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**R.A.F. NARRATIVE**

# **THE R.A.F. IN MARITIME WAR**

**VOLUME V**

**THE ATLANTIC AND HOME WATERS  
THE VICTORIOUS PHASE**

**June 1944 - May 1945**

**Air Historical Branch (1)  
Air Ministry**

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R.A.F. NARRATIVE

THE R.A.F. IN MARITIME WAR

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THE ATLANTIC AND HOME WATERS - THE VICTORIOUS PHASE

JUNE 1944 TO MAY 1945

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## CHAPTER I

COASTAL COMMAND'S PART IN OPERATION  
OVERLORD DURING JUNE 1944(i) Introduction

A full description of the Overlord Strategy, preparation and the operations during the actual invasion landings is contained in the separate R.A.F. Narrative entitled 'The Liberation of N.W. Europe'. Here is given the part played by Coastal Command in the prevention of enemy naval interference with the assault and the subsequent no less important carriage by sea of re-inforcements and build-up supply convoys.<sup>(1)</sup>

The seaborne transport of such a vast undertaking necessitated the prior movement of invasion convoys from western ports round Lands End and from eastern ports through the Dover Strait to join the concentration already assembled in the Portsmouth area. The complete assault force was then to debouch southward, led by a vanguard of minesweepers, straight across the English Channel to the selected landing beaches in the Seine Bay. The subsequent build-up convoys and the returning empties were to follow the same route and this corridor across the Channel became known as the "Funnel".

The function of Coastal Command was, in conjunction with certain naval forces, to hold the ring on each side of the Funnel against incursions by torpedo craft, enemy small battle units and U-boats, not so much on the day of invasion for which surprise was hoped, as during the subsequent vital period of establishment. Bound up in this task was the requirement to disrupt the enemy's coastwise supply line.

Apart from the very considerable number of heavy Allied warships required for bombardment duties with the initial landings, the naval force for holding the ring consisted of ten Escort Groups<sup>(2)</sup> acting independently and disposed by D day in the approaches to and the western end of the English Channel for action against U-boats, E-boats and destroyers with three Escort Carriers to the westward to provide air cover to them if it was found necessary.<sup>(3)</sup> In addition, all coastal and cross channel convoys were to receive close escort by other surface craft and finally, the M.T.B. and M.G.B. flotillas were available for patrols off enemy E-boat bases.

(ii) Coastal Command dispositions(a) General deployment

As the main task was against U-boat penetration from the westward, the bulk of the Command's A/U strength was concentrated in No. 19 Group whose A.O.C. also had first call on No. 15 Group's resources in view of the reduction of U-boat

- 
- (1) Discussion on and preparation of Coastal Command's plan during the months before June has been given in Volume IV Chapter XVII.
  - (2) These totalled 14 destroyers, 37 frigates and three sloops. Ref. Admty. C.B. 04050/44 (5).
  - (3) Escort Carriers Tracker, Pursuer and Emperor. In the event these carriers were, in the absence of any G.A.F. attacks on the surface units, withdrawn on the 11 June.

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threat to the transatlantic convoys. The combined strength of these two Groups in A/U aircraft was 27 squadrons totalling 392 aircraft. The enemy's virtual abandonment of the Northern Atlantic also permitted the Iceland based A/U squadrons to be freely drawn upon by No. 18 Group in their rising battle with Norwegian based U-boats debouching into the Atlantic through the Northern Transit Area. The combined A/U strength in this area was six squadrons totalling 62 aircraft.

To deal with the enemy surface craft threat, the majority of the Command's anti-shipping squadrons, to the number of six, were disposed in No. 16 Group on the eastern flank with only three squadrons together with two long range fighter squadrons in No. 19 Group on the western flank.

Details of Coastal Command's Order of Battle, Strength and Availability are given at Appendix I.

(b) Particular dispositions in the Channel Area against U-boat penetration

This was to be effected by an air blockade. The whole of the S.W. Approaches to the English Channel from the line Cape Clear/St. Nazaire to the line Portland Bill/Alderney was sub-divided into rectangular box patrols. A/U aircraft were to be fed into selected boxes at such intervals of time that complete cover was effected in any one of them every 30 minutes. By selection amongst them a concentration of air cover could be effected wherever it was thought necessary. Map No. 1 shows their arrangement which differed in alignment as between day and night flying. These were the permanent Cork Patrols. Ad hoc patrols in the same general area were in practice found necessary from time to time after D day so as to meet special situations.

Protection of coastal convoys was to be given by the F.A.A. squadrons on loan to Coastal Command. In the western area this was to be effected by flying line patrols from Lundy Island round Lands End and up to Portland Bill<sup>(1)</sup> primarily against U-boats and in the eastern area by similar line patrols extending from the North Foreland to Beachy Head<sup>(2)</sup> primarily against E-boats but also in case the enemy should use small submersibles rumoured to be under construction and possibly operational from the Low Countries.

Against surface craft

The No. 16 Group Beaufighter strike squadrons were suspended from operations against enemy shipping off the German North Sea coast and all effort was to be devoted to frequent offensive sweeps along the enemy coast between Ymuiden and Le Havre generally at dawn and dusk but escorted by Mustangs or Spitfires<sup>(3)</sup> when carried out in broad daylight. Similarly the No. 19 Group Beaufighter squadrons were to sweep up from the mouth of the Gironde, round Ushant and east as far as Alderney. The two Mosquito/Beaufighter long range fighter

- 
- (1) This stretch was divided into three equal portions - Red, White and Blue Patrols.
  - (2) Similarly this stretch was sub-divided into three - G, C and B patrols.
  - (3) Mustangs from the 2nd Tactical Air Force. Spitfires from A.D.G.B.

squadrons were to provide escort for these sweeps and maintain interception fighter patrols close to the west and north of Brittany against enemy aircraft.

For night work against E-boats, the Wellingtons of No. 415 Squadron would fly cross-over patrols offshore from Dieppe, Dunkirk and the Hook in the east and Wellingtons of No. 524 Squadron perform similar patrols to the north and west of the Channel Islands. These aircraft would not only attack themselves but could home strike aircraft held at readiness during the dark hours.<sup>(1)</sup> Independent action at night could also be taken if locations of enemy vessels were made by certain ground R.D.F. stations on the south coast when Swordfish of No. 819 F.A.A. Squadron and the Albacore flights of No. 415 Squadron could be vectored on to the target by Ground Control Interception.

Reconnaissance on the eastern flank and in the Channel area

See Map 2

Morning and evening sorties by pairs of long range Beaufighters from No. 16 Group were to fly between Terschelling and the island of Langeoog in longitude 0730E to give warning of any movement westward of enemy shipping or convoys. Frequent daylight short range reconnaissance flights would be maintained along the enemy coast between the Texel and Ushant by fighters flying in pairs under A.D.G.B. control<sup>(2)</sup> Any sightings made could be followed up by strike aircraft detailed from the 2nd T.A.F. Typhoons fitted with R.P. or bomb carrying Spitfires and Mustangs.

(c) Operations just prior to D day

The four F.A.A. squadrons in No. 19 Group had been flying limited coastal convoy support patrols in May, mainly against E-boat sorties from Cherbourg but from the 4 June when the first invasion convoys sailed from Bristol Channel ports bound for Portsmouth, they settled down to consistent day and night flying of the Red, White and Blue patrols. No. 524 Wellington Squadron continued to fly night cross-over patrols northward of Brittany against E-boats. No enemy movements were sighted.

During the first five days of June only limited anti-U-boat patrols were flown and these were all in the Bay of Biscay area. Even so the only U-boat then at sea in the Bay (inward bound U.955) was sighted and attacked at 0335/5th by L/L Liberator M/224 Squadron but no damage resulted. On the following night U.955 was again located but on the two occasions when an attack was pressed home the bomb release gear failed to function.

- 
- (1) Strike aircraft in No. 16 Group could be drawn from No. 254 Beaufighter Squadron under the procedure of Operation Percolate, and from anti-shipping squadrons in No. 19 Group under Operation Canoodle. Copies of both Operational Orders are at Appendices IIA and IIB.
  - (2) In June 1943, under a re-organisation of Fighter Command, certain squadrons had been transferred together with the light bombers of No. 2 Group Bomber Command to form the 2nd Tactical Air Force. Thereafter the purely fighter force at home was called the Air Defence of Great Britain - short title A.D.G.B.

In No. 16 Group's area the three F.A.A. Avenger squadrons had been flying the G, C and B convoy support patrols since the end of May. The Beaufighter strike squadrons, escorted by Spitfires, had carried out frequent sweeps along the enemy coast from Ymuiden to the Channel Islands while Wellingtons of No. 415 Squadron had flown night anti-E-boat patrols in the northern part of the Seine Bay. Daily reconnaissance throughout the Channel area was carried out by Spitfires, Typhoons and Mustangs under A.D.G.B. control. No sightings of any significance were made by any of this flying.

Mention must be made here of the Coastal Command meteorological flying. The Command had 5½ squadrons of diverse types doing this duty over North Sea, South Arctic and mid-Atlantic waters. On the evidence so collected was built up the hour to hour weather chart covering this enormous area from which to forecast the weather conditions approaching these islands.

As May advanced the weather forecasting assumed an ever increasing importance and during the first days of June it became vital. It is hardly an exaggeration to say that the final decision to launch Overlord was made possible by the evidence supplied so regularly by these aircraft.

It is of interest that later in December the German timing of Von Rundstedt's counter-offensive on the Western Front was on a weather forecast largely based on frequent reports from U-boats specially stationed in mid-Atlantic.

(iii) Available German naval forces in the area

The naval commander-in-chief Group West was Vice-Admiral Kranke whose headquarters was in Paris. He was in control of all German naval forces on the coasts of France. To him was responsible the flag officer in charge Western Sea Defences for the coastline from the Dutch-Belgian frontier down to Bayonne on the Franco-Spanish border.

At the beginning of June 1944, this Command had a personnel strength of 30,940 and some 460 miscellaneous surface craft ranging from naval built M. class and R-boat minesweepers to auxiliary patrol and escort trawlers, gun carrying artillery barges, sperrbrechers and auxiliary minesweepers. In addition there were five "Z" class destroyers, five Möwe class and one "T" class torpedo boats, and 34 E-boats. The destroyers were in southern Biscay ports but the E-boats and torpedo boats, constituting a considerable potential menace, were all disposed in the Channel area. Full details of type, number and bases of all these craft are given in Appendix III and the location of place names on Map No. 2.

The U-boat force, which on paper appeared a formidable factor, was concentrated in Biscay ports awaiting news of the actual point of assault. As has been recounted in Volume IV Chapter XIV this was known as "Group Landwirt" and by early June numbered 36 U-boats. It is of significance that a transfer of the Schnorchel fitted boats to Channel ports (Cherbourg, Le Havre and Boulogne) during April or May 1944, which was considered highly desirable by the U-boat Command, could not be undertaken because there were no bomb proof U-boat shelters in any French Channel port. There was a similar "Group Mitte" numbering 21 U-boats concentrated in

See Chapter IV  
section (iv)(b)

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S.W. Norwegian harbours. In addition, in the first week of June there were 13 more U-boats actually on their way into the Atlantic in the Northern Transit Area.<sup>(1)</sup>

No clear plan appears to have been prepared by the enemy either to interfere with the preparations and assembly of the assault or to provide additional surface craft patrols to give warning of the approach of an invading force. Certainly there was nothing so comprehensive as that maintained for months on end by ourselves in 1940 when we were at a disadvantage regarding numbers. One particularly glaring omission by the enemy was any determined attempt at air reconnaissance. However, for this absence credit must go to our air superiority in general and to Fighter Command's interception sweeps in particular.

(iv) A recapitulation of the German naval appreciation up to the invasion

For over a year, the Naval Group Command West had been aware that the area between Cherbourg and Le Havre was exposed more particularly to invasion than other stretches of the European coast line for three main reasons:-

1. The two principal harbours of Le Havre and Cherbourg could be outflanked by a landing in the Seine Bay.
2. The Cotentin Peninsula provided shelter against the prevailing westerly winds.
3. The outlying rocks did not form any real obstruction to landings as not only were there long stretches of beach clear of rocks but many of the offshore rocky ledges were submerged at high water sufficiently to allow shallow draught vessels to pass over them.

Admty.  
F.D.S./2/53.

However, the presence of these rocks led the Army Command to regard the area as far less threatened than either the Somme to Boulogne stretch or the north coast of Brittany.<sup>(2)</sup> The Army opinion prevailed. Consequently the construction of permanent coastal defence installations, particularly anti-tank obstructions was notably backward in the Seine Bay area as compared with other sectors in the Channel stretch.

The German Navy attempted to rectify the weakness of the Seine Bay defences by extensive mining. During the first three months of 1944 barrages of ground and moored mines were laid between Barfleur and the approaches to Le Havre. By April most of these ground mines had become inoperative<sup>(3)</sup> and many of the moored mines had been swept by the English. It was intended to renew both types of barrage during April but, because of delays in production in Germany and interruption in delivery due to bombing attacks on the railway system, no mines

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- (1) See Map Nos. 13 and 14 for positions of all U-boats at sea on 6 June.
  - (2) The known assembly of landing craft in the Plymouth area was thought (rightly) by German naval opinion to be for the ultimate purpose of movement eastward so as to join the Portsmouth concentration. The Army regarded it as intended for a descent on Brittany, thereby lessening still further their attention to the Seine Bay defences.
  - (3) The ground mines were laid with period sterilisers.

ibid were available until May and then only in limited numbers; moreover the principal mine laying squadron, consisting of five torpedo boats, was heavily attacked by aircraft when at sea during this month, losing the Greif sunk and others damaged. Extensive British air mining of Le Havre followed and caused a temporary but critical closing of the port. Meanwhile mines were arriving at last at Cherbourg but no laying vessels were available. Instead, an increase in the laying offshore of the mass produced KMA concrete ground mines was planned. The 2nd and 6th Minesweeping Flotillas were ordered to Cherbourg and Le Havre from the Biscay ports of Concarneau and Benodet to lay large numbers of these mines but because of strong action by English surface and air craft few arrived at their destinations. However, laying on the intended scale was in any case frustrated because of the blocking of mine transport in northern France by the bombing attacks on the railway system.

ibid Since early April there had been sporadic air raids on coastal defences, traffic centres and airfields in the area between Dunkirk and Cherbourg but without any recognisable centre of concentration. There was known to be a strengthening of English surface patrol craft in the English Channel and a growing assembly of landing craft particularly in the Portsmouth area. However, by the end of April this concentration was not considered to be yet large enough to fear an imminent large invasion.

During May the inadequate G.A.F. reconnaissance gave no clear picture of the rapid Allied build-up. This lack of information, caused entirely by the efficiency of British fighter patrols, had a decisive effect on the German inability to appreciate the situation. The enemy noted that Allied activity at sea remained unchanged as compared with previous months and there had been no mass attack by aircraft against German naval forces in harbour. On the whole, therefore, it was thought that no change had occurred in the general picture at the beginning of June 1944 as compared with May. Despite the absence of air reconnaissance it seems to have been assumed that the assembly of the Allied invasion fleet had still not been completed.

ibid One other weakness in the naval defence measures was the lack of suitable craft with which to maintain off shore patrols. For this purpose there were only the gun barges of the Sixth Gunbarge Flotilla whose speed was insufficient to allow them to operate from either Cherbourg or Le Havre as the threat from British air patrols necessitated their return to port during daylight hours. Accordingly they were stationed in the small local harbours of Courseul, Port en Bessin, Grandcamp, Isigny and St. Vaast. All these harbours dried at low water and were only usable around the time of high water. Consequently the coast remained unpatrolled over considerable periods. This was a disadvantage which had to be accepted and the danger of which was fully recognised by Group West.

ibid On the 5 June the weather forecast showed conditions rather adverse to a landing and although the approach of full moon and a dawn low water were otherwise favourable it was not thought to be so for the Seine Bay with its numerous outlying rocks. To sum up, at dusk on 5 June, Naval Group West considered that there were no particular indications of an imminent landing and in view of the weather and tide conditions in the area no gun barge patrols left harbour.

During the night 5/6 June the main assault convoys sailed from Spithead and, preceded by the minesweeper force, set course south for the Seine Bay. Coastal Command started flying the Cork Patrols in the western Channel and dawn Beaufighter sweeps in the eastern Channel took off.

(v) The German reactions on 6 June

The descent of the first Allied parachute troops at 0230 hours was taken by the enemy to be a sabotage raid. Continued landings were by 0300 hours recognised as being a more serious operation but it was not till 0320 hours, when a radar station reported ships approaching northward of Port en Bessin that it was realised by Naval Group West that a landing operation was imminent.

Despite the preceding British air attacks the efficiency of many of the radar stations was not affected as far as the main Channel sectors were concerned. Radar on both sides of Cherbourg had located eastbound shipping at about 2300 hours on the 5th but this appeared to be on or near the usual south coast convoy route and no particular significance was inferred from the reports. But when the main assault fleet headed southward for the Seine Bay it was not reported because the vital radar station, necessary to spot such an approach, at Cape Barfleur was out of action owing to recent air attacks. Furthermore the continued advance into the eastern part of the Seine Bay was not registered mainly because the radar equipment at Arromanches was non-operative owing to British jamming. Thus the approach of the invasion fleet was not fully established until dawn when the ships could be dimly seen with the naked eye and the true scale of the operation was at last apprehended.

However, Naval Group West had taken precautionary action on the first report of parachute landings and at 0310 hours the Flag Officer U-boat West was ordered to bring Group Landwirt to immediate readiness. At 0343 hours the same order was radioed to Group Mitte on south Norway. At 0351 hours, six of the U-boats on passage into the Atlantic who were still to the east of the Iceland/Faroes line were ordered to remain stopped where they were until further notice.<sup>(1)</sup> At the same time the torpedo boat, E-boat and local patrol flotillas in Cherbourg and Le Havre were ordered to sea to carry out reconnaissance sweeps in the Seine Bay area.

Realising by 0530 hours that a major operation was probably under way, the five schnorchel fitted U-boats who had just cleared past Iceland into the Atlantic<sup>(2)</sup> were told to make for western France at maximum continuous speed but to keep submerged during the day. The confirmation of the long awaited invasion landing came through to Flag Officer U-boats West an hour later and at 0800 hours the eight schnorchel fitted U-boats in Brest received orders to put to sea with despatch.

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- (1) These boats were:- U.247 (Sch.), 294, 980, 958, 290 and 1000. N.B. (Sch.) denotes a schnorchel fitted U-boat.  
(2) U.767, 988, 671, 1191 and 719 - all schnorchel fitted. This order was modified on 7 June in that U.719 and 247 (of the halted group) were detailed to operate in the North Channel and off the Butt of Lewis respectively. With all eyes on the invasion landings, Doenitz hoped to catch the defences off guard in these areas.



It was intended to get these boats to the scene of the landings as quickly as possible. At the same time the destroyer flotilla in the Gironde estuary was ordered to proceed at maximum speed for Cherbourg.

Later in the forenoon Admiral Doenitz himself ordered the whole of Group Landwirt to sea including all non-schnorchel boats and by midnight/6 June, 35 of the 36 in the Group had left harbour. Their detailed orders were as follows:-

(A) The eight Brest schnorchel boats plus one schnorchel boat from La Pallice were to make for a position 25 miles south of the Isle of Wight.<sup>(1)</sup>

(B) Seven Brest boats without schnorchel to operate in billets between the Scilly Islands and Start Point.<sup>(2)</sup>

(C) The remaining 19 boats from St. Nazaire, Lorient and La Pallice, who were all non-schnorchel, to form a reconnaissance ribbon along the 100 fathom line in the Bay of Biscay from the latitude of Brest down to Bayonne in case the Allies intended a second landing in the Biscay area.<sup>(3)</sup>

(vi) Action commences

The results of the enemy light craft reconnaissance sweeps from Cherbourg and Le Havre were meagre in the extreme. The 5th Torpedo boat flotilla contacted a strongly escorted battleship squadron and fired 15 torpedoes at it securing one hit on the Norwegian destroyer Svenner. Two torpedoes passed between H.M. ships Warspite and Ramillies and another narrowly missed H.M.S. Largs. The 15th Patrol flotilla came under fire from Allied ships and lost one boat. Both flotillas returned to Le Havre shortly after 0700/6 June having expended all their torpedoes and most of their ammunition. The Cherbourg E-boats, fifteen in number, failed to find the invasion fleet and were back in harbour by 0600 hours. The state of the tide prevented any of the gun barges based at St. Vaast and Port en Bessin from putting to sea at all. No Allied vessels other than the Svenner were sunk or damaged by any of the attacks.

Sweeps by No. 16 Group Beaufighters from 0800 hours saw no signs of enemy surface craft either between Boulogne and Le Havre or off the Cotentin peninsula.

In the west the first sightings of enemy forces did not come till 1900 hours when four Beaufighters on interception patrol off Ushant against enemy aircraft saw five U-boats escorted by six M. class minesweepers coming out from Brest. No attack could be made on them because of the intense flak. Within the hour three more U-boats were seen by a Liberator and two Mosquitoes, also leaving the French coast, and a sweep in progress by 30 R.P. and cannon Beaufighters of Nos. 144 and 404 Squadrons escorted by eight Mosquitoes of No. 248 Squadron sighted three enemy destroyers steering northwest up the coast abreast of St. Nazaire. These were Z.24, Z.32 and ZH1 of the

(1) U.764, 441, 269, 821, 984, 275, 621 and 953 from Brest and U.212 from La Pallice.

(2) U.413, 256, 740, 963, 629, 415, 989.

(3) U.714, 650, 281, 228, 985, 260, 255, 270, 608, 437, 445, 758, 766, 382, 993, 981, 333, 262 and 970.

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8th Destroyer Flotilla from the Gironde. They were attacked at 2030 hours in position 4653N x 0253W. The rear destroyer was seen to haul out of line on fire amidships and the other two were repeatedly hit by cannon fire. Q/144 Squadron was shot down by flak. After disengaging and on their way home, two of the escorting Mosquitoes shot down a JU.88 to the northward of Ushant which was apparently shadowing a British Escort Group in this position.

ibid

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This attack was followed up by the despatch of eleven more Beaufighters of Nos. 144 and 404 Squadrons. They sighted the three destroyers at 0130 hours on 7 June off Penmarch Point just south of Brest. Attacks were delivered on all three and fires broke out again in the rear ship. Owing to the damage received in these two actions the flotilla put into Brest to effect repairs. Late on the 8 June they put to sea again together with torpedo boat T.24 and, after being sighted off Ushant at 2227 hours by Liberator T/547 Squadron, were brought to action at 0120/9th by the British 10th Destroyer Flotilla some 30 miles W.N.W. of the Ile de Bas. ZH1 was sunk and Z.32 beached herself in a sinking condition on the Ile de Bas. Z.24 was badly damaged and with T.24 returned to Brest. Later on the 9th the stranded destroyer was repeatedly hit by bombs and R.P. by 24 Beaufighters of Nos. 144 and 404 Squadrons.

T.24 made another effort to reach Cherbourg during the night of the 9/10 June but failed to get through our surface craft patrols. So ended the attempt to bring this force into the decisive area. (1)

Although Beaufighter and Mosquito sweeps were frequent up to mid-June, very few sightings were made of any enemy vessels between the Gironde and the Channel Islands. What were seen were small patrol craft and although three attacks were made none were damaged.

To return to the U-boats. The sightings late on 6 June were of course part of the outflux of Group Landwirt boats. As speed of deployment was essential, many of them kept on the surface during the dark hours of the 6th/7th and numerous clashes took place with No. 19 Group aircraft who were flying the Cork Patrols specifically designed against just such a concerted movement.

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Air attacks were delivered by eleven aircraft resulting in the sinking of the inward bound U.955 and the enforced return damaged of five of the outward bound U-boats. (2) During these actions L/L Liberators B/224 and M/53 Squadrons were shot down by U.415 and 256 respectively and two more aircraft (L/L Liberator M/224 and L/L Wellington C/407 Squadrons) never returned. One of them probably fell to U.621 (Soh.) who claimed an aircraft shot down at 0137/7 June.

- (1) Eventually Z.24 and T.24 returned to the Gironde where they were sunk on 24 August by Coastal Command aircraft.
- (2) U.415 damaged by L/L Wellington G/179 Squadron  
U.963 damaged by L/L Liberator L/53 Squadron  
U.256 damaged by L/L Liberator L/53 Squadron  
U.212 (Soh.) damaged by Tsetse Mosquitoes O and L/248 Squadron  
U.989 put back to Brest with the C.O. wounded by M/G fire.  
The aircraft concerned cannot be identified  
U.955 sunk by Sunderland S/201 Squadron.

This early trial of strength between the A/U patrols and surfaced anti-invasion U-boats was to have significant consequences. The U-boats now received discretion by signal to submerge at will during the passage, and in the following weeks the British air patrols were so effective that henceforward the boats did in fact spend the majority of their time submerged and often on the bottom which greatly reduced their operational value. Alternatively they sought the shelter of the concrete bunkers in the Biscay Ports far from the vital zone of operations. Nothing was seen of them by the daylight patrols on the 7th but after nightfall some again surfaced to hasten their passage and another series of encounters took place. Seven air attacks were made resulting in the enforced return to Brest of U.413 by Halifax F/502 Squadron, the sinking of U.970 by Sunderland R/228 Squadron and a veritable right and left by L/L Liberator G/224 Squadron (Pilot - Flying Officer K. Moore) who sank U.629 and U.373<sup>(1)</sup> within twenty-five minutes of each other.

ibid

On 8 June eleven U-boats of Group Mitte were ordered to sea to form, together with the five halted non-schnorchellers, a reconnaissance arc around South Norway in case of an Allied landing either here or in northern Denmark. On the next day five of these boats, which were fitted with schnorchel<sup>(2)</sup> were ordered into the Atlantic to proceed direct to the Channel area. The air operations against U-boats in the northern area are dealt with in Section (xi).

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In the Channel Approaches there was an unsuccessful Mk.24 attack on 8 June on an already diving U-boat, probably U.984 returning to Brest. Only three attacks eventuated during the subsequent night hours none of which inflicted any damage but at 0840 hours on the 9th U.740 was sunk southwest of the Scillies by Liberator F/120 Squadron and at noon on 10 June four Mosquitoes of No. 248 Squadron on fighter interception patrol caught U.821 (Sch.) on the surface close to Ushant. In full view of the Germans stationed on the island the Mosquitoes shot the boat to ribbons, killing 20 of her bridge and gun personnel, riddling the external fuel tanks and forcing the remainder of the crew to stay inside the boat which was powerless to dive. At this juncture Liberator K/206 Squadron arrived on the scene and sunk the disabled U-boat with depth charges.

ibid

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By the evening of 10 June, all eight of the non-schnorchel U-boats detailed to operate between the Scillies and Start Point had been sunk or damaged by air attack. Of the nine schnorchel boats making for the Seine Bay area, one had been sunk and two forced to return to Brest. None of the remainder had even reached the Channel Islands. Numerous attacks had been made on the U-boat reconnaissance line in the Bay of Biscay involving the loss of one. Map No. 15 shows the situation of all U-boats in the area northwest of Europe on 10 June.

In B. d U.'s War Diary for 10 June there is the entry that 'on account of the large number of air attacks and the extensive damage suffered, above all on U-boats without schnorchel,

- (1) U.373 had just left Brest bound for the Scilly Isle Patrol in place of U.989 who had returned to harbour with the C.O. wounded.
- (2) U.715, 243, 480, 678 and 971.

all further sailing of these boats has been stopped for the present.' The non-schnorchel boats still at sea then received the following orders:-

In the approaches to the Channel - They were free to start a return passage if the enemy defences were too strong.(1)

In the Bay of Biscay area - They were to lie on the bottom for lengthy periods so as to shorten the time necessary to re-charge batteries on the surface. It was accepted that their reconnaissance value was thereby much reduced.

ibid

However, air attacks continued to be made on these Biscay U-boats. Five were made during the next two nights but at some cost to us. U.333 was damaged by Sunderland U/228 Squadron but was herself shot down. U.437, 445 and 228 were all attacked but in each case shot down their assailants.(2) Finally the schnorchel fitted minelayer U.214, who had just left Brest to lay mines off Falmouth was damaged and forced to return by L/L Liberator S/224 Squadron who unhappily was shot down just after releasing depth charges.

Not willing to risk further loss or damage, B. d U. recalled all non-schnorchel U-boats to port on 12 June observing in his War Diary that 'otherwise the strong enemy air activity will lead to high losses which would only be acceptable if an immediate landing on the Biscay coast was expected. As this is no longer considered an acute danger the boats will remain at readiness in the concrete shelters in harbour.'

See Map 16

By the evening of the 15 June all these U-boats were back in port but not before several more encounters with Coastal Command aircraft during which U.270 was badly damaged by L/L Wellington T/172 Squadron and two more aircraft were lost.(3)

(vii) The slow progress of U-boats up Channel

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and the logs  
of U-boats  
concerned

Meanwhile the six remaining schnorchel U-boats were only making very slow progress up Channel under the constant air cover and occasional hunts by escort groups.(4) Almost continual submergence saved them from air location except for one harmless attack on U.269 at 2330 hours on 10 June and the momentary sighting of an unmistakable schnorchel head at 1030 hours on the 11th by Liberator A/110 Squadron U.S.N. in a flat calm sea some 30 miles west of Guernsey. On 13 June U.953, who had only just reached a position 35 miles south of Start Point, gave up the attempt because of a defect in the schnorchel and started back to Brest. On the same day U.275 entered St. Peterport - Guernsey with a run-down battery followed on the 14th by U.269 also exhausted. Their presence

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- (1) B. d U. was unaware as yet that there were no U-boats left of the ones detailed to this area.
  - (2) Halifax Z/58 and Sunderlands N/228 and S/201 Squadrons never returned.
  - (3) L/L Liberator C/53 and L/L Wellington S/172 Squadrons never returned.
  - (4) These six were U.764, 441, 269, 275, 621 and 953. U.821 had been sunk and U.212 damaged by air attack. U.984 had been damaged by an Escort Group W.N.W. of Ushant on 7 June and had returned to Brest.

was detected by our air reconnaissance and the harbour was attacked by ten Typhoons of No. 263 Squadron acting under A.D.G.B. control on 14 June. Neither boat was damaged but U.275 left that night with her battery still not fully charged. Two air attacks were made on the harbour the next day by 14 Spitfires of Nos. 1 and 169 Squadrons followed by seven Typhoons of No. 263 Squadron. U.269 lay on the bottom of the harbour and so escaped damage but a patrol boat (V.P.205) of 481 tons was sunk. U.269 remained at St. Peterport, generally on the bottom during daylight, until early on the 18 June. U.275 subsequently made three attempts to reach her operational area but on each occasion had to turn back because of anti-submarine surface forces. Following an air attack, when five miles north of Guernsey at 1654Z hours on 18 June by U.S.N. Liberator B/110 Squadron, an oil leak developed and her commanding officer decided to return to Brest.<sup>(1)</sup> U.764 by 15 June had only reached a position 25 miles S.S.E. of Portland Bill and on this day sighted three frigates of E.G.3. He attacked and sank H.M. frigate Blackwood. Subsequent depth charge counter-attacks by others of the Group so damaged the boat that a return to Brest had to be started. U.441 by 15 June had only made very slight progress and may have been for some reason returning to Brest because on 18 June she was sunk by the Polish L/L Wellington A/304 Squadron when only 40 miles N.N.E. of Ushant. This leaves U.621 still unmentioned. She was in fact the only one to reach her billet, which was northeastward of Cape Barfleur. She arrived here early on 15 June and soon sighted batches of landing craft southward bound. Two salvos of torpedoes were fired; the first all missed but one of the second hit and blew to pieces a laden L.S.T. of 250 tons. Nothing was effected in the next three days. At 1030 hours on 18 June, U.621 fired at and missed two battleships and then, having expended her torpedoes, she started the return journey to Brest. Thus it was a full nine days before a single U-boat reached the decisive area and then only one small craft was sunk. It was to be another fortnight before further loss was inflicted by U-boats.

A study of the logs of surviving U-boats during their June sorties highlights their difficulties and complete lack of mobility. Never more than a 50 mile daily run was achieved and in most cases considerably less. The constant air cover made them chary of schnorchelling by day and the drain on battery power forced them to lie bottomed when the tidal stream was adverse. Roving groups of surface craft kept them in a constant state of harassment and hindered schnorchel charging at night. In desperation some U-boat captains surfaced at night to charge while manoeuvring at speed on various courses to avoid detection but more often than not they had to dive soon after, either because of sighting searchlights or on warning of approaching aircraft in their radar detectors, with the battery still far from charged. Inexperience of schnorchelling led to frequent violent changes in the air pressure inside the boat or to blowbacks of stifling and noxious exhaust gases. Except for boats taking refuge and a slight rest in Guernsey, none dared to radio their base either to give their position or experiences so that the U-boat Command was unable to plan concerted operations, less dangerous routes or more favourable

See Map No. 16  
for U-boat  
positions on  
15.6.44.

The logs of  
U.953, 984, 764,  
275 and 621.

(1) This attack was made while U.275 was schnorchelling. The photographs taken at the time are among the very few ever obtained of a U-boat actually schnorchelling.

attack areas and was quite unaware of losses or the very slow progress when on passage.

This handicap was indeed to remain a feature of all U-boat operations until the end of the war. The whole organisation had been based on the principle of free inter-communication between the boats at sea and the headquarters ashore. From now onwards it was impossible to exercise control and operations degenerated into blind independent unco-ordinated sorties.

(viii) Enemy attacks by surface craft against the invasion build-up shipping

The enormous superiority of Allied naval and air power concentrated in the invasion area prevented any attacks being attempted in daylight, (1) neither was there much movement even of patrol craft. The daylight reconnaissance sorties by A.D.G.B. sighted a few small vessels in the Channel Island area and their aircraft sank one of these off Granville on 7 June. (2) Two Beaufighters of No.143 Squadron came across some patrol boats off Cherbourg on the 8th and sank two of them by bombing attack. (3)

During the dark hours from 6/7 June onwards enemy light craft, including some E-boat flotillas, laid mines in areas on both sides of Cherbourg, in the Seine Bay, in the Boulogne/Dieppe sector and off the Flanders coast. This mining included an increasing use of the D.W.I. pressure operated type which from 9 June onwards was also being laid intermittently by the G.A.F. Enemy mining gave us a great deal of trouble, particularly the D.W.I. which was virtually unsweepable - (4) indeed, excepting marine loss, by far the greatest number of Allied shipping casualties while en route to and from the beach heads resulted from mine explosion.

Attacks on build-up shipping were made entirely by E-boats and only took place at night. This shipping soon settled down into a definite convoy cycle and each one received strong surface escort with support groups operating on each side of the route. The flank support again and again drove off E-boat attempts to penetrate into the Funnel and little loss resulted from the numerous torpedoes fired by them. Unfortunately, few casualties were inflicted on the E-boats in these encounters. The daylight sweeps by No.16 Group somewhat naturally saw nothing of them but the pre-dawn Beaufighter sorties attacked small detachments of E-boats hurrying back to harbour before daylight off Boulogne and Cherbourg on the 7th, off Flushing on the 8th and off Le Touquet and Flushing on the 11 June but on no occasion was damage caused. The Wellingtons of No.415 Squadron on their nightly anti-E-boat patrols also had several encounters. Attacks by them were made on the nights of the 6th/7th off Dieppe, the 7th/8th off Ostend and the mouth of the Somme, the 9th/10th off Dieppe and on the 12th/13th off Dieppe and Flushing. In the latter case H/415 Squadron was shot down by E-boat flak after starting to home

- (1) This was also true as regards attacks by the G.A.F. See Volume III of the Liberation of N.W. Europe Chapter VII.
- (2) Minesweeper M.4605 - 110 tons.
- (3) Harbour defence drifters Elbe and Johanna - both of 150 tons.
- (4) A measure of safety was secured by limiting the speed of all vessels in areas where it was thought that these pressure mines had been laid.

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a Beaufighter Percolate strike. Again no damage had been inflicted in any of the attacks nor were the E-boats intercepted on the four occasions when a Percolate follow up was homed into the vicinity.

Up to 12 June the E-boat arm had lost S.139 and S.140 on mines to the north of Barfleur and S.136 in action with H.M. ships in the same area. They had sunk three small vessels in a convoy southward of St. Catherine's Point and four L.S.T.s, two tugs and a Phoenix caisson in the Seine Bay. However, a dawn sweep on 13 June between Boulogne and Fécamp by 17 Beaufighters of Nos. 143 and 236 Squadrons sighted four E-boats, with some R-boats nearby, off Le Touquet steering north at 0445 hours. Bombing attacks were made which resulted in the sinking of S.178, S.179, S.189 and R.97 who had closed to rescue survivors. H/236 Squadron was shot down by flak.

ibid

This was a welcome success after much effort had been expended against these elusive and difficult targets. It is true that the E-boats had not proved the menace that had been thought likely but their relative immunity and continuous operations remained a potential threat. In fact their numbers were nothing like as high as estimated at the time by Allied Intelligence. We have seen that from the German records the total strength between Muiden and Cherbourg on 6 June was 34. By 14 June the strength had fallen to 28 of which seven were non-operational due to refit or repairs. Full freedom of operations was being curtailed by a serious shortage of torpedoes at Le Havre, their most favourably placed sortie point. This shortage was another by-product of the R.A.F. bombing attacks on the rail and road system in North France and a certain amount of torpedo ferrying had to be done by E-boats from Cherbourg and Boulogne.

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(ix) R.A.F. Bomber Command takes a hand

All previous success against German surface craft and E-boats in particular was dwarfed on 14 June by a devastating air-raid on Le Havre carried out by 325 Lancasters and 18 Mosquitoes of Bomber Command. It started in daylight at 2235 hours and during the next two and a half hours 1,800 tons of H.E. bombs were dropped. Eleven E-boats were destroyed outright in the shelters and three more were seriously damaged. Only one remained operational in the port. Three of the five torpedo boats, twenty auxiliary minesweeper and patrol boats, and nineteen tugs were sunk in the harbour.

This was followed up by an equally destructive raid on Boulogne during the next evening by 274 aircraft, mostly Lancasters, who dropped 1,315 tons of H.E. bombs. Three M class minesweepers, an R-boat depot ship, seven R-boats, five artillery gun barges and eleven auxiliary patrol and mine-sweeping craft were sunk.

ibid  
and  
B.O. records

The effects of these two raids were lasting. Very few attacks and no further shipping casualties were inflicted during June by enemy surface craft in the Funnel area. Only 13 E-boats remained operational in all Group West's command. These were re-grouped and centred on Ostend, Boulogne and Cherbourg<sup>(1)</sup> and their operations were subsequently mainly confined to laying mines. At the same time the 6th E-boat

(1) Ostend - 8th Flotilla - Total three E-boats  
Boulogne - 2nd, 4th and one of the 9th Flotilla -  
Total seven E-boats.  
Cherbourg - 9th Flotilla - Total three E-boats.

Flotilla in Baltic waters was ordered round to Ymuiden as a re-inforcement. They arrived there on 25 June.

(x) Little further movement by enemy surface ships

By mid-June the invasion army was firmly lodged and, although further easterly advance was held up at Caen, the American forces on the western flank were threatening Cherbourg. The E-boat attacks had had little effect on the stream of build-up supplies and any further threat by them or other surface forces had been scotched by the bombing raids on Le Havre and Boulogne. However, where the enemy had failed, the weather succeeded in disrupting the sea communication with England. A northeasterly gale sprang up on 19 June and raged for three days. Much damage was done to shipping, to the Mulberry harbour and to beach unloading facilities. The build-up supplies, which were already a little behind schedule owing to poor weather since the landing, were thrown out of gear and offensive operations by the Army were seriously curtailed for nearly a week.

Although No.16 Group's main efforts were employed in the area between Ymuiden and Le Havre, daily reconnaissance sorties were flown along the north German coast in order to spot any westward movement of enemy shipping. Little had been sighted up to the 15 June but on that day a convoy was reported and a wing strike of 40 Beaufighters escorted by ten Mustangs attacked it just to the eastward of Ameland. Three vessels were sunk for the loss of one aircraft.<sup>(1)</sup> Thereafter until the end of June few movements were reported and no attacks took place.

Very frequent coastwise sweeps and patrols, both by day and night, were maintained between the Texel and Le Havre from 15 to 30 June. Night patrols attacked small parties of two or three E-boats on five occasions but no casualties were inflicted except on 22/23 June when slight damage was caused to 8th Flotilla boats off the Hook of Holland. Other surface craft sighted were few and far between and were of small patrol type. One R-boat (R.79) was sunk off Boulogne on the 23rd and an artillery gun barge off Le Treport on 29 June. Four other encounters took place in this fortnight in which no damage was caused but we lost three Beaufighters by flak fire.

An even blanker fortnight was experienced in the west by No.19 Group's anti-shipping squadrons. As Cherbourg became more closely invested from 15 June onwards, frequent sweeps by the Beaufighter and Mosquito Wing were made between this port and the coast of Brittany to Brest but nothing was sighted. Typhoons armed with R.P. under A.D.G.B. control had a little better luck and sank two small vessels off St. Malo on 16 and 17 June, and severely damaged a ship in the harbour on 24 June.<sup>(2)</sup> After the fall of Cherbourg on 26 June<sup>(3)</sup> the

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- (1) Amerskerk - 7,900 tons, Nachtigal - 3,500 (E-boat depot ship) and the M. class minesweeper M.103 - 750 tons. Four Beaufighters were damaged by flak of which one (D/236 Squadron) crash landed on return.
  - (2) 16 June - Karel - 450 tons. 17 June - La France - 751 tons. 24 June - Lussac - 1,586 tons.
  - (3) The capture of Cherbourg split Group West's Command into two separate areas with no inter-communication by sea and raised ever increasing problems of supply to the western portion.



Group's anti-shipping effort was directed entirely to the Biscay coast between Ushant and the mouth of the Gironde river with particular attention to the area off Lorient and St. Nazaire. Here there were numerous sightings of sperrbrechers, mine-sweepers and escort craft concerned with the movement of U-boats in and out of harbour. For the most part these sightings were so close to the coast that land flak batteries kept the air strikes at a distance and the only success was on 30 June when an escort vessel was sunk off Benodet harbour.(1)

For the whole month of June, the reconnaissance and anti-ship sorties were a big advance on May figures. The A.D.G.B. despatched 1,335 sorties of single engine-fighters most of which were purely reconnaissance but 218 attacks were made by aircraft under its control and ten aircraft were lost as against four enemy vessels sunk totalling 1,792 tons and one of 1,586 tons damaged. The break-down of Coastal Command effort was as under:-

Coastal Command	Sorties despatched	Attacks	A/C lost	Vessels sunk	Vessels damaged
No. 16 Group	878	180	12	11-13,150	nil
No. 19 Group	445	123	5	1- 530	3-10,328
TOTAL	1,323	303	17	12-13,680	3-10,328

(xi) Operations against U-boats in the Northern Transit Area

In Volume IV Chapter XIV Part II, the operations against U-boats in the Northern Transit area were left at 3 June. The shifting of the air patrols from the Iceland/Faeroes region to the Shetlands/Norway longitudes had opened a phase of action lasting from mid-May to 3 June. Most of the 25 sightings and 17 attacks during this period had been on U-boats northbound to reinforce the Arctic U-boat flotilla based at Trondheim and Narvik but six attacks were on boats detailed for the Atlantic or Biscay ports. They resulted in the destruction of four U-boats and the enforced return damaged of another. In this respect these northern air operations had a direct share in the subsequent safeguarding of Operation Overlord from U-boat attack in the Channel. They continued to do so during June.

The exploitation of the May spate of sightings had resulted in a reinforcement of No.18 Group from both Iceland and No.15 Group. Though most of the detachments from No.15 Group were recalled on 5 June for the Channel Cork patrols, No.18 Group remained greatly strengthened. The scheme of air patrols had been re-organised at the end of May and the whole sea area north of Scotland from latitude 59° to 66°N between longitudes 10°W and 10°E was divided into 115 rectangular patrols each having a number or a letter. A further refinement in the selection was effected by adding a colour (red, blue, green or yellow) to these numbers and letters which denoted a movement of 30 miles to the north or east. A very varied choice was thus possible so as to cover all eventualities.

(1) UJ.1408 - 530 tons, anti-submarine escort vessel.

See Map 14

B. d U.  
War Dairy

After 3 June the more cautious submerged tactics of U-boats in transit resulted in a cessation of air attacks for the next week and five schnorchel fitted U-boats cleared through unseen into the Atlantic.<sup>(1)</sup> Meanwhile another batch of eight new U-boats had left harbour also bound for the Atlantic. After the start of the Normandy landings these were temporarily halted for two days and then on 8 June the schnorchel fitted U.247 was detailed for the Butt of Lewis area, U.233 and U.673 continued outward for Atlantic missions and the remaining five together with an efflux of eleven Group Mitte boats from Norwegian harbours were ordered to patrol billets around the southwest corner of Norway as a reconnaissance line against a possible further Allied landing in Norway or northern Denmark. On 9 June all schnorchel fitted U-boats in Group Mitte were ordered to proceed out into the Atlantic and then direct for the English Channel.<sup>(2)</sup>

See Map 15

No. 18 Group  
O.R.B.  
Appendices  
and  
B. d U. War  
Diary

See Map 16

Beyond a distant sighting of U.247 on 6 June, well to the north of the Shetlands, and one of U.980 leaving to take her place in the reconnaissance line,<sup>(3)</sup> no attacks took place until 11 June. On this date U.980, by then in her patrol position, was caught on the surface and sunk by Canso B/162 R.C.A.F. Squadron. For the next week sightings and attacks were almost of daily occurrence both on non-schnorchel boats in the reconnaissance patrol line and schnorchel boats bound for the English Channel. Two of these latter (U.715 and 423) were sunk outright and another (U.998) was so badly damaged that on arrival back in port she had to be scrapped.<sup>(4)</sup> U.804, going to her assistance, was attacked by Mosquito R/333 Squadron and although shooting the aircraft down suffered eight men wounded by cannon fire and had to put back to Bergen. U.290, on coast patrol, was similarly shot up by Mosquito H/333 Squadron on 14 June and had to return immediately to port with nine men wounded.

H.Q.C.C.  
June/O.R.B.  
Appendix 330

The northern area actions at this time were notable in that, contrary to the Channel operations, all the U-boats whether fitted or not with schnorchel elected to fight it out with flak against the attacking aircraft.<sup>(5)</sup> It was also marked by the use of No. 333 Squadron's Mosquitoes to carry the offensive against U-boats close in to the Norwegian coast.

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- (1) U.988, 767, 719, 1191 and 671.
  - (2) U.715, 971, 678, 423, 480, 998.
  - (3) The sighting was reported at midnight/8 June by Catalina T/120 Squadron. Shortly afterwards this aircraft was shot down by an Me.110.
  - (4) U.715 was accurately attacked on 13 June while schnorchelling by Canso T/162 R.C.A.F. Squadron, thus constituting the first success against this device. The U-boat surfaced mortally damaged. Some of the crew manned a flak gun and shot T/162 down after which U.715 foundered. On the same day, a little further north, U.480 was attacked by Canso B/162 R.C.A.F. Squadron but shot the aircraft down with no damage to herself. U.998 was very seriously damaged by Mosquito H/333 Norge Squadron on 16 June.
  - (5) U.423 was sunk by Catalina D/333 Norge Squadron on 17 June.
  - (5) No specific instructions on this subject can be found in German records and it may be that overconfidence among U-boat captains on their first war cruises resulted in this defiance to air attack. On the other hand, there is evidence that the newly fitted schnorchels were giving trouble and some of the surfaced encounters may well have been involuntary.

They were armed with two depth charges but did much of their execution by cannon fire directed against the crowded U-boat gun platforms. (1)

From 17 June there was a pause, broken only on the 20th by Liberator K/86 Squadron damaging the Atlantic bound U.743 who had to put back into Bergen. Action came fast once more from 24 June and continued up to the end of the month. On the 24th, U.1225 bound for the Atlantic was attacked by Canso P/162 R.C.A.F. Squadron when 120 miles north of the Shetlands. The aircraft was badly shot about on the run in but staggered on to straddle and sink the U-boat with depth charges. Immediately afterwards the aircraft became unmanageable, the starboard engine fell out of the wing and burning furiously the aircraft ditched. The crew got clear but were in the water for 21 hours, two of them dying of exposure before the arrival of an A.S.R. high speed launch. The captain - Flight Lieutenant D. E. Hornell - died soon after being pulled on board. He was awarded a posthumous V.C.

On 26 June, U.317 in the coastal patrol line, was attacked on the surface and sunk by Liberator N/86 Squadron under heavy flak. On the same day Liberator M/86 Squadron attacked U.771, also in the patrol line, but was shot down with no damage to the U-boat. On the 28th, U.478 bound for the English Channel was sighted while schnorchelling in 6203N x 0155E by the Norwegian Catalina C/333 Squadron at 2000 hours but at a distance of only 100 yards away. The aircraft made a steep turn but the snap attack did no damage. Only a few minutes later and some 60 miles to the northwest, Catalina Q/210 Squadron caught U.396, also bound for the Channel, on the surface. The U-boat opened fire and jinked under full helm as the depth charges were released. Only slight damage was inflicted but in view of her strenuous mission and necessity for full battle-worthiness, U.396 decided to go back to Bergen. During the following day her periscope was sighted twice by aircraft at close range. One attack, made 15 seconds after the periscope dipped, did no further damage.

At 1750 hours on 30 June, Canso A/162 R.C.A.F. Squadron sighted a periscope in 6322N x 0010E but it dipped too soon for an attack. Returning to the spot three hours later, a

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- (1) In the Command Directive for Overlord, the role of No. 333 Mosquito flight was given as Fleet Reconnaissance, although they had on occasions in the latter part of May and early June been used both to escort the heavy A/U aircraft against Me.110 attack and on A/U reconnaissance off the Norwegian coast. After D day they continued to be used occasionally on the latter task but from the 14 June they were increasingly employed to attack U-boats as they left their Norwegian ports. On the 18 June the A.O.C. in C. informed the Air Ministry of this temporary diversion to an A/U role but explained that the flight's availability for their primary reconnaissance role was unaffected should the need arise. A reply was received on the 24 June to the effect that the temporary misemployment of No. 333 Squadron was not objected to provided their reconnaissance availability remained intact.

Ref. H.Q.C.C. O.R.B. Appendices 330 and 331.

U-boat was seen on the surface about 15 miles away. This was U.478 again. As the aircraft ran in to attack, a hot fire was opened which severed all the depth charge release circuits. A/162 circled the U-boat while homing Liberator E/86 Squadron to the spot. At 2115 hours the Liberator arrived and under flak fire went straight in to straddle and sink U.478. Approximately 30 survivors were afterwards seen in the water.

### Summary

B. d U.  
War Diary

The frequent attacks on U-boats in the reconnaissance line involving the loss of two and the enforced return of another had resulted by 24 June in a direction by the U-boat Command that only six boats were to remain at sea off the Norwegian coast. The rest were recalled to Bergen or Stavanger and Group Mitte was reduced to a total of 25. The surplus, eight in number, were laid up in harbour so that their crews could join the first newly commissioned Type XXI prefabricated U-boats. The Group was further reduced on 27 June by the detachment of five U-boats to the Baltic for operations against the Russian coastal traffic.

After 'D' day the outward bound U-boats suffered severely. The nine making the the N.E. Atlantic or on overseas missions lost one sunk with two forced to return to port and out of the nine others detailed for the English Channel, four were sunk and one compelled to put back. A very considerable contribution on No. 18 Group's part to the safeguarding of the Overlord sea communications. (1)

ibid

The U-boat Command emphasised on the 27 June that U-boats on passage must proceed mainly submerged until reaching the open Atlantic and at the end of the month directed that schnorchelling must be continuous.

### (xii) The course of U-boat penetration up to 1 July

We left the account of U-boat operations in the Channel at 18 June with U.621, the only one of the original batch to reach the Funnel area, having just started her return journey. U.953, 764 and 275 were returning having failed to penetrate the defences, U.441 also returning had just been sunk north-east of Ushant and U.269 was about to leave Guernsey.

Meanwhile U.212 and 984 had started their second try accompanied by U.763. Both U.212 and 763 developed defects and returned to harbour by 18 June. U.984 struggled as far

### (1) June flying hours and results in the Northern Transit Area

	Effective hours	Total hours	A/C loss	U-boat		Results		No. of U/Bs got through
				Sightings	Attacks	Sunk	Dem.	
Day	3,624	5,690	6	24	18	8	4	15
Night	( 1 N	3 N	-	-	-	-	-	
	( 1 L/L	1 L/L	-	-	-	-	-	

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as the Channel Islands but was forced to put into Guernsey on 19 June with an empty battery. More will be said of her later.

A schnorchel fitted minelaying U-boat (U.214) had left Brest on 11 June to mine off Lands End but was attacked, damaged and forced to return on the 12th by L/L Liberator S/224 Squadron. Her task was taken over by another minelayer (U.218) who left Brest on 13 June. U.214 again left Brest on 16 June to mine this time off Plymouth. Both these lays were completed without incident at the end of the month(1) and both boats were back in Brest by 9 July.

The first four schnorchel U-boats coming round from the Northern Transit area were approaching the entrance to the English Channel.(2) The leading boat (U.767) had reached the vicinity of Lands End by 15 June and on that day sighted frigates of the 5th Escort Group. She attacked and sank H.M.S. Mourns, afterwards escaping from the depth charge counter-attacks. However, she was sunk three days later when off the north coast of Brittany by H.M. ships Fame, Inconstant and Havelock.

During the latter half of June six more U-boats left Biscay harbours bound for the Funnel(3) and a total of six from the Atlantic were either in the western part of the Channel in the outer approaches.(4) All were gradually becoming more skilful in their use of the schnorchel and, after U.621's arrival back in Brest on 23 June, were briefed by W/T of her experiences.(5) U-boats still found it necessary on occasions to surface during the dark hours to give their batteries an additional boost and as already mentioned U.984 had put into Guernsey to try and get in a complete charge. She was sighted there by the A.D.G.B. reconnaissance and, although spending the daylight hours on the bottom of the harbour on 19 and 20 June, was narrowly missed at midnight/20th by bombs from three Halifaxes of No.502 Squadron while lying alongside the jetty. She left at 0500/21 June.

By now the U-boats were resigned by force of circumstances to practice ultra slow passage tactics. They invariably bottomed during the periods of adverse tidal stream or on any occasion when their hydrophones indicated the proximity of surface hunting groups. A daily run of 30 to 40 miles was considered good going. Although the volume of flying in the Cork patrol area was fully maintained, the aircraft obtained only fleeting glimpses of periscopes or schnorchel heads and occasionally boats already in the act of submerging. Snap attacks on ill defined targets were the rule. Between 18 and 30 June there were 27 such sightings of which nine were at night. Seven day attacks and five night attacks were delivered. In the majority of cases no hurt was inflicted but U.971 was damaged by L/L Wellington L/407 Squadron on the night of the 20th/21st and again attacked by Liberator O/311

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- (1) The only known casualty in either minefield was S.S. Empire Halberd - 7,177 tons who was damaged by a mine explosion on 6 July when four miles north of the Longships off Lands End.  
(2) U.767, 988, 1191 and 671.  
(3) U.763 (2nd try), 953 (2nd try), 390, 212 (3rd try), 672 and 309.  
(4) U.988, 1191, 671, 971, 678 and 480.  
(5) This was the first time that the U-boat Command had any knowledge of conditions in the Funnel area or what the hazards of passage amounted to in full.

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Squadron, in daylight, on 24 June when she was further damaged. Surface craft were homed to the spot and she was finished off by H.M.C. ships Haida and Eskimo.

Other naval hunting groups who since 19 June had moved up Channel close to the western edge of the Funnell, had good results. U.1191 was sunk on the 25th when south of Portland Bill by H.M. ships Affleck and Balfour and U.269 retiring homewards was destroyed close by on the same day by H.M.S. Bickerton. Finally during the night of 29/30 June L/L Liberator I/224 Squadron located and illuminated a schnorchel head some 40 miles south of Start Point. An accurate depth charge attack followed which produced much oil and bubbles. The oil rapidly spread over an area  $2\frac{1}{2}$  miles long. Surface craft were homed and on arrival H.M. ships Essington, Duckworth, Dommett and Cooke made certain of the U-boat's destruction. This was U.988 who it is believed had never actually reached the Funnell area.

#### U-boat logs

During the last week of June three U-boats eventually reached the Funnell. U.671 on the 25th, U.984 on the 28th and U.763 early on 29 June. The only one to effect anything before 30 June was U.984. This boat after leaving Guernsey early on the 21st had only made good 25 miles in a northerly direction by 25 June. At 1500 hours, when 16 miles W.N.W. of the Casquet Rocks, she sighted three frigates close to. She fired an acoustic torpedo which hit and badly damaged H.M.S. Goodson and escaped the subsequent depth charge hunt. She finally arrived in her operational area, 30 miles north-east of Cape Barfleur, late on 28 June where she immediately sighted a landing craft convoy and several other ships but she was too distant for attack. On the 29th at 1500 hours she found herself favourably placed to attack a convoy sighted in 5007N x 0047W. This was convoy E.C.M. 17 at which she fired several torpedoes which damaged one and sank three large American ships.(1) Having expended all torpedoes, U.984 then started the return journey ultimately reaching Brest on 4 July.

See Map No. 18  
for U-boat  
positions on  
1 July.

The situation on 1 July was that there were still two boats (U.671 and 763) in the Funnell. U.984 had just left and U.953 was nearing it. Further westward and to the north and west of Brittany there was U.390, 309, 678, 480 and 212 making their slow journey up Channel. One minelayer (U.218) was still off Lands End and the other (U.214) was nearing Brest after laying her mines off Plymouth. U.672 had developed a schnorchel defect and was re-entering St. Nazaire. Of the 25 separate sorties despatched to the Funnell during June, two had given up, three had turned back for defects, seven had been sunk en route,(2) three had returned damaged,(3) six were still making the attempt and so far only four had reached it.

#### (xiii) Summary for June 1944

In considering the failure of German surface craft to interfere with either the Allied landing itself or the subsequent build-up and supply the main factor was the

- |     | <u>Sunk</u>  | <u>Damaged</u>                 |
|-----|--|--------------------------------|
| (1) | <u>James A. Farrell</u> - 7,176 }<br><u>John A. Treutlen</u> - 7,198 }<br><u>H. G. Blasdel</u> - 7,176 } | <u>Edward M. House</u> - 7,240 |
| (2) | Score - three by the Navy, two by Air and two shared.  |                                |
| (3) | Score - two by the Navy and one by Air.  |                                |

disparity in numbers. The enemy further reduced his chances by the lack of adequate air reconnaissance and absence of air action against either the British surface patrol forces or the Coastal Command air sweeps. According to the E-boat Command records, operations were carried out on all ten nights up to the night of the air-raid on Le Havre with an average of 15 boats per night. They claimed to have sunk one cruiser, one destroyer, one M.G.B., fifteen landing craft and six merchant vessels with a further five warships damaged. As far as can be checked with Allied records, our actual losses from E-boat action were one Phoenix caisson in tow, four landing craft, three small merchant vessels and two tugs sunk with only one frigate damaged. After the Le Havre air-raid no claims whatever were made. Apart from direct action against them, their operations were hindered by a serious shortage of torpedoes, particularly at Le Havre, and difficulty in re-stocking with mines. Both deficiencies were attributable to the disruption of rail and road communications in Northern France by Allied air attacks and it was no longer possible to send them to Le Havre by the sea route.

The U-boat menace was systematically stifled by the dense air cover put up by Coastal Command(1) and the roving parties of escort vessels in the Western Channel, each acting as complementary to the other. The first U-boat did not reach the decisive area until 15 June and stayed only three days. There was then a gap of seven days before any other arrival. Except for the loss of one L.S.T. on the 15th, no further loss to Allied shipping occurred in the Funnel area from U-boat action until 29 June when it is true that relatively heavy loss was inflicted by one U-boat. The success by this single U-boat does, however, show what could have happened if the defences had been less efficient. Against this success must be accounted the destruction of seven U-boats en route. In fact the very completeness of their frustration in this vital period has tended to obscure the achievement of the combined air/sea operations on the western flank.

(1) Coastal Command A/U flying hours in support of Overlord during June 1944

Task	Eff. Hrs.	Total hrs.	A/C lost	Sight	Attack	Sunk	Dam.
Western Channel (Cork)	Day 11,943	15,777	2	29	14	3	-
	Night ( 1,315(N) 3,143L/L	1,920(N) 3,505L/L	3 N 13L/L	6 N 24L/L	5N 18L/L	- 2L/L + 2sh.	1 N 6L/L
Bay of Biscay	Day 1,633	2,818	2	14	5	-	2
	Night ( 244(N) 272L/L	408(N) 362L/L	3 N -	10 N 7L/L	9 N 4L/L	2 N -	1 N 1L/L
Channel Convoy Cover	Day 2,184	2,787	-	-	-	-	-
	Night 362(N)	502(N)	-	-	-	-	-
Detailed Total	Day 15,760 ( 1,921(N)	21,382 2,830(N)	4 6 N	43 16 N	19 14 N	3 2 N	2 2 N
	Night ( 3,415L/L	3,867L/L	13L/L	31L/L	22L/L	2 + 2sh.L/L	7L/L
Flat Total	21,096	28,079	23	90	55	7 + 2 sh.	11

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CHAPTER II

AIR OPERATIONS AT SEA IN SUPPORT OF THE CAMPAIGN IN FRANCE

JULY AND AUGUST 1944

During July the enemy's light surface craft and U-boats continued their attempts against the steady flow of cross-channel supply traffic. Disruption was now beyond them. The Allied Force was firmly established and the most the enemy could hope for was a measure of attrition. Even this limited objective was scarcely reached. By the end of July the American component of the Allied Army broke through at Avranches and advanced across the Brest Peninsula, in August the British armies debouched to the south and eastward forcing the enemy to evacuate shipping, block or destroy port facilities and to retire towards the Belgian frontier. U-boats were still operating in the Channel but their Biscay bases were gradually abandoned until by the end of August only a few stragglers remained in La Pallice and Bordeaux.

(i) Enemy surface craft operations and the measures against them in July

Attacks on invasion shipping by German surface craft were confined to night sorties by the E-boat flotillas based along the eastern part of the Channel coast-line. Patrols by British destroyers, frigates and M.T.Bs. lay off their bases and between Le Havre and the Seine Bay beach heads. Other movements of enemy surface craft were also by night and consisted of minesweeping, light patrols and the occasional passage of escorted small supply vessels port hopping during the dark hours between Le Havre and Flushing.

In the west, the capture of Cherbourg and investment of the Cotentin Peninsula had isolated Brittany and the Biscay coast. In this area the only offensive units remaining were three Z class destroyers, one torpedo boat and two E-boats.<sup>(1)</sup> It was decided by the A.O.C.-in-C. that the requirement for a Beaufighter Wing in this area no longer existed neither was there any threat from E-boats. Accordingly the Wing (Nos. 144 and 404 Squadrons) and No.524 night flare Wellington Squadron were transferred to the eastern area under No.16 Group.

H.Q.C.C.  
O.R.B. App. 341  
1.7.44.

In the east the E-boat threat had not developed to the extent expected and, although it was not possible at the time to state the actual damage inflicted on them, there was no doubt that the constant harrying by night flying aircraft had made it extremely difficult to operate them effectively. This summing up, together with the re-inforcement of No.16 Group, made it possible to resume larger scale operations against enemy supply convoys not only along the Dutch coast but east of the Texel as far as Borkum.

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(1) On 7 July the disposition was:-

Brest - Two E-boats non-operational.  
La Pallice - Z.23 refitting.  
Gironde - Z.24 and T.24. Bordeaux - Z.37 refitting.



ibid  
App. 396  
5.7.44.

While therefore the pressure was maintained against enemy light surface forces between the Hook of Holland and Le Havre by a Wing at Langham (Nos. 455 and 489 Beaufighter Squadrons), No. 143 Beaufighter Squadron at Manston and the night flying Wellingtons, Albacores and Swordfish of Nos. 524, 415(1) and 819 F.A.A. Squadron in the Dover area, the Beaufighter Wings at North Coates (Nos. 236 and 254 Squadrons) and Strubby (Nos. 144 and 404 Squadrons) were used in conjunction with long range reconnaissance against enemy shipping plying between the Kiel Canal and Hook of Holland. For this purpose the torpedo was resumed as the principal weapon for Nos. 144 and 254 Squadrons.

(a) Operations between Le Havre and the Texel

Frequent Beaufighter sweeps, both day and night, were flown along this stretch of coast with anti-E-boat night patrols off Dieppe, Ostend and the Scheldt by Wellingtons, Albacores and Swordfish backed up by rover night patrols by Avengers of Nos. 854 and 855 F.A.A. Squadrons.

E-boats

The E-boat arm, re-inforced after their serious losses in the June air raid, now numbered 20 operational boats. They were grouped at Le Havre, Dieppe and Boulogne.<sup>(2)</sup> They operated on nineteen nights during July in small parties of three to six boats either laying mines or trying to break through to attack the Allied shipping off the invasion beaches. Night attacks by British aircraft were frequently made, generally on unidentified and faintly seen small craft. From the E-boat Command War Diary it was on only two occasions in the first fortnight of July that E-boats were implicated.

On the night 5/6 July, S.83 with engine trouble was being moved from Dieppe to Boulogne escorted by a motor launch. They were attacked by Beaufighters of No.143 Squadron and although the E-boat escaped serious damage the motor launch No.512 of 50 tons was sunk. On the same night four boats of the 6th Flotilla moved from Boulogne to Le Havre and were attacked on passage by others of No. 143 Squadron and two Avengers of No.854 F.A.A. Squadron. Only slight damage was inflicted. A similar move from Dieppe to Boulogne of two boats of the 8th Flotilla during the night 6/7 July was attacked by one Avenger of No.855 F.A.A. Squadron but no damage resulted.

E-boats failed to attack any invasion shipping up to the middle of the month but in the course of running actions with

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- (1) At the end of July 1944, No.415 R.C.A.F. Squadron was transferred to Bomber Command. Their Wellington aircraft were turned over to No.524 Squadron and Albacores to a newly re-formed No.119 Squadron.
  - (2) The detailed dispositions at the beginning of July were:-

Le Havre - (6 boats of 2nd Flotilla  
3 boats of 8th Flotilla)

Dieppe - (2 boats of 8th Flotilla  
2 boats of 9th Flotilla)

Boulogne - (2 boats of 2nd Flotilla  
1 boat of 9th Flotilla  
4 boats of 6th Flotilla)

During July frequent re-dispositions took place between these ports.

F. d S. War Diary  
and No.16 Group  
O.R.B. Appendices.

our surface patrols they sank M.T.B. 666 on the night 4th/5th, badly damaged the frigate Trollope on the 5th/6th and sank M.T.B. 434 on 8/9 July with no loss to themselves.

Their base at Le Havre suffered another set back on 5 July when the torpedo maintenance room in the E-boat shelter unaccountably blew up doing much structural damage and destroying 41 torpedoes. After this there was only room under concrete for six or seven E-boats. In his mid-July report F. d S. (the senior officer E-boats) stated that the stronger flank defence in the invasion area had brought E-boat operations against it almost to a standstill. It was hoped that the recent arrival of T5 acoustic torpedoes for use against destroyers would bring more success to their efforts to break through the screens. As an immediate alternative target, Group West Command gave permission for operations against convoys off the English coast but during the second half of July and up to the 26th the E-boat sorties were relatively few and uneventful.

A small sortie by the 6th Flotilla was attacked on the night 17/18 July by Wellington D/524 Squadron off Dieppe but no damage resulted. The sole surviving torpedo boat T.28 was escorted from Le Havre by nightly stages to Boulogne, Hook of Holland Den Helder and thence to Borkum. The only opposition from the air was on the first stage when the little convoy was attacked by three Avengers of No.854 F.A.A. Squadron on the night 22/23 July but no hits were scored. On the next night some E-boats were attacked between Dieppe and Boulogne by some of Nos.854, 855 and 524 Squadrons but again no damage was inflicted and two Avengers were shot down.

It was not till nearly the end of July that the English south coast convoys were tackled and these operations provided the only success achieved against Allied shipping during July. Convoy ETM.46 was attacked by eight boats of the recently reinforced 6th Flotilla off Dungeness on the night 26/27 July and two ships were damaged.<sup>(1)</sup> Afterwards in running actions with our own surface forces one E-boat was slightly damaged. Later they were attacked by five aircraft of No.854 F.A.A. Squadron but no hits were secured. Another sortie by three boats of the 9th Flotilla was bombed by aircraft of the same squadron close off Dieppe but again no damage was inflicted. Still another sortie on this night, into the Seine Bay by the 2nd Flotilla, was engaged by our M.T.Bs. As a result of several collisions in a close action S.182 was rammed and had to be scuttled but M.T.Bs. 412 and 430 both foundered.

Four nights later three boats of the 6th Flotilla attacked convoy F.T.M.53 when south of Beachy Head. Five torpedo hits were obtained which sunk one and damaged four large ships.<sup>(2)</sup> The three E-boats regained Dieppe undamaged.

(1) Fort Perrot (Br.) - 7,171 and Empire Beatrice (Br.) - 7,046 tons.

(2) Samwake (Br.) - 7,219 sunk and Ocean Courier (Br.) - 7,178,  
Fort Dearborn (Br.) - 7,160, Fort Kaskaskia - 7,187,  
Ocean Volga (Br.) - 7,174 tons damaged.

R.A.F. Bomber Command attacked Le Havre on 31 July with 152 aircraft (330 tons of bombs) damaging three E-boats and followed it up with another raid on 2 August with 353 aircraft (348 tons of bombs) which destroyed S.39 and 114 of the 6th Flotilla and damaged two more.

The first week of August saw the E-boat strength at only 15 operational boats disposed as under:-

Boulogne and Le Havre - 2nd and 6th Flotillas with a total of six operational and four non-operational boats.

Ymuiden - 8th and 10th Flotillas with a total of nine operational boats.

A further three boats were unserviceable at Rotterdam and Amsterdam and the remnants of the 9th Flotilla had been withdrawn for engine renewals.

#### Other enemy surface craft movements

These consisted of small patrol types and minesweepers. They operated almost entirely by night and were almost as difficult targets as E-boats. During July there were 13 nights on which air attacks at sea took place but only two patrol vessels were sunk. These were the gun carriers AF.99 - 250 tons on the 4th/5th and AF.13 - 250 tons on the 28/29 July by Beaufighters of No.143 Squadron and Avengers of No.854 F.A.A. Squadron respectively.

#### (b). Operations between the Texel and the Elbe estuary

Daily reconnaissance along this stretch was made by single or pairs of Beaufighters and by Wellingtons at night. Worthwhile targets so located were followed up by strikes by the North Coates and Strubby Wings. Sometimes the two Wings would sweep the stretch on armed reconnaissance to attack whatever seen.

Wing Strikes of between 30 and 40 Beaufighters went out on seven occasions and attacked enemy shipping on six of them. 5 July - A convoy of one merchant ship and ten escorts was attacked off Terschelling Island. Patrol craft VP.1236 of 274 tons and R.111 of 90 tons were sunk for the loss of S/236 Squadron.

6 July - A convoy was located at 0600 hours to the north of Norderney Island in 5400N x 0714E by the sighting of the protective balloon barrage above thick fog on the surface. A blind attack was made with unknown results. Later in the day another Strike located this convoy in clearer weather and attacked the nine merchant ships escorted by ten small craft. The German ship Stadt Riga - 3,002 tons was sunk and the Ernst Brockelmann - 1,900 tons badly damaged for the loss of U and F/455 Squadron.

8 July - A convoy of six merchantmen with ten escorts was attacked off the mouth of the Weser river and the following were sunk with no loss to the attacking aircraft:-

<u>Tannhauser</u> (Ge.)	- 3,200 tons
<u>Sif</u> (Swe.)	- 1,437 tons
<u>Miranda</u> (Ge.)	- 736 tons
<u>M.264</u>	- 750 tons
<u>Launch No.555</u>	- 58 tons

ibid

18 July - At 2228 hours, in darkness, a convoy of five merchant ships and ten escorts was attacked in 5350N x 0725E. Only the R. boat R.139 was sunk and three Beaufighters were lost thus emphasising the difficulties of night attacks.

21 July - In dusk conditions at 2130 hours a convoy of nine merchant ships with no less than 21 escort vessels was attacked in 5353N x 0755E. The Orient (Fi.) - 4,160 tons and M.307 - 750 tons were sunk. Beaufighter L/144 Squadron crash landed on return.

22 July - The only target seen was a couple of patrol craft in 5347N x 0711E. Both these - V.P.810 and V.P.812 of 314 and 386 tons respectively were sunk. Z/236 Squadron was shot down. In addition to the above, five reconnaissances in force were flown to the south coast of Norway but of these only one sighted a convoy to attack. This was on the 15 July when at 1804 hours a convoy of five merchant ships and eight escorts was tackled off Kristiansand South. The Irania (Nor.) - 2,184 tons was damaged with no loss of aircraft.

H.Q.C.C.  
O.R.B. App.  
Nos.403 and 404

Up to the 24 July, only two of the eleven wing strikes despatched had any single engine fighter escort. No G.A.F. fighters had put in an appearance but on this date the A.O.C.-in-C. wrote to the H.Q. Allied Expeditionary Air Force suggesting that, following the losses inflicted on enemy convoys, it was likely that the enemy would start providing fighter escort at any time. He asked if a Mustang squadron could be officially earmarked for escort duties to Wing Strikes going either to the Norwegian or North German coast. On 29 July a reply was received that up to eight or ten Mustangs could be called on for this task. Thereafter No.12 Group made Mustang escort available for all strikes to the Norwegian coast and either Mustang or long range Spitfire escort to those going to the North German stretch.

During July, No.16 Group on all anti-surface ship operations despatched a total of 1,196 sorties of which 356 made attacks. Eighteen aircraft were lost. Five enemy merchant ships and eleven escort craft were sunk. One merchantman was damaged.

#### (c) Operations off Brittany and the Biscay coast

Few enemy movements took place to the north of Brittany and, although many sorties were flown by No.19 Group Mosquitoes, Halifaxes and during the last ten days of July by Avengers, (1) attacks only took place on three occasions. One patrol craft - V.P.209 of 381 tons - was sunk, by Avengers of No.850 F.A.A. Squadron off St. Peterport harbour on 24 July.

Off the Biscay coast the enemy light craft were employed on minesweeping and escort duties to U-boats leaving or entering harbour and to accompanying occasional coaster-type

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- (1) The absence of enemy attacks on the southwestern coastal convoys allowed the diversion of Nos.849 and 850 F.A.A. Avenger Squadrons from Channel convoy support to anti-ship sorties. In the last week of July the convoy support was dispensed with entirely and Nos.816 and 838 F.A.A. Swordfish Squadrons together with No.850 Avengers reverted to the R.N.A.S. leaving only No.849 Avenger Squadron in No.19 Group which was moved to St. Eval.

supply vessels on passage between the ports. All these missions took place close to the shore, generally within range of shore-mounted flak batteries. Opportunities for air attack were therefore few and far between by day and during darkness were limited to relatively high level bombing from the anti-U-boat Halifaxes operating close off the Biscay coast.

Daylight attacks were made on only six occasions. Two patrol craft were sunk. Halifaxes of Nos.58 and 502 Squadrons attacked on ten nights. One patrol craft and an auxiliary minesweeper were sunk. Details of these vessels together with No.19 Group's anti-ship flying effort are given below.(1)

From early in July a British escort group operated during the dark hours fairly close off the approaches to Brest. A little later in the month one and sometimes two escort groups operated by day and night in this area gradually working further southeastwards as far as Belle Ile. There was no offensive reaction by the G.A.F. until 20 July when the 9th Escort Group was attacked west of Brest by He.177s armed with glider bombs. H.M.S. Matane was hit and damaged. Thereafter the escort groups received air escort by Mosquitoes of Nos.235 and 248 Squadrons. On 21 July at 1400 hours the 14th Escort Group was attacked by seven Do.217s and He.177s with glider bombs. No hits were secured and the Mosquito escort shot down two Do.217s and one He. 177 for the loss of two aircraft while fighters despatched by No.10 Group A.D.G.B. shot down a further three Do.217s. After an abortive attack by enemy aircraft during the night 24/25 July on the 12th and 14th Escort Groups no further incidents occurred until the second week of August.

(d) Fighter Command (A.D.G.B.) reconnaissance

Daily reconnaissance was carried out along the whole stretch of coastline between Ushant and the Texel by Spitfires and Typhoons. It was on a scale much reduced as compared with June and experienced the same dearth of daylight sightings as noted by the Coastal Command daylight sweeps. Of the 413 aircraft despatched, 277 were in the area Cherbourg to Ushant and 94 between Le Havre and the Texel. The balance of 42 were on escort to Coastal Command Wing Strikes.

Only three attacks were made - by R.P. Typhoons on small craft in St. Peterport anchorage and off Lannion Bay - North Brittany on 7 July and by Spitfire bombers on a tanker-type vessel lying off Ymuiden on 17 July. In neither case was any serious damage inflicted. In all, three aircraft were lost.

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(1) Day sinkings

V.P.621 - 268 tons by Mosquitoes of Nos.235 and 248 Squadrons off Belle Ile on 15 July.

Hanan (Ge.) - 144 tons by Mosquitoes of No.248 Squadron off Belle Ile on 28 July.

Night sinkings

M.4457 - 423 tons by J/502 Squadron off the Gironde on 27 July.

V.P.627 - 75 tons by V/502 Squadron off La Pallice on 28 July.

No.19 Group despatched 236 anti-ship sorties of which 79 made attacks for the loss of three aircraft. In addition there were 16 night attacks on surface craft by anti-U-boat aircraft.

Fighter Command  
O.R.B.  
Appendices

(ii) The first use by the Germans of Small Battle Units (1)

It may be recalled from Volume III Chapter XVI (viii) that one of the measures intended to be employed by the German Naval Command against a seaborne landing came under the heading of Small Battle Units. They had first been considered in the autumn of 1943. Admiral Doenitz had been much impressed by the exploits of such units in the Italian Navy and also by the British midget submarine attack on the Tirpitz in September of that year. He initiated a small organisation under Rear-Admiral Heye to plan and produce similar short range submersible weapons.

On 18 January 1944, Hitler approved the immediate construction of the first batch of 50 midget submersibles and also of a considerable number of one-man torpedoes for use against invasion forces. However, this late entry into a new field of warfare and the haste under which development of suitable types was carried out led to much improvisation and lack of tried experience in the prototype stage. Compared to the scale of effort put into their production the results of their operations were meagre and, after a few early successes due to the element of surprise, they constituted no serious threat to the shipping in the Seine Bay.

None of the various types being developed were ready in time to resist the initial Allied landings and, after an abortive start at the end of June 1944, it was not till the first week of July that any succeeded in reaching the area of shipping lying off the Normandy beach-heads.

Because of the strict allocation of spheres of action between the Allied Air Commands under the Overlord plan, Coastal Command aircraft did not operate either in the Funnell area or off the beach-heads and therefore no sightings by their aircraft were made of any of the small battle units on this or subsequent occasions of their use in this area. However, as later in the war special operations were conducted by Coastal Command in the Scheldt and southern North Sea area against them, the opportunity is taken now to describe the various types and to mention what few successes were achieved by them off the Normandy coast in July and August 1944.

(a) The main types of Small Battle Units were :-

1. Marder (originally called Neger) - This was a one-man weapon consisting of a carrier torpedo in the cockpit of which the man rode with an explosive headed torpedo slung underneath. The carrier supplied the motive power to creep up to the target and the man released the explosive torpedo at pointblank range.
2. Molch - An early type of midget submarine carrying one man inside it with two torpedoes slung beneath it. Approach was made submerged.
3. Biber - A one-man midget submersible capable of travelling surfaced on a petrol engine and submerged on battery power. It carried two torpedoes externally stowed in beam recesses.

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(1) References in this section:- Admty. F.D.S.65/54 and B.R. 1736 (37) - Battle Summary No.49.

4. Hecht (also known as Type XXVII U-boat) -- This was a two-man submersible with only electric propulsion and carrying one torpedo and one mine.

5. Seehund (also known as Type XXVIIB U-boat) -- This was an improved Hecht crewed by two men and carrying two externally slung torpedoes. Propulsion was by electric motor submerged and Diesel engine on the surface. The battery could be re-charged at sea. This was a genuine sea-going submersible but did not come into action until 1 January 1945.

6. Linsen - explosive motor boats. A Linse unit consisted of one control boat and two explosive boats. Each explosive boat carried a pilot who steered until within striking distance of the target. He then ditched and the final run in of both boats was directed by radio remote control from the control boat whose pilot also had the task of picking up the ditched men. Molch, Hecht and Seehund were not used in the Normandy area. A more detailed description of these weapons is given in Appendix IX.

(b) Operations in the Invasion Area during July and August 1944

The first Small Battle Units - Linsen and Marder - began to arrive on the French Channel coast during the last half of June 1944 by road and sometimes rail. The Linsen were based at Honfleur on the south side of the Seine estuary and the Marder at Villers near Trouville - a little to the westward.

An attack on invasion shipping with eight control and nine explosive Linsen was attempted on the evening of 25 June but was abandoned owing to bad handling at the start which resulted in a premature explosion of one Linse and confusion among the remainder. Two further attempts in June failed either through defective material or unskilled handling and it was decided to start Marder operations.

On the night of 5 July, 26 Marder started out from their base to attack Allied shipping in the Seine Bay. Two gave up because of propulsion trouble and only 15 returned. Navigational hazards and action by the British protective line of mobile motor boats and anchored landing craft accounted for the other nine. The surviving Marder made exaggerated claims amounting to twelve ships sunk or damaged but in fact only the two minesweepers Cato and Magie were sunk.

A second attack was made during the night 8/9 July by 21 Marder. The defence claimed to have sighted all of them, some several times over, from surface and aircraft in the area. The resulting attacks on them accounted for every one and none regained their base.<sup>(1)</sup> The only loss inflicted was the sinking of the minesweeper Pylades and serious damage

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(1) The air sightings were by Seafires of No.26 Sqdn. (No.3 Naval Fighter Wing) who were combining artillery spotting duties with anti-Marder Patrols. Between 0600 and 0800 hours on 9 July these aircraft sighted and machine gunned seven Marder claiming the destruction of at least one.

See Map 3

ibid

to the old cruiser Dragon which was scuttled nearby to form an additional block ship in the breakwater off the Sword beach.

Further operations had to await the arrival of reinforcements. About 30 Marder were expected on 17 July but were delayed in transit with the result that the next attack did not take place until the night of 2/3 August. For this operation the enemy planned to throw in Linsen and Marder simultaneously after a diversionary attack by the G.A.F. on the anchorages. To cover the retirement of the Small Battle Units the E-boats from Le Havre were to fire Dackel torpedoes.<sup>(1)</sup>

Twelve control and 20 explosive Linsen set out independently of 58 Marder. The Dackel operation proved impossible as a Bomber Command air raid on Le Havre disorganised the torpedo loading facilities and sunk or damaged four E-boats. Only eleven controlled Linsen and 17 Marder returned. The defence claimed to have destroyed 31 Linsen and 20 Marder.<sup>(2)</sup> The shipping losses were the transports Fort Lao la Renge (Br) - 7,131 and Samlong (Br) - 7,219 tons badly damaged and the destroyer Quorn, trawler Gairsay and Landing Craft Gun No.764 sunk.

Another attack took place on the night 8/9 August when 12 control with 16 explosive Linsen left in three separate groups to attack the anchorages. An alert defence destroyed all the explosive and four of the control Linsen. No loss was incurred. On the next two nights only Dackel were fired and these scored several hits damaging four ships.<sup>(3)</sup> The next attempt was during the night 15/16 August. The enemy had planned to use 53 Marder but, owing to continuous thunderstorms with torrential rain and the inexperience of the launching parties, only eleven set out. Seven of these soon returned because of the weather and the remaining four accomplished nothing.

The last attack in the Normandy area was made during the night 16/17 August by 42 Marder. Only 16 returned. The defence claimed to have sunk 25 of which aircraft were credited with six.<sup>(4)</sup> Their only success was the sinking of Landing Craft Flak No.1 and the torpedoing of the already damaged and beached transport Iddesleigh.

The Marder had been instructed to return after this attack to Le Havre as the advancing units of the British Army prevented their return to Villers. On 18 August the Linsen and Marder started to be withdrawn - the Linsen to Strassbourg for transshipment to the south of France and the Marder to Tournai in Belgium. A fresh Marder flotilla from Germany arrived at Rheims on 20 August but having insufficient range to operate from Le Havre, the nearest launching place still in German hands, they also were sent back to Belgium.

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- (1) Dackel was the German name given to long range pattern running torpedoes having a speed of only nine knots. They could be set to run straight for some 16 miles and then either circle or traverse for a further 18 miles. The total running time was about 3½ hours. They were fired by E-boats soon after dark from a position 15 miles westward of Le Havre on a compass bearing directed towards the Allied disembarkation beaches off the Orne River and Courseulles.
  - (2) Spitfires of No.132 Sqn. (2nd T.A.F.) claimed to have sunk six of the Marder.
  - (3) The transport Iddesleigh (Br) - 5,205 tons, H.M. cruiser Frobisher, the minesweeper Vestal and the repair ship (ex seaplane carrier) Albatross.
  - (4) These were claimed by Spitfires of Nos. 302 and 317 Sdns. (2nd. T.A.F.)



On 21 August, a flotilla of 24 Biber left Germany by road for Tournai while a flotilla of Molch was due to leave for the same destination on 29 August. Since the coastline between Le Havre and Fécamp was unsuitable for launching these craft, it was decided to operate them from Fécamp harbour and they were started on the journey. In addition, a fresh flotilla of Linsen left Germany bound for Fécamp but by the 30 August the military situation had so worsened that they were halted in Brussels. For the same reason the orders for the Molch flotilla were cancelled.

The Biber flotilla reached Fécamp on 29 August after having suffered some losses en route from low-level bombing attacks. By the night of 30/31 August, 22 had been put in the water but through further loss and disorganisation by bombing attacks only 14 set out for the Seine Bay. After nine hours struggle against a strong wind and rough sea, twelve returned without reaching the target area. The other two effected nothing. After this single operation the Bibers were withdrawn to München - Gladbach, suffering heavy casualties from air attack on the way.

This marked the end of Small Battle Unit operations off the French coast. Their subsequent activities were in the Scheldt and southern North Sea area and will be recounted in a later chapter.

(iii) U-boat operations in the Channel area - 1 July to 5 August

The U-boat Command was still in ignorance of the situation in the Central Channel area. No information as to the conditions had reached it since the arrival back in Brest of U.621 on 23 June. According to dead reckoning there should have been ten schnorchel boats operating in the area on 1 July but in default of any signalled reports it was feared that heavy losses had occurred.<sup>(1)</sup> Accordingly those boats known to be approaching the Channel from the Atlantic (U.678, 480 and 243) and those who had recently sailed from Biscay ports (U.309 and 212) were ordered to make for or return to Brest.<sup>(2)</sup> No more were to be sent into the Central Channel until the situation was clearer. As repeated radio orders to those believed to be in the Funnel area had not been answered, the five who had been there longest were instructed to return immediately as it was only when their experiences were known that a decision could be taken as to future sailings.<sup>(3)</sup> As far as the western Channel area was concerned the U-boat Command noted that U.214's report on arrival back in Brest on 1 July, having laid mines off Plymouth, showed that it was quite possible to operate in that area. This was confirmed by a signal from U.218 on 3 July that she was on her way back after having laid her mines off Lands End.

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- (1) In actual fact only U.671 and 763 were in the Funnel area. U.953 and 390 were approaching it and U.984 had just left it. See Map 18. U.269, 988, 767 and 1191 had been sunk.
  - (2) U.212 re-entered Brest on 4 July. U.309 and 480 entered Brest on 6 July.
  - (3) Of the five so instructed, four had already been sunk as in footnote (1) and the fifth - U.984 - was on her return passage.

Ibid pages 417  
to 420

Admty.  
C.B.04050/44(7)

U.984 arrived back in Brest on 4 July and U.671 entered Boulogne in a damaged state on 5 July.<sup>(1)</sup> Arising from their reports, the U-boat Command decided to resume sailings for the Funnel area with orders incorporating all the most useful points in their experiences. Disaster followed almost immediately though not directly as a result of this decision. U.390 attacked convoy ETC.26 when almost mid-way between the Isle of Wight and the Normandy beachhead on 4 July sinking the Ringen (Nor.) - 1,499 tons but was then hunted, counter-attacked and sunk on 5 July by H.M. Ships Wanderer and Tavy. U.678, who had not heard her recall signal, was sunk on 6 July by H.M.S. Statice and H.M. Canadian ships Ottawa and Kootenay about 25 miles southwest of Beachy Head after an abortive attack on a convoy. U.243, coming in from the Atlantic and re-directed by signal to Brest, was sunk on the surface in daylight on 8 July by Sunderland H/10 Squadron in 4706N x 0640W.

There was little for the enemy to set off against this triple loss. U.953 sank the A/S trawler Ganilly with convoy EBC.30 some 30 miles N.E. of Cape Barfleur on 5 July and escaped the subsequent hunt.<sup>(2)</sup> U.763 attacked convoy FTC.27 on the same day when S.E. of Selsey Bill and sunk the Glendenning (Br.) of 1,927 tons. She was, however, hunted for the next 30 hours and reported 550 depth charge explosions. She was not seriously damaged but was of course submerged all this time, generally bumping along the bottom with frequent evasive steering and subject to quite unknown tidal drifts. By dawn of 7 July the hunt had lost her and, believing she had been set towards Alderney, she steered, still submerged, in a northerly direction to clear this area of fierce tidal rips. However, she bumped the bottom in ever shoaling water and towards the evening came to periscope depth for a cautious look around. She was surprised to see land on three sides and bottomed hastily until fully dark before venturing to surface. It was then realised by the captain that he had unwittingly drifted into Spithead roads. Bottom was once more sought and U.763 lay for 12 hours entirely unmolested off St. Helens while making good her minor defects. She spent another 12 hours still well inside the Nab Tower before extricating herself without being detected and started the return journey. After a lively trip with many alarms, depth charges and bombs (some very close on the 13th) she arrived back in Brest on 14 July.

Log of U.763

Meantime, acting on the U-boat Command's orders, U.212, 741 and 672 sailed for the Funnel area on 5 and 6 July. A new hazard now faced the U-boats. During the dark hours an Escort Group now frequently moved in close off Brest. On the night 5/6 July the 12th Escort Group sighted and engaged a small

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- (1) U.671 had reached the Funnel area from the Atlantic on 25 June without opposition by keeping much closer to the English coast than the normal Biscay boat's route. Although sighting many targets she was invariably out of position for attack. On 2 July she was heavily depth charged and damaged when 22 miles S.W. of Beachy Head by a group of surface craft and, still harried, made off slowly towards Boulogne where she arrived 5 July.
  - (2) U.953 remained in the Funnel area without being able to attack until 11 July when she fired torpedoes at a convoy about 30 miles S.E. of the Isle of Wight. No hits were made and she started her return journey the same day arriving back in Brest on 22 July - a distance of only 240 miles in 11 days!

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convoy right in the Goulet de Brest. This consisted of U.212 and 741 escorted on the surface by four patrol boats. The two U-boats escaped damage but VP.715 - 450 tons was sunk and another was beached. As a result of this attack, two non-schmorchel U-boats were maintained on patrol at the outer end of the swept channel from Brest. They remained on the bottom by day and were on shallow diving patrol at night ready to surface and attack either on W/T signal from the shore radar station control or if hearing hydrophone evidence of an approaching enemy surface force. Nothing was ever effected by them.

Log of U.741

Admty.  
C.B.04050/44(7)

After U.953 had started homeward on 11 July, there were no U-boats in the Funnel area until U.212 arrived on 14 July. She remained a week without effecting anything and on 21 July was sunk by H.M. ships Curzon and Ekins to the south of Brighton. U.741 had a chapter of accidents. On 12 July she ran into some sweep wires in mid-Channel to the north of Cherbourg in which she broke her jumping wire and fouled her port propeller. A day and a half later when schmorchelling by night further eastward she had a collision with an unidentified surface vessel which put the schmorchel and both periscopes out of action. She made for Le Havre in blinded condition which she entered on 16 July. U.672 was attacked on 18 July when south of Start Point by H.M.S. Balfour. She was so badly damaged that the captain surfaced during the night 18/19th and abandoned ship into dinghies. This crew were picked up intact by our A.S.R. launches during 19 July. It is of interest that survivors reported that it had taken 12 days to reach this position from St. Nazaire - a distance of only 350 miles.

