command - 17 squadrons (297 A/C)
- (2) From the Mediterranean - 13 squadrons (210 A/C)
- (3) From West Africa - 4 squadrons (44 A/C)
- (4) From South Africa - 3 Squadrons (54 A/C)
- (5) From the Indian Ocean - 4 squadrons (44 A/C)

-
- (1) This number was given on the 4 March as 1,991 technical tradesmen and on 8 March whittled down to 1,679 men.
Ref: A.M./C.M.S. 545 encl. 30A and C.C./MS.114 Part I
Encl. 23A.

These figures were so totally at variance with other Air Ministry appreciations not to mention the Coastal Command and Admiralty opinions that the Director most concerned - D. of Ops. (M) - drew up another draft in which he re-iterated his previous arguments modified in the light of the decision to transfer the three Coastal Command Hudson squadrons and the recent offer of assistance from the Mediterranean and South Africa. His conclusions were:-

ibid
Encl. 23B

(1) that it had been established that a reduction in Coastal Command was unjustifiable, indeed it was necessary to re-inforce the Command if it was to undertake the Commitments required in Operation Overlord.

(2) Some of these re-inforcements could come by rolling up uneconomic squadrons, absorbing their personnel into the more productive squadrons and withdrawing the equivalent number of squadrons from Iceland, the Azores or Gibraltar.

(3) That the Chiefs of Staff be asked to approach the Americans or Canadians to provide replacements for the squadrons withdrawn.

ibid
Encl. 31A

A further meeting was held in the Air Ministry on the 2 March with the V.C.A.S. in the chair to reconcile the diverse drafts. It was agreed that a redraft should be prepared by D. of Ops. (M) in collaboration with A.U.S. (A). The final paper was completed on 8 March. The opening appreciation followed closely the substance already circulated by the Admiralty and Coastal Command Staffs. It stated that far from a reduction in Coastal Command's strength being possible it was imperative to make good deficiencies in the Command's manpower. Overseas, a saving of four Ventura squadrons was estimated from South Africa which together with offers already made would permit the Mediterranean Air Command to release two Beaufighter squadrons and five G.R. squadrons plus the personnel of a sixth. No savings could come from West Africa as the one G.R. long range squadron was being sent to the Indian Ocean from which also no reductions could be made, especially in view of the recent transfer to Singapore of seven Japanese battleships and two fleet carriers.

ibid
Encl. 34B

Several alternatives were suggested in the paper as to how best to employ these overseas savings which amounted approximately to 1,500 maintenance personnel and eight squadrons. The recommendation was that all should be given to Coastal Command in order to make up for its deficiency of 1,456 A/U sorties per month and 1,679 maintenance personnel.

ibid

Any re-inforcement to the other R.A.F. Commands for operation Overlord would have to come through American or Canadian allocation of G.R. squadrons to relieve existing fully occupied Coastal Command squadrons. While it was probable that some assistance in this way could be arranged, the negotiations would take time with more delay in moving and settling in, and this method was not recommended.

ibid
Encl. 35A

The paper was passed by the V.C.A.S. and reached the C.A.S. on 9 March. However, he found the paper entirely unsatisfactory and no better than the one to which he had taken exception in January. He did not accept the estimate of the U-boat threat either to Overlord or the convoys from America, neither did he consider there would be any serious targets for the anti-ship strike aircraft. Finally he said the paper as drawn up was quite unfit to be presented to the Chiefs of Staff. He therefore instructed his own Staff

A.C.A.S. (P)
File No. 57
Part I
Encl. dated
11.3.44.

(17500)589

SECRET

574

Officer to re-write the paper which he would send to the Air Staff for comment.

ibid
Encls. dated
12 and 13.3.44.
and

C.C. File MS.114
Part I
Encl. 26A

This repudiation created difficulties in the active discussions then in train between the Air Ministry, Admiralty and Expeditionary Force Staffs regarding the final detailed planning of the sea protection of Overlord based on the acceptance of Coastal Command's paper on their role and commitments: furthermore it brought to a standstill any decision on what assistance was to be accepted from the Overseas Commands' offers or asked for from the American and Canadian authorities.

ibid
Encl. 24A to
31A

However, planning in Coastal Command H.Q. continued on the existing basis. A meeting was held on 16 March in the Admiralty at which the measures necessary to secure the sea communications generally and Overlord in particular were reviewed in detail. It was agreed that the planned rehearsal (Exercise Fabius scheduled for 1 May) might result in vigorous re-action by the enemy. A.N.C.X.F. said that sufficient forces, air and surface, should be available to promptly counter such action. Sir Sholto Douglas stressed the necessity of keeping surface support groups clear of the air flooded zone at night and the meeting agreed that surface craft would be most profitably employed between the air zone and the "Funnel" of assault convoys crossing the English Channel between the Isle of Wight and Normandy. Sir Sholto asked for the promised Fleet Air Arm squadrons (1) to be turned over to him about 14 days before Exercise Fabius. He also said he must be made fully aware of all operations by our own surface craft against enemy light craft because it was exceedingly difficult for his aircraft to differentiate between the two. He thought the actual Battle Zone should be left entirely to our surface forces but the Vice-Admiral Dover quoted the successes that the R.A.F. ground controlled Albacores had had against E-boats in his area in co-operation with his M.T.B.s and it was left to later operational planning to decide the limits of air anti-ship operations. Later specific enquiry to A.N.C.X.F. revealed that he was relying entirely on Coastal Command to detect and engage enemy destroyers and light craft on either flank of the Battle Zone and to follow them up should they proceed inwards towards the "Funnel".

ibid
Encl. 33B

The re-written paper on the reduction of Air Forces in the sea war was circulated by the C.A.S. on 17 March to Air Ministry Branches and Coastal Command. The argument was along the same line taken in the earlier Planning Staff paper that the enemy menace at sea was so much reduced that we were now greatly over-insured against it. In the annex was set out the minimum requirements considered necessary in each theatre of war. The consequent savings were largely dependent on the agreement of American and Canadian authorities to transfer squadrons from the Western Atlantic, where they were unprofitably employed, to Iceland, the Azores and the United Kingdom, and on some arrangement whereby the American Morocco Sea Frontier took over the responsibility for the Gibraltar area.

A.M. File
C.M.S. 545
Encl. 39B

If these agreements could be obtained, the saving in all theatres would amount to 32 squadrons representing approximately

(1) At this time the Admiralty had informed Coastal Command that from six to eight Fleet Air Arm squadrons would be made available - Ref. C.C./MS.114 Part I encl. 31B.

16,000 men.(1) The precise manner in which these savings could be used to strengthen the offensive in Overlord could not be set down at the moment but it was hoped to turn over the bomber and fighter types complete to Bomber Command and the A.E.A.F. In conclusion the Chiefs of Staff were asked:-

ibid

- (i) To agree in principle to the proposals set out in the Annex.
- (ii) To approach the U.S. Chiefs of Staff for American deployment to the Eastern Atlantic and Gibraltar area.
- (iii) To approach the Canadian authorities to take over all G.R. operations from the Azores.
- (iv) To instruct the Air Ministry, after consultation with the Coastal and Mediterranean Commands, to make recommendations as to the types of squadrons to be given up.
- (v) To instruct the Air Ministry, after consultation with General Eisenhower and the C.-in-C. Bomber Command, to make recommendations as to how these squadrons should be utilised.

ibid
Encl. 42B.

Air Staff comment on this paper was provided at great length by D. of Ops. (M) on 21 March. Briefly, he refuted the estimations in the Annex as grossly over-optimistic. Regarding Coastal Command alone, the actual number of A/U squadrons allocated for the S.W. Approaches did not differ greatly from Air Staff opinion but the paper took no account of the fact that the squadrons were underestablished in manpower. The proposed Mediterranean reduction could not be justified in the light of the offer already made by Sir John Slessor which was his utmost maximum and the virtual extinction of the West Africa Command was fool-hardy in view of the continued presence of U-boats in the area. His main disagreement was on the proposal to withdraw from Coastal Command all the anti-ship and long range fighter squadrons. This would leave nothing to deal with enemy destroyers, torpedo boats and E-boats as the Navy had intimated that all their surface craft would be fully occupied either on A/U tasks or close protection to the "Funnel". The alternative of defensive mine-fields would be useless against light enemy craft. He also took leave to doubt whether any American assistance on the scale proposed could possibly eventuate before the mounting of Overlord and finally queried the wisdom of breaking up squadrons highly trained in sea warfare methods and expecting them to switch over rapidly to unfamiliar terrain and techniques.

On 22 March a full Air Ministry meeting was held by the C.A.S. to discuss the re-written paper. The A.O.C.-in-C. Coastal Command was asked for his views first. He said that on the A/U side at home there was little substantial difference between this paper and his own Command's estimate of numbers required but there would be too little time to train and fit in to the Coastal Command organisation any United States or

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- (1) From Coastal Command - 14 Squadrons including all the antiship strike force.
 - From the Mediterranean - 10 Squadrons.
 - From West Africa - 4 Squadrons.
 - From South Africa - 4 Squadrons.

ibid
Encl. 44A.

Canadian squadrons that might be made available. He deprecated the proposed substitution of Ventura squadrons in place of Sunderland and Catalina squadrons on the ground of the former's inadequate endurance and he opposed the rolling up of his two Halifax squadrons as they were highly trained night squadrons of which he was desperately short. His full opposition was reserved for the proposal to withdraw both long range fighter squadrons and the seven anti-ship strike squadrons. He was holding a joint Coastal Command/Admiralty Conference on 24 March and would then be in a position to comment more fully on the risks taken in ignoring all possible action by enemy surface craft. In conclusion he said that all the proposed cuts only amounted to a saving of 16,000 men and he could not help feeling that this was a small return for breaking up so many skilled highly trained maritime air war units.

After other doubts had been expressed by both V.C.A.S. and D.C.A.S. on the wisdom of such drastic cuts the C.A.S. said that another way of tackling the problem was by working out an estimate of the number of men required to produce the maximum efficiency in the Air Forces deployed for Overlord and then making up existing establishment deficiencies or giving them extra establishments. A decision could then be made as to what proportion should be obtained from the air forces engaged in the war at sea. A.M.S.O. undertook to have an estimate made on these lines and the meeting was adjourned until this was ready for presentation.

C.C. File
MS.114 Part I
Encl. 35B.

The conference alluded to by Sir Sholto Douglas took place at Coastal Command H.Q. on 24 March. Among the points discussed was the Admiralty view that in face of an air flooded zone across the S.W. approaches, the U-boats would probably attempt to infiltrate past it by keeping close to the French coast line and possibly use the Schnorchel apparatus to avoid charging batteries on the surface. Sir Sholto agreed but said that in order to cover this loophole he must have some fighter protection which at present was not forthcoming. It was also agreed that air action must be taken to the full against enemy light craft on the flanks of the Battle Zone and if necessary be continued inside also. The Admiralty stated that six Fleet Air Arm squadrons would be turned over to Coastal Command by 20 April and an additional eight would be at short notice to disembark should the need ashore be greater than in carrier borne operations. The question of recognition was only superficially dealt with, it being confirmed by the Admiralty that all Allied vessels would have special deck recognition markings and would use I.F.F. to facilitate identification by aircraft(1). In order to provide a continuous link in the co-ordination of naval and air operations, full size liaison sections from Coastal Command would be established at Dover and Portsmouth in addition to the existing one with A.N.C.X.F. and the A.O.C.-in-C. would be placed on the distribution list for all operational orders in connection with Overlord or Neptune issued by the Admiralty, A.N.C.X.F. and the other home Naval Commands.

ibid

(e) The reduction proposal is dropped

On 26 March, A.M.S.O. submitted to the C.A.S. the estimate on manpower. The points that emerged were that to bring all units contributing to Overlord up to establishment required 10,000 men. Over establishing was not an advantage in general

(1) When examined in greater detail this question of mutual recognition became of great importance and is described in Section (vi).