Log of U.309

See Map 21

Another batch of U-boats (U.309, 621 and 275) left Brest on the 14, 15 and 16 July respectively. The first of these to arrive in the Funnel area was U.309 on 19 July followed by U.621 on 23 July. The former had no incidents on passage. She missed with torpedoes at a convoy north of Cape Barfleur on 20 July, pushed on eastwards but finding no traffic returned to 5000N x 0130W by 23 July. Late on 24 July she attacked convoy FIM.47 but only succeeded in damaging the Sammeva (Br.) - 7,219 tons. On 25 July she started the return journey owing to exhaustion amongst the crew and after another uneventful journey re-entered Brest on 3 August.

Log of U.621

U.621 averaged 40 to 50 miles per 24 hours on passage. Two days after arrival in the Funnel area she missed with torpedoes at a convoy north of Cape Barfleur. During 26 July she had continual trouble with the schmorchel with drastic drops in air pressure inside the boat resulting in frequent fainting casualties amongst the crew. Late on 29 July she attacked and sank H.M.S. Prince Leopold (a landing ship infantry type of 2,938 tons) and early on 30 July she hit and damaged the Ascanius (Br.) - 10,048 tons, both to the northeast of Cape Barfleur. Remaining in this area she saw nothing until 2 August when she missed at a south bound convoy and had another miss the following day at another southbound convoy. During the whole period 23 July to 3 August she logged numerous depth charge attacks, some being from aircraft, but she suffered no serious damage. She started the return journey on the 4th and re-entered Brest on 11 August.

U.275 had an uneventful passage until 1600 hours on 25 July when she was suddenly attacked by a surface vessel 16 miles N.W. of Alderney. Well placed depth charge

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Log of U.275

explosions continued until midnight after which her attacker was shaken off but much damage had resulted to the schnorchel, periscopes, main motors, battery and the rudder mechanism. She struggled eastward but was again depth charged on 27 July. She was then in a parlous state, unable to schnorchel, battery nearly empty and not daring to surface because of continual hydrophone evidence of surface craft around her. She therefore lay on the bottom during adverse tides and drifted eastward when they were favourable. This continued until early morning 1 August when she surfaced sometime before daylight with a completely run down battery and very foul air in the boat. She hoped she was somewhere off the mouth of the Somme. She managed to get in two hours charging before having to dive at dawn. With this last kick in the battery and aided by current drifting she managed to crawl into Boulogne at 0045 hours on 2 August.

On 22 and 23 July three more U-boats left Biscay ports all for operations in the western part of the Channel. U.214 was to lay mines off Start Point but was sunk off this headland on 26 July by H.M.S. Cooke before being able to do so. U.333 was to take up a patrol between the Lizard and the Scilly Islands but was sunk southwestward of the Scillies on 31 July by H.M. ships Starling and Loch Killin. U.667 was to patrol from Lands End up to Trevoise Head off the North Cornish coast and was the only one to reach and complete her mission. More of her in a later section.

U.671, having completed repairs in Boulogne<sup>(1)</sup> left for the Funnell area on 26 July. She was sunk on 4 August by H.M. ships Stayner and Wensleydale when southwestward of Beachy Head having effected nothing.

U.984 left Brest on 26 July on her third trip to the Funnell area followed on the 2 and 3 August by U.413 and 480 while U.741, after refit in Le Havre, put out on 3 August for the northern part of the Seine Bay.

There we will leave the situation as for 5 August with U.984 and 741 in the Funnell area, U.621 abreast Lyme Bay returning to Brest, U.413 and 480 rounding the Brest peninsula, U.667 nearing the North Cornish coast and U.736 having just left Lorient bound for Lands End.

(iv) Air operations against U-boats in the Channel and Biscay areas

The U-boat experiences in the Channel area have been given in some detail in the previous section and illustrate the growing success of counter-action by surface forces (seven sunk and three badly damaged) and the absence of damage or kills by the air patrols. However, the constant presence of the latter continued to play a large part in restricting the mobility and exhausting the crews of U-boats but the ultra cautious almost continuous diving tactics gave few opportunities for air attacks. Between 1 July and 5 August inclusive, nine individual U-boats were sighted by the air patrols in the

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(1) The small dockyard at Boulogne was not capable of carrying out the repairs to U.671 and the Flag Officer U-boats west had sent a detachment of 30 specialist workmen overland from St. Nazaire to do this work.

Channel and S.W. Approaches, several of them more than once but in every case, except when surfaced at night under close escort off Brest, the sighting was momentary and gave no positive point of aim for the attacks which were made on seven of them. No damage was inflicted in any of the attacks. (1)

Slightly better conditions obtained in the Bay and down the Biscay coast. Here the air patrols working close off the coast located U-boats at night on the surface and occasionally even in daylight but accurate attacks were often impossible because the U-boats still had their surface craft escorts who put up concentrated and accurate flak. Ten individual U-boats were sighted and seven of them were attacked, again more than once in some cases. U.243 making for Brest from the Atlantic was, as previously mentioned, sunk on 8 July by Sunderland H/10 Squadron. On 11 July, U.1222 returning from overseas was sunk in daylight while schnorchelling by Sunderland P/201 Squadron. The other five who were attacked were not damaged. (2)

Mines laid by R.A.F. aircraft claimed one victim. U.415, a non-schnorchel boat returning to harbour after a patrol at the end of the Brest swept channel, detonated a mine just outside the net barrage on 14 July. She capsized and was a total loss.

The flying hours on the Cork patrols were not so high as in June in spite of the deployment of eight American search-light fitted Liberators from Morocco to the U.S.N. Liberator Wing at Dunkeswell. (3) This was because the increasing scale of flying effort called for in the Northern Transit area was held to justify the detachment half way through July of Nos. 206 and 120 Liberator squadrons from Nos. 19 and 15 Groups respectively to the north of Scotland. As no more U-boats from Norway were detailed for passage round to the English Channel or the Biscay ports, the operations in the Northern Transit area for July and onwards are recounted separately as they bore no relation to the support for Overlord.

(1)	U-boat	Sights	Attacks	Conditions at sighting
	U.953	2	1	Schnorchelling both times
	U.763	1	1	Surfaced under escort off Brest
	U.218 M/L	2	2	Periscope once - Conning tower once
	U.212	2	1	Schnorchelling both times
	U.672	2	1	Schnorchel once - Periscope once
	U.309	1	0	When actually diving a long way away
	U.621	2	2	Periscope once - Schnorchel once
	U.989	1	0	Surfaced under escort off Brest
	U.618	2	2	Surfaced off Brest - Shot down L/L Well. J/172 Squadron
(2)	U-boat	Sights	Attacks	Conditions at sighting
	* U.802	1	0	Conning tower a long way away
	U.243	3	3	Surfaced and sunk
	* U.518	1	1	Surfaced
	* U.1222	1	1	Schnorchelling and sunk
	U.963	1	1	Surfaced under escort
	Unidentified U/B	1	0	Surfaced under escort
	* U.107	2	2	Surfaced under escort
	* U.673	1	1	Surfaced under escort
	* U.170	1	0	Surfaced - A/C had no bombs left
	U.736	1	1	Surfaced

\* = Boats on mid-Atlantic or overseas missions.

- (3) These were from No.114 U.S.N. S/L Liberator Squadron. In the continued absence of U-boat activity in the Gibraltar area, the American authorities made this offer which was gratefully accepted by Coastal Command.

Although fewer hours were flown, the Cork was pushed further up into the Channel and, in the absence of any G.A.F. fighter interference, the Avenger squadrons in No.16 Group were relieved of coastal convoy support in favour of anti-U-boat patrols in the Central Channel and operations close off the northeast coast of France. More attention was given by No.19 Group to the Biscay area, particularly inshore along the coast between Brest and La Pallice. These modifications are reflected in an analysis of the July flying figures.<sup>(1)</sup>

(v) Plans for the redistribution of Coastal Command squadrons

As July progressed it was realised that the imminent breakout of the Allied armies from the landing area would force the evacuation of the Biscay U-boat bases in the near future leaving only the Norwegian ports from which to operate U-boats. A drastic redistribution of A/U squadrons was therefore not far away. Plans to this end, which had been provisionally discussed at the end of June, were prepared in more detail in conjunction with the Admiralty during July. Early in August a tentative revised Order of Battle was agreed to whereby No.18 Group was to be very substantially reinforced both in A/U and anti-ship squadrons. This proposal entailed the transference to Coastal Command of several airfields in Scotland with much alteration and addition to their equipment.

On 10 August, after discussion and agreement with the Admiralty and Air Ministry, the A.O.C.-in-C. issued a new directive governing the employment of Coastal Command in what was called the second phase of Operation Overlord. Briefly this memorandum foresaw an early re-orientation of the U-boat War from the Biscay to the Norwegian area. While it was expected that a few U-boats would still be stationed in the S.W. Approaches, there might be a renewed offensive against our Atlantic convoys. If this should materialise the Admiralty had agreed to a more southerly routing of ocean convoys so as to come within easy reach of air cover from the Azores. In any case there was bound to be far more U-boat traffic through the Northern Transit area and the main burden would consequently be transferred from No.19 to No.18 Group,

H.Q.C.C. O.R.B.  
Apps. Nos. 332,  
333, 336 and 337

ibid  
Nos. 399 to 402

ibid  
Nos. 484, 486  
and 487.

ibid  
No.488

(1)

Task	Eff. hours	Total Hours	A/C lost	Sights	Attacks	Sunk	Dam.
Western and Central Channel (Cork patrols)	Day 9,280	11,944	4	9	7	-	-
	Night ( 788 N ( 2,257 L/L	1,198 N 2,522 L/L	- 2 L/L	3 N 3 L/L	2 N 2 L/L	-	-
Bay of Biscay Patrols	Day 2,060	3,912	2	8	5	2	-
	Night ( 500 N ( 387 L/L	843 N 598 L/L	- -	4 N -	4 N -	-	-
Coastal convoy cover in S.W. approaches	Day 481	613	1	-	-	-	-
	Night ( 135 N ( 16 L/L	183 N 16 L/L	- -	- -	- -	-	-
Coastal convoy cover in E. Channel	Day 163	210	-	-	-	-	-
Analysed Total	Day 11,984	16,679	7	17	12	2	-
	Night ( 1,423 N ( 2,660 L/L	2,224 N 3,136 L/L	- 2 L/L	7 N 3 L/L	6 N 2 L/L	-	-
Flat Total	16,067	22,039	9	27	20	2	-

the A.O.C. of which would be responsible for the direction of all air A/U operations in the Northern Area and under whom would be placed the control of the R.A.F. in Iceland.

It was not expected that the transfer of U-boat effort to Norwegian bases would take place overnight and in the interim period there would have to be temporary re-adjustments in Group strengths as necessity might dictate. The appendices to this Directive gave the tasks in detail which were allocated to all Coastal Command Groups and an ultimate Order of Battle. In this latter it was envisaged that No.18 Group would have six Liberator, two Halifax, four Sunderland, one and a half Catalina and four L/L Wellington squadrons. No.15 Group to have one Liberator and two Sunderland squadrons. R.A.F. Iceland to have one Liberator and one Canadian Canso squadron leaving No.19 Group with three U.S.N. Liberator squadrons, one Sunderland and one L/L Wellington squadron.

ibid

Similarly a redistribution of the anti-ship squadrons was foreshadowed as soon as the military advance into Belgium had compelled the enemy to evacuate the northeastern coastline of France. This amounted to the move of two Beaufighter and one Mosquito squadron to No.18 Group leaving five Beaufighter squadrons in No.16 Group and only one squadron of Mosquitos in No.19 Group.

Changes were also made in the number and disposition of the F.A.A. squadrons on loan to Coastal Command. Only one Avenger squadron was to be retained in No.19 Group. The existing three in No.16 Group would remain but it might be necessary to ask the Admiralty for Swordfish squadrons to operate inshore north of Ireland and Scotland if U-boats appeared close off these coasts.

See Orders of Battle  
for 1 September  
in Appendix I.

In the event, this redeployment was gradual and was not complete until the end of September. For instance, although No.311 Liberator Squadron moved up from Cornwall to Scotland on 4 August, it was not till well on in the month that No.58 Halifax and No.407 L/L Wellington squadrons did so. During August the bulk of Coastal Command's strength was still in the south.

(vi) The evacuation of the Biscay U-boat bases

From early August the whole U-boat war picture started to change. On 1 August the U-boat Command gave orders that, owing to the Allied military break-outs into France from the invasion landing area, all U-boats in overseas patrol billets were to start home with sufficient fuel and food to enable a return direct to Norway if found necessary. On 2 August the U-boats at sea in the Channel area were instructed to start their return with enough fuel to reach Bordeaux as unfavourable military developments might preclude the use of the northern Biscay ports in a short time. On 4 August, the returning U.621 was told to make for La Pallice instead of Brest. On 6 August the headquarters of the U-boat Command West was moved from Brest to La Rochelle and the following general order was promulgated:-

B. d U.  
War Diary

The advance into Brittany by the American Army has necessitated a transfer of U-boats and this requires:-

- (a) All possible efforts to fit every U-boat with a Schmorchel.

(b) Those unable to be fitted in Brest, Lorient and St. Nazaire to transfer as soon as possible to La Pallice and Bordeaux and to take with them spare U-boat crews and the skilled dockyard workers.

(c) All schnorchel parts not needed in the northern ports to be transferred to La Pallice or Bordeaux.

(d) U-boats which, owing to lack of complete schnorchels in La Pallice and Bordeaux, cannot be adapted were to be paid off and the crews, after filling any vacancies in operational boats, must be sent home to Germany.

(e) All trained U-boat personnel not absolutely necessary on the spot must be sent home to Germany.

(f) Before transferring to the south, all U-boats were to fill to capacity with fuel.

ibid

See Map 23

There followed from 7 August an increasing stream of U-boats from Brest, Lorient and St. Nazaire bound for La Pallice and Bordeaux. Four left on the 7th, one on the 8th, three on the 9th, one on the 10th, three on the 11th, two on the 13th and one on 16 August. During the same period U.764, 989, 92 and 218 left Brest and U.385 left St. Nazaire, all bound for operations in the Channel.

Such an exodus was not unexpected by the Allied Command and from late in July the patrol areas of surface escort groups and No.19 Group A/U aircraft had been gradually moved down towards the Ile de Ré off La Pallice and covering all the coastal stretch from Brest. The escort groups (1st, 2nd, 11th and 12th) were augmented from early in August by cruisers and destroyers<sup>(1)</sup> while the air forces were increased by the re-deployment back to No.19 Group of Nos.236 and 404 Beaufighter squadrons from No.16 Group. Both these re-inforcements were primarily against the enemy surface craft expected to be involved in the German transfers and subsequent evacuation.

Action started on 4 August and during the remainder of the month many enemy craft and U-boats were sighted and attacked both by the air and surface forces. There follows a chronological list of the main events and successes. The references include No.19 Group O.R.B. appendices, Admty. C.B.04050/44 (8) and B. d U. War Diary.

A chronology of events during the evacuation of Biscay ports;—

4 Aug.

A Bomber Command raid on Paullac on the River Gironde sank the M class mine-sweepers M.271 and 325, the Sperrbrecher 146, the patrol craft VP.725 and the trawler La Mailleraye - 490 tons.

(1) This addition was under the heading of Operation Kinetic. The Home Fleet cruisers Diadem and Bellona were provided together with the destroyers Ashanti, Tartar, Haida, Iroquois, Ursa, Onslow and Piorum. Later in the month the cruiser Mauritius was added as well as the 3rd and 15th Escort Groups.



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Night 5/6 Aug.

Force 26<sup>(1)</sup> attacked a small southbound convoy 32 miles S.S.W. of St. Nazaire and sank two coasters, the Bookelo - 200 tons and Otto - 217 tons and the escorts M.263, M.486 and VP.414.

P.M. 6 Aug.

Beaufighters of No.236 Squadron sunk the coaster Jupiter - 856 tons off Les Sables d'Olonne.

U.736, en route to patrol off Lands End was sunk west of Belle Ile by H.M.S. Loch Killin.

P.M. 8 Aug.

A wing strike (Nos.236 and 404 Squadrons) sighted four M class minesweepers south of St. Nazaire and sank them all (M.366, 367, 428 and 438) for the loss of F/404 Squadron.

Halifaxes D and A/58 Squadron sank Sperrbrecher 134 - 997 tons off Lorient.

H.M.S. Bellona bombarded the radar station on Belle Ile. H.M.C.S.

St. Laurent was missed by a Do.217 glider bomb attack to the west of Lorient.

Naturally, numerous reports reached the U-boat West Command of the increased activity of British surface forces off the coast. Three U-boats, all non-schmorchel, on passage southward (U.260, 608 and 981) received orders to form Group Fuchse and operate against them. Nothing came of this effort and two of the boats were sunk within the next three days.

P.M. 9 Aug.

Force 26 was unsuccessfully attacked by enemy aircraft. Mosquitos of No.235 Squadron shot down two and damaged two more Do.217.s.

U.608 was sunk west of La Pallice by L/L Liberator G/53 Squadron and H.M.S. Wren

10 Aug.

Air raid by Bomber Command on La Pallice. Sperrbrecher 16 - 5,485 tons and a tug sunk.

Night 10/11 Aug.

U.385, bound for the Funnel area, was sunk west of La Pallice by Sunderland P/461 Squadron and H.M.S. Starling.

11 Aug.

A heavy air raid on Brest, in which extensive damage was done to buildings, failed to penetrate the U-boat shelters. An equally heavy raid on Bordeaux obtained nine to twelve direct hits on the U-boat pen roof but did no damage to U-boats inside.

M.27 sunk on a mine in the mouth of the Gironde.

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(1) Force 26 - Cruiser Bellona with destroyers Tartar, Ashanti, Haida and Iroquois.

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Night 11/12 Aug.

U.981 damaged on a mine outside La Pallice and was then attacked and sunk by Halifax F/502 Squadron. Survivors picked up by U.309. Owing to failure in recognition, L/L Liberator O/224 Squadron was shot down by H.M.S. Onslow - no survivors.

12 Aug.

A Wing strike (Nos. 236 and 404 Squadrons) together with Force 28<sup>(1)</sup> sank Sperrbrecher 7 - 7,097 tons and M.4214 off the Ile d'Oleron for the loss of two aircraft. The 12th Escort Group engaged three small patrol craft to the south of Brest approaches and drove two ashore on fire. A strike by Mosquitoes of Nos. 235 and 248 Squadrons sank the escort craft M.370 and VP.410 in the mouth of the Gironde river for the loss of two aircraft.

By this time the operations of British surface forces along the coast down to the Ile d'Oleron had cut the enemy's coastwise communications and the strongpoints in Brittany were isolated from the south as well as from the east. The German Army H.Q. requested Naval Group West to somehow maintain supplies of ammunition. Rather unwillingly, two U-boats were detailed for this task from La Pallice to go to Brest but certainly not to St. Malo as expected by the 1st Army H.Q. U.445 and 650 put to sea with cargoes of ammunition on 12 August but after being attacked from the air and harried by surface forces for five days they put into Lorient on 17 August and the task was abandoned.

Night 12/13 Aug.

U.270, en route Lorient to La Pallice, was sunk by Sunderland A/461 Squadron.

13 Aug.

A Wing strike (Nos. 236 and 404 Squadrons) sunk Sperrbrechers 5 and 6 (5,339 and 6,128 tons respectively) off Royan in the mouth of the Gironde and followed it up on 14 August by sinking FG.05 (Harbour Defence craft) in the same position.

14 Aug.

Another air raid on Brest by Bomber Command destroyed M.444, M.4001, VP.723 and the merchant vessel Sudetenland - 11,309 tons. Air laid mines in the approaches to La Pallice accounted for VP.605 and M.4463 (auxiliary minesweeper)

On this day the U-boat Command signalled all the large Type IX boats who were on return passage from overseas patrols to proceed direct to Norway.

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(1) Force 28 - Cruiser Diadem with destroyers Onslow and Piorun

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15 Aug.

U.618, on passage Brest to La Pallice, was sunk by L/L Liberator G/53 Squadron and ships of the 3rd Escort Group in 4722N x 0439W.

Force 27<sup>(1)</sup> intercepted three vessels in company to the N.W. of La Pallice and sunk them all. They were M.385, Sperrbrecher 157 - 935 tons and the coaster Banka - 249 tons.

M.T.B.s, working outside Brest, sank VP.720.

17 Aug.

Auxiliary minesweeper M.4207 sank on a mine off Le Verdon at the entrance to the River Gironde.

18 Aug.

U.107, on passage Lorient to La Pallice, was sunk whilst schnorchelling by Sunderland W/201 Squadron.

U.621, on passage Brest to La Pallice, was sunk by ships of the 11th Escort Group.

On 18 August, three days after the Allied landings in the south of France, Hitler ordered the evacuation of south and southwest France including the coastal batteries south of the River Loire. La Pallice became a fortress under Vice-Admiral Schirlitz. This and the fortified area at the mouth of the Gironde river were strengthened with guns and personnel from the coastal forces, many vessels of which were paid off and scuttled. The so called fortresses which were to be held as long as possible were:-

<u>Brest</u>	- Personnel 38,000 of whom 15,000 were naval
<u>Lorient</u>	- Personnel 27,000 of whom 9,000 were naval
<u>St. Nazaire</u>	- Personnel 28,000 of whom 10,700 were naval
<u>La Pallice</u>	- Personnel 14,000 of whom 5,500 were naval
<u>Gironde</u>	- Personnel 8,900 of whom 2,770 were naval

Such was the intensity of the air and surface patrols between Brest and the Gironde that U-boats making the 100 to 200 mile passage from northern to southern ports were, when not sunk outright, taking seven, eight and even nine days to do the trip. By 16 August the American advance into western France had reached the outskirts of Brest, Lorient and St. Nazaire and it became evident to the U-boat Command that a general evacuation of all seaworthy U-boats must start immediately.

U.548, still en route from Lorient to Bordeaux, was on 16 August told to proceed direct to Norway. She was followed on 17 August by U.993 from Brest and U.190 from Lorient.<sup>(2)</sup>

The situation on 20 August was that there were altogether 30 U-boats still in Biscay ports.<sup>(3)</sup> It was believed by the U-boat Command that seven others were still on passage from northern ports (in fact five of these were sunk). Those still at sea would, on reaching port, only receive essential

(1) Force 27 - Cruiser Mauritius with destroyers Ursa and Iroquois.

(2) In order to split the Allied A/U defences and to take attention off the projected stream of Biscay U-boats en route for Norway, Admiral Doenitz had instructed the Norway U-boat Command to send schnorchel fitted boats to various inshore positions in the Northern Area. Seven such boats were en route to billots in the North Channel, off Reykjavik, in the North Minch and Moray Firth.

(3) Brest - 2. Lorient - 4 plus 2 paid off. St. Nazaire - 4 plus 1 paid off. La Pallice - 7 plus 1 paid off. Bordeaux - 7 plus 2 paid off.

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repairs and fuel sufficient for the passage to Norway. Of the 24 seaworthy U-boats in port, those which were of the large Type IX class and those Type VII.s who could only be fitted with makeshift schnorchel were to proceed direct to Norway. Battleworthy Type VII.s would take up inshore billets in the North Channel or Bristol Channel/Lizard area where they were to operate for 10 to 14 days after which they were to go on round to Norway. The Bristol Channel was chosen because, once again, the U-boat Command was in ignorance of the situation in the Funnel area. The last firm information had come from U.621 who arrived back in Brest on 11 August. She had reported very intense air and surface activity. In spite of more requests to the eight boats believed to be in the Seine Bay/Isle of Wight area for situation reports, nothing had been received. It was known from intercepted B.B.C. broadcasts that two or possibly three of these boats had been sunk and complete uncertainty as to the scale or scope of the opposition decided the Command to send no more U-boats up the English Channel. The Bristol Channel area was confirmed as holding good promise by a signal on 22 August from U.667 returning from this area and claiming successful attacks against shipping off North Cornwall.

See Map 24

A general exodus followed and by the end of August eight Type VII.s had left for active patrols either in the Bristol or North Channels.<sup>(1)</sup> Three 1,600 ton U-Kreuzer left for the Indian Ocean and eight Type IX.s and VII.s were proceeding direct to Norway leaving seven seaworthy U-boats still in port.

Meantime the British air and surface forces continued to scour the coastal waters of the Bay and further successes were obtained.

20 Aug.

A Wing strike (Nos. 236 and 404 Squadrons) sank VP.409 and M.4214 in the roadstead of Les Sables d'Olonne. U.984, returning from the Funnel area, was sunk to the westward of Ushant by the 11th Escort Group.

21 Aug.

Mosquitoes of Nos. 235 and 248 Squadron sank M.292 off Le Verdon.

22 Aug.

U.180, bound for the Indian Ocean, sank on a mine just outside the Gironde.

Night 22/23 Aug.

Force 27, sweeping up from Belle Ile to Brest engaged a flotilla of patrol craft and sank the lot. They were VP.702, 714, 717, 719, 721, 729 and 730. This was the 7th Patrol Flotilla on its way from Brest to St. Nazaire.

24 Aug.

A Wing strike (Nos. 236 and 404 Squadrons) sank the destroyer Z.24 and torpedo boat T.24 off Le Verdon. U.445, en route for Norway, was sunk by H.M.S. Louis to the southwest of Penmarch Point.

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(1) U.262, 758, 714 and 247 to the Lizard/Bristol Channel area  
U.963, 309, 985 and 953 to the North Channel

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25 Aug.

U.667, returning after a nine day patrol off North Cornwall, sank on a mine close off La Pallice.

25, 26 and 27 Aug.

Heavy air raids on Brest by Bomber and U.S.A.A.F. Commands destroyed:-  
Sperrbrechers 1, 4, 8, 135, 162 and 180  
totalling 23,477 tons. Aux. minesweepers  
M.4040, M.4023 and M.4000.  
Harbour Defence craft FB.02, FB.05,  
FB.06 and FB.16.  
Coaster type vessels Ibis - 208 tons and  
J.A.Essberger - 739 tons.

Some more information came to the U-boat Command via intercepted B.B.C. radio news broadcasts regarding the loss in recent weeks of five U-boats in the Channel area. Having regard to the long passage in front of them on top of a harassing time in the Channel, instructions were signalled to those still believed to be alive in this area to start their journey round to Norway forthwith.

During the last few days of August the air sweeps down the Biscay coast saw little shipping and it was apparent that enemy operations at sea had come to an end. The A/U patrols were maintained but the stream of U-boats proceeding out through the Bay were all schnorchel fitted and bent on self effacement. Only two sightings were obtained after the 22 August and, with the exception of U.445 sunk by H.M.S. Louis on 24 August, none were damaged throughout their long trek to Norway.

See Map 24.

Conclusion

Thus ended the long story of the enemy occupation of the Biscay ports which had started in July 1940. Except for Brest which was occupied on 19 September 1944, the isolated fortresses held out till the end of the war by which time any war vessels and merchant ships in the harbours had been scuttled. The remaining seven seaworthy U-boats left on various dates for Norway, the last one being U.267 from St. Nazaire on 23 September. All reached Norwegian ports unscathed late in October.

The immunity from damage on this journey by a total of 22 U-boats from Biscay ports and nine direct from the Channel and S.W. Approaches is noteworthy and must be credited mainly to Schnorchel though some relief was obtained from the appearance in various northern inshore positions of the Norwegian based schnorchellers which diverted much flying effort from the transit route. This diversion may be held to initiate the inshore U-boat campaign which became such a feature of the U-boat war thenceforward to the end of the war. It should be noted, however, that the U-boat Command regarded these inshore operations as a stop-gap until such time as the prefabricated Type XXI and Walter boats were provided to once more challenge the Allied convoys in the open Atlantic.

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The August flying hours in the Bay area and results are given in the tables below:-

ANTI-U-BOAT OPERATIONS							
	Eff. hrs.	Total hrs	A/C lost	Sights	Attacks	Sunk	Dam.
Day	3,482	6,629	3	15	7	1 + 1 sh.	-
Night	753 N	1,525 N	2 N	12 N	6 N	2 + 1 sh.	-
	1,102 L/L	1,789 L/L	4 L/L	4 L/L	3 L/L	1 sh.	-
Total	5,337	9,943	9	31	16	3 + 3 sh.	-

ANTI-SHIPING OPERATIONS				
Sorties Despatched	No. of Attacks	A/C lost	War vessels sunk	Merchantmen sun
572	278 plus 28 by A/U aircraft	17	17 - 30,817	3 - 1,347

Other enemy shipping sunk in this area was:-

Author	War		Merchant	
	No.	Tons	No.	Tons
Naval forces at sea	13	7,336	3	666
Mines	6	1,996	5	768
Air raids	21	34,163	8	23,720

(vii) The final U-boat patrols in the Channel area - August 1944

While the evacuation of Biscay ports was taking place, the U-boats in the Channel had their most successful month, limited though this was. Regarding the western edge of the Channel area, U.736 had left St. Nazaire on 5 August bound for a Lands End patrol but on 6 August she was sunk westward of Belle Ile by H.M.S. Loch Killin leaving only U.667 in the Lands End/Trevose Head area. This boat had arrived on patrol on 7 August and on the next day attacked convoy EBC.66 to the north of Trevose Head sinking the Ezra Weston (U.S.) - 7,176 tons and the Canadian corvette Regina. She escaped the subsequent hunt. Special air patrols were directed to this stretch of coast and though during the next nine days some 285 day and 130 night hours were flown over her, she was only sighted once momentarily by Sunderland A/461 Squadron, on 16 August. However, she could effect nothing further herself and was recalled to France late on the same day. She left the patrol on 17 August and on the 22nd when westward of Ushant she reported her success to the U-boat Command. She arrived off La Pallice, her port of destination, on 25 August and foundered on a mine in the approaches to the harbour.

Regarding the Funnel area. During the first part of August a growing number of U-boats were arriving and by the 14th no less than eight were operating in the Channel.

See Map 23

These were U.984, 741, 413, 480, 764 and 275 actually in the Funnel with U.989 advancing up Channel and U.218 proceeding towards Start Point to lay mines. None had, as yet, sunk any Allied shipping.

On 15 August U.741 attacked one of two convoys near each other about 40 miles southeast of St. Catherines Point. H.M.S. Orchis, part of the escort to convoy FTC.68, saw the explosion of a torpedo which sank L.C.I. 99 in the other convoy about four miles away. After firing, U.741 went to the bottom but soon after she was located by the Orchis and sunk.

On the same day the U-boat Command signalled all U-boats operating in the Channel to return to Norway direct on completion of their patrol time except for U.984 who, having insufficient fuel for the passage, was recalled to France immediately. She started back on 16 August having sunk nothing during her eleven days in the Funnel area.(1)

On 19 August, U.480 sank the St. Enogat (Br) - 2,360 tons out of convoy ETC.72 and on 20 August U.764 sank the Coral (Br) - 638 tons out of convoy FTC.73, both attacks taking place about 28 miles southeast of St. Catherines Point. Further to the east on the same day H.M. ships Wensleydale, Forester and Vidette located and sank U.413 some 25 miles south of Beachy Head. She had achieved no success after ten days in this area.

U.480 followed up her previous success by sinking the minesweeper Loyalty on the 22nd, the Fort Yale (Br) - 7,134 tons on the 23rd and the Orminster (Br) - 5,712 tons on the 25 August. In no case was she harmed by any counter-action and it is of interest that this boat was one of the first to be coated with rubber against asdic echoes.(2)

U.989 attacked and damaged the Louis Kossuth (U.S.) - 7,176 tons on the 23rd and sank the Ashmun J. Clough (Br) - 1,791 tons out of convoy EBC.82 on 26 August. Meanwhile U.218 had laid mines off Start Point by 17 August and started her journey round to Norway. U.275, after a blank six days between Beachy Head and St. Catherines, left for Norway on 21 August. U.92, the last boat to be directed up Channel, had left Brest on the 16th and arrived in the Funnel area on 23 August. She achieved no sinkings and started for Norway about 27 August. By the end of August all the survivors were clearing the western Channel en route for Norway leaving only U.247 on patrol off the Lizard where she had just arrived.

At Appendix IV is given a diagram showing the dates between which individual U-boats operated in the Funnel area, any successes they achieved there and their passage times to and from the central Channel or the date of their destruction in the area.

Once again the honours for U-boat destruction in the Channel area had gone to the surface forces. The air patrols in this area and the S.W. Approaches had sighted only three of the U-boats traversing these waters. They were U.764 bound

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- (1) As recounted in the previous section, U.984 was sunk when rounding Ushant on her return journey by the 11th Escort Group on 20 August.
  - (2) Her captain certainly attributed his escape from counter-attack to this rubber coating.

up Channel on 7 August, U.621 returning on 8 August and U.92 bound up Channel on 16 August. Their other sightings were once each on U.766 and U.763 just after having left Brest en route for southern ports. Two attacks only were made and neither inflicted damage. No further sightings were obtained after 16 August. It is true that only 14 U-boats actually traversed the area during August but an expenditure of nearly 11,000 flying hours<sup>(1)</sup> to obtain five sightings and two attacks gives some idea of the increased skill developed by the U-boats in the art of schnorchelling.

B. d U.  
War Diary  
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Confirmation of this state of affairs comes from B. d U's War Diary in which the Channel operations are summarized in the statement that by the beginning of July the main difficulties of U-boats were the numerous surface patrol units in the area. This was particularly so in the approach routes in the western part of the English Channel. So many boats were forced to return having been located, hunted and damaged or exhausted before ever getting to the Seine Bay area that the order was given not to attack such units but to make every endeavour to get by unnoticed. The very great air activity was, after early July, not dangerous. It was true that many air attacks were made on schnorchels but the aim was so wide that real danger to the boat seldom existed.

ibid page 645

By the end of August the effect of schnorchel was decisive. Operations in the Channel without it would have been quite out of the question. Only a few months ago it would have been deemed impossible that a U-boat could operate for 42 days without breaking surface once. Only by this means was it possible to patrol close to the English coast again and so to bridge the intervening gap between the limitations of the old type and the expectations of the new type of U-boat.

(viii) - Action against enemy surface forces in August 1944

Fighter Command  
O.R.B. Appendices

The operations against enemy surface vessels in the Bay of Biscay area have been recounted in section (vi). Regarding the area between Ushant and the Cotentin peninsula, very little traffic was at sea and this virtually ceased with the complete investment of Brest by land forces and the fall of the strong point at St. Malo on 10 August. A few minor units remained in Channel Island harbours. Fighter Command carried out 50 reconnaissance sorties over this area up to 13 August after which they were discontinued.

East of the invasion beaches and as far as Ostend the anti-ship operations were almost entirely against the nightly movements of E-boats until nearly the end of the month when enemy shipping evacuated the ports of Le Havre and Dieppe. In the essentially short range night flying work the F.A.A.

(1) Anti-U-boat operations in the Channel and S.W. Approaches.

	Eff. hrs.	Total hrs.	A/C lost	Sights	Attack	Sunk	Dam.
Day	5,992	7,810	1	3	1	-	-
Night	692 N	1,062 N	-	1 N	0 N	-	-
	1,716 L/L	1,966 L/L	1 L/L	1 L/L	1 L/L	-	-
Total	7,400	10,838	2	5	2	-	-



squadrons (Avengers of Nos. 848, 854, 855 and Swordfish of No.819 Squadron) were invaluable. The longer range sweeps and patrols up and down the Belgian and Dutch coast were performed by night flying Wellingtons of No.524 and Beaufighters from Nos. 143, 144, 254, 455 and 489 Squadrons. Although No.236 and 404 Beaufighter squadrons were absent in No.19 Group during August, several Wing Sweeps again took place along the North German and southwest Norwegian coasts.

(a) E-boat operations

Early in August the E-boat Command put into action a new form of attack against the Allied shipping lying off the invasion beaches. Being unable to break through the destroyer and M.T.B. screen covering the beaches, they lay off Le Havre and fired very long range torpedoes into the anchorage. These received the cover name of Daakel and have been briefly described in section (ii). Up to the middle of August, 84 such torpedoes had been fired and together with the recrudescence of Small Battle Unit attacks during this period the resultant loss and damage to shipping caused some concern for a time to the Allied Command - not so much because of the volume of shipping put out of action as the continuous uncertainty of the presence of these missiles, particularly the Daakel. However, the allied military advance put a stop to the operations of the Small Battle Units after the 17 August and the stocks of very long range torpedoes for the E-boats ran out and could not be replenished.

In the more conventional role, the E-boats were singularly unsuccessful. Although making several attempts to attack our south coast convoys, only one ship was damaged. This occurred on the night 17/18 August when the Fort Gloucester (Br.) - 7,127 tons in convoy FTM.70 was hit about ten miles east of Dungeness. Some minelaying sorties were directed to the Orfordness and Margate areas but several were interrupted by air as well as surface craft engagements off the coast between Calais and Ostend. Our surface craft remained the major deterrent but there were occasions when continuous night attacks by aircraft forced E-boats to break off from their planned operations. However, neither ship nor air action succeeded in sinking more than one E-boat at sea though minor damage was sometimes inflicted. (1)

Air attacks on E-boats were delivered on the following dates:-

- Night 8/9      - By four aircraft of Nos. 854 and 855 Squadrons between Boulogne and Dieppe. Three E-boats were damaged.
- Night 13/14   - By one aircraft of No.855 Squadron off Dunkirk. One E-boat was damaged.
- Night 15/16   - By six aircraft of No.143 Squadron off Ostend. No damage.  
                     - By one aircraft of No.524 Squadron off the Somme. No damage.

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(1) The only loss at sea during August occurred on 25 August when S.91 had to be scuttled after being seriously damaged in action with British M.G.B.s off Cap d'Antifer.

ibid and  
No.16 Group  
O.R.B. Appendices

- Night 17/18 - By two aircraft of No.524 and one of No.143 Squadrons off Ostend. No damage.  
- By six aircraft of Nos. 848, 854 and 855 Squadrons at various positions between Fecamp and Dunkirk. No damage.
- Night 18/19 - By seven aircraft of Nos. 848, 854 and 855 Squadrons at various positions between Dieppe and Dunkirk.  
One E-boat damaged.
- Night 20/21 - By seven aircraft of Nos. 848, 854 and 855 Squadrons at various positions between Dieppe and Ostend. No damage but two projected attacks on convoys were abandoned.
- Night 25/26 - By eight aircraft of No.819 Squadron. One E-boat damaged.

On 28 August the final evacuation of Le Havre shipping started and continued during the next two nights. The 2nd and 8th E-boat flotillas mined the entrance to the harbour as they left and a similar programme was carried out at Dieppe. During the night 30/31 August, the two flotillas retired up the coast to Boulogne and Ostend. They were attacked at various points along the coast by six aircraft of No.143, two of No.819 and one of No.855 Squadrons but no damage was inflicted.

ibid

On 1 September the E-boat strength in N.W. Europe was 22 operational and 14 non-operational boats disposed as under:-

- Boulogne - 2nd and 10th Flotillas totalling nine operational and four non-operational boats.
- Ostend - 8th Flotilla of four operational and four non-operational boats.
- Rotterdam - 9th Flotilla of three operational and two non-operational boats.
- Ymiuden - 6th Flotilla of five operational and three non-operational boats.
- Brest - S.112 operational and S.145 non-operational.

(b) Other actions between Le Havre and the Texel

No targets along this coast were seen during daylight hours. Up to 23 August, night attacks on 41 occasions were made either on ill-defined small craft or blind on radar indication. This figure does not include those known from enemy records to have been made on E-boats. The positions of the 41 attacks were scattered but mostly along the south-western stretch of this coastline. No enemy vessels were sunk but superficial damage and casualties to crews may well have been inflicted in many cases.

No.16 Group  
O.R.B. Appendices

On 23 August a preliminary movement by sea of redundant material from Le Havre commenced. After this night there was a progressive move northeasterwards every night of small parties of coasters and light escort craft. From the 23/24 August until the end of the month 43 night attacks took place at various points along the stretch of coast between Le Havre

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and the Hook of Holland. The total loss inflicted on the enemy was only three escort craft sunk and one badly damaged. (1) Three aircraft were lost during August on these operations.

(c) Anti-shipping operations eastwards of the Texel

During August there were 45 long range reconnaissance sorties by Coastal Command aircraft extending almost to Heligoland and in follow up of worthwhile targets sighted there were six Wing Strikes or Reconnaissances in Force. Four of these attacked convoys. The strengths varied between 25 and 48 Beaufighters and were escorted by six to twelve Mustangs or L.R. Spitfires. The four successful strikes took place in the coastal stretch between Ameland and Heligoland as under:-

10 August - A Wing Strike located a convoy of five merchant ships escorted by ten small craft in 5353N x 0753E. Seventeen aircraft attacked and sunk the Santos (Ge.) - 5,943 tons for the loss of four Beaufighters.

13 August - A convoy of five merchant ships with twelve escorts was located in 5350N x 0753E. Thirty-four aircraft attacked and sunk the escorting M.383 - 750 tons and VP.1101 - 425 tons. One Beaufighter crash landed on return.

25 August - A convoy of six merchant ships with ten escorts was sighted in 5335N x 0610E. Forty-one aircraft attacked but only sunk the escorting M.347 - 750 tons.

29 August - Forty-one aircraft attacked a convoy of two merchant type ships with two escorts in 5412N x 0812E. The two ships, which were Sperrbrechers 26 and 176 of 2,096 and 1,450 tons respectively, were both sunk together with one of the escorts - VP.1269 of 100 tons - for the loss of two Beaufighters.

In addition to the above, there were three Reconnaissances in Force to S.W. Norway, on the 8, 24 and 30 August. The first consisted of 37 Beaufighters and was accompanied by the unusually strong escort of 48 American Mustangs. It was the only one to find a convoy. This was located in 5823N x 0500E and contained five merchant ships with nine escorts. The attack only damaged one ship, the Vim (Nor.) - 1,221 tons for the loss of three Beaufighters. The other two flights consisted of 40 and 50 Beaufighters respectively with an escort of 12 Mustangs each from No.12 Group Fighter Command.

Fighter Command (A.D.G.B.) co-operation

Apart from the 50 sorties to the area north of Brittany and 63 escorts to Coastal Command Wing Strikes, Fighter Command sent 144 reconnaissance sorties along the coast between Le Havre and the Texel. Sixty-one of these delivered cannon or R.P. attacks, mostly in the Scheldt and Dutch coast area. Two Dutch vessels - the Schelde - 250 tons and Globe - 314 tons were sunk off Schouwen Island on 4 August by R.P. Typhoons of No.317 Squadron. Two aircraft were lost in all during the

(1) M.363 - 750 tons, M.3800 - 400 tons and R.219 - 90 tons sunk. One Artillery Gunbarge - 250 tons damaged.

month. The August figures for No.16 Group and Fighter Command are given below.(1)

(ix) - Conclusion

The beginning of September saw the end of Overlord Phase I. The previous three months had seen the initial landing and subsequent establishment of the Allied Army in Normandy. The safety of its seaborne supplies had been secured. The debouchment from the invasion area had forced the enemy to evacuate first the U-boats and shipping in the Biscay ports and then progressively the surface craft in the French Channel ports.

The protection afforded by the maritime surface and air forces had been concentrated in the English Channel and its approaches. The enemy threats by direct sea attack from U-boats, small battle units, E-boats and other surface craft had been countered and the Allied losses were relatively trivial from these causes. Enemy mining exacted the highest price but even this was small in comparison with the huge number of Allied vessels involved. The table given at the end of this section gives the Allied War and merchant ship losses in the vital Channel area. As the enemy employed counter-action from all his western bases, his corresponding losses have been given on the coastline stretching from Ymuiden to the River Gironde.

Regarding the rather low figure given in the preceding sections of this chapter of enemy losses while evacuating ports, it is realised that at the time and even up to recent years a very much higher total was assessed as having been destroyed, particularly by direct air attack. The Germans only selected the minimum of battleworthy craft for evacuation and no vast exodus of shipping took place. The bulk was scrapped or scuttled in harbour. Such actions as took place at sea in the latter stages were all at night when bomb explosions and relatively minor fires on board assume a more spectacular aspect which tend to colour the debriefing reports from returning crews. The German naval records have been carefully examined and the losses given here are only those which can be confirmed with certainty.

One last thought. It must never be forgotten that the operations of the surface and air forces during these months close off an enemy held coast were virtually entirely free and untrammelled by attacks from G.A.F. bombers or fighters. So much was owed to the supremacy of the Allied Air Force over northern France and Belgium. Except for minelaying at night, the G.A.F. were astonishingly unsuccessful.

(1)	Sorties Despatched	Attacks	A/C lost	War vessels sunk		Merchant vessels sunk	
				No.	Tons	No.	Tons
No.16 Group	819	292	16	9	6,811	1	5,943
Fighter Command	257	61	2	-	-	2	564

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Tables showing Allied and German losses during Overlord Phase I

6 June to 31 August

Allied Losses

Author	Supply ships and Transports		Warships including Landing Craft	
	Sunk	Damaged	Sunk	Damaged
Mines	14 - 62,576	12 - 59,973	30 - 20,003	10 - 18,385
U-Boat	11 - 49,878	4 - 31,683	8 - 8,388	2 - 2,660
E-Boat	9 - 23,164	8 - 55,248	8 - 978	4 - 13,250
S.B.U.	3 - 19,555	-	8 - 10,755	-
G.A.F. at sea	2 - 9,008	1 - 7,132	4 - 6,085	-
Long range Shore guns	6 - 13,397	-	2 - 3,000	-
TOTAL	45 - 177,487	25 - 154,036	60 - 49,209	16 - 34,295

In addition, 419 Landing Craft of approximately 15,500 tons were lost through short range shore gunfire, beach obstructions and other hazards of landing but NOT including marine losses due to bad weather.

German losses between Ymuiden and the River Gironde

Author	Merchant vessels incl. tugs		Surface war vessels		U-Boats	
	Sunk	Damaged	Sunk	Damaged	Sunk	Damaged
Navy	4 - 823	-	54 - 25,511	3 - 3,844	15	5
R.A.F. at sea	7 - 2,531	2 - 4,957	43 - 37,989	7 - 790	12	11
Shared Navy/R.A.F.	-	-	-	-	5	-
Mines mostly R.A.F.	3 - 418	-	26 - 5,771	1 - 90	3	-
Allied Air raids	29 - 31,596	-	98 - 51,310	5 - 450	-	-
TOTAL	43 - 35,368	2 - 4,957	221 - 120,581	16 - 5,174	35	16

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## CHAPTER III

THE NORTHERN TRANSIT AREA IN JULY AND AUGUST 1944 AND THESTART OF THE U-BOAT INSHORE CAMPAIGN(i) Introduction

The situation in the northern area during the first week of July was very different from that experienced over the preceding six weeks. Only one U-boat (the type IX U.855) was outward bound and she was going overseas.<sup>(1)</sup> The standing U-boat patrols off west and southwest Norway had been cut down to five boats. In face of continuous air activity they rarely surfaced and then only with the utmost caution. One schnorchel boat - U.247 - was still on patrol in the North Minch area. She had been there since the middle of June unseen. On 5 July she made a signal to base reporting little traffic in the area and was instructed on 9 July to proceed round to Brest. This was the last Norwegian based U-boat to be sent round to the Channel area for many months.

The redeployment plan for Coastal Command if and when the U-boats were forced to operate exclusively from Norway has been outlined in Chapter II (v). A preliminary re-inforcement of No. 18 Group took place on 12 July with the move of No. 206 Liberator Squadron from No. 19 Group to Leuchars followed on 18 July by detachments of Nos. 59 and 120 Liberator Squadrons being sent to Tain. It was intended to prosecute the A/U operations in three main areas:- East and northeast of the Shetlands up to latitude 65°N; north of the Shetlands up to latitude 67°N; and between Iceland and the Hebrides. Concentration could be effected in whichever area was considered or found to be most fruitful but could not be maintained in all three at once. After a good deal of discussion with the Admiralty and C.-in-C. Western Approaches it was agreed that:-

- (a) The C.-in-C. Rosyth and A.O.C. No. 18 Group should control the whole northern offensive from the A.C.H.Q. at Rosyth.
- (b) After the needs of the Atlantic convoys had been met, four surface support groups should be allocated to and be operated by the C.-in-C. Rosyth in co-operation with the air patrols.
- (c) The C.-in-C. Western Approaches would continue with the training and maintenance of these four support groups who would still have their administrative base in the Western Approach Command.

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(1) Another boat of similar type (U.865) had turned back to Trondheim with defects in the schnorchel. This return was in accordance with B. d U's orders at the end of June that, to avoid needless casualties, all U-boats were to schnorchel continuously in the Northern Transit area. Any U-boat developing schnorchel trouble before reaching southeast Iceland must put back into port.

B. d U.  
War Diary  
and  
Map No. 18

C.C. File  
S.17075  
Encl. 34.

ibid  
Encl. 41.

(ii) Operations during July(a) In the actual transit area

No sightings of the few U-boats at sea occurred until 13 July. Then at 2024 hours on that day U.771 was sighted in driving rain on the surface two miles distant by Liberator Q/206 Squadron off the Norwegian coast. U.771 was returning to Bergen from her position in the standing patrol line. She dived instantly and the Liberator could only attack some 12 to 15 seconds after disappearance. No damage was inflicted. There followed five days of action against others of this patrol line.

ibid

No. 18 Group  
O.R.B.  
Appendices and  
B. d U.  
War Diary

After a momentary glimpse in darkness at 0207 hours on 15 July of a periscope directly under M/206 Squadron in 5953N x 0345E (probably U.1163 on patrol), Liberator E/206 Squadron attacked a U-boat on the surface at 0900 hours about 60 miles to the south. This was U.319, also on the coast patrol. She shot the Liberator down as it roared over but the depth charges had been released accurately and U.319 herself was sunk in the ensuing explosion. (1)

At midnight 15/16 July U.299 in the patrol line was attacked on the surface by Liberator R/206 Squadron. Flak was experienced on the run-in to which the aircraft replied with M/G fire. The depth charges did no harm but the U-boat's captain and one rating were seriously wounded by M/G bullets. Later on the 16th a periscope was sighted but could not be attacked by Catalina O/210 Squadron. This was probably U.286 on patrol. On 17 July, Mosquito L/333 Norwegian Squadron attacked a U-boat inshore and abreast of Bergen. This was U.994 returning from the patrol line and she sustained five men wounded by cannon and M/G fire.

ibid

This batch of attacks was too much for B. d U. and the remaining Group Mitte patrol line boats were recalled to harbour. One last dig at them was registered on 18 July when Mosquito K/333 Squadron caught U.286 on the surface in foggy weather close inshore off the southwest point of Norway. No damage was done by the two depth charges released but cannon fire killed one man and seriously wounded seven others including the captain.

These ubiquitous Norwegian manned Mosquitoes made two further attacks in July. On the 20th, N/333 Squadron tackled a U-Kreutzer (U.863) accompanied by an escort vessel off Hellisoy Light. Three of the U-Kreutzer's crew were badly wounded by cannon fire and she had to put back into harbour. On 25 July Mosquitoes E and F/333 Squadron attacked the outward bound U.244 when under escort off Kristiansand South. Slight damage was caused to the U-boat by the depth charges and six men were seriously wounded by cannon fire. U.244 had to return to harbour.

ibid

Finally, on 27 July, Liberator R/86 Squadron attacked U.865 off Trondheim as she was starting her second attempt to proceed overseas. She sustained damage and put back once more into Trondheim.

- (1) Air Sea Rescue was directed to the spot and one man of E/206's crew was picked up dead from the dinghy on 16 July.

Considering that, during July, only 18 U-boats were at sea in No. 18 Group's area it speaks well for the efficiency of air patrol that ten of them were sighted and eight attacked resulting in one being sunk and six damaged sufficiently to compel a return to harbour. Only one U-boat (U.855) cleared through into the Atlantic. Meanwhile between the 17 and 23 July a remarkable series of actions had taken place in Arctic waters between Jan Mayen Island and Narvik.

(b) In Arctic waters

On 14 July the Home Fleet, including three carriers, sailed from Scapa Flow for another strike by naval aircraft against the Tirpitz lying in Kaa Fjord off Altenfjord in Northern Norway.(1) The operation (code name Mascot) was timed for the night 16/17 July and it was appreciated that the enemy might well make a determined attempt to intercept the British force on its return journey with the Arctic based U-boats.(2)

Ro/G3/17/7

It was suspected by Intelligence that a U-boat patrol line was being maintained to the southeast of Jan Mayen Island and it was known that at least six to eight more U-boats were at Narvik. No. 18 Group therefore inaugurated some special sweeps by V.L.R. and L.R. aircraft to cover the track intended to be taken by the retiring naval force. It was to enable these sweeps to be maintained, in addition to the existing transit air patrols between Norway and Iceland, that the detachments of Nos. 59 and 120 Liberator squadrons were moved to Tain from Northern Ireland and Iceland respectively on 18 July.

Captain U-boats  
Norway War Diary

Dispositions on  
Map. No. 19

The Arctic U-boats' dispositions were in fact much as Intelligence believed at the time. On 16 July there was a Group Trutz of 12 U-boats patrolling a strip to the N.W. and S.E. of Jan Mayen Island.(3) At the main base of Narvik there were 10 U-boats with four more at Hammerfest and Tromso, and one was proceeding in the Vestfjord to Bodo. One was on a mission to Hope Island just south of Spitzbergen and a further four were on short refits at Trondheim and Bergen.

The attack on the Tirpitz took place at 0230 B hours on 17 July but was rendered ineffective by a thick smoke screen covering the entire Kaa Fjord. A few hours later Captain U-boats Norway signalled some of Group Trutz to move at high speed southeastwards to intercept the British force on their return journey and sent U.968 to sea from Narvik.

None of the Arctic U-boats flotilla were fitted with schnorchels, neither had they had any previous experience of action with shore based aircraft. There was almost continuous daylight in these high latitudes and the flotilla was accustomed to move about freely on the surface.

- (1) The fleet carriers Formidable, Indefatigable and Furious supported by a battleship, four cruisers, twelve destroyers and an escort group.
- (2) It was known to Intelligence that the Arctic Flotilla numbered at least 30 U-boats.
- (3) Group Trutz - U.716, 992, 365, 965, 636, 956, 361, 921, 347, 995, 742 and 387.



Moreover all boats carried the most up to date flak armament and the sea conditions between the 17 and 24 July were flat calm. Hence it was not surprising that surfaced action with the aircraft was invariably adopted.

ibid

No. 18 Group C.R.B.  
Appendices and  
Captain U-boats  
Norway War Diary

No. 18 Group's sweeps and patrols were placed across the homeward track to be taken by the British force and extended from latitudes 6730N to 6930N between longitudes 0430 and 1030E. The first two aircraft left base early in the afternoon of 17 July and both sighted U-boats in the area. Liberator U/86 Squadron attacked a U-boat on the surface at 2148 hours in 6836N x 0833E and under considerable flak straddled and sank U.361 outright, at least six survivors being seen afterwards in the water. Catalina Y/210 Squadron sighted his U-boat at 2156 hours in 6835N x 0600E also on the surface. During the run-in the aircraft was repeatedly hit, killing the navigator and badly wounding the captain and three others of the crew. In spite of his wounds the captain (Flying Officer J. A. Cruickshanks) pressed home the attack and released the depth charges to straddle and sink U.347. The second pilot then had to take over the controls and flew the badly damaged Catalina back to base where the captain, notwithstanding severe loss of blood and weakness, insisted on taking over control so that he could put down safely and beach the extensively holed flying boat. For this gallant action Cruickshanks was awarded the Victoria Cross.

ibid

Five more aircraft left during the evening and night of 17/18 July. Three saw no U-boats but all sighted the British naval force which steamed through the area close to where the two U-boats had been sunk a few hours previously. The other two aircraft both attacked U-boats. Liberator A/86 Squadron attacked U.387 under accurate flak in 6838N x 0859E at 1302 hours 18 July. The aircraft sustained considerable damage with two men wounded. This and a last minute jink by the U-boat caused a near miss with the depth charges which only inflicted minor damage on U.387. Catalina Z/210 Squadron attacked his U-boat at 1502 hours on the surface in 6824N x 0951E. Again very accurate flak was experienced which damaged the aircraft and wounded two of the crew. The attack, however, was well placed and U.742 foundered almost immediately, some 35 to 40 survivors being seen in the water before the damaged aircraft had to leave the scene. Everything possible was jettisoned which enabled the captain to gain a little height and fly home on one engine, a distance of 500 miles. On arrival the Catalina was successfully beached without further casualties.

Captain U-boats  
Norway War Diary

See Map No. 19.

Meanwhile at 0817 hours a German meteorological aircraft had sighted and reported the British force in 6700N x 0500E. Apparently the German Command feared another operation by them because U.992 and 968 were signalled to proceed at speed to positions northwest of this and all Group Trutz were ordered to take up a line patrol still further north between 7030N x 0430E and 6930N x 0930E. Late on 18 July, four more U-boats left harbour to take up positions guarding the sea approaches to Alten and Vest fjords. During the day three more aircraft had taken off for the patrol area. One of these (Liberator F/86 Squadron) sighted U.968 at 1900 hours hurrying on the surface to her patrol billet. She dived at too great a distance to be attacked but she was again sighted by F/86

at 2200 hours. This time she elected to stay on the surface and fight it out. By accurate flak and violent evasive manoeuvres she avoided damage from two depth charge attacks and so shot up the Liberator that it was forced to ditch.<sup>(1)</sup>

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During 19 July, sorties from No. 18 Group left almost hourly and the patrol area was extended further to the north. U.968 was again sighted on the surface and attacked at 1145 hours in 6939N x 0901E. This time her flak fire was countered by excellent shooting by Liberator R/86 Squadron and in the course of three attacks she was seriously damaged by depth charges and had seven men wounded by M/G bullets. She managed to dive and started return journey to Narvik. A similar action was fought at 1915 hours by Liberator F/59 Squadron in 7019N x 0602E against U.716. Here too the U-boat's flak was rendered inaccurate by well directed front gun fire and the depth charge attack seriously damaged U.716 who was forced to make for Hammerfest. She was sighted again at 2102 hours by H/86 Squadron but was able to dive before an attack could be made.

Log of U.387

The last encounter of the day came at 2321 hours when the Norwegian manned Sunderland O/330 Squadron, on the way to the patrol area, located a U-boat by her Mk.III A.S.V. in 6833N x 0720E. The big flying boat made good use of low cloud cover and emerged from it only half a mile from the U-boat which was U.387 returning to Narvik. Complete surprise was achieved but the aircraft had extremely bad luck because, in the perfect straddle obtained, the centre depth charge landed on the U-boat's upper deck and bounced off without exploding. The others of the stick were just outside lethal distance but U.387 was badly damaged though she succeeded in reaching Narvik two days later.

See Map 20

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On 20 July Group Trutz was moved still further to the northeast on a line 7230N x 0500E to 7030N x 1200E, more it seems to get out of shorebased air range than with any idea of intercepting the British naval force which incidentally had regained Scapa Flow the day before. No. 18 Group, having found a fruitful area, directed a stream of sorties into it but with not such positive results. At 0311 hours, Liberator B/86 Squadron when clearing from a patch of sea fog came upon U.636 at close range in 7205N x 0715E. The U-boat promptly opened fire, hitting both the starboard engines and damaging the starboard rudder, the turret and bomb bay, after which she crash dived. The hard hit Liberator had to set course immediately for base. Two other attacks took place during the day. Each was preceded by flak from the U-boat. That by Liberator G/120 Squadron slightly damaged U.921 but no damage was done to U.965 by Liberator N/59 Squadron.

and

Captain U-boats  
Norway  
War Diary

However, Captain U-boats Norway, in order not to expose the Trutz boats needlessly to air attacks, dissolved the Group and ordered all but U.921, 995, 425 and 668 to return to harbour. These four were then re-disposed in single widely spaced billets between latitudes 71° and 73°N from 10° to 14°E. Very early on 21 July, Liberator Z/120 Squadron

(1) The front gunner was killed in the action and two others of the crew died subsequent to the ditching. Six survivors were picked up on 21 July by Catalina X/210 Squadron.

sighted U.995 moving to her new position. Intense flak kept the aircraft at bay for a time and profitting from this the U-boat suddenly crash dived. The ensuing depth charge attack some seconds after disappearance only inflicted superficial damage. The remainder of the northerly sorties during 21 and 22 July were unproductive as the four U-boats were by that time out of range but the more southerly sweeps resulted in three attacks on the 22nd. These were on U-boats returning to harbour. U.965 spotted Liberator D/120 Squadron in time to get well under before the depth charges exploded and only had a periscope damaged. U.992 kept Catalina K/210 Squadron at bay with flak and then took the opportunity to dive with no damage from the belated depth charge attack. U.956, who stayed up to fight, severed the firing circuits of Liberator J/86 Squadron by flak fire and only suffered minor damage from two depth charges which the aircraft finally managed to release.

During 23 July, No. 18 Group cut down the number of sorties and directed them towards catching U-boats making for the And and Vest fjord approaches. However, most of the boats had already got in but one last attack was made at 1143 hours by Liberator R/86 Squadron on U.992 in 6814N x 1040E. In face of the usual flak a perfect depth charge straddle was obtained but this aircraft experienced even worse luck than Sunderland O/330 Squadron. No. 3 depth charge fell plumb on the U-boat's bridge, burst open without exploding and smothered everyone in blinding Torpex dust. The other charges did no damage and U.992 dived immediately.

The last sortie on this Arctic water offensive was despatched early on 24 July after which they were discontinued and No. 18 Group flying reverted entirely to normal transit area patrols. In all, 104 sorties were flown to Arctic latitudes up to 72°N averaging 750 miles from base. Altogether eighteen sightings of U-boats were made. Fifteen attacks were delivered on eleven individual U-boats resulting in three being sunk and four more damaged for the loss of one aircraft.

(iii) Operations in the Northern Transit area during August

Further re-adjustments took place during the month in the re-deployment plan for A/U squadrons. On 4 August, No. 311 Czech Liberator Squadron moved from S.W. England up to Tain in No. 18 Group. Two days later the large detachment of No. 162 R.C.A.F. Cansos left Wick and returned to Reykjavik to re-inforce Atlantic convoy cover and for operations in the western part of the U-boat transit area. Into this latter sector were fed numerous sorties from Nos. 59, 120, 422 and 423 Squadrons in No. 15 Group. During the latter part of August, detachments of Nos. 422 and 423 R.C.A.F. Sunderland squadrons operated from Sullom Voe and No. 202 Catalina Squadron was moved complete from Gibraltar to Northern Ireland with a detachment at this Shetland station. No. 407 L/L Wellington Squadron came up from Devonshire to Wick on 24 August and No. 58 Halifax Squadron to Stornoway on 28 August. There were also some moves among the short range F.A.A. squadrons on loan to Coastal Command which are referred to in more detail in the succeeding section on inshore U-boat operations.

U-boat traffic in the northern area was extremely sparse during the first half of August, only four boats putting to sea en route for the Atlantic. U.863 (Type IX) was routed from Trondheim north about Iceland and emerged in due course unseen through the Denmark Strait. The other three followed the

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See Map 22A

conventional route southwards of Iceland but only U.1229 cleared through unseen. U.300 was sighted and attacked on 4 August when south of Iceland by R.C.A.F. Cansos F and K/162 Squadron and later in the day by Liberator P/59 Squadron. The U-boat sustained damage from the first attack and was forced to return to Norway.(1) U.396 developed a schnorchel defect on 13 August when halfway between Trondheim and Iceland and returned to port. While doing so she was momentarily sighted at night on the surface by Catalina Y/210 Squadron early on 14 August. Meanwhile there had been some port to port transfers of Group Mitte U-boats. Two such boats (U.1163 and 771) were attacked while under surface escort off Egero by Mosquitoes E and S/333 Squadron.(2) No damage was inflicted on them and E/333 was shot down by U.1163.

See Map 23

See Map 24

ibid

From mid-August there started an increasing stream of outward bound U-boats from Norwegian ports destined either overseas in the Atlantic or to inshore billets around the northern part of the British Isles. Twelve were at sea by 20 August rising to sixteen by the end of the month. Extreme caution was now the order of the day and the growing hours of darkness made night schnorchelling a safe pastime as there were as yet few Leigh Light aircraft in any part of the area. Only two sightings were made by aircraft in the transit area after 15 August. U.484 was sighted on the surface in the afternoon of 23 August when north of the Faeroes by Sunderland S/422 Squadron in very clear weather. The U-boat dived to safety long before the aircraft reached the spot. On 25 August, Catalina Y/202 Squadron when in the same area sighted a schnorchel and periscope at one mile range and made a snap attack with depth charges. Both U.245 and 248 were in this vicinity but, as neither reported any incident, it was unlikely that any damage was inflicted.

See Map 24

By 31 August eight U-boats had cleared through the area and eleven were still on passage in it. Three more had turned back for defects and one had been forced to return by air attack. Not counting the two Group Mitte boats, there had been 23 U-boats present during August in the transit area. Only four individuals had been sighted and of the two attacked one had been forced to return - a very different story from July but one which was from now to be the usual experience.(3) The schnorchel was proving its value as a counter to air action.

- (1) U.300 was afterwards sighted on the return journey on 15th August by Catalina A/333 Squadron but too far away for attack before diving to a safe depth. She entered Trondheim on 17 August.  
 (2) U.1163 and 771 were being transferred from Stavanger to Kristiansand South.  
 (3) Flying hours and results in the Northern area during July and August.

	Type	Eff. hours	Total hours	A/C lost	U-boats				
					Sights	Attacks	Sunk	Dam	Got through
July	Day	2,490	5,708	4	27	22	4	10	One
	Night	48 (N)	185 (N)	--	2 <sub>N</sub>	1 <sub>N</sub>	--	--	
August	Day	2,605	4,373	1	8	6	--	1	Eight
	Night	( 551 (N) ( 181 L/L	(1,064 (N) ( 226 L/L	-- --	1 -- N	0 -- N	-- --	-- --	

(iv) The start of the U-boat inshore campaign

The fitting of schnorchel made feasible a positioning of U-boats in inshore billets close off the British coast, a factor which had not been possible since early 1941. As history shows this strategy gave nothing like the results hoped for by Doenitz but it certainly tied down much A/U effort in localized areas. We have seen the results of its first impact in the English Channel area and it is proposed now to outline the start of similar operations at other focal points around the British Isles. The inshore campaign remained the major commitment for the U-boat fleet until the end of the war and its narrative is kept separate in succeeding chapters from A/U operations in purely transit areas or in the Atlantic although individual R.A.F. Groups were often engaged in all three types of anti-U-boat warfare. Where possible the flying effort is analysed according to type.

Apart from the English Channel, June 1944 saw a tentative start of other inshore operations with the detailing on 7 June of schnorchel fitted U.247 and U.719 for the North Minch and North Channel areas respectively. This had already been mentioned in Chapter I but not in detail. Both U-boats reached their billets on about 13 June. U.247 remained undetected although torpedo attacks by her missed a battleship on 18 June and an escort vessel on 5 July. Late on 5 July she sank the fishing vessel Noreen Mary - 207 tons half way between Cape Wrath and the Butt of Lewis. Subsequently, an extensive hunt by surface and air forces for the next fortnight failed to locate her. Actually, on 9 July she was detailed by the U-boat Command to proceed to Brest. She left the North Minch area on 10 July. Except for the hunt referred to above no special air patrols were instituted while U.247 was in the area.

The sea area just north and northwest of Ireland, being a focal point for North Atlantic traffic, was lightly patrolled as a precaution by No. 15 Group from early in June. This was quite apart from ocean convoy escort and support. Sorties were occasionally provided by Nos. 6 and 131 O.T.U.s. (L/L Wellingtons and Sunderlands respectively). More regular patrols were done from 13 June by F.A.A. Swordfish of No. 811 Squadron and Avengers of No. 846 Squadron operating from Limavady.<sup>(1)</sup> No sightings were obtained of U.719. However, she saw little traffic and, after missing with an acoustic torpedo at an escort vessel on 24 June, made a W/T report to base the next day. A D/F of this signal called more marked attention to the area and, although no air sightings resulted, an asdic sweep located her on 26 June and she was sunk by H.M.S. Bulldog. The special air patrols were discontinued and the F.A.A. squadrons reverted to the R.N.A.S.<sup>(2)</sup>

- (1) Nos. 811 and 846 Squadrons were disembarked from the escort carriers Biter and Tracker respectively on 11 June for this task.
- (2) Flying hours on special patrols close off N.W. Ireland - 11 to 26 June.

	Effective hours	Total hrs.	A/C lost	Sights	Attacks
Day	280	446	1	-	-
Night	{ 29 (N)	58 (N)	-	-	-
	{ 39 L/L	64 L/L	-	-	-

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No further U-boats were detailed for inshore billets (other than English Channel) until U.667 took up position in the Bristol Channel on 7 August. This has been alluded to in Chapter II. On 8 August she attacked convoy EBC 66 north of Trevose Head and sank S.S. Ezra Weston (U.S.) - 7,176 tons and the Canadian corvette Regina. Special air patrols were immediately laid on which continued until 20 August. U.667 was unable to effect anything further but she was only sighted momentarily once and left patrol on 17 August.(1)

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During the second week of August five Norwegian based U-boats left port for inshore billets in the North Channel, North Minch, Moray Firth and off Reykjavik.(2) All got through the northern transit air patrols and four of them were in their positions in the last week of August. They were followed by the despatch during the second half of August of four more U-boats from Norway and three from Biscay ports. The former to re-inforce those already in the North Minch and North Channel areas and the latter to re-institute patrol in the Bristol Channel and off south Ireland.(3)

It is from this time that the inshore campaign proper can be said to start. The evacuation of the Biscay ports was well under way and some sort of compensatory though temporary action was expected by us from Norwegian based U-boats. Precautionary counter-action by special inshore air patrols was therefore inaugurated as likely points such as around the Orkneys, off the Butt of Lewis, off Reykjavik in Faxe Bay and of course in the North Channel area. Taking the areas in the order in which air patrols were instituted or re-introduced latterly in August we have:-

(A) North Minch area (around the Butt of Lewis to Cape Wrath)

Air patrols started on 10 August with sorties by L/L Liberators of No. 120 Squadron, Sunderlands of Nos. 422 and 423 Squadrons and Swordfish of No. 842 F.A.A. Squadron (working from Stornoway). The patrols were increased during the rest of the month by occasional sorties from Nos. 311, 59 and 86 Liberator Squadrons with more regular additions by a detachment of No. 1693 Anson Squadron operating from Stornoway.

(1) Flying hours in the Bristol Channel - 7 to 20 August

	Effective hours	Total hrs.	A/C lost	Sights	Attacks
Day	322	391	-	-	-
Night	( 25 (N) 112 L/L	40 (N) 132 L/L	- -	- -	- -

N.B. The one sighting of U.667 was by an aircraft on the way out to a Biscay Patrol.

- (2) U.296 left Bergen 16 Aug. Arrived in North Minch area 24 Aug.  
U.680 left Horten 14 Aug. Arrived in Moray Firth area 25 Aug.  
U.244 left Bergen 9 Aug. Arrived off Reykjavik about 29 Aug.  
U.482 left Horten 14 Aug. Arrived in North Channel area 30 Aug.  
U.484 left Horten 14 Aug. Arrived in North Channel area 7 Sept.  
(3) U.248 left Trondheim 17 Aug. Arrived in North Channel area 7 Sept.  
U.743 left Trondheim 21 Aug. Arrived in North Channel area 8 Sept.  
U.285 left Horten 19 Aug. Arrived in North Minch area 5 Sept.  
U.398 left Kristiansand 26 Aug. Arrived in North Channel area 8 Sept.  
U.262 left La Pallice 23 Aug. Arrived in Bristol Channel 5 Sept.  
U.758 left St. Nazaire 23 Aug. Arrived just south of Ireland 5 Sept.  
U.714 left La Pallice 26 Aug. Arrived in Bristol Channel 7 Sept.

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The only U-boat present in the area was U.296 and she did not arrive until 24 August. Her schnorchel and periscope were sighted once before the end of the month - by Anson D/1693 Squadron at 1617 hours on 27 August. The Anson dropped its two depth charges nearby but no damage was inflicted. (1)

(B) The Moray Firth area

Air patrols were instituted on 24 August and until the end of the month were performed by aircraft from No. 206 Liberator, No. 407 Leigh Light Wellington, No. 4C Sunderland O.T.U. and No. 1693 Anson Squadrons. U.680 arrived in this area on 25 August. Only a momentary sighting was made of her at very long range before the end of the month and this was by Anson D/1693 Squadron at 1945 hours on 30 August. (2)

(C) The Reykjavik area

R.A.F. Iceland

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Local air patrols in Faxse Bay were started on 26 August. They were done by aircraft from No. 162 Canso Squadron and the station flight of Ansons. U.244 arrived in this area on 29 August. No sightings of her occurred up to the end of the month. (3)

(D) The North Channel area

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Special air patrols were re-instituted on 29 August by Swordfish of No. 811 F.A.A. Squadron which had been re-loaned to Coastal Command on 27 August and again based at Limavady. U.482 arrived in the area on about 29 August and the next day attacked convoy CU 36 soon after 1530 hours sinking the large tanker Jacksonville (U.S.) - 10,448 tons in position 5530N x 0730W. Swordfish and Avengers of Nos. 811 and 850 F.A.A. squadrons were patrolling the area but the convoy had no specific air escort. Avenger A/850 Squadron actually saw the tanker torpedoed at 1544 hours. This was the first casualty here for some years and considerable air action was immediately started by available aircraft from Nos. 120, 422, 423, 6 O.T.U., 130 O.T.U. and the two F.A.A. squadrons. Surface forces were also disposed in the area but no location of U.482 resulted. Very early on 1 September, Liberator Q/120 Squadron obtained a radar contact and, after homing on it, passed over a dimly seen

(1) Flying hours in the North Minch area - 10 to 31 August

	Effective hours	Total hrs.	A/C lost	Sights	Attacks
Day	571	792	-	1	1
Night	( 27 (N) ( 33 L/L	65 (N) 38 L/L	- -	- -	- -

(2) Flying hours in the Moray Firth area - 24 to 31 August

Day	83	100	-	1	0
Night	( 7 (N) ( 6 L/L	10 (N) 7 L/L	- -	- -	- -

(3) Flying hours off Reykjavik - 26 to 31 August

Day	143	158	-	-	-
Night	17 (N)	23 (N)	-	-	-

wake with a dark object at the head in 5524N x 0805W but it could not be relocated for attack. This was probably U.482 because some hours later in the day she torpedoed and sank H.M. corvette Hurst Castle in this vicinity and again eluded pursuit.(1)

(e) The Bristol Channel area

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Special patrols were re-instituted off the North Cornish coast on 30 August by aircraft from Nos. 53, 224 and 547 Liberator Squadrons, No. 179 L/L Wellington Squadron and Nos. 103 and 105 U.S.N. Liberator Squadrons. After U.667 had left on 17 August no U-boats were present in this area until the arrival of U.262 and 758 on 5 September so that no sightings could be obtained by the flying done on the last two days of August.(2)

Summary

No widespread infiltration of U-boats into inshore billets was accomplished until the second half of August. By the end of the month few ships had been sunk by them and even fewer locations were made by the aircraft hunting them. However, a considerable air effort was already being expended on this task. The table below shows to what extent this amounted to since early June in areas outside the English Channel up to the end of August.

Area	Day and Night		A/C lost	U-boats			No. of U-boats present	Vessels sunk
	Eff. hrs.	Total hrs.		Sights	Attacks	Sunk		
North Channel	585	868	1	1	-	-	2	1
Bristol Channel	570	688	-	-	-	-	1	2
North Minch	630	894	-	1	1	-	2	1
Moray Firth	95	116	-	1	0	-	1	-
Off Reykjavik	160	180	-	-	-	-	1	-
Totals	2,040	2,746	1	3	1	-	7	4

(1) Flying hours in the North Channel area - 29 - 31 August

Effective hours		Total hrs.	A/C lost	Sights	Attacks
Day	154	198	-	-	-
Night	( 20 (N) ( 66 L/L	29 (N) 73 L/L	- -	- 1 L/L	- 0 L/L

(2) Flying hours in the Bristol Channel - 30 and 31 August

Day	64	75	-	-	-
Night	( 2 (N) ( 45 L/L	3 (N) 48 L/L	- -	- -	- -



## CHAPTER IV

ANTI-U-BOAT OPERATIONS IN MID-ATLANTIC AND OVERSEASJUNE TO DECEMBER 1944.(1)(i) Introduction

The description of U-boat operations in mid-Atlantic and in the overseas areas off the continents of America and Africa together with the Allied counter-measures up to 1 June 1944 has been recounted in Volume IV.

The U-boat dispositions on 6 June 1944 are illustrated on Map 13. There were three weather-reporting U-boats stationed in the mid-Northern Atlantic (U.534, 857 and 853). U.1222 was billeted off Halifax. U.539 was entering the Caribbean and had on 5 June sunk a ship off Puerto Rico. U.543 and 547 were patrolling in the Takoradi area and U.505 had just been captured intact off Port Etienne by the U.S. escort carrier Guadacanal's aircraft and her escorting destroyers.(2) Thirteen other U-boats were on passage in these wide ocean spaces to or from overseas areas including four large U-Kreuzers bound for the Indian Ocean. An important unit - the last surviving 1,600 ton U-tanker (U.490) - was in the Northern Atlantic proceeding southward and bound ultimately for the Indian Ocean to act as a refueller in that region.

The current Allied air policies regarding ocean convoys varied in the different areas. At home, in the N.E. Atlantic, in the absence of U-boat threat very little close air escort but relatively heavy distant support was afforded from Iceland, United Kingdom and Azores bases. Conversely, in the West Africa Command close air escort accounted for 50% of the flying. In Canadian waters also, much of the shipping whether in convoy or independently routed received close air escort but here there was in addition a proportion of barrier patrol flying against attempts by U-boats to penetrate into inshore positions or into the Gulf of St. Lawrence. It will be seen later how the schnorchel defeated this latter. In the Caribbean and Trinidad areas practically every convoy was air escorted in addition to more distant supporting sweeps but large ships were often routed singly without air cover. Off Brazil and from Ascension Isle the flying was generally on probability searches unrelated to shipping movement.

Finally, the cessation in March 1944 of any sort of U-boat pack action against convoys in mid-Atlantic had made possible the withdrawal of several American escort carriers from convoy support duties. Since that month these, with their destroyer escort, had been employed in ranging the central Atlantic longitudes looking for U-boats. In this task these so-called Hunter/Killer Groups were successful only on the occasions when U-boat W/T traffic provided them with firm indications of where to hunt.

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- (1) The positions, intentions and experiences of U-boats which appear in this chapter are taken from B.d U.'s War Diary.
  - (2) Full details of this action and the capture of U.505 are given in the U.S. Fleet A/S Bulletin for May 1945.

(ii) Events during June and July 1944

A considerable blow to enemy plans was registered on 9 June when the last surviving tanker - U.490 - was caught on the surface in mid-Atlantic (4247N X 4008W) and sunk by the combined action of aircraft from the U.S. escort carrier Croatan and her attendant destroyers. On 12 June, B. d U. instructed all overseas U-boats to start their return passages with sufficient fuel in hand to reach Bergen. Even at this date he appears to have foreseen the probable loss of the Biscay ports.

Following the procedure of Volume IV, each overseas area is dealt with separately:-

(a) The Canadian and United States seaboard

Off Nova Scotia, U.1222 was joined about 10 June by U.107 who made an incorrect claim to have sunk a small vessel south of Halifax on 13 June. U.1222 started homeward on the 16th followed by U.107 on 30 June, neither having effected anything. It is not clear from German records why this is so because neither U-boat was even sighted by Canadian flying. Early in July the large Type XB minelayer U.233 was approaching Nova Scotia with orders to lay her mines off Halifax. She was, however, detected by an aircraft from the American escort carrier Card on 2 July and systematically hunted until being located on asdics by the attendant destroyers on 5 July when she was sunk some 210 miles southeast of Halifax. No further U-boats were present in this area up to the end of July.

See Map 17

No U-boats at all were off the U.S. seaboard during these two months so that the large expenditure of flying hours was unproductive. The available records of Canadian and American flying give no break-down into specific task or distinction of day and night hours,<sup>(1)</sup> neither is it possible to determine the effective hours actually on task.

(b) The Caribbean and Trinidad area

On 11 June, U.539 attacked the independent Dutch Cassandra off Curacao with gunfire but the ship escaped without serious damage. In mid-June U.516 entered the area but neither boat scored any success until 4 July when U.539 torpedoed and damaged the independent Kittanning (U.S.) - 10,195 tons and on 7 July U.516 sank the independent Esso Harrisburg (U.S.) - 9,887 tons in the Colon and Curacao vicinities respectively. Just outside the Caribbean, U.530 had arrived off Guiana towards the end of June. She slowly worked westward until reaching Trinidad about 7 July. She remained here without

See Map 17

## (1) Flying hours by E.A.C. Canada and off the U.S. Eastern Seaboard.

Command	Task	JUNE - 1944				JULY - 1944			
		Total Hours	Sights	Attacks	Result	Total Hours	Sights	Attacks	Result
E.A.C. Canada	General A/U	3,805	-	-	-	3,297	-	-	-
U.S. Eastern Seaboard and Bermuda	General A/U	6,083	-	-	-	10,402	-	-	-

effecting anything until 23 July when she entered the Caribbean and patrolled off Curacao until the end of the month - again without effect.

The very considerable flying done during June and July<sup>(1)</sup> between the Gulf of Mexico and Guiana produced but three air attacks, all near Puerto Rico and probably on U.516 and/or U.539. No damage was inflicted on either.

(c) The South American coast from the Amazon to Rio de Janeiro

No U-boats were in this area during June. The U-Kreutzer U.861, southbound for the Indian Ocean, was instructed on 17 June to break her journey and operate for a time off Rio de Janeiro. At the time she was in the Atlantic Narrows and she did not arrive in the area until 7 July. She made an erroneous claim to have sunk a Brazilian ship on the 20th and did sink the independent William Gaston (U.S.) - 7,177 tons off Rio on 24 July, after which she proceeded eastward for Cape Town. The flying in the area amounted to 4,202 hours in June and 5,111 hours in July. There were no sightings.

See Maps  
13 and 17.

(d) The South Atlantic Ocean

The other three U-Kreuzers maintained their course for the Cape. U.860 was caught on the surface on 15 June by aircraft from the roving U.S. escort carrier Solomons and sunk, after shooting down two of her attackers, in position 2527S X 0530W.<sup>(2)</sup> U.198, when rounding the Cape, sank the independent Columbine (Br.) - 3,268 tons on 16 June. U.859 cleared into the Indian Ocean without incident.

ibid.

A fifth U-Kreutzer - U.862 - emerged into the Atlantic during the latter half of June having come northabout round Iceland and through the Denmark Strait so as to avoid the air patrols in the Northern Transit Area. She had an uneventful journey southward until 25 July when she ran across and sank the independent Robin Goodfellow (U.S.) - 6,885 tons to the southwest of St. Helena. She cleared into the Indian Ocean early in August.

(e) The West Africa area

U.543 started home from the Takoradi area on 13 June having effected nothing and was sunk while on passage on 2 July by aircraft from the U.S. escort carrier Wake Island when southwest of the Canary Islands.

U.547, also moving slowly from Takoradi, attacked a small convoy at midnight on 14 June to the west of Cape Palmas sinking the St. Basile (Fr.) - 2,778 tons and one of the escorting trawlers - H.M.S. Birdlip. She escaped the subsequent surface and aircraft hunt, and moved up to the Freetown sector where on 2 July she sank the independent

See Maps  
13 and 17

(1) Flying hours by the Gulf, Panama and Caribbean Sea Frontiers.

Month	Task	Total Hours	Sights	Attacks	Result
June.	General A/U	17,357	1	1	-
July	General A/U	20,174	2	2	-

(2) Details are in the U.S. Fleet A/S Bulletin for July 1944.

Bodegraven (Du) - 5,593 tons. Early in the dark hours of 4 July, Sunderland A/490 R.N.Z.A.F. Squadron, working from Freetown on convoy support, caught a glimpse of her but the U-boat had dived for too long by the time the aircraft arrived over the spot to justify an attack. U.547 then moved slowly northwards up the coast of Africa en route for home, finally leaving the northwest coast about 20 July. Her relief, U.546, was then passing a few miles away bound for Freetown. The West Africa Command made but the one sighting mentioned above during June and July. (1)

(f) The Central Atlantic

The roving American escort carriers had two successes during the period. Aircraft from U.S.S. Bogue attacked and destroyed the Japanese submarine I.52 on 24 June in position 1516N X 3955W. This boat was bound for a Biscay port with a valuable cargo from Japan. On 3 July, U.154 outward bound for the Florida Straits was detected and sunk by the destroyer escort to U.S.S. Croatan in position 3400N X 1930W.

(g) The North Eastern Atlantic

Weather reporting U-boats were maintained in mid-Northern Atlantic throughout June and July. U.853 started back to a Biscay base on 19 June. U.534 and 857 moved down one position and the northernmost billet was occupied a few days later by U.673 from Norway. She was conducting trials with a new type of conning tower and only remained until 4 July before being instructed to proceed to St. Nazaire. The other two boats started back to France on the 20th and 28th July respectively. The three positions were re-occupied in the same sequence - by U.858 on 4 July, U.804 on 20 July and U.855 on 25 July, all from Norwegian ports. Also during these two months, nine U-boats from Norway passed south well outside Ireland bound for the English Channel or Biscay ports and thirteen Biscay based U-boats traversed the waters westward of Cape Finisterre during their journeys to or from overseas areas.

None of these singleton U-boats on passage constituted any threat to convoys leaving or approaching the British Isles except for possible chance encounters. Although the full extent of these comings and goings may not have been known to our intelligence, the absence of organised attack in the Atlantic and the known enemy pre-occupation with the Normandy Campaign were considered sufficient justification to relax close air escort. However, general air cover was given in those areas through which ocean shipping was actually proceeding at any given time. Such support flying from U.K. bases sighted four U-boats during June and July of which two were attacked but without inflicting damage. All were to the west or northwest of Ireland and in fact were on U-boats proceeding

(1) Flying hours by the R.A.F. West Africa Command which extended from Port Etienne in French West Africa to Ponte Noire in the Congo. Available records do not differentiate between day and night flying, or give the effective hours on task.

Month	Task	Total hours	A/C lost	Sights	Attacks	Results
June	Convoy escort	1,025	-	-	-	-
	Support patrols	1,119	-	-	-	-
July	Convoy escort	860	-	-	-	-
	Support patrols	1,324	2	1	0	-

down to the English Channel area. Similar convoy support flying from the Azores, now reduced to one Fortress squadron, detected at night and attacked a surfaced U-boat north-eastward of these islands at the end of July. In this case the U-boat - U.518 - was on passage from the Bay to Cape Hatteras. No damage was inflicted. Details of the convoy escort and general support flying hours are given below. (1)

(iii) Events during August and September 1944

See Map 22

There were few U-boats at sea in the open Atlantic or overseas on 1 August. The three weather reporting boats were in their Northern Atlantic billets, U.530 was still in the Caribbean and U.546 was approaching the Freetown sector. On passage were two returning from the Caribbean (U.516 and 539) and two outward bound for the Canadian/American coast (U.802 and 518).

Halfway through August, the advance westward of Allied land forces towards the Biscay ports resulted in signals from B. d U. to the returning U.516 and 539 to make for Trondheim instead of western France. This was followed by another signal instructing all Type IX boats to return to Norway on completion of their patrols and to leave with the necessary fuel in hand. As neither U.516 nor 539 had the requisite fuel they were told to meet and take sufficient fuel from the weather boat U.855.

By the end of August the evacuation of the Biscay ports was nearly complete. With the loss of these bases, all U-boats had to set out from or return to Norwegian harbours. The extra mileage involved made it impossible to operate even the large Type IX boats in Caribbean or West African waters unless supplies were guaranteed at sea near these areas. The recent destruction of the last U-tanker and the air menace from roving American escort carriers made any kind of replenishment

(1) Ocean Convoy escort and support flying hours in N.E. Atlantic.

Month	Base	Task	Effective Hours	Total Hours	A/C lost	U-boat		
						Sights	Attacks	Result
June 1944	U.K. and Iceland	Escort	( 98 ( 3 (N)	( 202 ( 15 (N) ( 1 L/L	- - -	- - -	- - -	- - -
		Support	( 853 ( 74 (N) ( 198 L/L	(1,448 ( 176 (N) ( 271 L/L	3 1 N -	2 - 1L/L	1 - OL/L	- - -
	Azores	Escort	60	( 119 ( 16 (N)	- -	- -	- -	- -
		Support	( 366 ( 24 (N)	( 641 ( 177 (N)	- -	- -	- -	- -
July 1944	U.K. and Iceland	Escort	( 70 ( 2 (N)	( 154 ( 13 (N)	- -	- -	- -	- -
		Support	( 692 ( 16 (N) ( 123 L/L	(1,220 ( 49 (N) ( 128 L/L	1 - -	1 - -	1 - -	- - -
	Azores	Escort	51	( 107 ( 16 (N)	- -	- -	- -	- -
		Support	538 16(N)	998 121 (N)	- 1 N	- 1 N	- 1 N	- -
Flat Total			3,184	5,812	6	5	3	-

impossible even from the large Type XB minelayers who had in the past acted as reserve refuellers.<sup>(1)</sup>

Henceforward, except for the U-Kreutzers, overseas operations became limited to the coast of North America or N.W. Africa for the Type IX boats. For the smaller Type VII.s there remained only the coastal waters of Iceland and the British Isles.

(a) The Canadian and United States seaboard

No U-boats were present until the third week of August. During her approach U.802 reported the sighting of an aircraft carrier on 16 August about 400 miles S.S.E. of St. Johns (N.F.) This was U.S.S. Bogue who, with her attendant destroyers, was operating in this area. U.802 saw no more of the carrier but during the night of 18/19 August was suddenly attacked by aircraft (they were from the Bogue). She sustained slight damage and dived. For the next 48 hours she heard much activity on her hydrophones from surface craft but finally got clear and continued towards the Cabot Strait. In the same vicinity, however, was U.1229 bound for the coast of Maine to land spies. The Bogue's aircraft on continuous search patrols since their previous attack on U.802 came upon U.1229 all unsuspecting on the surface at midday 20 August in position 4220N X 5139W. Under heavy flak they delivered a series of rocket and depth bomb attacks which ultimately sank the U-boat. Forty-two survivors were taken aboard one of the Bogue's destroyers.

A third U-boat - U.518 - was also at this time nearing the coast but further south, having been detailed for the Cape Hatteras area. She reached her station on 23 August but effected nothing until 12 September when she hit and damaged the independent George Ade (U.S.) - 7,176 tons. She remained on patrol without further incident until 29 September when she started back to Norway.

Meanwhile U.802 had reached the Cabot Strait about 25 August, passed through, and by the 27th was well inside the Gulf of St. Lawrence. She remained there or in the St. Lawrence estuary for nearly three weeks undetected by either air or surface patrols but seeing very little traffic and no worthwhile targets. Her only offensive action was a torpedo miss at an escort vessel on 14 September in the St. Lawrence River just above Anticosti Island. About 20 September she withdrew unmolested and started back to Norway. On 24 September a Canadian Liberator (Y/10 R.C.A.F.) sighted her off St. John's (N.F.). She dived but the aircraft's armament of Mk. 24 mines failed to release.

U.541 was the next arrival. She was one of the last boats to depart from a Biscay port on overseas duty. She was detailed for the St. Lawrence and when still some 400 miles southeast of Newfoundland was momentarily sighted by a Canadian aircraft on 28 August but no attack was possible. On 2 September she was nearing the Cabot Strait and the next day had the effrontery to sink the independent Livingstone (Br.) - 2,140 tons right in the Strait. Passing through unmolested she reached the mouth of the St. Lawrence River and on 8 September missed with a torpedo at H.M.C.S. Norsyd. She remained here or in the Gulf of St. Lawrence until 25 September also without seeing any worthwhile targets. After withdrawing through the Cabot Strait she paused just to the eastward until

(1) Moreover only two of these remained afloat out of the eight built. U.219 was outward bound for the Indian Ocean and U.234 was still unready in Kiel.

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22 and 25

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See Map 27

2 October during which time she missed with torpedo shots at an escort vessel on one day and a large merchant ship on another. In her signalled report soon after, she recommended this latter position as holding out better chances than up the Gulf. She was not complimentary about the defences which were described as "..... in the Gulf of St. Lawrence, searching groups of destroyers and motor boats - not dangerous; little air activity. In the Cabot Strait area, lights as in peace time and no air activity."

By the end of September, U.1221 and U.1223 were in the area, the former off Halifax by the 25th and the latter just south of Newfoundland on 1 October bound for the Gulf of St. Lawrence.

All these boats were fitted with schnorchel and, indeed, from now onwards all U-boats putting to sea on operations were so equipped. It speaks much for the immunity from air detection so afforded that these large Type IX U-boats could exist for long periods in such a rat trap expanse of inland water as the St. Lawrence Gulf and the River estuary. Although effecting singularly little damage to shipping, they evaded all the extensive air and surface craft hunts touched off by their known presence.(1)

(b) The Caribbean area

U.530 was the only U-boat in the area on 1 August. She was at this time off Curacao and was moving northward on her return journey. About 3 August she left the Caribbean by the Mona passage between Haiti and Puerto Rico, and had an uneventful passage back to Kristiansand South. She had effected nothing and was the last U-boat to operate in this region. The large amount of flying done in August and September was, therefore, unproductive of a sighting.(2)

(c) The coast of South America and in the South Atlantic

There were no U-boats on patrol off the South American coast during August and September. They never reached as far as this again. However, U-Kreuzers continued to be despatched to the Indian Ocean and were routed down well to the westward of Ascension Isle and St. Helena. In the absence of any coastal U-boat activity, much of the Brazil based flying

(1) Flying hours by E.A.C. Canada and off the U.S. Eastern seaboard.

Command	Task	August - 1944				September - 1944			
		Total hours	Sights	Attacks	Results	Total hours	Sights	Attacks	Results
E.A.C. Canada	General A/U	4,009	1	0	-	5,763	1	0	-
U.S. Eastern Seaboard and Bermuda	General A/U	12,424	1	1	-	11,860	1	1	-

(2) Flying hours in the Gulf, Panama and Caribbean Sea Frontiers.

Month	Task	Total hours	Sights	Attacks	Result
August	General A/U	12,410	-	-	-
September	General A/U	11,170	-	-	-

was in the form of sweeps well off shore and into the central Atlantic Narrows. (1)

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U.863, who had also come out from Germany northabout Iceland and through the Denmark Strait, reached the Atlantic Narrows late in September. She was sighted early on 29 September by two U.S.N. Liberators of No. 107 Squadron who were on a sweep from East Brazil to Ascension Isle. The U-Kreutzer was on the surface in the pre-dawn twilight. Both aircraft attacked under flak and with accurately placed sticks of depth bombs sank the submarine in position 1045S X 2530W. Life rafts were dropped on the spot and many survivors were seen clambering on to them as the aircraft left the scene.

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Further north in mid-ocean between the Cape Verde Islands and South America were two large U-boats also southbound for the Indian Ocean. These were U-Kreutzer U.195 and the Type XB minelayer U.219 acting as a refueller. They were the last two U-boats to be despatched overseas from a Bisoay base. On 28 September, U.219 was instructed by signal to refuel the cargo-carrying U.1062 who was returning to Germany from the Far East. The rendezvous given was in the approximate position 1130N X 3500W. U.219 surfaced in this position later on the 28th and was promptly attacked by a carrier borne type aircraft which she shot down. She submerged again and sighted similar aircraft on 29 September after which she crept away from this unhealthy neighbourhood and continued her passage south. Actually these aircraft came from the American escort carrier Mission Bay who, with a destroyer escort, was roving in this area. During the night 29/30 September, U.1062 surfaced at the rendezvous and was soon contacted on A.S.V. by one of the Mission Bay's aircraft. U.1062 dived but the area was closely hunted during the 30th by the Mission Bay's destroyers. One of these obtained asdic contact and delivered a hedgehog attack which produced four detonations and much oil. This marked the destruction of U.1062 in 1136N X 3444W. Subsequently both U.195 and U.219 cleared into the Indian Ocean during October without further incident.

(d) The West African area

On 1 August, U.546 was between the Cape Verde Islands and Dakar on her way to the Bathurst/Freetown sector. She operated without any successes along the coast between Cape Blanc and Bathurst for five weeks and left for home on 10 September. Her only offensive action was a salvo miss at a southbound convoy off Cape Verde on 28 August.

See Maps 22,  
25 and 27

U.170 was the last boat detailed for this area. She left Lorient on 4 August and arrived in the Cape Verde area about 4 September. She operated between Bathurst and Freetown until 3 October when she started back to Norway. Her report mentions the sighting of only three ships - all of them neutral. She experienced little trouble from surface craft patrols but noted strong night air activity along 300 miles of

(1) Flying hours from Eastern Brazil bases.

Month	Task	Total Hours	Sights	Attacks	Results
August	General A/U	1,977	-	-	-
September	General A/U	3,212	1	1	U.863 sunk



the coast. The flying by the West Africa Command made no sightings but certainly seems to have stifled any enterprise by either of these U-Boats.(1)

### (3) The North Eastern Atlantic

The weather reporting boats U.804, 855(2) and 858 remained on duty in the Northern Atlantic throughout August. After refuelling an inward bound Type IX (U.539), U.858 and 804 left for Norway early in September. Only one fresh boat (U.772) was detailed in lieu. After refuelling another inward bound Type IX (U.516), U.855 left for Norway on 9 September, her place having been taken three days before by U.245.

U.772 started her return on 17 September leaving only U.245 on this duty and she too left for Norway on 2 October. Some continuity in weather reports was secured by B. d U. through ordinary U-boats on passage who were instructed to make daily reports while passing through the mid Northern Atlantic area.

During August there were no U-boats traversing the ocean convoy routes in the N.E. Atlantic and it is not surprising that no sightings were obtained by the convoy support flying. During September, however, there were increasing numbers. Quite apart from the weather boats movements, there were ten others on passage to or from distant areas and no less than 25 ex-Biscay based U-boats streaming round some 350 miles outside Ireland bound for Norwegian ports. It is true that all these 41 U-boats were on passage and not offence minded but it is notable that not one was sighted during September. For this immunity credit goes to the schnorchel and to a certain extent to B. d U's. tactics of opening the inshore phase of U-boat operations, because much of the air escort and all of the convoy support flying from the United Kingdom went towards concentrated air patrols in the area just northward of Ireland and in the outer Bristol Channel.

See Maps 22  
25 and 27

The one squadron - No.220 Fortress - in No. 247 Group based in the Azores was re-inforced at the end of July by a flight of four searchlight fitted Liberators of No.114 U.S.N. Squadron from Dunkeswell in No. 19 Group. Two more of these aircraft were added in September. The trans-Atlantic convoys were being routed further to the south and received air support from this base. Such flying was rewarded later in September by three sightings culminating in an excellent attack. In the early dark hours of 24 September, a Fortress on distant convoy cover detected and sighted a surfaced U-boat well to the north-west of the Azores. Flak was encountered but the actual

#### (1) Flying hours by R.A.F. West Africa between Port Etienne and the Congo.

Month	Task	Total hours	A/C lost	Sights	Attacks	Result
August	Convoy Escort Support Patrols	1,336 779	- 1	- -	- -	- -
September	Convoy Escort Support Patrols	877 1,455	- 1	- -	- -	- -

(2) That these weather reporting U-boats were capable of a sting is apparent because U.804 missed with acoustic torpedoes on 2 August at an escort group in 4730N x 3200W and U.855 missed on 6 September with shots at an independent ship in 5830N x 3300 W. Reference - B. d U. War Diary.

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sighting was too close and on the wrong bearing for an immediate attack; also the flares gave poor illumination in the hazy weather and the U-boat dived to safety. Two days later another Fortress, supporting convoy CU.40 in the same area, caught a momentary glimpse at 1402 hours of a schnorchel but it dipped before an attack could be made. Other Fortresses were homed to the spot and at 1547 hours Fortress P/220 Squadron again sighted the schnorchel. An immediate attack was made while both it and some of the coming tower were visible in position 4318N X 3628W. After the attack, oil in large quantities appeared and continued to spread for some hours accompanied by unidentifiable debris. Post war evidence indicates that all three sightings were of the U-Kreutzer U.871 and that the attack destroyed her. She was outward bound from Trondheim en route to the Indian Ocean.

The flying hours on convoy cover in the N.E. Atlantic are given below. (1) Although much has been said of the meagre results of this type of air effort as expressed in sightings or attacks on U-boats known to have been traversing this large area, it must be remembered that not a single ship was sunk or damaged between June and September inclusive out of the 130 ocean convoys containing 5,686 merchant ships which crossed the area.

(iv) Events in October, November and December 1944

Overseas operations by U-boats were limited to patrols in Canadian waters, mid-Northern Atlantic weather reporting duties and two cruises to the western approaches of Gibraltar.

(a) The Canadian seaboard and St. Lawrence area

During October only two U-boats were in these waters. U.1221 was off Halifax where she achieved nothing before leaving for home on 27 October and U.1223 who was in the Gulf of St. Lawrence from about 4 October. She attacked a small

(1) Ocean convoy escort and support in the N.E. Atlantic.

Month	Base	Task	Effective Hours	Total Hours	A/C Lost	U-boat		
						Sights	Attacks	Results
AUG. 1944	U.K. and Iceland	Escort	{ 199 { 6 (N)	{ 348 { 648 (N)	-- --	-- --	-- --	-- --
		Support	{ 607 { 32 (N) { 128 L/L	{ 948 { 162 (N) { 187 L/L	-- IN --	-- -- --	-- -- --	
	Azores	Escort	{ 71 { 7 (N)	{ 142 { 44 (N)	-- --	-- --	-- --	-- --
		Support	{ 540 { 161 (N) { 165 S/L	{ 857 { 244 (N) { 190 S/L	-- -- --	-- -- --	-- -- --	-- -- --
SEPT. 1944	U.K. and Iceland	Escort	{ 187 { 8 (N) { 1 L/L	{ 355 { 87 (N) { 4 L/L	-- -- --	-- -- --	-- -- --	-- -- --
		Support	NIL	NIL	--	--	--	--
	Azores	Escort	30 2 (N)	{ 59 { 10 (N) { 3 L/L	-- -- --	-- -- --	-- -- --	-- -- --
		Support	{ 623 { 173 (N) { 179 S/L	{ 1,023 { 290 (N) { 245 S/L	-- -- --	2 1N --	1 ON --	U.871 Sunk --
Flat Total			3,119	5,262	1	3	1	U.871 Sunk

See Maps  
27 and 30

convoy in the mouth of the St. Lawrence River on 14 October and torpedoed the Canadian frigate Magog who had to be beached. The subsequent concentrated air and surface craft operations failed to detect her but she took no further offensive action until 2 November when she torpedoed and damaged S.S. Fort Thompson (Br.) - 7,134 tons, again in the St. Lawrence River. She remained inside the Gulf until about 18 November before withdrawing and starting her homeward journey.

See Map 32

Meanwhile U.1228 had reached the Cabot Strait on 13 November followed by U.1231 on 25 November. The former torpedoed and sank the Canadian corvette Shawinigan on 25 November in the Strait and left for home on 4 December. U.1231 passed through the Strait into the Gulf of St. Lawrence and five days later missed with torpedoes at a destroyer in the St. Lawrence River. She remained here and in the Gulf until mid-December without seeing any targets after which she withdrew to the Nova Scotian coast, with no better luck, until 27 December when she left for Norway.

See Maps 34  
and 37

A third boat - U.1230 - arrived south of Nova Scotia on 27 November and landed two spies in Frenchman's Bay on the coast of Maine during the night of 30 November. Standing off from this coast she attacked and sank S.S. Cornwallis (Br.) - 5,458 tons sailing independently between Boston and Halifax on 3 December after which she stationed herself at the southern end of Nova Scotia until about 17 December when she started her return home.

See Map 37

A fourth boat - U.806 - was detailed to the Halifax area and arrived off this port in mid-December. She attacked the local convoy HHX.327 on 21 December and damaged S.S. Santucky (Br.) 7,219 tons. On 24 December she sank the Canadian minesweeper Clayoquot just outside Halifax harbour. U.806 was still on patrol in this vicinity at the end of the year when she was joined by U.1232.

Although this was their most successful period to date, the total casualties inflicted by the six U-boats only amounted to one merchant ship and three escort craft sunk and two merchant ships damaged. On the other hand the very considerable flying effort by the E.A.C. Canada off the seaboard and in the St. Lawrence area secured only one sighting. This was the day after the Clayoquot had been sunk off Halifax. Liberator E/11 R.C.A.F. Squadron, while escorting the fast convoy T.4, sighted and attacked a periscope some six miles from the convoy when it was 90 miles southeast of Halifax. This was U.806 but no damage was inflicted. The flying hours are given below. (1)

(b) The weather reporting U-boats in the N.E. Atlantic.

After U.245's departure for Norway early in the first week of October, no boats were specifically detailed for this duty

(1) Flying hours and results by the E.A.C. Canada.

1944	Total hours base to base	A/C lost	Sights	Attacks	Result
Oct.	4,245	1	-	-	-
Nov.	2,617	-	-	-	-
Dec.	4,328	-	1	1	-

until the 22nd when U.1226, who had just cleared through the Northern Transit area en route for Canada, reported that her schnorchel was defective. Her Canadian cruise was cancelled and she was instructed to remain in the approximate position of 5700N X 2600W and act as a weather reporter. No further signals were ever received from her and, as no Allied attacks took place in the vicinity, it seems likely that she foundered accidentally as a result of the schnorchel trouble. No weather reports having been received by 3 November, B. d U. instructed four U-boats who were on passage in the North Atlantic<sup>(1)</sup> to start making daily reports while they were in this sea area because these were urgently required for planning purposes, particularly in connection with a projected German Army counter-offensive on the Western Front and for forecasting possibilities of Allied air action. In addition U.396, then outward bound S.E. of Iceland, was detailed to a permanent billet west of Ireland to make reports thrice daily. She carried out this duty from 12 November to the end of the month when her place was taken by U.1053. Early in December, U.1232 and 870 were similarly detailed and other U-boats on passage received orders to report the weather daily. According to B. d U. the timing of General Von Rundsted's counter-offensive, which started on 16 December, was largely determined by the aid of the meteorological reports from these U-boats.

See Maps 32  
and 34.

After 18 December, weather reports were not considered so urgent so U.1232 was instructed to continue passage to Canada, U.870 was detailed to the approaches to Gibraltar and U.1053 started back to Norway. However, soon afterwards two fresh boats - U.877 and 1009 - were earmarked for this task. For some unknown reason no weather reports were received from U.877 by 21 December and on that date U.248, then to the south-west of Ireland en route to the English Channel, was told to go to the area and assume the duties of a weather reporter.

See Map 37

Whatever the reason for U.877's silence, she was in her appointed area because on 29 December she blundered into convoy HX 327 and was sunk by one of the surface escorts (H.M.C.S. St. Thomas) in 4625N X 3638 W. This constituted the only loss inflicted by Allied action up to this time among these special task U-boats in spite of their frequent signals and consequent vulnerability to Allied D/F fixes. However, it is only fair to state that little surface and no aircraft operations had been specifically directed against them. The year ended with only U.248 and 1009 being stationed in mid-Northern Atlantic billets.

(c) Other U-boat movements in the N.E. Atlantic

U.1227, who cleared from the Northern Transit area at the end of September, was detailed to patrol in the western approaches to Gibraltar. No U-boat had been in this vicinity since May 1944 and B. d U. hoped to find the defences asleep.

On her way south U.1227 sighted and reported a westbound convoy on 4 October in position 4920N X 2250W. This was ONS.33. She shadowed until dark and attacked at 2240 hours but only succeeded in damaging the Canadian frigate Chebogue who was one of the escorts.

(1) They were U.170 and 1221 on return passage, and U.1230 and 1231 on outward passage.

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

ONS.33 had been receiving air escort by Catalinas of No.202 Squadron based in Northern Ireland up to dusk on 1 October after which it had been discontinued. It was hastily resumed at dawn on 5 October by two V.L.R. Liberators of No.59 Squadron from Northern Ireland and a Fortress from the Azores, while more distant cover was given by other Liberators and Fortresses. The Chebogue was detached and started on a long tow back to the United Kingdom escorted and supported by still more V.L.R. Liberators, Fortresses and U.S.N. Searchlight Liberators from the Azores.

At 2039 hours on 5 October one of the supporting Fortresses (E/220 Squadron) sighted a surfaced U-boat in 4838N X 2517W. This was U.1227 disengaging to the south. She dived well before the aircraft reached the spot and no attack was possible. She continued her passage towards Gibraltar and was not seen again.

This example has been given at some length to show that lone U-boats on passage did occasionally attack chance encountered convoys. It was quite impossible to treat all convoys as permanently threatened in the wide expanse of the N.E. Atlantic but once a U-boat committed a hostile act it was the practice to concentrate air retribution quickly in the area although in these schnorchel days it seldom exacted the extreme penalty. From the end of October, the already limited ocean cover from the United Kingdom and Iceland bases was further reduced in favour of giving increased convoy escort in the inshore waters to the north and south of Ireland and off Reykjavik.

During October the last five U-boats evacuating from Biscay ports were still slowly making their way northward up a route some 350 miles outside Ireland. These together with fifteen U-boats bound during the period October to December to or from overseas stations all constituted potential chance encounters with ocean shipping but none occurred. The last U-boat traversing the ocean convoy area in 1944 was U.870. After her instructions on 18 December to leave her weather reporting position for Gibraltar, she proceeded in a southeasterly direction. At 0240 hours on 20 December, when surfaced in position 4135N X 1934W, she was picked up on A.S.V., illuminated by flares and attacked by Fortress T/220 Squadron who was on general cover patrol from the Azores. No damage was inflicted on her. Later on the same day U.870 sighted a westbound convoy in the vicinity. This was an American convoy of L.S.T.s bound from the United Kingdom to Norfolk (Va.) which was not receiving air escort. U.870 attacked, sinking L.S.T. No.359 and damaging the U.S. destroyer Fogg.

Air escort and strong support was immediately provided by Fortresses and searchlight Liberators from the Azores but U.870 was not re-located and continued her way towards Gibraltar.

During the last quarter of 1944, including weather reporting boats, there were 30 U-boats present in or crossing the convoy area. The flying hours on escort and support

are given below. (1) As can be seen, only two sightings were obtained but it must be remembered that attack on ocean convoys was not the primary object of any of these 30 U-boats. During the three months only one L.S.T. was sunk out of the 4,430 ships in 143 convoys which crossed the area.

(d) The Gibraltar Approaches

No U-boats had been in this area since May 1944 when, after U.731 was sunk trying to get through into the Mediterranean, B. d U. forbade any further attempts. The flying from Gibraltar had declined progressively and aircraft strength had been reduced in successive months till in September 1944 there were only two days operational flying by the last remaining squadron (No. 202 Catalinas) before they too left the station.

In mid-October some rather indeterminate reports of a possible U-boat were received from United States and H.M. escort vessels in positions well west of the coast of Portugal. A further possible contact was reported on 22 October to the southwest of Cape St. Vincent and it was thought likely that a U-boat was making its way towards the Gibraltar Strait.

(1) Flying hours on ocean convoys in the N.E. Atlantic.

Month	Base	Task	Effective Hours	Total Hours	A/C lost	U-boats		
						Sights	Attacks	Result
Oct. 1944	U.K. and Iceland	Escort	( 194 ( 5 (N) (	( 438 ( 117 (N) ( 8 L/L	-- -- --	-- -- --	-- -- --	-- -- --
		Support	( 28 ( 11 (N) ( 59 L/L	( 66 ( 29 (N) ( 108 L/L	-- -- --	-- -- --	-- -- --	-- -- --
	Azores	Escort	( 18 ( 7 (N) ( 6 S/L	( 46 ( 32 (N) ( 20 S/L	-- -- --	-- -- --	-- -- --	-- -- --
		Support	( 265 ( 150 (N) ( 164 S/L	( 390 ( 248 (N) ( 227 S/L	-- -- --	1 -- --	0 -- --	-- -- --
Nov. 1944	U.K. and Iceland	Escort	( 98 (	( 162 ( 55 (N)	-- --	-- --	-- --	-- --
		Support	11 L/L	( 3 ( 20 L/L	-- --	-- --	-- --	-- --
	*Azores	Escort	5	( 18 ( 6 (N)	-- --	-- --	-- --	-- --
		Support	( 50 ( 33 (N) ( 20 S/L	( 84 ( 53 (N) ( 27 S/L	-- -- --	-- -- --	-- -- --	-- -- --
Dec. 1944	U.K. and Iceland	Escort	( 30 (	( 55 ( 15 (N)	-- --	-- --	-- --	-- --
		Support	( 31 ( 80 L/L	( 66 ( 27 (N) ( 143 L/L	-- -- --	-- -- --	-- -- --	-- -- --
	Azores	Escort	( 16 ( 16 L/L	( 27 ( 26 L/L	-- --	-- --	-- --	-- --
		Support	( 118 ( 54 (N) ( 91 L/L	( 200 ( 68 (N) ( 133 L/L	-- -- --	-- IN --	-- IN --	-- -- --
Flat Total			1,560	2,917	--	2	1	--

\* During November the Azores Fortress squadron was partially out of the line while re-equipping to Leigh Light Liberators.

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The only squadron at the Rock was No. 22 S.A.A.F. Venturas who had been employed on anti-contraband duties during this month. They now started day and night A/U patrols in the westward approach to the Strait and gave occasional escort to the North/South convoys passing through the area.

These deductions regarding a U-boat were correct for U.1227 arrived in the Gibraltar Approaches about 20 October. She remained unobserved in this area until about 15 November but without making any hostile act. On or about 16 November she was detected and depth charged by surface craft and though only slightly damaged her commanding officer decided to start back to Norway. She made no signals to base and consequently no relief was organised by B. d. U. until by his estimation she had reached the end of her theoretical endurance in this area. This was not until mid-December and then, as has been mentioned before, U.870 was detailed from weather reporting to this patrol billet. U.870 did not arrive until right at the end of December and her experiences are dealt with in a later chapter. With only one cautious U-boat, present for less than a month, it is not surprising that the few hours flown during the last quarter of 1944 produced no sighting. (1)

(e) Other parts of the Atlantic

During these three months no U-boats were present in United States or South American coastal waters and none were off West Africa so that the 47,700 hours flown off the former stretch and the 2,559 off the latter naturally produced no sightings.

See Map 37

On 1 January 1945 the overseas disposition of U-boats was at a low ebb. There were U.1232 and 806 on patrol off Halifax, U.1231 homeward bound just south of Newfoundland, two weather reporting boats - U.1009 and 248 in the mid-Northern Atlantic with the homeward bound U.1230 near them, and U.870 on patrol in the western approaches to Gibraltar.

(1) Flying hours by Gibraltar based aircraft for last quarter 1944.

Month	Base	Task	Effective Hours	Total Hours	A/C lost	U-boat		
						Sights	Attacks	Result
Oct. Nov. and Dec.	Gib.	Escort	( 62 ( 5(N)	(113 ( 12(N)	- -	- -	- -	- -
		Patrol	(332 (278(N)	(411 (347(N)	- -	- -	- -	- -
Flat total			677	885	-	-	-	-

## CHAPTER V

THE U-BOAT INSHORE CAMPAIGN AROUND THE BRITISH ISLES  
INCLUDING THE NORTHERN TRANSIT AREA

SEPTEMBER TO DECEMBER 1944(1)

(1) The changing face of the U-boat war

We have traced the result of the U-boat Command decisions to evacuate the Biscay ports. By the end of August a stream of U-boats was proceeding through the Bay routed well westward of Ireland and bound for Norway. To tie down Allied A/U operations so as to safeguard this exodus, B. d U. kept U-boats in the English Channel as long as possible, deployed some of the ex-Biscay boats into inshore positions to the southeast and northwest of Ireland, and despatched Norwegian based U-boats into coastal waters north and westward of Scotland and as far away as off Reykjavik.

This strategy was successful during September in that the presence of U-boats in all these areas, particularly our tender spot off Northern Ireland where most Atlantic trade still converged, resulted in inshore concentrations of air and surface craft patrols leaving little available to harry the string of some 30 U-boats en route to Norway. The leaders of this stream were arriving in Norwegian ports by 20 September and the whole lot had safely accomplished their journey by the end of October. (2)

Meanwhile the preliminary success of U.482 in the waters just north of Ireland had gone far to force a modification of the Allied A/U plans for the northern offensive against U-boats. It will be remembered that in the August Directive it had been laid down, with Admiralty agreement, that subject to adequate reserves in the Western Approach Command for possible threats to Atlantic ocean convoys, the main task of Coastal Command was to prosecute a blocking offensive in the Northern Transit area in close co-operation with surface anti-submarine groups. By 7 September we find the A.O.C.-in-C. (Sir Sholto Douglas) informing the Air Ministry that the situation was now complicated by the fact that the enemy had taken certain measures not specifically envisaged, namely a determined and apparently permanent policy of close investment of the British Isles by inshore U-boat patrols. This presented Coastal Command with not one but four areas in which intensive air patrol was required:-

1. The Northern Transit area
2. The area around and in the North Minch
3. The approaches to the North channel
4. The approaches to the Bristol and St. George's Channels.

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- (1) The references for U-boat intentions, experiences and positions in this chapter are:- B. d U's War Diary, individual U-boat logs or the Admiralty Foreign Document Section.  
 Coastal Command's flying hours are compiled from the daily records in the Group O.R.B. appendices.
- (2) All these movements and dispositions are shown on Maps 26 and 28.



In addition, air cover of Atlantic convoys remained an undiminished commitment and it appeared to the A.O.C.-in-C. that some reinforcement must be made to the Command's strength if all these tasks were to be met.

Arising from a recognition of the enemy policy a new Directive governing A/U warfare was, with Admiralty agreement, issued by the A.O.C.-in-C. to all the Home Groups of the Command with effect from 11 September:-

(A) Subject to Atlantic convoy requirements as detailed in the daily Stipple signal, A/U operations in the areas off Cape Wrath, Northern Ireland and in the approaches to the St. George's and Bristol Channels were to take priority over all other A/U operations.

(B) These operations were to be under the control of the A.O.C. No. 15 Group who would have first call on aircraft sorties from Nos. 18 and 19 Groups for the purpose.

(C) No. 18 Group would continue to hold the responsibility for the harrying of U-boats on passage through the Northern Transit area.

In effect this Directive relegated the Northern Transit offensive to a secondary place which was undoubtedly in line with contemporary opinion in Coastal Command H.Q. and the Admiralty. Such opinion held that areas around threatened convoys whether they be on the high seas or in inshore waters presented far better chances for U-boat kills and the efficient safeguarding of shipping than any transit area operation. Moreover the prospects for the interception of U-boats on passage in the Northern Transit area were infinitely less promising than had ever obtained in the Bay of Biscay not only because of the advent of the schnorchel but by reasons of the greater width of debouchment and the inferior weather conditions.(1)

At first the interpretation of inshore air action took the form of concentrated air patrols with little close escort to the convoys passing through but, as will be seen in a later section, a change was made at the end of October in favour of more close escort and the employment of box patrols advancing ahead of and on the bows of each convoy.

Although in September the inshore U-boat campaign was established by B. d U., it was relaxed during October while the U-boat Command carried out a thorough re-organisation in Norway as the sole operational base for western operations and it was not till nearing the end of this month that systematic inshore patrols were re-commenced. By this time submerged tactics had been brought to a fine art and U-boats dived as soon as leaving harbour. They rarely re-surfaced until their return off port again some eight weeks later.(2)

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- (1) These included the lengthening hours of darkness and prevalence of rough seas in winter observing that no mark of A.S.V. was likely to detect a schnorchel head in seas higher than the very moderate state of Force 3.
- (2) The average length of cruise of inshore U-boats during the last quarter of 1944 was 57 days.

(ii) The Inshore areas during September 1944.(a) The area off Northern Ireland

It was in this area that most of the U-boat action took place and which caused the modification of Coastal Command's A/U policy.

As we have seen, on 1 September there was as yet only U.482 present. This boat had sunk a large American tanker out of convoy CU.36 on 30 August when close air escort was not provided and the corvette Hurst Castle on 1 September. The next day she attacked convoy ONS.251, which was also not receiving close air escort, and sank S.S. Fjordheim (Nor.) - 4,115 tons some 70 miles northwest of Lough Swilly.

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B.R.1337

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Admty.  
B.R.1337

The increased air effort following these attacks obtained little result. One Sunderland momentarily sighted some white vapour on 2 September which at the time was assumed to be from a schnorchel. On 3 September another Sunderland sighted a genuine schnorchel protruding about three feet with a little brown smoke emerging from below and a periscope plainly visible abaft it. (1) This was in position 5543N x 0915W and was undoubtedly U.482. The attack failed as the depth charges did not release. U.482 lay low for a few more days and then on 8 September attacked convoy HXF.305, also without close air escort, in a position 15 miles northwest of Lough Swilly sinking S.S. Empire Heritage (Br.) - 15,702 tons and S.S. Pinto (Br.) - 1,346 tons. The U-boat escaped the subsequent concentrated air and surface craft hunt and, having expended all her torpedoes, started back to Norway.

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1 Sept. in  
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These losses, right on our front doorstep, resulted in drastic changes in No. 15 Group's flying scheme. All the ocean convoy support and much of the close escort flying, hitherto given well out in the Atlantic, was concentrated into air patrols close in off Northern Ireland but curiously enough few convoys received close air escort while passing through this area. No.15 Group was reinforced by the transference from No.19 Group of Nos. 172 and 612 L/L Wellington squadrons to Limavady and by very considerable assistance by No.19 Group's three U.S.N. Liberator squadrons who used Ballykelly as an advanced refuelling base. In addition the Group made use of an Air Sea Rescue and two O.T.U. squadrons to swell the volume of flying in the area.

Meanwhile four more U-boats (U.248, 481, 398 and 743) were approaching from the northwest having come out on this mission from Norwegian ports. Two were quickly accounted for. U.743 was sunk on 9 September by H.M. ships Porchester Castle and Helmsdale when supporting convoy ONF.252 northwest of Ireland in 5545N x 1141W and about this time U.484 was sunk southwest of the Hebrides but of this more is said below.

On 10 September at 0918 hours, U.S.N. Liberator O/103 Squadron, after a radar contact, sighted a U-boat in the act

(1) These apparently trivial details of schnorchel sightings are given because it was from this time that attention began to be paid to reports of white smoke, spray and vapour clouds which were at first tentatively and later, in November, firmly accepted as evidence of schnorchelling U-boats. The subject is fully discussed in Section (V) and photographs are in Appendix V.

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of diving in position 5643N x 0848W but it had disappeared too long before the aircraft reached the spot to justify an attack. This was probably U.398 just arrived in her billet. On the next day at 1003 hours in a position 27 miles to the westward, Sunderland D/423 R.A.A.F. Squadron sighted what the pilot described as whitish vapour or steam close to the surface of the sea at a range of nearly ten miles. As the aircraft closed, the phenomenon was scrutinised through binoculars and the vapour was considered to be issuing from a hidden source. While still two miles away the vapour vanished and, on arrival over the spot, a slight wake mark some 30 yards long was observed. Four depth charges were dropped on the wake but nothing further was seen. At the time, the attack was assumed to be on a genuine U-boat and, when a few months later it became known to Admiralty Intelligence that U.484 had vanished early in September in this area, the Assessment Committee adjudged that either this attack or a promising one carried out by two H.M.C. ships Dunver and Hespeler on 9 September in position 5630N x 0740W was responsible.<sup>(1)</sup> In the light of 1955 research, particularly regarding the dubious report of white vapour, it is almost certain that the aircraft attack was on a whale spout or the stale wake mark of a collapsed waterspout,<sup>(2)</sup> and that U.484 had been sunk two days earlier by the two Canadian vessels.

While on passage homeward U.482 signalled base of her successes and B. d U. directed that four of the U-boats withdrawing from France should occupy billets close off north-western Ireland (U.963, 985, 309 and 953) and another boat (U.1004), then coming out from Norway, should station herself in the approach to the North Channel. By 18 September there were thus seven U-boats in the area but they did not remain at this figure for long. By 24 September, U.248, 309 and 963 had left for Norway followed at the end of the month by U.398, 985 and 953 leaving only U.1004 on patrol.

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From 22 September the already strong air patrols were augmented by a further transference from No.19 Group of Nos. 179 and 304 L/L Wellington squadrons to Benbecula; by the flying effort of one L/L Liberator and three Sunderland squadrons working from No.19 Group bases; by the recall to Northern Ireland of No.202 Catalina Squadron from No.18 Group; and finally by the loan of two more F.A.A. Swordfish squadrons (Nos. 838 and 842) which were based at Benbecula.

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This very large air force made no more sightings but the volume of flying seems to have kept the U-boats so immobilised and subdued that no further ship sinkings took place. B. d U. was disgusted at the poor showing as he received report after report from the seven U-boats either during passage home or on arrival. He scathingly noted in his War Diary that, with the exception of U.482, it was plain that none had made any determined effort to penetrate into the area of densest traffic. In view of their own admission that none had suffered attack either from air or surface craft they certainly could have done so. He caused a signal to this effect to be radioed to the four fresh U-boats then on passage to the area from Norway and inferred that he expected better results from them.

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- (1) In the official list of U-boat losses published after the war, this U.484 is still credited either to D/423 Squadron or H.M. ships.
  - (2) See Section (v) and Appendix V.

The total flying hours in this area topped those for any other but achieved only two genuine sightings.(1) Statistically this was a depressing picture but, although the figures were another pointer to the changed conditions under which the power of air location was rapidly diminishing, the U-boats purchased their immunity by a sacrifice of their ability to do harm. After 8 September no merchant ships were sunk in this area during the rest of 1944.

(b) South Ireland and Bristol Channel area

The short signal received at base from U.667 while returning to France from the Bristol Channel at the end of August reported her success in that area. It decided B. d U. to send others there not only to exploit a promising opening but as part of his strategy to tie down Allied A/U measures in separate areas. Three more of the U-boats withdrawing from the Biscay ports were detailed (U.758, 262 and 714). They took up their positions, the former south of Ireland and the other two in the Bristol Channel, during the first week of September. They remained for a fortnight without effecting anything and then left for Norway. All reported much activity by air and surface craft patrols but the considerable flying by No.19 Group obtained only one momentary glimpse of a possible periscope on 4 September which may have been U.262 closing in to her billet.(2)

(c) The last of the Biscay air patrols

In addition to the other flying, No.19 Group maintained air patrols in the Bay out to longitude 10°W and in the approach to the English Channel up to 11 September after which these were discontinued except for occasional sweeps in the Inner Bay by No.10 Sunderland Squadron. No sightings were

(1) September flying hours by Nos. 18 and 19 Groups off Northern Ireland.

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Results
Patrol	Day	3,276	4,562	1	2	0	-
	Night	( 490 (N) (1,602 L/L	( 995 (N) (1,940 L/L	-	-	-	-
Convoy escort	Day	59	72	-	-	-	-
	Night	( 2 (N) ( 9 L/L	11 (N) 11 L/L	-	-	-	-
Overall total		5,438	7,591	1	2	0	-

(2) September flying hours by No.19 Group in the South Ireland - Bristol Channel area.

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Results
Patrol	Day	2,479	2,969	-	1	0	-
	Night	( 573 (N) ( 873 L/L	( 749 (N) (1,011 L/L	-	-	-	-
Convoy escort	Day	61	85	-	-	-	-
	Night	( 3 (N) ( 5 L/L	( 5 (N) ( 6 L/L	-	-	-	-
Overall total		3,994	4,825	-	1	0	-

obtained by some 2,000 flying hours<sup>(1)</sup> although four U-boats cleared through out from the English Channell and ten more traversed the Bay during their journey away from France.

(d) The North Minch - Cape Wrath Sector

U.296, who had arrived in this area on 24 August, remained until 17 September. She was joined on 5 September by U.285 who, however, left on 12 September after receiving damage from a depth charge attack by surface craft. After the 17th there was a gap of ten days before U.281 arrived and she was still on patrol there at the end of the month.

In her report, U.296 said she had remained continuously submerged for 34 days and had on two occasions missed with torpedoes at escort vessels. Both she and U.285 experienced increased defence measures. Neither were attacked by aircraft but when schnorchelling at night there were many indications of A.S.V. registered by the search receiver whose aerials were mounted on the schnorchel head. Little traffic was seen and no ships were sunk.

The air patrols were not heavy and were provided by sorties from both No.18 and No.15 Groups.<sup>(2)</sup> Only one brief sighting was made. This was on 4 September by Sunderland H/330 Squadron, who had just left close escort of convoy UR.134 northwest of the Butt of Lewis. After homing on an A.S.V. contact, flak was opened below the port side of the aircraft and a dim shape was seen there. On turning to attack, the radar contact faded out denoting that the U-boat had dived. This was probably U.484 on her way south into her billet off Northern Ireland.

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(1) Flying hours in the Bay of Biscay and approaches to English Channel

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Result
Patrol	Day	938	1,424	1	-	-	-
	( 260 (N)	( 440 (N)	( 440 (N)	-	-	-	-
	( 140 L/L	( 211 L/L	( 211 L/L	-	-	-	-
Overall Total		1,338	2,075	1	-	-	-

(2) Flying hours in the North Minch sector during September

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Result
Patrol	Day	411	502	1	-	-	-
	( 1 (N)	( 3 (N)	( 3 (N)	-	-	-	-
	( 175 L/L	( 188 L/L	( 188 L/L	-	-	-	-
Convoy escort	Day	22	43	-	-	-	-
	( 6 (N)	( 8 (N)	( 8 (N)	-	1 N	0 N	-
	( 8 L/L	( 9 L/L	( 9 L/L	-	-	-	-
Overall Total		623	753	1	1	0	-

(e) The Moray Firth area

ibid

This area was only very lightly patrolled by No.18 Group.(1) Day sorties were provided by No.4C Sunderland O.T.U, and No.1693 Anson squadron, night hours by No.407 L/L Wellingtons. No sightings by this flying were made either of U.680 who left the area on 3 September or of U.1199 who arrived there on 20 September. The latter was sighted, however, on 27 September by Liberator S/206 Squadron who was on the way out to a Norwegian coast patrol. It was made in a rough sea in position 5842N x 0020W and the partially surfaced U-boat dived immediately before any attack could be made.

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and 758

Neither U-boat sank anything. U.680 was damaged by a surface craft depth charge attack on 2 September which enforced her early return. U.1199, actually remained in the Moray Firth or off Peterhead until 1 November and was continuously submerged for 50 days including the passage out and back to Norway. Her crew were enthusiastic about the schnorchel. She saw very little worthwhile shipping but a constant stream of small minesweepers, patrol craft and fishing vessels.

(f) The Reykjavik area

Here too, little inshore patrol was done until late in the month though most of the local convoys to and from the United Kingdom received close air escort in the approach to Reykjavik. The flying was provided by No.53 L/L Liberator and No.162 R.C.A.F. Canso Squadrons with sorties by the Station Anson flight. No sightings were obtained.(2)

U.244, who had arrived on 29 August, remained until 21 September. She saw only two small convoys and one single ship during her stay - for twelve consecutive days she lay four miles northwest of Reykjavik without sighting any shipping but complained that the large number of inshore fishing craft greatly hindered her night-time schnorchelling.

U.244 was relieved on 21 September by U.979 who the next day torpedoed and damaged S.S. Yukon (U.S.) - 5,970 tons only six miles off Reykjavik. This ship had been and was receiving

(1) Flying hours in the Moray Firth area.

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Result
Patrol	Day	198	235	-	1	0	-
	( 3 (N)	( 11 (N)	( 11 (N)	-	-	-	-
	( 75 L/L	( 81 L/L	( 81 L/L	-	-	-	-
Overall Total		276	327	-	1	0	-

(2) Flying hours in the Reykjavik area during September.

Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Result
Patrol	Day	106	120	-	-	-	-
	( 19 (N)	( 25 (N)	( 25 (N)	-	-	-	-
	( 41 L/L	( 46 L/L	( 46 L/L	-	-	-	-
Convoy Escort	Day	74	96	-	-	-	-
	( 8 (N)	( 12 (N)	( 12 (N)	-	-	-	-
	( 4 L/L	( 6 L/L	( 6 L/L	-	-	-	-
Overall Total		252	305	-	-	-	-

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close air escort as well as being accompanied by a destroyer. At 1804 hours, the escorting Liberator (C/53 Squadron) saw an explosion at the port bow of the Yukon but no previous sign of the torpedo or the U-boat nor was the subsequent search any more successful. In fact U.979 had collided with a surface craft shortly after her attack and had damaged her main periscope. She avoided location by the surface craft hunt by remaining at 60 feet and such depth charges as were dropped were not near her. The following days of concentrated air patrol also failed to locate her but she left on 26 September without relief because the periscope could not be repaired.

(g) Summary of September operations in inshore areas

September was the first full month of U-boat operations in the five inshore areas selected by the U-boat Command. Twenty U-boats carried out these patrols for varying lengths of stay. Two were sunk by surface forces almost as soon as they reached their area, sixteen accomplished nothing, one damaged a ship and one determined captain sank three merchant ships and an escort vessel. All these ships were in convoy but only in the case of the vessel damaged was close air escort being given.

Without the schnorchel none of these patrols would have been possible but, at the risk of odious repetition, this fitment resulted in a limitation to do harm because the constant submergence put an end to any search for targets. The U-boat had to wait until, fortuitously, a target steamed into periscope view. Even then an attack might not result. U-boat records are full of entries that ships or convoys were sighted but on bearings from which an attack was impossible.

Such immobile submerged conditions seem also to have served as a cloak to hide a lack of zeal on the part of many U-boat captains and to provide a ready excuse for a blank report of success at the end of the cruise. During daytime, air patrols could be nullified by a cautious use of the periscope or even prolonged descent to 100 feet depth while keeping a hydrophone listening watch. Schnorchelling was generally done at night, in short hourly or two hourly stretches, until the battery was re-charged. Warning of the near approach of radar fitted aircraft was possible without surfacing even though the aerial system of the search receiver mounted on the schnorchel head was not designed for centimetric reception.<sup>(1)</sup> Numerous entries in U-boat logs confirm this.

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- (1) A round dipole system, known as Bali I was fitted on top of the schnorchel head and used in conjunction with the Borkum detector. Although designed to cover only the 80 to 330 centimetre band, experience showed that radar emissions made on the 10 centimetre wavelength were received by the Borkum/Bali I combination when the source was closer than about a mile away. Of course if the U-boat chose to surface and use the standard Tunis search receiver, ample warning of both 10 and 3 centimetre A.S.V. impulses could be received directionally up to 40 miles range. The great disadvantage of Tunis was that it could not be made pressure tight for diving and the aerial had to be taken up through the open conning tower hatch on to the bridge, there to be revolved by hand. Reference - R.A.F. Signals history - Vol. VI - Pages 159 to 161.

Excluding the Biscay flying as being transit area operations, the inshore area flying aggregated during September to a total of 13,801 hours and produced only five sightings and no attacks.

(iii) The Northern Transit area during September 1944

See Map 24.

At the beginning of September there were eleven U-boats in the transit area, all proceeding westwards between the Norwegian coast and the exit south of Iceland. The stream of U-boats withdrawing from France had not yet arrived, neither had the incoming boats from the mid-Atlantic and overseas yet reached this area on their easterly journey to their new base in Norway.

See Map 26

As the month progressed, the area filled up with U-boats proceeding both ways, reaching a peak about 19 September when there were 25 U-boats present. By the end of the month there were still 16 boats in the area, all inward bound.

As regards the air operations, the Northern Transit area was roughly divided into two - an eastern portion extending from the Norwegian coast to the longitude of the Faeroes and a western portion lying to the south and southeast of Iceland. Iceland based aircraft were naturally directed into the western portion together with the few sorties that could be spared early in the month from No.15 Group, but after 12 September that Group was fully occupied with their inshore problem. No. 18 Group at first split their flying effort between the two portions up to mid-September. It was estimated then that the stream of U-boats from France would soon be arriving in increasing numbers and, as the transit area funnel was very broad at the western end, it was decided to concentrate the flying at the narrow end between the Shetlands and the coast of Norway. Thenceforth all the Group's effort was in the narrows.

Although No.18 Group had lost some air detachments to No.15 Group, it was re-inforced during the latter part of September by No.224 L/L Liberator, No.502 Halifax and Nos. 235 and 248 Mosquito squadrons from No.19 Group because by then it was considered that the exodus of U-boats from Biscay ports was complete. For the same reason it had been possible to augment Iceland's slender force by No.53 L/L Liberator Squadron also from No.19 Group.

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Taking the month as a whole, the flying to the east of the centre line was about three times as heavy as that done to the westward. Sightings were a long time coming and, except for a doubtful report by Sunderland O/330 Squadron on 12 September of a possible exhaust cloud from a schnorchel which vanished before the aircraft arrived, no genuine U-boat was contacted until 18 September. Then ten Mosquitoes from Nos. 235 and 248 Squadrons sighted a surfaced U-boat close off Utvaer Island in 6102N x 0430E. Under heavy flak from the island, attacks were made with 6 pounder gunfire, cannon fire and depth charges. The U-boat was U.764 inward bound to Bergen from the English Channel and, although she took up a decided list to port after the various attacks, the German records make no mention of serious damage. She entered Bergen the next day.

Not far to the westward and later on the 18th, there started a series of air actions whose cause lay in the



breakdown of a U-boat's engines. On 17 September the outward bound Type IX - U.867 - reported to base from approximate position 6200N x 0100E that both her diesel engines had broken down. She said she was able to dive in emergency but requested a tow back to harbour. B. d U. instructed her to dive towards the coast and to report her progress that evening and again at dawn. Other U-boats on passage who could reach these points quickly were to report their own positions and to search for U.867. The outward bound U.1228 and two homecoming boats, U.218 and 858, intimated that they were going to her assistance.

In the last hour of daylight on 18 September at 1950 A hours, L/L Liberator H/224 Squadron after a radar contact sighted the broken down U.867 in 6157N x 0103E. On the approach the U-boat's flak was silenced by front gunfire and a depth charge attack was made. Shortly afterwards the U-boat dived. No damage was inflicted. Two hours later the searching U.1228 was located by radar, illuminated and attacked on the surface by L/L Liberator R/224 Squadron in 6141N x 0245E. The attack damaged the U-boat's schnorchel gear. She gave up the search and proceeded into Frosjoen fjord where she arrived on 19 September. (1)

Meantime the crippled U.867 signalled that her battery was nearly exhausted and again requested a tow. This was ruled out by B. d U. both on account of a rising sea and the British air activity. The two remaining searching U-boats were told to tranship the crew of U.867 when they found her and to sink the boat. At 1636 A hours on 19 September, L/L Liberator Q/224 Squadron after a radar contact, sighted the unfortunate U.867 lying stopped on the surface in 6215N x 0150E. While the aircraft was approaching, the U-boat started to move slowly ahead and opened inaccurate flak fire which was soon silenced by the aircraft's guns. As the Liberator flew over, one large and several small dinghies were seen alongside the U-boat. The stick of depth charges overshot badly and exploded well outside even damaging range (confirmed from the photographs taken) but the hopelessness of his position seems to have decided the captain of U.867 to scuttle forthwith because on completion of a circuit the Liberator saw the U-boat slowly sink leaving one large and about 40 one-man dinghies containing up to 50 men floating in the discoloured water.

Two and a half hours later at 1900 A hours, U.858 reached the vicinity and was sighted on the surface, after a radar location, by Liberator S/206 Squadron at 1905 hours. In her log U.858 describes the approach of a four engined aircraft out of the darkening eastern horizon, of the opening shots from the aircraft's guns and her own reply with flak, of her zig-zag steering and final drastic alteration hard to port which caused the aircraft's depth charges to fall and explode out of damaging range off the starboard beam, and finally of her crash dive immediately after and the minor damage caused by one single depth charge dropped as she got under. All these details, including the time, agree absolutely with S/206's account and are confirmed by the photographs taken. What does NOT agree is the position given for the attack. U.858 states it as 6217N x 0145E which is only three miles from where

(1) Here she effected temporary repairs and returned to Bergen on 20 September for a more permanent refit.

the survivors of U.867 were reported to be whereas S/206 gives the position as 6220N x 0230E which is 22 miles to the eastward. Normally such a relatively small discrepancy would be ignored in view of the striking cross checks between the two stories but in this case there was a strange corollary.

After her U-boat's final dive, S/206 made circuits in the vicinity of the attack hoping it would resurface and twenty minutes later sighted numerous small dinghies containing obvious U-boat survivors. These were reported by S/206 and it was held to prove that she had sunk her opponent with a lucky last singleton depth charge. While the war continued the supposed victim's identity was not established. After the war it was found from German records that an entirely different U-boat - U.865 - had left Trondheim on 8 September bound for the Atlantic and had never been heard of again. U.865 was, therefore, somewhat hastily credited to S/206 regardless of the fact that the normal outward route from Trondheim for Atlantic bound Type IX boats passes nowhere near the scene of S/206's attack. Moreover by 17 September U.865 must have been well on her way past the Faeroes some 350 miles away.(1)

The survivors seen by S/206 were almost certainly those from U.867 who had scuttled two and a half hours earlier and in the light of 1955 research it appears equally certain that S/206 attacked U.858 inflicting no serious damage and that U.865 came to an unknown end possibly in the Northern Mine Barrage southeast of Iceland.(2) This would also account for the fact that she never made the customary clearance signal when reaching the open Atlantic. There is definitely no evidence that she was ever concerned in the attempts to rescue U.867 off Stadlandet.

In default of any further news of rescue from the searching U.858 and 218, B. d. U. cancelled the operation on 21 September and the two boats continued their homeward passage, arriving at Bergen and Kristiansand South respectively on 23 and 27 September.

After dark at 2035 A hours 21 September, Liberator Q/206 Squadron obtained a radar contact in 6127N x 0407E and on homing sighted a dark shape at the head of a white wake almost under the aircraft. Flak was seen coming up from this shape but by the time the aircraft had come round to attack this had ceased and no further contact could be made. In fact, this was U.437 inward bound to Bergen where she arrived the following day. She reported having picked up an approaching aircraft in her Hohentwiel search radar and had opened fire on the bearings given by it. When the aircraft sheered off she had dived.

ibid

The last two encounters with U-boats during the month both took place in the early morning dark hours of 24 September. L/L Liberator A/224 Squadron contacted, illuminated and ~~attack~~

- (1) By plotting along the normal outward route from Trondheim, U.865 on 17 September, when the crippled U.867 signalled her plight, would have been between Iceland and the Faerpes. This agrees with her estimated position as given in B. d U.'s War Diary. See also Map 26 which shows U-boat positions for the 19th September.
- (2) At this date (July 1955), U.865 is still credited sunk to S/206 Squadron.

attacked a surfaced U-boat off the Norwegian coast abreast of Bergen. The depth charges were seen to have straddled. German evidence establishes that the inward bound U.855 was sunk in this vicinity and this attack is credited with her destruction. The other sighting was by Halifax Y/502 Squadron who contacted a half submerged U-boat at close range in 6146N x 0257E. By the time the aircraft had got around into an attacking position the U-boat had disappeared for too long. This could have been either U.548 or 763 both of whom were near this position inward bound to Bergen.

#### Summary

Considering the amount of U-boat traffic through the transit area, September was not a good month for the air operations. In all, 55 U-boats were at sea within the area limits of which 17 were outward and 38 were inward bound. Two outward and five inward were sighted resulting in two and three respectively being attacked. U.855 was sunk, U.867 scuttled and U.1228 was damaged. The flying hours are given below.<sup>(1)</sup>

#### (iv) Operations during October 1944

##### (a) The Inshore areas

At this period a thorough re-organisation of the U-boat operational fleet was in train. Norwegian ports were now the only front line bases for all operations in western waters. Adequate refitting facilities only existed at Trondheim and Bergen. In neither port were the scheduled bomb proof shelters yet complete.<sup>(2)</sup> Consequently some of the Type VIIIs and most of the large Type IXs and U-Kreuzers were being routed from and back to Kiel or Flensburg with a staging post at Kristiansand.

Bomber Command brought home the inadequacy of the protection in an air raid on Bergen soon after daylight on 4 October by 118 Lancasters and Halifaxes who dropped 603 tons of 1,000 lb. bombs aimed at the U-boat pens. Although one completed pen received seven direct hits without penetration, much damage was caused to unfinished pens and the dock area. Four U-boats, recently arrived from France, U.228, 993, 437 and 92 were sunk or written off and Bergen's capacity for repairs was reduced for some time. Shipping in the harbour suffered severely, three vessels being sunk and eight damaged. Another raid was made on the night of 28/29 October by 51 Lancasters who dropped 189 tons of 1,000 lb. bombs. No damage was done to the pens or any of the U-boats but the unprotected dock area was devastated.

#### (1) September flying hours in the Northern Transit area.

Task	Period	Effective Hours	Total Hours	A/C lost	U-Boats			
					Total Sights	Total Attacks	Results	
							Sunk	Dam.
Patrol	Day	3,136	5,521	2	4	4	<u>U.867</u> Scuttled	-
	Night	( 900 (N) ( 680 L/L	(1,935 (N) (1,070 L/L	-	2 N 2 L/L	0 N 2 L/L	- <u>U.855</u>	- <u>U.1228</u>
Overall Total		4,716	8,526	2	8	6	2	1

(2) By the end of October five pens had been completed at Trondheim and four at Bergen. Others were well advanced but had not yet received the double concrete roof protection.

See Appendix VII for the growth of the U-boat Fleet and dispositions

Many of the older Type VII's on return from France were moved down to German ports where they were paid off and their crews drafted to the new prefabricated Types XXI and XXIII of which some 50 to 60 had now been completed. The stages of final schnorchel training and the deep diving trials of new boats were moved to the naval base at Horten in the Oslo Fjord. Expansion in the capacity for ordinary servicing and berthing facilities was pushed ahead at Stavanger, Farsund, Kristiansand South and other smaller Norwegian ports.

See Map 28.

The inshore patrol areas were sparsely occupied, only one U-boat being in the North Minch, Moray Firth and Northern Ireland positions respectively on 1 October. The September effort had been on a scale which drained the reserves available for reliefs in the various areas and, although six of the Group Mitte schnorchel boats(1) were detailed for service in the Atlantic early in October, only two reliefs had reached any inshore patrol before the end of the month. In the meantime U.281 in the North Minch sector and U.1004 off Northern Ireland had both started home by 10 October. There were, consequently, only five U-boats in all the inshore areas during October and four of these were present for less than a fortnight. No shipping was sunk or damaged by them.

H.Q. Coastal Command O.R.B. Appendix 673

The Admiralty Submarine Tracking Room was aware of a possible slack time but the aggregate of 5,445 flying hours with not a single sighting did engender a feeling of frustration among Coastal Command air crews. The detailed area figures are given below.(2) The Command Headquarters was also by no means unmoved by this blank period and a training drive was opened to improve squadron efficiency in locating and attacking the schnorchel. Four British submarines had been fitted with dummy schnorchels and were available as training targets. Mock-up schnorchel fitted buoys and radar target buoys were supplemented in the training

- (1) Group Mitte was still being held in harbour in case of an Allied landing in South Norway or Jutland. By early October the German Command considered that the approach of winter rendered this precaution no longer necessary.  
(2) Total flying hours in Inshore areas during October 1944. These include the close escort given to convoys in the areas.

Area	Task	Period	Effective Hours	Total Hours	A/C lost	U-boats	
						Sights	Attacks
Off Northern Ireland	Patrol and little escort	Day	1,411	2,120	-	-	-
		Night	( 40 (N) ( 848 L/L	( 131 (N) (1,008 L/L	2L/L	-	-
St. George and Bristol Channels	Patrol and some escort	Day	604	845	-	-	-
		Night	( 203 (N) ( 44 L/L	( 300 (N) ( 63 L/L	-	-	-
Western end of English Channel	Patrol from 30 Oct. only	Day	1	4	-	-	-
		Night	18 (N)	23 (N)	-	-	-
North Minch Sector	Patrol and little escort	Day	125	143	-	-	-
		Night	( 1 (N) ( 85 L/L	( 12 (N) ( 113 L/L	-	-	-
Moray Firth area	Patrol	Day	425	511	-	-	-
		Night	( 7 (N) ( 123 L/L	( 20 (N) ( 133 L/L	-	-	-
Reykjavik area	Convoy escort	Day	7	9	-	-	-
		Night	( 1 (N) ( 6 L/L	( 3 (N) ( 7 L/L	-	-	-
Overall Total - October			3,949	5,445	2	-	-

areas. A detailed exercise programme was issued and all squadron commanders instructed to make every effort to carry it out in conjunction with the operational flying.

#### Change of policy in the Western Approaches

During October, more and more of the ocean convoys were being routed in and outwards to the south of Ireland and No. 19 Group were providing an increasing amount of close escort in these waters. Towards the end of the month an appreciation was prepared at H.Q. Coastal Command giving the existing measures for meeting the U-boat threat and making certain suggestions for giving far more air cover to convoys while in waters near to the British Isles. A plan which gave effect to these was issued on 31 October. Briefly, this reasoned that the enemy was about to renew the inshore campaign on a large scale and his probable main objectives would be the northwest approach off Northern Ireland and the southwest approach to the south of Ireland and into the St. George's Channel.

The resources of Coastal Command were already stretched to the limit and it would be quite impossible to put up concentrated block patrols in both these areas similar to that performed by the Cork patrols in the western Channel for the Normandy landings. Moreover since then the U-boats had demonstrated their ability to schnorchel safely through areas well covered by air patrols. However, it was considered that the U-boats must do much better than merely evade the air patrols; they had to find our shipping and be bold enough to attack it. This meant they must close the shipping lanes inshore and, if committed to attack, would expose themselves to air location. The plan therefore proposed to give close air escort to all those convoys considered to be in danger while they were within two days sailing of our ports and in addition to sweep the path of the convoy 60 miles ahead and 28 miles on either side of its projected track at a 30 minute frequency. To effect this latter cover and density, a system of box patrols was designed which were to be flown relative to the convoy i.e. as the convoy advanced so the boxes advanced.

This plan would absorb nearly all the 244 aircraft in Nos. 15 and 19 Groups. It would be co-ordinated by the A.O.C. No. 15 Group so as to ensure the closest co-operation with the naval C.-in-C. Western Approaches who had the routing of convoys and control of all the surface escort and support groups. Should the enemy decide to operate once more in the Central English Channel only token air effort was available and the utmost that could be deployed were two Fleet Air Arm squadrons at present employed respectively to the north of Ireland and in the Moray Firth. They would be transferred to Thorney Island, near Portsmouth, and work under No. 19 Group.

#### (b) The Transit areas

The total number of squadrons on A/U duties in Coastal Command remained much the same during October with a few moves

ibid  
Appendix 613

ibid  
Appendix 618

ibid and  
See Order of  
Battle for  
1st Nov. in  
Appendix I.

of squadrons from one Group to another.(1) As the inshore areas remained so quiet a higher proportion of the total flying was switched to the Northern Transit area which was extended from the Faeroes/Shetlands channel well outside the Hebrides and down to the latitude of western Ireland. In addition, No. 19 Group flew extensive patrols southwestward of Ireland against the final batch of U-boats evacuating from the Biscay ports but in fact the tail end boat was already to the northward of this.

See Maps 28  
and 29

Although the inshore patrol areas were nearly empty of U-boats during October, the Northern Transit area was, up to mid-October, just as full of boats on passage as in the previous month. The number eased off from the third week as the last of the ex-Biscay boats reached their destinations.(2) None of these were damaged by Allied action but two came to grief through accident. On 22 October, U.985 struck a German mine off Lindesnaes when proceeding submerged at 40 metres depth. She managed to reach harbour but was so badly damaged that she was paid off soon after. Two days later U.673, when transferring from Bergen to Stavanger, was rammed by U.382. She had to be beached immediately and became a total loss.

No. 18 Group  
O.R.B. Appendices

The flying was again heavier in the eastern portion of the Northern Transit area and, with one exception, such sightings as were obtained occurred in this area. The first came on the night of 4/5 October by L/L Wellington P/407 Squadron when either U.857 or 804, both of whom were inward bound, was attacked but not damaged close off the Norwegian coast. On 13 and again on 14 October, U.1006, outward bound for Northern Ireland, was momentarily sighted in thick weather northeast of the Shetlands but in neither case was an attack possible. Two days later U.1006 was sunk by H.M. Canadian frigate Annan between the Shetlands and Faeroe islands. U.1003, also outward bound, was sighted off Norway on 18 October but she dived too soon to be attacked. On 23 October the inward bound U.1004 was attacked in Bergen Fjord by Mosquito E/333 Norge Squadron with cannon fire but no damage was inflicted.

ibid  
No. 15 Group

On 29 October to the southeast of Iceland occurred the only sighting in the western position of the area. Liberator B/59 Squadron reported a possible periscope seen momentarily and too close for attack. Subsequent evidence from a Sono buoy pattern dropped around the spot was reported as confirming the presence of a submerged U-boat. No attack developed. This might have been the inward bound U.802. After dark on 29 October, L/L Wellington V/407 contacted by radar and illuminated an unmistakable schnorchel and periscope off the Norwegian coast but unfortunately the position was in a Night Attack Restriction area which had been imposed to protect one of our own submarines on patrol and no attack could be made. This might have been the tail end ex-Biscay boat U.262.

ibid  
No. 18 Group

(1) No. 547 L/L Liberator Squadron and a detachment of No. 461 R.A.A.F. Sunderland Squadron was transferred from No. 19 to No. 18 Group. The two Halifax squadrons (Nos. 58 and 502) in No. 18 Group ceased A/U operations on 13 October and were thenceforward employed on night anti-shipping patrols off southwest Norway and in the Skagerrack. No. 15 Group lost No. 179 L/L Wellington Squadron transferred back to No. 19 Group on 22 October. No. 811 F.A.A. Swordfish Squadron which reverted to the R.N.A.S. and No. 838 F.A.A. Swordfish Squadron which was transferred to No. 18 Group for A/U patrols in the Moray Firth area.

Ref.: R.Q.C.C. appendices to O.R.B.

(2) The tail end boat was U.262 who reached Farsund on 1 November.

Right at the end of the month occurred two of the few positive attack incidents. They arose as the result of an attack carried out by Fleet Air Arm aircraft from H.M.S. Implacable on 27 October against a surfaced U-boat escorted by an M. class minesweeper off the western coast of Norway in 6524N x 1200E. The U-boat was U.1060, a torpedo transport boat en route from Narvik to Trondheim and also carrying the crew of an Arctic flotilla boat - U.957 - who had been paid off in consequence of a collision in Vest Fjord on 19 October with a German transport. The attacking F.A.A. aircraft sank the escort (M.433), killed the captain of U.1060 and 60 other ranks on board, and forced the U-boat to run aground on the nearby island of Fleina. In his War Diary, B. d U. stated that, although there had been heavy loss of life aboard U.1060, the boat was intact and he intended to bring her down to Trondheim for repairs.

In order to frustrate this kind of intention, Coastal Command had been asked on 28 October to carry out further attacks on the stranded U-boat. Early on 29 October two Liberators (Y and H/311 Czech Squadron) were despatched to make sure she could not be salvaged. The two Liberators found her at 0903 hours and, under inaccurate flak from small vessels in the vicinity and flak positions on shore, attacked her with rocket projectiles and depth charges. She was holed in many places and, according to B. d U's War Diary, settled firmly on the rocks flooded from end to end. No further salvage was attempted. (1)

Meanwhile on 28 October B. d U. had given orders that, because of similar attacks by British carrier borne aircraft on shipping in the Inner Leads between Bergen and Narvik, U-boats were no longer to proceed surfaced under escort in the Leads but were to do the journey alone and submerged, well away from the coast. Consequently U.1061, another torpedo transport boat who was en route in the reverse direction from Bergen, left her escort in the Leads and continued her northerly passage independently off shore. Unfortunately for her she did so on the surface. At 0211 hours on 30 October she was contacted on radar and illuminated by L/L Wellington R/407 Squadron in 6145N x 0340E. A good depth charge attack was delivered which so damaged U.1061 that she could not dive and was forced to make for the coast still on the surface. Twenty minutes later she was picked up by L/L Liberator A/224 Squadron but by well directed flak and violent evasive steering she avoided the attempts by the aircraft to attack until 0302 hours when A/224 managed to get in her depth charge release. Owing to a last second jink by the U-boat the stick just missed astern and inflicted no further damage. U.1061 continued at high speed for the coast and succeeded in reaching Maloy Sound later in the day, afloat but with considerable structural damage.

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- (1) Not knowing the full success of this attack, two Halifaxes of No. 502 Squadron were despatched early on 4 November to repeat the dose. They found that U.1060 had, since the Liberator attack, fallen right over on her starboard beam with the stern half well under water. The place was deserted and deliberate bomb and depth bomb attacks were made which left the U-boat completely beam ended and almost entirely under water.

Ref.: No. 18 Group O.R.B. appendices.

Ro/G.9/28/10

No. 18 Group  
O.R.B. Appendices

ibid

The results for October in the Northern Transit area were rather more discouraging than September.<sup>(1)</sup> In the eastern half, 6,544 hours were flown and in the west 3,805 hours. Of the 49 U-boats that were present in the area, 30 cleared through undetected and 12 more were still unseen on 31 October. Not counting the stranded U.1060, seven individual U-boats on passage were sighted resulting in three being attacked. Only one was damaged.

The transit flying by No. 19 Group off southwest Ireland produced no sightings. In fact, no U-boats were in the area until the end of the month when U.246<sup>(2)</sup> and U.978 were passing through en route for the English Channel.

(v) Bogus Sightings of Schnorchel smoke

The October flying, both in the inshore and transit areas, had been largely unproductive of sightings relative to the total of 17,800 flying hours expended. The feeling of frustration already mentioned became more marked in the early days of November among both air crews and headquarter staffs. In this atmosphere a series of sightings occurred which at the time were hailed as a welcome breaking of the drought but which, as postwar research reveals, were not scrutinised with sufficient care.

In order to marshal the evidence clearly it is necessary to go back to June 1943. On the 2nd of that month, at least six months before any U-boat had gone to sea equipped with a schnorchel, a Sunderland pilot had taken some photographs of a natural phenomenon which he saw just to the west of Ireland. Only one of the set survived and it is reproduced in Appendix V as photograph No.2. It is known that others had been taken earlier of the same kind of phenomenon but, having no interest or bearing on the A/U operations of the period, they had been lost or destroyed. All were recognised at the time (June 1943 and earlier) for what they really were i.e. small surface whirlwinds already sucking up spray and trying to form into waterspouts. These incipient waterspouts, or willywaws as they are often called, travel along quite slowly (between 5 and 15 knots) generally with the existing wind and leave a well

(1) Details of the Transit Area flying during October - 1944.

Area	Period	Effective Hours	Total Hours	A/C lost	U-boats		
					Sights	Attacks	Result
Northern Area	Day	2,267	3,408	3	6	3	U.1060 destroyed
Eastern Half	Night	( 439 (N) (1,502 L/L	(1,018 (N) (2,118 L/L	1 N 1 L/L	- 4 L/L	- 3 L/L	Shared F.A.A. U.1061 Dam.
Northern Area	Day	1,412	2,079	-	1	0	-
West Half	Night	( 95 (N) ( 944 L/L	( 428 (N) (1,298 L/L	- -	- -	- -	- -
Overall Total - North		6,659	10,349	5	11	6	1 shared destroyed 1 dam.
S.W. Ireland	Day	691	1,340	1	-	-	-
	Night	( 215 (N) ( 60 L/L	( 561 (N) ( 110 L/L	- -	- -	- -	- -
Overall Total - S.W.		966	2,011	1	-	-	-
All transit flying		7,625	12,360	6	11	6	1 shared destroyed 1 Dam.

(2) U.246 was damaged in 5030N x 1230W on 26 October by surface craft attack and had to return to Norway.



marked and foamy track. It has been computed by meteorological experts that, given the right conditions of humidity, barometric pressure, sea and air temperatures, literally dozens of these willywaws can form over a wide area, persist for short periods up to an hour, and then slowly fade out leaving a short lived wake mark.

Unfortunately by September 1944 no one remembered the few earlier photographs of willywaws and, imbued with the feeling that the schnorchel was defeating them as well as smarting under the drastic fall in sightings, air crews started to notice these and other natural phenomena. A few such reports started early in September 1944 as the chronological list in Appendix VI shows. Although as yet unaccompanied by photographic evidence these sightings were assumed to be of genuine schnorchelling U-boats and in one case, already mentioned in Section (ii) (a), the subsequent attack was credited with the probable sinking of U.484.

Curiously enough none were reported in October. It is quite possible that the atmospheric conditions around our coasts were not favourable to their formation. But in November there was a spate of them. They started on 3 November with a circumstantial report by Canso X/162 R.C.A.F. Squadron. The object was attacked without result. On 5 November a different crew in the same aircraft sighted a similar object, attacked it without result, and took a set of good photographs. Two of these are reproduced in Appendix V as photographs Nos. 3 and 3A. They illustrate very well the familiar description "Vapour cloud from schnorchel moving at the head of a marked wake". The reader will notice the similarity of the target to that on the earlier June 1943 photograph. What clinches the argument is that our 1955 knowledge from German records enables both these claims to be checked against the precise positions of U-boats at sea. On the two days in question the nearest U-boat was U.396 and she was 225 and 250 miles respectively away to the northeast.

If further proof is needed, we can compare X/162's photographs with those taken of a genuine schnorchel. Only three sets were ever taken during the war. One of these was secured by U.S.N. Liberator B/110 Squadron on 18 June 1944 in a position just north of Guernsey. The U-boat is established by German records as U.275. One of the photographs is reproduced as photograph No.1 in Appendix V. It will be seen that there is only a very small exhaust plume which keeps close to the water and there is no wake to speak of. About three to four feet of schnorchel sticks up and the periscope can be seen just abaft it. In fact there is no similarity between this genuine schnorchel and the other phenomena. Moreover in this genuine case the U-boat promptly dived deep soon after the depth charges started to explode whereas in many cases of attacks on assumed schnorchels the phenomenon continued unaffected and was sometimes attacked twice. The other two genuine sets were taken at the end of the war under special circumstances and are not so appropriate for comparison though in neither case was any smoke being made nor was the wake long.

See Appendix V  
Photos Nos. 13  
and 14.

The sightings by No. 162 Squadron took place in the western end of the Northern Transit area but similar reports soon started from the waters north of Ireland. Here again we are on sure ground regarding the positions of actual U-boats. German records establish that between 7 and 28 November there was only one U-boat anywhere near Northern Ireland. This was

See Map 31

See Appendix V  
Photos Nos. 4  
and 4A, 5 and  
5A

See section (vi)  
(d)

See Appendix V  
Photo No. 12  
and accounts in  
Appendix VI

U.1003 and reference to her log establishes that between these dates she was never outside a sector 20 miles westward of the island of Islay in the northern approach to the North Channel. She spent the daylight hours patrolling, sometimes at periscope depth but more often at 80 feet depth listening on her hydrophones and occasionally coming up to look around through the periscope. She schnorchelled by night and spent some of the time on the bottom. She saw no targets, fired no torpedoes, reported no close explosions of any kind and the only entry in her log of having heard even far distant explosions was at a time when no air attack was made. Yet six sightings, of which five were attacked, were made off Northern Ireland between 9 and 25 November at distances up to 90 miles from U.1003. In every case the crews' description is of whitish smoke or a whitish disturbance at the head of a wake and in the two cases where photographs were secured the object is similar to that photographed by X/162 Squadron and nothing like the genuine photograph No. 1. It will also be noticed from the descriptions of the attacks in Appendix VI that there was no visible object emitting the smoke, the track was down wind and the phenomena did not cease after attack even though in one case it was attacked twice.

Although it is easy to criticise, with postwar research and German records available, it does seem odd that suspicion of genuineness was not aroused by some of the above points. Actually a wave of optimism spread, the seas were eagerly scanned for similar objects and attacks on willywaws continued, including one by Sunderland Y/201 Squadron on 6 December which was, and still is, wrongly credited with the sinking of U.297. Selected photographs of the so-called schnorchelling U-boats were published in the Coastal Command Review for December and the "white smoke" type of sighting was accepted as authentic. Such bogus reports continued up to the end of the year and included several cases which were far more likely to have been puffs from a spouting whale.

Although running ahead of the narrative it is proposed to follow this subject into 1945. After several unphotographed January sightings, which from the description are considered to have been willywaws or spouting whales, a Halifax on a meteorological sortie on 21 January sighted the by now familiar white smoke at seven miles range. On closing, this was misidentified as a schnorchelling U-boat travelling down wind at 8 knots leaving a long wake. Being unarmed no attack could be carried out but the object was circled for 15 minutes while a set of excellent photographs were taken.<sup>(1)</sup> Two of these are reproduced in Appendix V as Nos. 6 and 6A. They are, of course, of a well developed willywaw but at the time were accepted as of a schnorchelling U-boat and were widely

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(1) Having the necessary equipment, the details of weather and sea were also put on record. They are given as of interest in indicating the conditions favourable to the formation of willywaws. Wind - 020°, 25 m.p.h. Sea - moderate. Visibility - 10 to 20 miles but occasional snow showers. Temperature of air - 35°F. Temperature of sea - 45°F. Humidity - 80 per cent. Course of schnorchel - 220° at 8 knots i.e. down wind.

reproduced in Service publications thus spreading still further the misapprehension. (1)

Enough has now been said to underline the fallibility attached to all the claimed sightings of schnorchels from September 1944 to the end of the war. The acceptance of the numerous bogus sightings had the unfortunate result that aircrews grew to believe that any kind of smoke or vapour near the surface of the sea, even if sighted ten or fifteen miles away, was probably emitted by a schnorchelling U-boat. (2)

(vi) Operations in the Inshore Areas during November and December

During November the enemy's redeployment of U-boats around our coasts took further shape. By the last days of the month two were stationed in the North Minch area, one off Northern Ireland, one off Reykjavik and two in the English Channel - these latter being the first ones since August. During December the numbers were augmented by three off the Orkneys, one off South Ireland, one in the southern part of the Irish Sea and four in the English Channel.

The appearance of U-boats in force in yet another inshore area caused a reshuffle of squadrons between the Groups. In order to cope with the English Channel, No. 19 Group in November received re-inforcement from No. 18 Group of No. 407 L/L Wellington and No. 838 F.A.A. Swordfish squadrons, from No. 15 Group of No. 422 Sunderland and No. 842 F.A.A. Swordfish squadrons and from the Mediterranean Air Command of No. 36 L/L Wellington squadron. During December the hard pressed No. 19 Group was assisted in the St. George's Channel area by numerous sorties from No. 15 Group. The operations will be considered in detail under the various inshore area headings.

(a) The area off Northern Ireland

U.483, who had arrived on 18 October, was still on patrol. She had missed with torpedoes at a merchant ship on the 21st and a warship on 23 October. On the night of 1/2 November she torpedoed H.M. frigate Whitaker, who was escorting a small local convoy to the north of Lough Swilly. Although reaching harbour the Whitaker was badly damaged, losing all her officers and many of the crew. Having evaded the subsequent hunt U.483 left patrol on 4 November to return to Norway. She had been joined in the area by U.1003 on 1 November and this U-boat remained to the north of the North Channel until she left on 30 November. As mentioned in the previous section, she saw no targets and suffered no attacks during the entire month. Her place was taken on 1 December by U.482, who remained in the North Channel itself throughout December without being sighted or attacking a target.

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- (1) The Coastal Command Review for January 1945, the Admiralty Monthly A/S Report for January 1945 and later in the U.S. Fleet A/S Bulletin for April 1945.
  - (2) Even now in 1955 it is thought in anti-submarine branches that a visual search for a schnorchel offers better chances of location than contact by radar. This is a dangerous doctrine unless the existence and aspect of willywaws and spouting whales are fully realised by all air crews.

No genuine sightings were made on these U-boats during the two months. There were, however, seven bogus sightings the nature of which have already been referred to in the previous section and Appendix V. Details of the flying hours are given below.<sup>(1)</sup>

(b) South Ireland and St. George's Channel up to Holyhead

No U-boats were on patrol in this area during November but during the last days U.1202 rounded Cape Clear and made her way up the St. George's Channel to Milford Haven. From the 1st to 10th December she patrolled between this vicinity and Holyhead where on three occasions she missed with torpedoes at independently routed merchant ships. When withdrawing she hit and sank S.S. Dan Beard (U.S.) - 7,176 tons on 10 December off St. David's Head in 5156N x 0529W. This ship was also independently routed and in her report to base U.1202 recommended the Southern Irish Sea as a good area for operations as there was much single ship traffic.

Between 17 and 27 December, U.773 was on patrol off Southern Ireland between Cape Clear and Cork. She confirmed that traffic proceeded along the Irish coast north of the declared mined area on its way to and from the Irish Sea but she made no attacks.<sup>(2)</sup>

In the last days of December, U.1055 rounded southwest Ireland and proceeded towards the St. George's Channel where she arrived early in January 1945. Other U-boats were traversing the southern part of this area during November and December on their way to or from the English Channel. Such were U.978, 991 and 680 who all made the double passage, and U.772, 486, 485, 650 and 905 who only passed into the English Channel.

Only two of all these U-boats were sighted by air patrol or convoy escort aircraft, details of whose flying are given

(1) Flying hours off Northern Ireland in November and December.

Month	Task	Period	Effective Hours	Total Hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	Patrol	Day	966 ( 12 (N)	1,361 ( 71 (N)	-	-	-	-
		Night	( 731 L/L	( 841 L/L	1 L/L	-	-	-
	Convoy escort	Day	132 ( 2 (N)	169 ( 32 (N)	-	-	-	-
		Night	( NIL L/L	( 1 L/L	-	-	-	-
Dec. 1944	Patrol	Day	515 ( 26 (N)	695 ( 65 (N)	-	-	-	-
		Night	( 480 L/L	( 560 L/L	-	-	-	-
	Convoy escort	Day	106 ( 3 (N)	154 ( 23 (N)	-	-	-	-
		Night	( NIL L/L	( 2 L/L	-	-	-	-
Overall Total			3,003	3,974	1	-	-	-

(2) U.773 had come up to this patrol from St. Nazaire which was still in German hands. Two boats (U.722 and 773) had been despatched from Norway in mid-October with special ammunition and medical supplies for the fortress. They arrived after an uneventful journey on 18 and 20 November. They left St. Nazaire on 7 December, U.722 direct back to Norway and U.773 to patrol off South Ireland and then return to Norway.

below.(1) The November flying was done by No.19 Group alone during which 19 convoys and six Monsters(2) were given close air escort through the area. In December the hours were considerably stepped up and, aided by flying from No.15 Group, 43 convoys and nine Monsters received air escort.

Neither of the sightings was made until the end of the period. On 25 December, Sunderland K/10 R.A.A.F. Squadron while escorting convoy UC 50A sighted a genuine schnorchel head and periscope some 20 miles from the convoy and near a straggler in 5056N x 0815W at a range of  $\frac{1}{2}$  mile but on a wrong bearing for immediate attack. While turning around, the target vanished and only one depth charge was dropped about 50 seconds later ahead of the last seen point. This was probably U.773 in whose patrol area this position lay, but she made no allusion to the incident.

The other sighting was reported by Liberator B/120 Squadron who, in conditions of cloud nearly down to sea level, obtained a radar contact at  $5\frac{1}{2}$  miles range. After homing, the rear gunner saw, momentarily through a gap in the cloudbase, a wake with a small dark object at the head almost under the aircraft in position 5054N x 0648W  $00^{\circ}$  northerly. The aircraft turned but never regained radar contact. A sono buoy pattern was dropped which, it was reported, gave evidence of the presence of a submerged U-boat but no further action was taken. This might have been U.1055 on her way into the St. George's Channel.

(c) The Western and Central English Channel

In mid-October, B. d U. had decided to re-open his operations in the English Channel and four boats had received orders while at sea outward bound from Norway to make for this area. These were U.978, 1006, 246 and 1200. U.1006 had been sunk when in the Faroes/Shetlands channel on 16 October by H.M.C.S. Annan, U.246 was heavily depth charged by surface craft of EG.31 off southwest Ireland on 25 October and had to return damaged to Norway and U.1200 was sunk on 11 November to the south of Cape Clear by H.M. Ships when supporting convoy HK 317. B. d U. was, at the time, only aware of U.246's enforced return and accordingly only one boat (U.991), then outward bound to the northwest of Scotland, was detailed in lieu.

(1) Flying hours in the South Ireland and St. George's Channel area.

Month	Task	Period	Effective hours	Total hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	Patrol	Day	345	440	-	-	-	-
		Night	( 186 (N) ( 80 L/L	( 277 (N) ( 91 L/L	- -	- -	- -	
	Convoy escort	Day	350	514	-	-	-	-
		Night	5 (N)	130 (N)	-	-	-	-
Dec. 1944	Patrol	Day	1,026	1,276	-	1	0	-
		Night	( 643 (N) ( 620 L/L	( 813 (N) ( 713 L/L	1 N 1 L/L	- -	- -	- -
	Convoy escort	Day	512	684	-	1	1	-
		Night	( 30 (N) ( nil L/L	( 211 (N) ( 11 L/L	- -	- -	- -	- -
Overall Total			3,797	5,160	2	2	1	-

(2) Monster was the generic term for large independently routed ocean liners engaged on troop carrying.

U.978 entered the English Channel on 2 November and made her way up to her billet north of Cherbourg where she patrolled between the 8 and 23 November. She effected nothing until the end of her time when on 23 November she sank the William D. Burnham (U.S.) - 7,176 tons out of convoy TMC.44 off Cape Barfleur. U.991 entered the Channel on 12 November and patrolled off Cherbourg between the 17th and 30th before starting homeward. She scored no successes.

See section  
(vii)

Meanwhile a second batch of eight U-boats were receiving orders while at sea outward bound to also make for the English Channel.<sup>(1)</sup> Again some were sunk on passage unbeknown to B. d U. U.322 fell a victim to H.M.S. Ascension just west of the Faroes/Shetlands Channel on 25 November after an initial location by a Norwegian manned Sunderland of No.330 Squadron. U.400 was sunk to the south of Cape Clear on 17 December by H.M. frigate Nyasaland while escorting a convoy. U.1209 collided, when submerged, with the Wolf Rock and foundered on 18 December.

See Map 36

Vigilance along the protracted passage route had since mid-October thus drawn much of the sting from this considerable blow aimed at the cross-Channel traffic to and from Cherbourg and Le Havre. However, four U-boats were active in the central English Channel during December (U.680, 772, 486 and 485). Six merchant ships and a frigate were sunk, and one merchant ship and a frigate damaged by them. Most of this score fell to one enterprising U-boat as the list below shows.<sup>(2)</sup> Only one boat paid the penalty and this was exacted by air action early on 30 December when U.772 was sunk by L/L Wellington L/407 Squadron soon after having successfully attacked a convoy off Portland Bill. By 1 January 1945 only two U-boats were still in the area, U.650 advancing up Channel and U.485 to the north of Cherbourg.

The air effort against these U-boats was in the form of box patrols extending from the Scilly Isles to the longitude of Le Havre. It resulted in no sightings during November when only two U-boats were in the Channel but obtained five sightings during December. One night sighting was made in the Western Channel. One day and two night sightings were made between the Casquet Rocks and Cherbourg. One night sighting was made south of Portland Bill. The day sighting was only a momentary glimpse of a periscope which vanished before an attack could be made. All the night sightings were by Leigh Light Wellingtons and all were on genuine schnorchel heads. In two cases the visual sightings were so close and on such a bearing that immediate attacks were impossible. By the time the aircraft had turned the contacts had disappeared. The two others were attacked - one on 26 December to the northwest

(1) These were U.680, 322, 772, 400, 486, 1209, 485 and 650.

(2) Shipping casualties in the English Channel during December 1944.

U-boat	Date	Name	Convoy	Where attacked
<u>U.486</u>	18 Dec.	<u>Silver Laurel</u> (Br.) - 6,142	BTC. 10	Sunk east of Falmouth
	23 Dec.	<u>Slemish</u> (Br.) - 1,536	WEC. 14	Sunk off Cherbourg
	24 Dec.	<u>Leopoldville</u> (Bel.) - 11,509	WEP. 3	Sunk off Cherbourg
	26 Dec.	H.M. frigate <u>Capel</u>	-	Sunk off Cherbourg
	26 Dec.	H.M. frigate <u>Affleck</u>	-	Damaged off Cherbourg
	28 Dec.	<u>Empire Javelin</u> (Br.) - 7,177	WWP. 23	Sunk off Cape Barfleur
<u>U.772</u>	23 Dec.	<u>Dumfries</u> (Br.) - 5,149	MKS. 71	Sunk off Isle of Wight
	29 Dec.	<u>Black Hawk</u> (U.S.) - 7,191	TBC. 21	Sunk off Portland Bill
	29 Dec.	<u>Arthur Sewall</u> (U.S.) - 7,176	TBC. 21	Damaged off Portland Bill

of the Casquet Rocks by F/407 Squadron which had no result and the other, already mentioned, by L/407 Squadron to the south of Portland Bill on 30 December which sank U.772. The flying hours for November and December are given below. (1)

(d) The North Minch to Orkneys area

In November there were two U-boats in the North Minch area, U.296 from the 14th and U.775 from the 25th. Both continued their patrols into December. U.296 left on 10 December reporting no success and that no attacks had been made on her, though she heard distant explosions all day long on 6 December. U.775 effected nothing until at daybreak on 6 December she sighted the 19th Escort Group about 10 miles northeast of Cape Wrath. She torpedoed and sank the leading frigate H.M.S. Bullen. The other two frigates, Loch Inch and Goodall, carried out protracted counter-attacks for the rest of the day. These were the explosions heard 20 miles away to the west by U.296. U.775 escaped undamaged from the 14 hour hunt, but it had unknowingly shifted to a fresh fox as the succeeding paragraphs show.

On 3 December B. d U. had decided to take action against British carriers whose aircraft were continually raiding the German shipping route up the west coast of Norway. His intention was to intercept these carriers as they set out or returned to Scapa Flow in the Orkneys by stationing U-boats near the exit from this anchorage. U.297 and U.1020, both of whom had just left Norway outward bound, were detailed to billets off the islands of Hoy and Ronaldsay respectively. B. d U. proposed to augment these patrols with the schnorchel fitted Arctic flotilla boats U.312 and 737.

U.297 approached her area from the westward during 5 December and is estimated to have been northeast of Cape Wrath in the early hours of 6 December thus running full tilt into the hunt being prosecuted against U.775. As nothing more was ever heard of her, it is reasonable to conclude that she was sunk by the two frigates mentioned above because one series of attacks made at 1130 A hours produced a lot of oil and splintered woodwork and we know it was not U.775. U.1020 arrived in her area on 7 December and was still there at the end of the month. The first Arctic boat (U.312) arrived on 23 December but left on the 26th after grounding and damaging her rudder while trying to get into Scapa Flow through the Hoxa Sound. U.278 and 313 took up similar billets right at the end of December. No carriers were ever sighted and all the boats complained of the fierce currents in the Pentland Firth area.

(1) Flying hours in the English Channel area.

Month	Task	Period	Effective hours	Total hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	Patrol	Day	1,737	2,082	-	-	-	-
		Night	( 473 (N)	( 666 (N)	-	-	-	-
			( 866 L/L	( 966 L/L	-	-	-	-
Dec. 1944	Patrol	Day	1,889	2,397	-	1	0	-
		Night	( 393 (N)	( 625 (N)	-	-	-	-
			(1,002 L/L	(1,094 L/L	1 L/L	4 L/L	2 L/L	U.772 Sunk
Overall Total			6,360	7,830	1	5	2	one sunk

Air patrols in the area were performed by Nos. 15 and 18 Groups of which details are given below.<sup>(1)</sup> The flying was stepped up in December but no sightings of genuine U-boats were obtained. Five bogus ones on willywaws were at the time assumed to be of schnorchelling U-boats including one which was followed by an attack which was and still is officially credited with the sinking of U.297. The facts are as follows:-

Sunderland Y/201 Squadron was instructed to co-operate in a U-boat hunt with the 19th Escort Group off Cape Wrath where the frigate Bullen had just been torpedoed. Y/201 joined up at 1053 A hours on 6 December and saw the Bullen in a sinking state in position 5846N x 0449W. The Senior Officer E.G.19 told the aircraft to patrol between the sinking ship and the Scottish coast. Later, in the afternoon she was told to circle round the Group who were still engaged in attacking asdic contacts. The weather conditions were 6/10 cloud, base 2,000 feet lowering in showers, sea moderate, wind 20 knots 250°T. At 1652 A hours Y/201 sighted a jet of whitish smoke or steam issuing from the sea about 5 miles away in 5844N x 0429W. There was no contact on her Mark III A.S.V. On approach, a considerable wake was seen which indicated that the source of the smoke was travelling at 10 to 12 knots in a direction 0500 T (i.e. down wind). The whole crew identified the object as exactly the same kind of schnorchel target as attacked by them on 9 November off Northern Ireland when they were in Y/201 Squadron.

We have seen that, from post war knowledge and the photographs taken, the attack on 9 November was definitely on a willywaw. The further evidence on this occasion (6 December) reveals that when passing low over the smoke at the head of the wake on two attacking runs an extremely violent turbulence was experienced which rendered the aircraft almost uncontrollable. The attack straddled the head of the wake with six depth charges. When the explosion plumes subsided there was no more to be seen of the moving wake. Y/201 then flew to E.G.19, who were about 8 miles distant, and informed the Senior Officer of the incident. On return to the scene, there was a large elliptical area of discoloured and smooth looking water. On the strength of this report, a wartime Admiralty Assessment of "U-boat probably sunk" was awarded to the aircraft. Immediately after the war, when German evidence was forthcoming, it was established that U.297 had vanished about this date and

(1) Flying hours in the North Minch/Orkneys area.

Month	Task	Period	Effective hours	Total hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	Patrol	Day	272	371	1	-	-	-
		Night	( 12 (N) ( 218 L/L	( 50 (N) ( 262 L/L	-	-	-	-
	Convoy Escort	Day	43	62	-	-	-	-
		Night	( 2 (N) ( 4 L/L	( 12 (N) ( 10 L/L	-	-	-	-
Dec. 1944	Patrol	Day	512	678	-	-	-	-
		Night	( 107 (N) ( 674 L/L	( 160 (N) ( 845 L/L	-	-	-	-
	Convoy escort	Day	38	54	-	-	-	-
		Night	nil	13 (N)	-	-	-	-
Overall Total			1,882	2,517	1	-	-	-



locality. In preference to surface ship attack reports, this U-boat was officially credited to Y/201 Squadron. Now, in 1955, there is no doubt that it was a willywaw that was attacked and U.297 should go to the more probable asdic attacks carried out that forenoon by the two frigates of E.G.19.

(e) The Reykjavik area

U.300, who had arrived on 22 October, saw only small single ships and coastal fishing craft up to 10 November. On this day, however, she sighted and attacked convoy UR.142 which was not receiving air escort. She sank the Godafoss (Ice.) - 1,542 tons, the straggler Shirvan (Br.) - 6,017 tons and the tug Empire Wold - 269 tons off Reykjavik in 6408N x 2250W. She reported a great deal of naval and air activity subsequently which she described as not very effective. She left patrol on 22 November. Her place was taken on 27 November by U.979 who remained off Reykjavik until 29 December but effected nothing.

No sightings were made on either of these U-boats by the flying in the area. After the attack on 10 November all convoys and many single ships were given air escort as they approached or left Reykjavik. Day and night patrols were also increased in the area. Details of the flying are given below.<sup>(1)</sup>

(f) Summary of the inshore areas during November and December

No U-boats were present in the Moray Firth area during these two months and no flying was done here. In the other five inshore areas there were during the period a total of 20 U-boats on patrol and in addition there were 12 passages of U-boats through the South Ireland area going to or returning from the English Channel. An expenditure of 21,037 flying hours on patrol, support or convoy escort sighted five individual U-boats of which three were attacked resulting in one sunk. On the other hand these U-boats only sank eleven merchant vessels and two frigates, and damaged a further merchantman and two more frigates.

It was not an imposing score for either side but it exemplified the condition of stalemate into which the U-boat war had drifted as far as the air was concerned. The naval picture was brighter as, in addition to one U-boat sunk while on patrol by H.M. ships, they had accounted for three others

(1) Flying hours in the Reykjavik area.