A.M. File
CMS.545
Encl. 45A

but 2,000 extra men could be absorbed gainfully. Against this total requirement of 12,000 there were already in sight savings of 3,500 (1) leaving 8,500 men to find. Should all the cuts outlined in the re-written paper on reduction be applied, it was estimated that 15,500 men would be thrown up - that was 7,000 more than was needed. The estimate concluded with a belief that it was extremely unlikely that agreement would be reached with any of the Commands concerned for all the squadrons mentioned to be withdrawn.

C.C. File
MS.114 Part I
Encl. 37A

On 27 March, the A.O.C.-in-C. Coastal Command reported to the C.A.S. the results of his naval conference and the commitment expected from him against enemy surface craft. He outlined, therefore, his proposed deployment of anti-ship squadrons and proposed to use the two long range fighter squadrons in defence of the A/U aircraft from JU.88.s operating from the Brest Peninsula.

A.M. File
C.M.S.545
Encl. 48A

On 31 March, the C.A.S. minuted A.M.S.O. and all other branches concerned that he was glad to see that the deficiencies in manpower were much less serious than he had supposed and that it would be wiser to defer the review on the needs of the Air War at sea until after Operation Overlord when there might well be grounds for a much more drastic reduction.

C.C. File
M.S.114 Part I
Encl. 40A

This was followed up on the 4 April by a letter to Sir Sholto Douglas to the effect that following a study of the overall requirement for the air war at sea the C.A.S. had decided not to ask for either Canadian or American reinforcements. The plans for Overlord should therefore, be based on the resources already existing in the Command. Arising from this, Sir Sholto proposed to recall No.179 Leigh Light Wellington squadron from Gibraltar. After negotiation with M.A.A.F. headquarters in Algiers and a signal to Cominch (see next section) approval was given on 21 April.

(iv) Control of Allied aircraft in the Gibraltar area

C.C.
O.R.B. Jan.
Appendix I

In an effort to bring uniformity into the responsibility for air cover to threatened convoys (British or American) in the sea area Azores/Madeira/Gibraltar the Admiralty signalled on 10 January 1944 to the head of the British Naval Delegation in Washington that they wished him to approach Cominch (Admiral King U.S.N.) on two particular points:-

(A) Seeing that the Eastern Atlantic was a British Strategic Area, the Admiralty wished to apply the Stipple procedure to all convoys in this area so as to afford the same measure of protection to a United States convoy as to a British convoy under identical circumstances.

(B) The Admiralty wished to apply any agreement on operational control to the U.S. Naval aircraft operating from the Morocco Sea Frontier.

Cominch replied on 4 February that, although he agreed in principle to the Stipple Procedure being applied to the Morocco Sea Frontier, he insisted that the U.S. Naval Commander of this Frontier (short title Commoroseafron) must be at liberty to fly

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- (1) These savings were from the Hudson squadrons, the Mediterranean and a re-organisation of Bomber Command servicing arrangements.

ibid
for Feb.
Appendix 58

additional aircraft when he considered it advisable.(1) He refused to contemplate putting the Morocco Sea Frontier under the operational control of the Flag Officer Gibraltar, adding that the recommendation by the Allied A/S Survey Board to abolish the Moroccan Sea Frontier was never concurred in by any United States Commander. The impasse regarding the independence of this Frontier area thus continued unsolved.

Upon receipt of the decision to recall Nos.48 and 233 Hudson squadrons from Gibraltar in order to re-inforce Transport Command for Operation Overlord, the Flag Officer and the A.O.C. Gibraltar in a joint signal asked Commorseafron if he would undertake the duties hitherto performed by these two squadrons of patrolling the Strait of Gibraltar approaches against the passage of U-boats into the Mediterranean. Commorseafron replied in the affirmative and that he would do so from the 17 February.

A.M. File
C.M.S.547
Encls. 6A and
7A

Somewhat unfortunately the Admiralty made a concurrent but independent approach to Cominch through the British Naval Delegation in Washington with a request on 16 February that two U.S.N. Ventura squadrons should be transferred from the Morocco Sea Frontier to Gibraltar under the operational control of the A.C.H.Q. at Gibraltar.

ibid
Encls. 13A
and 14A

Cominch replied that from a despatch dated 18 February he understood that the Commander Morocco Sea Frontier had, at the Flag Officer Gibraltar's request, already taken over the duties of the British Hudson squadrons beginning daylight 17 February. In view of this, Cominch continued, there appeared to be no necessity to accept the decreased efficiency that would result from a transfer of Ventura squadrons to Gibraltar due both to logistic and operational control problems which would thereby be incurred.

In order to decide whether to accept this situation or whether to press for a transfer under Gibraltar control, the A.O.C. Gibraltar was asked three questions on the 23 February:-

C.C.
O.R.B. Feb.
Appendix 53

(a) Whether he had been able locally to reach a satisfactory agreement with the Americans on the question of operational control.

(b) If so, was he satisfied that he had a definite call on sufficient aircraft to cover his commitments.

(c) Whether he still required No.52 Baltimore squadron recently loaned to him from the Mediterranean Air Command.

On 25 February, the A.O.C. replied that:-

Regarding (a), operational control remained with Commorseafron and he was not consulted as to the method of execution of the patrols.

A.M. File
C.M.S. 547
Encl. 21B

Regarding (b), he had no definite call and was dependent on the number of aircraft which Commorseafron might allocate after satisfying what he regarded his primary commitment of air escorts to convoys and shipping. Although the arrangement had worked reasonably well over the previous week it might be improved by personal contact

(1) Cominch also said that U.S. aircraft had no over-riding basic mission to cover all U.S. convoys irrespective of U-boat threat but the Naval Delegation doubted this denial.

though Commorseafron had flatly refused to allow his aircraft to operate east of the Strait unless in hot pursuit.