Month	Task	Period	Effective hours	Total hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	Patrol	Day	296	345	-	-	-	-
		Night	( 22 (N) ( 346 L/L	( 50 (N) ( 385 L/L	- 1 L/L	- -	- -	- -
	Convoy Escort	Day	84	111	-	-	-	-
		Night	( 2 (N) ( 71 L/L	( 18 (N) ( 80 L/L	- -	- -	- -	- -
Dec. 1944	Patrol	Day	192	219	-	-	-	-
		Night	( 12 (N) ( 151 L/L	( 25 (N) ( 170 L/L	- -	- -	- -	- -
	Convoy escort	Day	37	52	-	-	-	-
		Night	( 2 (N) ( 80 L/L	( 8 (N) ( 93 L/L	- -	- -	- -	- -
Overall Total			1,295	1,556	1	-	-	-

while on passage to inshore areas. One more had wrecked itself on the Wolf Rock. The gross loss of six U-boats in these operations for sinking eleven merchantmen and two frigates was not encouraging for the enemy's close investment policy. Worse exchange rates were to follow in January but the U-boat Command continued to persevere, pending the confidently expected readiness of the new Type XXI and XXIII boats.

In respect of this latter wish, the R.A.F. and United States Bomber Commands were having an ever increasing influence against such early readiness. The full story of this is told in Chapter VIII which deals with the bombing on naval targets but certain concrete cases may be mentioned here where they concern these new types. Back in July 1944, air raids on Kiel and Bremen by the R.A.F. and U.S.A.A.F. had destroyed Type XXIII U.2323 as well as three other conventional types. In a raid on Gdynia on 18 December the R.A.F. had sunk two U-boat depot ships and seriously damaged Type XXI U.2512 who was about to start her tactical exercises. At the end of the month a heavy raid on the U-boat building yards at Hamburg by the U.S.A.A.F. destroyed or damaged Types XXI U.2515, 2530, 2532 and 2537.

(vii) The Transit Areas during November and December

The extent covered by transit area flying was much the same as for October. The eastern part of the Northern Area was covered by No.18 Group, the western half extending down to the northwest of Ireland by No.15 Group and Iceland. The transit route outside Ireland was covered by Nos. 15 and 19 Groups. Owing to the spread of U-boats to more of the inshore areas, not so much flying was available along the transit route and the hours were cut drastically in November and further still in December. The details are given below.(1)

(1) Transit area flying in November and December.

Month	Area	Period	Effective hours	Total hours	A/C lost	U-boats		
						Sights	Attacks	Result
Nov. 1944	N.T.A. - East half by No.18 Group	Day	1,647 ( 172 (N)	2,406 ( 448 (N)	2 -	1 1 N	1 -	- U.322 shared
		Night	( 1,270 L/L	( 1,942 L/L	1 L/L	1 L/L	0 L/L	-
	N.T.A. - West half by No.15 and Iceland	Day	530 ( 18 (N)	796 ( 205 (N)	- -	- -	- -	- -
		Night	( 396 L/L	( 567 L/L	1 L/L	-	-	-
	Outside Ireland by Nos.15 and 19	Day	340 ( 123 (N)	572 ( 254 (N)	- -	- -	- -	- -
		Night	( 202 L/L	( 291 L/L	1 L/L	-	-	-
Nov.	Overall Total Transit		4,698	7,481	5	3	1	one shared
Dec. 1944	N.T.A. - East half by No.18 Group	Day	463 ( 150 (N)	684 ( 257 (N)	- -	- -	- -	- -
		Night	( 458 L/L	( 689 L/L	-	-	-	-
	N.T.A. - West half by No.15 and Iceland	Day	411 ( 6 (N)	561 ( 191 (N)	- 1 N	- -	- -	- -
		Night	( 166 L/L	( 232 L/L	-	-	-	-
	Outside Ireland by Nos. 15 and 19	Day	272 ( 25 (N)	394 ( 117 (N)	- 1 N	- -	- -	- -
		Night	( 199 L/L	( 298 L/L	-	1 L/L	0 L/L	-
Dec.	Overall Total Transit		2,150	3,423	2	1	0	-
Overall Totals for Nov. and Dec.			6,848	10,904	7	4	1	one shared

Although lower during November, now that the stream of ex-Biscay boats had reached Norwegian harbours, the U-boat traffic increased once more during December owing to the despatch of U-boats to the English Channel and Irish Sea areas. Aircraft sightings of them were few and far between. During November, 31 U-boats traversed or were present in the Northern Transit area and eight U-boats passed close around western and south-western Ireland. Of these, only three were located - all in the eastern half of the Northern area and they were late in coming. On 24 November at 2157 A hours Sunderland G/330 Norge Squadron obtained a radar contact in 6030N x 0450W. This was homed to several times but in the bad night visibility no visual target could be seen. After reporting to base, the aircraft was instructed to home Escort Group 17 to the spot for investigation. This was accomplished and soon after their arrival an asdic contact was picked up by them. A subsequent hedgehog attack at about 0300 hours on 25 November by H.M.S. Ascension brought up large quantities of Diesel oil which marked the end of U.322 bound for the English Channel. Although making no attack, the part played by G/330 Squadron was held to justify an official share in the kill.

On the night of 26 November, L/L Liberator G/224 Squadron, after homing on to a radar contact, sighted a surfaced U-boat in the Faroes/Shetland channel. Unfortunately the visual was too close and on a bearing too broad for immediate attack and after turning the contact was lost and never regained. This could have been either U.400 or 772, both of whom were in this vicinity outward bound for the English Channel. On 29 November came the only air attack. Two Tsetse Mosquitoes of No.248 Squadron escorted by four other Mosquitoes were on an A/U sweep off the southwest corner of Norway. At 1629 A hours a U-boat was sighted in the act of diving. The two Tsetse aircraft attacked with their 6-pdr. guns and fired nine rounds at the U-boat before she got under. This was U.170 just before entering Farsund but no damage is mentioned in German records.

December was even more disappointing. Out of 50 U-boats present in the Northern Transit area none were contacted and of the 17 rounding west and southwest Ireland only one was sighted. This did not occur until the early dark hours of 28 December when L/L Liberator B/120, after a radar contact, homed and sighted a fully surfaced U-boat in 5310N x 1153W steering south. Once more the sighting was made very close to and on a bearing too broad for immediate attack. However, the U-boat stayed up and a fresh run-in was made but at the critical moment the Leigh Light failed and nothing more was seen of the U-boat which presumably dived. German records make no mention of this incident but it could have been on any of U.325, 905 or 1055 who were all south bound in this neighbourhood.

(viii) Summary of the U-boat War in Home Waters -  
September to December 1944.

The U-boat War had gradually changed since August 1944 into a condition of stalemate in the inshore operational areas and a state of frustration in the transit areas comparable to the collapse of air operations in the Bay of Biscay during the winter of 1942/43. Both sides had made technical advances which tended to cancel each other out. The U-boats had adopted the schnorchel and possessed an efficient search receiver which together nullified the improved airborne radar

and the increased concentration of flying. Although the schnorchel undoubtedly lowered the capacity of U-boats to sink ships, it was the ace of trumps against visual and radar location except in flat calm weather.

Centimetric A.S.V. was excellent against surfaced U-boats. It gave positive and unmistakable indications at ranges up to 15 miles. There were, therefore, few suspicious or disappearing radar contacts during the first eight months of 1944. By September, however, all U-boats were becoming expert at schnorchelling in seas up to State 5 or 6 on the Beaufort scale. Even in calmer weather the schnorchel head gave far less definite echoes and of course at shorter ranges than any surfaced U-boat. Moreover these contacts were indistinguishable from those coming from flotsam such as casks, crates, oil drums etc and the more momentary echoes off prominent wave tops, whales spouting or even porpoises leaping. A.S.V. contacts soon had to be rated as Glass I, II or III according to their claim to being on genuine U-boats. Many of these echoes disappeared off the A.S.V. reception screen, due to some of the above natural reasons, as the aircraft homed towards them but could give rise to a suspicion that a U-boat had detected the A.S.V. impulse and had dived. On many occasions aircraft used sono-buoys to verify suspicious contacts. These, in the hands of any but very experienced listeners, produced another crop of dubious reports on the supposed presence of submerged U-boats because the natural sea noises so often occasioned wishful thinking.

G.C. S.17261  
Part I. Encls.  
111 to 126

An already clouded situation was further confused when the incipient water spout or willywaw became identified with schnorchelling U-boats. The resultant rise in recorded sightings of U-boats gave a false impression of a much improved picture both in inshore and transit areas e.g. the returns for November and December were of 14 and 21 sightings whereas a careful postwar check aided by German records establishes that there were only three and eight respectively on genuine U-boats. The sinkings by air action dwindled to one in the last quarter of 1944.

In fact, the aircraft had descended from its exalted position of U-boat Killer No.1 to the humble yet useful role of scarecrow to ensure the continual submergence of U-boats while at sea and consequent lack of mobility. Some of the above remarks applied equally to the surface craft when they were employed solely on blocking patrols and unrelated to convoys. U-boats had by the end of 1944 become almost immune from detection or attack while on passage to and from the Atlantic or the British Isles. When they reached their inshore operating areas they could exist for lengthy periods without molestation as long as they committed no hostile act. Once they hit a target, it provided a known datum point for an immediate retributive surface craft hunt. Hence the importance of adequately escorted convoys and the danger of routing ships independently even in inshore areas. The lesson had been learnt in mid-ocean warfare early in 1943, but its application to inshore waters was not complete until February 1945 when the tit for tat sequence of a ship sunk followed immediately by the U-boat sunk became almost monotonous.

## CHAPTER VI

## ANTI-SHIPING OPERATIONS - SEPTEMBER TO DECEMBER 1944

## (i) Introduction

An important event had occurred in August 1944 in the decision by the Swedish Government to no longer insure Swedish ships trading to German ports. This imposed a virtual ban on Swedish trade with Germany and deprived the latter of some 27 per cent of the shipping hitherto available for her import service, particularly in the vital iron ore category. This decision appears to have been made as a result partly of British diplomatic pressure and partly the ever mounting war casualties. Claims have been made that the cause was the increase in direct air attack at sea but perusal of Swedish losses during 1944 up to August reveal that only three Swedish ships were sunk and one damaged by air attacks at sea against eight sunk plus five damaged by mines and two burnt out plus eighteen others seriously damaged in port by air-raids. This subject is further discussed in Chapters VII and VIII which deal with the effect of aerial minelaying and port bombing on the Sea War. However, the effect was to make ever more valuable to the enemy his remaining cargo capacity and to make him even less inclined to risk convoys sailing in daylight along the North German, Dutch and later the Norwegian coasts.

At the end of August anti-shiping operations entered a new phase with the evacuation of enemy surface vessels from all French ports. Such activity moved eastward in the wake and ahead of the Allied armies. In their search for targets the anti-shiping squadrons were sweeping the enemy coast eastwards as far as Heligoland and occasionally reaching up to the stretch around the southwest corner of Norway. Resulting from this orientation into the North Sea area, a redistribution of the anti-shiping squadrons took place early in September.

A strike wing consisting of Nos. 235 and 248 Mosquito and Nos. 144 and 404 Beaufighter squadrons was moved up to Banff in No. 18 Group to re-open operations against the Norwegian coastal traffic. No. 16 Group's strike wings were disposed at Langham (Nos. 455 and 489 Beaufighter squadrons) and at North Coates (Nos. 143, 236 and 254 Beaufighter Squadrons) for operations along the northern Dutch and German coastline. At Bircham Newton were No. 524 Wellingtons and No. 855 F.A.A. Avengers who with No. 119 Albacores and No. 819 F.A.A. Swordfish squadrons at Swingfield<sup>(1)</sup> operated mostly at night against E-boats and other light craft in the Boulogne to Ymuiden area.

In the most southern part of the North Sea events moved fast during the first fortnight of September as northeast France and Belgium were cleared by the Allied armies resulting in the progressive evacuation of coasters, patrol craft and E-boats from Boulogne, Calais, Dunkirk, Ostend, Zeebrugge, Nieuport and Bruges followed by the capitulation of strong-points in Le Havre, Boulogne and Calais. There was, therefore, a continual night movement of enemy minor war vessels, along the Belgian and Dutch coasts up as far as Den Helder shepherding

See Map 4.

(1) During September, the German coast batteries around Cape Grisnez indulged in an orgy of cross-channel bombardment and from 13 September to the end of the month these two Swingfield squadrons were employed on smoke laying patrols in the Dover Straits to mask our shipping as it passed through.

various types of coasters and barges loaded with stores and base personnel. The only offensive units among this motley throng were the E-boats but they were in the process of re-grouping and carrying out night minelaying off the evacuated ports.

See Map 5

In the Norwegian area traffic was as yet light and consisted almost entirely of small but well escorted parties of two or three merchant ships carrying warlike stores northwards and returning with iron ore and fish products. Their route lay through the Inner Leads where ships were difficult to locate and only debouched into open water at a few points between the Skagerrack and Trondheim.

In both areas, British naval forces were also actively engaged in the anti-shipping offensive but, beyond listing in Appendix VIII the sinkings effected by these naval forces so as to present a balanced picture of enemy losses, it is only the R.A.F.'s part which will be described in detail.

As the air operations in the southern part of the North Sea were under different conditions to those conducted along the Norwegian coast, it is proposed to recount them separately.

(11) No. 16 Group operations - September and October 1944

The August system of constant day and night reconnaissance flights along all parts of the enemy held coastline was continued between Boulogne and Heligoland. They were performed by two to four aircraft at a time, drawn from the squadrons of appropriate range e.g. Swordfish, Avengers and Albacores south of Ymuiden; Wellington and Beaufighters for the longer distances. Although the primary task was the location and reporting of enemy convoys, the reconnaissance flights always attacked targets of opportunity such as small parties of mine-sweepers and other auxiliary craft.

(a) The area south of the Texel in September

Daylight targets were conspicuous by their absence and all attacks were made at night after A.S.V. location. It was difficult to identify the object and even more difficult to hit it. Moreover the enemy craft, although small, were all well provided with flak and every encounter entailed violent avoiding tactics which were not conducive to accurate bombing neither was it possible to spot the fall of bombs with any certainty or to stay to observe results. During September there were 144 night attacks made between Boulogne and Ymuiden, of which 118 took place in the first fortnight, with a loss of nine aircraft. Twenty-two small enemy craft were sunk and many more undoubtedly received damage in varying degrees.(1)

No. 16 Group  
O.R.B.  
Appendices

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- (1) Both German and Allied records have been scrutinised before making up these and subsequently quoted figures of sinkings. All have been related to specific aircraft attacks. It has, however, proved very difficult to establish more than a vague estimate of damage and only cases of authenticated serious damage are mentioned in these anti-shipping chapters. The names of the enemy vessels, tonnage, date of attack and squadrons concerned are given in Appendix VIII.

Fighter Command  
O.R.B.  
Appendices.

Almost daily reconnaissance close in-shore, among the islands and over inland waterways between Dunkirk and the Texel, was performed by Fighter Command Spitfire and Tempest aircraft. Barges, tugs, small coasters and motor boats were frequently shot up with cannon and machine gun fire but although 45 such attacks were made during September no actual sinkings resulted.

(b) E-boat movements in September

The E-boat force, which numbered only 13 operational boats, after mining Boulogne harbour and approaches was withdrawn to Dutch harbours where they arrived on 5 September. They had their share of night air attacks while on passage but their only loss was S.184 scuttled after a hit by the Dover batteries during the previous night.

Admty.  
N.I.D./15/X.237/12

The administration of E-boat flotillas was now vested in the Naval Chief Command North and the Senior Officer E-boats set up his headquarters in Scheviningen with his boats split between Rotterdam and Ymuiden. Their primary task was mine-laying along the Flanders coast and off Norfolk. Undisturbed sorties to the former took place after dark on the 8th and 10th but one by 10 E-boats on the 12 September bound for Cromer was detected, shadowed and bombed soon after leaving Rotterdam by Wellingtons of No. 524 and Avengers of No. 855 F.A.A. squadrons. Although no hits were scored, surprise was considered lost and the whole sortie abandoned. The project was repeated on the night of 16/17 September and mines were laid off Cromer by nine E-boats. While returning they were chased by surface craft and bombed by a Wellington of No. 524 Squadron but no damage was caused.

The landing of airborne troops at Arnhem took place on 17 September and an interesting sidelight is cast by a signal made soon afterwards by the German Naval War Staff to the Admiral-Holland suggesting the immediate destruction of the ports of Rotterdam, Ymuiden and Amsterdam. Captain E-boats was aghast and urgent representations by him led to a postponement till further notice. He did, however, shift his headquarters from Scheviningen to Den Helder.

ibid

During the night of 18/19 September, four E-boats successfully ran deck cargoes of stores into Dunkirk where a German garrison was still holding out and returned to the Hook with General Von Klug and his staff. Three other E-boats (S.183, S.200 and S.702) covered the operation to seaward but were brought to action 35 miles northwest of Dunkirk by H.M. frigate Stayner and M.T.Bs 724 and 728. All three E-boats were sunk and 67 survivors, including the senior officer 10th Flotilla, were picked up.(1)

No further E-boat operations took place in September, mainly owing to bad weather. On 1 October, the E-boat force, now only nine boats strong, was still based in Rotterdam and Ymuiden.

- (1) This officer, who was highly thought of by the German Naval Command, was exchanged on 6 December for a British Officer prisoner.

(c) Texel to Heligoland and the Drem system of rendezvous

Meanwhile frequent Wing Sweeps were flown by day along the northern Dutch and German coast, usually escorted by six to ten Mustang long range fighters of No. 316 squadron, Fighter Command. Pre-dawn reconnaissance often reported small convoys but the follow-up Wing Strike, taking off at dawn, had been too late on the scene as by that time the quarry had slipped into a defended anchorage.

The technique of wing operations demanded accurate and compact formation flying. This could not be done in darkness. The problem was to produce a strike force in formation ready for immediate action just before dawn on the enemy coast some 200 miles from base. Experiments and trials in August had resulted in a scheme to provide an illuminated rendezvous at sea. A single night flying aircraft was to lay flame markers in a pre-arranged position off the enemy coast near to the datum of a planned dawn strike. The Wing was to take off singly in the dark, fly out to the enemy coast in loose order and on picking up the flame marked rendezvous was to circle it, form into close battle formation in the faint pre-dawn light and be on the enemy convoy route at the desired spot during the twilight before sunrise so catching the enemy ships as they turned into the approaches to the anchorage. The scheme was known as the Drem System after the air establishment where it was conceived.

It had been tried out once and with success on 13 August off the North German coast but the subsequent special operations directed against enemy shipping evacuating the French Channel ports had prevented its repetition until early September when the tide of war was receding up the Dutch coast. However, two September Drem operations failed to produce any targets and another refinement was introduced for use on Day Wing Sweeps. This consisted of one or two aircraft detached from the wing formation but in continuous V.H.F. radio telephone touch with the wing leader. They flew inshore of the Wing over inlets and possible remote anchorages where shipping might be lying. Any sightings were passed immediately to the wing leader who would decide whether to divert the Wing to attack or continue the sweep for targets on the convoy route. The detached aircraft were known as outriders and were first used on 18 September. Thereafter they were the feature of most operations in force. The Drem system was of course only used for dawn strikes.

Fifteen Wing Sweeps of over 30 aircraft apiece and four smaller were carried out during September. On only four occasions was any shipping found at sea and twice the wings sought targets inside the harbour of Den Helder. Counting the 19 night attacks on targets of opportunity by long range reconnaissance flights, there were 214 individual aircraft attacks delivered between the Texel and Heligoland. Two merchant ships and five escort vessels were sunk besides damage done to harbour installations, flak and radar posts in the Den Helder area for the loss of eleven aircraft.

So sparse were targets at sea in this area that five wing operations were carried out during the month along the southwest corner of Norway. Only two sighted even small craft. Attacks resulted in the sinking of a small coaster on the 8th and two M. class minesweepers on 11 September.

No. 16 Group  
O.R.B.  
Appendices.

ibid

ibid



To avoid crowding in extensive footnotes, the details of the names, tonnage and date of sinking together with the number of sorties flown and attacks made are given in Appendix VIII.

(d) E-boat movements in October

Their primary task during October was to lay mines in the West Scheldt estuary and approaches. Eight E-boats put out at night on 4 October but in bright moonlight they were located and bombed by five aircraft of No. 855 F.A.A. Squadron. No damage resulted but the sortie was abandoned. Re-inforcements to the slender E-boat force arrived from 5 October onwards in the shape of the 9th Flotilla from Germany and dribblets of refitted boats for the existing 4th, 8th and 10th Flotillas bringing up the total force to 20 E-boats. After dark on 10 October fourteen E-boats laid 56 mines westward of Walcheren Island in the Scheldt approaches. This represented their sole operation. On 19 October the 4th Flotilla was withdrawn via inland waterways to Germany for refit thus reducing the strength to 15 boats.

Admty.  
N.I.D./15X.237/48

Towards the end of the month, the Naval Chief Command North issued a directive, following the Allied occupation of the south bank of the West Scheldt, in which the priority was minelaying north of Ostend with secondary importance given to torpedo patrols either off the Flanders or Norfolk coasts. A minelaying operation was started on 29 October but after a short battle with seven British M.T.Bs off Ymuiden, in which S.191 was damaged, the sortie was broken off.

(e) Other air operations in October

The brunt of the short range work, all at night, lay on the Wellingtons of No. 524 Squadron and the F.A.A. Avengers of No. 855 Squadron. With some Beaufighter assistance they carried out 100 sorties up to mid-October between the Scheldt and Ymuiden. Thirty-nine night attacks were made but only on the night 1/2 October has any record of a sinking been found. This was the German coaster Wachtel - 992 tons sunk off the Hook of Holland.

No. 16 Group  
O.R.B.

On 17 October, the hard worked and invaluable No. 855 Squadron left Coastal Command and reverted to the Naval Air Service. Their place was taken by No. 827 F.A.A. Barracuda Squadron but they did not start operations until 1 November, consequently in the latter half of October only 28 more sorties took place in the most southern area. These resulted in four night attacks but no damage was inflicted.

East of the Texel also there were fewer targets found and these tailed off to no sightings after mid-October. For an expenditure of 414 sorties along this stretch of coast there were 25 night attacks which sunk one new merchant ship hull and a gunbarge for the loss of five aircraft while one day sweep on 15 October into the Heligoland Bight sunk three small auxiliary craft for the loss of two aircraft.

Although Antwerp had been occupied by British troops early in September, it proved impossible to use this large and much needed port for direct supply to the Allied armies because the Germans still held the coast line on the estuaries of the Scheldt and the islands in the delta. Land and amphibious operations were being fought throughout October to free the area.

ibid The German coast batteries around Cape Grisnez were captured on 30 September and there was no longer a requirement for smoke-laying in the Dover Strait. Nos. 119 and 819 Squadrons were, therefore, moved up from Swingfield to Bircham Newton but were taken out of the line preparatory to going to an advanced base on the Belgian coast. It proved a long job to find a suitable airfield which was not either water-logged or rendered unusable by the recently evicted enemy and neither squadron flew operationally during October.

(f) The reappearance of German Small Battle Units

During September, three German Naval Commando units operated in the upper reaches of the Rivers Maas and Scheldt. Using Linsen, Marder, frogmen and demolition mines they aimed at the destruction of lock gates, unloading jetties and bridges situated in the hotly contested region between Nijmegen and Antwerp. The story of these ventures does not, however, come within the scope of these volumes.

Admty.  
F.D.S. 65A/54 The re-opening of genuine maritime operations dates from 26 September when a flotilla of 60 Linsen (1) was arriving in batches at Groningen in North Holland by rail from Lubeck. In the first days of October the 60 Linsen were transported down to an advanced base at Flushing and the first operation was planned for the night of 5/6 October. It was intended that one formation of Linsen should escort a supply convoy to Dunkirk and the remainder should attack Allied minesweepers off the Flanders coast. The operation was a fiasco. On leaving Flushing, two Linsen were sunk in error by the harbour defence patrol and then the weather suddenly deteriorated. Fourteen were driven ashore, twenty more foundered. Twenty-six struggled back to harbour and, later in the day, when they were being withdrawn to Rotterdam lost two more through fighter-bomber attacks.

See Map 4 A fresh flotilla of 60 was sent forthwith to Groningen arriving on the 12th, being moved down to Rotterdam on 14 October. On 22 October, twenty-eight were transported to Flushing and went to sea that night - twenty-four for Dunkirk and four, with much needed gun spares, for Breskens. On leaving harbour they were scattered by gunfire from an Allied battery near Westkapelle and fourteen returned. There is no record of the remainder's fate. Twelve left Flushing on the night of 26/27 October to attack Allied disembarkation berths at South Beveland but all grounded on a sand-bank in mid-stream off Terneuzen. The operation was repeated the following night with twelve more Linsen and four Naval Commando craft. Four explosive Linsen were released but only one hit a target. This was claimed to have destroyed two 300 ton lighters in the process of being unloaded. On the last night of October, six Linsen carried out an attack in the West Scheldt which claimed erroneously to have sunk three Allied craft. The remaining Linsen were then withdrawn up to Rotterdam.

ibid Although the above had little to do with maritime air operations at the time because Coastal Command patrols were, during the last half of October, almost non-existent in this in-shore area, the activities of other Small Battle Units (notably Biber and Seehunde) in later months called for much special effort by No. 16 Group. It is felt, therefore, that

(1) Linsen and their operation is described in Appendix IX.

a brief mention must be made of all their sorties if only to record their limitations and the fatalistic bravery of their crews.

(iii) No. 18 Group operations on the Norwegian coast - September and October 1944.

(a) Introduction

The conditions for anti-shipping operations off the Norwegian coast differed radically from those in the southern North Sea. To start with there was nothing like the same amount of reconnaissance available. The distances to the coast were too great for any employment of Fighter Command single-engined aircraft and, except for the one newly arrived Banff Wing, there was only the flight of Norwegian manned Mosquitoes of No. 333 Sqdn. These were quite invaluable as the pilots knew well the maze of fjords and islets which made the location of shipping so difficult along this indented and precipitous coastline. They were consequently almost worked off their feet and it was largely through their daily flights that any strike action could be planned. Enemy traffic contained no offensive units like E-boats and consisted of small infrequent convoys rarely exceeding two or three merchant ships but well escorted by up to eight patrol craft. They kept to the Inner Leads and often anchored up remote fjords between broad daylight and evening dusk. Such targets were difficult to relocate by the strike force after initial reconnaissance reports made some hours earlier.

See Map 5

No. 18 Group was responsible for the Norwegian coast extending from Kristiansand South in the Skagerrack to Aalesund in latitude 62°N. Enemy traffic north of Aalesund was out of the Group's reach but was sometimes raided by F.A.A. aircraft working from carriers on periodic sorties from Scapa Flow. A more considerable contribution was soon to be made by light surface craft, notably Norwegian manned M.T.Bs, working from advanced bases in the Shetlands. Additional was the employment of some of our submarines on patrol off the exposed stretches of coast and the laying of mines by them and carrier borne F.A.A. aircraft at likely navigational points on the shipping route. This narrative is only concerned with the R.A.F. side of these anti-ship operations and, except for a notation in Appendix VIII of what was sunk by the naval forces in this area, it is the R.A.F.'s operations that will be recounted.

(b) Operations

Acting for the most part on the results of reconnaissance by No. 333 Flight, eleven strikes or sweeps in force were carried out during September by the Banff Wing. On only two occasions was a convoy found in a position to be attacked. On 14 September one was located off Kristiansand South resulting in one merchant ship damaged and one escort vessel sunk for the loss of one aircraft. On 19 September a convoy was attacked in the mouth of Sogne Fjord when two merchant ships were sunk for the loss of one aircraft. On the 21 September, isolated craft were sighted off Lister and two small coasters were sunk. The only other encounters fell to No. 248 Mosquito Squadron when engaged on anti-U-boat sweeps. They damaged a coaster and sunk the escorting vessel in Hjelte fjord on 24 September and sunk a local defence craft off Kristiansand

No. 18 Group  
O.R.B.  
Appendices

South on 28 September. The names, tonnage, dates and sorties flown are tabulated in Appendix VIII. No. 16 Group's sweeps off southwest Norway have already been mentioned. The month's operations really amounted to an exploration of the possibilities of air action along the Norwegian coast after a lapse since May 1944 due to the concentration of anti-shipping effort in the Southern area for Operation Overlord.

ibid

By October it was realised that enemy traffic, not content with the natural protection afforded by the Inner Leads, was increasingly taking refuge by day in secluded anchorages up small fjords debouching into the Inner Leads route and restricting passage along open coast stretches to the dark hours. Consequently No. 16 Group's tactic of dawn strikes using the Drem system of rendezvous was introduced to meet the latter and the Outrider refinement for daylight sweeps was used to locate the former. The Mosquitoes of No. 333 flight were ideal for this job and thereafter they always provided the outriders.

The first Drem operation took place on 9 October and affords a good example of this dawn strike method. As the subsequent tactics of the attack were clearly marked, it is proposed to describe the operation in detail as a representative account of a typical attack on an escorted convoy:-

At 0417 hours on 9 October, a Warwick aircraft of No. 281 A.S.R. Squadron took off from Banff to lay the Drem flares. At 0610 hours this aircraft dropped 7 Mk.II and IV Marine markers, 17 flame floats and 50 drift lights in a circle of radius three miles in a position 5918 N x 0435 E (off Skudnes Fjord). The Banff Wing(1) took off singly in darkness between 0456 and 0529 hours and proceeded in loose order for the above position.

ibid

At 0627 hours the Drem flares were sighted and the force circled them while forming into battle order and at 0649 hours in faint dawn light the Wing set course south at 100 feet altitude. Reaching 5900 N x 0500 E at 0655 hours the force climbed to 2500 feet still in twilight and at 0700 hours sighted a convoy bearing 160° distant 20 miles very close inshore off Egersund. At 0705 hours the convoy was seen to consist of five merchant ships escorted by six patrol craft in three columns steering 310° at about 6 knots.

At 0710 hours the attack commenced. Six cannon Beau-fighters were sent in first and engaged the largest merchantman and the escort craft nearest to it, and then switching to the rear merchant ship with its nearest escort. Almost simultaneously five of the Mosquitoes attacked the other merchant ships and escorts with cannon fire. The other three Mosquitoes were detailed to act as fighter cover in case the G.A.F. put in an appearance. Just behind the cannon attack came a wave of eight R.P. Beaufighters who attacked the three leading escort craft and then switched to the two largest merchant ships, following up on the other merchantmen and escort vessels.

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(1) The Wing consisted of:-

- 8 Beaufighters/404 Squadron armed with R.P.
  - 6 Beaufighters/144 Squadron armed with cannon
  - 4 Beaufighters/144 Squadron armed with torpedoes
  - 8 Mosquitoes/235 Squadron armed with cannon.
- All under the leadership of Wing Commander Gadd.

Finally the four torpedo Beaufighters attacked the two largest merchant ships.

ibid

There was intense flak from all vessels, both merchant and escort, and from shore batteries. The billows of black smoke, flak tracer, rocket and cannon splashes with at least two torpedo explosions made accurate observation of results difficult. The whole action was over in five minutes and at 0715 hours the Wing was on course for base leaving the convoy in confusion. No aircraft had been shot down and only three were damaged. All returned intact and landed between 0830 and 0943 hours. Some photographs<sup>(1)</sup> taken during the action in conjunction with de-briefing reports formulated a claim to have torpedoed two merchant ships setting these on fire and to have seriously damaged another merchantman and two escort vessels with rocket and cannon fire. Postwar examination of relevant enemy records confirms the sinking of Rudolf Oldendorff (Ge.) - 1,953 tons, serious damage to Sarp (Nor) - 1,116 tons and the sinking of escort vessel U.J. 1711 - 485 tons.

Regarding the actual attack, it will be seen that the continual thought, training and exercise that had been given to Wing operations since early in 1944 had not altered the basic conception which was to smother, put off aim or otherwise neutralize the intense flak put up from a convoy by a first wave of cannon fire followed immediately by R.P. so as to allow the torpedo carriers a relatively unmolested run-in. In narrow fjords or other places where torpedoes could not be used, the R.P. was the main weapon and the cannon element was increased so as to blast a temporary respite in which carefully aimed shallow R.P. dive attacks could be made. Each element had to be timed to a split second and the whole attack was usually over in a matter of minutes.

ibid

The Outrider refinement was first employed in No. 18 Group on 19 October and was instrumental in directing part of a Wing Reconnaissance in force on to a small convoy just to the northwest of Bergen but the attack inflicted no sinkings. During the month, fourteen daylight Wing sweeps or strikes were flown but, apart from the two occasions mentioned above, no convoys were found. On four other dates, single escorted ships were attacked resulting in one merchant ship and two escort craft being sunk. On 21 October, a Wing attack was made on Haugesund harbour and the only two ships found in the roadstead were both sunk.

The anti-shipping part of No. 18 Group received a welcome addition during the month, although at the expense of the anti-U-boat side. It will be remembered that the two Halifax Squadrons (Nos. 58 and 502) had specialized in night A/U patrols using high intensity slow dropping flares to illuminate and attack any A.S.V. contacts obtained. When the Biscay operations came to an end in August, the two squadrons were used in the Northern Transit area during September based at

(1) A little later it became customary to include in the Wing Strikes an aircraft whose sole duty was to take photographs during the action for assessment purposes. Many of these are available in the Air Historical Branch and it is a pity that their inclusion would make the volume unduly bulky because they convey the atmosphere of attack far better than any written account.

Stornoway under No. 18 Group control. It was soon realized that against schnorchelling U-boats they were unlikely to be of any use with their high altitude flare technique. Their night sorties were, therefore, directed to the coastal waters off Norway where, it was hoped, U-boats might be caught on the surface as they entered or left the Inner Leads. As far as catching U-boats this also proved fruitless but during early October several attacks were made by them on surfaced targets which proved to be either escorts awaiting the arrival of U-boats or single escorted merchant ships taking advantage of darkness to negotiate the few open stretches of coastline. Many of these contacts were around the southwest corner of Norway and in the Skagerrack. In mid-October it was decided to institute standing night patrols between Lister and the Skaw, flying at the best height for A.S.V. location on surface ships. The aircraft were armed with 500 lb. M.C. bombs in place of depth charges but employed the same flare technique for relatively high level bombing using the Mark XIV sight.

The subsequent attacks were not very lethal to start with but improved in succeeding months until in 1945, with the aid of improved flares and special training, the casualties to the German supply line to Norway became serious. During October 1944, the Halifaxes, made 74 night sorties and delivered 25 attacks, all in the Skagerrack area. Two vessels were sunk and one damaged.

The Russian armistice with Finland, signed on 19 September,<sup>(1)</sup> denied Germany access to Finnish raw materials and lost her the use of Finnish cargo tonnage previously operating for her. Sweden, after her August withdrawal of trade with German ports, had by this time prohibited the entry of German and controlled tonnage into Swedish ports. There was therefore every likelihood of a considerable increase in enemy trade with Norway quite apart from the stream of warlike supplies required now that the main U-boat bases were located in Norwegian ports. This shift of emphasis, coupled with decreasing activity off the southern North Sea coastline, led to a further re-inforcement of No. 18 Group's anti-shipping resources. The Langham Beaufighter Wing was transferred late in October up to Dallachy on the Moray Firth and together with the two Beaufighter squadrons from Banff was formed into a Dallachy Wing. No. 143 Squadron was transferred from North Coates up to Banff where it started to re-arm to Mosquitoes so as to form a homogenous Banff Wing.<sup>(2)</sup>

(1) Finland had joined the Axis against Russia on 22 June 1941 and it was not until mid-1944 that a general Soviet advance brought one wing of their armies back into Finland. Hostilities against Russia ceased on 4 September and fighting against the German forces started soon after. An armistice with the U.S.S.R. and Great Britain was signed on 19 September 1944.

(2) On 1 November 1944, the anti-shipping disposition was as under:-

No. 18 Group		No. 16 Group	
<u>Stornoway</u> - Nos. 58 and 502 Halifaxes Night.		<u>North Coates</u> - No. 236 - Beaufighter - R.P. No. 254 - Beaufighter - Torpedo	
<u>Banff</u> - No. 235 - Mosquito No. 248 - Mosquito No. 333 - (Norge) - Mosquito Flight No. 143 - re-arming to Mosquito		<u>Langham</u> - No. 827 F.A.A. - Barracuda. Detachment of No. 524 - Night Wellingtons.	
<u>Dallachy</u> No. 144 - Beaufighter-Torpedo No. 404 - Beaufighter-R.P. No. 455 - Beaufighter-R.P. No. 489 - Beaufighter-Torpedo Detachment of No. 524 Wellingtons		<u>Bircham Newton</u> - No. 119 - Albacores No. 819 F.A.A. - Swordfish (awaiting an airfield in Belgium)	

See also the Order of Battle, Strengths and Availability for this date in App. I.

H.Q.C.C.  
O.R.B.  
Appendix 623

ibid

(iv) No. 16 Group Operations - November and December 1944

During the last week of October and first ten days of November the Allied amphibious operations in the delta of the Scheldt River were overcoming the stubborn resistance by detached enemy forces. After the south bank of the outer Scheldt had been cleared, the island of Walcheren was attacked. Flushing was occupied on 5 November and both banks of the West Scheldt River up to Antwerp were freed by Canadian forces by 8 November. Much minesweeping and clearance of obstructions had to be undertaken and it was not till the end of the month that the great port was re-opened to traffic.

(a) - Enemy convoys and E-boats

E-boats were active while the Walcheren operation was in progress but beyond sinking a small cargo vessel and an armed trawler off Ostend in the dark hours of 2 November they effected nothing neither did they suffer any casualties though bombed on the night of the 2nd/3rd by two Barracudas of No. 827 and two Wellingtons of No. 524 squadrons. Their sorties ceased until after dark 15 November when one party laid mines off the Humber unopposed and another, operating in the Scheldt approaches, was engaged by naval forces. S.168 was set on fire but regained harbour and M.T.B. 742 was damaged. Their final November operation was during the night of 29/30 November when eight E-boats laid 35 mines in the Scheldt approaches and westward of Dunkirk. They were chased by surface patrols and bombed by a Wellington of No. 524 Squadron but received no damage.

Admty.  
N.I.D./15/  
X.237/48

Although detachments of No. 119 Albacores and No. 819 F.A.A. Swordfish were moved on 28 October to St. Croix near Bruges, the airfield condition prevented any flying and another airfield was tried nearer the coast at Maldegem. From here operational flying by these two squadrons started on 12 November and consisted of night sorties on patrols between the mouth of the Scheldt and Ymuiden. Little was found and only five night attacks on unidentified small craft eventuated up to the end of the month. No damage is recorded in German records. Between the Hook of Holland and Texel island reconnaissances and rovers were conducted, mostly at night, by Wellingtons of No. 524 and Barracudas of No. 827 F.A.A. Squadrons to the number of 90 sorties but they too saw few targets and their 22 attacks on ill-defined objects obtained no hits. Naval surface patrols fared little better as only one German auxiliary of 500 tons was sunk.

No. 16 Group  
O.R.B.  
Appendices

Most of the Group's effort went into day sweeps and night rovers along the coast from Texel to Heligoland. Except for the night of the 2/3 November when two small convoys were unsuccessfully attacked off Terschelling and Borkum, this was entirely unproductive until 21 November when a sweep by 12 Beaufighters of No. 236 Squadron sighted two harbour defence craft in the mouth of the River Weser and sank them both. After a further blank five days and nights, isolated targets were found on occasions up to the end of the month. Twenty-eight attacks in all were delivered and accounted for a gunbarge north of Borkum on the night of the 25th/26th and a newly launched merchant ship hull in tow off the River Weser on the night of the 29/30 November. This was all there was to show for 227 sorties along this bit of coast - not to decry the Group's effort but as an indication that there simply were not targets under way.

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H.Q.C.O.  
O.R.B.  
Appendix 808

December followed the same pattern. Of eight sweeps as far as Heligoland by the North Coates Wing, only two located any targets. These occurred late in the month both at night between Borkum and the Weser. Eight attacks were made but without result. To the south of the Texel little was seen until the second half of the month. No E-boat operations took place before the 18th. In anticipation of their renewal and also against possible midget submarine activity, No. 612 Leigh Light Wellington Squadron was transferred on 19 December from No. 15 Group to Langham in No. 16 Group.<sup>(1)</sup>

Admty.  
N.I.D./15/x.257/48

On 15 December, Bomber Command attacked the E-boat shelters at Ymuiden with 14 Lancasters and obtained penetration of the roof with two 12,000 lb. bombs. S.198 was destroyed, six other E-boats were damaged and the entire E-boat maintenance was disorganised. Six of the pens were unusable and the 8th Flotilla was put out of action until the end of the month. The 2nd Flotilla of eight boats was immediately moved from Germany to Den Helder and together with the two Rotterdam flotillas carried out minelaying sorties off the Flanders coast during the nights of the 18th/19th, 22nd/23rd and 24th/25th December. Attacks were made on them by Wellingtons of Nos. 524 and 612 Squadrons but no hits were obtained although the Dutch coaster PiJo was sunk in the course of such attacks on the last night. However, shadowing reports by these aircraft were instrumental in enabling naval forces to intercept one party of E-boats off the Hook of Holland on the night of 22/23 December and in the ensuing action S.185 and S.192 were sunk. On 29 December, Bomber Command raided the E-boat base at Rotterdam with 16 Lancasters. Much structural damage was done to the shelters but, profiting from the experience at Ymuiden, the E-boats themselves had been well dispersed in the docks and none were damaged. Meanwhile the two squadrons in Belgium had moved to a better airfield at Knoeke Le Zoute on the coast a few miles east of Zeebrugge. Their flying re-started on 23 December and took the form of day patrols extending 16 miles westward from Walcheren Island specifically against Small Battle Units.

(b) The Small Battle Units

During the first half of November additional Linsen explosive motor boat units were moved into Holland and a total of 96 boats was apportioned between Den Helder, Schevingingen and Hellevoetsluis at the mouth of the West Maas River while 30 Biber were sent to Poortershaven (between Rotterdam and the sea) with a further 59 to a reserve at Groningen in North Holland.

See Map 4.

No Linsen operations were conducted until 22 November and then their sorties were directed up the Maas River and do not concern the maritime narrative. The German Naval Staff were uncertain how best to employ the Biber as by their nature they were of little use except against stationary targets so all November was spent in adapting them for the carriage of ground mines in addition to torpedoes.

Admty.  
F.D.S.65A/54

The December operations of Linsen started badly. A planned sortie of twelve boats from an advanced base near Hellevoetsluis

- (1) An additional reason for this transfer was the withdrawal of No. 827 F.A.A. Squadron who reverted to the R.N.A.S. on 1 December.

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was almost wiped out on 5 December by Allied fighter bombers. A further sortie on 17 December by 27 Linsen ran into bad weather, lost four boats and returned immediately. The 23 put out again next evening to operate in the Scheldt but 13 of them ran aground to the south of Goeree and only three boats reached the target area. An attack was made on a destroyer but the explosive boats missed. On the following evening (19 December) twenty-one put out but ran into fog and lost five grounded and abandoned.

The first Biber operation took place on the night of the 22/23 December when eight left Poortershaven in tow of R-boats and ten put out from Hellevoetsluis in tow of Rhine patrol craft to attack Allied shipping in the West Scheldt. The former party ran into British M.T.B.'s off the Hook and lost four Biber while trying to slip the tows in a hurry. The latter group lost a Biber sunk and one badly damaged by mines off West Schouwen leaving a total of 12 Biber armed with torpedoes and mines to carry out the operation. None of the Biber returned but the Panamanian S.S. Alan-a-Dale of 4,702 tons was sunk to the south east of Flushing. On the next night eleven Biber left Hellevoetsluis in tow and were slipped northwest of Goeree for operations in the Scheldt. One sank en route, another ran aground on West Schouwen and the other nine never returned. Three more Biber put out on the night of the 24th/25th together with three units (nine boats) of Linsen bound for the West Scheldt. The Biber never returned and only one Linsen unit reached the area. An attack was made on a large ship off Zeebrugge but one explosive boat missed ahead and the other hit a nearby wreck. The control Linsen returned to harbour the next day heavily iced with the pilot nearly dead from cold. Finally, six Biber set out from Hellevoetsluis after dark on 25 December to lay mines in the West Scheldt but again none ever returned. On no occasion were any of these Biber or Linsen sighted by the maritime air patrols but two Biber were claimed sunk off Flushing soon after daylight on 26 December by Typhoon fighters of the 2nd Tactical Air Force. Naval claims amounted to six between the 23rd and 26th leaving 30 Biber whose fate is unknown. Stress of weather and navigational hazards were probably responsible for the majority.

ibid

On 27 December, the last 14 Biber at Hellevoetsluis were intended to leave in daylight under cover of a smoke screen but when manoeuvring in the dock, two of their torpedoes exploded prematurely sinking themselves and nine others as well as two harbour defence vessels. The tidal lock gates were damaged and the remaining three Biber were left hanging by their mooring lines.

The heavy losses sustained (115 Linsen and 52 Biber) caused Flag Officer North Sea Command to recommend that these types should be suspended until the Seehunde midget U-boats had been tried out in operations up the Scheldt but the Naval War Staff replied that the situation on the Western Front demanded immediate all-out action against Allied supply convoys in the Scheldt area,<sup>(1)</sup> and in this area there were ample opportunities for effective action by Biber. The Flag Officer commented caustically that as none of the Biber crews had so far ever returned it was impossible to assess the effectiveness of

(1) Bitter fighting was taking place in the Ardennes sector where General Von Runstedt had made a deep penetration in the Allied line.

their operations. However, the C.-in-C. Navy (Doenitz) insisted that after re-inforcement, Linsen, Biber and Molch operations were to continue though he classed their operations apart under an official description of Opferkämpfer (Literally - sacrificial suicide) and gave orders that the Small Battle Units were to be accorded special consideration by all Naval commands. There was never any lack of volunteers for this dangerous service.<sup>(1)</sup>

Meanwhile the first six Seehunde midget U-boats had left Germany by road on 24 December bound for Ymuiden followed by daily batches of six. By the end of December some 20 Seehunde were operationally ready and their first war cruises started on 1 January 1945.

(o) Air minelaying by the G.A.F.

In face of the difficulty experienced by E-boats and more so by Biber to lay mines in the Scheldt area, it seems at first sight strange that more use was not made of the G.A.F. to lay mines from the air. Mining in this area was regarded by the Germans as easily the most potent weapon against Allied shipping<sup>(2)</sup> and winter night conditions seem ideal for the low-level laying of mines from the air with small risk of loss from Allied counter measures.

Perusal of German records reveals little G.A.F. activity on this task. A few enemy aircraft laid parachute mines off Ostend during the night of 8/9 December, about eight aircraft laid mines in the West Scheldt during the night 26/27 December and about twenty minelaying aircraft were active in the Scheldt approaches and off Ostend after dusk on 23 January 1945. And that is all.

Although not specifically stated in German records, there seems little doubt that this meagre effort was not due to lack of intention but because the devastating bomber offensive, much intensified since 'D' day, had forced German aircraft output into defensive fighter production to the complete exclusion of types suitable for bombing or minelaying. What few remained in operation such as Ju.88, Ju.188, He.177 and Do.217 were spread thinly between Northern Norway for use against convoys to Russia and the Russian battle front itself. This absence from the Scheldt area was in fact one of the many valuable benefits to the Allied sea war conferred by the much criticized strategic bomber offensive on Germany. Appendix X gives facts to support this view.

(v) No. 18 Group operations - November and December 1944

At the 52nd meeting of the U-boat Warfare Committee held on 26 October, the A.O.C.-in-C. Coastal Command said that his best chance of finding U-boats in northern waters was near the Norwegian coast particularly at night but the presence of British submarines on anti-shipping patrols seriously restricted

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- (1) As an indication of the high regard in which the S.B.U. personnel were afterwards held, thirty of these men were being flown to Berlin at the end of April 1945, as a personal bodyguard for Hitler. Reference - German records.
- (2) This is confirmed by Allied figures. Up to 1 January 1945, out of total casualties of 28 vessels sunk and 14 damaged, mines accounted for 23 sunk and 13 damaged.

H.Q.C.C.  
O.R.B.  
Appendices  
Nos. 619,620,  
and 689.

his aircraft and he asked that this handicap might be lessened. The Admiralty representative said that the anti-shipping offensive had been given a very high priority and he doubted if much alteration could be brought about. The Chief of Staff to the Submarine Command said he would, in consultation with Coastal Command Headquarters, do as much as possible to adjust the bombing restriction areas necessary to safeguard our submarines so as to create a minimum of interference with air operations. After further consultations the Admiralty on the 16 November agreed to withdraw the submarine patrol which operated off the southwest coast of Norway but added that attacks on enemy shipping were just as important as anti-U-boat operations since the enemy's whole existence in Norway depended upon their seaborne supplies. As our submarine patrols were part of the anti-shipping strategy it was hoped that this withdrawal would be followed, not only by extended air A/U operations, but by intensified attacks by Coastal Command on enemy shipping in this area.

No. 18 Group  
O.R.B.  
Appendices.

Operation  
Ashfield  
See  
Appendix XI

Anti-shipping sorties by No. 18 Group were stepped up from 544 in October to 677 in November and 823 in December. It was, however, still difficult to find enemy shipping in positions suitable for attack even with the frequent employment of Drem dawn strikes and full daylight sweeps with Outriders. On only four occasions were small convoys found in November by the daylight operations. They resulted in five vessels being sunk and five more damaged for the loss of three aircraft. The Halifax night patrols made more frequent attacks and in the third week of November were re-inforced, after the withdrawal of the submarine patrol off S.W. Norway, by night rovers of torpedo carrying Beaufighters and Wellingtons armed with bombs. To provide datum points for these dark hour rovers the Drem System of flame markers was used soon after dusk. Thirty-five night attacks, mostly by the Halifaxes, accounted for two ships sunk and two damaged.

Slightly better results were obtained in December as the daylight Wing operations attacked on nine occasions sinking nine and damaging eight vessels. The forty-six night attacks, again mostly by the Halifaxes, damaged five ships, three of which were over 5,000 tons. The day operations at last provoked some action from the enemy fighter defence. On 7 December a sweep by the combined Banff and Dallachy Wings escorted by Mustangs, was attacked north of Aalesund by 15 to 20 Me.110's and F.W.190's. In the ensuing dog fight six enemy aircraft were destroyed for the loss of two Mosquitoes, one Beaufighter and a Mustang. No further fighter opposition was encountered till 26 December when the Banff Wing, after attacking shipping off Lervik was intercepted by 24 F.W.190's in the entrance to Bommel Fjord. One Mosquito was lost but three F.W.190's were shot down.

The year ended with the emphasis of the anti-shipping operations of Coastal Command placed almost entirely on the Norwegian coast. In the southern North Sea the flying was mainly directed against E-boats and small battle units endeavouring to interrupt the Thames/Antwerp supply line.

## CHAPTER VII - PART I

AERIAL MINELAYING - JUNE TO DECEMBER 1944 INCLUSIVE(i) Introduction

There were two aspects in the minelaying campaign which have not received sufficient attention in previous chapters on this subject in earlier volumes. This is because precise information was not available at the time they were written. After this World War II we are lucky enough to possess such a mass of German naval documents and day to day records as has never before been available to a victor. The Admiralty Foreign Document Section are an almost inexhaustible reservoir of evidence but it takes time for a given line of research on the part of a narrator to be translated from generalities into specific requests to this hard worked section and then for a meticulous search in the hundreds of relevant German files to result in a detailed answer.

Admty.  
F.D.S. 102/56

One of these aspects concerns the reaction of the enemy to our air minelaying from its inception in April 1940. German coastwise shipping was, on this account, officially put into convoy in the areas between South Norway and the Central Baltic on 14 May 1940. Convoy along the southern North Sea coast and down to Rotterdam was not started till the end of August 1940. In spite of the control over shipping movements and routes which convoy procedure gave, the losses to mine hazard were high relative to our limited mining from the air in its early days. (1) This 'happy time' for minelaying was due to the initial inexperience of German sweeping, insufficient numbers of mine-sweepers of all types, the continued presence of many independent ships and a lack of convoy discipline resulting in either rompers or stragglers who cut corners on swept routes.

From March 1941, the progressive rectification of these causes reduced enemy mining losses to tolerable figures except for short peaks in May, July and November 1941 following the introduction of new British firing assemblies in the mines. In each case the German technicians soon mastered them and the tonnage sunk per mine laid over the period March 1941 to February 1942, dropped to an average of 30. However, from March 1942, Bomber Command got into their stride of greatly increased monthly lays particularly in the area Kattegat to West Baltic (classified in these minelaying chapters as Area No. 1). Enemy losses, particularly in Area No. 1, rose rapidly and remained high until May 1943. It is in this period that the second aspect in the mining campaign comes into view.

The tempo of German sweeping and mine escort to convoys, which was geared to the earlier rate of British laying, could not cope with the very large increase in mines laid so that although the tonnage sunk per mine laid actually dropped to an average of 16, the very fact that so many more mines were being laid resulted in more ships being sunk. This continued until the German sweeping organisation could expand

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(1) Although the monthly lay between April 1940 and February 1941 averaged only 120 mines, the average tonnage sunk per mine laid was 80.

proportionately which it finally did by June 1943 and losses were once more reduced to tolerable figures in spite of further increases in monthly lays. Between June 1943 and January 1944, the average tonnage sunk per mine laid fell to a low of  $3\frac{1}{2}$ .

As we have seen in Volume IV Chapter XIII, Bomber Command started high level minelaying in January 1944 and the monthly lays again rose steeply to an all-time high in May 1944. Disappointingly, except for small peaks in January, March and May corresponding to fresh variations in the mine firing assemblies, the enemy losses remained well below 10,000 tons per month and the average tonnage sunk per mine laid rose only slightly to 6. However, this result was only achieved by the enemy impressing school and other auxiliary flotillas of surface craft hitherto unconnected with minesweeping. The C.-in-C. Navy, Doenitz, intimated his growing concern to Hitler early in May 1944 and said the strain was unlikely to abate until the late autumn when the 1943 programme of new construction would be coming into commission.

This chapter traces the course of events from June 1944 to the end of the war.<sup>(1)</sup> During the first half of this period the tonnage loss remained low but at the expense of high casualties among sweepers and convoy escorts. Traffic, particularly in No. 1 Area, was subjected to lengthy hold-ups before routes could be pronounced safe and before they were again fouled by subsequent air lays. From early in 1945 the situation materially worsened for the enemy by the heavy bombing of ports which brought to an end much of the vital repair work to refitting or damaged sweepers. This added to the constant drain of casualties inflicted on convoy mine escorts by Coastal Command's direct attacks at sea brought about a collapse in the sweeping organisation in March 1945 and resulted in the heaviest monthly mine loss of the whole war.

To save the reader having to refer back to Volume IV, certain general information on Air Mining is repeated here. The mines in use were the A Mark IV of 1,500 lb., the A Mark VI of 2,000 lb., fitted with a bomb fuse which detonated the mine if it was dropped on land, and the A Mark VII of 1,000 lbs.<sup>(2)</sup> The A Mark VI was a recent introduction and was gradually replacing the A Mark IV.

The firing components of these mines could be magnetic or a combination of magnetic and acoustic. The fusing clocks could be set to delay the active state of the mine after laying and a steriliser fitment could be set to render the mines dead after any desired period. In order to appreciate the

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(1) References used:-

A.H.B. files - ID4/83, II A1/21, II/69/170, 171 and 172, II/70/107 Part II, II/70/472, IIR/241/3/525(F).

Air Ministry File - S.1636/II.

Admty File - F.D.S. 102/56

- The number and location of mines laid is taken from the Admiralty's Encyclopedia of Gardening and Bomber Command Instruction No. 69 App. B.
- (2) There were a few A Mark III 1,500 lb. mines modified for stowage in Mosquito aircraft. The Mark VII was a slight improvement on the A Mark V mine, also of 1,000 lb. weight. Some of these were modified for carriage by Mosquitoes of No. 8 Group.

Fuehrer  
Conferences  
on Naval  
Affairs  
May 1944.

laying programme it must be remembered that mines laid in different areas required different steriliser settings. For instance, the big lays in May 1944 off French coasts were set for a short active life in view of the hoped for successful invasion landings; those laid in June and July were sterilised after an even shorter period so as not to endanger our own naval forces operating close in to coasts still held by the enemy. More easterly gardens had longer lives but even in the Kattegat and Western Baltic the sterilisers were set for 54 days. A routine 'sweetening' had therefore to be done if certain gardens were required to remain active continuously. On the other hand a series of gardens could be allowed to lapse so as to lull enemy suspicion before relaying them as a surprise. Finally, a number of ingenious refinements could be incorporated in the firing assemblies. For instance, mines could be set to detonate only if certain targets passed over them<sup>(1)</sup> and a clicker circuit could be included by which no detonation would take place until a pre-set number of activations had occurred. Thus an active mine could be passed over safely say six times but would detonate on the seventh occasion.

The A Marks IV and VI had been cleared for release with parachute attachment from altitudes up to 15,000 feet provided the depth of water exceeded 40 feet. High level minelaying (in these chapters anything above 10,000 feet) was by June 1944 a common procedure, particularly over those gardens to which the enemy was sensitive and which were consequently heavily defended by ground flak. Much special planning was done before sorties were despatched to known danger points so as to integrate them with spoof measures and current operations thereby minimising the risk from enemy night fighters. Losses among minelaying aircraft had thus been greatly reduced in spite of ever increasing monthly lays. The High level technique of course required the use of H2S (the position finding radar) and had been standardised in February 1944. However, the method was under constant review with time to time amendments.<sup>(2)</sup>

A.H.B./  
II/69/170  
and  
II/70/472

Much gardening was and continued to be performed at relatively low levels as A.O.Cs of Groups had discretion to choose the height having regard to the location, state of weather and conditions of enemy defence likely to be encountered. In the subsequent tables the term High Level sortie is, for statistical reasons, taken as 10,000 feet or above.

#### (11) Operations during June, July and August 1944

For the first ten days of June the laying continued at a very high rate with the support of operation Overlord as the same tactical objective. Over a thousand mines were put down, the heaviest deliveries being off Le Havre, Dunkirk, the

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- (1) The actuating magnetic field of force of a merchant vessel was different from that of the sperrbrecher type of mine protection vessel and these again were different from an M.class minesweeper.
  - (2) A new Bomber Command Operational Instruction No. 76 embodying these modifications was issued on 1 September 1944. This was later issued for general information as T.C.48 by the Air Ministry. A copy is contained in A.H.B./II/170/472.

Scheldt as far as Ymuiden to the east of the Normandy beaches and off Brest, Lorient and St. Nazaire to the westward.(1)

A.H.B./  
ID4/83

Owing to an explosion early in June at one of the main filling stations, the supply of mines fell off and the rate of laying after 10 June was much curtailed. In the last twenty days of the month only 755 mines were laid. These were mainly directed against the Biscay U-boat bases but included two new gardens off St. Peterport - Guernsey and Alderney where U-boats were reported to have called during their efforts to reach the Seine area.(2)

Only one aircraft was lost by enemy action during June, this was a Stirling of No. 3 Group missing from a low level sortie to Brest on the night of 23/24 June.(3) The short summer nights prevented any laying in the Baltic gardens, in fact the only lays eastward of Heligoland were on two nights when Mosquitoes of No. 8 Pathfinder Group laid eight at the junction of the Great and Little Belts.

A.H.B./  
ID4/83

During July the laying was still restricted, partly owing to the continued effect of the June explosion and partly because mine stocks were being built up in readiness for longer nights when the Baltic gardens could be well plastered. Consequently only 708 mines were laid during the month. Of these, about 45 per cent were put down off the Biscay U-boats bases, 45 per cent along the southern North Sea coast and the balance in the lower part of the Kattegat with a small lay towards the end of the month in the Kiel Bight. Now that the Allies were firmly established in Normandy no more mines were ever laid anywhere off Northern France. Two Lancasters of No. 5 Group were lost on low level sorties, one in the Kattegat and one off Kiel.

ibid

During August the mining effort was stepped up considerably. In connection with the progressive evacuation of Biscay ports by U-boats and surface craft over 900 mines were laid off these harbours for the loss of one Stirling. Minelaying in the Baltic was re-opened on a large scale and nearly 200 mines were laid off Kiel, 70 in the Cadet Channel, and 390 off Swinemunde and in Danzig Bay.

Almost half of these Baltic mines were planted on the night of 16/17 August when 46 Lancasters and 38 Halifaxes laid 329 mines for the loss of two Lancasters and three Halifaxes. Other big lays took place on the nights of 26/27 and 29/30 August when 41 and 46 aircraft laid 182 and 183 mines respectively for the loss of six Lancasters. The loss of eleven aircraft showed that the defence had not lessened since the last Baltic lays in April 1944 when 19 aircraft were lost in laying double the number of mines.

One special operation was undertaken in the mining of the Dortmund/Emms canal. This was done on the night of the 9/10

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- (1) These reinforced the 1,350 mines already laid in these areas during May 1944.
  - (2) The names of the gardens were Hostile Air and Hostile Ozone respectively.
  - (3) Two other aircraft crashed - a Halifax of No. 4 Group on landing back on 9 June and a Stirling of No. 3 Group when taking off on 12 June.

August by Mosquitoes of No. 8 Pathfinder Group. Armed with modified A Mark III 1,500 lb. mines, ten aircraft set out and succeeded in laying seven in the canal from low level with no loss.

No mines were laid in the Kattegat or anywhere along the southern shores of the North Sea. The details of laying giving Group, number of sorties and High or Low level are at Appendix XII. The number of mines planted in each garden and their location is given in Appendices XIII and XIV and illustrated on Maps No. 6 and 7 respectively. For ease of reference to the text the general distribution of laying is given below in a table.

General Distribution of mines laid in the Period						
	No. 1 Area	No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area	
Month	Kattegat The Belts Baltic	South Norway	Denmark to Dunkirk	North France	Biscay Ports	Total
June	8	--	534	366	870	1,778
July	119	--	283	--	306	708
Aug.	662	--	7	--	917	1,586
Totals	789	--	824	366	2,093	4,072

(iii) Results for June, July and August 1944.

Superficially the actual mine casualties during these three months seem disappointing in view of the 4,072 mines laid as the tonnage sunk per mine laid remained at the low figure of six. The aggregate sunk was 72 vessels totalling only 24,612 tons and 23 of 38,465 tons damaged. In addition four U-boats were sunk and three damaged. The number of surface vessels sounds impressive but contained only 15 medium sized cargo ships sunk and ten damaged. The brunt of the losses fell on the enemy's minesweeper and escort craft, no less than 33 being sunk and eight damaged. As the Germans were already feeling a shortage of these craft this score was valuable. The balance of sinkings was made up of 24 non-combatant fishing craft, tugs and small barges totalling but 2,254 tons with five of 671 tons damaged.

As the tactical objective of R.A.F. mining varied in the period the specific results are considered month by month. In the table below is given the geographical distribution of the casualties. At Appendix XV is a chronological and detailed list giving individual name, type, tonnage and position.

Vessels sunk by R.A.F. laid mines						
Month	No. 1 Area Kattegat Belts Baltic	No. 2 Area South Norway	No. 3 Area Denmark to Dunkirk	No. 4 Area North France	No. 5 Area Biscay Ports	Total
June	8-4,250	--	15-3,390	2- 708	5-1,315	30-9,663
July	3-1,250	--	7-4,428	2- 330	2- 486 plus 1 U/B	14-6,491 plus 1 U/B
August	10-2,598 plus 1 U/B	--	0-3,349	--	10-2,514 plus 2 U/B's	28-8,461 plus 3 U/B's
Totals	21-8,098 plus 1 U/B	Nil	30-11,167	4-1,038	17-4,315 plus 3 U/B's	72-24,618 plus 4 U/B's



Vessels damaged by R.A.F. laid mines						
Month	No. 1 Area Kattegat Belts Baltic	No. 2 Area South Norway	No. 3 Area Denmark to Dunkirk	No. 4 Area North France	No. 5 Area Biscay Ports	Total
June	3-15,466	-	2-3,945	-	-	5-19,411
July	4- 6,607	-	2-1,605	-	-	6-8,212
Aug.	(12-10,842 (plus 1 U/B	-	-	-	2 U/B's	(12-10,842 (plus 3 U/Bs
Totals	(19-32,915 (plus 1 U/B	Nil	4-5,550	Nil	2 U/B's	(23-38,465 (plus 3 U/Bs

## (a) - June

As the mining campaign during this, and the previous month, was in support of the Normandy landings it is of interest to note the low enemy losses in the crucial No. 4 Area and off the Biscay Ports. One point needs stressing here. The mining by the R.A.F. was in combination with ground mining by Naval Coastal Force craft at various points along the enemy coast. This naval effort, which amounted to 880 mines in May and 178 in June was limited by their range to the stretch between North Brittany and the Texel.(1) The Naval laid fields were entirely separate from the R.A.F. gardens and there is no difficulty in deciding the authorship of sinkings knowing as we do from German records the position of such losses. Unless otherwise stated all mine losses in this chapter are due to R.A.F. laid mines.

During June, the enemy's loss due to mines of all kinds laid either in the deeper water in the Channel or off the coast of Northern France was only two patrol boats, two E-boats and an R-boat minesweeper. The latter three craft fell to Naval laid fields. The Biscay mining claimed two patrol craft, two auxiliary minesweepers and a fishing vessel - all on R.A.F. laid mines.(2)

No. 3 Area paid a better dividend. Fifteen vessels were sunk consisting of one merchant ship, one landing craft, six auxiliary minesweepers, three patrol craft, a tug and three fishing vessels. Another merchant ship and a sperrbrecher were damaged. All these casualties were caused by R.A.F. laid mines. Away to the east, no loss occurred in No. 2 Area which had not been mined since February 1944 and virtually no mines were laid in No. 1 Area during June but here the lays off Kiel and in the Kattegat during May were still active. During June four merchant vessels, two patrol craft and two fishing vessels were sunk and three large merchantmen were damaged.

- (1) In addition, a number of tactical fields of moored mines in deeper water had been laid in mid-Channel and approaches by regular Naval minelayers.
- (2) During May, the enemy losses in these two areas were even less. Off northern France one R-boat foundered in an R.A.F. garden and another R-boat in an inshore Naval field and south of the Gironde one M. class minesweeper was sunk in an R.A.F. garden.

Admty.  
Historical  
Branch

(b) July

This was a month of reduced mining while stocks were being built up for August. Such laying as was done was mostly off the North Sea coast of Germany and the Biscay ports. Enemy losses fell proportionately. In No. 3 Area the casualties were three merchant ships, two landing craft, an auxiliary minelayer and a fishing vessel sunk and one merchantman damaged. In No. 4 Area two barges were lost off Le Havre and in No. 5 Area two auxiliary craft and a U-boat (U.415). All these were on R.A.F. laid mines. To the eastward in No. 1 Area the May lay claimed another merchantman sunk and two more damaged. Two fishing vessels were also sunk and another two damaged.

(c) August

The objectives were the evacuation traffic from the Biscay ports and the re-opening of the Baltic offensive. Good results were obtained in both areas. For the first time there was a reasonable return on the consistently heavy lays off Biscay ports. Mining here had always been most unrewarding, largely due to the fact that deep water extends close up to the coast. The ports have no shallow estuaries so that water suitable for groundmining is limited and swept channels can be short and easily maintained by regular minesweeping.<sup>(1)</sup> However, during August the Allied military advance into northwest France compelled a progressive evacuation of these ports. Under this stress and the direct attacks at sea by Coastal Command aircraft and Naval surface forces the minesweeping collapsed. Two U-boats (U.180 and U.667) three coasters, four minesweepers, a patrol craft and two tugs were sunk on mines and two more U-boats (U.547 and U.981) were damaged.

No. 4 Area yielded one last sinking, that of a gunboat to the west of Fecamp. This occurred in a Naval laid field and was the last of such casualties. Naval Coastal Forces ceased laying during this month. No. 3 Area bagged one merchant ship and a patrol craft in the Elbe estuary and one auxiliary sweeper off the west Scheldt. Five fishing vessels fell victims to a garden off West Denmark which had recently been planted. The placing of seven mines in the Dortmund/Ems canal disappointingly had no result. Although the Germans record the presence of aircraft over the canal that night, there is no indication that they were aware of the minelaying. No casualties occurred and the canal traffic was uninterrupted.

The main interest of the month centres on the western Baltic. Minelaying here re-started in mid-August in conjunction with a heavy bombing attack on Stettin. On 17 August the British Admiralty declared the Baltic to be a mined area and warned neutrals that specified areas could only be used at their own risk.

Mining casualties from the first lays resulted immediately.<sup>(2)</sup> On the 17th, two merchantmen were mined,

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- (1) Up to 31 July 1944, 12,400 mines had been laid by the R.A.F. off Biscay ports causing the loss of only 54 vessels totalling but 19,500 tons plus four U-boats.
  - (2) These lays took place in the Kiel Bight, off Swinemunde and in the Cadet Channel, a total of 313 mines.

one in the Kiel Bight and the other in the Cadet Channel. Two patrol craft struck mines off Swinemunde followed on the 19th by a coaster, and a sperrbrecher. Numerous standard traffic routes (the German name was 'Ways') were promptly closed which caused congestion of shipping in port with the consequent danger to bombing. The raid by Bomber Command on Stettin destroyed five ships and damaged a further six.

Admty.  
F.D.S. 102/56

Although the main Ways between Kiel and Swinemunde were swept and re-opened within a few days, the enemy was unable to cope fully owing to the acute shortage of minesweeping craft and they were closed again on 30 August. The secondary routes had to be neglected in order to concentrate on the main routes. A system of compulsory routeing, for which plans had been prepared about a year previously, was introduced. These were buoyed and along certain stretches minesweeper escort was obligatory. This latter was first implemented on 19 August to ensure the regularity of supplies to the German armies further north in Russia. Most of the 'Ways' were re-opened by the 1 September.

(iv) The serious effect on U-boat trials and training

Mine casualties persisted particularly off Swinemunde with occasional incidents in the Kiel Bight and Kattegat until the last week of August, when two lays of mines were put down in Danzig Bay for the loss of five Lancasters. The effect of these 171 mines was out of all proportion to the loss of a patrol craft and U.1000 which immediately resulted.

See Map 8

The whole of new U-boat acceptance trials, all elementary U-boat training, basic tactical training, technical training and torpedo firing training took place in the Gulf of Danzig. This area of some 50 miles by 40 was admirably suited as it was compact, secluded from the war and for the most part over 300 feet in depth. In order to give some idea of the extent and great importance attached by the German Navy to the meticulous trials and training of new U-boats and their crews, a full account of this organisation is given at Appendix XVI. Here it is necessary to state that only about 40 per cent of all commissioned U-boats were operational, the rest being new U-boats working-up and school boats training new entries. After acceptance trials each new U-boat did at least 3½ months of rigorous working-up exercises in the Danzig Bay area, it having been realised that nothing shorter could give new boats a reasonable chance of survival against Allied countermeasures.

In view of the British declaration of intention to mine the Baltic, the Germans fully expected that mining would cover all waters in the Western and Central Baltic. Regarding Danzig Bay, they reasoned that we would realise that ground mines in the majority of the area would only incommode U-boats when engaged on deep diving trials and they therefore fully expected we would drop moored mines as well. (1)

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(1) As the Germans had designed a moored mine for deep water which could be dropped by aircraft, they presumed that we also had developed this type but this was not so. Actually it was not till November 1944 that the Germans encountered the first moored mines in the Baltic. These were found on the supply route to more northern Baltic ports and in isolated cases in the U-boat exercising area. In fact they were laid by Russian submarines.

Admty.  
F.D.S. 102/56

When therefore the presence of hostile aircraft was noted over the Danzig Bay area on the nights of 26/27 and 29/30 August all U-boat training areas and the shipping routes from Kiel were closed.

See Map 8

Sweeping located only a few mines and it was assumed that a new variety of firing assembly had been incorporated. This necessitated meticulous sweeping with strict convoying and meant unavoidable delay in re-opening any of the U-boat training areas. To anticipate the narrative, on 6 September Admiral von Friedeburg, who was responsible for all U-boat trials and training, reported that the mine situation in the Gulf of Danzig was preventing him from carrying out trial schedules, particularly those connected with the new Types XXI and XXIII. He urgently requested the clearance of at least the U-boat Acceptance area which lay close off Hela as well as provision for adequate mine escort for U-boats proceeding via the compulsory routes to this area. The only outcome was that on 8 September a part of the deep water technical training area was re-opened but with the restriction that U-boats must keep at least 50 metres (162 feet) of water under the keel.

More hostile aircraft were detected over the Gulf on the night of 15/16 September (1) and no other parts of the training area were re-opened until:-

20 September - The Acceptance area off Hela.

24 September - Part of the general torpedo firing area but restricted to keeping more than 50 metres under the keel.

ibid

1 October - Part of the C.O's torpedo firing area but restricted to a diving depth of 35 metres (114 ft.)

Between the 4th and 8th October two sperrbrechers and a tug were damaged by mine explosions and it was not till 14 October that the basic tactical training and parts of the elementary training areas were re-opened with restrictions to keep more than 50 metres under the keel. After another eight days of sweeping a further part of the general torpedo firing area was pronounced safe but still with the same restrictions. On 8 November the other Acceptance area in the south of the Gulf was brought back into service.

For a further six weeks the partially re-opened areas continued to be used with occasional scares when merchant ships were mined in the traffic route skirting the Gulf. Then on the 15th/16th and 18th/19th December Bomber Command Lancasters laid a total of 113 mines in the western half of the Gulf with the loss of one aircraft.(2) Although the immediate mining result was only damage to one merchant ship off Gdynia, on 21 December the German Naval War Staff recorded that following renewed enemy minelaying all trials by the U-boat Acceptance Command had once more been brought to a complete standstill and that transfer to another suitable area was not practicable.

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(1) On this night Bomber Command Lancasters laid 75 mines off Hela and Pillau with no loss of aircraft.

(2) This minelaying was combined with an attack on Gdynia by 227 Bomber Command Lancasters on the night of 18/19 in which nine ships totalling 17,763 tons were destroyed, the old battleships Schleswig-Holstein and a 22,000 ton oil refinery ship badly damaged, and Type XXI - U.2512 put out of action. No aircraft were lost.

On 1 January 1945, the Naval Staff directed that priority be given to the clearance of mines from the Acceptance areas but in spite of this order Admiral Friedeburg was compelled to close the whole of the Gulf of Danzig on 8 January following further British minelaying which had occurred two days previously.<sup>(1)</sup> The U-boat training area in the Gulf of Danzig was never again re-opened to the full limits and in February 1945 was transferred to new areas in Lubeck Bay, an inferior location from every point of view.

This is a classic example of the right weapon being put in the right place with the greatest economy. Between 26 August 1944 and 7 January 1945, Bomber Command despatched 107 Lancasters to the Gulf of Danzig where they laid 488 mines at the cost of seven aircraft. Although the enemy casualties were trifling, (four vessels of 14,411 tons and a U-boat sunk, five vessels of 5,973 tons damaged), the whole U-boat acceptance, exercise and readiness programme was delayed for months, finally brought to a full stop and compelled to transfer to an inferior area. The further story of this area in Lubeck Bay is mentioned in a later section but enough has been recounted here to spotlight the hitherto unrecognised and vital part played by Bomber Command's minelaying in the smothering of any resumption of the U-boat war with the formidable new prefabricated types of submarine.

(v) The Swedish embargo on trade with Germany

Although Sweden preserved her neutrality throughout the war, her geographical position made it certain that most of her trade would be with Germany. Much of this was in iron ore and timber exports with coal imports between the Baltic ports of both countries, a lesser amount was from the eastern Swedish ports in the Kattegat. In addition, Germany chartered many Swedish ships to augment her own carrying capacity both in the Kattegat/Baltic area and to ply through the Kiel Canal along the southern shores of the North Sea down as far as Rotterdam.

From April 1940 both areas were periodically fouled with air laid mines but only the North Sea stretch was subject to direct air attack at sea. During 1943 an additional risk to Swedish ships was added by the growing scale and accuracy of Allied air raids on German ports. Casualties to Swedish merchant ships steadily mounted and by the end of 1943 had reached:-

Cause	Sunk	Damaged
By Air Mining at Sea	28-68,282	16-42,816
By R.A.F. attack at Sea	8-18,342	12-33,617
By Air-raid in Port	3- 2,715	14-23,619
Totals	39-89,339	42-100,052

It will be seen that mining constituted by far the greatest hazard. Swedish ship owners demanded an ever increasing bonus

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(1) This was the laying of 129 mines spread over the Gulf by Bomber Command Lancasters for the loss of one aircraft on the night of the 6/7 January.

when chartered by the Germans, while insurance and freight charges rose continuously, moreover crews became more loth to sail to any German port.

During the first six months of 1944, further casualties occurred. Well aware of the dissatisfaction in Swedish shipping circles, the Allies early in July 1944 made representations to the Swedish Government that all Swedish tonnage trading with enemy ports should be withdrawn. The Swedish Government, reluctant to make an open break, contented itself on 10 August by withdrawing marine insurance for Swedish ships sailing to Dutch and those German ports lying westward of Kiel. Meantime in July and up to mid-August another three Swedish ships had been sunk and five damaged, four of the latter in air-raids.

Determined to strike while Swedish official opinion was wavering, a further reminder to the Swedish Government on the dangers of continuing to trade with Germany was timed to coincide with the re-opening of minelaying in the Kattegat/Baltic area and the air-raid on Stettin both of which took place as we know on the night of the 16/17 August. Among the ships destroyed or damaged by this raid were three Swedes and two other Swedish craft fell victims to mines soon after. On 18 August the Swedish Government withdrew marine insurance for all Swedish ships sailing to any Axis ports whatsoever. By this time Swedish losses had reached the following figures:-

Cause	Sunk	Damaged
By Air mining at Sea	36-74, 164	21-47, 618
By R.A.F. attack at Sea	10-21, 657	13-34, 541
By Air-raid in Port	5- 5, 579	32-52, 014
Totals	51-101, 400	66-134, 173

#### The Sequel

Having thus taken the plunge the Swedish Government, in order to avoid incidents in their territorial waters, closed all their Baltic ports to German shipping on 27 September 1944, but German ships continued to trade to the Swedish ports in the Kattegat and Skagerrack. It was not till 1 January 1945 that the Swedish Government took the final step of placing a total embargo on exports to and imports from Germany. With the exception of Red Cross and food consignments to Norway approved by the Allies, all Swedish trade with Germany and German controlled countries then ceased.

#### Conclusion

Cumulative loss up to mid-1944 and increasing hazards probable in the immediate future appear to have caused the Swedish Governmental decision but it is not known which hazard was uppermost in mind. The figures certainly show that mining was the most deadly, with the moral effect of damage in port by air-raid as a good second.

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(vi) - Operations during the period September to December 1944  
Inclusive

By the beginning of September most of France had been liberated and the tide of war had receded to the Dutch frontier. No further air minelaying was done off the Biscay coast or along the northern shores of France and Belgium. Mining sorties fell accordingly and only 748 were laid during September. Apart from the planting of 18 mines off the Texel, the laying in No. 3 Area was limited to gardens eastward of Borkum and these only totalled 117. The bulk of the laying took place in the Kattegat (158 mines) and in the main shipping channel between Kiel and Cape Arkona, off Swinemunde and in the Gulf of Danzig totalling 415 mines. Two Lancasters of No. 3 Group were lost on high level sorties off Swinemunde and one westward of Cape Arkona, all to enemy night fighters.

One innovation of the month was the re-opening of air laying in southern Norwegian waters. On the nights of the 12th/13th and 15th/16th, Halifaxes of No. 6 Group laid 40 mines off the harbour of Oslo for the loss of one aircraft to ground flak. These and the subsequent heavier monthly lays in both this and the Kattegat gardens were directed against the supply and military traffic to and from Norway. Norwegian ports were now becoming the main bases for all operational U-boats and required an increasing tonnage of stores and supplies. In the reverse direction, the Germans were transferring army divisions back to the homeland.

In spite of a long spell of bad weather in the middle of October, the number of sorties was stepped up and 1,133 mines were laid. The majority went into the Kattegat and Oslo area. A second garden was instituted in this latter area situated in the approaches to the port of Drammen, some 20 miles west of Oslo. This was designated Onions II and the port of Oslo became Onions I. In No. 3 Area the garden off the Texel received a final 24 mines and 164 others were planted in the Heligoland Bight. Aircraft losses were heavier than usual. Four Lancasters of Nos. 1 and 5 Groups and two Halifaxes of Nos. 4 and 6 Groups were missing from the Kattegat, one Lancaster of No. 1 Group was lost off Heligoland and one Halifax of No. 6 Group in the Oslo fjord. All were on high level sorties and it was thought that enemy fighters were responsible.

There was also a special operation to the Kiel Canal which was carried out by Mosquitoes of No. 8 Pathfinder Group. Nine of these aircraft set out on the night of the 5/6 October (armed with 5 - A Mark III and 4 - A Mark VII mines) preceded by five routemarkers from the same Group. All nine mines were claimed to have been put down in the western half of the canal. There were no aircraft losses though one was badly shot about by flak.

During November, bad weather at bases and persistent widespread low cloud over the North Sea prevented much of the routine sweetening up of gardens. Only 750 mines were laid, mostly in the Kattegat (210 mines) and the Oslo Fjord area (345 mines) where two new gardens were introduced. These were:-

Onions III - In the approaches to Mosse, a port on the eastern side of the main Oslo Fjord.

Onions IV - On the opposite side of the Fjord off Horten. This was a naval base and was much used by newly operational U-boats before starting their first war cruise and as a final exercise area for Schnorchel training.

In all, 329 mines were laid in the Onion gardens and a further 16 off Frederikstad, yet another port on the eastern side of the entrance to Oslo Fjord. No mines were laid in the Baltic but 195 were put down in the Heligoland Bight. Aircraft casualties were confined to one Lancaster of No. 3 Group missing from the Oslo Fjord area and one Halifax of No. 6 Group which crashed on landing back from a sortie to the Kattegat.

Very bad weather persisted until the middle of December but thereafter sorties were stepped up considerably and a total of 1,160 mines were laid during the month. The Baltic was revisited and Danzig Bay (113 mines), Swinemunde (97 mines) and the Cadet Channel (54 mines) all received attention. The bulk of the lay was once more in the Kattegat and the Oslo Fjord Onion gardens with 509 and 264 mines respectively. Two new gardens were initiated both on the south coast of Norway:-

See Map  
Nos. 6 and 7.

Polyanthus VI - situated in the entrance to Langesund Fjord, at the top end of which were the ports of Porsgrund and Skien, where 32 mines were laid.

Polyanthus VII - situated at the entrance to Sandefjord, up which was the port of that name, where 28 were laid.

In No. 3 Area, only 53 mines were laid in the Heligoland Bight. Aircraft losses remained low. Two high level Lancasters of No. 5 Group were missing, one in Danzig Bay and the other in the Kattegat, and one low level Halifax of No. 6 Group was shot down by ground flak in Sandefjord.

The details of sorties are at Appendices XII, XIII and XIV with the location of gardens on Map 6. The general distribution of mines laid during the four month period is given in the table below. From September onwards the enemy traffic in No. 1 Area became the main objective in the mine campaign. Because this traffic was distinct as between that through the Kattegat to and from Norway and that in the Baltic between Kiel and the ports further east, the mining in these two halves of No. 1 Area is given separately.

Month	No. 1 Area		No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area	Totals
	IA Kattegat	IB Baltic	South Norway	Heligoland to The Texel	North France	Biscay	
Sept.	158	415	40	135	-	-	748
Oct.	808	9	128	188	-	-	1,133
Nov.	210	-	345	195	-	-	750
Dec.	509	264	324	63	-	-	1,160
Four Months Totals	1,685	688	837	581	N11	N11	3,791
2,373							



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(vii) - Results for the period September to December 1944  
Inclusive

General

Very nearly the same number of mines were laid during these four months as had been during the previous three but the tonnage sunk per mine laid rose from 6 to 13. Although the number of vessels sunk fell from 72 to 52 the tonnage was doubled and the damaged figures were not far short of being twice both in numbers and tonnage. The location had, of course, changed as the heavy but unremunerative lays in the Biscay area had ceased while the lengthening nights enabled a plastering of the far more rewarding shallow areas in the Kattegat and Baltic. As might be expected the majority of enemy casualties occurred in No. 1 Area but even so, on a numerical basis, they do not constitute a particularly good return for 2,373 mines laid there. The effects on enemy traffic and planning were, however, extremely satisfactory and are considered in detail month by month in the three main mining areas. The geographical distribution of enemy losses is given in the two tables below and, as for the minelaying figures, No. 1 Area is split into its two halves of the Kattegat and Baltic.

Vessels sunk by R.A.F. laid mines							
Month	No. 1 Area		No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area	Monthly Totals
	IA Kattegat	IB Baltic	South Norway	Heligoland to The Texel	North France	Biscay	
Sept.	2-8,080	5-3,773	--	4-2,129	--	--	11-13,982
Oct.	9-6,410	2-399	--	2-3,070	--	1-331	14-10,210
Nov.	2-457	7-9,057	4-305	--	--	--	13-9,819
Dec.	7-2,037	( 6-13,221 ( plus 1 U/B	1-658	--	--	--	(14-15,916 (plus 1 U/B
	20-16,984	20-26,450 plus 1 U/B	5-963	6-5,199	N11	1-331	52-49,927 plus 1 U/B
	40-43,434 plus 1 U/B						

Vessels damaged by R.A.F. laid mines							
Month	No. 1 Area		No. 2 Area	No. 3 Area	No. 4 Area	No. 5 Area	Monthly Totals
	IA Kattegat	IB Baltic	South Norway	Heligoland to The Texel	North France	Biscay	
Sept.	2-1,686	6-15,392	--	1-5,193	--	--	9-22,271
Oct.	6-4,208	5-5,644 plus 1 U/B	1-2,978	--	--	--	(12-12,830 (plus 1 U/B
Nov.	7-6,411	3-6,379	--	--	--	--	10-12,790
Dec.	4-5,743	4-8,306 plus 1 U/B	4-510	--	--	--	(12-14,559 (plus 1 U/B
	19-18,048	18-35,721 plus 2 U/B.s	5-3,488	1-5,193	N11	N11	43-62,450 plus 2 U/B.s
	37-53,769 plus 2 U/B.s						

(b) - September

Admty  
F.D.S. 102/56

The big lays in the Baltic which took place on the nights of the 11th/12th and 15th/16th totalling 415 mines caused most of the routes in and leading from the Kiel Bight to the eastward to be closed between the 12 and 18 September. However, a number of mines fell on land which enabled specialists from the German Torpedo and Mines Department to dismantle them and examine their characteristics thus facilitating a quick adaption of sweeping gear and procedure. All routes were re-opened by 19 September but shipping had to have a mine escort. This was still obligatory at the end of the month but thereafter was only enforced between Cape Arkona and Pillau in the Gulf of Danzig. The profound effect of the mining in this latter area on the U-boat organisation has been described in section (iv). Ship casualties during this month in the Western Baltic amounted to three merchantmen sunk and two damaged (one a big one of 13,882 tons), two naval auxiliaries sunk and four including a sperrbrecher damaged.

The 158 mines laid in Kattegat gardens caused no closing of traffic routes. Casualties were confined to two merchant ships sunk and two damaged. No loss occurred as yet in No. 2 Area. In No. 3 Area, one cargo vessel was sunk and one damaged both off the Elbe estuary and one patrol craft was lost to the south of Horn Reefs. Two fishing craft fell victims in these gardens.

(c) - The Kiel Canal

ibid

Immediately after the Mosquito sorties to the Kiel Canal after dark on the 5 October, the mine watchers reported one in the Canal near the 52.5 Kilometre mark, four or five near the 36 Kilometre mark and one near the 21 mark.<sup>(1)</sup> Three more mines were found on land near the 36, 36.8 and 41.4 marks. The Canal was immediately closed to traffic between the 56.8 Km. mark and Brunsbuttel. Although all available craft were put on to sweep the canal, not a single mine was located up to 11 October and it was re-opened. Shipping was only allowed through in convoy with a strong groundmine escort sweeping ahead. On 13 October, when leading the escort ahead of a convoy, the trawler Steinbutt - 291 tons sank on a mine at the 52.4 Km. mark. This spot had previously been traversed 49 times by minesweepers. Traffic was immediately stopped again and the stretch once more thoroughly searched but without result. On 14 October, passage in convoy was again permitted but only for ships of less than 18 feet draught and 3,000 G.R.T. On 18 October, this was extended to include ships up to 20 feet draught and 4,000 G.R.T. Compulsory escort was limited to the stretch between the 57 Km. and 21 Km. marks. On 20 October the limit was raised to 26 feet draught. On the 26th the wreck of the Steinbutt was removed and from 28 October escort was only compulsory for ships of over 1,000 G.R.T. This incident shows what delays can result from half a dozen mines and one small casualty in an important waterway.

(1) The Kiel Canal is 99 Kilometres long and is marked off in Kilometres from Brunsbuttel (the 1 Km. Mark) to Holtenau at the Kiel end (the 99 Km. mark).

(d) October to December inclusive in Nos. 1, 2 and 3 AreasThe Oslo Fjord area

The small minelay in mid-September had no results and caused no concern to the enemy but after air mining was observed on the night of the 4/5 October, Oslo harbour and approaches was closed to traffic. It was not reopened until 13 October when concentrated sweeping was deemed to have reduced the danger to a minimum. In the interest of a quick turn round of traffic, orders were given that convoys should use Oslo only if absolutely essential, otherwise they should make for alternative harbours in the main Fjord (1) and were to have mine escort right into the anchorages. After British air activity had been reported at night on 24 October the Oslo and Drammen Fjords north of latitude 5930 N were closed and on the following day the Naval C.-in-C. Norway gave instructions for a line of buoys to be laid along Oslo Fjord fairway so that sweeping could be concentrated along this stretch.

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After the air mining on the night of 28/29 October, six mines were found on land. An examination brought to light new firing mechanisms and settings the sweeping of which would require considerable numbers of craft with much alteration in the sweeping gear. It proved impossible to cope quickly since several harbours in the area had been mined simultaneously. Oslo, Laurvik and Drammen had to be closed which resulted in serious congestion in Moss, Fredrikstad and Brevik. It was decided that in future convoys would be restarted after two days sweeping and the making of additional covering runs to complete the maximum number of actuations known to have been set on the clicker circuits of the dismantled mines.

On 2 November traffic was restarted from Oslo with more valuable ships accompanied by groundmine escort but following more air mining on 11 November it was again stopped. After concentrating all minesweeping craft on the Oslo Approaches some shipping was able to proceed on 16 November but further mining on the 21st caused this stretch to be closed once again. It had not been re-opened by the 27 November when still more mining took place and the situation in the whole of Oslo Fjord area became critical. The following measures were introduced:-

1. - Oslo Approaches and main Fjord - Minesweeping by the local force was stopped on 1 December and thereafter was to be carried out by the convoy escorts. The sweepers thereby released were to be employed:-

- (a) In Drammen Fjord - Six covering runs and then re-open to traffic.
- (b) The anchorages at Falkenstein Bukta, Frebergvik, Holmstrand Fjord and Sande Bukta - each to have fourteen covering runs and then re-open to traffic.
- (c) Moss Sundet, Horten harbour, Horten roads and other areas where mining was reported - each to have fourteen covering runs and to be re-opened as soon as possible after 3 December.

ibid

(1) Needless to say these other ports had inferior rail communications neither were the dock facilities comparable to Oslo.

2. - Fredrikstad main entrance - Sweeping was to be carried out till 3 December by two local harbour defence vessels. Thereafter ships were to be permitted through following a double check by the escorts of each convoy. If no mines were exploded, the restrictions were to lapse at the end of 14 days.

After one sweeper casualty in Drammen Fjord on 4 December the whole Oslo Fjord area was again re-opened. Air mining was resumed on the 13 December and from this date both the Horten and Moss roads had to be closed. Mining sorties to all the Oslo Fjord ports were almost continuous during the remainder of December and the situation got worse and worse. On 19 December the N.O.I.C. Oslo Fjord stated that in view of the lengthy periods required to refit the overworked sweepers, replace worn out gear and the shortage of special fittings it was impossible to clear either the Oslo area or the approaches to Horten where vessels including a U-boat had been immobilised in the harbour since 13 December. On 22 December the ferry service and convoys to and from Moss and Horten had to be stopped again and by the end of the month, after still further minelaying, the main traffic to and from Norway was thoroughly disorganised with the situation worsened by bombing attacks. (1)

The actual mine casualties for this three month period were not heavy, being one small cargo vessel, two sweepers, a tug and a fishing craft sunk, and one merchantman and four sweepers damaged. As in the Gulf of Danzig the effect was out of all proportion to the loss. According to the German records only 66 mines were cleared by them but 147 mines were found on land thus enabling them to keep abreast of our firing technique. This substantiates their claim that the disorganisation was due purely to the chronic shortage of sweepers.

#### The Kattegat area

During these three months, traffic suffered similar hold-ups as in the Oslo Fjord area. There were three main routes running up through the Little Belt, Great Belt and the Sound all converging on the exit into the Skagerrack at the northern end. These had numerous cross connecting routes and feeders from the ports on both sides of the Kattegat. The Germans had a system of local patrol boats throughout the area who reported by signal their observations during our mining operations. Those channels or sections of route where mining was suspected were immediately closed to traffic and not re-opened until the mines had been cleared or the area searched without finding any. Here again it was not the ingenuity of the mine setting (vitiating anyway by dismantling those found on land) but the scarcity of sweepers which caused the considerable hold-ups. Every one of the 'Ways' had to be kept closed for periods varying from three to fourteen days at a time during the period. As the mining became more

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(1) This no doubt alluded to an attack on Horten during the night of 28/29 December by 65 Lancasters and Mosquitoes which destroyed two merchant ships and U-735, and damaged two other ships and U-682. It was followed on the night of 31 December by a raid on Oslo anchorage by 26 Lancasters which severely damaged a 7,000 ton merchantman.

incessant during the last half of December, whole stretches were out of use well into January 1945.

Casualties were moderate, four merchant ships being sunk and ten damaged. Sweepers and patrol craft suffered six sunk and seven damaged. The balance was made up of eight non-combatant fishing vessels sunk. The Naval Command's motto was safety before speed but after entering the deep water of the Skagerrack the convoys' troubles were not over because December marked the intensification of night bombing by Coastal Command Halifax rovers from No. 18 Group. By the end of the year the Admiral Commanding the Skagerrack insisted that convoys in his area should be limited to two merchant ships since larger convoys were more likely to be spotted by British reconnaissance and provided a better target for heavy bombing attacks.

#### The Southern Baltic

After mid-September 1944 no mining took place until the last half of December. The various routes out of the Kiel Bight to the north and to the east extending to the Gulf of Danzig had been re-opened on 18 September. Normal convoy schedules were maintained through October, November and up to mid-December at the expense of quite tolerable losses these being three merchant ships, four auxiliaries (one a converted liner of 12,181 tons) and four non-combatant craft sunk, and four merchant ships, four auxiliaries (including two sperrbrechers), two Type XXI U-boats and a tug damaged. Thereafter the air mining, particularly the three operations between the 18 and 22 December, (1) created a serious situation. The coastal route from Swinemunde to Gdynia had to be closed which caused immediate congestion in harbours.(2) When the accumulation became too great, ships were allowed to proceed in pairs unescorted by the deep water route but after the Baltenland - 3,042 tons was sunk on 25 December by a Russian submarine, when 40 miles northward of Stolpmunde, escorts had to be made compulsory in spite of the acute shortage of such craft. During the last nine days of the year mine casualties, all between the Cadet Channel and Swinemunde, amounted to two merchant ships sunk and two more damaged, two auxiliaries and a Type XXIII U-boat sunk and one auxiliary damaged. Most of the routes eastward of Sassnitz remained closed until the end of 1944 because there were not enough sweepers to clear them and only the most urgent east/west convoys were undertaken.

#### No. 3 Area

Little traffic traversed this area westward of Borkum and the short stretch between Borkum and the River Elbe was not difficult to keep clear even with limited numbers of sweepers. Casualties were therefore very low, only one merchant ship and a survey vessel sunk and none damaged.

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- (1) These operations laid 55 mines off Gdynia, 54 in the Cadet Channel and 97 off and to the north of Swinemunde.
  - (2) Mention has been made in Section (iv) of the advantage taken to exploit this congestion by Bomber Command's attack on Gdynia during the night of 18/19 December.

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(viii) - Conclusion

Had we not had access since the war to contemporary wartime German records it might well have been assumed that the air mining campaign after June 1944 became less and less worth while relative to the large numbers of mines laid. It has already been advanced since the war that mining had a trifling effect on the U-boat war. The writer considers that this chapter puts a new complexion on the oft forgotten part played by Bomber Command's minelayers; it certainly demonstrates the danger of adopting the counting of heads as a yardstick of efficacy.

CHAPTER VII - PART II - AERIAL MINELAYING -  
JANUARY TO 8 MAY 1945

(1) General remarks

During the concluding four months of war the minelaying policy continued to aim at the maximum disorganisation of enemy shipping movement in the Western Baltic and on the route between Germany and South Norway. To this end no more mines were laid westward of the River Weser estuary or, after early January, to the eastward of Swinemunde but five new gardens were sown along the southern Norwegian coast:-

Polyanthus I            off Kristiansand South

Polyanthus 2            off Lillesand

Polyanthus 3            off Grimstad

Polyanthus 4 and 5 - off each end of Tromsø island in the approaches to Arendal and Naresto.

Early in February the C.-in-C. Bomber Command asked if the Admiralty could increase the life of mines laid in the Western Baltic and Kattegat areas. These were being laid with 54 day sterilisation settings and it meant that these distant gardens had to be replanted again and again with consequent cumulative effort and loss of aircraft. To make matters worse there was a recommendation on 12 February from the naval staff at S.H.A.E.F. that the settings should be shortened to 28 days in the belief that a German collapse was imminent. On 21 February the Admiralty replied that they fully realised the objection raised by Bomber Command but mines were fitted with coil type sterilisers which could not be set reliably for a longer life than 54 days. Any increase would necessitate the fitting of long dated clocks and these were not available in quantity. The Admiralty were, however, opposed to the suggestion from S.H.A.E.F. and no shortening of the time setting was contemplated.

See Map 6

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 Encl. 42B

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During January and February, when a total of 2,022 mines were laid, the aggregate tonnage of enemy vessels sunk was 68,315 giving a figure of  $33\frac{1}{3}$  tons per mine laid which was a big rise from the previous quarter's 12 tons per mine. Even without the available German evidence this is an indication of how far the efficiency of enemy sweeping had deteriorated. In March the figure rose steeply to 58 tons per mine and then curiously enough in April, when the German organisation was stretched to cracking point and more mines than ever were laid, the figure dropped to only seven per mine laid.

High level minelaying was predominant in this last period, three times as many mines being so laid. Although avoiding flak by this method the high level sorties were more vulnerable to air interception and of the 23 aircraft lost, 20 were shot down at high level by enemy night fighters.

(ii) Operations during January and February 1945

January was a month of bad flying weather with much icing down to low levels and mining operations were restricted to one night at the beginning, four in the middle and one at the end of the month. In all only 159 sorties were despatched and 668 mines laid. Of these, 129 were put down in Danzig Bay on the night of the 6th/7th and, as previously recounted, resulted in the final closing down of U-boat trials and training in this area. The remainder were distributed in the Swinemunde area (152), Kiel Bay (98), the Kattegat area (202) and the Onion gardens in Oslo fjord (87). Aircraft losses were one on the Danzig Bay lay, one near Swinemunde and four in the Kiel Bay area.

With improving weather in February there were ten night operations involving 286 sorties in which 1,352 mines were laid. The Polyanthus gardens Nos. 4 to 7 along the southern coast of Norway received 80 mines, the Oslo fjord area 300 and the Kattegat 275. Laying was restarted in the Elbe and Weser estuaries with 283 mines and the balance of 414 were put down between Swinemunde and Kiel Bay. Six aircraft were lost in the latter area, two off the Elbe and one off southern Norway. In addition, on the last night of February, five Mosquitoes of No. 627 Squadron, each carrying two A Mk. VII mines took off for the Kiel Canal. The intention was to lay from a very low altitude but on arrival the visibility was poor in the extreme and only one aircraft found the appointed position where two mines were duly released.

The table below shows the distribution of mines laid:-

Month	Area 1A	Area 1B	Area 2	Area 3	Totals
	Kattegat	W. Baltic incl. Kiel Canal	South Norway	Heligoland Bight	
Jan.	202	379	87	-	668
Feb.	275	416	380	283	1,354
Total	477	795	467	283	2,022

(iii) Results for January and February

In the Western Baltic

The Germans suspected that mines with about 20 days delay action were being used. All routes were repeatedly closed to traffic, either following casualties or if suspicious air

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activity was reported, thereby slowing up the turn round of ships and drastically reducing the monthly aggregate of transport. Considerable congestion of shipping was unavoidable at the assembly points and the enemy was compelled to re-open routes in the shortest possible time. Such was the scarcity of minesweepers that this was done after completing only a few covering runs over suspected areas in spite of the risk involved. The minimum of transport tasks were, however, fulfilled but at a considerable cost. During the two months a total of 26 vessels (48,790 tons) and a Type XXI U-boat foundered on mines and a further 10 vessels (38,044 tons) plus two more new prefabricated U-boats were damaged.

#### In the Kattegat area

ibid

Here also the mine protection force was not sufficient to ensure the smooth running of traffic and it was only occasionally that proper anti-ground mine escorts could be provided for the convoys. By February there were only two of these sperrbrecher available and this duty had to be allotted to ordinary M. class and auxiliary minesweepers who could not operate their sweep gear in winds of more than Force 5 or 6. Casualties were, however, not heavy - three coasters, a naval minelayer and three fishing vessels sunk and nine vessels damaged but these latter included four minesweepers and three precious sperrbrecher.

#### South Norway

German sweeping was successful in keeping losses to a minimum. During the two months the minefield off Sandefjord claimed one merchant ship and a coaster, and in the Oslo fjord one large ship foundered together with a Type VII U-boat and a harbour defence vessel was damaged.

#### In the Heligoland Bight

Similarly the February lays off the estuaries of the rivers Elbe and Weser claimed only one merchant ship, three small craft and two naval auxiliaries but there was little organised traffic in this area.

#### The Kiel Canal

ibid

During the evening of 28 February the German minewatchers reported the presence of suspected minelaying aircraft and at 2148 hours the Kiel Canal was closed to traffic. Sweeping started immediately but as nothing was found the Canal was re-opened on 2 March with compulsory mine escort between the 35 km and 50 km marks. Such escort necessitated much shuttling with ever increasing delays in traffic. Actually only two mines were released in weather which made their precise position entirely problematical and the incident again shows the unsuspected results of apparent failure.

The general distribution of enemy vessels sunk and damaged is given below. Individual details of date, name, tonnage and position are in Appendix XV.



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Enemy Vessels sunk

Month	Area 1A	Area 1B	Area 2	Area 3	Totals
	Kattegat	W. Baltic	South Norway	Heligoland Bight	
Jan.	5 - 4,577	11 - 26,229 plus 1U/B	2 - 11,867	-	18 - 42,673 plus 1U/B
Feb.	2 - 234	15 - 22,561	1U/B	6 - 2,847	23 - 25,642 plus 1U/B
Totals	7 - 4,811	26 - 48,790 plus 1U/B	2 - 11,867 plus 1U/B	6 - 2,847	41 - 68,315 plus 2U/B.s

Enemy Vessels damaged

Month	Area 1A	Area 1B	Area 2	Area 3	Totals
	Kattegat	W. Baltic	South Norway	Heligoland Bight	
Jan.	4 - 4,500	2 - 4,160 plus 1U/B	2 - 517	-	8 - 9,177 plus 1U/B
Feb.	5 - 9,606 plus 1U/B	8 - 33,884 plus 1U/B	-	-	13 - 43,490 plus 2U/B.s
Totals	9 - 14,106 plus 1U/B	10 - 38,044 plus 2U/B.s	2 - 517	-	21 - 52,667 plus 3U/B.s

(iv) Operations during March and April 1945

Another attempt to mine the Kiel Canal was made on the night of the 2/3 March. This was more successful as six Mosquitoes from No. 627 Squadron laid twelve mines in positions about one third of the way along the Canal from Brunsbuttel.

Other operations took place nightly up to the 13 March and thereafter on a further six occasions. Most of the lays were in the Kattegat, the Oslo fjord area and in the Heligoland Bight with visits to Kiel Bay and around Sassnitz in the Western Baltic. Aircraft losses were lighter, four in the Kattegat area and one in the Weser estuary - all by enemy night fighters. In all there were 270 sorties who laid 1,198 mines.

April saw a heavy concentration of laying in the Western Baltic where enemy traffic became dense. After a moderate start on the 4th/5th when 72 mines were laid in the Kattegat and 84 in the Oslo fjord, two big operations took place on the 9th/10th and 13th/14th April during which no less than 913 mines were put down in the Kiel Bay area besides smaller lays in the Kattegat and Belts.

Only two further small operations were carried out in April - on the night of the 21st/22nd when 118 mines were laid in Kattegat gardens and the 25th/26th when 72 were put down off Horten in the Oslo fjord.

The April sorties numbered 271 and 1,362 mines were laid for the loss of only three aircraft, all to night fighters in the Kattegat area. The table below gives the distribution of mines laid during March and April.

Month	Area 1A	Area 1B	Area 2	Area 3	Totals
	Kattegat	W. Baltic incl. Kiel Canal	South Norway	Heligoland Bight	
March	314	180	330	374	1,198
April	287	919	156	-	1,362
Totals	601	1,099	486	374	2,560

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Encl. 46A

On the 1 May Bomber Command Headquarters requested the Admiralty that no more mines be delivered to the Groups as stocks amounted to approximately 2,500 which was ample for current requirements as far ahead as could be foreseen. In the event only one last sortie of eleven Lancasters from No. 3 Group took off on 3 May bound for the Kattegat but in view of the imminent cessation of hostilities they were recalled while still on the way and no mines were laid.

(v) - Results for March, April and May

The Kiel Canal

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On the night of the 2/3 March the German observation posts reported that six aircraft had been seen to drop mines in the Gruntal area about 45 Kilometres east of Brunsbuttel. Only a few hours after the Canal had been re-opened following the scare on 28 February all traffic was again stopped and sweeping restarted. By 0700 hours on 5 March four mines had been swept in the Canal itself and four more were found on land some 500 yards from the Canal bank. Traffic was restarted later in the day but with a compulsory shuttle double mine escort service imposed between the 40 and 50 km. marks where more mines were still suspected. By 6 March two more mines were swept in the Canal, another on the 7th and still another on 13 March. The Germans were uncertain whether this completed the total released on the two occasions and compulsory mine escort was still in force on 30 March. Although there were no casualties to shipping, the precautions taken had the effect of slowing the passage of shipping very seriously and an ever increasing number of vessels were held up at each end of the Canal.

The Western Baltic

During March the Soviet submarines first penetrated westward of the island of Bornholm into an area which till then had been avoided by them because of supposed danger from British airlaid mines. Eastward of Cape Arcona the only area still free of these submarines lay off Sassnitz and Swinemunde where paradoxically the British minefields provided anti-submarine protection for the coastwise German shipping. In spite of our mining, the turn round of shipping in the Western Baltic during March was far greater than either January or February but was only achieved by cancellation of the order that important convoys must have a groundmine escort of at least two sperrbrecher. Consequently losses were heavy. Two cargo liners of over 20,000 tons each, six merchant ships, two torpedo boats and two U-boats were among the 25 vessels sunk and a further five cargo vessels and a destroyer were included in the 12 damaged.

ibid

Towards the end of April the general collapse of the German war machine crippled their navy's ability to carry out its tasks. This was not only due to the cessation of new construction and impossibility of getting any repairs done but to the extreme scarcity of oil fuel after the destruction by bombing of most of the synthetic production. The final casualties in this area occurred on the 3 and 4 May when an M. class minesweeper, a torpedo boat and the old battleship Schlesien struck mines and foundered off Swinemunde.

#### The Kattegat and South Norway

ibid In mid-March the increasing difficulties and delays resulting from heavy minelaying in these areas and in the Heligoland Bight became so serious that the German Ministry of Shipping put forward a proposal that, in order to speed up the turn round of shipping, routes should no longer be closed to traffic and swept methodically after observed minelaying incursions but that convoys should merely rely on a minesweeping escort. This was refused by the German Naval War Staff who pointed out that enemy mines were of mixed no delay and period delay types. If minesweepers first of all carried out a number of covering runs over the suspected area to exhaust the period delay the degree of safety was far greater than continuing the passage behind a minesweeper escort. Moreover if and when the escorts' sweeps were damaged by exploding mines new gear had to be streamed and for some time the convoy would be in a dangerous area entirely without protection. The serious delays were accepted and the enemy losses in these areas were not very heavy amounting in all to four merchant ships and thirteen small craft sunk with four merchantmen damaged.

The distribution of enemy vessels sunk and damaged is given below.

#### Enemy Vessels Sunk

Month	Area 1A	Area 1B	Area 2	Area 3	Totals
	Kattegat	W. Baltic	South Norway	Heligoland Bight	
March	10 - 9,163	14 - 59,248 plus 2 U/B.s	-	2 - 1,038	26 - 69,449 plus 2 U/B.s
April	4 - 741	11 - 8,785	1 - 110	-	16 - 9,636
Up to 8 May	-	3 - 16,930	-	-	3 - 16,930
Totals	14 - 9,904	28 - 84,963 plus 2 U/B.s	1 - 110	2 - 1,038	45 - 96,015 plus 2 U/B.s

#### Enemy Vessels Damaged

March	2 - 15,490	8 - 32,103	1 - 964	-	11 - 48,557
April	3 - 4,804	4 - 11,923	-	-	7 - 16,727
Up to 8 May	-	-	-	-	-
Totals	5 - 20,294	12 - 44,026	1 - 964	-	18 - 65,284

(vi) Summary

Aerial minelaying maintained up to the end its essential part in the disorganisation of enemy shipping movement. It was, however, greatly assisted during the last ten months of war by the loss, damage and repair delays inflicted on the enemy minesweeping fleet by direct air attack at sea and the bombing of enemy ports. Latterly the tonnage sunk and damaged by direct attack and bombing surpassed the air mining figure but its economy of effort and low aircraft loss remained in striking comparison as the table below shows. Moreover the disorganisation and loss caused by minelaying was inflicted mostly in waters well beyond the reach of direct attack either by air or surface craft.

Anti-ship results between June 1944 and 8 May 1945 inclusive

Author	No. of Sorties	A/C lost	No. and ton. of enemy vessels	
			Sunk	Damaged
R.A.F. minelaying	2,901	59	210-238,875	105-218,866
R.A.F. Direct Sea Attack	19,735	276	252-312,971	74-266,425
R.A.F. ) Port Bombing U.S.A.A.F.)	25,412	337	308-449,277	85-381,101

However, no lessons should be based on events or figures in the latter stages of a long war. It took many months and years before direct air attack at sea and bombing of ports played any significant part against enemy shipping but aerial minelaying exerted an influence and heavy casualties immediately, and out of all proportion to the small initial scale of operations as witness the table below:-

Results for the first nine months of anti-ship operations of the War

Author	No. of Sorties	A/C lost	No. and ton. of enemy vessels	
			Sunk	Damaged
R.A.F. minelaying	1,507	31	86-82,983	10-17,070
R.A.F. Direct Sea Attack	5,040	173	9-13,531	14-47,662
R.A.F. Port bombing	4,873	65	15-10,592	16-28,502

Whatever assumptions are made as to the possible conditions and course of the next major war there is no doubt that long range aerial minelaying affords a cheap and effective initial blow at an enemy's use of his inshore waters. Moreover in these times of limited numbers of highly specialised aircraft types it is the only method which remains.

## CHAPTER VIII

BOMBING POLICY AND OPERATIONS AGAINST MARITIME TARGETSJUNE 1944 TO MAY 1945PART I - JUNE TO DECEMBER 1944 INCLUSIVE(i) Introduction

The policy and operations of the Allied heavy bomber force prior to and during the landing of the invasion forces in Normandy are recounted in Volume III of the Liberation of Northwest Europe and the first two chapters of Bomber Command Narrative Volume VI. During this time both the R.A.F. Bomber Command and the U.S. 8th A.F. were controlled by the Supreme Headquarters of the Allied Expeditionary Force under General Eisenhower. It was intended, after the secure lodgement of the Allied armies, to re-open the heavy bomber offensive against enemy petroleum production and war industry in Germany and only to a lesser degree continue heavy bomber support to the armies in France. This plan had to be modified a week after 'D' day by the necessity to combat the enemy flying bomb campaign (Crossbow targets), to attack certain naval targets and to bombard various enemy strong points which were holding up the Army. Instead of reverting to the Chiefs of Staff the control of the heavy bomber force continued to be vested until mid-September in S.H.A.E.F. under General Eisenhower.

In this Maritime Narrative it is proposed to recount only those operations which were directed against naval targets. It is realised that the term can be stretched to cover attacks on factories producing ship or U-boat components or even on oil fuel production where situated in ports. Where appropriate, attention is drawn to the effects of these on the enemy's sea resources but in the main the account is limited to operations against naval objectives in either roadstead, port or building yard.

(ii) Operations against naval targets in France --  
June to August(a) Le Havre and Boulogne

The Historical  
Record of  
A.E.A.F.  
A.H.B./115/112/  
2/6

The only serious menace to the Overlord build-up from enemy surface craft came from light craft and E-boats operating from ports in Northern France. At the 13th Conference of Air Commanders held at S.H.A.E.F. on 13 June the naval liaison officer asked for an air bombardment of Le Havre saying that not only was there a shortage of naval 16-inch ammunition but naval guns were always at a disadvantage in a duel with coastal guns. The Conference agreed that Bomber Command should make a heavy attack forthwith. The attack was duly carried out at twilight on 14 June by 346 Lancasters and Mosquitoes who dropped 1,816 tons of bombs for the loss of only one aircraft with obviously excellent results.(1) On the following day at the

(1) The full score of shipping sunk has been ascertained as three torpedo boats, fourteen E-boats, nineteen auxiliary patrol and minesweeping craft, and nineteen tugs of various sizes. In Appendix XVII is given a list of the individual vessels sunk and damaged in this and all subsequent air raids by the R.A.F. and U.S. heavy bomber forces.

ibid 15th Conference the naval liaison officer asked for a similar attack on either Boulogne or Cherbourg. As it was thought that more E-boats were present in Boulogne this port was given as a priority target for Bomber Command and a heavy raid was made on the evening of 15 June. Although in fact there were no E-boat casualties the attack by 274 Lancasters and Mosquitoes, who dropped 1,315 tons of bombs with no loss, destroyed 27 auxiliary patrol and minesweeping craft.

The effects of these two raids crippled further operations by enemy light craft for six weeks. Two further but much smaller attacks were made on Le Havre, one on 31 July by 57 aircraft dropping 300 tons of bombs which sank five auxiliary craft and damaged three E-boats, and the other on 2 August by 55 aircraft dropping 313 tons, which destroyed four auxiliary craft and two E-boats with two more E-boats badly damaged.

(b) The Biscay Ports

ibid The advance of elements of the U.S. Army into Brittany at the beginning of August called for bombing attacks on the defences of Brest which were soon extended by request to include enemy naval installations both in Brest and other Biscay ports in co-ordination with the current naval plan to hamper and attack the evacuation of U-boats, patrol craft and other shipping. To this end attacks were directed to harbours and U-boat shelters in Brest, Lorient, La Pallice and Bordeaux, and to the oil fuel storage depots situated along the lower reaches of the Rivers Loire and Gironde. The naval base at St. Nazaire was excepted, as was Lorient after one attack, on the ground of the supposed proximity of French resistance forces and U.S. advanced troops.

Most of the bombing was done by day but in spite of numerous direct hits by the heaviest bombs on the roofs of the concrete shelters no damage was caused to U-boats in any port. Surface craft and shipping suffered severely in Brest but it has been found impossible to distinguish between bomb damage in other ports and enemy demolition which was either taking place concurrently or during the subsequent weeks. With the exception of the fortified bases at Lorient, St. Nazaire, La Pallice and the mouth of the Gironde all the Biscay area was occupied by the Allies by the third week of September and there was found the following shipping sunk or burnt out with no clue as to cause:-

Anchorage	Minor war vessels	Cargo vessels
Brest	8 - 1,345 tons	9 - 30,701 tons
R. Loire down to Donges	14 - 3,599 tons	22 - 129,862 tons
Bordeaux down to Paullac	11 - 10,719 tons	25 - 93,646 tons

In the Summary of Attack table below only confirmed bombing results, additional to the above, are given. Individual details are at Appendix XVII.

Target	Dates attacked	Author	No. of Aircraft Attacking	Long Tons dropped	A/C loss	Vessels	
						Sunk	Dem.
Donges	July 23/24th 24/25th	B.C.	227	1,140	3	1	-
Bordeaux to Royan	Aug. 4th, 5th, 10/11th, 11th 12th, 13th, 18th.	B.C.	752	3,082	3	5	-
Brest	Aug. 5th, 12th, 13th, 14th, 17th, 24th, 25/26th, 27th, 28th, Sept. 2nd, 5th.	B.C.	748	3,753	28	14	-
	Aug. 11th, 26th, Sept. 3rd	U.S.A.A.F.	982	2,430	8	6	-
Lorient	Aug. 6th	B.C.	30	148	-	-	-
La Pallice	Aug. 9th, 10/11th, 11th 12th, 16th 18th, 19th	B.C.	230	1,115	-	2	-

## (iii) Targets in Germany

## (a) June and July 1944

Even during June and July when Crossbow targets and Army support were paramount, both the C.-in-C. Bomber Command and the Commanding General U.S. 8th A.F. found it possible to direct many attacks into Germany on oil, aircraft industry and transportation targets. Some of these objectives lay in the big German ports so that much of the bombing comes indirectly under the maritime heading. Between 18 June and the end of July, Hamburg, Bremen, Bremerhaven, Brunsbuttel and Kiel all received attention on the scale given in the table below. Apart from much damage to war industries and harbour facilities in these ports the attackers at a cost of 42 aircraft sank 22 vessels plus four U-boats and damaged 13 other vessels. It will be noticed that in all these raids the R.A.F. bomb lift was nearly twice that of the U.S.A.A.F. (aircraft for aircraft) but as the U.S. raids were made in daylight visual bomb aiming conditions they often gave a bigger return in ships sunk and damaged.

Port	Dates attacked	Author	No. of Aircraft Attacking	Long Tons dropped	A/C loss	Vessels	
						Sunk	Dem.
Hamburg	June 18th, and 20th	U.S.A.A.F.	1,100	2,650	11	13	3
	June 22/23rd, July 20/21st, 26/27th, 28/29th.	B.C.	380	1,274	24	1	3
Bremen	June 24th, July 29th	U.S.A.A.F.	701	1,687	3	5 + 1 U/B	6
	June 23/24th, July 19/20th.	B.C.	67	106	-	-	-
Kiel	July 5th and 18th.	U.S.A.A.F.	337	814	-	-	-
	July 23/24th	B.C.	612	2,916	4	3 + 3 U/Bs	1
Bremerhaven	June 18th	U.S.A.A.F.	94	211	-	-	-
Brunsbüttel	June 18th and 20th	U.S.A.A.F.	66	150	-	-	-

## (b) August and September 1944

Crossbow targets against both flying bombs and rockets still had priority and high on the list were attacks both in the Biscay and Northeast France areas but again many raids were directed to Germany among which featured many of the ports. Docks and building yards were not yet being selected as precise aiming points, the objectives still being oil, industrial plants and housing in these ports so that not many ships were sunk or damaged. Exceptions to this were the two raids on Stettin and the one on Bremen on the night 18/19 August, in each case the shipyard area of the town being given as the aiming point. This one Bremen attack sank eight and damaged two more vessels. The summary for the period is given below.

Port	Dates attacked	Author	No. of Aircraft Attacking	Long Tons dropped	A/C Loss	Vessels	
						Sunk	Dam.
Hamburg	Aug. 4th and 6th	U.S.A.A.F.	207	528	4	-	3
	Aug. 26/27th, 29/30th, Sept. 6/7th, 30/1st Oct.	B.C.	103	126	-	-	-
Bremen	Aug. 4th and 30th, Sept. 26th.	U.S.A.A.F.	523	1,152	-	-	-
	Aug. 18/19th, Sept. 1/2nd, 17/18th.	B.C.	350	1,232	1	9	2
Kiel	Aug. 4th, 6th, 24th, 30th, and Sept. 12th.	U.S.A.A.F.	529	1,217	6	-	-
	Aug. 12/13th, 16/17th, 26th/27th, Sept. 15/16th	B.C.	1,129	4,136	28	3	1
Wilhelmshaven	Aug. 27th	U.S.A.A.F.	34	62	1	-	-
Bremerhaven	Sept. 26th	U.S.A.A.F.	13	27	1	-	-
	Sept. 18/19th	B.C.	208	864	2	-	-
Heligoland	Aug. 27th	U.S.A.A.F.	45	111	1	-	-
Emden	Aug. 27th	U.S.A.A.F.	37	56	2	-	-
	Sept. 6th, 6/7th, 7/8th, and 8/9th.	B.C.	195	597	1	-	-
Stettin	Aug. 16/17th, 29/30th.	B.C.	824	2,726	28	7	8
Gdynia	Aug. 6th.	U.S.A.A.F.	75	97	-	1	-

(iv) Special requests by the Admiralty and the attacks on the Tirpitz

## (a) E-boat shelters at Ymuiden

Apart from the request, which was agreed to, for extensive bombing of targets in the Biscay area, the Admiralty repeatedly asked for attacks on the U-boat pens under construction in Bergen, the E-boat bases at Ostend and Ymuiden and the battle-ship Tirpitz in Northern Norway. However, the Crossbow and Army support priorities were held by S.H.A.E.F. to have



superior claims until on 24 August the E-boat base at Ymuiden was attacked by 22 Lancasters carrying the 12,000 lb Tallboy bombs. The concrete shelters were badly damaged but no E-boats were actually using Ymuiden at this period and only three small patrol craft were sunk.

The Bergen request was shelved time after time by the commitments for Army support bombing of strong-points at Le Havre and Boulogne during September but the Tirpitz project was taken up seriously.

(b) Attacks on the Tirpitz and her end

This is perhaps the place to recapitulate the attacks that had been made on this ship since mid-1943 and to carry the story through to its conclusion.

During May 1943, the Tirpitz together with the Scharnhorst, Lutzow and destroyer escort moved up from Trondheim to the Alten and Kaa fjords in Northern Norway. Between the 6 and 9 September the Tirpitz, Scharnhorst and ten destroyers carried out a raid on Spitzbergen returning to their anchorage on the 10th. On 22 September naval midget submarines attacked the Tirpitz in Kaa fjord and inflicted serious damage which put her out of action for six months.

During the night of 10/11 February 1944, she was attacked without damage by four Russian aircraft. The repairs from the midget submarine attack were completed by 10 March. On 3 April she was attacked by 42 Barracudas of the Fleet Air Arm covered by fighters from two fleet and three escort carriers in Operation Tungsten. Only four aircraft were lost and German records establish that she received 13 direct hits on deck by 1,600 lb., 600 lb., and 500 lb S.A.P. bombs as well as two near misses alongside. The damage inflicted took the enemy three months to repair. On 17 July she was again attacked by the Fleet Air Arm using 45 Barracudas with fighter cover from three fleet carriers in Operation Mascot. However, a very effective smoke screen from the ship and points around the anchorage so covered her that only blind bombing could be done and no damage was inflicted.

Admty.  
F.D.S. 17/53

Early in August the Admiralty suggested to the Air Ministry that Mosquito bombers might be used to attack the Tirpitz as the slow Barracudas gave the enemy ample time to enshroud the target with smoke. The suggestion was that Mosquitoes, each carrying a 2000 lb A.P. bomb, should take off from carriers and afterwards land in Russia. However, General Eisenhower, still in control of the bomber forces, could not agree to a diversion from the main land objectives.

A.H.B./  
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and ID/12/83

On 23 August the Joint Planning Staff produced a paper urging the advantage of dealing with this ship as her very presence above water required a British containing force in northern waters which otherwise could be sent to the Far East where we were laboriously building up a naval force. The planners believed the operation feasible provided the Russians would agree to the attackers landing on their territory. As the Air Staff was very much in favour of this attempt the Chiefs of Staff invited them to discuss the project with General Eisenhower. On coming down to final details, the C.-in-C. Bomber Commander was against the use of Mosquitoes partly because he could ill afford them and partly because he considered their bomb load quite insufficient to cripple

let alone sink the big battleship. His scheme was to use relatively few Lancasters, armed with the largest bombs, from a Scottish base and afterwards to land in Russia. This was discussed with General Eisenhower on 2 September who gave his approval to the operation.

Meanwhile the Fleet Air Arm had carried out a series of further attacks on the 22, 24 and 29 August 1944 with Barracudas from a carrier force under the name of Operation Goodwood. Poor weather conditions and the effective smoke screen on each occasion made visual aiming impossible and no damage was caused.

The initial plan for the Lancasters was that, armed with 12,000 lb. Tallboys and J.W. bombs<sup>(1)</sup>, Nos. 9 and 617 Sqdns. should leave airfields in the north of Scotland during the evening, bomb the Tirpitz shortly after dawn, and land at Yagodnik airfield (20 miles S.E. of Archangel). Arrangements were satisfactorily made with the Russians and the operation, known as Paravane, was timed for 11 September. However, during the forenoon of this day the weather worsened and the C.-in-C. Bomber Command decided that the attack would have a far better chance if done from the Russian end; moreover if the force was not got away immediately the operation might be postponed indefinitely in view of the bad weather system then approaching. Accordingly the force took off that evening under Group Captain C. McMullen A.F.C.<sup>(2)</sup> and landed in very poor weather conditions at Yagodnik and neighbouring airfields early on 12 September. In 10/10 cloud down to 350 feet with driving rain and landing on strange small airfields with either wood-boarding or muddy runways it was not surprising that six of the Lancasters so bent or collapsed their undercarriages that they were of no further use. Four others had defects which it was estimated would take four days to repair. Refuelling, for which the facilities were primitive, took nearly 40 hours at the completion of which 28 aircraft were fully serviceable.<sup>(3)</sup>

- (1) The J.W. mine/bomb (nicknamed Johnnie Walker) had been designed in June 1942 by Brig. General Jefferis against major warships lying in roadsteads or at anchor in harbour. It weighed 400 lbs and contained 90 lbs of Torpex. It could be dropped, with parachute attachment, into a minimum of 40 feet of water. On entering the water the mine/bomb sank to the bottom after which it immediately started to oscillate between the bottom and the surface for about two hours at the end of which it sank for good. An ingenious arrangement of fins caused it to track slightly sideways on its ascent each time from the bottom. Much redesign and many trials had been necessary before quantity production was reached. At this date there were about 200 of the bombs in stock. A Lancaster could carry a load of 12.
- (2) The force consisted of 39 Lancasters (26 with Tallboys - 12 with J.W. bombs - one carrying a film unit), two Liberators (transport) and one P.R.U. Mosquito with a total of 290 personnel. One of the Tallboy Lancasters returned to base shortly after take-off as the bomb had shifted in its stowage.
- (3) The report stresses the willing co-operation and assistance by the Russians at this very short notice.

The First attack

A.M. D.B. Ops.  
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Signals.

Extract from  
the War Diary of  
the German Navy  
operational  
staff.

Frequent weather reconnaissance forecasted good weather for the 15 September and in the early hours the strike was despatched consisting of 28 Lancasters (21 with Tallboys, six with 12 - J.W. bombs each, and one with the Film Unit). The Tirpitz was easily picked up in Kaa fjord (6957Nx2313E) but full surprise was not achieved as the smoke screen had been started about eight minutes before attack. It did not incommode the first few aircraft but thereafter it, the bomb explosions, and flak smoke obscured the view of later aircraft. Two Tallboy aircraft did not release because they were unsighted by smoke and two because their bombs hung up. The J.W. aircraft, coming last in the attack, dropped all their bombs into the smoky murk beneath them. In all, 17 Tallboys and 72 - J.W. bombs were released. Flak from the shore and ships in the anchorage was moderate but inaccurate, only three aircraft sustaining very minor damage, and there was no fighter opposition. Two hours later the Mosquito made a reconnaissance to view the result but cloud had closed down completely. The 27 attacking aircraft returned safely to Yagodnik and the Film Unit Lancaster flew back direct to England. From photographs and films taken it was estimated that at least one hit and several near misses had been secured. There was no evidence of any result from the J.W. bombs. German records establish one direct hit right forward on the starboard side and two very near misses. The foremost compartments were badly damaged and took in some 2,600 tons of water. Repairs could not be done in Norway and it was decided to move the ship to moorings near Tromso where she would be used as a floating gun battery in the defences of that port.

The strike force started to return to the United Kingdom in batches from the 16 September and by the 21st all had arrived but one who was missing on the return flight. The Mosquito and the two transport Liberators returned on the 26 and 28 September respectively. The six crashed Lancasters were turned over to the Russians after certain equipment had been removed but six unused Tallboys were later salvaged and shipped home in S.S. Samaritan sailing in Convoy R.A.61.

The Second attack

On 15 October the Tirpitz was moved from Kaa fjord to Tromso where she was moored up off Haakoy island three miles westward of the town. Carrier borne F.A.A. reconnaissance verified her exact position on 18 October and another attack was planned by Bomber Command under the name of Operation Obviate to strike with the same two squadrons of Lancasters direct from a Scottish airfield on the first suitable day after 28 October. As the ship was now 200 miles nearer the United Kingdom it was intended that the aircraft should return to Scotland and only those damaged during the attack should land in Russia. To be certain of attaining the 2,250 miles entailed out and back the selected aircraft were fitted with special Merlin engines and paddle bladed propellers to assist take off, were equipped with temporary extra fuel tanks, and weight was reduced by the removal of the mid-upper turrets complete, the front guns and ammunition, 3,000 rounds from the rear turrets, the pilots armoured plate protection, and all oxygen and nitrogen bottles.

The weather forecast being good for the 29 October, the strike of 38 Lancasters, all armed with Tallboys, and one

Lancaster with the Film Unit took off from Lossiemouth. Good visibility was experienced right up to the area but then low cloud at about 8,000 feet covered the target and prevented any deliberate aiming. Nevertheless 32 Tallboys were released on partial glimpses and all returned safely except one who, damaged by flak, made for Sweden where it crash-landed in a bog. The crew destroyed the aircraft. The photographs disclosed little and at the time only a claim of a near miss aft on the port side was made.

German evidence is confined to an entry in the German Navy Operational Staff War Diary for 30 October to the effect that damage caused to the Tirpitz made it questionable whether the ship could be moved again. It is not clear if this alluded to additional damage inflicted in this attack or whether it referred to that sustained in the attack on 12 September.

#### The Third attack

Further photographic reconnaissance revealed no apparent change in the condition of the ship and yet another attack was planned under the name of Operation Catechism for early November. There were discussions as to whether the 2,000 lb. A.P. bomb, of which each Lancaster could carry six, would be a better load dropped in sticks thus theoretically giving more chance of hits and assuring definite penetration of the heavy armour deck. There was more than a suspicion that the Tallboys only partially detonated on striking armour or even broke up without any detonation.<sup>(1)</sup> On the other hand this change of load would lose the known value of a near miss with the Tallboy, more than two or three of which could be lethal on their own account to the unprotected under water hull. In the event the Tallboy was retained.

A run of poor weather caused many postponements of the operation but on 11 November, although the weather reports were not particularly favourable, the A.O.C. No. 5 Group decided to take a chance and in the early hours of 12 November, 32 Lancasters took off (31 Tallboys and one with the Film Unit). As the force neared the area the weather cleared and the battleship was clearly visible on the approach. No smoke apparatus had been mounted around the anchorage as in Kaa Fjord but the Tirpitz started her own smoke screen. However, it was too late to cover the ship before aim had been taken by the leading six aircraft. Tallboys were released by 29 of the aircraft starting at 0941 hours. Photographs were taken by each attacking aircraft and continuously by the cinematograph cameras in the Film Unit Lancaster. After the 16th bomb had exploded the whole scene had become completely obscured by smoke. Up to that time the film shewed two direct hits amidships and four near misses alongside. More hits and near misses may have occurred afterwards.

Flak was experienced from the Tirpitz until the first direct hit. Flak was continuous from four ships anchored in the vicinity and from land batteries on Haakoy Island.

(1) This suspicion arose after recent detailed inspections of the concrete roofed pens in Brest and Bordeaux where many direct hits with Tallboys had been made.

A.M. D.P. Ops.  
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No. 5 Group  
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records.

One aircraft was damaged and subsequently force landed in Sweden, the other aircraft all returned safely to Scotland.

Some 2½ hours after the attack and when the smoke had cleared from the scene, photographs were taken by a P.R.U. Mosquito which shewed the battleship capsized with only part of the flat bottom and starboard bilge keel visible above water. German evidence estimates that about 1,000 officers and men perished in her.

(c) The U-boat pens at Bergen and Trondheim

After many postponements, both policy and weather, the still incompleated U-boat pens at Bergen were attacked during daylight on 4 October by 118 Lancasters and Halifaxes who dropped 603 tons of 1,000 lb. and 500 lb. S.A.P. bombs with no loss of aircraft. Much damage was done to the dockyard and U-boat repair shops. Four U-boats were either sunk or had to be written off and in addition three cargo vessels were sunk and eight others damaged. The completion of the pens was seriously delayed.

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Another raid was made on the night of 28/29 October. A force of 244 Lancasters and Mosquitoes was despatched but on arrival found Bergen under 10/10 cloud and only 51 of the aircraft managed to bomb with 189 tons of 1,000 lb. S.A.P., G.P. and M.C. bombs. Four direct hits were obtained on the pens which as yet had only a 3.5 metre thick roof but none penetrated and there was no damage to any U-boat. However, the unprotected dockyard was completely wrecked, a lighter was sunk and two cargo vessels damaged. Three aircraft were lost.

ibid  
Page 699

The tricky weather conditions and distance away from the main bomber bases made Trondheim a target of rare opportunity. It was not till 22 November that an attempt was made. The force despatched was 178 Lancasters and Mosquitoes but before their arrival an extremely effective smoke screen had been laid and only 18 aircraft released bombs. One aircraft was lost and no damage inflicted.

(v) Targets in Germany - October to December 1944.

(a) Policy

Meanwhile on the 16 September the control of the heavy bomber forces had reverted to the Chiefs of Staff and first priority given to oil targets with transportation, tank and mechanical transport production coming after in that order on the understanding that heavy bomber support would be given to the land battle if asked for by S.H.A.E.F. A combined strategic target committee was set up to study and allocate specific targets under the priority headings. The Committee also acted as a clearing house for all outside claims on bomber effort. Such claims were numerous and conflicting, the principal contestants being the War Office, Admiralty, S.H.A.E.F., M.E.W. and the Political Warfare Executive

Diversions from the priority programme started immediately with the Walcheren campaign and during October the heavy bombers attacked with 1,688 aircraft who dropped 8,808 tons of bombs on dykes, strong points and batteries in aid of the amphibious operations.

A.M. C.39441/49  
Part I -  
Encl. 30A  
A.M. C.39432/49  
Part I - Encls.  
205A to 208A.

No sooner was this commitment completed on 1 November and the strategic targets re-affirmed as only oil and communications when demands were made by the Admiralty for high priority attacks on U-boat construction yards in Germany and U-boat maintenance facilities in Norway as they considered a new and dangerous U-boat offensive was imminent. The Air Staff were sceptical about this threat and were unwilling to agree to renewed diversion from the attack on oil targets.

ibid  
Encl. 215A

The matter was referred to the Cabinet A/U Committee and the Prime Minister ruled against this diversion for the present but directed that detailed plans should be made in readiness for attacks on U-boat production centres, prefabrication plants, assembly slips and the actual operational U-boat bases should the threat become urgent. A committee was appointed in which the Air Staff, the U.S. 8th A.F., the Admiralty and M.E.W. were represented, to study the matter and decide where attacks could most profitably be directed.

The Committee judged that attacks would be most telling against assembly yards with the U-boat operating bases coming second. They worked on the assumption that the war against Germany would have ended by mid-May 1945; only a short time was therefore available in which attacks on assembly yards would have any practical effect in limiting the number of commissioned U-boats before that date. As it took at least two months to work a U-boat up to an operational state all useful bombing would have to cease by mid-March. Therefore in order to disorganise the U-boat threat at all the bombing attacks would have to start inflicting major damage before mid-January. Regarding the operational bases at Bergen and Trondheim the Committee considered they were too distant for the necessary continuous raids to be successful judging from the poor results obtained that summer on similar bases in the Bay of Biscay which were much closer to the United Kingdom.

ibid  
Mins. 215 to 217

The Air Staff continued to maintain that, to be of any value, operations would have to be placed on such a high priority as would detract effort from the German petroleum industry. Any relaxation in this quarter would allow vastly increased enemy activity on all fronts and would also result in a resurrection of the German fighter force.<sup>(1)</sup> They concluded that no diversion from existing priorities should be made until a point was reached when the Royal Navy and R.A.F. Coastal Command were unable to cope with the supposed greatly increased U-boat threat at sea.

In spite of this contention, the Cabinet A/U Committee decided on 19 December that in view of the increase in new U-boats being commissioned<sup>(2)</sup> the heavy bombing force should attack assembly yards, slipways and berths but such operations were not to be detrimental to the existing priority for oil and communications. U-boat production targets were to be

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- (1) By this date (mid-December 1944) armoured units of the German Army and the German fighter force were hamstrung by the lack of fuel consequent on the systematic bombing of the synthetic oil plants. Any pause allowed repairs to be completed and production re-started.  
Ref: Chapter 8 and enemy documents quoted in Chapter 11 of Bomber Command Narrative VI.
  - (2) Allied intelligence on this subject was very accurate. German records give the actual output of prefabricated U-boats in December as 35 compared with an average since June of 16 per month. Similarly the number of U-boats newly commissioned in December is given as 29 compared with an average of 17. See Appendix VII.

attacked by either marginal bomber effort or incidentally to major strategic objectives. The first list of naval targets was issued on 29 December and included:-

1. The assembly slips in Hamburg, Bremen and Danzig
2. The assembly yards at Kiel and Vegesack
3. The light craft bases at Ymuiden, Rotterdam and Den Helder.

The inclusion of the targets in Holland resulted from pressure by the Admiralty because E-boats and the midget U-boats operated from these bases against the Thames/Antwerp supply route. This was supported by S.H.A.E.F. who decided that their destruction would directly benefit the land campaign.

#### (b) Operations

From the foregoing it is apparent that some of the heavy bomber effort during October and most of it during November and December was against oil and communication targets in Germany. In the course of this many of the German ports featured as containing one or other of these objectives. The table below gives the effort together with the vessels sunk and damaged incidental to the raids. Those attacks on ports made at specific Admiralty request and in satisfaction of the new list of naval targets issued on 29 December are described in the next section (vi).

Port	Dates attacked	Author	No. of Aircraft Attacking	Long Tons dropped	A/C loss	Vessels	
						Sunk	Dem.
Hamburg	Oct. 12/13th, 14/15th, 15/16th, 22/23rd, 31/1st, Nov. 30/1st, Dec. 11/12th.	B.C.	277	343	3	3	1
	Oct. 6th and 30th, Nov. 4th 6th and 21st	U.S.A.A.F.	1,210	3,030	8	7	5
Bremen	Oct. 6/7th	B.C.	246	999	5	2	-
	Oct. 12th	U.S.A.A.F.	238	557	1	-	-
Bremerhaven	Oct. 30th	U.S.A.A.F.	21	51	-	-	-
Cuxhaven	Oct. 30th	U.S.A.A.F.	34	81	1	-	-
Heligoland	Oct. 15th, 30th	U.S.A.A.F.	49	150	-	-	-
Wilhelmshaven	Oct. 5th, 9/10th, 15/16th	B.C.	738	3,276	7	6 + 1 U/B	-
Stettin	Oct. 6th	U.S.A.A.F.	12	27	-	1	-
* Dortmund/ Ems and Mittelland Canals	Sept. 23/24th, Nov. 4/5th, 6/7th, 21/22nd.	B.C.	569	2,752	29	Put out of action till 24 Dec.	

\* This target is included in "naval targets" because of the effect that interruptions in its use had on slowing down the scheduled output of prefabricated U-boats. The subject is dealt with in Section (vii).

(vi) Attacks made specifically on naval targets

Such attacks do not start in earnest until 29 December when the list of naval targets on high priority was issued after the decision given in the Cabinet A/U Committee but from mid-December opportunities were taken by Bomber Command to visit some of those still under discussion.

Horten

On the night of the 13/14 December, 46 Lancasters and Mosquitoes bombed the shipyard at Horten in the Oslo Fjord without loss but with little result for the 118 tons of bombs released. This was followed up by another attack on the 28/29 December by 65 aircraft who dropped 350 tons of bombs. This time two merchant vessels and an operational U-boat were sunk and two more vessels and another U-boat were seriously damaged for the loss of three aircraft. German records comment that on the previous day the harbour had contained eight operational U-boats but six of these had left for sea just before the attack. Yet another attack was made in moonlight on the 31 December by 26 Lancasters with 82 tons of bombs. The specific targets were the light cruisers Enden and Koln who were lying in the roadstead. Warning was received of the approaching aircraft and both ships were under way moving out of the anchorage as the bombs started to fall. Neither ship was hit though one stick of bombs narrowly missed the Enden. One large merchant vessel in the roads was damaged and one of our aircraft was lost.

Ymuiden and Rotterdam

The E-boat shelters at Ymuiden were attacked in daylight on 15 December by 14 Lancasters carrying Tallboys. The shelters were very badly damaged, six pens being rendered unusable, and the entire E-boat maintenance disorganised. One E-boat was destroyed and six others damaged putting the whole 8th Flotilla out of action until the end of the year. Resulting from this attack, E-boats and other light craft were forbidden to use shelters again but were to lie well dispersed in the harbours at which they were based. Consequently when the Rotterdam E-boat base was attacked on the 29 December by 16 Lancasters there were no E-boat or other vessels lost although direct hits by Tallboys completely demolished the shelters.

Gdynia

This Baltic port was attacked by 227 Lancasters with 817 tons of bombs on the night of the 18/19 December with no loss of aircraft. It was entirely a target of opportunity as just before take-off on another mission the weather conditions over Germany precluded all objectives except possibly the Breslau area and East Prussia. The A.O.C. No. 5 Group selected Gdynia as H.Q. Bomber Command had previously given permission for attack on naval ports if the strategic objective was unattainable. The port actually contained many German naval units as well as cargo vessels, all held up on account of air laid mines. The attack was highly successful in that among the vessels sunk were two U-boat depot ships, a torpedo boat and five merchant ships while a 22,000 ton oil refinery ship, the old battleship Schleswig-Holstein and U.2512 were badly damaged. The latter casualty was gratifying as she was a Type XXI U-boat just about to carry out her final tactical exercises before becoming operational.

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Admty. F.D.S.

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F.D.S./X.237/48

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Hamburg

ibid  
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In daylight on the 31 December was carried out the first of the deliberate attacks on U-boat final assembly yards. The U.S. 8th A.F. despatched 324 aircraft to attack synthetic oil plants and the U-boat assembly slips in Hamburg. For the loss of 24 aircraft 740 tons of bombs were released. A 15,000 ton depot ship, five other vessels and two Type XXI U-boats were sunk. Two more Type XXI and another large cargo vessel were damaged. Three of the U-boats were completed and lying alongside, the other was about to be launched from the slip.

(vii) - The effects of bombing on U-boat production up to the end of 1944.

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As has earlier been recounted in Volume IV, bombing had no effect up to July 1943. The "catastrophe" raids on Hamburg in that month sank no completed U-boat. One incomplete hull was destroyed and two more were damaged but the blitz did slow down production by damage in the shops and absenteeism. It has been calculated from German records that about five weeks production time was lost in the three Hamburg U-boat yards. In the words of the British Bombing Survey Unit, if there had been no raids the yards would probably have completed about 30 U-boats more than they did during the next year. Similarly the August raids on Kiel are estimated to have denied two more U-boats. However, all these U-boats were of the old conventional type whose construction was already tapering off in favour of the new prefabricated method. Subsequent to June 1943 only those conventional U-boats already laid down were completed. (1)

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It is of interest to note that the new method of prefabrication not only effected an enormous saving of man-hours and spread the risk of bomb damage but had the effect of limiting the vital damage that could be done to shipyards. Arising from the fact that so much of the work hitherto done by shipyards was now done by the inland section assembly plants, the shipyards had much less use for their machine shops, foundries, platemakers etc. Thus a yard apparently entirely incapacitated by bomb damage to many of its shops, but with slips undamaged, continued its final assembly work practically unaffected.

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The prefabricated types with which we are now concerned started into production in December 1943. The original programme called for an output of Type XXI U-boats at an average of 33 per month from July 1944 to November 1945 and of ten smaller Type XXIII per month from September 1944 onwards. The Type XXI were to start at two in March, eight in April, 15 in May, 26 in June and the full 33 in July, thus expecting a total of 249 by 31 December 1944. The small Type XXIII were to start at one in May, two in June, five in July, seven in August and ten in September and subsequently which would give a total of 55 by the end of 1944. However, difficulties in getting the production organisation of this revolutionary method to run smoothly led to several postponements of the target programme in February, June and July. No delays due to Allied bombing occurred until 29 July when, during a heavy

(1) 145 were completed between July and December 1943 and the final 112 were completed before the end of June 1944.

raid by the U.S. 8th A.F. on Bremen, a 100 ton crane in the Deschimag yard was badly damaged. This crane was necessary in putting the prefabricated sections into place on the assembly slips before welding them into complete hulls. A considerable loss of output resulted before repairs could be completed. On 14 August a successful daylight attack, again by the U.S. 8th A.F., on the electric motor works at Mannheim resulted in a total cessation of work for two months causing further delay in completion of Type XXI boats. The net result was that in the two western assembly yards in Hamburg and Bremen only one Type XXI was produced in June, four in July, five in August and ten in September.

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More organisation troubles added to the effect of these bombing attacks resulted in a further lowering of the monthly target in September and again in October to a figure of 22. Bombing interference was again caused on the 3 October and night of the 2/3 December by R.A.F. attacks on Hagen in the Ruhr in which city was located much of the submarine storage battery production. Three heavy raids by the U.S. 8th A.F. during November on Hamburg caused hold-ups on the final assembly slips at Blohm and Voss but the main reason why output continued to fail at both Blohm and Voss and at the Deschimag assembly slips in Bremen was the frequent breaching of the Dortmund/Ems and Mittelland canal system.

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The raw steel for ten of the 32 firms engaged in Type XXI section fabrication came via these canals and the finished sections from the section assembly plants had no other way of reaching the two western final assembly yards in Hamburg and Bremen - they were too heavy and bulky to go by rail or road transport. Delivery of sections dropped from an average of 106 per month in the previous four months to 30 in October, 18 in November and 17 in December. Output of completed boats, which had picked up to 14 in October fell to only five in November.

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The other yard engaged in assembling Type XXI boats were the Schichau works in Danzig. No bombing interference occurred here but the same organisation troubles obtained. Output did not start until July and up to 31 December only 20 Type XXI were completed. In all, instead of the 249 scheduled in the original plan only 80 were delivered to the German Navy by the end of 1944. It has been calculated that about 30 more would have come into being if there had been no bombing but the rest failed to materialise because of the difficulties experienced in such a revolutionary and hurried change of method.

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The production of the smaller Type XXIII was also delayed but not to such a marked degree. Two assembly yards only were concerned, one in Kiel (The Germania Werft) which did not start on the work until November, and the other in Hamburg (the Deutsche Werft) which until the last quarter of 1944 was not affected by bombing. Output started in May with one Type XXIII, two in June, three in July, five in August and eight in September. Various delays prevented the ten per month from eventuating and hold-ups in the delivery of sections limited production thereafter to seven in October, eight in November rising to ten in December. Instead of the planned 55 by the end of 1944 only 44 were delivered. The B.B.S.U. reckoned that about five more would have been produced if there had been no bombing.

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It should be noted that there is a slight divergence in the figures quoted by different German records. A mean has been taken and given in this account. It does not affect the conclusion which is that the ambitious German programme broke down in this period mainly because of its own shortcoming but in the last three months of 1944 Allied bombing was very definitely slowing down the output.

(viii) - Summary of bombing results - June to December 1944

It will be seen from the foregoing that the Strategic Bomber Force during this period was engaged on many occasions directly and for much of the time indirectly against enemy naval and mercantile resources. It could do this and give army support on a large scale in addition to its legitimate strategic objectives only because at long last the numbers and types were approaching the goal planned for as long ago as 1941 - a goal which had receded from time to time not only because of the inevitable lag between drawing-board and full production but because of much frittering of strength in basically uneconomic and diversionary attack demands from outside sources.

During this period of seven months the direct and indirect participation against naval targets involved 15,716 attacking aircraft who dropped 53,024 tons of bombs for the loss of 251 bombers. The results amounted to 217 enemy vessels of all kinds aggregating 252,536 tons and 12 U-boats being sunk with a further 56 vessels of 236,749 tons and four U-boats damaged. Havoc had been caused in E-boat bases, widespread damage was done in the all-important repair yards, and the more subtle but no less valuable slowing down of prefabricated U-boat construction was well under way.

CHAPTER VIII - PART II - JANUARY TO MAY 1945 INCLUSIVE

(i) Policy and Operations - January 1945

Several factors combined to limit the marginal effort of the heavy bomber force against the naval targets on the list issued on the 29 December. The German counter-attack in the Ardennes, which opened in mid-December, resulted in a major diversion of bomber effort until the 18 January. Much of the remainder was directed to various oil production targets in Germany interspersed with area raids on industrial centres. There was also a heavy attack early in January by 350 aircraft on Royan in support of amphibious Free French operations against the enemy fortified area at the mouth of the River Gironde. A renewal of Bomber Command's raids against the Dortmund/Ems and Mittelland canal systems took place on the first day of January which put them both out of action again until the 6 February resulting among other benefits in further serious delays in the Type XXI output.

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page 832

It was not till the 12 January that any purely naval objective was tackled. On this day 25 Lancasters attacked the U-boat pens at Bergen with 128 tons of bombs including Tallboys. Two direct hits were made with these bombs which ruptured the 3.5 metre roof but did not penetrate the lower inside roof of 1.5 metre thickness. The thin walls dividing the repair shops were demolished but the machines were scarcely touched. No U-boats were hit and very little damage was done in the dock-yard but the completion of the pens was put back for another two months.

The first effective attack of the year on U-boat production was made on the 17 January by the U.S. 8th A.F. with 146 aircraft on the Blohm and Voss assembly yard at Hamburg at a cost of only four aircraft with good results. Three commissioned Type XXI U-boats were sunk and another one damaged. In addition five merchant ships were sunk and three more damaged. Individual names and tonnages are given in Appendix XVII. A summary of effort is in the table below.

Port	Dates attacked	Author	No. of aircraft attacking	Long Tons dropped	A/C Loss	Enemy Vessels	
						Sunk	Dam.
Canals	Jan. 1 and 1/2	B.C.	246	1,274	3	Cut till 6 Feb.	
Bergen	Jan. 12	B.C.	25	128	3	-	-
Hamburg	Jan. 16/17	B.C.	8	7	-	-	-
	Jan. 17	U.S.A.A.F.	146	360	4	5 plus 3 U/Bs	3 plus 1 U/B

After the end of the Ardennes battle the heavy bomber force resumed oil and transportation priorities which were reaffirmed in a new directive issued on the 19 January giving the order as:-

A.H.B./  
IIH/241/3/  
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1. The German petroleum industry.
2. The German lines of communication, with a clause that if weather or tactical conditions were unsuitable, area targets were to be attacked.
3. The German jet aircraft production.

Stress was laid on the attack of U-boat production by the marginal effort of both bomber forces.

The War Office had been disturbed by the strength and success of the German tank forces in the Ardennes battle and pressed for a high priority against tank production. At the end of January this was made co-equal with communications but after a protest by the U.S. Chiefs of Staff it was agreed that this should not interfere with increased measures against U-boat production, particularly in Bremen and Hamburg. Partly due to this and following the high level deliberations at Malta a special directive was addressed to the heavy bomber H.Q.'s on the 7 February as follows:-

1. To maintain and if possible increase the marginal bomber effort on the assembly yards in Bremen and Hamburg.

A.H.B./IIIG/86/6  
Mins. of 17th  
Mtg. of the C.S.T.C.

The Argonaut  
Conference See Chap  
X Section (11)

A.H.B./IIH/241/  
599(G) Encl. 34A

2. To maintain the marginal effort against U-boat operating bases and be ready to strike heavily if the bases became crowded beyond the capacity of the concrete pens.
3. To increase by 100 per cent the air mining effort in U-boat training areas.

(ii) Operations in February and March 1945

Meanwhile early in February, acting on requests from the Admiralty and S.H.A.E.F., attacks were made on the Small Battle Unit and E-boat bases at Poortershaven (near Rotterdam) and Ymuiden. On the 3rd these two targets were visited by 19 and 17 Lancasters respectively armed with Tallboy bombs. The Small Battle Unit record makes no mention of any casualties in the former raid and E-boats in this vicinity were well dispersed at the mouth of the river at the Hook. At Ymuiden there was only superficial splinter damage to E-boats. The attack was repeated on Ymuiden on 8 February by 15 Lancasters but, although the shelters were ruptured by Tallboy hits, no damage resulted to light craft as both the E-boats and the 31 Seehunde midgets were dispersed at a distance in the port. Another attack took place on 10 February by nine U.S. aircraft in which one E-boat was destroyed.

E-boat War Diary  
Admty,  
F.D.S./X.237/48

More concentrated attacks on U-boat production started soon after mid-February with a dead set at the Deschimag Type XXI assembly yard in Bremen. It had been realised that very little shop work was done at these final assembly yards so that dense area attacks were unsuitable. Precision bombing by even a few aircraft could result in serious dislocation of output provided the accuracy was sufficient to damage the actual slipways on which the Type XXI were assembled. Consequently the Deschimag yard was attacked nightly at relatively low altitude in good visibility from 17/18 February to the end of the month by parties of four to six Mosquitoes each carrying a 4,000 lb. G.P. bomb. German records confirm the damaging results following the adoption of this method. One of these attacks was particularly successful (21st/22nd) when one Type XXI was destroyed, two were badly damaged and three more on the slips completely blocked from launching. To make up good measure, a daylight attack was made on 24 February by the U.S. 8th A.F. with 198 aircraft which caused much damage and sank a Type XXI boat commissioned in September 1944 but receiving final rectifications. Two more Mosquito attacks took place early in March and then on 11 March a heavy U.S. air attack with 407 aircraft created such havoc that the Deschimag yard virtually shut down and only token activity was maintained thereafter.

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Hamburg was only visited once in February when on the 24th 289 U.S. aircraft attacked oil production plants but bombs falling in the dock area sank two merchant ships. However, U-boat production was very directly affected by further attacks during February on the Dortmund/Ems and Mittelland canals which once more put them out of use. Repairs to the breaches were again started but a heavy raid on 3/4 March finally cut them beyond repair and they remained useless for the rest of the war.

Wilhelmshaven was raided on 27 February by a small party of U.S. aircraft but the objective was the railway system and no bombs fell in the dockyard area. The only other naval

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target attacked in February was the port of Horten in the Oslo Fjord where 83 Lancasters and Mosquitoes dropped 221 tons of bombs on the night of the 23rd/24th. The Karl Johans shipyard was completely devastated and six vessels were sunk. The table below gives the bomber effort for February.

Port	Dates attacked	Author	No. of attacking aircraft	Long tons dropped	A/C loss	Enemy Vessels	
						Sunk	Dam.
Poortershaven	Feb. 3	B.C.	19	96	-	-	-
Ymuiden	Feb. 3 and 8	B.C.	32	171	-	-	-
	Feb. 10	U.S.A.A.F.	9	36	-	1	-
Bremen	Feb. 17/18, 18/19 19/20, 21/22 22/23, 25/26 and 27/28	B.C.	38	71	-	1 U/B	2 U/Bs plus 3 blocked
	Feb. 24	U.S.A.A.F.	198	513	1	1 U/B	-
Hamburg	Feb. 24	U.S.A.A.F.	289	729	-	2	-
Horten	Feb. 23/24	B.C.	83	221	1	6	-
Wilhelmshaven	Feb. 27	U.S.A.A.F.	23	53	-	-	-
Canals	Feb. 7/8 and 21/22	B.C.	341	1,628	18	Cut again till end of Feb.	

A very greatly increased bomber effort was spread further afield during March but with Hamburg and Bremen receiving most of the weight. The yards in Hamburg were attacked heavily twice by the R.A.F. and three times by the U.S. 8th A.F. during which a total of five U-boats and fifteen ships were sunk, and one U-boat and eleven other vessels damaged. Another R.A.F. raid had oil plants as the aiming mark and no ship casualties resulted. Output of Type XXI boats dropped to four from the Blohm and Voss yard.

After 11 March Bremen received attention mainly on account of the oil plants near the dock area. During the course of one of these (21 March) a large new destroyer was sunk alongside the quay of one of the basins. However, a last attack on the Deschimag yard was made on 30 March by 319 U.S. aircraft where two cargo vessels, six conventional U-boats under repair and three new Type XXI boats still fitting out alongside were all sunk.

Other heavy attacks delivered during March were on Sassnitz (6th/7th) by Bomber Command in which a destroyer and three small craft were sunk with two vessels damaged, on Kiel (11th) by U.S. aircraft where three 750 ton escort minesweepers were sunk with two Type XXI and a conventional U-boat damaged, on Swinemunde (12th) in which U.S. aircraft sunk a 12,000 ton liner and six other vessels and on Wilhelmshaven (30th) by U.S. aircraft whose bombs sank the light cruiser Koln, seven other vessels and three U-boats including a commissioned Type XXI.

Two light attacks were made on Ymuiden by nine and three U.S. aircraft on the 14th and 21st March respectively but the E-boats and other small craft were too well dispersed and no casualties resulted.

An interesting target was attacked at the end of March. This was the colossal concrete shelter at Farge, situated 15 miles down river from Bremen. On the 27th, 109 Lancasters dropped 694 tons of heavy bombs followed on the 30th by 32

Fortresses carrying special A.P. bombs but in neither case was there any penetration of the roof. This immense structure was part of the undertaking to put all U-boat construction under concrete which had originated early in 1943. Four small shelters had already been completed:-

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At Deutsche Werft - Hamburg in March 1943

At Howaldts Werke - Kiel in February 1944

At Howaldts Werke - Hamburg in March 1944

At Deutsche Werke - Kiel in November 1944

Under the prefabricated U-boat programme the shelters at the Howaldts Werke both in Kiel and Hamburg were used for Type XXI section assembly, that at the Deutsche Werft in Hamburg for Type XXIII final assembly and that at the Deutsche Werke at Kiel for the final assembly of the midget Seehund U-boats.

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The largest shelter of all was the one at Farge, known by the code name of Valentin, which had been begun in May 1943 and scheduled for completion by March 1945. It was intended to concentrate into this all the western Germany final assembly of the Type XXI boats with a planned output of 14 per month. Two other smaller shelters nearby, code names Hornisse and Wespe, were to feed it with the requisite number of assembled sections per month. When completed it was intended that all assembly on the open slipways in Bremen and Hamburg should cease.

ibid

Valentin was an enormous citadel 1,350 feet long and 320 feet wide with walls and roof 15 feet thick. At this time in March various delays had postponed the completion date to August 1945. After the above mentioned bombing attack the roof was increased to 22 feet and was subsequently ordered to be further increased to 33 feet in thickness but was never finished before the end of the war neither did any assembly of Types XXI ever start.

The March bombing effort was five times as great on naval objectives as that for February and sounded the death knell for U-boat construction as well as causing irreparable destruction in the major ship and repair yards. By now the attacks were largely unopposed, except by flak, as the ceaseless bombing of synthetic oil production had almost grounded the enemy fighter force. The summary of the month's effort is given overleaf.

Port	Dates attacked	Author	No. of Attacking Aircraft	Long Tons dropped	A/C lost	Enemy Vessels	
						Sunk	Dam.
Hamburg	Mch. 5/6, 8/9, 21/22 and 31	B.C.	910	3,754	16	1 U/B	5
	Mch. 11, 20 and 30	U.S.A.A.F.	1,190	2,782	7	15 plus 4 U/Bs	7 plus 1 U/B
Bremen	Mch. 4/5, 9/10 13/14, 20/21, 21, 21/22 and 27/28	B.C.	196	720	1	1	-
	Mch. 11 and 30	U.S.A.A.F.	726	1,690	3	9 U/Bs	-
Emden	Mch. 3/4	U.S.A.A.F.	18	41	-	-	-
Canal	Mch. 3/4	B.C.	213	1,028	7	cut for good	
Sassnitz	Mch. 6/7	B.C.	186	680	1	4	2
Kiel	Mch. 11	U.S.A.A.F.	344	708	-	3	3 U/Bs
Swinemunde	Mch. 12	U.S.A.A.F.	660	1,435	1	7	-
Ymuiden	Mch. 14 and 21	U.S.A.A.F.	12	46	-	-	-
Wilhelmshaven	Mch. 30	U.S.A.A.F.	327	837	1	8 plus 3 U/Bs	-
Farge	Mch. 27	B.C.	109	694	-	No penetration of shelter	
	Mch. 30	U.S.A.A.F.	32	124	1		

## (iii) Operations in April and May 1945

Having crossed the Rhine at the end of March, the Allied armies encircled the Ruhr area early in April and by the 13th it was considered that the strategic bomber objectives had been achieved. Henceforward the heavy bomber force was used mainly to give direct support to the land campaign but U-boat production continued to be the main target for the marginal effort. Consequent upon withdrawals before the Russian armies advancing into East Germany along the Baltic coast, Kiel had now become the principal German naval port and was also the central administrative base. Orders were given to the heavy bomber commands to concentrate attacks on this target with the Hamburg U-boat yards as a second priority.

Attacks on Kiel opened on the 3rd and 4th April when 693 and 505 U.S. aircraft dropped a total of 3,138 tons of bombs in the two days. Three commissioned Type XXI and three conventional U-boats were sunk besides two liners and ten other vessels. This was followed on the 9/10 April by an attack by 578 Bomber Command aircraft with 2,638 tons of bombs which sank the pocket battleship Admiral Von Scheer, the light cruiser Emden, torpedo boat T.1 and inflicted very severe damage on the heavy cruiser Admiral Hipper resulting in her being scuttled soon afterwards. In addition five other vessels were sunk and two large cargo ships were badly damaged. Widespread damage was done in the dockyard and both the Deutsche Werke and Germania Werft shut down completely.

The Hamburg yards received attention on the night of 8/9 April by 427 Lancasters and Halifaxes who dropped 1,503 tons of bombs. Three commissioned Type XXI U-boats and five cargo vessels were sunk with damage to another six. Enormous damage was done in Blohm and Voss and Howaldts yards resulting in

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complete cessation in both of any further production. Hamburg only received three more light attacks up to mid-April and no more U-boat or ship casualties resulted.

Kiel was attacked again heavily on the night of 13/14 April by 467 Bomber Command aircraft and thereafter nightly from the 21st to the 27th by parties of Mosquitoes carrying 4,000 lb. bombs. During these raids two more commissioned Type XXI and seven conventional U-boats were sunk.

Raids were made on other enemy ports during April. Seventeen Lancasters bombed Ymuiden on the 7th but hit no E-boat or Seehund. One 1,000 ton ship was sunk. Travemunde was visited on three occasions by small raids in which a U-boat depot ship and a torpedo recovery vessel were sunk. Cuxhaven was bombed on the 14th/15th by 23 Lancasters. Much damage was inflicted on the port but little shipping was present and no sinkings occurred. On 16 April a daylight attack was made on Swinemunde by 16 Lancasters in which the pocket battleship Lutzow was repeatedly hit and sank.

#### Support bombing for naval forces

To facilitate approach by our naval forces to the Elbe and Weser estuaries the dominating fortress of Heligoland was subjected to very intense attacks on the 18th and 19th April by a total of 978 heavy aircraft of Bomber Command. No less than 5,180 tons of bombs including Grand Slams (22,000 lb.) and Tallboys were dropped which reduced the island's fortifications to rubble and dismounted many of the big long range guns. A similar attack was delivered on 25 April by 468 aircraft on the heavy batteries at Wangerooge Island covering the approaches to Wilhelmshaven with equally successful results.

Away down the Biscay coast a determined effort was being made to liquidate the enemy fortified area at the mouth of the Gironde. In support of this the U.S. 8th A.F. carried out heavy attacks on the strongpoints at Royan, Pointe de la Coubre and de Grave on the 14th, 15th and 16 April with a total of 2,746 aircraft in which 6,398 tons of bombs were dropped. The area fell to the Allies on 20 April.

A summary of the April bomber effort on purely naval targets is given below.

Port	Dates attacked	Author	No. of attacking aircraft	Long Tons dropped	A/C Loss	Enemy Vessels	
						Sunk	Dam.
Kiel	Apr. 3 and 4	U.S.A.A.F.	1,198	3,158	3	12 plus 6 U/Bs	2
	Apr. 9/10, 13/14, 22/23, 23/24, 24/25, 25/26, 26/27 and May 3	B.C.	1,389	4,959	7	8 plus 9 U/Bs	3
Hamburg	Apr. 4	U.S.A.A.F.	22	88	-	-	-
	Apr. 8/9, 9, 9/10 and 13/14	B.C.	589	1,957	7	5 plus 3 U/Bs	6
Ymuiden	Apr. 7	B.C.	17	80	-	1	-
Travemunde	Apr. 8	U.S.A.A.F.	12	27	-	-	-
	Apr. 8/9 and 23/24	B.C.	50	84	-	2	-
Cuxhaven	Apr. 14/15	B.C.	23	113	-	-	-
Swinemunde	Apr. 16	B.C.	16	80	1	1	1

(iv) The effects of bombing on U-boat production(a) Between January and March 1945

It must be stressed that the big Type XXI U-boat was considered to be the real threat in any resumption of U-boat warfare on a large scale. The appearance of even 50 of these on the high seas would have seriously embarrassed essential supplies coming across the Atlantic. The small short ranged Type XXIII could only be used in quick stabs at our East Coast traffic. The containment of these latter and the conventional U-boat fitted with schnorchel was certainly being effected but only by denuding the ocean of nearly all surface and air anti-submarine forces.

The Type XXI production, which had been drastically slowed down in 1944 by organisational troubles and in the latter three months to a certain extent by bombing, suffered a serious blow early in 1945 by the Russian advance into East Prussia. The threat of this was apparent to the enemy in January and at the end of this month all work was stopped at Danzig and Gdynia so as to get the skilled workers away to the west in good time. Consequently the Type XXI output from the Schichau yard in Danzig, which had previously been about six per month, ceased for good after 31 January. (1)

By the end of 1944 the purely internal organisation troubles in production had been smoothed out and output by the two western assembly yards should have, in the absence of bombing, continued at or slightly above the actual December total of 22 boats. However, only eleven were delivered in January and fourteen in February. It seems reasonable therefore to credit Allied bombing as a whole with the deficit of about 19.

In the papers of the Committee for Shipbuilding (short title HAS), then headed by Otto Merker, is a statement dated 14 February 1945 giving the record of production since the inception of the programme and the situation of the boats already delivered to the German Navy. It is sufficiently enlightening to be given below:-

State	Type XXI		Type XXIII	
	No.	Individuals	No.	Individuals
Fully operational	Nil	-	2	U.2324, 2322
Practically ready operationally	7	U.2502, 2503, 2506, 2511, 2519, 3504, 3508	8	U.2321, 2325, 2326, 2328, 2329, 2335, 2336, 2340
Under final training	27		11	
Used as school boats	4		1	
Still undergoing acceptance trials	30		14	
Commissioned but not yet ready for trials	18		12	
Delivered to the Navy but still at the yards	13		1	
Delivered but subsequently damaged by bombing	3	U.2508, 2512 and 2547	3	U.2323, 2331 and 2342
Commissioned but already destroyed by bombing at various ports	5	U.2515, 2523, 2530, 2532, 2537	1	U.2323
Total completed output	107		53	

(1) Six Type XXI were delivered during January.

German records  
in  
U.S.S.B.S.

It can be seen what a high proportion still had not reached or passed even their acceptance trials and considering that most of these boats had been delivered in the latter part of 1944 it gives some idea of the lengthy teething troubles inherent in a rushed design and construction.

On 24 February another commissioned Type XXI (U.3007) was sunk at Bremen so that by 1 March direct bombing had since 31 December 1944 sunk six commissioned Type XXI and one not yet delivered, and had damaged or blocked from launching five more. The effects of bombing on the yards and other parts of Germany had denied a further nineteen from ever coming into existence. The chief of these latter were undoubtedly the cutting of the canal system linking the rivers Rhine, Ems, Weser and Elbe and the shortage of submarine storage batteries due to the continual bombing of Hanover and another effective raid in February on Hagen. (1) Most of the submarine electric motor production was in Berlin and Mannheim both of which cities had been frequently attacked. Although the output had been seriously curtailed, it was in sufficient quantity to match the greatly reduced number of launchings of complete U-boats.

The Type XXIII programme continued to escape direct interference by bombing, partly because the Deutsche Werft - Hamburg assembly was under concrete and partly because Kiel (containing the other assembly in the Germania Werft) had not yet been heavily attacked. However, output suffered from inability to receive components and dropped from a steady nine per month to four in February, the deficit of five being attributed to the effects of bombing.

The very great increase in bombing which took place during March brought production of both types almost to a standstill by the end of the month. Direct hits accounted for one commissioned Type XXI at Wilhelmshaven, three prior to delivery at Bremen, and one commissioned Type XXIII in Hamburg. The concentrated bombing of the assembly yards in Bremen and Hamburg resulted in only two Type XXI being finished in the former before it virtually closed down and four from Blohm and Voss in Hamburg. Type XIII output dropped to three.

(b) Bombing in early April puts a full stop to U-boat production

The final blows fell on 8/9 April when the Hamburg yards of Blohm and Voss, Howaldts Werke and Deutsche Werft were forced to shut down completely following a raid that night by 427 Bomber Command aircraft and the 9/10 April raid on Kiel by 578 Bomber Command aircraft after which the Deutsche Werke and Germania Werft ceased production. Only three Type XXI and three Type XXIII were delivered.

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- (1) At Hagen, the repairs to the battery producing plant had barely been made following the December raid when the place was knocked down again in February. It was finally put out of production by a heavy raid on 15/16 March. At Hanover, the continual raids had destroyed all the sources of power and light in the industrial quarter. The only other battery producing factory was in Posen which fell to the Russian advance in January 1945.

The various German statements and records of prefabricated output differ slightly in these last months but it appears that in all, since the start of the programme, between 117 and 120 Type XXI and 63 Type XXIII U-boats were finished and delivered to the German Navy. In the case of the all-important Type XXI this was a very different total to that in the original schedule; moreover of the 120 delivered, only one was operational at the end of the war. The failure of the construction programme was mainly due to defects in the internal organisation irrespective of bombing. When these had been put right in the latter part of 1944 it was then entirely due to the effects of bombing that a regular monthly quota of 22 was not delivered to the German Navy. The following table sets out relevant figures.

Production	Type XXI	Type XXIII
The number scheduled for delivery in the original programme by 1 May 1945	381	95
The number not produced because of organisation troubles, faulty design and bad workmanship	202	13
The estimated number denied by delays and damage caused by Allied bombing attacks	60	19
The actual number delivered to the German Navy	119	63
<u>After commissioning</u>		
The number sunk by Allied bombing attacks	15	2
The number still training, on acceptance trials or fitting out at the end of the war	91	38
The number at or on passage to operational bases in Norway but not yet fully operational	12	17
The number fully operational at the end of the war	1	6

(v) Summary of bombing results in 1945 and brief survey of the war period against U-boat production

The attacks on naval objectives were not heavy until after the special directive issued early in February. From then onwards they were stepped up to a maximum mainly against U-boat production. In the four month period the effort against maritime targets involved attacks by 9,696 aircraft who dropped 30,352 tons of bombs for the loss of only 86 aircraft. The results aggregated to 84 vessels of 195,001 tons and 32 U-boats being sunk or burnt out, and 28 vessels of 144,148 tons and five U-boats damaged. Devastation was caused in many ports and the whole U-boat production brought to a standstill by the second week in April.

Over the period of the war, the effects of bombing against naval objectives in an enemy's home country bear out the axiom that decisive results will not be obtained until a large measure of air superiority can be achieved over that country. Until then even heavy attacks are bound to be uneconomically

expensive in air losses with no compensatory accuracy of bombing and as such are bound to be disappointing in results.

Take the example of U-boat production which was the target most often asked for by maritime interests. Between 1941, when it received priority under the Battle of Atlantic directive, and the end of the war a very large effort was expended in attacks on the yards concerned as the following figures show:-

Year	AREA ATTACKS			PRECISION ATTACKS			Results on new U-boat output
	Attacking aircraft	A/C loss	Tons	Attacking aircraft	A/C loss	Tons	
1941	5,071	157	6,436	-	-	-	NIL
1942	5,412	360	10,879	-	-	-	NIL
1943	7,673	291	20,996	1,959	99	4,356	Nil up to July Very little after Aug.
1944	11,709	210	33,706	1,182	30	2,604	Little until Oct. then increasing
1945 4 mths.	1,729	9	4,346	6,029	42	18,886	Very great and output ceased in Apr.
Totals	31,594	1,027	76,363	9,170	171	25,846	

It can be seen that up to July 1943 there was no effect on U-boat production to compensate for the serious aircraft losses. In the second half of 1943 precision daylight attacks started but without local air superiority so aircraft loss remained very high, again without much affecting U-boat output. Throughout 1944 until the late autumn little interference was caused. Aircraft casualties remained high though the relatively few precision attacks were less costly. However, output did start to fall off but due mainly to the bombing of canals and battery production neither of which were regarded at the time as part of the attack on U-boat production. In 1945, enemy opposition by both day and night fighters fell away owing to the fuel shortage and to a lesser degree to more adequate long range fighter escort to the bombing raids. Precision attacks were stepped up to four times the weight of area bombing. The result was immediate. At a fraction of the previous cost in aircraft the yards were laid waste and output of U-boats ceased early in April.

It has been said that here is the lesson, here are the proofs - precision bombing should have been started far earlier. But this type of bombing cannot be done either in daylight or by accurate flare marking at night in the face of efficient opposition. Long range fighter escort by itself is not the whole answer by day and it cannot be given by night. It was the ceaseless pounding away by the heavy bombers at strategic targets, which was so frequently criticised by uninformed opinion, that finally emasculated the enemy fighter opposition, and incidentally preserved our own country from heavy enemy raids by forcing his aircraft production into purely fighter types.

## CHAPTER IX

## ANTI-U-BOAT OPERATIONS OVERSEAS AND IN MID-ATLANTIC

JANUARY TO MAY 1945<sup>(1)</sup>(1) Introduction

The operation of U-boats in Atlantic overseas billets during this final four months of war was little more than a gesture in the forlorn hope that it might result in a diversion of Allied anti-U-boat effort from the strangulation of the inshore campaign around the British Isles. The boats employed were all big Type IX.s which were too unwieldy for shallow inshore operations and where in any case their long sea endurance was not matched by equally long human endurance in the harassing conditions of our home waters. In their overseas role they had a few successes amounting in all to the sinking of nine merchant ships and damage to five others for the loss of twelve U-boats. Allied Air played little part in this and surface craft were responsible for every kill.

The weight of air opposition varied widely. On the North American seaboard there were the considerable dispositions of the Canadian Eastern Air Command and the United States Eastern Sea Frontier forces which on the 1 January were at strengths of 105 and 147 aircraft respectively but in the Gibraltar area there was on this date only one British squadron (No. 22 S.A.A.F. Venturas). The independent minded United States Moroccan Sea Frontier with a strength of 72 aircraft spent much of their flying effort on long range cover to their UG and GU convoys far to the westward where there were no U-boats and only a small proportion was devoted to the inshore approach to the Gibraltar Strait. In the mid-Northern Atlantic, where the weather reporting U-boats lay and through which passed the U-boats bound to and returning from North America, there was no shore based air flying. The one and a half Coastal Command squadrons based in the Azores reached only to latitude 45°N in their support to the trans-Atlantic convoys which were by now routed down to take advantage of this cover.

The overseas and mid-Atlantic U-boat positions on the 1 January 1945 were as follows:-

Two were operating off Halifax - U.806 since 15 December and U.1232 just arrived, with U.1231 leaving this vicinity for home. To the westward of the Gibraltar Strait was U.870 newly arrived on patrol. In the mid-Northern Atlantic were two weather reporting boats (U.248 and U.1009) with U.1230 nearby on her homeward journey from Canada. Two more overseas boats were clearing south of Iceland into the Atlantic - U.1233 bound for Canada and U.869 for Gibraltar.

With the exception of four U-boats homeward bound from the Far East (U.843, 861, 510 and 532) who subsequently came up the centre longitudes of the Atlantic, the three areas quoted above were the only ones in which overseas U-boats were present during the remainder of the war and they will be considered separately month by month.

- (1) U-boat positions and reports mentioned in this chapter are taken from Admty. F.D.S. (96/55) and the daily plot compiled from this source held at A.H.B.I.

See Map 37

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(ii) - January 1945

(a) - The North American Seaboard

U.1232 soon started action for on the 4 January she attacked convoy SH.194 off Halifax, sinking the Polarland (Nor.) - 1,591 tons and damaging the Nipiwani Park (Br.) - 2,373 tons. No air escort was present and although constant area patrols were being flown no location of the U-boat was obtained before or after the attack.

On the next day the U-boat Command signalled both boats that if their present operational area proved unfruitful they had permission to edge southward close in off New York. Having just scored a success U.1232 did not move but U.806 shifted down off Cape Cod. Here she saw nothing and started homeward about the 8 January.

On 14 January U.1232 continued her success by sinking three large merchant ships out of convoy EX.141 also close off Halifax. (1) The flying weather on this occasion was very bad and no air escort was being given but the surface escorts in their counter-attack managed to damage both U.1232's periscopes and she left for home two days later. No other U-boat came to these coasts until 29 January when U.1233 arrived on patrol off Halifax.

During the month no sighting or contacts were made by either the Canadian or American Air Commands. Their flying hours are given in the table below.

<u>Command</u>	<u>Task</u>	<u>Total hours</u>	<u>A/c lost</u>	<u>Sights</u>	<u>Attacks</u>
E.A.C. - Canada	Convoy escort Area patrols	1,717 1,390	-	-	-
Eastern Sea Frontier	All kinds of a/c flying	5,265	-	-	-

(b) - The Western Approach to Gibraltar

On the 3 January the newly arrived U.870 attacked convoy GUS.63 at late dusk when 24 miles west of Cape Spartel and damaged S.S. Henry Miller (U.S.) - 7,207 tons. There was no British air escort to this convoy and U.S. records available are not in sufficient detail to determine if a Moroccan Sea Frontier aircraft was actually with the convoy at the time of the attack. On the next day at 0843A hours Ventura D/22 Sqdn. S.A.A.F. on the way to escort convoy KMS.75 sighted the conning tower and after part of the hull of a U-boat eight miles away in a position 80 miles off the Gibraltar Strait. On approach the U-boat disappeared when the aircraft was still four miles distant and no attack was possible. After searching the vicinity for half an hour, D/22 met the convoy some 37 miles to the westward and informed the S.O. Escorts. The U-boat was of course U.870.

(1) The ships were the Athel Viking (Br.) - 8,779 tons, the British Freedom (Br.) - 6,985 tons and the Martin Van Buren (U.S.) - 7,176 tons.

A.H.B.  
IHK/85/43  
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Encl. 23.

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U.S. Fleet  
A/S Bulletin

A.H.Q.Gib.  
O.R.B.

ibid

Just after nightfall on the 9 January she attacked convoy GO.107 right in the Gibraltar Strait but only sank the Free French sub-chaser L'Enjoue who was one of the surface escorts. Being fully dark, no air escort was being given by No. 22 Sqdn. and again it is not known if any American night-flying aircraft was present but it is unlikely. U.870 followed this up on the 10th by attacking convoys KMS.76 in the late afternoon about twelve miles west of Cape Spartel and sank the Blackheath (Br.) - 4,637 tons. Air escort was being given by Ventura Z/22 Sqdn. and the pilot actually saw the plume of water from the torpedo explosion alongside the leading merchant ship in the starboard column. No signs of the U-boat were seen either before or after the event neither did the surface escorts detect her before or gain asdic contact afterwards.

No such U-boat activity had been experienced in the Gibraltar area for a very long time and it now came at a time when practically all the overseas resources of Coastal Command had been recalled to Home waters. Even the Moroccan Sea Frontier were in the process of detaching squadrons to No. 19 Group in southwest England.<sup>(1)</sup> Following this last attack by U.870 the departure of No. 127 U.S.N. Ventura Sqdn. was cancelled but the Liberators and Catalinas had already left. In place of the night flying Liberators, the Air Ministry asked the Mediterranean Air Command if they could loan a Leigh Light squadron. This was arranged and No.458 R.A.A.F. L/L Wellington Sqdn. was transferred at the end of January to Gibraltar where it started operations in February under Coastal Command control.

ibid

However, after this flurry of attacks U.870 made no further hostile moves and started her journey home about 21 January. At 1314A hours on the 22nd, Ventura P/22 Sqdn, when on the way to escort KMF.38A sighted schnorchel smoke in clear weather at a range of eight miles about 85 miles southeast of Cape St. Vincent. When still four miles away the smoke ceased and on arrival over the spot no disturbance was seen in the water but some wisps of smoke were still visible. Two depth charges were dropped as a deterrent and markers laid. The aircraft then met the convoy which was off Cape St. Vincent and informed the S.O. Escorts. He detached two corvettes who arrived at the sighting position at 1624A hours but a thorough search gained no asdic contact. If this sighting was genuine and not a whale blowing it might have been U.870 homeward bound or it could have been U.869 arriving on patrol. No further signs of any U-boat were seen during the remainder of the month. The flying in the area during January is given in the table below:-

A.H.Q.Gib.  
C.R.B.  
and  
U.S. Fleet  
A/S Bulletin

Command	Task	Total hours	A/C lost	Sights	Attacks
No. 22 Sqdn. from Gib.	Convoy escort Area patrols	627 250	1 -	2 -	1 -
U.S. Air Morocco	Convoy escort Area Patrols	1,034 1,815	- -	- -	- -

(1) On 7 January, Cominch (Admiral King U.S.N.) had approved the move of No. 112 U.S.N. Liberator Sqdn., No. 127 Ventura Sqdn. and half of No. 63 U.S.N. Catalina Sqdn. from the Moroccan sea Frontier to the United Kingdom. Ref: Coastal Command C.R.B. for Jan. 1945 - Appendix 7.



(c) - The Mid-Northern Atlantic

On 3 January the returning U.1230 reported from position 5600N x 3000W giving the results of her cruise in Canadian waters and that she had now effected repairs to a leaky battery hatch and was fully operational with fuel in hand. She was ordered to remain in the vicinity of the above position and undertake daily weather reports instead of U.1009 nearby who was signalled to proceed eastwards into the North Channel for inshore operations. The other weather boat (U.248) was in 4700N x 2700W. Very approximate positions of all weather reporters were of course known to the Allies from long range D/F fixes on their frequent W/T transmissions but specific operations against them were not usually considered worthwhile. However, early in January the U.S. Navy authority decided to have a shot at pinning down the southernmost of these boats. A destroyer task group from the Azores was despatched into the general area and soon after arrival they obtained good HF/DF fixes. A systematic hunt was organised and on 16 January asdic contact on a U-boat was obtained. After several Hedgehog attacks there were underwater explosions followed by debris on the surface including German books and human flesh. This marked the end of U.248.

U.S. Fleet  
A/S Bulletin

U.1230 ceased weather reporting on 18 January and continued her homeward passage and on 20 January the U-boat Command instructed the returning U.806 to also pause in the northern billet and undertake daily reports. The southern position was re-occupied on 24 January by U.907 who had come out from Norway for the purpose and the end of the month saw these two boats still in their respective positions. Meanwhile U.1231 had made the whole passage home from Canada and U.1233 in the reverse direction had just arrived off Halifax. There was no shore based flying in this large area. Flying by the Azores based aircraft on convoy cover amounted to 642 hours but did not reach up even to the southernmost weather reporter and no sightings were made.

(iii) - February 1945

(a) - The North American Seaboard

U.1233 maintained patrol off Halifax until 17 February when she left for home having effected nothing. No other U-boat was present anywhere along this seaboard until well into March. The only two air attacks were made by Canadian aircraft close off Halifax on 18 February. The pilot's description of the objects seen momentarily both before and after the attacks point to whales, particularly as other aircraft in the vicinity reported the presence of these mammals. The February flying in the area is given below.

See Map 40

<u>Command</u>	<u>Task</u>	<u>Total hours</u>	<u>A/C lost</u>	<u>Sights</u>	<u>Attacks</u>
E.A.C. - Canada	Convoy escorts Area patrols	1,887	3	-	-
		1,871	1	-	-
Eastern Sea Frontier	All kinds of A/U flying	5,659	-	-	-

(b) - The Western Approach to Gibraltar

U.869 is thought to have been on patrol in the area through-out the whole of February but she never regained harbour.