Regarding (c), he wished to retain No.52 Squadron until the situation was clearer.

The A.O.C. added the qualification that if he had operational control of Commorseafron's lavish air forces all needs could easily be satisfied.(1)

ibid
Encl. 22A

This state of affairs was not very satisfactory but it was decided to allow matters to rest for a time and not to press the operational control question for the moment.

ibid
Encl. 25A

Having a primary interest in preventing more U-boats from entering the Mediterranean where as much shipping was now on the move as in the Atlantic, the C.-in-C. Mediterranean Allied Air Force (Sir John Slessor) visited Gibraltar to discuss appropriate measures with possible assistance from his own Command. He informed the A.O.C.-in-C. Coastal Command, on 29 February, of the results of this visit and undertook to enlist the aid of the American Naval Command in the Mediterranean (short title - Comnavnav) in co-operating with Commorseafron to provide more air sorties for the blocking of the Strait against U-boats. He observed that it was most unfortunate that Cominch had been approached on the subject before allowing him (Sir John) to tackle Comnavnav and thereby getting local agreement on combined action.

ibid
Encl. 35A

Following a conference at Algiers held by Sir John Slessor on 4 March at which were present the A.O.C. Gibraltar, the Chief of Staff to the C.-in-C. Mediterranean and Comnavnav (Admiral Hewitt U.S.N.), a signal was made to Coastal Command in which it was stated that sufficient aircraft of the right type could not yet be found to really saturate an area east of the Strait both day and night. It was proposed therefore that Gibraltar should continue to mount air patrols in conjunction with Commorseafron to the west so as to force U-boats to dive somewhere about longitude 0630 W while an area to the east of the Strait between 0400 W and 0400 E, inside which a successful U-boat would have to surface, should be heavily patrolled at the same time. This latter was of course beyond Gibraltar's capacity with only one Leigh Light squadron (No.179) for the night and the Baltimore No.52 squadron for the daytime. Sir John Slessor's only Leigh Light squadron was fully occupied off the Anzio bridgehead but there was another squadron converting and Air Vice Marshal Lloyd (commanding the Mediterranean Coastal Air Forces) would accelerate this and help as soon as possible. Meanwhile Comnavnav had signalled Commorseafron to give Gibraltar all assistance in his power inside as well as outside the Strait. On being warned that Cominch's orders precluded Commorseafron from operating inside the Mediterranean except in hot pursuit, Admiral Hewitt remarked that Commorseafron would do what he, Hewitt, told him to do. This, the signal continued, should mean that when the expected American Searchlight Liberator squadron arrived at Iyautey there would be most valuable help at night as well as by day from the Moroccan air forces. Sir John Slessor concluded the signal by drawing attention to the fact that it would in future be more profitable to let him interview

ibid

(1) At this time these forces consisted of two Liberator, two Ventura and three Catalina squadrons totalling some 90 aircraft.

Comnavnaw before tackling Cominch on the touchy subject of the employment of Commorseafron's aircraft.

A precis of this signal together with certain observations by Sir John Slessor on the subject of what squadrons he could spare towards the deficiency for Overlord was sent on 5 March to the Air Ministry. Accordingly the Admiralty and Air Ministry instructed their delegates in Washington not to re-open the question of transfer of the Ventura squadrons to Gibraltar under British operational control.

On 10 March, the A.O.C. Gibraltar visited Casablanca where he found Commorseafron as co-operative as personal relations were cordial. The Searchlight Liberator squadron had just arrived and would be ready to start operations from the 31st either to the east or west of the Strait. American liaison was installed in the A.C.H.Q. at Gibraltar, communications with the Moroccan H.Q. at Casablanca were improved and a combined scheme of A/U patrols agreed upon.

Relations having improved so much regarding the Strait patrols, Sir John Slessor agreed to relinquish his Nos. 52 and 69 Baltimore squadrons immediately to meet Overlord deficiencies. Early in April, however, the situation was affected by Coastal Command's proposal to bring No.179 L/L Wellington squadron home for Overlord. A combined British/American conference at Algiers agreed that the resources of Commorseafron could not make up for this loss in night effort. The newly arrived Searchlight Liberator squadron was only temporarily at Port Lyautey until taking up its assigned position at Lagens in the Azores. Accordingly Cominch was asked to guarantee the continuance of the Liberator squadron at Port Lyautey until the protracted negotiations were concluded with the Portuguese Government for its transfer to the Azores. Cominch made a favourable reply and on 21 April Coastal Command received approval to recall No.179 Squadron.

(v) Completion and issue of Directive Role of Coastal Command in Overlord

Exchanges of opinion and suggestions followed till mid-April between Coastal Command and various naval authorities. Resulting from further discussions with the A.E.A.F., the Air Commander informed the Allied Naval Commander on the 18 April that, after deliberations with Coastal Command, all the Expedition's maritime air requirements had been provided for and enclosed a detailed schedule showing the resources and means for so doing. Meanwhile the Admiralty were kept informed of all adjustments and alterations in Coastal Command's plan and a request was made for early Admiralty approval as the A.O.C.-in-C. was particularly anxious to issue a directive to his Groups as soon as possible.

Also on 18 April, a conference was held in the Admiralty at which were present all the Flag and Air Officers concerned in the transport and mounting of the Operation. The latest amendments to the Coastal Command plan were explained and in the general discussion the following extra points were referred to:-

(1) Fighter cover was being arranged so as to permit day and night A/U patrols to extend up to the line Portland to Jersey.

(2) The Fleet Air Arm squadrons allocated to Coastal Command would be employed on close cover to Overlord coastwise convoys.

ibid
Encl. 36A

ibid
Encl. 39A

ibid
Encl. 41C

Signal to
H.Q.C.C.
J.C.S.533
9/4/44

Admty. signal
to Cominch.
T.O.O. 1921B/
17/4

Admty. to
H.Q.C.C.
T.O.O. 1331B/
21/4

C.C. File
MS.114 Part I
Encls. 39B to
47B and 51A

(3) Surface forces must be able to operate in the same areas as aircraft and Sir Sholto Douglas urged that special recognition rules be instituted. A sub-committee was envisaged to discuss this forthwith.

The A.O.C.-in-C. now issued his Directive on the Role of Coastal Command in Operation Overlord with appendices outlining the tasks of the Groups and the Order of Battle. There were also detailed instructions as to specific patrol areas, signal procedure and organisation.

In summary the main task was anti-U-boat, the brunt of which lay on No.19 Group in the S.W. Approaches. Twenty one squadrons were allocated and a series of box patrols, each aiming at a density of cover of at least 30 minutes, were to be employed. These adjacent boxes could be shifted independently or as a whole could be advanced up Channel as far as the line Portland to Jersey analogous to the pushing of a cork into a bottle. They were thenceforth always known as the Cork Patrols. Fighter cover against single engine enemy fighters was being arranged for those boxes impinging on the French coast should it appear to be necessary. In addition to this A/U flooding area, escort or cover to coastwise invasion convoys between Lynmouth and Portland was to be given by four Fleet Air Arm squadrons backed up by such other No.19 Group aircraft as could be spared. Should U-boats or midget submarines threaten the eastern flank of the Invasion Force it might be necessary to transfer some A/U squadrons from No.19 Group and arrangements were in being for their operation under No.16 Group control. The primary weapon against U-boats was to be the Mk. XI Depth Charge but those aircraft equipped to carry the Mark 24 Mine would carry one on daylight sorties. No.502 Halifax squadron would carry 600 lb. A/S bombs. The sortie length and number of sorties required per day for each type of aircraft were laid down in a separate appendix.

C.C. File
MS.114 Part II
Encl. 52B

ibid

Air operations against enemy destroyers and light surface craft would be conducted by both Nos. 19 and 16 Groups and would generally take place mostly at dusk and dawn with the G.C.I. Albacores at night aided by flare dropping A.S.V. Wellingtons. The forces allocated to No.16 Group were five Beaufighter Strike squadrons together with a Wellington/Albacore and a F.A.A. Swordfish squadron (both trained in ground control interception) and another F.A.A. squadron of Avengers as cover to invasion convoys between the Nore and Beachy Head. Those allocated to No.19 Group consisted of two Beaufighter Strike squadrons, a Wellington/Albacore squadron trained in G.C.I. and two Mosquito/Beaufighter long range fighter squadrons for action against enemy JU.88.s operating in the Bay of Biscay. Weapons for the anti-ship squadrons were cannon, R.P., and both 500 lb. and 250 lb. M.C. bombs.(1) The Albacores and Swordfish on night G.C.I. would carry 250 lb. G.P. bombs.

The three V.L.R. Liberator squadrons and one Canadian Canso squadron in No.15 Group and Iceland were to escort threatened Atlantic convoys, cover the entrances to the North Channel and Northern Transit Area and to provide aircraft if necessary for Fleet Reconnaissance. The latter two tasks

(1) The M.C. bomb had a high charge weight ratio and was fitted with an air burst pistol to give good fragmentation effect.

were shared by the one Sunderland and Catalina squadrons in No.18 Group. The responsibility for engaging any enemy major naval units attempting to break out into the Atlantic had been accepted by the C.-in-C. Home Fleet so that Coastal Command's commitment was confined to the provision of long range reconnaissance.

No.247 Group Azores, now reduced to one Fortress squadron, and R.A.F. Gibraltar, reduced to one Catalina squadron, had the task of escorting threatened Atlantic convoys with the latter base having an additional commitment of co-operation with the American Morocco Sea Frontier in preventing the passage of U-boats into the Mediterranean.

This comprehensive document was issued to the Groups on the 18th and to all interested Headquarters including the Admiralty and Air Ministry by 24 April.

There had been, at an earlier date, a suggestion that Coastal Command's anti-ship Beaufighter squadrons should have an alternative role of attacking land targets under control by the A.E.A.F. The A.O.C. No.16 Group had opposed this on several counts. On 25 April a conference was held at Coastal Command to examine the possibilities. It was agreed by the Air C.-in-C. A.E.A.F. that no transfer of the two long range fighter squadrons need be considered. Various methods of employing the Beaufighter strike aircraft were discussed having regard to their unfamiliarity with map reading from low heights over land and the entirely different attack technique. It was pointed out that in any case they could only be diverted from their maritime role when no further action was likely to be needed against enemy light craft and this permission would not be lightly given either by A.N.C.X.F. or the Admiralty. As all these premises were highly problematical no firm ruling could be given but provisional instructions were drafted. Regarding the question of fighter cover for daylight anti-ship operations by No.16 Group's Beaufighters, a conference at No.12 Group Fighter Command on 28 April agreed to arrange Mustang support when these occurred off the Belgian and North French coast.

There had been suggestions that enemy reaction to the rehearsal Exercise Fabius might necessitate the implementation of part or the whole of Coastal Command's plan with effect from 1 May. On 29 April the S.N.S.O. at H.Q. Coastal Command submitted a reasoned appreciation to the A.O.C.-in-C. in which he considered that the U-boat Command could not afford to commit itself in large U-boat movements until it was certain that the main assault was actually taking place. In his view the U-boat threat would not develop until about D + 2 as not until the landing point was self evident would the U-boats be thrown in to cut the build-up re-inforcements while the enemy's land forces would try to overwhelm what initial assault forces had succeeded in getting ashore. It was, however, likely that from about D - 14 the enemy would try to establish two or three U-boats on diving patrol on our south coast as advanced reconnaissance but these were likely to pursue ultra cautious tactics and presented no danger to Exercise Fabius or the initial movements of invasion convoys prior to the landing. The planned A/U air effort should be used as detailed in the Coastal Command Directive to ensure that those U-boats of the main rush up Channel who did succeed in reaching the outskirts of the "Funnel" area would only do so in a state of exhaustion. The object was the safety of the initial assault and subsequent build-up. The main consideration was when to apply the Cork patrols. If this appreciation was accepted, they should not be applied before D day otherwise:-

ibid

ibid
Encl. 59A

C.C. File
TS.7448
Encl. 11

C.C. File
TS.15,336
Encl. 32

C.C. File
TS.15,322
Encl. 25

SECRET

583

ibid

(a) We should give away our plan to the enemy.