The last signal received at base from her was on 10 January when she acknowledged her orders to proceed to Gibraltar from a position 600 miles west of Ireland. She could have reached her billet about the third week of January. After that there were at no time any hostile actions or locations which could have been attributed to her until right at the end of February. On 28 February convoy GUS.74 was 60 miles N.N.W. of Casablanca. Two of the surface escorts, the American destroyer Fowler and the Free French L'Indiscret, gained asdic contact on a U-boat and attacked. Their claim to have destroyed a U-boat was allowed and, as postwar evidence showed that U.869 was the only boat who could have been anywhere near this area on this date, her destruction was credited to this attack.

There was another U-boat, however, who was in the area earlier for a short time and about whom the evidence is positive. This was U.300, a type VII C boat, who left Trondheim on 20 January nominally for operations in the English Channel. She reached the Scilly Islands by the 6 February and then signalled base for permission to extend her cruise down to Gibraltar. This was granted and she continued down the Portuguese coast, round Cape St. Vincent and arrived in the Gibraltar Strait on 16 February. At 1055A hours on the next day she sighted and attacked convoy U.G.S.72 when 10 miles north of Tangier sinking the Regent Lion (Br.) - 9,551 tons and damaging the American Michael J. Stone - 7,176 tons. No British air escort was present at the time, the first sortie on this duty not meeting the convoy until an hour later.

The immediate search by surface and aircraft did not locate U.300 but two days later on the 19th a contact was attacked eight miles off Tangier by H.M.S. Evadne. It transpired afterwards that this inflicted damage on U.300 who retired into Tangier Bay where she bottomed to effect temporary repairs after which she proceeded westward and took up station between Cadiz and Cape St. Vincent. On 22 February she sighted a convoy of landing craft about 45 miles southeast of the Cape. Her attack failed. She was detected and depth charges from the surface escort re-opened the patched up damage forcing her to surface where her crew abandoned ship under gunfire from H.M. Ships Recruit and Pincher. The convoy was being air escorted by Ventura Q/22 Sqdn. who saw nothing of the U-boat until she surfaced after the depth charge attacks. The aircraft then watched her end and the subsequent rescue of 41 survivors.

The February flying hours in the area are given below:-

Command	Task	Total hours	A/c lost	Sights	Attacks
R.A.F. Gibraltar	Convoy escort Area patrols	664 208	- -	1 -	0
U.S. Air Morocco	Convoy escort Area patrols	747 997	- -	- -	- -

#### (c) - The Mid-Atlantic

The temporary weather reporting boat U.306 resumed her homeward passage on 3 February and U.907 left for home on 17 February. No reliefs for this task were detailed until March. An American escort carrier group operated for most of February in the area hoping to repeat the January success against

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U.248 but without result. The only passage across the area was U.866 during the last days of the month on her way over to the Canadian Seaboard.

This was far to the north of any flying from the Azores. However, during their 360 February flying hours one sighting was made but this was in quite a different direction. It occurred on 21 February when Azores based aircraft were co-operating with an American destroyer task group (TG.21.5) about 450 miles S.S.E. of the Azores. The American Liberator F/114 Sqdn. after a radar contact sighted at 1555A hours the conning tower and after part of a U-boat in the act of diving. On arrival over the spot no aiming mark remained for attack and a later search by surface craft failed to gain contact. This may have been U.843 the leading one of the four U-boats coming home from the Far East.

Evidence of the impending arrival in mid-Atlantic longitudes of others was provided on 23 February by the sinking of the independently routed Point Pleasant Park (Br.) - 7,136 tons some 540 miles northwest of Capetown. Actually this was by U.510 who was number three in the order of return.

(iv) - March 1945

(a) - The North American Seaboard

No U-boats were present until 14 March when U.866 arrived in the Nova Scotia area. From early in the month an American destroyer task group (TG.22.14) had been patrolling in a large area around Sable Island with no result but on the 18 March at 1030 hours a firm asdic contact was gained about 130 miles E.S.E. of Halifax. After several attacks much oil and debris came to the surface including German documents. This marked the end of U.866. Further to the south there were two newcomers in the last week of March. U.857 and U.879 both arrived in the Hatteras area about the 26th. After some blank days of no traffic U.857 who had discretion in her orders to move north if required, proceeded slowly up the coast and took up a position off Cape Cod about the 1 April.

There were only two air incidents, both on 26 March by Canadian aircraft. Canso N/5 Sqdn. patrolling southwest of Nova Scotia, attacked a moving but unidentified object midway between Nova Scotia and Cape Cod. No positive after effects were observed and it is not at all certain now that the object was a U-boat as postwar plotting indicates that there was not one in this area at the time. The other attack developed out of a disappearing radar contact by Liberator F/10 Sqdn. in a position 215 miles E.S.E. of Halifax. The aircraft was co-operating with an American destroyer task group (TG.22.10) and, having closed them to report the incident, was told to return to the spot while they proceeded towards it. When re-approaching the spot the aircraft got another radar contact which also disappeared soon after. Sono buoys were dropped, one of which gave what was claimed to be positive evidence and an attack was made with one Mk.24 Mine. Loud noises were heard some four or five minutes later. Soon afterwards the destroyer group arrived and carried out a prolonged search without result. It is just possible that the cause of the disappearing contacts was U.190 who was actually approaching Halifax on this date but she was not damaged by the attack. She arrived off Halifax about 30 March.

No. 247 Group  
O.R.B.

See Map 43

The flying hours in the area are given in the table below:-

Command	Task	Total hours	A/c lost	Sights	Attacks
E.A.C. - Canada	Convoy escort Area Patrols	2,685 2,680	- -	- 2	- 2
Eastern Sea Frontier	All kinds of A/U flying	7,235	-	-	-

(b) - The Western Approach to Gibraltar

There were no U-boats in the area during March, the flying hours are given below:-

Command	Task	Total hours	A/c lost	Sights	Attacks
R.A.F. Gibraltar	Convoy escort Area Patrols	916 236	- -	- -	- -
U.S. Air Morocco	Convoy escort Area patrols	833 1,239	- -	- -	- -

(c) - The Mid-Atlantic Area

In the northern part of this area there was only one weather reporting boat. This was U.1064 who arrived from Norway on 11 March and occupied an area around 5700N x 2800W until 25 March when she started back to Norway. There were several passages across. U.1233 during her return from Halifax, U.857, 879, 190 and 853, all proceeding to the North American seaboard, and the leading boat from the Far East (U.843) who came through past the Azores straight up to the Northern Transit area.

See Maps  
43 and 46

A.H.Q.  
West Africa  
O.R.B.

Further south in the Equatorial Atlantic there was unwonted activity. The sinking of the Point Pleasant Park northwest of Capetown on 23 February had alerted the West Africa Command and preparations were made to intercept any U-boats who might route their northern passage within reach of the Command's bases. A considerably increased air effort was laid on during March but no positive locations were made. In fact only one U-boat came up close to the West African coast and it was not the one who sank the Point Pleasant Park but U.861 who was well ahead of U.510 and was already passing St. Helena on 23 February. By the 15 March U.861 had traversed the bulge of Africa and was just westward of the Canary Islands from where she proceeded east of the Azores and straight up into the Northern Transit area.

U.510 came up outside the Cape Verde Islands later in the month and on 31 March was 500 miles west of Port Etienne, the northernmost base in the West African Command. The fourth boat, U.532, kept over on the South American side. She sank the independently routed Baron Jedburgh (Br.) - 3,656 tons on the night of the 10 March about 650 miles southeast of Pernambuco and on 23 March sank the Oklahoma (U.S.) - 9,298 tons in a position 900 miles northeast of the Amazon delta.

The flying hours from West Africa and the Azores are given in the table overleaf.

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<u>Command</u>	<u>Task</u>	<u>Total hours</u>	<u>A/c lost</u>	<u>Sights</u>	<u>Attacks</u>
R.A.F. West Africa	Convoy escort Area patrols	12 2,080	- -	- -	- -
R.A.F. Azores	Convoy escort Convoy support	10 968	- 1	- -	- -

(v) - April 1945

(a) - The North American Seaboard

See Map 46

At the beginning of the month U.190 was patrolling off Halifax, U.879 off Cape Hatteras and U.857 off Cape Cod. On 5 April U.857 torpedoed and damaged the independently routed Atlantic States (U.S.) - 8,537 tons about ten miles <sup>north</sup> of Cape Cod. This brought a strong hunting force to the spot and on the 7 April she was located by asdic and sunk by the American destroyer Gustafsen.

A day or two later U.853 arrived in the same neighbourhood with permission to move either towards Halifax or New York if traffic was scarce. Nothing more occurred in the patrol areas until 14 April when U.879 sank the independent Belgian Airman (Bel.) - 6,959 tons about 80 miles northeast of Cape Hatteras. Perhaps sensing a retributive hunt she then started her return journey but five days later in the early morning darkness of the 19 April she was located by the destroyer task group TG.22.10 and destroyed 150 miles south east of Halifax.

See Maps 48  
and 50

Meanwhile another newcomer (U.548) was approaching the Hatteras area. She torpedoed and sank the independent Swiftscout (U.S.) - 8,300 tons about 170 miles northeast of Cape Hatteras on the 18 April and followed this up by damaging the independent Katy (Nor.) - 6,825 tons some 50 miles from this Cape on 23 April. On the same day U.853, who had seen no traffic north of Cape Cod, fired at and sank the American patrol boat PE.56 off Portland in the Gulf of Maine. She then retired round Cape Cod and moved in close off the eastern end of Long Island. Still another newcomer was U.530 who had been detailed to the New York approaches. She took up station south of Long Island on 19 April.

Further north off Nova Scotia, U.190 had broken a long period of inaction by sinking the Canadian minesweeper Esquimalt close in off Halifax on 16 April but this proved to be her sole success and she left for home on the 29th. Finally on 30 April a destroyer group engaged in searching to seaward of Chesapeake Bay gained asdic contact, attacked and destroyed U.548 in a position about 100 miles northeast of Cape Hatteras.

This left only two U-boats on patrol off the North American Seaboard on the 1 May - U.853 to the east of and U.530 to the south of Long Island. During April the combined air effort produced no sightings or definite locations of any of these U-boats. The flying hours are given in the table below:-

<u>Command</u>	<u>Task</u>	<u>Total hours</u>	<u>A/c lost</u>	<u>Sights</u>	<u>Attacks</u>
E.A.C. - Canada	Convoy escort Area patrols	1,922 1,532	- -	- -	- -
Eastern Sea Frontier	All kinds of A/U flying	11,216	-	-	-

(b) - The Western Approach to Gibraltar

Once more there were no U-boats in this area but U.541 was on outward passage towards it at the end of April. The month's flying hours are given below:-

<u>Command</u>	<u>Task</u>	<u>Total hours</u>	<u>A/c lost</u>	<u>Sights</u>	<u>Attacks</u>
R.A.F. Gibraltar	Convoy escort Area patrols	96 22	- -	- -	- -
U.S. Air Morocco	Convoy escort Area patrols	774 858	- -	- -	- -

(c) - The Mid-Northern Atlantic

During April there was considerable activity in this area. Apart from two weather reporting boats (U.396 and U.1009) who maintained their inoffensive patrols from the 4th to the 11th and 16th to 23rd respectively, there was the homeward passage of U.532 the last of the returning Far East boats, and the outward passage of U.548, 530, 881 and 889 to North America and U.873 bound for the Caribbean. The main event, however, was the debouchment of six large U-boats operating under the name of Group Seawolf who were to comb the Northern Atlantic convoy route and, it was hoped, spring surprise attacks on poorly defended mid-ocean convoys causing not only loss but forcing a dispersion of the Allied air and surface A/U forces concentrated around the British Isles. They were in fact a weak substitute for what Admiral Doenitz had always intended to do on a larger scale with his Type XXI pre-fabricated ocean boats had they been ready for operations.

The six boats concerned were U.518, 858, 880, 805, 1235 and 546. They had sailed from Norwegian ports on dates between the 13th and 22nd March with orders to proceed into the Atlantic to a rendez-vous area north of the Azores. By the 10 April they were roughly lined up on the meridian of 2600W between latitudes 4830N and 5100N, some 650 miles due north of the Azores. On the 11th they received signalled orders from base to take up precise positions in a north/south line and to start a sweep to the W.S.W. along the supposed Allied convoy route. They were to proceed submerged at periscope depth by day and on the surface during the dark hours.

Unfortunately for this plan the date coincided roughly with a decision to send American task groups of destroyers and an escort carrier to form a barrier patrol in the western part of the Northern Atlantic against U-boat passages to the North American seaboard. During the late evening of the 15 April, destroyers of the escort carrier group (TG.22.5) gained contact with a U-boat in 4754N x 3025W. A Hedgehog attack was followed by violent underwater explosions with subsequent debris appearing on the surface. Shortly afterwards another contact was gained

See Map 48

U.S. Fleet  
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a few miles to the south and after attack a U-boat surfaced in a crippled condition. Gunfire failed to sink her before she managed to get under again but asdic contact was regained and after four hours of attacking a heavy underwater explosion brought quantities of oil fuel to the surface. These two episodes marked the destruction of U.1235 and U.880

Following these events, shore based air co-operation was given from the Azores. In the early dark hours of 18 April the search-light fitted American Liberator A/114 Sqdn., after a radar contact, illuminated what the pilot suspected to be a surfaced U-boat in a heavy sea in position 4626N x 3359W. Having been briefed that at least twenty destroyers were somewhere in the area, the pilot withheld immediate attack until he was certain that the object was a U-boat. In fact it was a U-boat and it promptly dived before the aircraft could line up for an attacking run. A similar sighting was made 20 hours later when the American Liberator E/114 Sqdn. illuminated another fully surfaced boat in 4626N x 3309W. This time it was recognised immediately but the sighting was made broad on the bow and only 150 yards away. By the time the aircraft had circled, the U-boat had disappeared too long for attack. Both these sightings were of course of surviving members of Group Seawolf and though disappointingly not followed by attacks, were of value in confirming to the surface forces that more U-boats were in the area.

Their continuing search was rewarded on the night of the 21/22 April when two destroyers gained contact in 4326N x 3823W. After firing Hedgehogs several heavy underwater explosions were felt followed by loss of asdic contact and the appearance of oil fuel in quantity. This was the end of U.518. Two days later on the morning of 24 April the U.S. destroyer Davis of TG. 22.1 was torpedoed and sunk in 4353N x 4007W. The subsequent hunt by others of the group gained contact and after several hours of attack a damaged U-boat appeared on the surface where her exhausted crew abandoned ship under gunfire. Survivors identified themselves as U.546.

Thus four of the six Seawolf boats were disposed of less than a fortnight since starting their westward sweep. The U-boat Command was unaware of these losses and on 23 April had signalled the Group that on completion of the sweep, and if fuel permitted, three boats were to proceed to the Halifax/Cape Cod area and three boats had freedom to operate from New York to the south. At the same time U.881, 889 and 1228, all outward bound in the northeast Atlantic, were signalled to make for the New York/Cape Hatteras stretch of coast.

By the 1 May the surviving U.858 and 805 from Group Seawolf were approaching Halifax and Cape Hatteras respectively; U.881 and U.889 were in mid-Northern Atlantic making for the North American coast with U.873 nearby bound for the Caribbean; U.1228 was some 450 miles northwest of Ireland en route also to the American Seaboard and U.541 on her way to the Gibraltar area about 300 miles west of Ireland. The flying hours by Azores based aircraft during April were:-

Command	Task	Total hours	A/C lost	Sights	Attacks
Azores	Convoy escort Area Patrols	22 758	- -	- 2	- 0

No. 247 Group  
O.R.B.

U.S. Fleet  
A/S Bulletin

See Map 50

## (vi) - May 1945 - All areas

Little remains to be told of the overseas U-boats. U.853, on patrol eastward off Long Island, attacked and sank the independent Black Point (U.S.) - 5,353 tons at 2135 hours on 5 May. A destroyer task group was on the scene soon afterwards and gained asdic contact. After numerous attacks a large oil slick was observed in the early hours of 6 May in which was considerable debris of German origin including a board marked with the identifying number U.853.

Barrier patrol searches were still continuing well to the southeast of Newfoundland and Nova Scotia. On 6 May an American destroyer gained contact in 4318N x 4744W. On the evidence resulting from her attacks a claim was made for a kill and the Assessment Committee credited her later with the destruction of U.881.

The situation on VE day was as follows:-

See Map 52

U.530 on patrol south of Long Island and U.858 off Nova Scotia. In the area southeastward of Newfoundland were U.889 still outward bound to the American seaboard and U.873 to the Caribbean, U.190 was on her homeward journey from Halifax, and U.805 had turned back for home after receiving confused signals on 4 May about a cessation of hostilities. In the mid-Northern Atlantic were U.1228 still proceeding towards the North American coast followed by U.234 who was bound for Japan. In the Eastern Atlantic were U.541 well northwest of Cape Finisterre en route to the Gibraltar area and U.485 on patrol off Portugal.

See Map 54

After the general broadcast signal to surface and surrender which was made on 8 May U.805, 858 and 1228 did so on the 9 May; U.541 and 889 on the 10th; U.190 and 873 on the 11th; and U.234 and 485 on the 12 May leaving only U.530 who proceeded submerged for the River Plate in South America which she reached in July 1945.



## CHAPTER X

THE U-BOAT INSHORE CAMPAIGN<sup>(1)</sup> - 1 JANUARY TO 8 MAY 1945

## (i) The Situation at the opening of 1945

Before embarking on the history of the final phase it is as well to have a clear picture of the battleground, the disposition and intentions of the combatants, the weapons and means of detection on both sides, and the climate of opinion existing at the start of 1945.

After two months of relative quietness while the U-boat operational fleet was reorganised in Norway with old boats being replaced by new though still conventional types and additional bases being established in the southwestern ports, the scale of operations had increased in December. During the second half of this month, four U-boats were in the English Channel, one to the south of Ireland, one in the North Channel, one on each side of the Orkneys and one close in off Reykjavik. However impudent such close inshore patrolling may seem to a postwar reader, it must be remembered that the U-boats were virtually on the defensive, a position to which they had been forced and kept from mid-1943 mainly by the successfully offensive characteristics of convoys, adequately escorted by air and surface units, and directed by the excellent information supplied by the Admiralty Submarine Tracking Room. Moreover air action alone had by the autumn of 1944 compelled them to exist submerged continuously except in relatively remote ocean areas.

The whole raison d'être of U-boat warfare was to sink ships, at this time preferably those engaged in supplying this country or the armies now advancing towards Germany. We have seen how little they affected the orderly supply of the invasion armies ever since the landing in Normandy and it was the same tale of failure where shipping from overseas to these islands was concerned. The table below speaks for itself:-

1944	MERCHANT SHIPS SUNK				U/Bs Sunk	Merchant ships safely conveyed
	In U.K. Coastal waters		In the Atlantic			
	in convoy	independent	in convoy	independent		
Sept.	3	-	-	1	9	3,324
Oct.	-	-	-	-	4	2,994
Nov.	2	2	-	-	2	2,960
Dec.	6	1	-	1	5	2,890
Total	11 *	3	-	2	20	12,168

\* None of these coastal convoys was air escorted at the time of the sinking

Despite these meagre returns, in the course of which they lost 20 U-boats in Home Waters and the Atlantic, the U-boat Command had no option but to continue the despatch of Type VII

- (1) The references for U-boat positions, movements, intentions and experiences given in this chapter are:- Individual U-boat logs and extracts from the U-boat Command records held by the Admiralty Foreign Documents Section.

U-boats to inshore billets and the few larger Type IXs to the Canadian/American seaboard. Of course all these boats were fitted with schnorchel but were still of the conventional type and as such were considered a stop-gap until the prefabricated Types XXI and XXIII could, as Doenitz planned, turn the tide and by their superior performance regain the initiative. His earlier confidence in this rearmament was now being shaken, not only by the continual delays in completion caused by unforeseen technical troubles and the growing effects of Allied bombing but by the fouling of the training and exercise area in Danzig Bay by air mining. The increasing disorganisation of this essential phase in a new U-boat's life has already been recounted in Chapter VII.

Already told in  
Chapter VIII

The British Anti-submarine Commands (Admiralty and Coastal Command), while satisfied with the initial smothering of inshore operations, realised that it was only by using nearly all the available air and surface A/U craft close in to the British Isles that this state of affairs could be maintained. The sinking of six ships in the English Channel during the last half of December was, therefore, a warning that the balance was precarious. Should the long endurance Type XXI get loose in any numbers in the mid-Atlantic, the enforced transference of air and surface escort to mid-ocean convoys could result in the loss of control in both areas because there certainly were not enough resources for both tasks simultaneously.

(a) The policies of both sides

German

In a New Year appreciation, the U-boat Command professed to be quite satisfied with the course of events but only compared November and December results with the almost negligible success in the previous five months. Much play was made of the advantages which the schnorchel conferred in enabling inshore patrols to be maintained in areas denied to U-boats since 1940. By a judicious exaggeration of reported successes and a masking of U-boat losses, the conclusion was drawn that the future of inshore operations was extremely bright. A more sober paper was drawn up by B. d U's staff in mid-January in which it was admitted that whereas formerly each U-boat on operations sank 200 tons they now only achieved 80 tons. However, it was confidently expected that the previous figure would be improved upon when the new prefabricated types went to sea. One significant remark was made that, following the loss of the Biscay port dockyards and their skilled workmen, it was impossible to complete refits and repairs either in Norway or Germany with the necessary speed. This meant that U-boats spent longer in port and, in view of the increasing Allied bomber attacks, submarines in harbour were rapidly becoming more in danger than when at sea. (1)

B. d.U. War  
Diary pages  
856 to 861.

ibid  
pages 853  
to 855.

U-boats were sent into billets situated where German intelligence deducted either focal points of ocean traffic or points on coastwise routes where convoy evasive tactics were difficult. The extent of choice lay all round our coastline with the exception of the stretch between Flamborough Head and the Thames estuary which the enemy avoided on account of the maze of offshore shoals.

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(1) Six operational U-boats had been sunk in harbour since early October by R.A.F. bombing attacks.

Passage to and from these billets was very slow as the U-boat Command was resigned to buying immunity from air attack at the expense of continual submergence. Boats were advised to proceed deep by day and only to schnorchel at night. The average speed of advance was 60 to 70 miles per 24 hours. A trip to the English Channel took, there and back, between 40 and 50 days depending on which base port was used. As a Type VII boat's endurance was on an average some 56 days this did not leave much time on patrol in the billet, particularly if it was in the Central Channel. Once on patrol the U-boats dived by day listening on hydrophones with occasional looks through the periscope and were instructed to do their schnorchelling only at night and then in short bursts of two hours at a time. Immobile and limited in outlook as they were, these U-boats on patrol were forced to wait for targets to steam into attacking range.

Thus there were few opportunities for aircraft to detect, let alone attack, U-boats from the time they left harbour till they regained it two months later. If, in the counting of heads killed, Coastal Command may seemingly have a poor record during this inshore phase it must always be remembered that the dread of their presence imposed such caution that U-boats were robbed of most of their power of attack.

#### British

Against this positioning of U-boats with its constant movement of reliefs and time expired home goes the agreed Admiralty/Coastal Command air policy was to give close air escort to important convoys considered to be in danger spots, fly air patrols as cover over inshore areas in which U-boats were believed to be billeted and to patrol over the passage routes, especially in the Northern Transit Area. This policy was a compromise between one extreme of attempting to close escort all convoys and the other of flying box patrols all round our coasts with no reference to individual convoys.

It was exercised through the daily three-way telephone conversation between the Admiralty Submarine Tracking Room, the headquarters of Coastal Command and the Liverpool headquarters of the C.-in-C. Western Approaches. Decisions were then taken as to which of the large convoys and Monsters<sup>(1)</sup> in inshore waters or within 200 miles of our western coasts should be given close air escort. The residue of air effort left was then available to each individual Group Commander for employment in box patrols over such inshore areas as the Tracking Room believed were occupied by billeted U-boats or over the transit routes where it was thought that U-boats were on passage. The inshore box patrols were held to be adequate cover for the numerous small coastwise convoys and no close air escort was afforded them even after the six ships had been sunk in December out of such convoys in the English Channel.

It can be seen, therefore, that all convoy air escort and much of the patrol flying was still directed by Tracking Room intelligence though in this latter stage of the war such information was not as accurate as in previous times. This

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(1) Monster was the name given to all troop carrying liners. They invariably proceeded alone and at high speed.

was mainly because the submerged U-boats were singletons whose progress on passage was largely a matter of estimation and who when on patrol kept complete W/T silence for their own safety thereby affording no opportunities for our radio direction finding to fix them.

(b) Detection and counter-detection

Detection

Aircraft employed search radar both by day and night, day visual binocular look-out and the Leigh Light at night in the final stage of radar homing. Radio Sono buoys were being increasingly used to detect totally submerged U-boats. Now that the U-boat rarely showed more than a schnorchel head or a periscope above the surface, radar detection was far more difficult even in calm conditions and most unlikely in seas higher than State 4 on the Beaufort scale. This applied to both ten and three centimetre A.S.V.<sup>(1)</sup> After months of largely unrewarding radar search it was not surprising that phenomena previously not connected with possible U-boat origin began to receive undue attention. Radar contacts made at a few miles range which disappeared on closing the spot leaving no hostile object to be seen were now being treated with undeserved suspicion. Comparing in each case the postwar known position of U-boats, very many of these contacts were undoubtedly made on some such non-submarine object as pieces of flotsam, porpoises leaping, whales blowing and even collections of gulls.

Daylight visual search with binoculars produced its own crop of bogus sightings such as the incipient water spout or willywaw and the exhalation of vapour-like breath of whales or blackfish to which attention has already been drawn in Chapter V. Here again there is much clear evidence from U-boat logs that schnorchelling was rarely done in daylight either in inshore billets or on passage when near our coasts. Many cases of false reports of schnorchel smoke were misidentification of long period flame/smoke markers dropped by other aircraft hours before.

Finally, the radio sono buoy method of detection, (2) excellent in theory, was used in cases of disappearing radar contacts, suspicious vapour clouds and oil slicks. This produced another crop of mistaken attacks by depth charge and Mark 24 Mine. Comparison of these with postwar known positions of U-boats discounts the majority and reveals a vast amount of wishful hearing.

Counter-detection

For this the U-boats had visual look-out through the periscope and the search receiver Borkum whose aerial system

(1) At the beginning of 1945, Coastal Command possessed 25 A/U squadrons fitted with either Mk.III, V, VI or VIA ten centimetre A.S.V. and five squadrons with Mk. VIIIA or X three centimetre A.S.V. For details of A.S.V. performance against positive schnorchels see R.A.F. Signals History Volume VI Chapter 15 pages 198 and 206.

Regarding the value of radar to detect U-boats in this last phase of the war, it is of interest that of the 91 genuine sightings obtained during 1945 in Home Waters as many as 37 were initially located by visual look-out.

(2) Details of the tactical use of Radio Sono Buoys are in C.C. January O.R.B. Appendix 39A and the performance figures are given in the R.A.F. Signals History Volume VI Chapter 15 pages 207 and 211.

(Bali I) was pressure tight and was mounted on top of the schnorchel head. Although the Borkum/Bali equipment was designed to cover the 80 to 330 centimetre wave band, it would register on both ten and three centimetre emissions at short ranges up to about  $\frac{3}{4}$  mile. U-boat logs contain frequent reference to warnings being received when schnorchelling whereupon the practice was to go deep and proceed dead slow for an hour or more before coming to schnorchel depth again.

On the very rare occasions when a U-boat surfaced, the Tunis search receiver system could be used. This registered both ten and three centimetre A.S.V. emissions up to a range of 40 miles but still had the disadvantage that the aerial circuit was not watertight and had to be taken up on the bridge through the conningtower hatch. (1)

(c) Weapons

The main aircraft weapon was still the Mk.XI 300 lb. Torpex filled depth charge set to explode at 25 feet but the Mark 24 Mine (the small homing torpedo) was being used to an increasing degree in conjunction with sono buoy detection. Generally speaking the depth charge stick was used if the pilot considered his target was a positive schnorchel head or smoke actually coming from one. The Mark 24 Mine was used if a sono buoy pattern dropped around the position of a suspicious sighting was deemed to give positive evidence of a submerged U-boat's propeller noises.

The U-boat's weapon was only the torpedo, against ships or escort vessels. They never tried conclusions now on the surface with an aircraft so their flak armament, though still carried, was not used on operations. In view of their lack of worthwhile success against ships with the torpedo, it is strange that advantage was not taken by the German Naval Command of their ability to penetrate close inshore in order to lay ground mines of the unsweepable pressure type. These could have embarrassed us far more than did the occasional snap shots with torpedoes at small coastwise convoys.

(d) Disposition of A/U aircraft

In December 1944, the A.O.C.-in-C. Coastal Command had stated that the development of the enemy's inshore campaign had upset the original intention to concentrate air action in the Northern Transit Area. Progressive transference of squadrons from No. 18 Group back to Nos. 15 and 19 Groups had been necessary to provide escort to ocean convoys while they were within 200 miles of our coasts and to patrol the inshore areas within the boundaries of these two Groups. Any further switching would have reduced the transit patrols to a mere token effort and he required at least three additional Liberator squadrons now that increased U-boat activity was envisaged. He suggested that the U.S. authorities be asked to provide these from areas which were known clear of U-boats. He also asked for a detachment of the M.A.D. Catalinas as he considered they would be particularly useful against recently submerged U-boats.

C.C.  
December O.R.B.  
Appendix 793

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(1) Details of both the Borkum/Bali I and Tunis search receivers are given in the R.A.F. Signals History Volume VI Chapter 13 pages 159 to 161.

C.C.  
January O.R.B.  
Appendices 6  
and 7.

A.H.B./  
IIK/54/10/40(B)  
Encls. 72A to  
109A

This request was forwarded by the Chiefs of Staff and agreed to by Cominch (Chief of the U.S. Navy) who on 7 January 1945 detailed No. 107 Liberator Squadron from South America, and No. 112 Liberator and No. 127 Ventura Squadrons from the Moroccan Sea Frontier. A flight of No. 63 M.A.D. Catalina Squadron was also promised from the same area. The Liberator squadrons and the M.A.D. flight ultimately became operational in No. 19 Group during February but No. 127 Squadron was retained in the Morocco area following two attacks by a U-boat in the western approaches to Gibraltar during the first ten days of January. To compensate for the withdrawal of the Liberator squadron from this area, the Mediterranean Air Command transferred No. 458 I/L Wellington Squadron to Gibraltar.

In the opening days of January, Coastal Command possessed 32 squadrons of A/U aircraft of which  $2\frac{1}{2}$  squadrons were either in the Azores or at Gibraltar. For the inshore campaign in Home Waters there were, therefore,  $29\frac{1}{2}$  squadrons whose strength on 1 January 1945 was 420 aircraft. These were disposed as follows:-

No. 18 Group For the Northern Transit Area and against U-boats inshore around the Scottish coast -

Eight squadrons of strength 107 aircraft.

R.A.F. Iceland For the transit area south of Iceland and inshore off Reykjavik - Two squadrons totalling 31 aircraft.

No. 15 Group For convoy escort, inshore patrols around Ireland and the transit area west of the Hebrides - Seven squadrons of strength 111 aircraft

No. 19 Group For convoy escort and patrols in the St. George's, Bristol and English Channels -  $10\frac{1}{2}$  squadrons of strength 147 aircraft.

No. 16 Group For short range patrols in the Central English Channel - Two squadrons totalling 24 aircraft.

Details of squadrons, types and availability on 1 January are given in Appendix I. Broadly speaking, just under half of the Home Waters force was fitted with Leigh Lights and all except two squadrons were equipped with centimetric A.S.V.

(e) Disposition of U-boats in the first week of 1945

At the beginning of January there were 32 U-boats at sea in Home Waters. Of these only five were actually in inshore billets in Home Waters - two were still in the English Channel, one in the North Channel, one just east of the Orkneys and one in the Moray Firth. On passage outside of Ireland were two bound for the English Channel, two for the Irish Sea and two homeward bound. In the Shetlands/Faeroes area was one bound for the English Channel, another for the Irish Sea <sup>(1)</sup> and two for billets just west of the Orkneys. South and southeastward

See Map 36

(1) This interest in the Irish Sea resulted from an enthusiastic report from U.1202 who had spent the first ten days of December 1944 between the St. George's Channel and Holyhead. Although sinking only one ship, the C.O. had observed a large number of big independently routed ships in this area.

of Iceland were two large boats bound for overseas billets and two smaller types homeward bound (one from Reykjavik and one from weather reporting duties in mid-Atlantic). Off the west and southwest coast of Norway were a further seven outward bound boats and three homeward bound. Three new Type VII boats were entering the Skagerrack from Kiel and going to Norwegian ports.

See Map 37

Away to the westward were two weather reporting boats in mid-Atlantic, two large boats returning from Canadian waters, and two more large boats were on patrol off Halifax. Another large boat was patrolling westward of Gibraltar. The exploits of overseas and mid-Atlantic boats have been described in the previous chapter. Here it is proposed to deal only with Home Waters.

(ii) Policy during the final phase

(a) A memorandum by the First Sea Lord

C.O.S.(45)14(0)  
copy in A.H.B./  
ID3/1843D

On 6 January a memorandum by the First Sea Lord on the U-boat War was placed before the Chiefs of Staff. His conclusions were, briefly, that a major U-boat offensive was likely to start in February or March and that in spite of all the steps being taken by the Admiralty and Coastal Command he was extremely doubtful if the threat could be broken before serious losses to shipping had occurred. Such losses might well prejudice the maintenance of our forces in Europe and cause a shortage of shipping for their subsequent re-deployment to the Far East. A forecast of the U-boat campaign during 1945 by the Naval Staff, upon which these conclusions were based, was included in the paper. This consisted of a short account of operations since Overlord with rather a surprising comment that since October both the U-boat and our anti-U-boat operations had been unsuccessful. This seems to have stemmed from the narrow viewpoint that not so many U-boats had been sunk as in the previous quarter and took no account of the tiny ratio of shipping lost to the total sailed safely. The forecast went on to state that increased skill in the use of schnorchel had greatly reduced the effectiveness of our aircraft, that our surface forces were handicapped by asdic difficulties in shallow coastal waters and that the U-boats had recently showed a much more aggressive spirit. We had yet to encounter the new Type XXI 1,600 ton ocean going U-boat, carrying 26 torpedoes, with at least 15 knots submerged speed and the small coastal Type XXIII also with high submerged speed. It was estimated that both these types would be brought into operation in February or early March.

ibid

Continuing, the forecast said that the enemy intention was thought to be the employment of Type XXI boats in mid-Atlantic packs, the Type XXIII on the east coast of Scotland and England, the conventional Type VII as at present but in greater numbers in the other coastal waters around these islands and the large Type IX and U-Kreutzer in the Indian Ocean, Caribbean and off the American/Canadian Atlantic seaboard. All this would cause a serious dispersal of our very limited forces. Although the enemy had maintained only about 30 U-boats on patrol during the last three months, it was estimated that he could keep up to 70 on patrol from the spring rising possibly to 90 by the summer. A great increase in our shipping losses by U-boat alone was therefore threatened and it was estimated that these might rise to between 70 and 90

ships a month, compared with 60 during the worst period of spring 1943 when only about 60 U-boats were on patrol.

Much depended, however, on the success or failure of land operations in Europe, the ability of A/U forces to kill and harry U-boats, the development of new technical equipment for counter measures, and the degree to which a bombing offensive against the construction yards could be pursued. The paper concluded with the remark that the threat was serious but might not achieve the estimated shipping losses unless the morale and efficiency of U-boat commanders improved. There were indications that this had occurred in individual cases already.

This gloomy picture was discussed at the Chiefs of Staff meeting on 8 January. The C.A.S. said that on paper the position looked dangerous but the vital factor was the morale of the U-boat commanders and crews. A rise in this was dependent on a run of successes at low cost to the U-boat fleet. The immediate problem was to defeat the technique of operating U-boats in shallow waters and to him that seemed mainly a technical question; moreover it should always be borne in mind that we were entering this campaign with an advantage of some 22 million tons of shipping over the situation in early 1943. He suggested the whole matter be examined by the Joint Planning Staff on the assumption that the threat was as grave as that feared by the Naval Staff and it should be considered whether we were justified in sending largenumbers of light naval craft to support our capital ships in the Far East at the expense of building up escort forces in waters threatened by the U-boat offensive.<sup>(1)</sup> The question of employing our bomber forces to meet this U-boat threat should be left for Ministerial decision.

After discussion at the 12th Chiefs of Staff Meeting, the Joint Planning Staff were instructed to examine the First Sea Lord's memorandum and to prepare a report as to the probable effect of the forecasted losses on the overall shipping situation and what countermeasures could best be taken against the U-boats. Reporting progress on this at the Chiefs of Staff Meeting on 18 January, the Directors of Plans said that the subject was formidable and practically involved the whole conduct of the war. Only the estimate of the effects on the Allied shipping situation could possibly be completed before the C.O.S. meeting prior to the next meeting of the Cabinet A/U Warfare Committee on 23 January but every effort would be made to finish the whole report before the Chiefs of Staff left for the Argonaut Conference due to open at Malta at the end of the month.<sup>(2)</sup> Here for the time we will leave the Joint Planners.

(b) The appearance of U-boats in the Irish Sea

Meanwhile four U-boats had penetrated into the Irish Sea and made their presence known by sinking three independent ships and damaging two more by 15 January. The C.-in-C. Western Approaches took immediate steps to put as much shipping as possible, including coasters, into convoy. Support groups of escort vessels were ordered into the area to increase the protection to convoys and local patrols of every type of

(1) The Admiralty planned to transfer a total of 41 destroyers and 260 escort vessels to the Far East during the next six months.

(2) Argonaut was the code name given to the series of high level consultations on Allied Policy between the Prime Minister, President Roosevelt and the combined British and U.S. Chiefs of Staff which were to open at Malta prior to the main conference with President Stalin and the Soviet Staff at Yalta in the Crimea.



available craft were collected at focal points to harass the U-boats. An unfortunate result of this penetration was that all sea training and exercises of both surface and air A/U craft against target British submarines had to cease.<sup>(1)</sup>

A.H.B./  
ID3/1843D

Just previous to these sinkings the A.O.C.-in-C. Coastal Command had put forward a scheme for stultifying the whole U-boat inshore campaign by instituting a block along a line northward from the Shetlands to latitude 64°N consisting of up to ten escort groups with a large concentration of day and night air patrols in close co-operation. Admittedly this would denude the convoys and other areas of much of their escort and cover, both air and surface, but the A.O.C.-in-C. considered the risk of a temporary rise in shipping losses well worth the ultimate objective of interception before the U-boats could reach our western coasts or the open Atlantic. This scheme was discussed at the Admiralty with the First Sea Lord and the Naval Staff on 18 January. While some of the Naval Staff were in favour of its immediate adoption, it was decided to postpone any implementation for two months for three reasons:-

1. It was essential to clear the Irish Sea of U-boats before we could afford to divert the necessary number of escort groups.
2. The success of such a block line was estimated at preventing not more than 10% of U-boats from getting through.
3. In January the weather in the Northern Transit Area was not suitable for hunting by surface forces because of rough seas and the short daylight hours would handicap the air search.

While not agreeing with the second, the A.O.C.-in-C. did consider the third reason made it advisable to put the scheme off but as the implementation would require much redeployment of air and presumably of surface forces he was averse to postponing it beyond the end of February as even then it would probably be nearer April before the operation could be started. Although U-boat sailings did increase materially in February and March, they achieved little and the need for such a drastic redeployment of forces did not arise so the scheme was never put into operation.

(c) A request for large air reinforcement and the Irish Sea policy

C.C.  
January O.R.B.  
Appendix 5.

While the Joint Planners were still examining the implications of the First Sea Lord's memorandum, the Admiralty sent a signal to all Naval and Air Commanders which was a transcript of the gloomy Naval Staff forecast for 1945. This reached Coastal Command on 20 January. After digesting the conclusions and galvanised by the crop of ship sinkings now increased to eleven, the A.O.C.-in-C. wrote on 24 January to the Air Ministry saying that should the U-boat offensive increase to the extent outlined in the Admiralty's signal, then his forces were

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- (1) The Irish Sea had been the last and best place for such training which could be guaranteed free from the embarrassing intrusion of hostile submarines while our own submarines were acting as targets.

ibid  
Appendix 9

totally inadequate. Even with the two additional U.S.N. squadrons recently detailed it would only be possible to give air cover to ocean convoys and Monsters close off our coasts and made no provision for escort to the large volume of coastal shipping now being menaced; moreover the margin of effort available for the transit areas remained severely limited. Should the new Type XXI appear in any numbers in mid-Atlantic it would be quite impossible to cover the Irish Sea, English Channel and transit areas at high density and also to provide cover for ocean convoys out to mid-Atlantic. Very considerable reinforcements were necessary and from calculations made at his headquarters the requirement was twelve long range squadrons, six of medium range and the loan of a further nine F.A.A. squadrons for close range duties off the main ports and focal points. In view of the unfinished Joint Planners report and the coming Argonaut deliberations on the subject, no reply could be made to this staggering request for some time.

C.C.  
January O.R.B.  
Appendix 4

Regarding the Irish Sea, the policy had crystallised by 26 January and on this date the A.O.C. No. 15 Group informed H.Q. Coastal Command of the measures being taken. Broadly speaking, the policy of the C.-in-C. Western Approaches was to ensure the safe passage of convoys and to deter further U-boat operations by attacking with the utmost vigour any U-boat revealing itself. Most of the convoys and Monsters would be escorted by a permanent close escort of surface craft who would not be diverted to any U-boats sighted away from the convoy. Six independent support groups of escort vessels were being provided as additional cover on the main shipping route between the Mull of Kintyre in the north and Tuskar Rock at the southern end of the Irish Sea. This route was divided into three zones - Mull of Kintyre to the Isle of Man; Isle of Man to Holyhead; and Holyhead to Tuskar Rock. Two support groups would be operated in each of these zones on a shuttle service, passing convoys along to each other, and would attack any U-boats revealing themselves or found by air patrols.

ibid

With regard to aircraft, it had been decided that close air escort to Irish Sea convoys was not required and that the plan to cover the Irish Sea with box patrols, which was put into force immediately the sinkings began, met fully the requirements of the C.-in-C. Western Approaches. These box patrols were flown day and night at approximately one hour's density. The total daily effort required 42 sorties from Nos. 15 and 19 Groups and was well within their capacity. Any commitments under Stipple (1) for other areas would have priority. These and/or weather conditions might prevent full air cover over the Irish Sea, consequently certain patrols had, in agreement with the C.-in-C. Western Approaches, been allotted preference based on the assumption that U-boats would operate in the main shipping route by day retiring at night to schnorchel close inshore in suitable waters.

(d) The Mark 24 Mine becomes the primary weapon against U-boats

A Group Commanders' Conference was held at H.Q. Coastal Command on 31 January at which the A.O.C.-in-C. reviewed the A/U war as it affected the Command. The A.O.C. No. 15 Group said that in deference to the request by the C.-in-C. Western

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(1) Stipple was the code prefix to the daily decisions as to which convoys and Monsters were to receive close air escort.

ibid  
Appendix 36

Approaches practically all the flying effort, after satisfying the Stipple commitment, was concentrated in the Irish Sea leaving very little for the U-boat passage route westward of the Hebrides. The A.O.C.-in-C. replied that he favoured intensive combined operations along such routes as likely to produce better results and told the Conference of the block scheme proposals he had put forward but for the moment, he said, the Admiralty considered that all effort must be concentrated in the Irish Sea in an endeavour to drive the U-boats out of that area.

After a discussion on weapons, it was agreed that the Mark 24 Mine offered such good chances against schnorchelling and recently completely submerged U-boats that it should be regarded as the primary weapon of attack in conjunction with sono buoy patterns against all such targets which included suspicious smoke puffs, wakes, swirls and oil slicks. It was being planned to lay barriers of sono buoys across transit routes with a continual patrol of aircraft overhead ready to use the Mk.24 Mine when sono buoy indications were received of U-boat penetration.

(e) The Argonaut Conference considers the new U-boat threat

J.P.(45) 19  
(Final)

C.O.S.(45)  
29th Meeting

A.H.B./ID3/  
1843D

To return to the Joint Planners. The first part of the report was laid before the Chiefs of Staff on 24 January. Their conclusion was that, if the shipping loss reached the figure given in the First Sea Lord's memorandum, the overall deficiency in sailings might be increased from an already forecast 8 per cent up to some 13 per cent for the first half of 1945. Among the other figures in the forecast they had assumed that sinkings from U-boats alone would be 60 ships a month in March and April, 80 in May and June and 90 in July and August. Owing to the many implications and the complexity of the problem, they were unable to assess the threat on specific operations. The above general conclusion was, therefore, disappointingly vague and the C.A.S. considered that it did not pay sufficient regard to the time factor. As A.C.A.S.(P) pointed out in a brief to the C.A.S., the additional 5 per cent overall deficiency might prove critical if the war continued into the autumn but as the bracket dates for the close of the German war were early summer, the existing favourable stock position in the European theatre could render March to May losses relatively unimportant.

J.S.(Argonaut)  
(Final)

The second part of the report, dealing with countermeasures to combat the U-boat threat was finished on 31 January. The following is a brief summary. The report opened by stating that the menace of the new U-boat campaign arose from the enemy's technical developments notably the schnorchel and the new design U-boats. The planners were not confident that our own future technical developments could assure us of early victory against the U-boats at sea. Steps had already been taken to stop the reinforcement of escort forces in the Far East. Increasing the strength at home of surface forces and A/U aircraft was under constant review but these measures by themselves were unlikely to be sufficient.

Recommendations for additional measures

1. Offensive bombing. No major diversion of heavy bombing effort from the existing priorities was justified but a marginal effort should continue to be directed to assembly

yards, particularly Hamburg and Bremen. At the moment no effort should be expended on operational bases but if the forecasted U-boat offensive developed, such bombing should start as it was unlikely that the increased numbers of U-boats necessary to such an offensive could be accommodated in the bomb-proof pens.

2. Mining. Air mining should be doubled on U-boat passage routes up the Kattegat and particularly in the working-up exercise area in the western Baltic. Steps were being taken to employ surface craft and carrier borne aircraft to increase mining in Norwegian waters out of range of bomber aircraft.

3. Minesweepers. An integral part of this mining was the attack on enemy minesweepers and the possibility of increasing this was being examined.

4. Supply shipping. It was intended to maintain and if possible intensify the present scale of attack on enemy shipping engaged in supplying Norwegian bases.

#### Conclusion

Provided that our merchant ship construction was maintained at its present rate the planners believed that the above counter-measures would prevent the U-boat campaign from seriously affecting operations as a whole during the first half of 1945. Should the war continue beyond the summer the effects of the campaign were likely to become serious and it would then be necessary to consider more drastic countermeasures which might involve a large diversion of effort from the main operations.

The memorandum by the First Sea Lord and the two reports by the Joint Planners were included in a memorandum by the British Chiefs of Staff. One on this subject was drawn up by the U.S. Chiefs of Staff in which early and persistent bombing of all the assembly yards and all the Norwegian U-boat operating bases was the sole advocacy. These were discussed at the Combined Chiefs of Staff meetings at Malta during the first part of the Argonaut Conference which opened on 30 January 1945. By 2 February it was decided that it was too early to assess the extent that a possibly intensified U-boat offensive could again threaten the North Atlantic shipping and it was proposed to review the matter again on 1 April. Meanwhile certain counter-measures were agreed against the current U-boat operations and a directive was despatched to all appropriate commanders as follows:-

- (a) Build up as much as was possible the strength of surface hunting groups and A/U air squadrons.
- (b) Maintain and if possible increase the marginal bomber effort on assembly yards, particularly Hamburg and Bremen.
- (c) Maintain a marginal effort against operating bases, being ready to increase this when bases became crowded beyond the capacity of concrete pens.
- (d) Increase, by 100 per cent if possible, the air mining effort against U-boats, including the training areas.
- (e) Mine waters beyond the range of (d) above by using surface minelayers and carrier borne aircraft.

ibid

C.C.S. 774/1

C.C.S. 774

Minutes of  
Argonaut  
Conference  
held in  
A.H.B.1.

C.C.S. 774/3  
and 776/3.

(85404) 211

- (f) Intensify operations against enemy minesweepers.
- (g) Maintain and intensify operations against enemy shipping used to supply U-boat bases.

A.H.B./  
ID3/1843D

C.C.  
February O.R.B.  
Appendix 84  
see Chapter XI

Accordingly the Air Ministry on 7 February addressed a directive to R.A.F. Bomber Command giving effect to items (b), (c) and (d) and invited General Spaatz to issue similar instructions to the U.S. 8th Air Force. Regarding (a), proposals for increasing the strength of Coastal Command had been under consideration in the Air Ministry ever since the A.O.C.-in-C.'s letter of 24 January. It was now decided, with Admiralty agreement, that until an increased U-boat threat was unmistakable, the transfer of one squadron (No. 459 R.A.A.F.) from the Mediterranean Command<sup>(1)</sup> together with the two American squadrons already detailed was all that was necessary at the moment and a letter to this effect was sent to H.Q. Coastal Command on 19 February. Items (f) and (g) were also communicated to the Command and were included ~~including~~ in a current expansion of anti-shipping operations, including plans for extending these into the Kattegat.

C.O.S.(45)  
166(o)

A.H.B./  
ID3/1843D

To complete the story of Coastal Command's strength in Home Waters, the matter of reinforcement was again raised at a Chiefs of Staff meeting on 13 March in which an Air Staff paper stated that no further additions had been made since 19 February but invited Admiralty consideration for the recall of two Sunderland squadrons from West Africa, the loan of additional F.A.A. squadrons and a further approach to Cominch for American squadrons. However, the Naval Staff were reluctant to withdraw any A/U squadrons from West Africa in case U-boats turned up on that coast and they were unable to provide any F.A.A. squadrons as this would mean immobilising carriers, finally the existing situation in the U-boat war was not thought to be sufficiently serious to warrant an approach to Cominch for further assistance. In the event there were no more additions to Coastal Command and the wartime peak of the Battle Line was achieved in mid-February with a total of 54 squadrons under the Command's control with a strength of 793 aircraft.<sup>(2)</sup>

ibid

The U-boat war situation on 1 April 1945 was such that no review of the situation, as called for in the Argonaut Conference, was deemed necessary. Such then was the high level policy against a possible intensified U-boat offensive and the immediate and more local policy against the existing inshore campaign. We now turn to actual operations in the light of postwar knowledge of the enemy's movements and dispositions.

(iii) The continuance of bogus reports of U-boats

No apology is made for further reference to the subject in this chapter because right up to the end of the war the majority of aircraft reports have proved on examination and comparison with the now known positions of U-boats to have been cases of mistaken identity in which the causes lie

(1) No. 459 Squadron at this time was equipped with Baltimores and quite unsuitable for anti-schnorchel work. The squadron was transferred to Chivenor in No. 19 Group where they reformed on 15 March for re-equipment and training in L/L Wellington XIV.s but never became operational and were disbanded on 10 April 1945.

(2) For details see Order of Battle and strength for 1 March 1945 in Appendix I.

either in willywaws, whales, blackfish, porpoises, marine smoke markers, pieces of flotsam or oil slicks of non-submarine origin. These again were frequently given further misidentity by claims to have heard propeller noises from the sono buoy patterns dropped around such 'suspicious' sightings. Thousands of hours of apparently fruitless flying were bound to result in attention being focused on non-submarine phenomena previously unnoticed when U-boats were surfacing more freely. Such conditions of mind can never be reproduced during short peacetime exercises and it is no good saying that, because such mistakes are not made in 1956, the waste of time and effort will not occur again if our coasts are ever infested with modern hostile submarines who still must raise their periscopes to see and schnorchel for ventilation.

The earlier examples of misidentification of willywaws and the exhalations from whales are given at the beginning of Appendix VI. Regarding 1945, some of the sightings and attacks were classified outright as non-submarine by Coastal Command headquarters but most were allowed and appear therefore in the official returns as genuine. These have been checked since the war against the known positions of U-boats or by extracts from their logs and those found to be really genuine are given in the subsequent sections on operations together with the number found now to have been bogus. For the guidance of future air commanders (and air crews) the rest of the Appendix VI contains accounts of such bogus sightings or contacts as a warning of what may be expected to be reported under war conditions.

(iv) January Operations (1) General Remarks

The increased scale of U-boat sailings noted for December was maintained during January 1945. Thirteen new boats came up from Kiel and twenty U-boats sailed on operations from Norwegian bases during the month. Among these was U.245 who sailed from Heligoland on 17 January bound for the North Foreland area which had not seen a U-boat since May 1940. The first two Type XXIII boats left Kiel in the third week of January to complete their schnorchel training at Horten in the Oslo fjord and one of them (U.2324) sailed on operations on 29 January. During January six U-boats were sunk in Home Waters and one in mid-Atlantic. At the end of the month there were 44 at sea in the Atlantic area (2) of which 39 were in Home Waters.

One feature of January was the penetration by six U-boats into the Irish Sea. Two came in from the north, the others south about Ireland and through the St. George's Channel. In answer, Coastal Command instituted box patrols which by the end of the month covered the entire area, and the C.-in-C. Western Approaches instituted convoy for all ships (including coasters) of more than 1,000 tons G.R.T. and brought in a permanent force of six support groups in addition to the individual surface escort attached to each convoy.

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- (1) All times in subsequent sections have been reduced to G.M.T. The flying details are from Group O.R.B. Appendices and squadron records.  
(2) In these chapters only the Atlantic area is considered. No account is given of the 10 to 15 operating in the Northern Baltic or the 30 odd based in Northern Norway against convoys to Russia because no R.A.F. action took place against them. For their monthly strengths see Appendix VII.

See Maps 38  
and 39

See  
Chapter VII  
(iv)

The other feature of the month was the final closing down of the whole U-boat training and exercise area in Danzig Bay on 8 January owing to the repeated mining from the air by Bomber Command. Arrangements were made by the Germans to shift some of this to Lubeck Bay and about 70 U-boats were moved in mid-January to Swinemunde, Warnemunde and Kiel while 14 of the most advanced of those working up were transferred to the Oslo fjord which now became the deep diving and schnorchel exercise area. The remaining training flotilla of 30 U-boats left Gdynia at the end of January bound for Wilhelmshaven via the Kiel Canal. The enforced break up of this important organisation would, it is true, have eventuated later with the occupation of Rugenwalde, Kolburg, Gdynia and Danzig by the Soviet land forces in March but the December/January stoppage by R.A.F. mining came at a critical moment in delaying the operational readiness of the first 50 of the prefabricated U-boats as well as many new conventional types.

(a) - The Inshore Areas

The Irish Sea

It was in this area that B. d U. hoped for outstanding results and it was indeed in this area that all but one of the January ship casualties occurred. By 8 January, U.1055 was patrolling off St. David's Head, U.285 was approaching the area off Cork, U.482 was patrolling off the entrance to the Firth of Clyde and U.1172 was in the North Channel en route through into the northern part of the Irish Sea. First blood went to U.1055 who attacked convoy ON.277 to the W.S.W. of St. David's Head at 1730 hours on 9 January and sank the Jonas Lie (U.S.) - 7,198 tons, afterwards getting away to the north undetected. No air escort was being given as the large OS.103/KMS.77 convoy was considered more dangerously placed to the south of Ireland.

This attack was followed on 11 January by the sinking of the Normandy Coast (Br.) - 1,428 tons and the U.S. auxiliary Roanoke - 2,606 tons, both independently routed, off Holyhead at 1520 and 1536 hours respectively by U.1055. Box patrols were at once started by No. 15 Group in the central and southern parts of the Irish Sea, joined by No. 19 Group on 12 January. At 1703 hours on this latter day, Liberator J/120 Squadron after homing on to a firm radar contact sighted a wake in poor dusk light conditions with something black at the head of it in position 5307N x 0545W (west of Holyhead). An attack was made with depth charges but no result was seen. This was U.1055 and no damage was inflicted. Three support groups hunted the area but found nothing.

On 15 January the Maja (Br.) - 8,181 tons, independently routed, was sunk at 1214 hours when 25 miles southwest of the Isle of Man. This was by U.1172 who was now patrolling in this part of the Irish Sea. An hour later the independently routed Spinanger (Nor.) - 7,429 tons was hit and damaged away to the north in the entrance to the Firth of Clyde shortly followed by a hit and damage to H.M. escort carrier Thane unescorted and engaged in ferrying aircraft. These two attacks were the work of U.482. Intensive hunts by both surface and aircraft were laid on in both areas. Thick weather on airfields hampered all the air searches but the 22nd Escort Group found and attacked an asdic contact from the 16th through until the 17 January just to the north of the Mull of Kintyre finally producing traces of diesel oil. This

was not thought conclusive at the time but postwar information establishes that this was U.482 destroyed while retiring seawards from the scene of her attacks.

It was this series of torpedoings that decided the C.-in-C. Western Approaches to order Irish Sea shipping into convoy and to start organising the special countermeasures mentioned in previous sections. Meanwhile B. & U. had received reports from agents that British minelaying had taken place off the north and northeast coast of Ireland and a signal was broadcast on 11 January that no more U-boats were to enter the Irish Sea via the North Channel. Another was sent on 14 January that U-boats already in the Irish Sea were, when time expired, to withdraw via southwest Ireland. By 18 January both U.285 who had effected nothing and U.1055 had left by this route. U.1051 and U.825 were at this time approaching the southern entrance to the Irish Sea. The former reached the Cardigan Bay area about 20 January and the next day sunk the Galatea (Nor.) - 1,152 tons, still independently routed, some 25 miles southwest of Bardsey Island. U.825 also arrived in this area on 23 January.

On 23 January, U.1172 sank the Vigsnes (Nor.) - 1,599 tons in Liverpool Bay soon after she had dispersed from the local convoy MH.1. This U-boat was then rash enough to attack H.M. frigate Manners on 26 January whom she hit and damaged when southwest of the Isle of Man. Two escort groups nearby closed for the hunt and five hours later destroyed U.1172. This was the second example of the tit for tat sequence that was such a feature of the final phase of inshore operations.(1)

The final episode of the month was an attack by U.1051 and U.825 at noon on 27 January on convoy HX.332 when 27 miles south-west of Bardsey Island. No close air escort was being given as No. 19 Group's airfields were under snow and No. 15 Group was escorting convoys in the N.W. Approaches. The Solar (Nor.) - 8,262 tons was sunk and the Ruben Dario (U.S.) - 7,198 tons damaged. After preliminary counter attacks by the close escort, two support groups (EG.5 and EG.21) took up the hunt. From her log U.825 got away from this with severe damage and started homeward on 28 January but U.1051 was destroyed some eight hours later about 15 miles westward from the scene of attack.

Since the 11th of the month when air patrols were started in the Irish Sea, 2,477 hours of day and night flying produced but one attack although six U-boats had been present in the area. There were two other sightings, both of which were attacked, which postwar knowledge shows to have been bogus.(2) To avoid frequent interruption in the text, the tables giving details and classification of the flying in this and the other inshore areas are contained in Appendix XVIII.

Although seven ships sunk and four damaged was a relatively high figure for three weeks U-boat operations in this new area, the destruction of three U-boats was a fairly satisfactory exchange rate. In the event, the convoy and support group

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- (1) The first example had occurred five days previously when U.1192 sank a ship out of a coastal convoy off Land's End and was herself sunk by the convoy escorts two hours later. See the next sub section.
- (2) These sightings were by H/423 Squadron on 15th and E/423 Squadron on 22 January. See Appendix VI for the accounts.



policy instituted by the C.-in-C. Western Approaches never allowed ship casualties to reach this figure again. Surviving U-boat evidence also makes it clear that the constant air patrols so restricted their operations that many attack opportunities were lost. Later months were to amplify these complaints.

#### The English Channel

This area, between the longitudes of Land's End and Brighton, was occupied at times during January by six U-boats (U.485, 650, 325, 905, 1017 and 1199). U.485 spent a fortnight, U.325 three weeks, U.905 three days only and U.1017 eleven days on patrol. Remarkably little was accomplished by them, in fact the only shipping casualty was the George Hawley (U.S.) - 7,176 tons who was hit and damaged in the coastal convoy TBC.43 off Land's End on 21 January by U.1199 who was still on passage to the central Channel. She was promptly hunted by the surface escort and was sunk two hours later. No air escort was being given as, similarly to the Irish Sea area, the policy did not call for this on coastal convoys. U.1017 was still on patrol at the end of the month and was joined on 31 January by U.480 and 244.

Box patrols and air escort to five large convoys amounted to a total of 3,465 day and night hours but no genuine sightings resulted. There was one bogus sighting.<sup>(1)</sup> Besides the destruction of U.1199, U.650 vanished from unknown cause at some date during January so that the exchange rate of two U-boats sunk for one ship damaged was more than satisfactory.

#### The Bristol Channel across to the South of Ireland area

No U-boats were on patrol in this area but the stretch along the south coast of Ireland was traversed during the month by eight U-boat passages going to and coming from the Irish Sea. The 1,184 hours of day and night flying were divided almost equally between box patrols inshore and air escort to a total of 39 convoys in the S.W. Approaches. No sightings of U-boats were made and no ship casualties occurred.

#### Off Northern Ireland

The only U-boats present during the month were U.1172 for two days on her way to the Irish Sea, U.1009 for five days off Lough Swilly and U.1014 right at the end of January off Lough Foyle. No ship casualties occurred. Most of the 390 hours a day and night flying were on close escort to 12 convoys and 12 Monsters. No genuine sightings resulted but there were three bogus, of which one was attacked.<sup>(2)</sup>

#### The Butt of Lewis to the Orkneys

One U-boat was on patrol each side of the Pentland Firth for most of the month. No ship casualties occurred and there were no genuine air sightings during the 799 hours of day and night flying. Three bogus non-sub sightings were made all of which were attacked.<sup>(3)</sup>

(1) This was by E/103 Squadron on 1 January - See Appendix VI.

(2) These were by BT.6(C) O.T.U. and E/304 on 12th, and M/304 on 27 January.

(3) These were by A/330 on 10th, P/86 on 11th/12th and E/206 on 13 January.

Reykjavik area - Iceland

There were no U-boats present. The 89 hours flying was practically all on convoy escort. No sightings were made.

The East coast of Scotland

On 31 December 1944 U.1020, who had been patrolling eastward of the Orkneys, was given permission by B. d U. to move down to the Moray Firth and on 15 January this was extended to the Firth of Forth area. At 0930 hours on 11 January, Liberator A/224 Squadron sighted a trail of brown smoke distant four miles in 5748N x 0226W (a few miles north of Banff). The smoke seemed to be coming from a definite source but on close approach it stopped and dispersed leaving nothing visible or a wake mark on which an attack could be made. This could have been U.1020 but she never returned to harbour so neither we nor the Germans know on what date or where during her cruise she came to grief. This possible sighting was the only one made during 100 day and night hours flying in the Pentland/Moray Firths area.

(b) The Transit AreasThe Northern area from Norway to the line Iceland/Hebrides

In this area during January there were 32 U-boats outward and 16 inward bound. The flying was concentrated in two portions, one from Norway through the Faeroes/Shetlands Passage and round to the westward of the Hebrides, the other to the southeast and south of Iceland down to latitude 59°N.

The overall total of day and night flying hours was 2,656 and only one encounter with a U-boat resulted though four bogus sightings were reported. (1) The one genuine sighting occurred on 11 January when at 2000 hours L/L Wellington P/172 Squadron, after homing on a radar contact, illuminated a schnorchel head distant  $\frac{1}{2}$  mile in 5715N x 1030W C.° 220° 5 knots. An attack was made with six depth charges while the schnorchel was still visible but no unusual after results were seen. No U-boat reported this attack but of the four boats in the approximate neighbourhood (U.1017, 825, 1199 and 1051) the two latter were sunk at the end of the month and their logs are therefore not available for examination.

There was another sighting but this was made by Mosquito T/333 Squadron engaged on anti-ship recce close to the Norwegian coast. This aircraft sighted a fully surfaced U-boat at 1010 hours on 10 January close in to the island of Herdla, northwest of Bergen. No attack was made owing to the proximity of the island's flak defences and the large enemy fighter base there. The U-boat was U.733 who entered Bergen later that day.

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(1) These were by B/304 on 13th, Y/518 on 21st, C/518 on 23rd, and K/53 on 31 January - See Appendix VI.

The transit route west and southwestward of Ireland

During the month 16 U-boats passed through outward and nine homeward bound. No genuine sightings were made during 675 hours of day and night flying. There were two bogus sightings.<sup>(1)</sup>

(c) Summary for January 1945

Task	Total hours base to base	A/C Lost	U-BOATS		
			Sighted	Attacked	Result
Inshore Area Patrols	7,448	5	2	1	-
Inshore Convoy escort	1,057	-	-	-	-
Transit Areas	3,332	-	1	1	-
Total - January 1945	11,837	5	3	2	-

During the month the inshore U-boats sank seven and damaged three merchant ships, and damaged two naval vessels at a cost to themselves in these waters of six U-boats (four by the Navy and two by unknown cause) - a satisfactory exchange rate.

See Map 39

At the end of January there were 39 U-boats at sea in Home Waters. The majority (29) were on passage outward or homeward bound. The ratio of boats on passage to boats on patrol remained fairly constant throughout the inshore phase at 3 to 1.

(v) - February Operations - General remarks

During February there were greatly increased sailings of operational U-boats, the figure being 41 (including the second Type XXIII boat) against 20 in January. There was also a rise in the number of new U-boats leaving Kiel for Norwegian ports from 13 in January to 24 in February though none of these were of prefabricated types. During February, twelve operational U-boats were sunk in Home Waters and two in the western approach to Gibraltar. At the end of the month there were 57 U-boats at sea in the Atlantic area of which 51 were in Home Waters.

See Maps 41  
and 42

A marked reduction was seen of U-boat successes in the Irish Sea despite an increase in the number operating but there was a recrudescence of U-boat activity in the English Channel. The month also saw the appearance off our east coast of the first two Type XXIII boats to become operational. Finally there was an initial institution of L/L Liberator patrols in the northern Kattegat and a try-out of sweeps over the new U-boat exercising area off Bornholm island in the western Baltic.

(a) The Inshore AreasThe Irish Sea

No U-boats were present in the Irish Sea on 1 February but during the rest of the month there were between various dates no less than eight operating in this area. The first arrival was U.963 on 2 February followed during the next nine days by

(1) Bogus sightings by E and K/423. Sqdn. both on 1 January.

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U.1208 and 1058. By 20 February the first three boats had left without effecting anything. Five more then entered during the last week, two of them - U.1064 and 483 - coming in north of Ireland.<sup>(1)</sup> The former attacked convoy UR.155 in the entrance to the Firth of Clyde on 21 February and sank the Dettifoss (Ice) - 1,564 tons afterwards escaping southward into the Irish Sea. No air escort was being given to this small convoy. The other three boats - U.1276, 775 and 1302 - entered via the St. Georges Channel. U.775 sank the independently routed U.S.S. auxiliary Soreldoc - 1,926 tons on 28 February southwest of Bardsey Island and on the same day U.1302 sank a small coaster the Norfolk Coast (Br.) - 646 tons to the northwest of St. David's Head.

During the month air patrols covering all parts of the Irish Sea were flown by Ncs. 15 and 19 Groups amounting to a total of 3,575 hours day and night flying but no genuine sightings were made. There were five bogus sightings all of which were attacked.<sup>(2)</sup> No close convoy escort was given.

As far as can be ascertained from German records there were, in addition to the ship sinkings noted above, only four other occasions during the month when torpedoes were fired.<sup>(3)</sup> This absence of offensive activity by eight boats can only be ascribed to the policy of convoy with surface escort and support, and to the restrictive effect of continuous day and night air patrols. Although no U-boats were sunk they had been rendered relatively impotent.

The English Channel

The month started with three U-boats already on patrol - U.1017, U.244 and U.480, all in the central Channel area. On 6 February the former attacked coastal convoy TBC.60 when southwest of the Needles and sank the Everleigh (Br.) - 5,222 tons straggling from the convoy after which she escaped the counter attack and started her homeward journey. By 10 February another U-boat (U.1018) had arrived on patrol in the western Channel and next day she attacked coastal convoy BTC.65 when just west of Plymouth and sank the Persier (Bel.) - 5,382 tons afterwards also escaping the counter attack. Four more U-boats arrived in the western Channel during the next fortnight - U.1004, 927, 327 and 1203. At midday on 22 February U.1004 attacked coastal convoy BTC.76 just east of Falmouth and sank the Alexander Kennedy (Br.) - 1,313 tons and an escorting Canadian corvette the Trentonian. Although heavily depth charged the U-boat got clear with only slight damage. On 24 February another of these recent arrivals (U.1203) sunk H.M. trawler Ellesmere who was escorting an L.S.T. convoy 60 miles south of the Lizard.

This proved to be the last of the unavenged U-boat successes. Three support groups were by now in the area and air patrols were much increased. Early on 24 February U.480, on her return journey out of the Channel, attacked coastal convoy BTC.78 off

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- (1) At the end of January B. d U. had reconsidered the reports of mines north of Ireland and gave permission to certain U-boats to penetrate via the North Channel provided they kept very close to the Irish coast.
  - (2) Bogus sightings by S/304 on 2nd, A/201 on 7th, O/423 on 23rd, X/59 on 26th and A/36 on 28 February.
  - (3) During the first week U.963 missed a vessel, U.1058 missed with torpedoes on the 10th and 11th, and U.775 missed on 27 February.

Lands End and sank the Oriskany (Br.) - 1,644 tons. She was promptly hunted by the 3rd Escort Group and destroyed six hours later. At dusk on the same day L/L Warwick K/179 Squadron homed to a radar contact southeast of Falmouth and in the failing light sighted a schnorchel close ahead with thin vapourish smoke coming from it. An accurate depth charge attack was delivered following which, in the moonlight, an ever increasing patch of oil was seen. This marked the end of U.927, the second of the recently arrived boats.

At 0913 hours on 27 February U.1018 attacked coastal convoy BTC.81 about seven miles west of the Lizard and sank the Corvus (Nor.) - 1,317 tons. She was soon contacted by the supporting 2nd Escort Group and was destroyed at 1030 hours. Finally, later in the day at 1630 hours U.S.N. Liberator H/112 Squadron sighted a suspicious wake in a calm sea some 45 miles southwest of the Lizard which the pilot decided to watch. First, however, he contacted the nearby ocean convoy ONA.287 and informed the S.N.O. escorts of what he was going to do. Not long after his return to the spot he suddenly saw a periscope, verified through binoculars, only 100 yards away. It dipped almost immediately and no attack was possible. The position was marked and the S.N.O. escorts informed by R/T. The 2nd, 3rd and 14th Escort Groups all closed the position and started an extended hunt. Asdic contact was made and twelve hours after the sighting convincing evidence of a kill was produced. This was U.327 the third of the recent arrivals.

A final sighting of a periscope was secured by U.S.N. Liberator M/103 Squadron on the morning of 28 February at  $\frac{1}{2}$  mile range in a calm sea about mid-way between Falmouth and Plymouth. This disappeared before any attack was possible and surface forces who arrived later could pick up no contact. This might have been U.1004 who was still on patrol in this vicinity. The only other surviving U-boat in the area was U.1203 who was much further to the south.

The flying hours in the Channel area amounted to 2,041 day and night on patrol for which there had been one U-boat sunk, one shared sunk with surface forces and one other sighted. Five ocean convoys received close air escort involving only 37 flying hours with no sighting.

Thus, after an inauspicious start, the score for the month was five cargo vessels and two escorts sunk against four U-boats destroyed - a not unsatisfactory exchange.

#### The Bristol Channel across to the south of Ireland area

U.1203 was on patrol off the south coast of Ireland from the 7th to 21 February. She then moved to the Scillies by the 24th and into the Channel Approach. Apart from her patrol there were ten passages along the south coast of Ireland by U-boats on their way to or returning from the Irish Sea.

No. 19 Group carried out 457 hours of patrol flying and together with No. 15 Group afforded 833 hours close escort to a total of 36 ocean convoys in the S.W. Approaches. The only genuine sighting occurred at 0918 hours on 4 February when Liberator C/59 Squadron, escorting convoy HX.334, sighted a tubular object, described as either a periscope or schnorchel head, less than a mile away in 5059N x 1207W. At the time the aircraft was, at the request of the S.N.O. escorts, on a

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Cobra patrol.(1) The object disappeared before an attack could be made. From postwar evidence this might have been the periscope of U.1058 en route towards the St. Georges Channel. There was one bogus sighting during the month.(2)

The only ship casualty occurred on 20 February when the Irish Sea portion of convoy HX.337 was attacked south of Waterford by U.1208 who was on her return journey from the south Irish Sea. The attack was made at 1155 hours and one of the surface escorts, H.M. corvette Vervain, was sunk. The convoy was being air escorted by Liberator S/59 Squadron who at the time was some distance away on a Cobra patrol and saw nothing. Twenty minutes later the aircraft came closer to the convoy and saw survivors in dinghies and in the water. Box patrols were also being flown in the area and three other aircraft saw the sinking Vervain. None saw any signs of U.1208 either before or after the attack. However the supporting 22nd Escort Group picked up asdic contact within a few minutes of the torpedoing and after several depth charge attacks produced convincing evidence of the destruction of U.1208.

Off Northern Ireland

U.1014 was the only boat on patrol on 1 February. She was close in off Lough Foyle. During a working-up exercise off this base on 4 February, ships of the 23rd Escort Group obtained an asdic contact on a bottomed object which was finally classified as genuine U-boat and was thereupon attacked in earnest. Considerable quantities of clothing, paper and other wreckage of German origin left no doubt that a U-boat had been destroyed. This was later identified as U.1014. U.1064 passed through the area between the 17th and 20th en route to the Irish Sea. U.483 was on patrol from 22nd to 28 February between Lough Foyle and the Mull of Kintyre after which she too went on into the Irish Sea.

There were no ship casualties in the area. Air patrols by No. 15 Group amounted to 253 hours and a further 334 flying hours were devoted to the air escort of 10 convoys and 15 Monsters through the area. No genuine sightings resulted but there were three bogus two of which were attacked.(3)

The Butt of Lewis to the Orkneys

The only boat here on 1 February was U.313 and she left for home on the 3rd. There were no ship casualties and the 421 flying hours made no genuine sightings. There were two bogus.(4)

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- (1) This was one of the standard 'Reptile' patrols which an escort commander could order the escort aircraft to perform. Cobra was a perimeter patrol around the convoy and a numeral suffix denoted the number of miles radius from the convoy. On this occasion it was Cobra 15.
  - (2) Bogus sighting and attack by J/103 U.S.N. Sqdn. on 23 February.
  - (3) Bogus sightings by F/201 and Y/120 on the 20th and S/120 on 22 February.
  - (4) Bogus sightings by F/330 on the 10th and E/304 on 20 February.

Reykjavik - Iceland

No U-boats were present until 27 February when U.1022 arrived. At midnight on the 28th she attacked convoy UR.155 near Skagi Light to the west of Reykjavik, sinking the Alcedo (Pan.) - 1,349 tons and escaping unseen. The convoy was being night air escorted by L/L Liberator T/53 Squadron. At the time of attack the aircraft was some miles away on a Cobra patrol and as no signals were passed to him either by W/T, R/T or visual the pilot was unaware until he landed back that a ship had been sunk.

The month's flying of 103 hours was on convoy escort close to Reykjavik and no sightings were obtained.

The east coast of Scotland and northeast England

The first Type XXIII boat (U.2324) operated down the coast from Peterhead to the Tyne between the 5th and 19 February. She reported seeing no traffic north of the Firth of Forth except fishing craft and very little to the southward. She finally fired her two torpedoes at two ships off the Northumberland coast on 18 February. Both torpedoes missed and she started homeward the next day.

One conventional Type VII boat (U.309) was detailed to patrol in the Moray Firth. She left Horten on 8 February and was sunk on arrival in the mouth of the Firth on 16 February by the 9th Escort Group who were patrolling in the area.

The second Type XXIII boat (U.2322) patrolled from Aberdeen down to St. Abb's Head from 14 February and sighted no target until 25 February when at 1855 hours she attacked convoy FS.1739 southeast of St. Abb's Head and sank the Egholm (Br.) - 1,317 tons afterwards getting away undetected on her homeward journey.

During the month No. 18 Group only flew a total of 215 day and night hours on patrol over the route believed to be used by U-boats operating off the Firth of Forth areas. No genuine sightings were made. There was one bogus contact which was attacked.(1)

The North Foreland area

Mention has been made in section (iv) of the despatch in January of U.245 to this area. She arrived on patrol on 23 January and left on 15 February. Her operation was mixed in with those of the Seehund midget submarines who were trying to disrupt the military supply route between the Thames estuary and the Scheldt. Counteraction was provided by the anti-shipping squadrons in No. 16 Group and no specific anti-U-boat operations were employed. The area and subject is, therefore, more fully dealt with in Chapter XI on anti-shipping operations between January 1945 and V.E. day. Suffice it to say here that U.245's only success on this cruise was the sinking of one ship out of a convoy attacked on 6 February off the North Foreland. No further operations in this area were carried out by regular U-boats until mid-April.

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(1) Bogus contact by N/224 on 27 February.

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(b) The Transit Areas

The Northern area from Norway to the line Iceland/Hebrides

In this area during February there were 46 U-boats outward and 20 inward bound. The overall total of day and night flying hours by Nos. 15, 18 and Iceland Groups was double that for January and amounted to 5,400 but only resulted in one possible and two genuine sightings of which one was attacked. There were two bogus sightings, both attacked. (1)

The possible sighting occurred on the night 5/6 February when L/L Liberator V/53 Squadron was homing on a double radar contact. Visual lookout reported a short wake with a small black object at the head about  $\frac{1}{4}$  mile on the port bow in 6056N x 1704W. When turning to illuminate, the firm radar contacts were seen to be two unlighted fishing boats some two miles further on. On completion of the turn back to the wake a small radar contact was obtained but this faded out on the run in and nothing was seen in the Leigh Light. U.1232 was in the area homeward bound but her position is not known with sufficient accuracy to confirm this sighting.

A genuine sighting was made on 15 February by Liberator R/224 Squadron to the north of the Shetlands when at a range of two miles in poor visibility the beam gunner using binoculars saw a short wake with two thin black objects at the head on an easterly course. Unfortunately when passing the information to the pilot through the intercom the object was obscured by the port wing and when the aircraft turned the target had vanished. This might have been U.825 homeward bound who was in this vicinity.

The one attack was made by Wellington Q/304 Squadron at 1744 hours on 16 February. In a roughish sea and poor visibility the pilot sighted less than a mile away on the beam a wake with periscope, schnorchel and top of conning tower showing in 5720N x 1124W (130 miles west of the Hebrides) steering southerly. The Mark VI A.S.V. was at the time switched off for cooling. After banking steeply an attack was made with 6 - Mk. XI depth charges while the target was just visible. Afterwards a certain amount of oil in short streaks was seen. Markers were dropped at intervals until relief aircraft arrived. Nothing further transpired. In fact, this was U.1019 as her log confirms the attack and the information that she was damaged. However, she carried out her own repairs and soon continued southwards bound for the Irish Sea.

The Navy had better luck with these passage U-boats. H.M. S/M Venturer sank U.864 inward bound to Bergen when close off the Norwegian coast and the 10th Escort Group patrolling during the month northward of the Shetlands sank U.1279, U.989 and U.1278 all outward bound. This performance by a single escort group showed that the block scheme for this area proposed in mid-January by the C.-in-C. Coastal Command was not such a pipe dream after all.

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(1) Bogus sightings by B/206 on 9th and K/59 on 11 February.



The transit route westward of Ireland

During February sixteen U-boats passed outward along this route bound for the English Channel or Irish Sea and seven returned homeward. The 733 day and night flying hours over the route made no genuine sightings. There were two bogus sightings.<sup>(1)</sup>

The transit route through the Kattegat and Skagerrack

Regarding this transit area, it will be remembered that the two night flying Halifax squadrons of No. 18 Group started sorties into the eastern end of the Skagerrack early in October 1944. These were maintained and increased during the next three months but were directed entirely against surface shipping and used the high level flare attack method. After the directive issued in the Argonaut Conference by the Combined Chiefs of Staff early in February 1945 requesting, among other items, more air action against enemy minesweepers and supply shipping on this route between Germany and Norway, Coastal Command not only stepped up the Halifax sorties in the Skagerrack but extended them into the northern part of the Kattegat. They also started L/L Liberator patrols in this area for the express purpose of attacking new U-boats on their way from Kiel to Norwegian bases. As Bomber Command were increasing their mining throughout the Kattegat the enemy was forced to use minesweepers as escorts to U-boats and supply convoys throughout their passage as well as continually sweeping the shipping channels. The night flying by both anti-ship and anti-U-boat patrols would, it was hoped, find targets among all three types of enemy vessels and thus make an effective start in satisfying the requirements of the directive.

The anti-U-boat patrols started on the night of 12/13 February with seven Liberators in the Kattegat followed next night with five in the eastern Skagerrack. Thereafter none could be spared from other duties until later in the month when similar sorties were despatched on the nights of 20th/21st, 25th/26th and 26th/27th February. In all, a total of 202 flying hours were expended. The only U-boat convoy intercepted was at 2230 hours on 13 February when L/L Liberator E/547 Squadron obtained a multi-contact radar indication and on homing to the nearest contact illuminated a fully surfaced U-boat in 5800N x 1055E (northeast of the Skaw) steering 345° at 12 knots. An attack was made with six depth charges but no after results were seen. From German records this was the new type VIIC U.1273 who reported being unsuccessfully attacked by an aircraft at this time and place. She was in loose convoy with U.190, 805 and 1005 escorted by a minesweeper en route from Kiel to Horten.<sup>(2)</sup> These anti-U-boat sorties encountered many surface vessels but with two exceptions such targets were not as yet tackled by the Liberators because it was difficult to differentiate at night when homing on a cluster of radar blips between a party of U-boats with minesweeper escort and a convoy heavily escorted by

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- (1) Bogus sightings by Z/59 on 10 and G/517 on 24 February.  
 (2) It is of interest that U.1273 was afterwards mined on 17 February with the loss of 57 lives on an R.A.F. laid mine in the entrance to Horten roads when returning to harbour after diving exercises.

flak vessels. Recognition of the target could only come at close range in the Leigh Light at very low altitude. The former was a legitimate target but the latter was suicidal to no purpose with the wrong bomb load. During March some of these aircraft were armed with 600 lb A/U bombs and radar blind bombing equipment which enabled attacks to be made at relatively high level without using the Leigh Light.<sup>(1)</sup>

It was disappointing that only one U-boat convoy interception was made but Admiralty Intelligence could not forecast precisely when such little parties of U-boats would be on passage. In fact, a total of 17 new U-boats came up from Kiel between the 12th and 18 February.

(c) An attack on the U-boat exercise area

The break-up of the U-boat training and exercise organisation in Danzig Bay, caused by persistent R.A.F. minelaying, became known to Admiralty Intelligence early in January. It was estimated that much of the night tactical training and torpedo firing would be shifted to the area close around Bornholm island in the western Baltic. Coastal Command headquarters decided that a night sweep over this area by Leigh Light Liberators would come as a complete surprise to the enemy and might be fruitful in attacks on the latest types of U-boats undergoing their final training. During January very careful planning took place so as to avoid enemy radar screens, flak positions and night fighter bases on the outward route and to arrive in the area from an advantageous direction into a low moon path. The operation, which received the code name of Ohilli, required good weather together with a particular phase of the moon.

The opportunity for its execution did not arise until 3 February when shortly before 2300 hours fifteen Leigh Light Liberators (seven of No. 206 and eight of No. 547 Squadrons) took off from Leuchars each armed with 16 - Mk. XI D.C.s. One aircraft soon developed engine trouble and turned back, the others proceeded across the North Sea into the Skagerrack and close down the Swedish coast of the Kattegat. Here one aircraft ran into night fighters and expended so much fuel and time in avoiding tactics that the pilot decided to turn back. The remaining thirteen crossed the southern tip of Sweden and debouched into the chosen area northeast of Bornholm at about 0300 hours on 4 February. Three aircraft saw and attacked U-boats. C/206 Squadron, after sighting and attacking a cargo vessel 40 miles east of Bornholm with six depth charges, immediately got another radar contact at 10 miles range. On close approach this broke up into eight separate contacts, and before the Leigh Light was switched on, dim shapes were seen under and on each side of aircraft which appeared to be stationary surface craft and some U-boats. The pilot flew on for eight miles and then returned on the radar contact. Not wishing to draw concentrated fire the pilot did not use the Leigh Light but attacked a dimly seen wake at 0305 hours in a position about 35 miles east of Bornholm. This time an escort

- (1) This equipment was a 3 cm. A.S.V. bombsight. The type fitted was AN/APQ5B. The only two Squadrons so equipped were Nos. 206 and 547 who received it during March 1945. It was known as the L.A.B. (low altitude bombing) bombsight. A full account of the development and detail is in the R.A.F. Signals Volume VI pages 192 to 197 of Chapter XV.

A.H.B./  
IHK/54/5/85  
Encls. 1 to 13.

Nos. 204 and  
547  
Squadron O.R.B.

vessel was clearly seen close by which opened up with intense flak. The flak was seen by E/206 who was homing on the same cluster of contacts. While closing he noticed all contacts except one fading out and on illumination only a large escort type vessel was seen which promptly opened accurate fire. Six depth charges were dropped but missed well astern. The aircraft was repeatedly hit, serious damage being done to rudder, port wing, fuselage and both port engines. Preparations were made to bale out over Sweden but ultimately the pilot regained control and struggled back safely to Banff.

J/206, after homing on a radar contact, illuminated a fully surfaced U-boat about 30 miles east of Bornholm and at 0309 hours delivered an attack with six depth charges. On return to the spot no after results could be seen but the aircraft suddenly experienced intense flak from three unidentified sources in the vicinity.

ibid

E/547, after homing on a radar contact, illuminated two fully surfaced U-boats close together and four escort vessels all steering in a northwesterly direction about 35 miles east of Bornholm and at 0336 hours made a depth charge attack on the leading U-boat. On the run in all vessels opened up with flak scoring many hits on the aircraft, fortunately with no casualties or serious damage. Two of the other aircraft sighted only surface craft in much the same position and the other seven saw nothing during their sweep.

A.H.B./  
IIK/54/5/85  
Encl. 22B

A plot of the movements and reports from the aircraft taking part showed that no sightings of any kind were obtained north or northeast of the island, all were some 30 to 35 miles due east and indicated a force of U-boats and escort vessels in approximately 5510N x 1620E steering northwestward. Even now in 1956 it is impossible to say what this party were doing or whether damage or destruction was inflicted on any U-boats attacked in this or subsequent air operations around Bornholm. No German records of the training flotillas at this period have ever been discovered and a prolonged search among other German naval documents reveal no mention of the experiences of new U-boats undergoing working up exercises in this area.

ibid

Encls. 15 to 19  
and 26 and 30.

One aftermath of the operation was a protest by the Soviet Naval Staff and a request that it should not be repeated as they were employing their own submarines on patrols around Bornholm. With typical lack of liaison they had omitted to inform the Western Allies of this fact. Under these circumstances Coastal Command cancelled a repetition planned for later in February and asked that agreement be obtained for a repeat in the third week in March. This was duly arranged.

(d) Summary for February 1945

Task	Total hours base to base	A/C lost	U - B O A T S		
			Sight	Attack	Result
Inshore area patrols	6,899	4	3	1	one sunk one shared
Inshore convoy escort	1,372	-	1	-	-
Transit Areas	6,336	1	4	2	one dam.
Bornholm area	157	-	4	3	-
Total Feb. 1945	14,764	5	12	6	one sunk one shared one dam.

During February, the inshore U-boats sank eleven merchant ships and three naval vessels at a cost to themselves in these waters of twelve U-boats destroyed (nine by the Navy, one by Air, one shared and one by accident) - again a satisfactory exchange rate.

(vi) March Operations - General remarks

See Maps 44  
and 45

The March U-boat sailings were maintained at a high level, 37 boats departed on operations (including the third Type XXIII) and 28 new U-boats came up from Kiel, including two more Type XXIII and U.2511 the first Type XXI. During the month, 15 U-boats were sunk in Home Waters and one off Nova Scotia. At the end of March there were 61 U-boats at sea in the Atlantic area of which 53 were in Home Waters, the latter figure being an increase of two over February in spite of the 15 sunk.

Ship sinkings in the Irish Sea petered out completely after 2 March although there were several U-boats operating throughout the month. The western end of the English Channel provided most of the limited U-boat successes but they paid dearly for them as for each ship sunk they lost a U-boat. So lethal was this area that on 30 March B. d U. made a general signal to the effect that the heavy losses made a temporary withdrawal necessary and patrol billets well to the south of Ireland and the Scillies would be instituted in lieu.

During the month B. d U. broadcast several intelligence signals to U-boats at sea drawing attention to the undesirability of schnorchelling on passage by day except in rough sea conditions. When in enclosed or inshore waters the periscope was to be used very cautiously. Bilges were to be pumped into diving tanks by day and only blown at night. If it was believed they had been detected from the air U-boats were to shift position as quickly as possible. Secluded bays, a high coastline and Irish territorial waters were advocated as safe spots for undisturbed night schnorchelling. The above were prompted not only by individual U-boat patrol reports but by German Intelligence interception of British aircraft reports which so frequently mentioned schnorchel smoke, wakes and oil slicks. The use of sono buoys was also now known to the enemy and U-boats were instructed, if they thought they were being dropped, to dive deep quickly and then crawl dead slow for at least 15 hours and always to wait till dark before schnorchelling.

The continued failure of the inshore campaign to show results commensurate with U-boat losses decided B. d U. to re-open operations in mid-Atlantic, partly as a surprise move and partly to divert anti-U-boat surface and air forces from the inshore areas. To this end seven Type IXC boats were sailed for the Atlantic from Norway in the third week of the month. While at sea these boats were instructed by signal to make for a rendez-vous area about 500 miles north of the Azores which they were expected to reach early in April. Detailed orders for a line sweep against ocean convoys followed and their experiences have been recounted in Chapter IX (V) (c).

The final feature of the month was a repetition of the Liberator sweeps over the U-boat exercise area around Bornholm island on the nights of 23rd/24th and 26/27 March. The aggregate of hours flown by Coastal Command in the inshore campaign during March reached the colossal total of 25,000, over 10,000 more than the figure for February.

(a) The Inshore AreasThe Irish Sea

On 1 March there were five U-boats in the Irish Sea. U.1276 had been in the central part for nearly a week without firing a torpedo. U.483 was entering past the Firth of Clyde, U.1302, 775 and 1019 were in the southern part having just entered during the previous 48 hours.

The only ship casualties for March in the Irish Sea occurred on the 2nd when at 0800 hours U.1302 attacked convoy SC.167 some 17 miles N.W. of St. David's Head and sank the King Edgar (Br.) - 4,536 and Novasli (Nor.) - 3,204 tons. No close air escort was being given to this convoy, the priority for the day having been given to both parts of two nearby convoys MKS.85 and HX.339. After the attack a prolonged and extensive hunt by several escort groups took place which lasted some days and involved all three U-boats at different times. U.1019 took refuge north of Wexford and her log mentions hearing continual depth charge explosions well to the east of her. U.775 finally decided it was too hot an area and crept out during 3 March round St. David's Head into the ~~British~~ Bristol Channel. U.1302 seems to have stuck it out not far from the attack position because after dark on 7 March she was finally contacted and destroyed by the 25th Escort Group some 25 miles north of St. David's Head.

The only air encounters during this time were further north. Sunderland Z/422 Squadron, after a radar contact, sighted some whitish smoke three miles away at 1426 hours on 2 March to the west of the Isle of Man. On arrival the smoke had almost dispersed leaving no aiming mark. Homing signals to surface forces were started and a sono buoy pattern laid which, it was claimed, gave positive evidence of a U-boat. At 1635 hours a periscope was momentarily sighted not far from the sono buoy pattern but on the run-in the depth charges failed to release. Three escort vessels arrived at 1700 hours and started to sweep while the aircraft continued to circle but nothing more transpired. Although making no mention of the incident, the U-boat was probably U.483 as in her subsequent patrol report she stated that, contrary to usual practice, she sometimes schnorchelled by day if weather, visibility and hydrophone conditions appeared to make it safe.

The other air sighting was more positive and occurred at 1128 hours on 5 March when, in hazy weather, Sunderland W/422 Squadron saw in a moderate sea the top of a conning tower only  $\frac{1}{2}$  mile away in a position about 20 miles west of Bardsey Island. Before the aircraft could line up for an attack the target disappeared leaving no aiming mark. This could have been U.1019 who by this date was in the vicinity.

U.1019 was definitely seen and attacked a few days later on 9 March by Liberator W/120 Squadron. This aircraft obtained a Mk.X (3 cm.) A.S.V. contact at 0852 hours in a flat calm sea at one mile range and almost simultaneously the bomb aimer sighted a periscope. The position was 12 miles west of Bardsey Island and there was a northbound convoy six miles westward of the sighting. Being unplaced for immediate attack the aircraft turned and sighted the periscope momentarily twice more but each time out of direct approach. On the fourth attempt only a short wake mark was visible but two Mark 24 Mines were released followed by a sono buoy pattern. No explosion

was heard but positive U-boat noises were picked up. Meanwhile homing signals had been sent out and at 0953 hours escort vessels were seen approaching. R/T communication was established and a hunt was started with the aircraft circling around the area. The periscope was seen again momentarily at 1023 and 1027 hours but on neither occasion could even a snap attack be made nor when surface craft arrived was any asdic contact made. At 1030 hours another Liberator arrived and by 1230 hours there were nine escort vessels engaged in the search. At 1254 hours W/120 left to check position on Bardsey Island and on return at 1310 hours an object was sighted five miles west of the hunt which on closer approach was recognised as the top of a U-boat's conning tower disappearing in a foamy swirl. A stick of four depth charges were dropped ahead of the swirl only a short time after complete submersion but no after results were seen. After reporting this sighting to the surface craft by R/T the hunt moved over to the spot but nothing more transpired. In her log U.1019 records she was diving deep in this vicinity coming up periodically to periscope depth. She made no mention of seeing an aircraft in the early stages and was unaware of the Mark 24 attack or the surface craft hunt but records the sighting of an aircraft corresponding to W/120's return and the subsequent depth charge attack which did her no harm.

U.483 made her way slowly down the Irish Sea from the Isle of Man finding no targets. While schnorchelling at night on 7 March to the northeast of Dublin she reported being in collision with an unidentified vessel resulting in the loss of her schnorchel mast and damage to the periscope. Thus crippled she crept southward out of the area and returned home via southwest Ireland. By 13 March all U-boats had left the Irish Sea. The next arrivals were U.1169 on the 20th and U.242 on 27 March, both of whom came in via the St. George's Channel. U.1169's periscope was probably sighted at 0732 hours on 26 March by U.S.N. Liberator B/110 Squadron about 15 miles northeast of Wexford. The aircraft was at 1,500 feet and unplaced for immediate attack. Markers were dropped and a sono buoy pattern laid. Acting on evidence from this two Mark 24 Mines were released but nothing resulted neither was any contact made when the 22nd Escort Group arrived, after being homed, at 0904 hours. Both these U-boats were still on patrol on the Irish Sea at the end of the month.

During March, air patrols covering all parts of the Irish Sea were flown by Nos. 15 and 19 Groups amounting to 4,128 day and night hours. Four possible or genuine sightings were obtained, two of which were attacked. There were in addition nine bogus sightings of which five were attacked.(1) Close air escort was given to only three convoys and one Monster totalling 35 flying hours with no sightings.

#### The English Channel

This area was again very active there being ten U-boats concerned. The month started with four in the area, all at the western end. U.683 was south of the Lizard and U.275 north of Ushant both en route to the Central Channel. U.1203 was patrolling in the mouth of the Channel and U.1004 to the

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(1) Bogus sightings by A/815 and O/201 on 5th, V/422 and V/201 on 6th, U/461 on 8th, X/461 on 9th, DA3/GR on 17th, S/461 on 20th and X/228 on 26th.

east of the Lizard. The latter was about to start her homeward passage and her place was taken on 5 March by a newcomer U.399. She was probably sighted on this day by Sunderland G/10 Squadron who was escorting the combined convoy OS.114/KMS.88. A small object was seen through binoculars sticking out of the water in a position 26 miles southwest of the Lizard and five miles from the nearest ship in the convoy. The sighting was too close for immediate attack and while turning it was lost to view.

Two possible sightings were made by Barracudas of No. 810 F.A.A. Squadron in the Central Channel. This squadron was operating from Thorney Island under No. 19 Group control. On 6 March at 1805 hours F/810 Squadron obtained a Mk.XI (3 cm.) A.S.V. contact at two miles range in smooth water conditions and on closing saw a short wake mark which was attacked without result with six depth charges in a position 26 miles south of the Needles. This could have been U.683's periscope who was patrolling in the neighbourhood. The next day Q/810 Squadron through binoculars sighted less than a mile away three thin objects sticking up about three feet out of water. Although banking steeply towards the target, it had disappeared before arrival but two depth charges were dropped on the estimated position. This was nine miles from the previous day's sighting and therefore could have been U.683 again.

On 8 March, convoy ONA.289 was attacked off Beachy Head and the Lornaston (Br.) - 4,934 tons was sunk. This was the work of U.275 who had come into the eastern Channel from St. Nazaire but she did not survive for long as she was destroyed on 10 March in a naval deep minefield ten miles S.S.W. of Beachy Head.

By 9 March U.1203 had left on her homeward journey and three more U-boats were approaching the western Channel. U.681, the first, was proceeding at 80 feet depth on 11 March past the Scilly Isles and at about 0900 hours hit some outlying rocks. The damage sustained forced the captain to surface and, realising he could no longer dive for any length of time, he made for the Irish coast at full speed on the surface. At 0926 hours he was intercepted by U.S.N. Liberator N/103 Squadron who made an immediate attack. The U-boat took violent evasive action and the stick of 8 - Mk.XI D.C.s undershot with the last one exploding close to the U-boat's tail. The aircraft then turned and released 2 - Mk. 24 Mines at the still speeding U-boat. Even before this the U-boat captain had decided his position was hopeless and had given the order to abandon ship. This was done while still proceeding at full speed, the ballast tank vents were opened and demolition charges lit. As the U-boat disappeared a heavy explosion took place aft. Later about 40 survivors were picked up by the 2nd Escort Group.

The other two boats, U.315 and 953, duly arrived and took up patrol billets to the south and southeast of the Lizard respectively. Meanwhile U.683, having completed her patrol time in the central Channel, was proceeding westward down channel and on 12 March was rounding the Lizard. After dark the 2nd Escort Group, still patrolling in this area, picked up asdic contact and sank her off the Wolf Rock.

A quiet period for both sides ensued until 21 March except for a night illumination of a schnorchel head 30 miles south of the Scillies on the night of the 16th/17th. This was by L/L Warwick O/179 Squadron and the sighting was almost under

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the aircraft. In the subsequent turn to attack, the target disappeared and no attack was possible. This was probably U.953 who had just started her return home after only three days of completely ineffective patrol. Her place was taken by U.246 who arrived on patrol between Falmouth and Plymouth about 18 March. Another newcomer, U.1195, entered the Channel about the 20th en route to the line Cherbourg/Needles.

Action started again on 21 March with the sinking at 1335 hours of the James Egan Layne (U.S.) - 7,176 tons out of coastal convoy BTC.103 off the Eddystone by U.399 and at 1418 hours the sinking of the John R. Park (U.S.) - 7,194 tons out of coastal convoy TBC.102 west of the Lizard by U.315. In both cases the U-boat got away unharmed and U.315 struck again next day. She sank the Empire Kingsley (Br.) - 6,996 tons out of another coastal convoy (TBC.103) at 1340 hours northwest of Lands End and again got clear undamaged.

Early in the morning of 26 March coastal convoy BTC.108 was attacked southwest of the Lizard by U.399 whose only victim was the tiny coaster Pacific (Du.) - 362 tons. This convoy was being trailed two miles astern by the 3rd Escort Group. Immediately after the torpedoing they gained asdic contact and destroyed U.399 by hedgehog attack. The Group remained in this vicinity and on 29 March picked up another submarine contact. After a short series of attacks unmistakable evidence of destruction came to the surface. Actually this was U.246 who had just started her return journey from the Plymouth area.

The final episode of the month came on the same day when U.315 attacked coastal convoy BTC.111 northwest of Lands End and badly damaged one of the escorting frigates, H.M.C.S. Teme. No retribution was exacted from this U-boat and she started homeward on 31 March leaving no U-boats in the western part of the Channel and only U.1195 in the central area.

During the month No. 19 Group flew a total of 4,618 day and night hours on box patrols and together with No. 15 Group escorted 13 convoys in the area totalling 201 flying hours. In all there were five genuine or possible sightings of which three were attacked and resulting in one U-boat being sunk. There were also three bogus sightings all of which were attacked.<sup>(1)</sup> Five ships were sunk and one escort vessel damaged for the loss of five U-boats - a very satisfactory exchange rate.

The Bristol Channel across to south of Ireland area

One U-boat was on patrol for a short time in the Bristol Channel. This was U.775 who had crept round St. David's Head during 3 March. She took up position just south of Milford Haven and at 1330 hours on 6 March attacked coastal convoy MH.44 hitting the Empire Geraint (Br.) - 6,991 tons who was seriously damaged and subsequently beached in Milford Haven. The counter-attack by the convoy escorts inflicted damage on U.775 who started on her return journey on 8 March. In failing dusk light on this day she was possibly seen soon after starting to schnorchel by Sunderland R/422 Squadron about 15 miles south of Milford Haven. No attack was made as on close approach the object sighted had disappeared leaving no aiming mark.

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(1) Bogus sightings by O/105 on 4th, A/810 on 8th and U/107 on 18 March.



During the month there were six passages along the south coast of Ireland by U-boats to and from the Irish Sea. One of them was sighted by Wellington Q/304 Squadron on 13 March when, after a radar contact, a conning tower was seen four miles away on a southerly course to the southwest of St. David's Head. By the time the aircraft arrived, the target had disappeared for too long an interval to justify an attack. This was possibly U.1276 leaving the Irish Sea en route homeward.

Box patrols during March by Nos. 15 and 19 Groups amounted to 2,796 day and night flying hours for which there were two genuine sightings and two bogus.<sup>(1)</sup> In addition, 945 hours were given to the close air escort of 37 convoys and one Monster.

#### Off Northern Ireland

During March there were three U-boats on patrol and all had been sunk before the end of the month. The only shipping casualty occurred on the 16th when the Ingertoft (Br.) - 2,190 tons was sunk out of the small convoy RU.156 three miles west of the island of Skye at 0800 hours by U.722 who got away undetected. No air escort was being given. This U-boat had arrived in the area on 9 March and after this attack nothing was seen of her until a doubtful sighting by Sunderland L/201 Squadron at 0841 hours on 26 March. The aircraft sighted smoke at a range of 13 miles off the southern tip of the Hebrides. On approach this was reported as very dense white and coming from a point on the surface streaming away down wind. When seven miles away it began to disperse and had disappeared at two miles range leaving a long grey streak in the water 20 yards broad and half a mile long. No attack was made but the 2nd division of E.G.21, who were patrolling 50 miles to the north, were informed and arrived on the scene at 1137 hours. No particular attention would have been given to this sighting afterwards if the Escort Group had not sunk U.722 two days later only 28 miles away. Even so, it is almost incredible that U.722 should have been schnorchelling in broad daylight, making this amount of smoke and leaving such an outsize wake mark. The evidence reads much more like a smoke marker but the sighting cannot be written off as entirely bogus.

The other two U-boats were U.1003, who arrived off Loch Foyle on 1 March joined about the 13th by U.296 just to the eastward. Their patrols were featureless until the night of 20 March when U.1003, who was schnorchelling, collided with the Canadian frigate New Glasgow at 2217 hours about 12 miles north of Lough Foyle. The U-boat bottomed at once thereby escaping destruction by subsequent depth charges dropped by the New Glasgow and other frigates of the 26th Escort Group nearby. Examination of the collision damage in U.1003 disclosed a split conning tower, periscopes and schnorchel smashed and many internal leaks. At daylight/21st she left the bottom and cruised at 60 feet all day in a northwesterly direction until dusk when she surfaced to charge her nearly exhausted batteries. However, she was forced to dive again before replenishment by constant alarms of approaching hunting forces. With pumps running continuously she struggled through the 22nd March but just after midnight the batteries gave out and could not keep the pumps going. The captain surfaced and abandoned ship in

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(1) Bogus sightings by P/103 on 1st and X/107 on 14 March.

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the early hours of 23 March. Soon after dawn dinghies containing 31 of the crew were sighted by the Canadian frigate Thetford Mines about 20 miles northwest of the collision position.

Meanwhile since the collision the area had been intensively patrolled by surface and aircraft. No air sightings occurred until 0900 hours on the 22nd when Wellington R/172 Squadron sighted off Loch Foyle a hump of cascading foam travelling down wind at 5 knots leaving a long wake. This subsided and vanished before an attack could be made. Later at 1040 hours, another swirl was sighted in the same position which was attacked with six depth charges without result. Nearby escort vessels were informed by R/T and No. 15 Group diverted Liberator M/120 Squadron to investigate. So far, post war reasoning points strongly to a bogus sighting on a willywaw because it is now known that U.1003 was some 20 miles away to the northwest in a parlous condition with a dying battery and spending much of the day lying on the bottom.

Liberator M/120 Squadron arrived at 1140 hours and laid a sono buoy pattern which was claimed to confirm the presence of a U-boat steering west at six knots and at 1322 hours an attack was made with 2 - Mark 24 Mines in position 5523N x 0640W (13 miles N.E. of the entrance to Loch Foyle). Twelve minutes later the sono buoy operator reported two bangs tailing into a "wooshing sound" after which no more noises were heard. At 1445 hours a small patch of oil about 30 yards in diameter was seen at the attack point. When M/120 left the area at 1513 hours there were seven escort vessels sweeping the vicinity. They found nothing, not even a bottomed object.

At the time nothing was known about the possible presence of U.296 in the North Channel area and subsequent interrogation of survivors from U.1003 made it clear that she had not been hit by the Mark 24 Mines, consequently the attack was classified together with R/172's sighting and attack as probably non-submarine. After the war it was established from German records that U.296 had been detailed by signal on 9 March, when west of the Hebrides, to operate in the Firth of Clyde. She should have arrived in this area about 15 March but, as she never regained harbour or made any subsequent signal, her whereabouts are unknown on 22 March. For want of a better attack claim the Admiralty Assessment Committee credited her destruction to this attack by M/120 Squadron. This account has been given in some detail to illustrate the amount of pure supposition that underlies some of the sightings, attacks and assessments in the final schnorchel phase.

During March, No. 15 Group carried out a total of 723 day and night hours patrol resulting in two possible sightings and one attack credited with the sinking of a U-boat. In addition, 622 hours were expended in close escort to 16 convoys and 20 Monsters with no sightings. There were two bogus sightings.<sup>(1)</sup> The score of one ship sunk in the area against three U-boats destroyed was eminently satisfactory.

The Butt of Lewis to the Orkneys

For some reason not apparent in German records, B. d U. detailed five U-boats in March to patrol in this hitherto most

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(1) Bogus sighting by Z/422 on 8 March and R/172 on 22nd.

unrewarding area although his Intelligence Branch must have been aware by now that traffic was very thin along this bit of coast. U.1021 was on patrol the whole month, U.1104 from the 3rd to the 15th, U.978 from the 4th until well into April, U.1005 from the 4th for six days and U.965 from 16 March.

U.1005 had her patrol cut short as she was instructed by signal on 8 March to proceed to the south of Ireland. She left the area on the 10th and, proceeding down westward of the Hebrides, hit outlying rocks off St. Kilda on 12 March. The resultant damage forced her to return forthwith to Bergen. The other four boats effected nothing. U.1104 left for home on the 15th, U.965 was sunk on 27 March by the patrolling 1st Division of E.G.21 and U.1021 fell victim to the same Group on 30 March leaving only U.978 on patrol on 1 April. There were no shipping casualties to offset the enemy's loss of two U-boats.

Air patrols by Nos. 15 and 18 Groups amounted to 576 day and night flying hours and 87 hours were given to the escort of three convoys. No genuine sightings resulted but there were two bogus.<sup>(1)</sup>

#### Reykjavik - Iceland

U.1022, who had arrived at the end of February, may have been contacted by L/L Liberator M/53 Squadron just before midnight on 1 March some 25 miles northwest of Skagi. The aircraft obtained a firm radar contact which was held while homing to a range of one mile but nothing was seen when the Leigh Light was switched on. A sono buoy pattern was laid and, acting on the evidence claimed, two attacks were made with Mark 24 Mines but without result. Thirty hours later U.1022 torpedoed and sank the anti-submarine whaler Southern Flower - 328 tons four miles off Skagi. The local force of whalers and trawlers failed to pick up any trace of her and a week later at 1400 hours on 10 March she attacked a group of them some 15 miles northwest of Skagi but when getting into a firing position she broke surface in the heavy sea running. She was sighted and attacked, first by gunfire and later with depth charges but managed to extricate herself safely though damaged. She left patrol for home on 13 March. Meanwhile U.773 had arrived in the area on 7 March and spent an uneventful patrol off Reykjavik until 31 March when she too left for home.

Except for the possible contact on U.1022, no air sightings were obtained during the 680 day and night flying hours of patrol or the 279 hours of air escort afforded to seven convoys in the Reykjavik area.

#### The East coast of Scotland and N.E. of England

No U-boats were present until 10 March when U.714 arrived off Montrose. She promptly attacked and sank the Norwegian mine-sweeper Nordhav II outside this port. She then moved down to St. Abb's Head where on 14 March she sank the Swedish Magne - 1,145 tons out of convoy FS.1756. The newly commissioned frigate Natal, who was on passage nearby, closed the position within a few minutes, picked up asdic contact and half an hour later destroyed U.714.

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(1) Bogus sighting by V/547 on 1st and N/224 on 4 March.

U.778 arrived in the Peterhead area on 12 March and had an unproductive patrol until the 23rd. In his report, the captain said there was no traffic, constant air and surface patrols, and occasional depth charge attacks but she was able to schnorchel at night undisturbed close in to the coast. She returned early because of a breakdown in the hydrophone equipment. She was probably sighted when leaving by a Sunderland on an operational flying exercise who, after a radar contact, sighted in clear moonlight on the night of 23 March a schnorchelling U-boat in the mouth of the Moray Firth steering 0450. No depth charges were being carried so no attack could be made.

The third U-boat in the area was the Type XXIII - U.2321 who patrolled between the Firth of Forth and St. Abb's Head from 17 March and was still there at the end of the month without finding any target.

No. 18 Group flew patrols close off the Scottish east coast but only to the extent of 236 hours. Except for the sighting in the Moray Firth, there were no others genuine but three bogus sightings were reported.<sup>(1)</sup>

(b) The Transit Areas

The Northern Area from Norway to the line Iceland/Hebrides

In this area during March there were 51 U-boats outward and 26 inward bound. The overall total of day and night flying hours by Nos. 15, 18 and Iceland Groups was 6,361, an increase of 1,000 over that for February. Seven genuine sightings were made of which five were attacked resulting in two U-boats being sunk and one damaged. There were in addition six bogus sightings, three of which were attacked.<sup>(2)</sup>

The first genuine sighting came on 5 March when Wellington U/172 Squadron, after a radar contact, sighted a periscope through binoculars about 500 yards distant but on a wrong bearing for attack. As the aircraft passed to port, the U-boat broke surface showing bows and top of conning tower heading northeast. Unfortunately by the time a turn had been made the U-boat had disappeared for too long an interval to justify a depth charge attack. The position was 5610N x 1210W and was probably the homeward bound U.244.

No further contacts were made until 20 March when at 1830 hours Liberator B/86 Squadron obtained a contact on her Mk.X (3 cm.) A.S.V. at  $3\frac{1}{2}$  miles range. In gathering dusk this was three times homed on but on each occasion nothing concrete could be seen. A marker was dropped and at 1900 hours a pattern of sono buoys were laid around it which immediately produced sounds of a U-boat. In almost complete darkness

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- (1) Bogus sightings by K/547 on 16th, U/224 on 18th and B/224 on 28 March.
  - (2) Bogus sightings by D/547 on 4th, J/210 and E/547 on 17th, D/248 on 23rd, P.L./248 on 25th and T/86 on 30 March. In the latter case, the pilot of T/86 Squadron, after twice attacking the fast moving 'schnorchelling U-boat' without result, came to the conclusion that his target was an incipient waterspout and his photographs confirmed this opinion. Henceforward it was at last suspected at H.Q. Coastal Command that all "schnorchel smoke" sightings were not necessarily genuine.

another radar contact was obtained and acting on this and the sono buoy giving the maximum noise an attack was made at 1930 hours with 2 - Mk. 24 Mines. For the next six minutes the propeller noises continued but then there was a prolonged reverberation after which all noises ceased. The position of attack was 62 miles north of Cape Wrath. After the war it became known that U.905 sailed from Trondheim on 13 March bound for S.W. Ireland. No outward clearance or passage signal was ever received from her and she never regained harbour. Allowing the usual 60 mile advance per 24 hours, she could have been in the attack position on 20 March and the Assessment Committee credited her destruction to this attack.

Two nights after a definite sighting was obtained slightly to the east of this position when L/L Liberator L/224 Squadron, after homing on a firm radar contact, illuminated a surfaced U-boat steering 236° at 10 knots. An attack was made with 4 - 600 lb. depth bombs but unhappily the stick just overshot and the U-boat dived. This was U.321 outward bound who had just come through the Fair Isle channel between the Shetlands and Orkneys.

On 24 March, Mosquito Q/235 Squadron failed to return from an anti-shipping rover patrol. A day later it was reported from one of our own submarines (H.M. Nor. S/M Dolfijn) on patrol off Hellisoy that at 1224 hours/24 March a Mosquito aircraft was seen being shot down by a U-boat which afterwards turned back into the fjords. No rescue could be attempted by the submarine owing to the presence of surface craft. Postwar evidence establishes that U.249, outward bound on operations from Bergen, was attacked by a Mosquito at this time and place. Casualties were inflicted on the bridge personnel and some slight damage to the U-boat. The Mosquito was then shot down and one airman taken prisoner. U.249 had to return to Bergen for repairs and to land the wounded.

Liberator V/86 Squadron obtained a glimpse of a schnorchel and periscope in a very rough sea with low visibility about 45 miles northwest of the Shetlands at 1523 hours on 27 March but the target vanished before an attack could be made. Another momentary sighting of a schnorchel in similar weather conditions was reported by Liberator S/86 Squadron on 29 March about 90 miles north of Cape Wrath. In this case the aircraft, after a second glimpse, laid a sono buoy pattern in spite of the high sea running.<sup>(1)</sup> On rather scanty hydrophone evidence an attack was made with 2 - Mark 24 Mines. There was no result. No precise identity can be given for either of these sightings but U.325 was in the vicinity of the former, and both U.1276 and 953 were in the neighbourhood of the latter.

The final encounter of the month came at 0900 hours on 29 March when Liberator O/224 Squadron sighted three miles away what appeared to be a persistent white cap in an otherwise moderate sea in a position 70 miles northwest of Muckle Flugga. The aircraft closed and at one mile identified a periscope making a pronounced feather. An immediate attack was made with 4 - Mk. XI D.C.s while the periscope was still visible.

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(1) Instructions had been issued that sono buoy evidence was highly unreliable owing to water noises if a pattern was laid in sea conditions rougher than State 4 on the Beaufort scale.

As the aircraft was turning after release about eight feet of the U-boat's stern came into view. Within a few minutes of the depth charge explosions a light oil patch appeared and sono buoys were laid around it. Although their evidence was very scanty, a further attack with 2 - Mk. 24 Mines was made but without result. The aircraft remained another two hours by which time the oil had spread to an area 200 yards in diameter. A positive ruling on the attack was postponed but postwar evidence revealed that U.1106 had sailed from Kristiansand South on 23 March bound for S.W. Ireland. She made no outward passage signals and was never heard of again. On the usual allowance of 60 miles advance per 24 hours she could have been the U-boat attacked and the Assessment Committee credited her destruction to the depth charge attack.

#### The Transit route westward of Ireland and to the Scillies

During March the air patrols over this route were intensified and extended to cover the stretch between S.W. Ireland and the Scilly Islands. A trial was also made of the sono buoy barrier scheme mentioned in the policy section (ii) (d). This took place on the 8th and 9 March. The area chosen was west of Ireland from Latitude 5315N to 5215N between longitudes 1345W and 1130W. Sono buoys were laid in staggered lines within these limits. The 1st Escort Group was stationed 10 miles southward of the area ready to be homed on to any positive indication obtained by the air patrols.

It was estimated by the Submarine Tracking Room that there were up to 12 U-boats on passage somewhere westward of the British Isles and the selected area was considered the most likely to give results over the next 48 hours. From postwar knowledge, the Tracking Room were accurate as to numbers but not as to positions. There were indeed ten outward and one inward bound but by unlucky chance none were in the chosen area on 8 March.<sup>(1)</sup> Six of the outward bound boats were strung out to the north of the area and three had just left to the south-east, only U.260 was near but she was still about 40 miles to the north. U.1004, homeward, had just left the area and was also about 40 miles to the north.

From dawn on the 8th onwards, U.S.N. Liberators of Nos. 103, 105 and 110 Squadrons were fed into the area where they patrolled keeping W/T watch on the various sono buoy transmitter frequencies. Two U.S.N. Catalinas of No. 63 Squadron fitted with M.A.D. also patrolled in the hopes of detecting submerged U-boats. Only one indication was reported on 8 March. This was by N/103 Squadron who from 1412 to 1526 hours claimed positive U-boat noises in 5241N x 1334W. An attack was made with one Mark 24 Mine but nothing resulted and the noises continued. From the postwar plot of U-boat positions neither U.1004 nor U.260 were within 60 miles and it appears that the sono buoy evidence was non-submarine. During 9 March, U.260 was the only boat in the area but no indications or contacts were reported by any aircraft. In the two days, 349 flying hours were expended in this experiment. It was not repeated

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(1) Had the operation been timed for 14 March, there were then three outward and two homeward bound in the area.

until the last week of the war, which seems a pity as it had good possibilities, particularly just north of the Shetlands.

A few days later U.260, who was en route to the Irish Sea, was proceeding at 250 feet depth southeast of the Fastnet Light. At 1750 hours on 12 March she hit a mine in the naval laid deep mine field 20 miles E.S.E. of that light. She managed to surface and reported her condition to B. d U. who told her to scuttle if unable to effect temporary repairs, otherwise to make for St. Nazaire. After edging his boat close to the Irish coast the captain signalled to B. d U. that he was about to scuttle and the whole crew landed in dinghies close to Galley Head on 14 March.

Flying by Nos. 15 and 19 Groups over this transit route during March amounted to 2,122 hours for which there were no genuine sightings. Five bogus sightings were all attacked.<sup>(1)</sup> There were 16 outward and 11 homeward bound U-boat passages along the route during the month.

#### The Transit route through the Kattegat and Skagerrack

Few Leigh Light aircraft could be spared by No. 18 Group for action against U-boats on this route and only occasional sorties were flown during the first ten days, none of whom sighted anything but surface convoys and numerous small craft. They were discontinued until near the end of the month when four sorties were despatched armed with the 600 lb. depth bomb thus making it practical to attack all targets from a relatively high level. One such attack was made on a cargo vessel southbound off the Skaw on the night of the 26/27 March but no damage is mentioned in German records. A fully surfaced U-boat was sighted on the same night further to the west by L/L Liberator S/547 Squadron but as the aircraft was returning from a Bornholm sortie with no depth charges left, no attack could be made. Only 110 flying hours were expended by the A/U aircraft.

Although many sightings and attacks on surface shipping were made by the night flying Halifaxes, there was only one occasion when U-boats were seen. This occurred at 2215 hours on 17 March when Halifax H/58 Squadron sighted two surfaced U-boats with two escort vessels east of the Skaw steering 330°. These were probably U.874 and 1106 en route to Horten. The Halifax could not attack as no bombs remained after previous attacks on surface vessels. During the month 28 new U-boats came up from Kiel to Norwegian ports.

#### (c) Attacks in the U-boat exercise area

After agreement with the Soviet Naval Staff, sweeps by Leigh Light Liberators took place round Bornholm on the nights of 23rd/24th and 26/27 March. Eight aircraft from each of Nos. 311 and 547 Squadrons set out on the first night. Once again the tracks debouched from the Swedish coast north of Bornholm and led right round the island clockwise, the furthest off being about 30 miles from the coast. Six aircraft sighted and attacked U-boats, all were singletons with no escort and were widely separated in positions all round the island.

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(1) Bogus sightings by C/110 on 4th, L/423 and Z/59 on 5th, N/103 on 8th and F/59 Squadron on 30 March.

Of the other ten aircraft, four saw nothing but a few fishing craft, four saw small surface vessels which were attacked, one saw a large convoy steering 300° to the southeast of the island and one saw a destroyer and small vessels 20 miles west of the island. All the U-boats were attacked while fully surfaced and in five cases a good straddle was claimed. As there were no escorts and what little flak came from the U-boats was inaccurate, the attacking aircraft returned to verify results but, beyond the fact that in every case the radar contact disappeared, there was no evidence of any results.

On the second night seven aircraft of No. 311 and eleven of No. 547 took part. This time seven sightings of U-boats were made and five were attacked. All except one were to the eastward of the island and four of the sightings could have been on one little group of two U-boats steering east in company with a large escort vessel. Of the five attacks, three were on fully surfaced boats and two were in the act of diving. In addition two sightings of schnorchelling U-boats were claimed. There was accurate flak, both from the surfaced U-boats and the escort vessel so that no investigation after attack was done. Of the other 14 aircraft, three saw nothing except fishing vessels, two attacked ships in convoys sighted south of the island, two attacked R-boats near the port of Ronne, three attacked various small patrol craft and four attacked miscellaneous contacts not identified.

As in the case of the February attacks, no U-boat information is available from German records and it is therefore not possible to confirm claims for casualties amongst the U-boat targets. Regarding surface craft, all that can be found in the records is that during the first night's attacks the German manned cable ship Budjadingen - 446 tons and the patrol craft VS.276 - 141 tons were both sunk by aircraft 10 miles S.S.W. of Ronne, and on the second night the German fishing craft Venus - 261 tons was sunk some 40 miles W.S.W. of the island.

It is unsatisfactory not being able to confirm any precise results against U-boats but there can be no question that these raids did no good to the working-up organisation and routine. One last sweep was carried out towards the end of April by three Liberators of No. 206 Squadron on the night of the 23rd/24th. Only one U-boat was sighted, in a position 34 miles N.E. of Bornholm. The automatic blind bombing approach equipment was faulty and the five depth charges released fell 200 yards to port of the U-boat which promptly dived.

(d) Summary for March 1945

Task	Total hours base to base	A/C lost	U - B O A T S		
			Sight	Attack	Result
Inshore Area Patrols	13,758	2	14	7	2 sunk
Inshore Convoy Escort	2,170	-	1	0	-
Transit Areas	8,593	1	8	5	2 sunk 1 dam.
Bornholm area	403	-	13	11	-
Totals - March 1945	24,924	3	36	23	4 sunk 1 dam.



During March the inshore U-boats in Home Waters sank ten merchant ships and three naval vessels with damage inflicted on another naval vessel at a cost to themselves in these waters of fifteen U-boats destroyed (eleven by Naval action and four by Air) - once again a satisfactory exchange rate.

(vii) Operations during April and May 1945 - General Remarks

The sailings of U-boats on operations increased during April to 44 as compared with 37 in March and included the first Type XXI U-2511. New U-boats coming up from Kiel increased to 35 against 28 in March. The May figures were five despatched on operations and at least 20 new boats from Kiel with many others on passage in the western Baltic.

See Maps 47  
and 49

Considering the Atlantic as a whole, the merchant ship losses during this last five week period were very moderate at 13 sunk and seven damaged but the destruction amongst U-boats was far the heaviest for a long time - 23 around the British Isles, five in mid-Atlantic and four off the American seaboard, totalling 32. Taken in conjunction with 27 more U-boats sunk on passage in the Kattegat/Baltic area and with the destruction of a further 18 in port plus the collapse of the prefabricated building programme due to Allied bombing it exemplifies the extent to which the Allies dominated the U-boat menace. However, even with these losses there were still 45 U-boats in the Atlantic area on 4 May of which 35 were around the British Isles.

See Map 51

Mention was made in the general remarks for March that, consequent on U-boat losses in the Channel and Irish Sea, B.d.U. instituted patrols southward of Ireland and the Scillies. By 3 April there were four boats in such billets added to during the month by a further four. They effected little and lost four of their number to air and surface craft attacks. Also during April, two U-boats were sent to the North Foreland area where they sank two ships and damaged another. As they were integrated with the Seehunde sorties in this area the detailed story is given in the anti-shipping Chapter XI section (xii)(b).

The other innovation mentioned was the despatch of several large U-boats against ocean convoys in the mid-North Atlantic. Six of these started a westward sweep in mid-April in this area under the code name of Group Seawolf. The project was suspected by Allied Intelligence and an American task force, consisting of two escort carriers with twenty destroyers, was detailed to scour the possible line of advance. Between the 15th and 24 April four of these U-boats were located and sunk. A more detailed account has been included in Chapter IX on overseas U-boat operations.

Much more attention was given in this last period by Coastal Command to the transit route through the Kattegat and Skagerrack. Not only were the night sorties stepped up but the daytime anti-shipping strikes extended their scope into the Central Kattegat. In the course of these latter operations there were two occasions in April and three in May when small parties of surfaced U-boats on passage were attacked with success. In addition, during the first four days of May, the 2nd Tactical Air Force operated R.P. fitted Typhoon Squadrons with equal success in the Western Baltic area.

See Appendix VI.

In Home Waters, natural phenomena continued to be misreported as genuine Schnorchels right up to the end of the war. While the total number of bogus reports during the period remained high at 37, the true origin of most of these reports shifted from willywaws to spouts from whales, black-fish or porpoises, there being 24 of such misidentifications. Bona fide sightings of U-boats around our islands remained remarkably low in view of the high intensity of flying and numerous targets present. The Table below illustrates the efficiency of Schnorchel tactics against air location and the prevalence of bogus reports:-

Table - U-boats in U.K./Iceland area and Aircraft Sightings

Month	No. of U-boats in area		Total Hours Flown	Genuine Sightings	Bogus Sightings
	Monthly total	Ave. on any day			
Sept. 1944	59	26	24,400	14	4
Oct. 1944	48	23	18,200	11	-
Nov. 1944	37	17	16,900	3	14
Dec. 1944	46	24	15,000	8	13
Jan. 1945	49	27	11,800	4	15
Feb. 1945	65	34	14,400	7	15
Mch. 1945	73	40	24,400	22	30
Apr. 1945	84	40	24,700	16	31
May 1945	40	33	6,100	3	6

See Map 51

The final stage of the war was marked on 4 May when Admiral Doenitz broadcast a signal at 1514 hours G.S.T. to all U-boats at sea instructing them to cease hostilities and start return to base. Many U-boats did not receive this signal and many disregarded it. After the unconditional surrender, the Admiralty ordered a broadcast to all U-boats at sea at 1200B hours on 8 May directing them to surface, report in plain language and proceed surfaced to certain designated ports. Again many disregarded this for some days and even on 15 May there were still five U-boats at sea submerged.

See Map 53

See Map 55

The Use of Blimps for inshore work

One interesting recommendation for inshore anti-submarine work should be recorded although the war ended before its value could be assessed from operational experience. This was the use of small airships or Blimps, particularly for inshore convoy escort. On 6 April 1945, the C.-in-C. Coastal Command sent a memorandum to the Admiralty and Air Ministry drawing attention to the large amount of inshore flying done by heavy long range aircraft primarily designed for more distant employment and suggesting that all coastwise convoy air escort could be better performed by Blimps. He said he had already been in communication with Admiral Stark (U.S.N. representative in London) and had been assured that a squadron of these could readily be made available. He was himself prepared to organise ground accommodation and facilities for handling.

C.C.  
April O.R.B.  
Appendices  
283 and 284.

ibid  
Appendices  
285 and 286

This proposal was fully endorsed by the Admiralty who obtained authorisation from Cominch in Washington for the despatch to the United Kingdom of one squadron of six Blimps. Arrangements for their reception at Cardington went ahead

ibid  
Appendices 287  
and 288

during April and the advance ground party arrived at the end of the month. In the event none of the Blimps had arrived before VE day and on 10 May the Admiralty signalled Cominch that they would not now be required.

It was intended to base them operationally at Chivenor for employment in the S.W. Approaches and English Channel. Even in the present (1957) state of submarine development it appears that such an economical highly manoeuvrable carrier of dunking asdic and/or M.A.D. equipment would be invaluable around our extensive coastline.

(a) The Inshore Areas

The Irish Sea

On 1 April U.1169 and 242 were still on patrol and were joined on the 3rd by U.1024. About this date U.1169 started her homeward journey but she hit a mine and foundered on 5 April in the deep minefield laid in the St. George's Channel. U.1024 was responsible for the last shipping casualties which occurred in this area. On 7 April she attacked convoy HX 346 off Holyhead and damaged S.S. James W. Nesmith, 7,176 tons. After escaping the subsequent search she lay up close to the Irish coast until 12 April when she attacked convoy BB.80 at noon to the south of the Isle of Man and damaged S.S. Will Rogers (U.S.) - 7,200 tons. This time the hunt located her and she was sunk six hours later by the 8th Escort Group in 5339N x 0503W. Neither of these convoys were receiving air escort.

U.242 is thought to have been on patrol all the month but her precise movements in the Irish Sea are unknown. A somewhat dubious sighting of smoke and a claimed glimpse of a schnorchel on a southerly course was made at 0810 hours on 30 April by Sunderland H/201 Squadron some 20 miles south of the Isle of Man in low cloud and squally weather. Two attempts were made to attack but on each occasion the depth charges failed to release. Three hours later and 14 miles away to the northeast some smoky looking spray at the head of a moving wake was attacked with depth charges and photographs were taken. These showed conclusively that the target on this occasion was a willywaw. Shortly afterwards the 14th Escort Group was contacted and at the Senior Officer's request H/201 led them to the position of the first sighting made at 0810 hours. After searching the vicinity, the Group obtained an asdic contact at 1900 hours on a bottomed object in 5342N x 0453W which was then heavily depth charged bringing to the surface diesel oil, bits of wood and several tin cans of German origin. For some days it was thought that these came from the wreck of U.1024 sunk in this vicinity on 12 April. However, a further search by the 10th Escort Group on 2 May confirmed the presence of two bottomed wrecks. After the war it became known that four U-boats had vanished during the last weeks of the war - U.242, 325, 326 and 398. For some reason not explained the postwar Assessment Committee allocated U.325 to the attack on 30 April by the 14th Escort Group but it seems far more likely that U.242 was the boat concerned because each of the other three had been detailed for quite other areas. H/201 was credited with a share in this kill as she had been the means of bringing the Group into the vicinity.

This possible sighting was the only one secured by the 2,474 day and night hours of patrol flying by Nos. 15 and

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19 Groups though there were four other bogus reports.(1) Close air escort was given to four convoys and two Monsters, amounting to 44 flying hours with no sighting.

During the first week of May a further 645 hours of flying were expended but there were no U-boats present and consequently no sightings.

The English Channel

Here on 1 April there was U.1195 in the central area, joined on 5 April by U.1063 in the Start Point area. On 6 April U.1195 attacked convoy VWP.16 to the east of St Catherine's Point (I. of W.) and sank the large S.S. Cuba (Br.) - 11,420 tons. She was located and destroyed one hour later by H.M.S. Watchman, one of the convoy escorts. No air escort was being given.

On 15 April U.1063 made an attempt to attack convoy TBC.128 off Start Point but was located by the 17th Escort Group who were trailing just astern of the convoy. She was attacked, blown to the surface and sunk by gunfire. U.325 who had been detailed by signal on 10 April (when west of Ireland) to operate between Lands End and Plymouth, could have reached this billet about 19 April. She was never heard of again and there is no clue as to her end. U.1023 arrived off the Wolf Rock from the Bristol Channel on 25 April and then moved slowly up Channel reaching the vicinity of Start Point on 1 May.

During April Nos. 19 and 15 Groups flew 2,871 day and night hours of patrol and 372 hours close escort to 23 convoys. No genuine sightings resulted but there were two bogus reports both of which were attacked.(2)

On 1 May U.249 arrived to patrol between the Lizard and Start Point while U.1023 moved into Lyme Bay where she torpedoed and sank the Norwegian minesweeper No. 382 at 2145B hours on 7 May. Both U-boats were still on patrol in the Western Channel on 8 May. No. 19 Group flew 1,000 day and night hours patrol and escorted three convoys during this last week of war with no sightings.

Inshore in the Bay of Biscay

During April No. 19 Group's flying boat squadrons carried out inshore patrols amounting to 515 hours and 47 hours of escort in support to naval forces operating off La Pallice and the mouth of the River Gironde. No sightings were obtained. During the month U.485 and 510 traversed the Bay into port, and U.878 and 485 left port for the Atlantic. U.255 was patrolling off the Gironde between the 17th and 22 April. U.878 was sunk on her outward voyage in the Outer Bay on 10 April by H.M. Ships of EG.B1. who were escorting convoy ON.295.

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- (1) Bogus sightings by BX/No.6(G) O.T.U. on 13th, F/423 on 24th, P and Q/202 on 29th and H/201 on 30 April.  
(2) Bogus sightings by L/110 on 22nd and F/228 on 27 April.

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During the first week of May U.255 was ferrying equipment and stores between LaPallice and St. Nazaire finally leaving the latter port for Norway on 8 May. No. 19 Group flew 95 hours on inshore patrols but sighted nothing.

The Bristol Channel across to south of Ireland area.

Two U-boats traversed the south coast of Ireland during April, U.1024 on her way into the Irish Sea and U.1023 towards the Bristol Channel. U.1023 arrived in the Trevoise Head area on 17 April and her periscope was probably sighted at 1952B hours on 21 April by Sunderland V/422 Squadron. The object, described as sticklike and leaving a small wake, disappeared before an attack could be made.

At 1535B hours on 23 April U.1023 attacked convoy TBC.135 some 17 miles southwest of Trevoise Head and damaged S.S. Riverton (Br.) - 7,345 tons. Three hours later the U.S. Catalina V/63 Squadron (fitted with M.A.D.) obtained a contact near this position and, after tracking it with float lights, delivered an attack with 24 retrobombs. No explosions resulted and subsequent tracking seemed to indicate that the target was lying stopped on the bottom. The 17th Escort Group was homed and carried out some depth charge attacks in the vicinity, with no results. This may have been U.1023 as she subsequently withdrew from this area and crept round Lands End into the English Channel.

This sighting and contact were all that was obtained from 996 hours of patrol flying and 1,143 hours of convoy escort to 46 convoys and five Monsters. There were two bogus reports neither of which was attacked.<sup>(1)</sup> During the first week of May there were no U-boats in the area and the 484 flying hours saw nothing.

Off Northern Ireland

There were no U-boats here for the first three weeks of April but during the last ten days this area held more boats on patrol than any other. Individual billets were apportioned by B.d.U. mostly off the northwest coast. The dates of arrival were U.1305 and 293 on the 20th, U.956 and 636 on the 21st, U.1105 on the 24th, and U.901 to the south of the Hebrides on 27 April. One other boat (U.1017) was on passage through the area from 28 April. On the very first day of U.636's patrol she was located by the 4th Escort Group and sunk in position 5550N x 1031W.

During April, 1,833 day and night hours were flown by No. 15 Group on patrols covering the area. With the exception of one bogus report by W/172 Squadron on 8 April there were no sightings by aircraft until midnight 23/24 April when L/L Liberator X/120 Squadron, after homing on a radar contact, caught a glimpse of a black object at the head of a white wake in 5518N x 0847W. The sighting was made very close to and in such hazy conditions that the Leigh Light was of little assistance. A flame float was dropped at the spot. On the return run, radar contact was re-established but faded out and a sono buoy pattern was laid in the vicinity. This was claimed to have given positive evidence which an hour later

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(1) Bogus sightings by PZ/No.8 O.T.U. on 2nd and E/461 on 16 April.

was considered loud enough from one of the buoys to warrant an attack with 2 - Mk. 24 Mines. There was no result. At the time the pilot was rightly criticised for not releasing the weapons immediately on the flame float instead of much later when the U-boat had had time to go deep and reduce to dead slow, at which speed the propeller noise would be insufficient to cause the mines to home. Postwar comparison of times and positions in U.1305's log make it fairly certain that she was the U-boat concerned.

On the following night L/L Liberator W/120 Squadron had a similar experience in much the same position. This time the object sighted was claimed to be a definite schnorchel leaving a well defined wake but again it was sighted too close for immediate attack. A flame float was dropped and once more, instead of dropping Mk. 24 Mines as soon as possible, the laborious laying of a sono buoy pattern was undertaken. It was three hours before it was considered that propeller noises justified an attack. There was no result. It is likely that this sighting also was of U.1305.

However, a successful attack took place on 29 April. Liberator Q/120 Squadron at 1815B hours sighted a wake distant three miles in 5604N x 1106W. Through binoculars it was seen that at the head of the wake was a schnorchel sticking up three or four feet from behind which could be seen faint traces of smoke. An immediate attack was made with 4 - Mk. XI D.Cs. which straddled the target. After subsidence of the explosion plumes no sign of the schnorchel could be seen but oil soon appeared which spread to an area 100 yards across in which several dozen small pieces of wood were floating. An assessment of "Probably Sunk" was given. After the war it became known that U.1017, who left Trondheim on 15 April, had been detailed to proceed towards the English Channel. Allowing the usual 60 miles per 24 hours on passage she could have been in the above position on 29 April. As she was never heard of again the Assessment Committee credited her destruction to this attack. In addition to air patrol, close air escort was given to eleven convoys and five Monsters involving 353 flying hours but no sighting resulted.

The only shipping casualties effected by all these U-boats were the sinking of the small independently routed coaster S.S. Monmouth Coast (Br.) - 878 tons on 24 April and damage to H.M. frigate Redmill on 27 April, both in positions about 20 miles west of Eagle Island. These attacks appear to have been the work of U.1105, who was detailed to a billet off this island.

During the first days of May all five U-boats were still on patrol but they started to leave for home one by one after the 4th leaving only U.1105 and 956 in position on 7 May. No further attacks were made on shipping. Air patrols and escort to convoys in the area amounted to 1,071 hours day and night flying up to 8 May and resulted in two attacks by patrol aircraft. There were in addition three bogus sightings.<sup>(1)</sup>

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(1) Bogus sightings by Q/36 on 2nd, M/202 on 3rd and O/423 on 4 May.

At 1453B hours on 6 May, Sunderland B/201 Squadron sighted a white wake in 5523N x 0748W. During approach this was scrutinised through binoculars and a black tubular object seen at the apex. When about  $\frac{1}{2}$  mile away this dipped leaving a narrow tapering swirl mark. About four seconds later 6 - Mk. XI D.C.s were released just ahead of it. Nothing unusual resulted and a sono buoy pattern laid subsequently gave only indeterminate vague noises. Postwar evidence reveals that U.956 recorded being attacked at 1500 hours while schnorchelling in this position and that slight damage was received. Liberator U/59 Squadron was diverted from a neighbouring patrol to investigate and follow up this attack. At 1714 hours she established R/T contact with B/201 and then laid additional sono buoys northward in the direction that the target had been seen moving. It was claimed that at 1756 hours positive beats at 150 per minute became audible and by 1815B hours, these became loud in one of the buoys so an attack was made with 2 - Mk. 24 Mines in position 5527N x 0750W. Both mines were heard running for  $6\frac{1}{2}$  minutes when a loud rumbling explosion took place followed five minutes later by a similar one, after which only water noises came from the sono buoys. Shortly after, a considerable disturbance was seen welling up on the surface leaving two large patches of fluorescent green - proof that both mines had detonated. Good photographs were taken which confirmed these details. About ten minutes later two orange coloured objects resembling partially inflated dinghies were seen near one of the patches.

All this evidence points to a kill but what U-boat? We now know that U.956 must have been within about 12 miles of the 1453B hour position but she surrendered practically unhurt three days later as did the other four boats known to have been off Northern Ireland. No other U-boat is unaccounted for who could have been in the area on this date.

#### Butt of Lewis to the Orkneys area

During April U.978 was on patrol from the 1st to 12th and U.739 from 19 April into May. Only 244 hours of patrol and 190 hours of convoy were flown and there were no genuine sightings but two bogus reports were made.<sup>(1)</sup> On 3 May U.739 was relieved by U.764. Up to 8 May, 73 hours of patrol and 39 hours of convoy escort obtained no sighting. No shipping casualties occurred in this area in either April or May.

#### Reykjavik - Iceland

The flying hours in the area were 41 on patrol and 191 on convoy escort during April and 132 on patrol plus 38 on escort during the first week of May. No sightings were obtained in either month.

U.979 was on patrol off Reykjavik from 18 April until 5 May. She made no attacks until 2 May when she sank the A/S trawler Ebor Wyke - 348 tons just north of Skagi Light. On the night of the 4/5 May she attacked convoy RU.161 when 20 miles northwest of Reykjavik damaging S.S. Empire Unity (Br.) - 6,386 tons. This convoy was being given night air

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(1). Bogus reports by U.S.N. Catalina V/63 on 5th and B/519 on 17 April.

escort by Canso G/162 Squadron who saw the explosion of the torpedo at 2314Z hours when three miles away from the convoy. No sighting or contact was obtained before or after the attack. A little later and when at periscope depth U.979 collided with an A/S trawler and damaged her schnorchel aerial and flak guns. She escaped the counter-attacks and started back to Germany.

East Coast of Scotland and N.E. England area

This area was active throughout April and up to the last hours of the war. The U-boats concerned were mostly Type XXIII boats. U.2321, who had been in the St. Abb's Head area since 17 March, found no target until 5 April. On this day she attacked and sank S.S. Gas Ray (Br.) - 1,406 tons one mile north of St. Abb's Head and left for home the following day. She was relieved in this area on 7 April by U.2324 who remained for ten days after which she left for home without having effected anything. Meanwhile two conventional U-boats had been detailed to the east coast. U.1206, bound for the Peterhead/Moray Firth area, ran aground while submerged off Kinnaird Head on 14 April. She damaged herself so severely that she was abandoned and scuttled by her crew. U.1274 arrived off the Northumberland coast on the 13th and attacked convoy FS.1784 on 16 April sinking S.S. Athelduke (Br.) - 8,966 tons. She was located a few hours later by the escorting H.M.S. Viceroy and sunk off the Farn Islands.

The St. Abb's Head area was occupied again from the 17th to 23 April by U.2329 who fired at and missed a ship on the latter date and left for home. Up to the north, U.2326 arrived off Aberdeen on 23 April, fired at and missed a ship, and left for home two days later. Finally a conventional boat - U.398 - left Kristiansand on 18 April bound for the East Coast but German records do not state her precise billet. She could have been at any point between Aberdeen and the Northumberland coast by 24 April. She was never heard of again and is listed in the Official Returns as a "cause unknown" but there seems now a possibility that she came to her end by an air attack on 28 April which see below.

No. 18 Group could only devote 586 day and night flying hours to this extensive strip of coast. Three genuine sightings resulted of which two were attacked. There were, in addition, seven bogus sightings mostly on smoke markers or blackfish. (1)

The first genuine sighting did not occur until 19 April when at 1940B hours Mosquito R/235 Squadron, returning from a Wing Strike in the Kattegat, sighted a surfaced U-boat in mid-North Sea. The aircraft had no armament left with which to attack and the U-boat dived. This was probably U.2324 returning from the St. Abb's Head area.

At 1530B hours on 23 April, Mosquito O1/235 Squadron on transit flight from Banff to Fraserburgh sighted the top of a conning tower leaving a white wake off Kinnaird Head. The conning tower was painted grey and was of high narrow shape.

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(1) Bogus sightings by Q/333 on 4th, P/224 and K/86 on 16th, G/311 on 16th, J/206 on 17th, N/489 on 22nd and G/206 on 23 April.



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Before it disappeared an attack was made with cannon fire. This was probably U.2326 who was on patrol here at this date.

At 1835B hours on 28 April, Liberator E/206 Squadron sighted some suspicious looking steamy white smoke in 5531N x 0100W (off the Northumberland Coast) moving in a southwesterly direction. On closing, the smoke dissipated at  $1\frac{1}{2}$  miles range and a sono buoy pattern was dropped around the spot. Positive evidence of propeller beats of 120 per minute were claimed and when these got very loud in one buoy at 1912 hours an attack was made with one Mk. 24 Mine followed six minutes later by the other Mine. At 1925B hours an explosion noise was heard after which only water noises were registered by the pattern. The aircraft left the scene a few minutes later to check position by the Longstone Lighthouse and on return to the attack position saw a considerable trail of oil which had not been there prior to the attack. This evidence was not considered conclusive by the Assessment Committee either to establish the presence of a U-boat or of detonation by the weapons. However, the information about U.398's date of sailing and mission as mentioned above was not known to the immediate Post War Assessment Committee. Although not customary, U.398 might have been schnorchelling in daylight hours and this attack might have destroyed her. At least such suppositions are just as likely as those made by the Committee in crediting destruction in two other cases of attack by Mk. 24 Mines during this month (vide the attacks by U/224 Squadron on 3 April and by U/86 Squadron on 23 April described in the next section (b)).

During May there were two Type XXIII boats operating between Aberdeen and the Firth of Forth. U.2326 sighted several targets but was not able to get within torpedo range and in fact did not leave the area until 10 May. U.2326 attacked convoy EN.91 at 0040 hours on 8 May when close off May Island in the Firth of Forth and sank both the Avondale Park (Br.) - 2,878 tons and the Sneland I (Nor.) - 1,791 tons. She escaped the subsequent hunt and left submerged for Kiel where she arrived on 14 May.

Only 38 flying hours could be made available for patrols by No. 18 Group up to 8 May and no genuine sightings resulted. There was one bogus sighting.<sup>(1)</sup>

(b) The Transit Areas

The Northern area from Norway to the line Iceland/Hebrides

In this area during April there were 51 U-boats outward and 23 inward bound. The overall total of day and night flying hours by Nos. 15, 18 and Iceland Groups was 7,862, an increase of 1,500 over that for March. Only two possibly genuine contacts resulted, both of which were attacked. There were, however, no less than ten bogus sightings, half of which were attacked.<sup>(2)</sup> Naval action scored only one success when U.486, approaching Bergen, was sunk on 12 April by H.M.S/M Tapir.

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- (1) Bogus report by D/248 on 3 May.  
(2) Bogus sightings by O/162 on 1st, A/210 on 6th, F/547 on 7th, Q/53 and H/547 on 10th, R/162 on 21st, M/162 on 24th, N/210 on 25th, B/162 and N/224 on 26 April.

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The first possibly genuine air encounter took place on 3 April when at 1615B hours Liberator U/224 Squadron sighted white smoke at the head of a wake moving downwind in squally weather with low cloud and frequent rain storms. The sighting was at  $1\frac{1}{2}$  miles range in 6142N x 0024W and there had been no contact on Mk. X (3 cm.) A.S.V. An immediate attack was made with 4 - Mk. XI D.C.s followed 10 seconds later by the release of 2 - Mk. 24 Mines. After the subsidence of the depth charge plumes and three minutes after release of the Mk. 24 Mines an explosion took place close to the point of release, the single plume rising to quite 100 feet. The war-time assessment was "Probably Sunk". Just after the war the Assessment Committee for reasons unknown allocated U.1276 as having been sunk by this attack. The only information that German documents can give is that this U-boat left Bergen on 28 January 1945 bound for the Irish Sea. She made no outward passage signal, none of the Irish Sea casualties were by her, and she made no home passage report and never regained harbour. If the customary passage advance of 60 miles per 24 hours is assumed, she could have entered the Irish Sea southabout on 21 February. If it is assumed she did a patrol of 18 days and left by the same route for Norway she could have been in the attack position on 3 April - 65 days after leaving harbour. Altogether it seems very slender evidence on which to credit a kill, particularly as the sighting itself in the prevailing weather conditions is very like a willywaw.

The other encounter is equally problematical. This took place on 23 April when at 0918B hours Liberator U/86 Squadron sighted a three mile long oil streak in position 5926N a 0508W. A sono buoy pattern was laid around one end and extended an hour later as nothing was being registered. At 1055 hours intermittent cavitation swishes were claimed which by 1115 hours had become more regular at 88 beats per minute. An attack was made at 1121B hours with 2 - Mk. 24 Mines. Three minutes later what was described as "a very loud rushing water noise" was heard lasting for  $\frac{1}{2}$  minute followed soon afterwards by another similar noise. Mechanical clanking noises continued to be heard with rhythmic beats at 160 per minute until 1400 hours. Photographs of the oil streak were taken and these look like bulk cargo unrefined oil. In spite of the unconvincing details the attack received an assessment of "Probably Sunk". Here again, the postwar Assessment Committee allocated a U-boat (U.396) who never regained harbour, without recording their reasons. Research into German records in 1956 has revealed that U.396 was detailed for weather reporting duties in mid-Atlantic. She arrived on her billet and sent her first weather report on 4 April from position 5750N x 2550W. There is no record of when she started her return journey and she was never heard of again. If it is assumed that she left her billet for home about 11 April (which is a very short time on this type of patrol) she could have been passing through the attack position on or about 23 April.

During the first eight days of May there were 16 U-boats outward and 11 inward bound in the area. The overall total of day and night flying hours was 1,694 and there was one genuine sighting and one bogus. The genuine encounter took place on 7 May when in dawn twilight at 0446 B hours Catalina X/210 Squadron obtained a Mk. VIIIA (3 cm.) A.S.V. contact at 2 miles range. The aircraft homed and sighted at very close range a schnorchel and periscope in 6132N x 0153E steering

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3150 at 6 knots. Being too close for release, the aircraft circled and then attacked with 4 - Mk. XI D.C.s about 10 seconds after the target had dipped. Four minutes later, light oil started to appear in a trail leading eastwards. Sono buoys were dropped which gave positive evidence of a U-boat's movements also in an easterly direction. Subsequent evidence from the crew of U.320 establish that she was the U-boat involved and had been outward bound. While schnorchelling at dawn on 7 May the periscope watch reported the approach of an aircraft and the U-boat started to go deep. Depth charges exploded when she was at about 100 feet and caused much minor damage with numerous leaks in ballast and fuel tanks. She turned and headed easterly towards Norway. The cumulative leaks resulted in so much water entering the boat that the pumps were unable to compete by the 9 May. Accordingly she surfaced not far from the Norwegian coast, abandoned ship, scuttled and the crew got ashore in dinghies. This was the last German U-boat to be sunk from Allied action (air or surface) and her end came almost at the same time as a German U-boat sank the last Allied ships in the Firth of Forth.

The second planned sono buoy barrier

During this last week of the war was staged the only other example of a planned sono buoy barrier. It had been realised after the first attempt in March that the standard buoy had too short a life for the practicable maintenance of a barrier. Development of a 72 hour buoy was undertaken but these were not available in quantity until the end of April. As they were bigger and heavier it was decided to lay from surface craft.

Accordingly the planned barrier was laid by three ships of the 10th Escort Group along a 60 mile bearing 3100 from position 5645N x 1000W. This was about halfway between Rockall and the southern Hebrides. Laying started at 0600 B hours on 2 May and was completed in five hours. The barrier was patrolled and monitored by pairs of Liberators from Nos. 59 and 120 Squadrons continuously until 0600 B hours on 5 May. The line was marked along its length by flame floats renewed every two hours. Twenty-three sorties involving a total of 210 hours were flown.

Throughout the three days the weather was excellent and good reception was reported from all buoys until nearing the end when some were losing power. Surface current drift caused the line to move bodily a distance of 35 miles to the north-west by the end of the period. No evidence was obtained at any time of the presence of U-boats.

Using postwar information of U-boat positions, there were four U-boats in the vicinity but none are estimated to have crossed the line fairly and squarely. U.826 homeward bound and U.244 outward bound passed the extreme northwest end of it during 2 May. U.293 homeward passed just southeast of it during 5 May and on the same day U.1305 homeward bound was approaching it from the southward. This latter U-boat, who was at periscope depth, reported sighting a Liberator two miles away at 1400 hours on 5 May.

The Transit route Westward of Ireland and South of the Scillies

In April B.d.U's policy of withdrawal from the Irish Sea and English Channel came fully into effect with the stationing

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of several U-boats in patrols well to the southwest of Ireland and south of the Scillies. As these billets were on the Western Transit route the operations against them are included under this heading. Between various dates in April there were in all eight boats on patrol and ten passages to or from the patrols or the western channel making a total of 18 individual U-boat targets.

The overall day and night flying by Nos. 15 and 19 Group in the whole western transit area amounted to 4,944 resulting in five genuine sightings and three bogus.<sup>(1)</sup> The attacks by aircraft and patrolling escort groups in the S.W. Approaches were highly successful as seven U-boats were destroyed - four while in their billets, two when nearing them and one on passage through towards the Channel, at the cost of only two merchant ships lost.

The first action came at 1448B hours on 2 April when Wellington Y/304 Squadron, after homing on a radar contact, sighted what looked like a conning tower washing down in breaking seas with two tubes sticking up from it. An immediate attack was made with 6 - Mk. XI D.C.s and a good straddle claimed but in the rough sea nothing unusual was seen afterwards. A wartime assessment of insufficient evidence of damage was given but in November 1945 it was reassessed as "Probably Sunk" and the identity given as U.321. This was quite reasonable as she had made a passage signal and on 30 March was detailed to a billet 190 miles S.W. of Fastnet. She was never heard of again.

At midday on 4 April, Sunderland F/10 Squadron in squally rough weather claimed to have sighted schnorchel smoke at the head of a wake travelling down wind about a mile away in position 4948N x 1333W. While turning to attack the object was lost to view in a heavy shower. Although this has all the features of a willywaw the fact that U.774 was on patrol in this vicinity makes it impossible to rule out a genuine sighting. However, U.774 was definitely located on 8 April by the 4th Escort Group and sunk in 4958N x 1151W. On the same day the 21st Escort Group located and destroyed U.1001 who was on patrol about 70 miles to the southeast in 4919N x 1023W. Still on the same day, Catalina J/202 Squadron away to the north in 5724N x 1022W, sighted an unmistakable schnorchel and periscope in a rough sea, occasionally showing 10 to 12 feet of their length. An attack was attempted but unhappily the depth charges failed to release and before another run could be made the U-boat disappeared. This was the southbound U.1023.

No further contacts by either surface or aircraft occurred until 15 April when the 5th Escort Group located and destroyed U.285 in 5013N x 1248W who was enroute to a billet well west of the Scillies. On 18 April U.1107, on patrol in 4747N x 0626W, attacked convoy HX.348 at noon and sank the Cyrus H. McCormick (U.S.) - 7,181 tons and the Empire Gold (Br.) - 8,028 tons. She escaped detection but was destroyed under most interesting conditions by U.S.N. Liberator K/103 Squadron on 25 April. This aircraft sighted 1½ miles away a definite schnorchel sticking up six feet in calm water and

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(1) Bogus sightings by Z/201 on 4th, G/59 on 10th and P/518 on 22 April.

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leaving a short wake with traces of smoke in position 4812N x 0542W travelling south at about 5 knots. While the schnorchel was plainly visible an attack was made with 2 - Mk. 24 Mines. Both mines were seen just below the surface in the calm clear water to be homing in the direction of the target. Three minutes later there was a violent explosion at the still visible schnorchel. Nothing was seen of it after the plume had subsided but oil and debris appeared which half an hour later had spread to an area 250 yards across. One corpse was seen floating in this patch. Good photographs were taken in confirmation, two of which are reproduced in Appendix V as Nos. 14 and 15.

The final encounter of the month was at 1809B hours on 30 April when the M.A.D. fitted U.S.N. Catalina R/63 Squadron sighted a white wake two miles away in 4800N x 0630W. As the aircraft closed, a definite Schnorchel and periscope was seen at the head. An attack was made from astern and when passing over the target a strong M.A.D. impulse was registered and 24 - retrobombs were fired. One second later there was an explosion just abaft the schnorchel. After the explosion spray had subsided there was a boiling patch of water with oil, bits of wood and other debris coming to the surface. Later, the 1st Escort Group arrived and confirmed a German origin. This was the end of U.1055 who was enroute into the English Channel. One other boat U.326 had been detailed to a patrol well west of Brest. She made a passage report when west of Ireland on 14 April and was never heard of again. She could have reached her billet by the 24th but the date and cause of her disappearance are not known.

On 1 May there were only U.776 and 825 present. The former was to the west of Brest and the latter well southwest of Ireland. During the first week U.1010 traversed the transit route to a billet next to U.825, U.249 was on passage through to the Channel and U.826 was homeward bound. The 760 day and night flying hours by Nos. 15 and 19 Groups obtained no genuine sightings. There was one bogus report.<sup>(1)</sup>

The Transit route between the West Baltic and Skagerrack

This area provided action on an increasing scale in April and ended with a blaze of air attacks over the first six days of May. Surfaced U-boats abounded in the last stage and provided targets such as had not been seen since mid-1943. The full list of U-boats on passage cannot be identified from the scrappy German records covering the final fortnight of war but it is known that 38 newly completed boats came up from Kiel during April and at least 20 in the first days of May. There were in addition quite a few unidentified U-boats southbound during April for long refit in German yards. Finally a large number of unidentified newly commissioned, school and other old boats left West Baltic ports in a mass evacuation northward just before the unconditional surrender.

During April, enemy fighters and strong surface flak escort were still sufficiently in evidence to preclude the use of heavy A/U aircraft in daylight operations so No. 18 Group's A/U squadrons flew their 470 hours on night patrols in the area. Even so they lost three Liberators to night fighters or flak.

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(1) Bogus sighting by E/228 on 1 May.

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The night flying resulted in four radar homings on surfaced U-boats all of which were attacked from relatively high level in face of flak by using the L.A.B. equipment to automatically release the load of 4 - 600 lb. A/U bombs and so avoiding the necessity to illuminate the target.<sup>(1)</sup> However, no damage was inflicted and in only one case do the U-boats mention an attack in their records.

It was the daylight anti-shipping Wing Strikes armed with R.P. which did the execution during April. These operations were escorted by long range Mustang fighters from No. 11 Group F.C. and were extended into the Kattegat where on occasions they sighted small parties of surfaced U-boats. The first of these encounters took place on 9 April when two northbound close to one southbound U-boat were sighted to the east of the Skaw by a Wing Strike of 33 Mosquitoes. The southbound U.843<sup>(2)</sup> was sunk at 1723 hours and both the northbound U.1065 and 804 a few minutes later. U.804 disintegrated in a violent explosion, bits from which caused the film unit Mosquito<sup>(3)</sup> to crash into the sea and so damaged three others of the Strike that they had to force land in Sweden. There was flak opposition at first from all three U-boats but the concentrated fire power of the Wing was so devastating that this was smothered almost at birth.

On 14 April, a Beaufighter Wing Strike attacked shipping moored up alongside in Josing fjord in South Norway. Among the surface craft seen was one U-boat but, although many of these ship targets were sunk or set on fire, there is no record of damage to the U-boat or her identity. The Mosquito Wing again ran across U-boats on 19 April. The Strike, consisting of 24 of these aircraft, sighted a party of four surfaced U-boats escorted by a patrol vessel at 1632B hours steering northeast off Anholt Island in the Kattegat. The leading boat (U.320) immediately dived but the other three together with the escort vessel were repeatedly attacked with R.P. and cannon fire leaving the escort a blazing wreck, U.251 destroyed in a patch of debris and the other two U-boats lying stopped with dinghies alongside. Flak was experienced but it was not very accurate. One aircraft crashed in Denmark and one forced landed in Sweden. Of the two boats lying stopped, one (Type XXIII U.2335) was badly damaged and the other (Type XXI U.2502) only slightly. The latter picked up survivors and later

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- (1) These occurred on the nights of 2nd/3rd, 3rd/4th, 20th/21st and 22nd/23rd April. The equipment was a 3 cm. A.S.V. bombsight, type AN/APQ5B, but known as L.A.B. (Low Altitude Bombing) sight. Nos. 206 and 547 Squadrons were fitted during March 1945 and were the only two squadrons in Coastal Command to receive it. Full details of its development are given in R.A.F. Signals History Volume VI Chapter XV.
  - (2) U.843 had only recently returned to Bergen from the Far East. On this day she was enroute from Bergen to Kiel for a long refit.
  - (3) These Wing Strikes were accompanied by a Mosquito carrying cinematograph and ordinary cameras to record the actions as a supplement to the individual aircrafts' camera guns so that the size, number and identity of targets could be established and claims checked.

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joined a northbound strongly escorted troopship. The little convoy was sighted next day steaming up Oslo fjord by Mosquito L/333 Squadron on a reconnaissance flight.

There were no more encounters in April by Wing Strikes but two torpedo attacks were made at night off Kristiansand by roving Torbeaus of No. 489 Squadron. The first occurred at 0415B hours on 23 April when Z/489 sighted in moonlight a surfaced U-boat lying stopped off a small island in the entrance to the fjord. The torpedo narrowly missed and blew up on the island. The other was at 0323B hours on 27 April when F1/489, after homing on a radar contact, sighted a surfaced U-boat only  $\frac{1}{2}$  mile ahead in 5810N x 0830E steering 220° at about 10 knots. Being too close, a circuit was made and then under fairly accurate flak the torpedo was released. There was no result. This was probably U.1271 en route from Kiel to Bergen.

The early days of May saw an ever increasing movement of shipping and surfaced U-boats westward from West Baltic ports and northward from the Kiel area towards Norway. Wing Strikes of Mosquitoes from No. 18 Group operated in the Kattegat, No. 16 Group Beaufighter Strikes, using an advanced base in Holland, swept into the Belts area and R.P. fitted Typhoons of the 2nd Tactical Air Force, working from airfields in North Germany, operated in the Western Baltic. Finally from 5 May the heavy A/U Liberator squadrons attacked by day and night in the Kattegat. Apart from enemy surface shipping destroyed there was a very big bag of U-boats of all sizes ranging from near-operational Types XXI to conventional type school boats.

During the first four days of the month the anti-shipping type of aircraft had the field to themselves. On 2 May, Mosquitoes of No. 18 Group sank U.2359 and damaged another Type XXIII while 2nd T.A.F. Typhoons sank U.1007. On 3 May, the 2nd T.A.F. aircraft sighted 25 U-boats of which 13 were attacked resulting in no less than six being sunk<sup>(1)</sup> and No. 16 Group Beaufighters disposed of U.2524. On 4 May, 2nd T.A.F. Typhoons attacked four U-boats and sank U.876, 904 and 746 while No. 16 Group Beaufighters wiped out a group of three U-boats (U.393, 2338 and 2503) and sank U.236 out of another group of three nearby.

This concluded the anti-shipping squadrons score and the action was continued by No. 18 Group's Liberators. Daylight encounters took place on 5 May in the northern and central Kattegat with several near-operational Types XXI. One Liberator was shot down by flak but U.3503, 3523 and 2521 were sunk. In the evening U.2365 was caught alone and destroyed, at dusk the conventional U.534 fell a victim and during the night 5th/6th a schnorchelling Type XXI U.2534 was located, illuminated by Leigh Light and sunk.

Another schnorchelling U-boat was sighted at 1839 hours on 6 May by Liberator G/86 Squadron who took good photographs before straddling and sinking it with depth charges. This was U.1008 and one of the photographs (No. 13) is reproduced

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(1) The individual U-boats were:- Types XXI - U.2540, 3030, 3032, and conventional types - U.1210, 579, 733.

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in Appendix V. The last attack was made by L/L Catalina A/210 Squadron at 0049 hours on 7 May. This also was on a schnorchelling U-boat but the stick overshot and no damage resulted.

(c) Summary for April and May 1945

Month	Task	Total hours base to base	A/C lost	U-boats		
				Sight	Attack	Result
<u>April</u>	Inshore Air Patrols	9,561	1	9	6	1 sunk 1 sh. sunk
	Inshore Convoy Escort	2,343	-	-	-	-
	North and West Transit	12,806	5	7	5	5 sunk
	Skagerrack & Kattegat	791	9	15	13	4 sunk 1 dam.
	Western Baltic	30	-	1	1	-
Totals - April 1945		25,531	15	32	25	10 sunk 1 sh. sunk 1 dam.
<u>May</u>	Inshore Patrols	2,984	-	2	2	1 sh. dam.
	Inshore Convoy Escort	667	-	-	-	-
	North and West Transit	2,455	-	1	1	1 sunk
	C.C. in Kattegat (A/U)	1,035	2	31	18	13 sunk 1 dam.
	2nd T.A.F. in W. Baltic (A/U)	about 200*	-	32	49	10 sunk
Totals - May 1945		7,341	2	66	70	24 sunk 1 dam. 1 sh. dam.
* 2nd T.A.F. despatched 747 anti-ship sorties in all during May but only 49 actually attacked U-boats.						

During April the inshore U-boats around the British Isles sank eight and damaged four merchant vessels as well as damaging one frigate, at a cost to themselves in these waters of 21 U-boats lost.<sup>(1)</sup> When the four sunk by Air in the Kattegat area are added it makes a devastating exchange rate and exemplifies the impotence of the Inshore U-boat campaign in its final full month.

The May U-boat lost figures derive their spectacular nature from the execution done by air action among the U-boat exodus from Germany towards Norwegian ports. Around our coasts the situation was relatively quiet. Two merchant vessels and two small naval auxiliaries were sunk, and one merchant ship was damaged against the loss of one U-boat to air action in the Northern Transit area and one to unknown cause.

(1) Of the 21 lost, eleven were destroyed by Naval action, six by Air, one was shared between Navy and Air, one by grounding and two by cause unknown.



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(viii) The Aftermath at Sea

See Map 51

On 4 May, when Admiral Doenitz broadcast his order to all U-boats at sea to cease hostilities, there were 45 in the Atlantic area, of which 12 were inshore billets and 33 on passage out or homeward. Some U-boats did not receive this signal and some disregarded it. Only eight obeyed and started a submerged return to base.<sup>(1)</sup> One of these (U. 2511) is of interest as being the only Type XXI ever to become fully operational. On this day she was to the north of the Faeroes outward bound. While submerged she received the cease hostilities signal. A few hours later she sighted a British cruiser screened by destroyers. Her captain (Korvetten-Kapitan Schnee) carried out an attack run, penetrated the screen undetected and when his torpedo sights came on at point blank range from the cruiser he fired a dummy shot, afterwards diving deep and getting away unsuspected. He then returned submerged to Bergen where he arrived on 6 May.

See Map 53

Up to 7 May, only two additional boats had decided to return.<sup>(2)</sup> At 1200 hours on 8 May, the Admiralty broadcast to all U-boats that Admiral Doenitz had been directed by the Allies to give surrender orders to all U-boats at sea. They were to surface, report in plain language their number and position, hoist a large black flag and proceed by certain routes to designated ports. No U-boats obeyed immediately but during that night six more started back submerged.<sup>(3)</sup> On 9 May the first surrenders took place. Nine U-boats during the day complied and surfaced flying the black surrender flag.<sup>(4)</sup> This left 13 other boats returning submerged, five still on patrol and 12 continuing their outward passage. During the 10 May another nine U-boats surrendered.<sup>(5)</sup> Six others, including the last two on patrol, decided to return to a German base submerged making 12 in all returning submerged and seven still defiantly outward bound.

See Map 55

Over the next five days 13 more U-boats surrendered at sea and three others succeeded in reaching German ports submerged,<sup>(6)</sup> leaving on 15 May a final hard core of four outward bound and one homeward bound, all of course submerged. These five reached their chosen destinations in due course - U. 963 scuttled off Lisbon on 20 May, U. 979 ran herself ashore off Sylt on 23 May, U. 1277 scuttled off Lisbon on 4 June, and U. 530 and 977 reached the River Plate in South America in July and August 1945 respectively.

The tale is complete. It remains to attempt to draw conclusions as to the effect of Air action in the long struggle to defeat the U-boat War against Allied shipping and not least to consider the lessons to be learnt from the schnorchel phase, lessons which are still valid even in the era of the true submarine powered by atomic energy.

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- (1) These eight were:- U. 287, 805 and 2511 outward bound, U. 739, 1305, 293 and 901 from inshore billets around the British Isles and U. 858 from off the Canadian seaboard.
  - (2) U. 979 on 5 May from Reykjavik who decided to return direct to Germany and U. 802 outward bound off the Shetlands who turned back to Norway.
  - (3) U. 249, 1105, 764, 956 and 2336 from inshore billets and U. 255 from St. Nazaire to Norway.
  - (4) U. 249, 1105, 802, 1009, 1058, 826 in various positions around our coasts and U. 805, 858 and 1228 in mid Atlantic or near the Canadian Seaboard.
  - (5) U. 293, 532, 825, 1023, 1109 and 1305 around our coasts, U. 516 and 541 in the outer Bay of Biscay, and U. 889 in the Western Atlantic.
  - (6) U. 739 entered Borkum, U. 2336 entered Kiel and U. 287 reached Cuxhaven.

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CHAPTER XI

ANTI-SHIPING OPERATIONS - JANUARY TO MAY 1945

As in Chapter VI, which recounted anti-shiping operations from September to December 1944, it is proposed to deal with No. 16 Group's Southern North Sea activities separately from No. 18 Group's operations off the Norwegian coast as the two areas continued to differ radically both in conditions and objectives. Similarly to avoid frequent detailed footnotes the chronological lists of enemy vessels sunk and damaged in each area are given monthly in Appendix VIII together with date, tonnage, position, squadrons concerned, number of sorties flown, attacks delivered, aircraft losses and, to present a balanced picture, the total credited to naval action.

(A) Nos. 16 and 2nd T.A.F. GROUPS

(i) Policy and Tactics in January and February

No. 16 Group had a difficult and thankless task throughout the first two months of 1945. During January the Allied armies were fighting to recover the ground lost in the German Ardennes counter-offensive and, having effected this by the end of the month, the next six weeks were spent in clearing the enemy from the west bank of the Rhine between the Dutch border in the north as far as Remagen in the south. The bulk of supplies for the forces engaged in these operations came through Antwerp and it was, therefore, vital to prevent E-boats and Small Battle Units (S.B.U.s) from interrupting the sea traffic off southeast England and the direct supply line from the Thames into the West Scheldt River either by torpedo attack or minelaying.

See Map 4

West Holland remained a German stronghold until early in May and was, therefore, the base for all these enemy naval operations. E-boat flotillas were stationed at Den Helder, Ymuiden and Rotterdam; the midget Seehund submarines at Ymuiden; and the submersible Biber and Molch one-man craft at various points between Rotterdam and Hellevoetsluis in the Maas delta from which also sallied the Linsen explosive motor boats.

All enemy sorties left at dusk or soon after and those by E-boats always returned before the following dawn. Seehunde, Biber and Molch were almost impossible to locate by night and extremely difficult by day. Regarding enemy surface shipping, there was virtually none, even at night, along the Dutch coast but during the dark hours there were minesweepers and small patrol craft in the coastal waters. All enemy surface craft were well supplied with flak armament which opened up immediately when identification flares were dropped by patrolling aircraft in order to attack radar contacts. It was also the duty of the Group to search for and attack what little enemy shipping still moved between the Elbe ports and Emden. This necessitated fairly frequent day and night sweeps eastward from the Texel into the Heligoland Bight. Add to this the fact that most of the flying was unrewarding in actual sightings, that it was achieved with very slender aircraft resources, that the bulk of attacks were at night on difficult targets under heavy flak and it can be understood that the Group had much hard work with very little to show for it.

Frequent discussion had taken place between the R.A.F. and Navy, both at Chatham A.C.H.Q. and at higher levels on the best

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measures to be adopted for night air patrols in co-operation with naval surface forces. By the end of 1944 the air scheme had crystallised as follows:-

1. A night anti-E-boat patrol close off Den Helder (Box 2)
2. A similar patrol covering Ymuiden and the Hook (Box D)
3. A night patrol in depth against E-boats leaving the Hook for our East Coast (Box C)
4. A line patrol at night close in to the Hook against both E-boats and Biber (Line E)
5. A long narrow night patrol covering Den Helder to the Hook but further off shore to locate E-boat sorties bound for our East Coast (Box 1)
6. A daylight anti-midget line patrol running due west from Walcheren Island to longitude 0300E (Patrol S).

It was agreed that no night air patrols should take place in the Scheldt river or its approaches so as to allow complete freedom for naval and shore guns to fire at all aircraft seen, under suspicion of minelaying. The daylight Walcheren patrol was done by Albacores of No. 119 Squadron carrying depth charges. This squadron was based at Knocke near Zeebrugge. Early in February it was re-equipped with Mark III Swordfish fitted with Mark XI (3 cm.) A.S.V. The night patrols were done by Wellingtons of Nos. 524 and 612 Squadrons and F.A.A. Swordfish of No. 819 Squadron which later were also based at Knocke. All aircraft on Anti-E-boat work were armed with 250 lb. M.C. bombs fitted with air burst pistols to detonate just above the water. At the end of January the anti-E-boat patrols were revised and plain rectangular boxes P, Q and R were instituted off the E-boat bases instead of Boxes 1, 2 and D. Line E, against Biber leaving the Hook in tow, was retained as also was Box C in view of its position athwart E-boat sorties from Hook to East Anglia and to the Scheldt Approaches from Ymuiden and Den Helder.

The outward and homeward Thames/Antwerp convoys of course had individual naval escort but there were in addition small groups of M.T.B.s and M.L.s controlled by single frigates disposed in the Outer Scheldt. It had been recommended that these frigates should be fitted with V.H.F. R/T sets so as to link up with the air patrols, the whole to be controlled from the running plot situated at the Ostend headquarters where the G.C.I. organisation was installed. Further discussion resulted in a decision to cut off the admittedly limited shore radar control in favour of direct V.H.F. R/T communication between the shadowing aircraft and the control frigates. The necessary fitting of V.H.F. sets to frigates and destroyers was still proceeding at the end of February but this method of fighting the E-boat bore fruit in March and April and was the means of finally countering this threat.

Action against the Seehund type of sea-going midget was at first left in the hands of naval patrols and the escorts to convoys. Although their arrival in December at Ymuiden was known to Allied Intelligence, not much was gleaned as to the

See Map 9  
for January  
patrols

A.H.B.  
IHH/104/1/5A  
Encls. 87A and  
89A  
See Map 9

C.C.  
December O.R.B.  
Appendix 808  
and  
January O.R.B.  
Appendices 17  
and 18

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Admty. N.I.D.  
1/PW/Rep/15/45  
A.H.B.  
IHK/54/11/304  
Encl. 2

scope of their operations until two or three had been sunk by naval action early in January and details of their mission orders extracted from the survivors picked up. A memorandum covering all the forms of the S.B.U. operations thought possible against the Antwerp convoys was sent by H.Q. Coastal Command to the Naval and Air Commanders acting under S.H.A.E.F. with proposals on specific air action. These were discussed during January and as against the Biber and Moloh threat it was decided:-

ibid Encl. 10

1. That the detector loops installed off Flushing combined with M.L. patrols should prove an effective barrier to prevent entry into the Inner Scheldt river. The existing daylight Albacore patrol westward of Walcheren Island was sufficient air action on their line of passage towards the convoy route in the Scheldt Approaches.
2. That the 2nd Tactical Air Force (2nd T.A.F.) be asked to patrol the waterways off Schouwen and North Beveland islands at periods of tide and weather considered favourable for Biber or Linsen operations and to be prepared to provide strikes on request.

The 2nd T.A.F. agreed to this request and during January and subsequent months made many sorties available against S.B.U. routes or the bases from which they operated. Their record is given separate from No. 16 Group operations.

ibid  
encl. 16

See Map 10  
for February  
patrols

No air action against the Seehunde took place until 29 January when an area westward of Ymuiden was instituted as a daylight patrol by Beaufighters armed with depth charges and cannon. Early in February more extensive counter action was considered necessary and three areas of creeping line ahead patrols were instituted between the North Foreland and Yarmouth. It was pointed out, however, by the A.O.C. No. 16 Group that the Beaufighter was not the most suitable aircraft to search for such small targets but none other could be spared and even these were in short supply from other priority duties.

(ii) No. 16 Group Operations in January and February (1)

It is considered that the best way of presenting the picture is to analyse briefly the flying done during these two months and then to examine the various enemy operations in more detail so as to show where, if at all, the air effort impinged.

During the period No. 16 Group had under its control a strength of only 106 aircraft consisting of two Beaufighter squadrons (Nos. 236 and 254), one and a half night flying Wellington squadrons (Nos. 612 and 524), (2) one Albacore/Swordfish squadron (No. 119) and one F.A.A. Swordfish squadron (No. 819). (3) The two latter squadrons used an advanced base at Knocke.

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- (1) References throughout the chapter are No. 16 Group O.R.B. Appendices.
  - (2) During January the sorties by this squadron were reduced while they were re-equipping to Mk.XIV Wellington fitted with 10 cm A.S.V. and during the whole of February a detachment of six aircraft were operating in No. 18 Group at Dallachy.
  - (3) This F.A.A. squadron ceased operations on 22 February and reverted to the R.N.A.S. on 1 March after nearly a year of invaluable work under No. 16 Group control.

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Day reconnaissance flights east of Texel island to the Elbe estuary by parties of two to eighteen Beaufighters took place on eight occasions in January increasing with the better weather to twenty-six in February. The sole sighting was a small coaster in the mouth of the River Weser on 9 February. Night flights on the same stretch of coast by parties of one to ten Wellingtons or Beaufighters amounted in all to twenty. Small craft were contacted on radar on four occasions but the attacks made were without result. Only one Wing Strike took place and, in default of any coastwise shipping at sea, was directed against the defended anchorage at Den Helder. Thirty-two Beaufighters took off on 17 January escorted by twenty-two Spitfires of No. 12 Group Fighter Command. The roadstead contained only one uncompleted merchant hull but there were three M class escort vessels and six patrol boats lying at anchor. Attacks were pressed home under heavy flak from ships and shore. Some aircraft engaged ships, some the shore flak positions and some the harbour and nearby radar installations. Damage to all these was inflicted but German records confirm only one patrol boat of 300 tons as being sunk. Six Beaufighters were lost to flak fire. The operation was never repeated in view of doubtful returns for severe loss.

The anti-E-boat patrols were flown almost nightly throughout the period by parties of Wellingtons, Swordfish, Albacores and occasionally by Beaufighters. A large number of radar contacts resulted in 118 attacks being made but the only certain casualty to the enemy was one barge of 630 tons sunk out of a tow off the Hook on the night of 5/6 January. The majority of these attacks were on E-boats and the possession of the detailed War Diary of the E-boat Commander makes it clear that no loss or damage was inflicted on them. Regarding attacks on enemy auxiliary patrol craft, none were sunk but German records of minor damage are not complete.

The daylight anti-midget patrol off Walcheren Island absorbed 143 sorties by No. 119 Squadron but only one sighting was made. This occurred on 23 January at 1215 hours. The attack had no result and was undoubtedly on a Seehund which was not damaged. As mentioned before, no specific patrol against Seehund was flown until the end of January. Others were started early in February and were flown by up to four Beaufighters at a time until 15 February. On this day a Seehund was sighted some 25 miles east of Harwich and thereafter the number of sorties was increased but no further sightings were made until 23 February when a Seehund was attacked midway between the Hook and Orfordness. No damage was inflicted.

In aggregate during January and February, No. 16 Group flew:-

Day and night sorties east of Den Helder	- 311
Night sorties against E-boats	- 372
Day sorties off Walcheren Island	- 143
Day sorties against Seehunde	- 51
	<u>877(1)</u>

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(1) An addition, ten Beaufighters provided air cover to the northwest of Denmark on 6 February for armed coasters en route to Sweden engaged on running special cargoes back to the United Kingdom under the code name of Operation Moonshine.

(iii) 2nd T.A.F. operations in January and February

During January, parties of Typhoons and Spitfire bombers made daylight sweeps over the Maas delta bombing targets in the Zijpe, Vianen and Hellevoetsluis area. Two direct attacks, each by 35 Spitfires, were made on the Biber/Molch depot at Poortershavn. They appear to have caused no midget casualties but on 14 January part of an attack by 67 Spitfires in the Zijpe area bombed Linsen motor boats seen in Hellevoetsluis and damaged many of them. In February, apart from an attack on the Amersfoort railway system (where there was a Molch depot), no anti-midget operations took place but four air-raids by Bostons were made on Dunkirk which was still firmly held by the enemy. The purely anti-S.B.U. sorties for the period amounted to 272. German records only admit to several Linsen being damaged on 14 January.

(iv) Enemy Operation during January and February

(a) E-boats in January<sup>(1)</sup>

Early in January the E-boat disposition was as under:-

<u>Den Helder</u>	{ 2nd Flotilla - 8 boats 5th Flotilla - 8 boats (arrived from Wilhelmshaven on 13th)
<u>Ymuiden</u>	8th Flotilla - 8 boats
<u>Rotterdam</u>	{ 4th Flotilla - 8 boats 6th Flotilla - 8 boats 9th Flotilla - 8 boats

This gave a total strength of 48 boats but not more than 36 were ever operational at any one date. At Wilhelmshaven there were the 10th and 11th Flotillas refitting and non-operational. The current E-boat policy was to carry out torpedo attacks on shipping along the Thames/Scheldt convoy route or if this proved unprofitable, between the Humber and the Thames estuary. Minelaying in these areas was considered of equal importance but was not to be done in certain specified areas where it was likely to hamper the operations of Seehunde against the Thames/Scheldt convoys. Torpedo sorties could be made independently of or in conjunction with Seehund operations but only after close liaison between the directing staffs. The Scheldt river area above Walcheren Island was reserved for Biber, Molch and Linsen operations.

No E-boat operations were attempted during the first nine days of January because the weather was unfavourable. A torpedo and minelaying sally from all three E-boat bases on the evening of the 9th was abandoned in face of a rising gale. It was not till the dark hours of the 14/15 January that the first operation of the year took place. Sailing from Den Helder eight boats of the 2nd Flotilla laid 20 mines around No. 14 buoy off Dunkirk and six boats of the 5th Flotilla laid 19 mines in the Outer Dowsing Channel east of the

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(1) The German reference for all E-boat operations is the War Diary of F. d S. (Fuehrer du Schnellboote) - Admty. N.I.D. 15/X. 237/48.

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Humber. Both sorties were detected by Wellingtons and Swordfish off the Dutch coast but the seven attacks made inflicted no damage.

The next night (15th/16th) saw a major effort. Nine boats of the 2nd and 5th Flotillas carried out a torpedo sweep north of Cromer but sighted no convoys. They were engaged for a short time by the patrolling destroyer Farndale but without result. Nine boats of the 6th and 9th Flotillas attacked an eastbound convoy in the Scheldt Approach but were repulsed by the destroyer Cotswold and frigates Curzon and Seymour. No damage was inflicted by either side. Eight boats of the 4th and 8th Flotillas attacked convoy T.A.L.97 in the Margate area and sank L.S.T.415 of 2,750 tons without loss to themselves. Both on the way out and when returning, sightings were made by Wellingtons and Swordfish off the Hook, westward of Ymuiden and off Den Helder. Nine bombing attacks were made but no damage caused and the operations were unaffected.

Another series of contacts and attacks by patrolling aircraft took place after dark on 17 January mostly on unidentified radar blips close off the Hook. The E-boat Diary makes no mention of any operation so these may have been on auxiliary minesweepers or patrol boats. No enemy loss is recorded. The next E-boat operations occurred during the night of 22/23 January when 24 boats from the Rotterdam and Ymuiden flotillas raided the Thames/Scheldt convoy route. One group attacked convoy T.A.C.14 to the north of Dunkirk and sank the straggling S.S. Halo (Br.) - 2,365 tons. Action followed with British surface forces in which M.T.B.495 was damaged. Other groups were engaged by our forces at different points along the convoy route in which two E-boats (S.168 and S.175) were damaged and further west still, in the Margate area, gunfire from the Tongue Sand Fort sank S.199. The only two air attacks were made off the Hook and were without result.

The Den Helder flotillas laid mines on the next night in the Humber area. Surface forces did not make contact. The E-boats were attacked five times by Wellingtons off Texel Island as they were returning but again without result. On the following night (24th/25th) up to 18 E-boats operated off Orfordness. No convoys were encountered but mines were laid. Fog over No. 16 Group airfields grounded the night air patrols so no air locations were made. A spell of bad weather then put a stop to enemy operations until the night of 29/30 January when the two Den Helder flotillas set out. They were sighted and attacked twice by Wellingtons without result and then laid mines to the north of Cromer. Here they were indecisively engaged early on 30 January by the frigate Cubitt and destroyer Wolfhound. Fog over East Anglia compelled an early return of all air patrols so that no interceptions were made as the E-boats re-entered Den Helder.