(b) Not being fully engaged the enemy fighters might inflict needless loss on our A/U aircraft - losses which were irreplaceable before D day.

(c) We should not locate any U-boats because there would be none at sea in force.

This view was accepted and no special A/U effort was laid on for Exercise Fabius. Certain additional anti-ship reconnaissance patrols were flown in case of attack by enemy surface craft.

C.C. File
TS.15,337
Encls. 30, 33

C.C. File
TS.15,322
Encls. 33A, 36
and 42

C.C. File
MS.114 Part II
Encl. 70A
and 82A

During May some final details in the Coastal Command Plan were added. For the better protection of east coast and eastern flank invasion convoys against E-boats the Admiralty made available another two F.A.A. Avenger squadrons. Moonlight and dark night patrols by No.16 Group's Beaufighters and A.S.V. Wellingtons respectively against enemy surface craft between Dieppe and the Texel were planned in detail. But a request for corresponding day reconnaissance by single engine fighters to be extended from the existing Somme/Ostend line was refused by A.E.A.F. because the additional aircraft could not be spared from the main battle area. This brought a warning from Sir Sholto Douglas to the Deputy Supreme Commander (Sir Arthur Tedder) that, although Coastal Command Plans should frustrate the U-boat threat he was much concerned about the menace to Overlord from enemy surface craft which he thought had been underestimated.

By the 1 June 1944, Coastal Command squadrons had taken up their final dispositions. The Order of Battle, strength and availability is at Appendix I.

(vi) Mutual recognition between air and surface craft

A.M. File
C.M.S.664
Encl. IB

It was over plans to deal with enemy surface craft at night that the question of recognition became acute although it had originated in joint Air/Surface craft A/U operational conditions. The subject had assumed some prominence back in February 1944 when surface craft of the Plymouth Command were operating in the Inner Bay of Biscay area at night. On 13 February the C.-in-C. Plymouth notified the Admiralty that numbers of cases were occurring in which his surface forces were being illuminated by Leigh Light aircraft. The American and many of the British Liberator aircraft were not fitted with radar interrogators and neither the use of shipborne search radar nor the firing of recognition two star cartridges was desirable in enemy waters. No satisfactory solution had been reached in discussions between the naval and air staffs in the A.C.H.Q. and it was requested, that the matter should be taken up between the Admiralty and Air Ministry.

ibid
Encl. IA

Nothing came of this and on 31 March the A.O.C.-in-C. Coastal Command stated that since 13 February three further incidents had taken place in which exchange of fire had occurred between friendly air and surface craft. He requested an early meeting between the departments concerned to settle a policy of recognition at night in the Atlantic area.

ibid
Encl. 3A and
C.C. File
TS.15,464
Encls. 1 and 1A

On 16 April a signal was made by the C.-in-C. Western Approaches to the effect that in the open Atlantic it had been found that the Night Air Escort to Convoy policy with its red, white and blue areas (instituted in November 1943) was perfectly adequate but the problem when in inshore waters was

(17500)599

SECRET

SECRET

584

still unsolved. In view of the imminence of Operation Overlord with its commitments for simultaneous action by air and surface craft at night it was urged that a meeting should take place immediately at which all naval and air authorities were represented.

While this meeting was being arranged, the Supreme Headquarters of the Allied Expeditionary Force (short title SHAEF) issued orders on 18 April for the painting of a distinctive marking - longitudinal white and black stripes - on all U.S. and British aircraft engaged in Operation Overlord except flying boats, four engined land aircraft and night fighters together with rules governing the opening of A/A fire in the battle zone. On the 19th the Admiralty informed all interested parties of the existing procedure at sea, the various means that were possible for mutual recognition and some recent new suggestions that had been made.

On 24 April the general meeting was held in the Admiralty. The Coastal Command representative led off by saying that, although hitherto it had been accepted that the onus was on the aircraft to establish its friendly character, operational experience proved that whatever action the aircraft took the result was usually the same, namely the aircraft was fired at. The three types of mission now vitally concerned were aircraft escorting invasion convoys, aircraft co-operating with ships in A/U operations and aircraft engaged in attacking enemy surface forces who might come across Allied surface craft in the vicinity.

After long discussion it was agreed:-

- (A) That ships would whenever possible identify aircraft by I.F.F. but that owing to the nature of the radar interrogation equipment in aircraft⁽¹⁾ reliance could not be placed on the identification of ships by aircraft.
- (B) That no reliance could be placed on the display by ships of existing recognition lights, Aldis lamp signals or the showing of downward recognition lights by aircraft.
- (C) That it would be of assistance if ships fired the aircraft recognition cartridge when they had established by I.F.F. or other means that an approaching aircraft was friendly. The aircraft was then to switch on navigation lights and turn away.
- (D) That, as Leigh Lights were not in use by the enemy, all aircraft burning Leigh Lights should automatically be treated as friendly. The aircraft recognition cartridge should immediately be fired by the ship and answered by the aircraft switching on navigation lights and turning away.
- (E) That no general rules could be devised to prevent our aircraft from dropping flares over contacts which might prove to be friendly ships but the ships should in their own interest accept the onus of identifying themselves.

(1) The majority of aircraft radar interrogators were on 176 Mc/s. This frequency had long been vulnerable to interception by U-boat search receivers. The risk was also held to apply by this time to the relatively few 10 cm interrogators and in consequence no interrogation was permitted when aircraft were engaged on A/U operations.

ibid
Encl. 3A

A.M. File
CMS.664
Encl. 6A

ibid
Encls. 7A and 8A

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(F) That as U.S. surface craft would also be in the Overlord area, it was considered that the U.S. Naval Commander in Europe should be invited to comment on the above conclusions.

ibid
Encl. 9A

ibid
Encl. 10A

ibid
Encl. 11A

ibid
Encls. 12A
and B

The Admiralty were in general agreement with these recommendations and on 7 May circulated them for concurrence by all interested parties. However, in the actual signal the instructions to ships regarding the recognition cartridges were worded may fire instead of should fire and no reference was made to the case of ships illuminated by flares. Moreover in a letter of the same date to the A.O.C.-in-C. Coastal Command their Lordships emphasized that the proposed measures would in no way alter the existing recognition principle that the onus of establishing its identity rested with the aircraft and they categorically re-affirmed this point.

Regarding the signal, the Air Ministry agreed to the proposals provided that the word may was in all cases amended to will and that the flares case was similarly covered. Regarding the letter the A.O.C.-in-C., in a reply to the Admiralty dated 11 May, disagreed profoundly with the so-called principle that the onus of establishing its identity lay with the aircraft. The meeting of 24 April had fully understood that, as U-boats were likely to be in the area, Coastal Command aircraft would not use their interrogators and would therefore be unable to identify surface craft by radar. As a result the meeting had agreed that during Overlord it would be for the surface craft to establish its friendly character to the aircraft by firing the recognition cartridge. In the light of their Lordships' letter it would now appear that no amelioration of the position had been achieved other than the acceptance of Leigh Lights as an indication of friendly identity. As a result, surface craft would not only be liable to attack from all non-Leigh Light aircraft but would be reported to A.C.H.Q.s as hostile. He urged that the whole question be re-opened immediately so that it could be settled in the short time available before Operation Overlord started and he attached a re-draft to serve as a basis for discussion.

ibid
Encl. 13A

After further argument, another signal of proposals was made by the Admiralty on 17 May. In this the general instruction to warships who established by any means the friendly nature of approaching aircraft continued to be may fire recognition cartridges but introduced a further paragraph to the effect that particular areas could be designated as Aircraft Areas in which it was vital not to disturb the operations of our own aircraft and where the likelihood of encountering enemy aircraft was small. In such areas all vessels should fire the recognition cartridges when any aircraft was detected in their vicinity so as to establish the ships' friendly identity to the aircraft who must reply by switching on navigation lights and turning away.

ibid
Encls. 15A
and 16A

ibid
Encl. 17A

C.C. File
TS.15,464
Encl. 58

This was agreed to by Coastal Command and the Air Ministry and was then circulated to all Allied air authorities on 22 May. However, Bomber Command objected to the obligation on aircraft to turn away from warships firing the recognition cartridge observing that their large formations could not comply with safety. This objection was upheld and on 31 May a paragraph was added to the effect that the turn away did not apply to aircraft flying in a stream or large formation. Whenever practical such formations would be routed clear of shipping and be flying as high as possible.

(17500)601

SECRET

(vii) Attack Restriction Areas

Now that there was agreement on the subject of mutual recognition in the Overlord sea area, the question of safeguarding our own surface forces from promiscuous air attack when on independent operations was tackled. On 23 May the A.O.C.-in-C. Coastal Command signalled all interested authorities that he proposed:-

(1) That the whole Channel area between the lines Scillies/Ushant and North Foreland/Walcheren should be instituted as a Surface Vessel Attack Restriction Area until further notice for all Allied aircraft except:-

(a) Coastal Command to be exempt as their aircraft were specially briefed by the A.C.H.Q.s as to where they could or could not attack.

(b) Those Groups belonging to the Air Defence of Great Britain and A.E.A.F. Commands who provided escort or cover to Coastal Command aircraft or who provided strikes on enemy sea forces which had been specifically arranged with the local naval authority.

(2) That the Attack Restriction would only be lifted for aircraft other than those mentioned in paras. (a) and (b) if agreed to by the local naval authority.

With a minor amendment this proposal was agreed upon and the area was instituted on 27 May. Outside this area only Coastal Command controlled aircraft operated and the normal bombing restriction signal procedure continued to function when required from time to time in order to cover special naval operations.

(viii) - Enemy plans for naval counter-measures to invasion

There remain the enemy plans and counter-measures to mention. Those taken by the Army and Luftwaffe are described in the Air History Branch narratives of the Liberation of Northwest Europe. Here is briefly outlined the naval re-action to the probability of large scale invasion.

Ever since the winter of 1941/42, Hitler had been obsessed by the fear of the invasion of Norway but more recently, since mid-1943, his "intuition" had on occasions named Holland, Jutland, the Gironde, and once even Normandy as the threatened area. These pure guesses had played havoc with the orthodox method of assessment of probabilities by painstaking reconnaissance and intelligence. Consequently, by the beginning of 1944 the organised defence of Western Europe was still a matter of provisional paper plans rather than solid achievement.

The naval share of this defence was more realistic and better organised than either of the other branches of the Wehrmacht. Appreciating the strength of Allied maritime power, Admiral Doenitz realised that it would be useless to employ any of the major warships of the German Fleet - indeed after the loss of the Scharnhorst at the end of 1943, only one heavy unit (the Tirpitz) remained in full commission. The remaining ships(1) were all being used in the Baltic to train

(1) Two pocket battleships, seven cruisers and two old pre-war battleships.

C.C. File
TS.15,498
Encl. 1

ibid
Encl. 8

new personnel. He also realised that, although he had plenty of U-boats, they were no answer against an initial assault. Their part would come, as soon as the precise point of landing was known, in attempts to strangle the build-up and essential supply shipping to the beach-heads.

To oppose the actual assault Doenitz pursued two lines of naval warfare which appeared to him as the most effective in the circumstances. The first of these was the development of midget submarines, one-man torpedoes, explosive motor boats and similar small battle units; the other was the large scale use of a new type of mine which, being extremely simple to construct and lay, promised great success in coast protection.(1) However, success by either method was entirely dependent on the numbers which could be produced in time by the German factories and this was subject to priorities for material and man-hours - both already difficult problems.(2) Doenitz, therefore, could not afford to neglect the older form of shore defence, namely coastal batteries.

In this latter case the enormous length of coastline marking the achievement of the quondam triumphant German arms now became an acute embarrassment as it was quite impracticable to set up coastal batteries at every likely landing area. Consequently it was decided to declare certain seaport towns as fortresses, to concentrate coastal artillery near them and to defend them to the last - a form of defence which history has shown to be ineffective against maritime superiority and which in this case was doubly vulnerable because the shortage of fighting men necessitated joint manning by naval and army personnel.

Bad feeling between the Navy and Army over the allocation of recruits began to show itself late in February 1944. Arising out of an order by General Rundstedt (commanding the Western Region) in which some naval units were detailed for guard duties, Doenitz confronted Field Marshal Keitel and General Jodl in Hitler's presence on the 26 February. He made it abundantly clear that his naval recruits were only in the west because there were no barracks in Germany to accommodate them. They were still under initial training and it was out of the question for them to take over any tasks in the Army's sphere. He had no intention of endangering the ship-building programme ordered by the Fuehrer by having no crews ready because of interruptions in their training. He concluded the meeting by saying he would under no circumstances permit the use of a single one of his own men for other than naval purposes.

The manpower situation in Germany had been getting more and more critical since the end of 1942. By 1944 the German High Command was becoming desperate in its search for more

Fuehrer
Conferences
on naval
affairs 1944
Page 17

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- (1) This was known as the R.M.K. mine. It was constructed out of concrete and operated by a contact fuse. Doenitz planned to lay these in inshore waters at a rate of 1,200 per month.
 - (2) At a Fuehrer Conference on 18 January 1944, Hitler approved an order for 50 midget submarines and a large number of one-man torpedoes. Development and production of the concrete coastal defence mine was, at the same conference, scheduled to go ahead as quickly as possible.
- Ref.: Fuehrer Conferences on Naval Affairs 1944 - page 9.

troops and frequent attempts were made to co-opt naval recruits for the Army. The above incident marked the beginning of a struggle for men between Doenitz and the Army chiefs which became increasingly bitter and lasted until the end of the war.

That Doenitz was keenly aware of possible surprise invasion was shown late in January 1944. On the 28th, at 0230 hours, a reconnaissance aircraft belonging to Fliegerfuehrer Atlantik reported the presence of 200 to 300 landing craft in the Bay of Biscay to the westward of La Pallice. Although considering the report unlikely, Doenitz ordered five U-boats, then outward bound in the vicinity, to proceed at high speed to the area. At 0808 hours, another U-boat (U.302) inward bound to La Pallice, reported a convoy with an air escort steering N.E. in the same neighbourhood. Coming on top of the previous air report, opinion in the U-boat Command changed in favour of an imminent invasion landing. Both the main U-boat groups in the Northern Atlantic received orders to surface and return at high speed regardless of Allied air activity. At 0923 hours, U.302 sent another signal reporting 25 to 30 smoke trails and a strong enemy surface escort zig-zagging eastwards at 16 knots.

However, at 1033 hours U.302 again piped up saying this time that the smoke trails originated from ordinary trawlers engaged in fishing. A later air reconnaissance confirmed this and mentioned the presence of many Spanish trawlers on various courses. The scare was thus explained. Orders were cancelled. The Atlantic U-boat groups were told to re-submerge and the outward bound boats resumed their journey.

On the 19 February, Doenitz circulated an appreciation and policy statement governing naval anti-invasion measures to all naval commands. In it he stated that, although the Navy alone could not prevent or repulse an enemy landing, yet by delaying actions they could gain time which might be of decisive importance to the Army. As soon as the combat area was known, all available naval forces were to be concentrated regardless of possible engagement by their own coastal artillery. In summary the tactics were to be:-

- (1) Attacks on the landing craft by U-boats, light patrol craft and coastal artillery.
- (2) Attacks on enemy shipping in the invasion area with midget submarines, one-man torpedoes and other small battle units.
- (3) Attacks on Allied Atlantic communications with the new prefabricated Type XXI U-boats.
- (4) Protection of the whole western European coastline with the R.M.K. concrete mines.
- (5) Beach obstructions and local batteries at particularly likely landing places.

Concurrently Doenitz formed the two U-boat Groups Mitte and Landwirt in Norwegian and Biscay ports which have already been mentioned in Chapter XIV. These were to be kept at immediate readiness against possible landings in the two areas. As no U-boat base facilities existed in the English Channel, the initial opposition to any main assault between Cherbourg and the Scheldt rested entirely on coastal batteries, beach

B. d U.
War Diary
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ences on Naval
Affairs 1944

obstructions and inshore protective mining with attacks by light surface craft and small battle units.

Admty.
N.I.D.I./G.P./
10 and 11

The growing Allied invasion preparations in Southern England were noted from early April onwards and last minute efforts were made to extend and strengthen the defences. Here the Army and Naval opinion differed as to the area most threatened. From the naval viewpoint the mouth of the Seine was the danger spot and it was also the weakest in defence preparation but the Army expected the landing at the mouth of the Somme or still further to the eastward. The Army view prevailed. Consequently the majority of material and manpower available for defence construction was directed to the latter area. Even the extensive mining in the Seine Bay, which was insisted on by the naval authorities, failed to materialise owing to delays in mine transportation on the bomb damaged railway system. Furthermore, due to labour shortage, bomb damage to factories and transport difficulties, the schedule for small battle units and coast defence mines was hopelessly behindhand so that at the end of May 1944 the much vaunted West Wall defence system was very far from completed.