The January experience shows clearly that the air patrols, though capable of detecting all the E-boat sallies, were unable of themselves to interrupt them. The air reports were, however, of value in alerting the naval patrols as to the direction of the raids and the problem was to bring the surface forces into action as early as possible. The technique to effect this was about to bear fruit.

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(b) - Small Battle Units in January(1)

At the beginning of 1945 the S.B.U. disposition was as under:-

<u>In Ports</u>	<u>Inland Reserve</u>
Den Helder - 21 Linsen	Amersfoort - 60 Molch
Ymuiden - 24 Seehunde	Assen - 30 Molch
Scheveningen - 33 Linsen	
Rotterdam - (20 Biber (12 Molch	
Hellevoetsluis- 27 Linsen	

The current policy for S.B.U.s was the disruption of the Allied supply line between the Scheldt Approach and Antwerp. Seehunde were to attack the seaward portion, Biber and Molch to attack in the Scheldt river and Linsen in the Inner Scheldt. Minelaying by the G.A.F. and E-boats was not allowed in the area of Seehund operations.

The first operation of the year was by Seehunde. Seventeen of these craft left Ymuiden at 1700 hours on 1 January to attack shipping in the Outer Scheldt Approach. They proceeded at seven knots on the surface parallel with and five miles out from the Dutch coast as far as the Hook, then towards the East Hinder channel and so into their operational area north of Ostend. None were located on passage by the air patrols but they came up against naval action along the convoy route. Two were definitely sunk by H.M. ships, one grounded off Walcheren Island and one scuttled northeast of Zeebrugge.(2) Their sole success was the sinking of H.M. trawler Hayburn Wyke - 324 tons off Ostend at 2225 hours on 2 January. Only two Seehunde ultimately regained the base at Ymuiden. Seven others failed to find the harbour entrance and ran ashore at various points on the coast south of Ymuiden but most of the crews were rescued and several boats were subsequently salvaged. Of these, three had sighted nothing on their cruise, one had fired at but missed a destroyer, one had survived a twelve hour depth charge hunt and another had reached the operational area only to have to return immediately because of diesel defects. The fate of the remaining four is unknown and there were no Allied claims.

Eight more Seehunde were to have set out on the evening of 3 January but bad weather set in and it was not till the 6th that two put to sea. Diesel trouble forced both to return soon after leaving harbour. On 10 January, five Seehunde left Ymuiden bound for the Kentish coast off Margate. Two soon returned with defects and another for damage received in a depth charge attack by an unidentified surface craft early on the 11th. Of the two who continued, one was unable to reach the operational area because of heavy seas and frequent snow

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- (1) The German reference for all S.B.U. operations is Admty. F.D.S. 65 and 65A/54.  
(2) One at 1710/2 by H.M. destroyer Cowdray with convoy ATM.27 off Zeebrugge. One at 2002/2 by H.M. frigate Ekins patrolling north of Ostend. One at 0300/3 grounded at Domburg in Walcheren I. and was abandoned. One at 1610/5 scuttled northeast of Zeebrugge on the approach of British M.T.B.s.



storms but blundered into a small convoy in the mouth of the Thames estuary south of the Kentish Knock shoal. A torpedo attack was made, erroneously claiming a hit, after which the boat returned to Ymuiden. The other, in similar bad weather conditions, found herself close under the North Foreland where she sighted two small vessels but was unable to attack owing to the heavy sea. An ever increasing amount of water was shipped when trying to run on the diesels and her bilge pump becoming choked she had to beach herself to avoid foundering.

Twelve Molch had been towed from Rotterdam to Hellevoetsluis intending to operate in the West Scheldt river on 10 January but the bad weather caused a postponement. Extremely foul conditions set in on the 12th which brought all S.B.U. operations to a full stop. While withdrawing the Molch back to Rotterdam in tows the tugs grounded in a snow storm resulting in one Molch being lost and six others damaged. Several Linsen of those stationed at Hellevoetsluis were damaged by air attack on 14 January. (1)

In readiness for an improvement in the weather, reinforcements of all types were brought by rail into Holland and by 20 January the disposition was as under:-

<u>In Ports</u>	<u>Inland Reserve</u>
Den Helder - 27 Linsen	Amersfoort - 60 Molch
Ymuiden - 26 Seehunde	Zeist - 60 Molch
Scheveningen - 33 Linsen	
Rotterdam - 30 Molch	
Poortershavn - 20 Biber	
Hellevoetsluis - 27 Linsen	

On 21 January ten Seehunde sailed in three groups, one of four boats bound for billets off Ramsgate, one of three boats to the South Falls area eastward of the North Foreland and one of three boats to the convoy swept channel off Lowestoft. Seven boats returned without reaching their allotted area - six for mechanical troubles and one after a collision with a buoy. One of these was sighted and attacked off West Kapelle on 23 January by Albacore R/119 Squadron but no damage was inflicted. This was the only air sighting of a midget during January. Of the three boats who continued, two operated without sighting anything off Ramsgate and returned to Ymuiden, the third had a compass failure and blundered into the Thames estuary. After firing at and missing a steamer at 2330 hours on the 22nd, the coxswain finally found himself south of Lowestoft early on 24 January. Here he was sighted and depth charged by M.L. 153. Although not damaged, the coxswain decided to bottom until after dark before starting back to base on the surface. This he did but was unknowingly being drifted up the coast so that when he surfaced at 0100 hours on 25 January and set course eastwards he ran hard aground on the Scroby Sands off Yarmouth. After trying vainly to get off for 2½ days, the two exhausted crew fired Verey lights to attract attention and were taken off by a boat from the Trinity House vessel Beacon. The realisation that Seehunde could operate as

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(1) On this day a sweep of 67 Spitfires of the 2nd T.A.F. armed with 500 lb. and 250 lb. bombs attacked various targets in the area between Zierikzee and Hellevoetsluis.

far afield as Yarmouth in the north and Ramsgate in the south resulted in the first Anti-Seehund air patrols mentioned previously in section (ii).

It was in exceptionally cold weather with much floating ice in the Scheldt delta that nine Linsen left Hellevoetsluis at 2300 hours on 24 January to operate in the West Scheldt river. More Linsen were intended but could not sail as they were frozen in. The three control Linsen returned having destroyed their explosive craft after sighting nothing. In similar weather conditions fifteen Biber set out from the Hook on the night of 29/30 January having previously been towed down from Poortershavn. They were undetected by the air patrols but were defeated by the weather. Five returned because of damage received among ice floes, three sank after collisions with ice, one beached on return from the Scheldt near Hellevoetsluis after 60 hours at sea and the remaining six vanished without trace. There were no Allied claims to any of these.

The final January Seehund operation also started out during the evening of 29 January. Ten boats left Ymuiden in two groups, one bound for the Margate area and the other for the South Falls. Only two boats reached their billets. One of these operated well to the east of the South Falls and sighted a convoy of three ships with two escorts. As the sights were coming on to fire the boat had to go deep to avoid being rammed. She was ineffectively depth charged and returned to base. The other reached Ramsgate and after missing with her torpedoes at a ship in the roadstead also returned to harbour. Of the remaining eight, two returned early with engine trouble, four because of damage in the heavy seas, one due to the utter exhaustion of the engineer and one failed to find Ymuiden harbour entrance and ran aground just to the south.

There were no Molch operations during January because the intense cold which prevailed was assumed to lower their electric battery capacity to a range of under 50 miles which was not sufficient for West Scheldt operations. However, trials completed by the end of the month proved them capable of just over 55 miles and, provided they could be towed as far as Goeree, this was considered adequate for future operations. Trials during the month were also successful in launching Linsen explosive motor boats from E-boats and, when weather again permitted, it was intended so to transport Linsen for extended operations at the western end of the Thames/Scheldt convoy route.

During January occurred the last recorded minelaying operation by the G.A.F. After dark on 23 January about 20 Ju.88.s laid mines in the Scheldt river and approaches. One of these aircraft was shot down near Ostend with a mine still aboard. Sweeping was redoubled and by the 28th the minesweepers had detonated 36 ground mines. The C.-in-C. Nore, who was far more concerned by the mine menace than any enemy torpedo attacks, asked the Allied Expeditionary Naval Commander to inform the appropriate military and air authorities that, unless better results against minelaying aircraft could be produced, the only channel to Antwerp was likely soon to be blocked by wrecks. Fortunately for us the G.A.F. strength in minelaying types was at a minimum and as such aircraft were

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usually under priority orders to operate tactically against Allied ground forces their employment on minelaying was never resumed.

The rather complex picture of enemy operations is added to in the latter part of January by the arrival in the area of a genuine U-boat. U.245, a type VIIC boat, left Heligoland on 17 January bound for the North Foreland area. She arrived here on 23 January but made no hostile move until the 28th when at 0450 hours she attacked a ship in convoy near the South Falls buoy. Although the crew reported hearing an explosion no ship was in fact hit. She continued on patrol in this area into February and will be referred to again in sub section (d).

(c) - E-Boats in February

The detailed account of E-boat movements in F. d S.'s War Diary ceases at the end of January but headlines of their operations continue until mid-April and it is possible to reconstruct their story in parallel with British evidence.

No complete operation by them appears to have occurred until 17 February. This pause seems to have been due to refitting, reinforcement, and redistribution among the bases though Allied action may have contributed. For instance the German record mentions the daylight air raids on Ymuiden by Lancasters with 12,000 lb. bombs on the 3rd and 8th February and states that although on both occasions the shelters were badly shattered no E-boats were inside. Damage was, however, inflicted to some E-boats dispersed nearby. The U.S.A.A.F. raid with Fortresses on 10 February increased the dockside dislocation and destroyed one E-boat (S.193). E-boats were on the move during the nights of 3rd/4th and 5th/6th February and were attacked inconclusively by the Wellington night patrols close off all three E-boat bases. This was probably inter-port redistribution.

On 12 February the German Admiral North Sea Command protested to the Berlin Naval War Staff that, as torpedo attack by E-boats was obviously less profitable than minelaying, the restrictions placed on mining in the Thames/Scheldt area deprived the E-boats of their most effective weapon. Moreover the Seehunde, in whose favour this restriction was made, were not proving successful and he requested the lifting of the ban. After some argument this was agreed to in certain specified areas along the convoy route.

The middle of February was marked by frequent fog which completely grounded our night patrols between the 15th and 18th, hence a sortie by the Den Helder E-boats on 17 February laid mines off the Wash and Humber undetected by air or surface patrols. During the last week of the month E-boat activity was very marked. About 20 boats from Ymuiden and Rotterdam operated during the night of the 20th/21st with mines and torpedoes along the Thames/Scheldt route. Thirteen air attacks were made on them off these ports and six encounters took place with naval surface craft but all were inconclusive. No torpedo attacks eventuated but mines were laid. On the following night all six E-boat flotillas sailed on torpedo operations off East Anglia. Sixteen air attacks were made off the Dutch ports, again without result. Some parties of E-boats were shadowed across the North Sea and the air reporting enabled surface forces to engage one group but while driving them off another group penetrated the screen and attacked convoy FS.1734 about

23 miles northeast of Yarmouth. S.S. Goodwood (Br.) - 2,780 tons and Blacktoft (Br.) - 1,109 tons were sunk and S.S. Skjold (Br.) - 1,345 tons damaged. Yet again the flotillas put to sea on the third consecutive night. The Rotterdam boats operated mainly with mines along the Thames/Scheldt route but were engaged by surface forces before reaching the swept channel. The Ymuiden flotilla was shadowed and attacked by Wellingtons to almost halfway over to the east coast before abandoning the sortie and returning to base. E-boats were out minelaying again on the fourth night (24th/25th). One party was attacked by the air patrols off Ymuiden in the course of which Wellington A/612 Squadron was shot down. They continued to be shadowed by another Wellington (B/524 Squadron) until it too was shot down by flak. Small groups of E-boats were subsequently engaged at various points in the southern North Sea by naval patrols in the course of which S.167 was crippled and scuttled herself in the Scheldt Approaches. The surviving 23 officers and men were taken prisoner.

The final operation of the month left harbour after dark on 28 February on combined torpedo and minelaying in both the Thames/Scheldt and East Anglia areas. Once more the outgoing sorties were attacked and shadowed by Wellingtons. The southern group laid mines off Ostend but were intercepted on the return journey by the destroyer Cotswold and frigate Seymour. Action ensued in which S.220 was sunk and 26 survivors taken prisoner. A number of indecisive naval encounters took place at other points along the Scheldt route and also to the northeast of Yarmouth. No torpedo attacks resulted in either area but mines were laid.

#### (d) Small Battle Units in February

Although not a Small Battle Unit it is convenient here to continue the exploits of U.245 who on 1 February was still patrolling some 25 miles east of the North Foreland. According to her log she fired at but missed a ship in convoy at 0100 hours on 2 February and was not herself detected. No further target was seen until 6 February when she attacked convoy TAM.71 early in the morning 20 miles east of the north Foreland and sank S.S. Henry B. Plant (U.S.) - 7,240 tons. She was damaged by the escorts' counterattack and withdrew northwards into the British mined area to effect repairs. There she remained until 11 February when, repairs complete, she re-occupied her previous billet. She made an unsuccessful attack on another convoy in dark and rainy weather on 12 February and finally started return to Heligoland on the 15th where she arrived on 19 February. Although gaining only one success it seems odd that, in view of the targets seen and the relative freedom from harassment compared with other U-boat inshore billets, the Germans made no move to re-occupy the area until April.

Reverting to the S.B.U. operations, on 3 February the Molch reserve depot at Amersfoort was bombed in the course of a general attack by 2nd T.A.F. Spitfires on the railway system in and around this town; however, no Molch was actually hit. Also on this day the Poortershavn midget base was attacked by 19 Lancasters dropping 12,000 lb. bombs. The Germans report no damage to midgets but the base facilities were wrecked, particularly the heavy cranes found so useful in lifting Biber into and from the water. It is significant that no Biber operations took place throughout February. Also on the

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3rd and again on the 8th and 10th February Ymuiden was attacked by Allied bombers as has been mentioned previously. The E-boat shelters were the target so no damage was inflicted on the 31 Seehunde dispersed in the port area.

On the evening of 5 February, eight Seehunde left Ymuiden for the North Foreland area. All met with failure. One returned early with diesel trouble, two beached on the Dutch coast north and south of Ymuiden, and three returned without reaching their billets. Only two arrived on patrol and although sighting shipping were unable to get in their attacks. Late on 10 February another eight Seehunde sailed for the Thames/Scheldt convoy route. Mechanical troubles caused three to return prematurely on the 11th and another from its billet on the 12th. Three operated as ordered but apart from sighting patrol vessels their cruises were unproductive. One failed to return and there were no British claims to account for this casualty. A follow-up against the same objective by five more Seehunde left Ymuiden late on 12 February. Again one returned early because of defects. Three reached their billets of whom one attacked convoy TAM.80 off the North Foreland on 15 February and badly damaged the Dutch tanker Liseta - 2,628 tons. One Seehund vanished without trace.

While this batch of Seehunde were still at sea the question of their future employment was raised following the E-boat Commander's protest at the restrictions on his minelaying. It was pointed out that Seehund operations to the East Coast and North Foreland had continually failed through bad weather, heavy losses had been incurred with little damage to Allied shipping and air attacks on rail communications to Holland now threatened to disrupt the supply of fresh boats. A proposal to use them in the more sheltered waters of the Scheldt river was examined and in the meantime the ban on E-boat minelaying was lifted along certain stretches of the Thames/Scheldt convoy route. All ideas of the German Army Command to reduce the number of troops allotted to the islands in the Maas delta were vetoed by Hitler himself in view of their importance in the defence of West Holland and the cover they afforded for all S. B. U. operations.

The trial operation of Seehunde in the West Scheldt river was combined with a Linsen raid. At 0800 hours on 16 February four Seehunde put out from Ymuiden. Two boats were never heard of again, one saw no targets and when returning on the 18th ran aground just north of Ymuiden. The other missed with torpedoes at a convoy of landing craft and on the 19th also ran aground outside the harbour. The Linsen raid took place during the night of the 16th/17th when 15 left Hellevoetsluis bound for the Scheldt river. Nine put back early because of fog and the other six achieved nothing and lost two boats. As the relatively more valuable Seehunde seemed as unsuccessful as the smaller expendable Biber and Molch they reverted to open sea operations and on 20 February three Seehunde sailed for the Ramsgate area. Four more left on the 21st for the South Falls followed by one other on 23 February. All appear to have reached their billets and some delivered attacks for early on the 22nd L.S.T. 364 - 2,750 tons was sunk out of convoy TAM.87 when 20 miles east of the North Foreland and on 24 February the cable ship Alert - 941 tons was sunk seven miles east of Ramsgate. All eight boats returned including one who was attacked without damage by Beaufighter J/254 Squadron at 0948 hours on 28 February when about 40 miles east of Orfordness.

Nine Linsen left Hellevoetsluis late on 21 February to seek targets in the West Scheldt river. Six returned because of engine troubles and the other three failed to sight anything. Molch made a belated appearance this same night, having been previously moved from Amersfoort to Scheveningen and Hellevoetsluis. Ten Molch from the former port were towed as far as Schouwen Island and four set out under their own power from the latter, all en route to the Inner Scheldt. Eight returned having found no targets, three were sunk by British action<sup>(1)</sup> and three vanished without trace. Adverse weather then put a stop to further operations until 6 March.

(v) Summary of January and February operations

In the course of these two months the night patrols by Wellingtons and Swordfish had made 36 attacks in January and 64 in February specifically on E-boats. Four aircraft had been shot down with no loss or damage to the enemy. At first sight this appears to be a poor result but in fact the shadowing reports of E-boat movements made both before and after attack were of growing value in giving warning, direction of the threat and information enabling interception by our naval patrols. Regarding underwater attack it might be thought that such an obvious vantage area as the western end of the Thames/Scheldt route off the North Foreland would be permanently patrolled by A/U aircraft particularly after the four torpedo attacks in February. Consideration was given to such action but the employment of night air patrols in this area was opposed by the C.-in-C. Nore owing to the possibility of enemy air minelaying. Also the frequent use of the Leigh Light or flares to identify the confused radar returns probable from the numerous buoys, shoals and independent patrol craft were likely to betray the convoys and it was decided to leave protective measures entirely to the Navy. Moreover No. 16 Group's strength was unequal to any new patrol and no regular A/U squadron could at this time be spared from the other Groups. Finally it was thought that the shipping loss from midget submarines was small compared with that from E-boat mining and torpedo.

In the light of postwar knowledge it is clear that, in spite of the considerable effort made by the S.B.U.s, it was the E-boat minelaying that inflicted most of our shipping casualties and even they were not unduly high in comparison with the total volume of ship movement. The table below illustrates this point:-

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- (1) M.L.s 588 and 901 each bagged one early on 22 February about five miles northwest of West Kapelle and shore gunfire sank another off Flushing in the forenoon of 22 February.

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Table showing the cause of Allied ship casualties in the Southern North Sea.

Month	Type	Sorties	Loss	Allied ships sunk by		Allied ships damaged by	
				Torpedo	Mine	Torpedo	Mine
Jan.	E-boat	95	2	2 - 5,115	5 - 16,361	-	1 - 1,100
	Seehund	44	10	1 - 324	-	-	-
	Biber, Molch	15	10	-	-	-	-
	Linse	15	7	-	-	-	-
Feb.	E-boat	77	2	2 - 3,889	10 - 19,551	1 - 1,345	3 - 11,956
	U-boat	1	-	1 - 7,240	-	-	-
	Seehund	33	4	2 - 3,691	-	1 - 2,628	-
	Biber, Molch	14	6	-	-	-	-
	Linse	24	3	-	-	-	-
Total for Jan. and Feb. 1945				8, -20,259	15 - 35,912	2 - 3,973	4 - 13,056

(vi) No. 16 Group operations in March

The departure at the end of February of No. 819 F.A.A. Swordfish squadron left the strength of No. 16 Group at only 92 aircraft during March in spite of the return to Langham of the No. 524 detachment from No. 18 Group. However, the better flying weather resulted in the total sorties rising considerably over the February figure. The enemy also benefited from calmer seas and his E-boat and S.B.U. operations were stepped up smartly. The bulk of air activity was again at night there being 422 sorties directed against E-boats. During the month the standard anti-E-boat patrols were slightly amended and two extra added in mid-sea between the Dutch coast and East Anglia. No E-boat sallies got through undetected but as shadowing and reporting for the benefit of surface forces was made a priority, air attacks on them fell to 59. Although these attacks only resulted in one E-boat being sunk, it is evident from German records that their operations were often adversely affected by the persistent air harassment. A further 16 night air attacks were made off the Dutch ports on enemy patrol and minesweeping craft but without any confirmed results.

Anti-S.B.U. flying was changed in emphasis in that two new anti-Seehund patrols off the Maas estuaries were added and Beaufighters flying this type of patrol increased their sorties to 142 while the Swordfish inshore line patrol off Walcheren I. was reduced to only 29 sorties. This was in accordance with the agreed February policy that the Biber, Molch and Linsen types operating in the Scheldt river could best be dealt with by naval patrols, 2nd T.A.F. sweeps and shore batteries. A total of 30 sightings and 17 attacks were made by Coastal Command aircraft resulting in the sinking of two Seehunde, seven Biber and three Linsen.

Air action against enemy coastwise traffic east of Texel Island was again unproductive as very little was on the move. Thirteen daylight reconnaissance flights as far as the Elbe estuary saw a few small coasters or patrol boats generally close up to the shore. Seven single attacks were made without confirmed result. One reconnaissance in force by 31 Beaufighters was made on 24 March but only one armed coaster of 600 tons was sighted and that was sunk in the mouth of the Western Ems river. The nine night flights along the same coastline fared no better. Nothing at all was located until

See Map 11 for March patrols

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the last week of March and then on three occasions minesweepers were attacked between the Ems and Weser estuaries but again without confirmed result.

In aggregate during March, No. 16 Group flew:-

Day and night sorties east of Texel Island	- 93
Night sorties against E-boats	- 422
Day sorties off Walcheren Island	- 29
Day sorties against Seehunde	- 142

Total - 686

(vii) 2nd T.A.F. operations in March

Ten offensive sweeps and reconnaissance flights over the deltas of the Maas and Scheldt rivers were carried out involving 76 sorties in which 67 attacks were made. One 100 ton barge was sunk on 9 March off Overflakkee island and the ferry vessel Zierikzee of 100 tons was sunk at Hellevoetsluis on the 14th. The casualties inflicted on S.B.U.s amounted to eight Linsen motor boats destroyed as they were returning near Hellevoetsluis plus two more off Goeree and one Biber off Walcheren Island, all on 12 March. There were also during the month two bombing attacks on Dunkirk by six Bostons.

(viii) Enemy operations during March

(a) E-boats

The E-boat War Diary gives no specific port distribution of the flotillas but it is evident that the 8th Flotilla left Ymuiden at the end of February to refit in Germany and was not replaced thus leaving the 2nd, 4th, 5th, 6th and 9th Flotillas based on Den Helder and Rotterdam at a strength of 40 boats of which not more than 25 to 30 were available on any one day. Ymuiden appears to be henceforward only a port of call, partly because the Allied bombing raids had shattered the E-boat shelters and partly because the dispersal facilities were occupied by the Seehunde flotilla. Further damage was inflicted on the port on the 14th and 21st March by U.S.A.A.F. Fortress attacks but no E-boats were implicated and the Seehunde were too well dispersed to suffer.

No E-boat operations took place until the night of the 9th/10th when three flotillas left to lay mines in the Scheldt Approaches. They were located and shadowed on their way south by the air patrols and several indecisive encounters took place with naval patrols. Their superior speed enabled the E-boats to disengage and lay their mines. Two air attacks were made westward of Ymuiden but caused no damage and one Swordfish (G/119 Squadron) was shot down west of the Hook.

The night of 11/12 March saw simultaneous operations by E-boats, Biber, Molch and Linsen against the Thames/Antwerp supply line. For the first and only time flotillas of E-boats transported Linsen to a distant objective. Three control and six explosive Linsen were carried and launched by the Rotterdam flotillas near the South Falls buoy against a convoy located nearby. No success was achieved by the explosive boats and the three control boats containing all nine coxswains made off homeward. At 0750 hours on 12 March when off Goeree they were sighted, attacked and sunk by Coastal Command Swordfish of No. 119 Squadron. The Den Helder flotillas laid mines off the



Wash. Although both E-boat groups were reported by the air patrols when leaving harbour there were no subsequent encounters with naval patrols. The experiences of the Biber, Moloh and other Linsen sorties on this night are given in the next section.

The enemy intended to operate all five E-boat flotillas on minelaying during the night of the 13th/14th but the Den Helder boats were so harried by air action that they turned back early and, as the weather was deteriorating, the other flotillas were recalled and the whole operation was abandoned in spite of no actual damage being received from six air attacks. Nothing further was attempted until 17/18 March when five flotillas again put to sea for minelaying. Once more the air patrols gathered over them, reporting, shadowing and occasionally attacking. This time the E-boats pressed on and mines were laid off Ostend and East Anglia. There was one naval interception in the course of which two M.T.B.s received damage and casualties.

On the following night all the flotillas were at sea again. A total of 25 boats were directed against the East Coast convoy route between the Humber and Orfordness on combined torpedo and minelaying operations. They were promptly reported by air and shadowed nearly as far as Cromer thus enabling naval interception. Six boats of the 5th Flotilla encountered British destroyers and withdrew with two of their number damaged. The 2nd Flotilla ran into British M.T.B.s and after a fierce engagement turned back with all six boats damaged. The 9th Flotilla of five boats was fired on by destroyers off Southwold and driven away. The 4th and 6th Flotillas succeeded in laying mines and, while withdrawing the latter intercepted convoy FS.1759 off Lowestoft. A torpedo attack was made which sank the Crichton (Br.) - 1,097 and Rogate (Br.) - 2,871 tons. One E-boat was damaged by the convoy escort.

On the 21/22 March all five flotillas totalling 20 boats once more operated against the East Coast convoy route. The 2nd Flotilla emerging from Den Helder was harried by Coastal Command Beaufighters. An attack by G/236 Squadron sank S.181 killing both the flotilla leader and the C.O. of the boat, whereupon the remaining four boats returned to harbour with survivors. One aircraft (J/236 Squadron) was shot down by flak. The other 15 boats continued across the North Sea under constant air shadowing and occasional attack. On nearing our coast they were engaged by naval patrols in various positions and were driven off. Damage was claimed by each side but in all cases appears to have been superficial.

On the next night, nine boats of the 4th and 6th Flotillas sallied out from the Hook to lay mines on the Thames/Scheldt route. Eight attacks were made by the watchful air patrols but without causing damage. However, the shadowing reports enabled interceptions to be made by naval patrols and the E-boats were repulsed with two of their number damaged. The last March operation took place on the 25th/26th when 15 boats from the 4th, 6th and 9th Flotillas left the Hook on another attempt to mine along the Thames/Scheldt route. Air reports gave warning of the direction of approach and numerous indecisive encounters resulted with naval patrols to the north of the route but five E-boats penetrated the screen and laid mines. Six air attacks were delivered as the boats were re-entering the Hook but without result.

See  
Appendix IIA

During March the co-operation between air and surface forces improved vastly. Air reports on V.H.F. R/T could now be received direct in destroyers and frigates which were used by them to vector on the light patrol craft under their control. At the suitable moment R/T could be used to ask the shadowing aircraft to drop flares so as to silhouette the E-boats. When no surface forces were within reach the same procedure was used to direct striking forces of Beaufighters under the provisions of Operation Conebo and Percolate. This harassment from the air and increasingly frequent interception by the Navy combined to reduce the E-boat torpedo threat to almost nil and greatly limited the extent of their minelaying.

The E-boat War Diary mentions the significant fact that by the 21st the March fuel allocation had been used up. With difficulty sufficient fuel was made available for the last three operations. On 26 March the 5th Flotilla was ordered to the Baltic leaving only four flotillas operational in Holland and no further sallies took place until 5 April.

(b) Small Battle Units

The German record for Seehunde operations is far less detailed from March to the end of the war and individual description is no longer possible. Between the 6th and 19 March, ten Seehunde left Ymuiden bound for the North Foreland area.<sup>(1)</sup> They effected nothing and lost four of their number. One was sighted off the Goodwin Sands by an M.T.B. on the 7th and later that day M.T.B. 675 sank one about 30 miles east of Ramsgate. Another was sunk early on 10 March by Beaufighter F/254 Squadron off Goeree. The frigate Torrington sank another early on the 11th off Ramsgate and two days later she sank another 20 miles north of Dunkirk. Three were sighted northwest of Ostend by aircraft on the 12th and two air attacks were delivered on returning Seehunde by Beaufighters to the westward of the Hook on the 13th and 17 March but without confirmed result.

During the same period, nine others operated off the coast of East Anglia.<sup>(2)</sup> One was sighted off Yarmouth very early on the 8th by a naval patrol craft but no attack was possible. On 13 March a Seehund attacked convoy FS.1753 eight miles off Southwold and sank S.S. Taber Park (Br.) - 2,878 tons. Two were sighted and attacked without apparent result by Beaufighters well to the west of Ymuiden on the 13th and 18th and one was sunk on 22 March by M.T.B. 394 about 23 miles southeast of Yarmouth.

Meanwhile the intended scale of Biber operations had been seriously affected. When preparing for an operation on 6 March a Biber pilot accidentally released his torpedoes in the depot basin at Rotterdam thereby sinking 14 Biber, damaging nine others and causing numerous casualties. However, eleven surviving Biber were sailed from Rotterdam that evening to operate in the Scheldt river. None returned and no Allied shipping was hit

- (1) Five left on the 6th, three on the 9th, one on the 11th and one on the 16th March.
- (2) Four left on the 6th, one on the 9th, one on the 11th, one on the 16th and two on the 19 March.

One Biber was captured by a naval M.L. off Breskens on the 7th, four others were found on the same day abandoned on beaches off North Beveland, Domberg, Knooke and Zeebrugge and another was sunk by shore gunfire off West Kapelle on 8 March. The other five vanished and there are no Allied claims.

On the night of the 10th/11th, six Linsen left Hellevoetsluis to raid the anchorage off Veere on the northern coast of Walcheren Island. They were repulsed by shore batteries leaving two boats grounded on a sandbank.

During the next two days (11 and 12 March) occurred the combined operation by E-boats and S.B.U.s against the Antwerp supply line. Fifteen Biber armed with torpedoes and mines, fourteen Molch and 27 Linsen left Rotterdam and Hellevoetsluis to operate in the West Scheldt river. Again no Allied shipping was hit and the S.B.U. loss was heavy. Thirteen Biber, nine Molch and sixteen Linsen failed to return. Of the Biber and Molch it is impossible to distinguish which type was the target for the many attacks made on them but careful perusal of air and naval claims appears to establish the following causes for the 22 sunk:-

Two by Coastal Command Swordfish in the evening/11th off Schouwen I.

Four by naval M.L.s in the forenoon/12th off Westkapelle.

Four by Coastal Command Swordfish and Beaufighters in the afternoon/12th off Goeree and Schouwen Island.

One by 2nd T.A.F. Spitfires in the afternoon/12th off Walcheren I.

Four by shore batteries late on the 12th off Flushing and Breskens.

One by the frigate Retaliok at 0328/13th northwest of Walcheren I.

Six by unknown cause but there were two Beaufighter attacks in the afternoon/13th west of the Hook with no positive results seen.

The Linsen attack was countered by naval patrols and shore batteries off Walcheren I. and Terneuzen. At least six Linsen were claimed destroyed by these means. The remainder withdrew towards their base and German evidence states that eight were destroyed early in the forenoon of the 12th by air attacks as they were nearing Hellevoetsluis. This links up with recorded attacks by 2nd T.A.F. Mustangs and Spitfires on enemy motor boats at this time and vicinity. Two more were definitely sunk at 1135/12th by 2nd T.A.F. Tempests off Goeree.

Coupled with the simultaneous failure of E-boats and their launching of Linsen, this was an expensive 36 hours and no further S.B.U. operations took place until 22 March. On this night twelve Linsen proceeded undetected to the convoy route northwest of Ostend but finding no target returned to harbour. On the 23rd and 24th March a total of 16 Biber armed with torpedoes and mines set out from Poortershavn for the Scheldt Approaches. It is not known if any mines were laid but no torpedo hits resulted and nine Biber failed to return. The following appear to be the causes:-

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One by the frigate Retalick at 2051/23 to the northeast of Ostend

Two more possibly by this ship early/24th to the north of Ostend

One by Coastal Command Beaufighters at 0940/25th off Goeree

One seen beached and abandoned at mid-day/27th on Schouwen I.

Four by unknown cause.

Twelve Linsen set out from Hellevoetsluis on the night of 26 March in two parties of six, one bound for the West Scheldt river and the other to Bergen-op-Zoom up the East Scheldt. All returned having found no targets and there was no Allied interception.

During this period between the 24th and 26th March, four Seehunde left Ymuiden for the coast of East Anglia and six for the Thames/Scheldt convoy route. Most of them reached their billets but four never returned. The East Anglia boats lost one to Beaufighter Q/254 Squadron at 1440/25th about 20 miles northwest of the Hook and one to the corvette Puffin off Lowestoft early on 26 March but another Seehund sank the coaster Jim (Br.) - 833 tons on 30 March to the southeast of Orfordness. One Seehund of the Thames/Scheldt party attacked convoy BTC.106 at 1209 hours on 26 March off the North Foreland and sank the Newlands (Br.) - 1,556 tons. Shortly afterwards a Seehund was sunk in the vicinity by M.L.1471. Another was sunk late on 27 March by M.L.586 just west of Walcheren I.

(ix) Summary of March operations

Despite a greatly increased effort by E-boats and S.B.U.s the Allied shipping casualties were much the same as for February but the loss inflicted on the S.B.U.s was very much heavier. Although air attack only sank one E-boat and none were sunk by the naval patrols, the co-operation between the two was an increasing deterrent and in the surface encounters many E-boats were roughly handled. The anti-Seehund air patrols at last yielded some dividends and the combined defence scheme in the Scheldt river area was most effective against all the Biber, Molch and Linsen attacks. The table below gives the analysis for the March shipping losses in the Southern North Sea.

Month	Type	Sorties	Loss	Allied ships sunk by		Allied ships damaged by	
				Torpedo	Mine	Torpedo	Mine
Mch.	E-boat	131	1	2 - 3,968	8 - 31,714	-	1 - 7,176
	Seehund	29	9	3 - 5,267	-	-	-
	Biber, Molch	56	42	-	3 - 225	-	1 - 8,325
	Linse	66	27	-	-	-	-
Totals for March 1945				5 - 9,235	11 - 31,939	-	2 - 15,501

(x) No. 16 Group operations in April

When taking stock of the March shipping casualties in the Southern North Sea it was estimated at H.Q. Coastal Command that, of the thirteen in the Scheldt Approaches and five in the Outer Thames estuary, over half were probably due to midjets and even more attention should be given to countering this threat. Although the design of anti-midget air patrols was recast in the first days of April, No. 16 Group had not sufficient aircraft to increase the flying effort. The whole question of operations against midjets was discussed at the Command Headquarters on 6 April. The A.O.C.-in-C. ruled that No. 810 F.A.A. Barracuda Squadron should be transferred from Thorney Island<sup>(1)</sup> to Beccles in Norfolk for anti-Seehund duties and said he would approach the Admiralty for another F.A.A. squadron to be loaned. A few days later three ships were torpedoed out of convoys just off Dungeness. This was considered at the time to be the work of Seehunde or possibly genuine U-boats coming in from the east.<sup>(2)</sup> New anti-Seehund patrols were immediately instituted in and to the eastward of the Dover Straits and the other F.A.A. Barracuda squadron (No. 822) was moved from Thorney Island to Manston in Kent to fly them in conjunction with No. 119 Squadron's Swordfish at Knocke. In addition, the threat was considered serious enough to send a detachment of No. 407 L/L Wellington Squadron from No. 19 Group to Langham in Norfolk for night anti-U-boat and Seehund patrols to the westward of Ymuiden.<sup>(3)</sup> All these reinforcements enabled no less than 586 sorties to be flown on anti-midget patrols and resulted in 37 attacks in which five Seehunde and three Biber were sunk.

See Map 12

The anti-E-boat flying was maintained at the previous level until mid-April when it was apparent that E-boat activity was on the wane. Sorties were subsequently much reduced and the month's total was only 187. The 40 attacks were made without infliction of damage but the main object of these patrols was to bring about an interception by our surface forces and in this they were exceedingly successful. It was mainly owing to this combination that the E-boat operations faded out in the middle of the month.

Daylight Beaufighter reconnaissance either in force or on small flights to the Elbe estuary saw virtually nothing. Only two attacks were made in the course of 63 sorties - one on 18 April on a group of four Seehunde off Borkum and the other on 25 April on a motor launch south of Heligoland. In neither case was any damage inflicted. Night sorties eastward of Texel Island amounted to 61 during which there were 25 single attacks on small coasters or patrol boats. Two lighters were sunk off Terschelling on one occasion and a German tug off Norderney Island on another.

There were three night operations in conjunction with our own M.T.B.s. The first took place on the night of the

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- (1) This squadron together with No. 822 was under No. 19 Group control for A/U patrols in the Central Channel.
  - (2) In fact two genuine U-boats did arrive from the east a little later in April and patrolled off the North Foreland. They are referred to in detail in section (xii) (b).
  - (3) The standard patrols in April are illustrated on Map 12.

24th/25th April under the code name of Operation Taboo during which four enemy craft were reported and shadowed by Wellingtons off Vlieland but no encounter by the surface force resulted. The operation was repeated on the following night and enemy craft were located and shadowed in the same vicinity. This time the naval force connected and action followed off Terschelling island. The M.T.B.s claimed a torpedo hit but no confirmation can be found in German records. A third operation under the code name of Physic took place on the night of 27th/28th April but no enemy vessels were located by the air search.

In aggregate during April, No. 16 Group flew:-

Day and night sorties east of Texel island	- 124
Night sorties against E-boats	- 187
Day sorties against Seehunde	- 567
Night sorties against Seehunde	- 19

Total	897
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(xi) 2nd T.A.F. operations in April

During the first part of the month there were four air raids on Dunkirk and only one sweep of four aircraft on anti-midget duties. By mid-April the Allied army advance into Germany provided many forward airfields for the 2nd T.A.F. and thereafter most of their maritime operations were directed against enemy shipping lying between Terschelling island and the River Elbe though two more Mitchell attacks were made on Dunkirk. From 18 April occasional daylight anti-midget patrols between the Scheldt estuary and Ymuiden were performed by No. 69 Wellington Squadron. Four aircraft of this squadron were sent from their base at Eindhoven to Knoeke for this duty. Armed with 250 lb. depth charges they carried out 21 sorties but saw no midgets.

Apart from the 72 bombing sorties on Dunkirk there were during the second half of April no less than 474 anti-shipping sorties and 437 attacks were delivered. Practically all these were by R.P. fitted Typhoons and many claims were made to have sunk or damaged vessels of all sizes lying at anchor offshore or in roadsteads at Borkum, Emden, Schillig, Cuxhaven, Brunsbuttel and up the River Elbe almost to Hamburg. Much damage there certainly must have been but German records for this period are sketchy on damage returns. As regards vessels confirmed sunk there are only the Alwine Russ (Ge) - 988 tons in the river Elbe and the Eisen (Ge.) - 750 tons with two tugs off Brunsbuttel, all on 25 April.

(xii) Enemy operations during April

(a) E-boats

There were no E-boat sorties until the night of the 5th/6th April when 18 boats left Dutch bases for torpedo operations along the Thames/Scheldt route. One party of seven was located off the Hook by patrolling Wellingtons but the six attacks delivered caused no damage. Nothing was seen of any of them near the convoy route and no encounters with surface patrols took place.

On the following night six boats of the 2nd Flotilla left Den Helder to lay mines off our east coast. They were located and shadowed by the air patrols until seen to be engaged by our

forces at 0140/7th off Smiths Knoll. A series of pointblank naval actions followed during the next hour and a half during which S.176 and S.177 were sunk by ramming while we lost M.T.B.5001 by gunfire, M.T.B.494 by being rammed and had M.T.B.493 badly damaged by ramming her opponent.

Again on the next night (7th/8th) E-boats were at sea. Twelve boats of the 4th and 6th Flotillas left to lay mines in the Scheldt Approaches. They, as usual, were shadowed by the air patrols and were seen to be engaged with our surface patrols at 0130/8th to the northwest of Ostend. During action S.202 and S.703 collided at high speed and both sank. Some 40 survivors were picked up by the pursuing frigate Rutherford and M.T.B.s 482 and 454. Shortly afterwards another E-boat (S.223) detonated a mine and sank about 30 miles north of Ostend.

These were relatively heavy losses for the small E-boat force and no further operations took place until the night of the 12th/13th April when twelve boats of the 4th and 9th Flotillas sallied out to lay mines again in the Scheldt Approaches. They were shadowed and reported by the Wellington patrols and in due course brought to action by a surface patrol group. A short fierce battle down to 20 yards range was fought with the frigate Ekins and M.T.B.s 797 and 746. S.205 was damaged badly by gunfire and both the M.T.B.s suffered slight damage.

This proved to be the last E-boat operation of the war in these waters. The German record notes that on 16 April there were only 22 boats in the Dutch ports and of these not more than 15 were operational. A proposal to transfer the 1st Flotilla from Germany was abandoned owing to fuel shortage. This and the successful combination between air and surface patrols brought to an end what was the least unsuccessful form of enemy action against our east coast and Scheldt bound shipping.

#### (b) Small Battle Units

By the beginning of April, the advancing Allied armies had almost completely encircled Holland so that no reinforcements could be sent by rail or road and only the Seehund type were sufficiently seaworthy to make the passage coastwise from Germany. There was an air attack by 17 Lancasters on 7 April to cripple the nest of Seehunde at Ymuiden but once again the dispersal was too good and none were hit. On 8 April the S.B.U. strength in Holland was:-

- 29 Seehunde at Ymuiden
- 24 Biber at Rotterdam
- 60 Molch at Amersfoort
- 51 Linsen at Scheveningen and Hellevoetsluis

#### 1. Seehunde and genuine U-boats

As the Biber and Linsen operations were on a small scale it is considered simpler for April to deal with the Seehunde separately together with two U-boats who operated in one of the their areas. First must be mentioned what Seehund reinforcement reached Ymuiden by sea during April. Four left Wilhelmshaven early on 18 April. This was the little group sighted and attacked by a Beaufighter at 2025 hours on this day when 15 miles N.W. of Borkum. No damage was inflicted and all

four arrived at Ymuiden on 20 April. Subsequently a further 15 Seehunde were sent in batches from Wilhelmshaven. One turned back after grounding and one foundered off Wangerooge island, the remaining 13 had all arrived in Ymuiden by the 1 May. During the last week of April an additional two made the passage from Heligoland.<sup>(1)</sup> For the final two weeks of the war a strength of 33 Seehunde was maintained at Ymuiden.

All S.B.U. operations were held up by unfavourable weather until 5 April. Between P.M. that day and the end of the month a total of 36 Seehunde sorties left Ymuiden at fairly regular intervals to operate off the East Coast, in the Scheldt Approaches, and as far west as Dungeness. Two genuine U-boats left port early in April to operate in the North Foreland area. These areas will be taken separately:-

#### The East Coast north of the Thames.

Starting from 5 April, ten Seehunde sailed on various dates up to 28 April bound for this area.<sup>(2)</sup> Three were lost during the cruise. One was sunk at 0758/12th by Beaufighter U/236 Squadron when 35 miles west of the Hook and another by the destroyer Garth very early on the 14th off Orfordness. On 16 April at 1900 hours a Seehund sunk the cable ship Monarch (Br.) 1,150 tons also off Orfordness. Nothing further eventuated until early on the 29th when the corvette Sheldrake sank a Seehund to the southeast of Lowestoft.

#### The Scheldt Approaches

Also starting from 5 April, nine Seehunde sailed for the area at intervals up to the 23rd.<sup>(3)</sup> Again three were lost. On 9 April a Seehund attacked convoy TAC.90 some 20 miles north of Ostend and sank the U.S. tanker Y.17 - 800 tons. One Seehund was sunk at 1108/13th by Beaufighter P/236 Squadron when 16 miles northwest of Walcheren I., one by the Blankenberghe shore batteries on the 18th and one was found aground and abandoned off Walcheren I. on 19 April.

#### The Dover/Dungeness area

Starting on the 7th, seventeen sailed at intervals up to 23 April.<sup>(4)</sup> Six failed to return. One of the early starters attacked convoy TBC.123 on the evening of 9 April just to the northeast of Dungeness sinking the Samida (Br.) - 7,219 tons and damaging the Soloman Juneau (U.S.) - 7,176 tons. On the next day M.L.102 sank a Seehund about 12 miles east of Dover and another one ran aground just east of Calais. A third was sunk by Beaufighter W/254 Squadron some 35 miles west of the Hook. On 11 April at 0915 hours a Seehund attacked convoy

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- (1) Seehunde were first sent to Heligoland at the beginning of April and by the 22nd there were 15 in the harbour. The two bound for Ymuiden sailed on the 23rd and the other 13 were then moved back to Wilhelmshaven.
  - (2) One sailed on the 5th, two on the 10th, one on the 12th, two on the 21st, two on the 24th, one on the 27th and one on the 28 April.
  - (3) Two sailed on the 5th, one on the 6th, one on the 9th, two on the 10th, one on the 12th and two on 23 April.
  - (4) Nine sailed on the 7th, three on the 8th, one on the 9th, two on the 22nd and two on 23 April.



UC. 63B five miles east of Dungeness and damaged S.S. Port Wyndham (Br.) 8,580 tons. It may have been this Seehund that was rammed and sunk at 2317 hours that night only a few miles away by M.T.B. 632. On the 12th three aircraft (Mosquito A/254, Beaufighter M/236 and Wellington V/524 Squadrons) combined to sink a Seehund at 1630 hours about 25 miles west of the Hook. Finally another one was sunk on 13 April in much the same position by Barracuda L/810 F.A.A. Squadron.

These known Seehunde losses have been allotted to one form or another of British attack after careful examination but there were in addition during the month 27 other air sightings in the triangle Ymuiden/Orfordness/Hook of which 18 were attacked with either depth charges or cannon and after which there was no observed result.

#### The North Foreland area

Two genuine U-boats were sailed for this area. The Type XXIII U.2322 left Stavanger on 5 April and the Type VII U.245 put out from Wilhelmshaven on 6 April. U.2322 arrived on patrol about 13 April but found no targets until the 23rd when she attacked convoy ATM.133 about 13 miles east of Ramsgate just after midnight and damaged the Sverre Helmersen (Nor.) - 7,209 tons. Having expended her two torpedoes she immediately started her return journey to Stavanger which she reached on 1 May. U.245 arrived on patrol about 15 April and at 0547 hours on the 18th attacked convoy TAM.142 when 10 miles east of Ramsgate and sank both the Filleigh (Br.) - 4,856 tons and the Karnt (Nor.) - 4,991 tons. She was slightly damaged by the escorts' counter-attacks and left for Norway on 19 April ultimately entering Bergen on 9 May.

As far as can be learnt from British records neither of these U-boats were located by air or surface forces during their cruises and, except for action taken immediately after U.245's successful shot, neither was molested. Once again it seems strange that genuine U-boats were not used to strike at the Thames/Scheldt route on more occasions as the enemy was well aware that neither E-boats nor S.B.U.s were having any success in interrupting the traffic.

#### 2. Biber and Linsen

Biber operations restarted on 9 April when five put out from the Hook armed with torpedoes and mines for the Scheldt river. Two returned on the 11th with mechanical trouble, one of these when making the Hook entrance blew up on a mine. The other three were sunk during the 12th when west of the Hook - two by Beaufighters of No. 254 Squadron and one by a Swordfish of No. 119 Squadron. Two more Biber left Zierikzee on the night of the 11th/12th to lay mines in the channel between North and South Beveland. One succeeded and the other never returned. On the same night 15 Linsen left Hellevoetsluis for the Ostend area. They were repulsed in this area by surface patrols losing two sunk by the frigate Ekins and expended three explosive boats without hitting a target. A further 21 Linsen attempted to repeat the operation on the next night but were forced by bad weather to return prematurely. Weather again frustrated a similar intention by 12 Linsen on the night of the 17th/18th but six others detailed to transfer to Dunkirk sailed in spite of the conditions. They all missed their way

and were found on the 18th hard and fast aground off Breskens. The final Linsen operation of the war took place on the night of the 20th/21st April and was a repeat transfer to Dunkirk of 12 Linsen from Hellevoetsluis. Only six got there. The party was located about 28 miles north of Ostend by the frigate Ekins. She sank four for certain and two others were missing.

On the night of the 21st/22nd April, six Biber put out from the Hook with mines bound for the Scheldt river. Four returned having laid their mines and two vanished from cause unknown. The final Biber sorties of war were by four who left Rotterdam at 1030 hours on 26 April again to lay mines in the Scheldt river. One grounded on the way down to the sea and the others were attacked by aircraft as they were clearing from the Hook. Two were sunk and one escaped back to base. (1)

(c) Conclusion of all E-boat and S.B.U. operations

The table below gives the analysis for the final month of April:-

Month	Type	Sorties	Loss	Allied ships sunk by		Allied ships damaged by	
				Torpedo	Mine	Torpedo	Mine
Apr.	E-boat	48	5	-	2 - 8,373	-	2 - 6,176
	U-boat	2	-	2 - 9,847	-	1 - 7,209	-
	Seehund	36	12	3 - 9,169	-	2 - 15,756	-
	Biber	17	9	-	4 - 266	-	1 - 7,191
	Linse	66	17	-	-	-	-
Total for April 1945				5 - 19,016	6 - 8,639	3 - 22,965	3 - 13,367

Regarding the whole period 1 January to the end of the war, in order to save trouble in referring back, a table is given below showing the total results by each type of enemy unit:-

Type	Sorties	Loss	Allied ships sunk by		Allied ships damaged by	
			Torpedo	Mine	Torpedo	Mine
E-boat	351	10	6 - 12,972	25 - 75,999	1 - 1,345	7 - 26,408
U-boat	3	-	3 - 17,087	-	1 - 7,209	-
Seehund	142	35	9 - 18,451	-	3 - 18,384	-
Biber, Molch	102	70	-	7 - 491	-	2 - 15,516
Linse	171	54	-	-	-	-
1 Jan. to 30 Apr. 1945			18 - 48,510	32 - 76,490	5 - 26,938	9 - 41,924

Although Seehunde operational sorties ceased on 28 April, they continued to sail from Ymuiden with supplies for Dunkirk. One sailed at the end of April and three on 2 May. All reached

- (1) No trace can be found in either Coastal Command, Fighter Command or 2nd T.A.F. records of any air attack this day anywhere near this position. The aircraft may, however, have been United States Army Air Force Thunderbolts.

their destination before Dunkirk's capitulation on 8 May. Considering the frail construction of the Seehunde, the crews performed remarkable feats of endurance operating as they did for periods up to 10 days, often in vile weather, in billets as far as 150 miles from base. The Biber, Molch and Linsen deserved more than their tiny measure of success and their operations were well named 'Totaleinsatz' (Do or die). All S.B.U. crews were tough volunteers and it is significant that on 28 April thirty of these men were flown to Berlin on special request to act as a personal bodyguard to Hitler.

(B) No. 18 GROUP

(i) No. 18 Group policy in January

During January the operations followed the same pattern as for the end of 1944, daily reconnaissance flights off the Norwegian coast between Aalesund in the north and the Naze in the south. If no worthwhile shipping targets were sighted there was usually a formation sweep by from six to twelve Mosquitoes or Beaufighters along selected stretches of coast to attack targets of opportunity. If, however, shipping was sighted by the reconnaissance flights or if agents' reports indicated definite convoy movements, a Wing Strike of twenty or more Mosquitos (the Banff Wing) or Beaufighters (the Dallachy Wing) was despatched to attack. When possible these Strikes were escorted by long range Mustang fighters of No. 13 Group F.C. but as only one squadron (No. 65) of these valuable aircraft could be spared by Fighter Command for this duty, shipping targets near enemy fighter bases could not always be tackled. Enemy shipping further north than Aalesund or further east than Kristiansand South could not be reached as neither Beaufighter nor Mosquito had the range but 100 gallon drop tanks were in the course of trials and fitment to the Mosquitos to increase their radius of action to 500 miles.

See  
Appendix I for  
details of  
squadrons

C.C.  
Dep. O.R.B.  
Appendix 804

These distant areas were, however, visited during the dark hours whenever weather permitted by night patrols of the two Halifax squadrons (Nos. 58 and 502). Dependence on A.S.V. for the location of targets restricted such patrols to open water and as enemy shipping kept inside the islands northward of Stadtlandet it was decided at the end of January to concentrate more on the Skagerrack against the enemy traffic between Germany and Oslo or Kristiansand South.

See Map 5

(ii) No. 18 Group operations in January

The middle half of January was marked by very bad weather resulting in only 477 sorties being flown as compared with 823 in December 1944. Very little traffic was on the move during the short daylight and twelve rovers sweeps only sighted targets on three occasions. One merchant ship, two coasters, a lighter and a trawler were sunk.<sup>(1)</sup> Five Wing Strikes were despatched, all in the first half of the month, and in the absence of shipping under way three of these attacked defended anchorages. Two merchant ships, a coaster and an escort vessel were sunk for the loss of two aircraft by flak.<sup>(2)</sup> An unescorted strike force was intercepted on the way to attack Flekke fjord roadstead (S.W. Norway) on 11 January by twelve Me.109 and

- (1) See Appendix VIII for names, description, tonnage and position of sinking together with the squadrons concerned.  
(2) F/144 and M/455 Squadrons.

F.W. 190's. In the ensuing dogfight two strike aircraft were shot down and five of the enemy fighters were destroyed. (1) A more serious interception took place on 15 January when F.W. 190s shot down five Mosquitoes out of a strike at Lervik (north of Haugesund) with no loss to themselves. (2) Attacks on anchorages were discontinued as it was plain that one Mustang squadron was insufficient for all the escort which should be given.

C.C.  
Jan. O.R.B.  
Appendix 12

C.C.  
O.R.B. for Jan.  
Feb. and Moh.  
Appendices 33,  
116, 132, 134  
and 201.

By mid-January, Mosquito aircraft fitted with 100 gallon drop tanks and the necessarily modified R.P. stowage were being fed into the Strike squadrons in preparation for extended operations. Sooner than relegate one of these squadrons back to a purely fighter role the A.O.C.-in-C. requested the Air Ministry for a second Mustang squadron, not only to augment the fighter escort for current operations, but as a necessary part of his plan to use all the re-equipped Mosquitoes to attack enemy shipping by day in the eastern Skagerrack at the earliest opportunity. Unfortunately soon after this request the new drop tank and R.P. stowage showed many shortcomings in practice which required a complete redesign by the Ministry of Aircraft Production. From time to time during February the A.O.C.-in-C. protested at continued delays but it was early March before the Mosquito strike squadrons were satisfactorily fitted.

Night operations in January were almost entirely by the two Halifax squadrons. Thirty-two sorties were flown off West Norway resulting in nineteen attacks in which one cargo vessel and a minesweeper were sunk and fourteen sorties in the Skagerrack where seven attacks were made resulted in one cargo vessel being sunk. One Halifax was missing either by flak or enemy night fighters. (3) The Torbeaus were only used once. This was a night attack by five of No. 489 Squadron on 28 January on two destroyers previously sighted by reconnaissance just north of Haugesund. No torpedo hits were obtained and two of the aircraft were shot down by flak. (4)

The score for January was 12 vessels sunk for the loss of 14 aircraft (five by flak, seven by E/A and two crashed). In the same area naval forces sank 12 vessels and damaged one. Details are in Appendix VIII.

(iii) No. 18 Group policy and operations in February

Bad weather again kept the sorties low at 497 with even fewer attacks being delivered - only on four occasions by day and 43 single attacks at night. Daylight traffic movement was almost nil, twelve rover sweeps had nine blank returns and the other three only saw odd vessels moored close up under cliffs in fjords. Under these conditions attacks were difficult and only one cargo vessel was damaged. Wing Strikes were despatched on three occasions into fjords where shipping was at anchor. The first of these took off on 9 February. Reconnaissance had sighted an enemy naval force consisting of a destroyer, a large sperrbrecher and two M. class escorts moored in the narrow Forde fjord which extends up from Stav

- 
- (1) M/143 and C/144 Squadrons.
  - (2) D, E and V/143, A/235 and R/333 Squadrons.
  - (3) Z/58 Squadron.
  - (4) A and E/489 Squadron.

fjord. Several merchant vessels had also been seen in another neighbouring fjord but the A.O.C. No. 18 Group decided on the naval objective in view of the priority of such a target on the existing Admiralty list. Thirty-one Beaufighters escorted by ten Mustangs accordingly attacked the naval vessels. The Strike was repulsed with the loss of seven Beaufighters shot down by intense accurate flak and as the force was leaving it was attacked by twelve F.W.190s. Although engaged by the Mustang escort, two more Beaufighters were shot down.<sup>(1)</sup> Two enemy fighters were claimed by the Mustangs who lost one of their number in combat. No damage was done to the naval craft.

This set-back lent added weight to the A.O.C.-in-C.'s plea for another Mustang squadron and also raised the question of the priority for targets. Hitherto the list was headed by naval units of all sizes but as merchant shipping was now of such importance to the enemy the A.O.C.-in-C. requested a redecision by the Admiralty. A new priority list was issued in agreement with the Admiralty as under:-

C.C. Feb. O.R.B.  
Appendices 97  
and 98

1. Surfaced U-boats
2. Pocket battleship, cruiser or larger minelayer
3. Tankers
4. Troopships
5. Merchant ships
6. Escort vessels, destroyers and below
7. Other small naval craft

The second strike, also escorted, was despatched on 16 February to attack shipping anchored in Norang fjord to the south of Aalesund. The force was intercepted by 16 M.E.109s over the target and although they were kept at bay by the Mustang escort the shipping attack was hurried and no serious damage was inflicted. The last strike, on 21 February, was at shipping in the Bommelo fjord and succeeded in sinking two vessels and damaging a third.

Night operations were continued by the Halifax squadrons, mostly in the Skagerrack and northern Kattegat. A total of 61 sorties were flown and 35 attacks made resulted in one ship being sunk off the Skaw and one damaged north of Namsos. Two aircraft were lost to flak.<sup>(2)</sup> In addition to the Halifax attacks in the Kattegat area there were four single ones at night by A/U Liberators with sticks of depth charges. No positive result can be traced in German records.

Other night operations were by Wellingtons and Torbeaus. A detachment of No. 524 Wellington Squadron fitted with 10 cm. A.S.V. had been set up to Dallachy from No. 16 Group to restart Drem flare rendez-vous procedure in conjunction with Torbeaus under the code name of Operation Ashfield. Four of these were carried out during the month but on no occasion was any target located so instead was tried a roving sweep of Torbeaus supported by R.P. fitted Beaufighters timed to arrive on the Norwegian coast soon after dusk on moonlight nights. The first of these took place on 26 February along the coast between the Naze and Kristiansand. Eight attacks were made on shipping

See  
Appendix XI

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- (1) Losses - C, QI, Y, G, O and F/404, Y/144, O and V/455 Squadrons and one Mustang/65 Squadron. Three other Beaufighters were damaged.
  - (2) P and H/58 Squadron.

sighted. One cargo vessel was sunk by torpedo and a smaller one damaged by R.P. for the loss of one aircraft by flak.<sup>(1)</sup> The sweep was repeated on 28 February but no targets were sighted. It was, however, considered that these roving sweeps gave better chances than Operation Ashfield and in view of the shortage of night attack aircraft in No. 16 Group the detachment of Wellingtons returned to Langham on 5 March.

C.C.  
Feb. O.R.B.  
Appendices 90  
and 91

The A.O.C.-in-C.'s request for a second Mustang squadron was approved by the Air Ministry at the end of the month and No. 19 Squadron was ordered to join No. 65 at Peterhead for escort duties under the control of No. 18 Group. They did not take part in operations until early in March.

The results for February were extremely meagre, only four vessels being sunk and four damaged at a cost of twelve strike aircraft (ten by flak and two by E/A) and one Mustang fighter. Naval forces in the area were even less successful with one escort vessel sunk.

During February there were three innovations in connection with anti-shipping operations:-

1. The establishment in the Admiralty of a detailed running plot of all enemy shipping and convoy movements along the Norwegian coast. This was compiled from reports from photographic and ordinary reconnaissance flights, W/T reports from agents in coastal hide-outs and intelligence gleaned from enemy W/T traffic volume. The plot proved a great success, not only for directing air strikes, but for planning sorties by our own motor torpedo boats, informing our submarines on patrol and timing the periodic operations of our escort and fleet carriers off the coast northward of Aalesund.

2. This was concerned with the absence of daylight shipping movement due to the enemy's policy of only sailing during the hours of darkness. This night sailing could only be done in the long intricate passage of the Inner Leads by using lights once more on navigational beacons and in lighthouses. It had been proposed in January to attack some of the more important ones and smash the light installation with cannon fire. This was easy to undertake in the course of normal reconnaissance flights. After lengthy exchange of opinion between air and naval authorities and some opposition from the Norwegian Government in this country it was at last agreed that such attacks could start early in March.

3. This arose over the problem of how to force traffic out of the Inner Leads at selected points and into more open water accessible to air or surface attack. With very few exceptions all these Inner Lead channels and fjords between Stavanger and Aalesund were far too deep for ground mines.<sup>(2)</sup> We had no moored mines capable of

C.C.  
Jan. and Feb.  
O.R.B.s  
Apps 14 to 16,  
92 to 96 and 192

See Map 5

- 
- (1) L/455 Squadron.  
(2) Two of these shallower exceptions were sown by carrier-borne F.A.A. aircraft. In January, 12 ground mines were laid just south of Haugesund. In February, seven more were laid here and four off the northeast corner of Bremanger Is.

A.H.B. /  
IIK/54/11/123  
Encl. 47

being laid by aircraft but the enemy was rightly assumed not to know of this. It was suggested, therefore early in January to the Admiralty by H.Q. Coastal Command that such moored minelaying could be simulated by dropping large bombs singly from a relatively low height at selected points in the deep water channel. The fuses of these bombs were to be set for delayed action of a varying number of hours to resemble premature mine detonations. Thus the enemy might not only report splashes of possible minelaying but have his suspicions apparently confirmed by some subsequent explosions. We knew he was sensitive to the threat of deep water moored minelaying and this might well result in serious delays to his sailing schedule while he vainly swept the vicinity and possibly cause a diversion of traffic to seaward into easier positions for attack.

ibid Minute 31  
and Encl. 54

A.H.B. /IIK/54/  
11/306 Encls. 2  
and 13

The proposition was put forward again in February and was attempted on the evening of 16 February. Three Beaufighters carrying 500 lb. bombs set to  $\frac{1}{2}$  hour, one hour and six hours delay were detailed to drop in the entrance to Egersund harbour. Unfortunately foggy conditions off the port prevented the lay. However, the project was regularised under the code name of Operation Chuck and a full description of intention forwarded to the A.O.C. No. 18 Group. It was not tried again until early in March after which it became quite frequent.

(iv) No. 18 Group policy and operations in March

Much improved weather conditions saw a big rise in anti-shipping sorties to 847. More attacks were made, particularly by night on enemy traffic in the Skagerrack. Early in the month the Mosquito Wing was at last satisfactorily equipped with 100 gallon drop tanks and daylight operations escorted by Mustangs were extended as far east as the Skaw. Shipping was still seldom seen underway by day in the Inner Leads off Western Norway and targets had to be searched for where they were lying up in the narrow fjords. The addition of the second Mustang squadron now enabled all these searches to have a fighter escort.

C.C.  
Mch. O.R.B.  
Appendix 192

The policy of attacking lighthouse and beacon light installations was approved on 9 March and by the end of the month about fifteen were put out of action between Haugesund and Aalesund. The spoof minelaying (Operation Chuck) was carried out off Josing fjord, Egersund, south of Haugesund and northeast of Stadlandet backed up by ground mines laid in shallow water off Askeveld by carrier-borne F.A.A. aircraft. It has proved impossible from German records to assess separately the individual effect of these two policies from the general and increasing interruption to traffic to and from Norwegian bases.

Day Operations

Rover sweeps, increased now to some 25 aircraft apiece, operated on six occasions along stretches of the Inner Leads without seeing any movement of shipping. Six escorted Wing Strikes of 40 or more aircraft each were directed at roadsteads or fjord anchorages during the month and found a number of targets. Aalesund and its vicinity was attacked twice resulting in four ships being sunk and two damaged. Midgulen and Dals fjords each received an attack which yielded four more ships damaged and Egersund roadstead was raided where two ships

See Map 5

were sunk. The total loss of aircraft in these strikes was eleven. (1) A Wing Strike at Norang fjord was interrupted by 20 enemy fighters. Two Mosquitoes and a Mustang were shot down against the destruction of three F.W.190s. (2)

The feature of the month was the extension of daylight strikes into the eastern end of the Skagerrack. On 7 March, 42 Mosquitoes escorted by 12 Mustangs swept as far as the Swedish coast. They found and attacked a southbound enemy naval convoy of landing craft about 40 miles north of the Skaw. Four landing craft and an escort vessel were sunk for the loss of two aircraft to flak. (3) A repetition strike on 12 March was intercepted 30 miles south of Lister by 10 - Me.109s. In the ensuing combat one enemy was shot down for the loss of a Mosquito and a Mustang. (4) Another Wing Strike penetrated to the northern Kattegat on 20 March but saw no shipping at all. Finally on 30 March an escorted Strike of 45 Mosquitoes attacked the harbour of Porsgrund, off the entrance to Oslo fjord, where ships had been reported by previous reconnaissance. This was a great success, five cargo vessels being sunk for the loss of only one aircraft (T/235 Squadron) to flak.

#### Night Operations

The moonlight periods at the beginning and end of March were used to employ rover sweeps of eight to ten torpedo and R.P. Beaufighters. Eleven sweeps were despatched, some around Stadlandet peninsula and some along the coast between Stavanger and Oslo fjord. Only two targets were ever seen and these were by single Torbeaus who each missed with their torpedo.

The Halifax squadrons flew 117 sorties, all to the Skagerrack and Kattegat area. They made 99 separate attacks resulting in three ships being sunk and six badly damaged. Nearly all the attacks were on convoys and the volume of flak put up kept the aircraft at 4,000 feet or more when bombing in the uncertain light of flares. Under these conditions 9 per cent hits was not too bad. In addition to the Halifaxes there was one night attack to the north of the Skaw by an A/U Liberator using depth charges but no damage was inflicted.

#### Results

Day and night operations during March off the Norwegian coast scored 19 vessels sunk and 14 damaged - a considerable improvement on February. Losses were 19 strike aircraft (16 by flak and three by E/A) and two Mustang fighters. In the same area the score by naval forces was three ships sunk.

The increasing opposition by enemy fighters during March prompted the A.O.C.-in-C. to ask for a third Mustang squadron. It was estimated that enemy reinforcements amounted to some 90 single engined fighters distributed between Trondheim and Kristiansand South. The request was regretfully turned down by

A. H. B. / IIK/54/  
11/123 Encls. 63,  
64, 68 and 69

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- (1) F,R and W/143, G/144, W/235, K/248, L,R and U/404 and P and X/455 Squadrons.
  - (2) V/248, G/333 and a Mustang/65 Squadrons.
  - (3) O/235 and R/248 Squadrons.
  - (4) Q/248 and a Mustang/19 Squadrons.



Fighter Command, endorsed by the C.A.S., in view of superior claims for Mustang escort to daylight bombing raids over Germany.

Attacks in the West Baltic

During the course of night anti-U-boat sweeps by Liberators over the U-boat training area around Bornholm Island there were sixteen attacks made with depth charges on small merchant ships, coasters and patrol craft. These occurred on the nights of 23rd/24th and 26th/27th March. The only confirmed results from German records are the sinking of the cable vessel Budjadingen - 446 tons and patrol boat VS.276 - 141 tons just west of Bornholm on the 23rd/24th and an R-boat in the same vicinity early on 27 March.

(v) No. 18 Group policy and operations in April

On 3 April the air attacks on lighthouses and beacons in the Inner Leads were discontinued in view of the rapidly lengthening daylight hours in Western Norway.

On 11 April a combined meeting was held at the Admiralty to review the previous three months of anti-shipping operations off Norway, to hear the evidence by the Ministry of Economic Warfare of the effect on enemy traffic and to decide whether to continue the attacks. A paper was circulated by the M.E.W. in which details were given of the enemy's overall tonnage position in the different categories of shipping, the increased times of round voyage performance and the fall in Norway's imports and exports. The conclusion was that the various forms of anti-shipping attack had in combination achieved results out of all proportion to the number of ships claimed as sunk. Quite apart from these, much damage had been inflicted on all classes of vessels resulting in a high percentage being laid up in repair yards for periods greatly in excess of normal due to the incessant Allied bombing raids. The net result was a most significant decline in Norway's contribution to the German war effort coupled with a marked reduction in the enemy's ability to wage war from Norwegian bases. The meeting accordingly decided that attacks should continue as heretofore.

Replying to a question as to the effects of Operation Chuck the Admiralty Intelligence representative said there were indications that the Germans did believe that aircraft were laying moored mines and the operation was of value provided it was not repeated too often. Arising out of this answer, the Admiralty Torpedo and Mining Section went ahead with the provision of some even more convincing spoof mines on lines suggested earlier in March by H.Q. Coastal Command. The Beaufighter type was cleared for their carriage and on 21 April No. 18 Group were informed that 20 would be delivered on 30 April.(1) However, the war ended before the laying of any of these ingenious spoofs could be arranged.

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(1) Six of these spoofs were ordinary Mk. III 1,500 lb. mines but marked 'Moored' and set to float so as to simulate a moored mine which had broken away. The remaining fourteen were fitted with fuses to detonate on the bottom within set periods up to seven days after dropping. It was intended to lay them in three batches, two floaters being included in each batch, in positions near enemy observation posts in deep water channels.

A. H. B. /  
IHK/54/11/115  
Encl. 95 and  
minutes

C. C. April  
O. R. B. Appendi-  
ces 311 and 312

A. H. B. /  
IHK/54/11/306  
Encls. 9 and 12

Anti-shipping sorties continued during April at a high level until a spell of very bad weather with snow and icing conditions put a stop to operations after 26 April. Although the sorties for the month were slightly lower at 772 the number of individual attacks rose from 279 in March to 350 in April.

#### Day Operations

See Map 5

C. C. April  
O. R. B. Appendices 314 and 315

ibid Appendices 316 and 317

Day rover sweeps were only flown on four occasions, all on the coast of West Norway. Nothing was seen by the first around Stadtlandet so the next three were directed up the lengthy Sogne fjord. There was opposition by F.W.190s but this was held off by the Mustang escort who shot two down. Two merchant ships were sunk and one damaged. Wing Strikes were despatched fourteen times mostly into the eastern Skagerrack and northern Kattegat. All were escorted by Mustangs but enemy fighter opposition was still rising. On 20 April the A.O.C.-in-C. requested either more Mustang escort or the systematic bombing of enemy fighter airfields. The Air Ministry disallowed the latter and asked Fighter Command to consider the provision of additional fighter escort. This was arranged and from 26 April two more Mustang squadrons (Nos. 118 and 165) were allotted for this duty.

See Map 5

The first Wing Strike of the month, consisting of 40 Mosquitoes, took off on 2 April for Sandefjord off the entrance to the main Oslo Fjord. Here were sunk two cargo vessels with four others badly damaged for the loss of two aircraft by flak.(1) On the following day a Beaufighter Strike found Egersund harbour shrouded in fog and had to abandon the attack. On the 5th, a Mosquito Strike penetrated the Kattegat and attacked a convoy of small vessels off Anholt sinking two for the loss of three strike aircraft and two Mustangs.(2) On the same day a Beaufighter force off Stadtlandet was intercepted by Me.109s. In the general combat the Mustang escort bagged four of the enemy but three Beaufighters were shot down.(3)

A Mosquito Strike into the eastern Skagerrack on 9 April sighted a party of three surfaced U-boats off the Skaw. These were attacked and all sunk. The action has been described in more detail already in Chapter X. The 11 April saw two Wing Strikes, Mosquitoes to Porsgrund roadstead where four vessels were sunk and two damaged, Beaufighters to Fede fjord near Lister where an M. class escort was sunk. Both forces were attacked by concentrations of Me.109s and lost between them four aircraft in exchange for three enemy fighters.(4) On 14 April, Josing fjord (of Altmark fame) was visited by Beaufighters but the very steep sides of the narrow fjord made attacks difficult and although hits were seen, and confirmed by cine camera, on ships moored close under the cliffs the German records make no mention of serious damage. Enemy fighters appeared but were driven off by the Mustang escort. Unfortunately in the confined conditions of attack two aircraft collided and both crashed.(5) A Skagerrack Mosquito

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- (1) O/143 and U/248 Squadrons.
  - (2) F and U/235, E/333 and two Mustangs/19 Squadrons.
  - (3) U/144 and G.N./455 Squadrons.
  - (4) N/235, H/333, X/144 and one Mustang/65 Squadrons.
  - (5) AI and Y/489 Squadron.

Strike on the 17th ran into bad weather and had to return without sighting anything but on 19 April another Mosquito Strike into the Kattegat attacked a U-boat convoy sinking the escort vessel and one U-boat and damaging another. This incident also has been more fully described in Chapter X.

On 21 April a strike of 45 Mosquitoes escorted by 24 Mustangs swept into the Kattegat but saw no targets. On the return journey when in the mouth of the Skagerrack they sighted a force of 18 - Ju.88s and 188s. Mosquitoes and Mustangs joyfully walked into this welcome target and between them shot down four Ju.188s and five Ju.88s noting with surprise that several enemy aircraft were carrying torpedoes. It is not known what project the Germans were engaged upon.

On the next day Beaufighters attacked in the Inner Leads between Ulversund and Maaloy but only sank one medium sized cargo vessel and lost two aircraft.(1) On the 24th a Mosquito Strike to the Kattegat was forced to return empty handed by thick fog off the Skaw and the last strike of the month took place on 26 April by Beaufighters into Fede fjord. They were attacked by a large party of Me.109s and F.W.190s and in spite of the Mustang escort lost three aircraft.(2)

Of other day operations, two more series of attacks on lighthouses were made before the cancellation on 3 April and single reconnaissance aircraft twice shot up freight trains where the railway skirts the coast of South Norway. Operation Chuck failed on the 8th through bad visibility but two spoof mine bombs were laid on 23 April just to the south of Haugesund.

#### Night Operations

Seven separate night sweeps during the moonlight period by parties of Torbeaus and R.P. Beaufighters either saw no targets or were baulked by bad visibility. Two abortive torpedo attacks on surfaced U-boats have been mentioned in Chapter X. There were also two torpedo attacks on merchant vessels but no confirmation of damage can be found in German records. One Torbeau was missing.(3)

The two Halifax squadrons again achieved a good score. Out of 125 sorties into the Skagerrack/Kattegat area, 98 made attacks resulting in ten vessels being sunk and four others damaged for the loss of four aircraft.(4) A further 12 sorties were flown off West Norway yielding three attacks but no damage was inflicted.

In addition to the night attacks above there were 17, mostly in the eastern Skagerrack, by A/U Liberators but in no case can any damaging result be confirmed in German records.

#### Results

The April day and night operations resulted in 23 vessels being sunk and eleven damaged. Aircraft losses amounted to

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- (1) R/144 and B/455 Squadrons.
  - (2) E and U/144 and N/455 Squadrons.
  - (3) BI/489 Squadron.
  - (4) J, O and X/58 and X/502 Squadrons.

29 strike aircraft (15 by flak, seven by E/A and seven by crashes or flying debris) and four Mustang fighters. In the same area one vessel was sunk by one of H.M. submarines.

(C) Nos. 16, 18 and 2nd T.A.F. GROUPS IN MAY

(i) Policy

The German war organisation was rapidly falling apart at the end of April. Although there was little shipping movement off the Norwegian coast and none along the Southern North Sea shore, there was much in the Western Baltic. Here there was a growing exodus from the east towards Kiel and up from Kiel through the Belts. The Kattegat was soon filling with vessels of all sizes, some still southbound from Norway and some, including U-boats, escaping up towards Norway. Active operations by E-boats and Small Battle Units had ceased and it appeared from photographic reconnaissance that the enemy was trying to evacuate as much as he could from ports menaced or over-run by the advancing Soviet armies and at the same time rush what he could to Norway with a view to waging the U-boat war exclusively from that stronghold.

In these conditions of confused shipping movement it was decided to use 2nd T.A.F. Typhoon sorties from North German airfields to cover the Western Baltic as far east as Mecklenburg Bight and send the strike wings of both No. 16 and 18 Groups into the Kattegat/Kiel Bight area. In order to enable the Beaufighter Wings to reach this area, the northern squadrons (144, 455 and 489) moved down first to Thornaby in Yorkshire and then to North Coates in Lincolnshire where they joined Nos. 236 and 254 Squadrons. An advanced base at Helmond in Holland was made available by the 2nd T.A.F. and the two Beaufighter Wings used this as a refuelling point either on the outward or homeward journey.

The night flying Halifaxes continued their usual sorties into the Skagerrack/Kattegat area as did the night flying Wellingtons of No. 16 Group into the Heligoland Bight.

(ii) R.A.F. operations at sea

It is considered that the last week of the German war can best be recounted chronologically as events occurred, because all three Groups were operating simultaneously in the general area between Lubeck Bay and the Skaw.

1 May

The poor weather with 10/10 cloud almost to sea level, which had prevailed during the last days of April, continued throughout the 1 May and no extended operations were possible.

2 May

The Mosquito Wing consisting of 35 aircraft escorted by 24 Mustangs set out from No. 18 Group bases at 0630 hours, swept up the Skagerrack, rounded the Skaw and at 0854 hours sighted a little group of escorted U-boats to the northeast of Laeso I. The Wing attacked and sank the escort vessel

2nd T.A.F.  
Daily Log

See Map 7

and one U-boat for the loss of one aircraft to flak.(1) During the afternoon and evening, 2nd T.A.F. Typhoons armed with R.P. and working from advanced airfields in Northern Germany, made 48 sorties into the Lubeck Bay area. A number of targets were attacked and the confirmed results include four named cargo vessels and a U-boat sunk. More vessels were probably damaged or even sunk but German records are not complete during the last days of the war.(2)

2nd/3rd night and dawn 3 May

Three Wellingtons of No. 524 Squadron carried out night sweeps along the German coast as far as the River Elbe. They located some scattered small craft off the Weser estuary and made attacks without observed result. Acting on these reports No. 16 Group despatched a pre-dawn strike of 12 Beaufighters to the vicinity. They arrived at 0630 hours and sighted eight small vessels in scattered groups some 12 miles south of Heligoland. Attacks were made in which a barge was seen to sink, a tug and another barge set on fire and a coaster type vessel blew up with a heavy explosion. The latter is confirmed in German records as the repair vessel Adrianus - 250 tons.

3 May

The Mosquito Wing of 48 aircraft escorted by 18 Mustangs took off at 1630 hours and proceeded from the Scottish base direct towards the Belts area. When crossing Denmark they ran into heavy rain with almost nil visibility at 1900 hours and turned homeward without sighting any worthwhile targets. One Beaufighter Wing left Thornaby at the same time also with a Mustang escort and crossed Denmark further south in better weather. At 1950 hours they sighted a northbound convoy at the lower end of Langeland Channel consisting of a large tanker and a cargo vessel with seven escorts disposed around them. A few miles to the eastward were three large cargo vessels lying almost alongside each other. The convoy was attacked by Nos. 455 and 489 Squadrons with R.P. and torpedoes under intense flak but although many R.P. hits were secured, no torpedoes hit and no vessel was sunk. One Beaufighter and Mustang were shot down by flak.(3) A few minutes later the other target was attacked by No. 144 Squadron and those of the other squadrons with any ammunition left. One of the ships was sunk and the other two badly damaged with no further loss of aircraft.

The other Beaufighter Wing escorted by Mustangs also proceeded straight across Denmark into the Great Belt and then down towards Kiel. From 1720 to 1730 hours they sighted and attacked a large number of targets. The confirmed results are two merchant ships, three coasters and a U-boat sunk with two large ships severely damaged for the loss of one aircraft.(4) The 2nd T.A.F. Typhoons had a field day from their northern German airfields. In all they flew 319 sorties in the area between Fehmarn Belt and Kiel Bight. Their confirmed score is

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- (1) Mosquito G/235 Squadron.
  - (2) The same remark applies to the results of attacks carried out on subsequent days by Wing Strike and 2nd T.A.F. aircraft. Only confirmed sinkings and damages are recorded in this account.
  - (3) Beaufighter N/144 and a Mustang/19 Squadron.
  - (4) Beaufighter X/254 Squadron.

2nd T.A.F.  
Daily Log

four large cargo vessels, five smaller vessels and four U-boats sunk with a cargo vessel damaged though obviously more than this one must have been hit seriously. Aircraft loss amounted to four.(1)

### 3rd/4th night May

During the night Halifaxes of No. 58 Squadron sank a cargo vessel and an M. class escort off Aarhus in the Kattegat. Further south in the Kiel Bight, Wellingtons of Nos. 524 and 612 Squadrons sank one and seriously damaged two other cargo vessels.

### 4 May

The three Strike Wings were out again. Forty-one Mosquitos escorted by 18 Mustangs set out at 1320 hours for the Kattegat. In the Aarlborg Bight a lone R-boat was sighted and promptly sunk at 1535 hours. Ten minutes later when east of Aarhus Bay a westbound convoy was seen, consisting of two merchant ships and five escorts. Attacks were made under intense flak resulting in one merchant ship being sunk and the other badly damaged for the loss of three Mosquitoes and three Mustangs.(2) The Wing then turned north for home and immediately sighted a small cargo vessel on a northerly course. This was attacked by those aircraft with ammunition remaining and left burning fiercely.

See Map 7

One Beaufighter Wing of 22 aircraft (Nos. 236 and 254 Squadrons) accompanied by 24 Mustangs sighted at 1610 hours a large two funnelled ship with two escorts in the northern end of the Great Belt. Very heavy flak was put up by all three ships and although many R.P. hits were seen, no confirmed sinking resulted. One Mustang was shot down and one Beaufighter subsequently crashed.(3) Continuing their sweep the Wing sighted at 1638 hours a group of three surfaced U-boats in the Little Belt. Attacks were made which sank two of them outright and forced the third to scuttle later from damage received. At 1645 hours another group of three U-boats was sighted further down the Little Belt. Two boats dived before attack was possible but the third was sunk outright. The other Beaufighter Wing, 36 aircraft with 16 Mustangs, ran into a wall of black rain cloud at 1813 hours over Denmark. Visibility was nil down to ground level and the force turned back without seeing anything.

2nd T.A.F.  
Daily Log

Once again the 2nd T.A.F. had a big day. Typhoon, Tempest and Spitfire sorties totalling 360 operated between the Fehmarn Belt and up as far as the Flensburg fjord. Out of the many claims made the following can be confirmed by name:- Two cargo vessels, an M. class escort and five U-boats sunk, plus two merchantmen and a large oil refining ship badly damaged. Losses were only two aircraft.(4)

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- (1) Two Typhoons/198, one/197 and one/181 Squadrons.
  - (2) Mosquitos A and W/235 and Z/143 Squadrons. Three Mustangs from Nos. 19 and 234 Squadrons.
  - (3) Beaufighter QI/236 and one Mustang/64 Squadrons.
  - (4) One Typhoon/183 and one Spitfire/317 Squadrons.

(iii) The end of anti-shipping operations

It was now plain that the majority of surface ship movement was escape and evacuation from the Baltic ports being over-run by the Soviet Army. Much was by-passing Kiel into the Belts bound for Kattegat ports and the whole area was likely soon to capitulate but it was considered possible that resistance would continue in Norway and that the U-boat war was by no means over. At 2305 B hours on 4 May the Admiralty signalled all Naval Commands and H.Q. Coastal Command that surface ships were not to be attacked unless within 20 miles of the Norwegian coast. Attacks on U-boats and their escorts were to continue wherever they were sighted.

C.C.  
May O.R.B.  
App. 372

During these three days of May, 29 surface vessels of all sizes and 16 U-boats had been sunk, and at a very conservative estimate 12 other ships had been damaged, all for the loss of only 18 aircraft. Anti-U-boat operations continued unabated as described at the end of Chapter X and resulted in another eight U-boats being sunk before the general surrender. Patrols against Small Battle Units by No. 16 Group were also flown up to the end. These amounted to 174 sorties but with the exception of a few returning Seehunde there were no S.B.U. operations to detect. Three attacks were made without result.

ibid  
App. 377

On 5 May the Admiralty made another signal which only permitted attacks on enemy shipping in the Skagerrack north of latitude 58°N providing it was proceeding towards Norway. Reconnaissance flights were maintained over the whole area from the Skagerrack to Kiel Bight but no targets satisfying the above condition were sighted and no more strikes were despatched. Finally, at 1445 B hours on 7 May the order went out that no further anti-shipping operations were to be carried out.

ibid  
App. 379

So ended a side of Maritime Air War which has received much less notice in official pronouncements than it deserves, probably because it has been overshadowed by the Anti-U-boat Battle. It was a task shared at times by all the R.A.F. Commands and much of the Fleet Air Arm but fell mainly and continuously on Coastal Command. It was entirely unenvisioned by pre-war deliberations except as strictly limited against enemy major warships. The anti-shipping force had to be improvised from early 1940 onwards with unsuitable types of aircraft and in the face of competing priorities. It was not till early 1945 that crews took the air in adequately armed suitable aircraft properly escorted against enemy fighters. The anti-shipping crews probably had a tougher time than any other branch of the R.A.F. as their proportion of casualties shows. Since April 1940, when anti-shipping operations really started, Coastal Command flew 37,837 sorties on reconnaissance and strikes, made 7,017 individual aircraft attacks and lost 856 aircraft. They sank 366 vessels of half a million tons, and damaged another 134 vessels also aggregating half a million tons.

CHAPTER XII

CONCLUSIONS DRAWN AFTER THE 1939/45 MARITIME WAR  
(NOT REPRESENTATIVE OF AIR STAFF OPINION)

(i) - Introduction

The principles of war do not change. It is frequently said that the advent of nuclear weapons has altered these. Principles are not affected by weapons. For a time the more horrific may influence opinion but inevitably there comes the counter measure and we are made to realise, often painfully, that we ignore these principles at risk of defeat.

When drawing conclusions from a long but finally victorious war, the consummations attained by the end of the war must not be related with the likelihood of having anything comparable in sight at the beginning of another world struggle. It is the state of policy, resources and training just prior to and at the outbreak of this last war which must be examined in the light of what afterwards occurred before a useful conclusion can be drawn or a lesson carried on to the future. It is depressing to find that in 1939 the same inadequacies and mistakes were perpetuated as in 1914. If only we could learn to remember we might break the vicious circle.

Because these volumes deal with the part played by Air Forces in the Maritime War 1939 to 1945, only those conclusions appropriate to this heading are discussed. In this respect the close co-operation with the Royal Navy inevitably brings into the subject policy and influences emanating from the Admiralty.

(ii) - General conclusions

There is no doubt that we were quite unprepared for a major war in 1939. This is not the place to discuss or assess the reasons for such unpreparedness but the fact is plain and was so at the time to many serving officers. In the field of naval air action it resulted in a tiny Coastal Command not fully trained in any single maritime task attempting to perform many jobs, some entirely unenvisioned in peace time, assisted by small Bomber and Fighter Commands completely unaccustomed to operating at sea.

While the initial lack of numbers could not under the usual peace time sentiment of a democracy be avoided there was no valid reason for the absence of fully trained cadres in the various categories of maritime tasks such as anti-submarine, convoy escort, aerial minelaying and anti-shipping. Throughout the war until the winter of 1944/45 we were still paying the price. This question of training and exercise is of the utmost importance. Acceptance of requirements is of no use unless the air crews and control organisations are in peace-time ceaselessly trained and exercised in realistic practices in all weathers. The last war experience is emphatic on this subject. Far more than in actual numbers this is where we were so unready in 1939.

(iii) - Tasks envisaged before the War

These numbered only three. North Sea reconnaissance, co-operation with the Royal Navy in convoy protection and counter-offensive action in defence of seaborne trade embracing attacks on enemy warships, submarines or aircraft. The



first was a primary task, the second was subsidiary and the third but a pious hope.

(a) North Sea and Fleet reconnaissance

Prior to September 1939, North Sea reconnaissance had been stated by the Admiralty as their major requirement in view of their great concern about the operation of German warship commerce raiders. However, neither the naval nor air staffs seem to have fully realised that such reconnaissance would almost certainly fail in periods of bad weather and was non-existent at night. In the event and somewhat naturally the enemy made use of these very periods to send his major warships through the North Sea. During the first fifteen months of war there were 22 moves by enemy major units out of or back into the North Sea and on only five occasions were they spotted by air patrol. The advent of airborne radar (A.S.V.) made little difference as far as passages along the Norwegian coast were concerned as a further 21 moves up to September 1943 were only located on eight occasions. Open ocean reconnaissance was equally unfruitful as with the exception of the Bismark none of the warships raiders were detected while gaining or leaving the North Atlantic.

After September 1943 no major unit movements took place outside the Baltic and it is not possible to say how efficient our location reconnaissance might have been in the latter part of the war. Up to this date there is no doubt that it fell far short of expectation.

Conclusion

Insufficient pre-war training and exercise was given to ship recognition, navigational accuracy, shadowing and reporting procedure. The low standard of these led to much confusion during the 1940 Norwegian campaign. Navigational accuracy remained poor for much of the war and there were many cases of it as late as 1943, particularly when reporting positions of enemy blockade runners in the Bay of Biscay.

Most of the failures in the North Sea were due to the aircraft being, through no fault of their own, in the wrong place or in the right place at the wrong time but the quality of look-out was sometimes questionable as on occasions the logs of enemy warships note the sighting of our aircraft while remaining unobserved themselves.

(b) - Convoy escort

Prior to the war the concept of convoy for our seaborne trade was unpopular as it was thought its imposition was an act of defensive weakness and would seriously affect our import tonnage. It was hoped that it would not be necessary particularly as the Admiralty envisaged no U-boat threat comparable to 1917. Consequently air escort plans were extremely nebulous and amounted to little more than the token appearance of an aircraft who would circuit closely around a convoy with no very clear orders as to its duty. Little or no practical training or exercise had taken place and its real value was quite unappreciated. As the war progressed there was a rude awakening as to the capabilities of U-boats and air escort was demanded on all occasions but its true metier was still underestimated. Gradually it was improved, developed, made lethal at last to U-boats and extended in scope so that by 1943 it was highly efficient and quite invaluable.

If from the early days of the war the six flying-boat squadrons in Coastal Command had been employed entirely on convoy escort and support instead of frittering much of their effort on reconnaissance patrols we should have saved thousands of tons of shipping and many lives from U-boat attack and done far more than the air did to nullify the threat from surface commerce raiders. Air escort to convoys was in 1939 not treated with nearly the importance it should have been, particularly as there was much information as to its value available from the records of the First World War. The whole subject is intimately bound up with proficiency attained by aircraft in anti-submarine measures and any conclusion must contain the war experience of these measures.

(c) - Anti-Submarine measures

Although listed in the pre-war requisites, anti-submarine measures were virtually non-existent at the outbreak of war. The power of U-boats to do us deadly harm had been hopelessly underestimated by the naval staff mainly because of their faith in the ASDIC location device. This was held to confer such killing qualities on surface craft that no assistance was deemed necessary from aircraft other than sighting reports. Consequently nothing had been done in Coastal Command to train or exercise air crews in the very special technique required to locate and attack these elusive targets. Indeed it was sometime after the outbreak of war before pilots knew what a submarine looked like, what its capabilities were or where its weakness lay. No realistic trials had been done to find an efficient weapon and the plentiful experience of the First World War lay forgotten in the Archives. For instance there was an Admiralty paper dated March 1919, on Air Anti-Submarine operations in which it was stated that the then existing bombs were too small and nothing lighter than the 520 lb. delay action bomb was considered lethal. In 1939 and for much of 1940 the majority of Coastal Command's A/U aircraft were armed with a 100 lb. bomb and it was May 1941 before the 300 lb. depth charge (comparable to the above bomb) was adopted as the standard A/U weapon.

The technique of air location and attack on U-boats had to be flogged out afresh in the face of the enemy and it was the end of 1941 before the first German U-boat was sunk solely by air attack and not till mid-1942 did the second unaided success occur. Thereafter the score mounted rapidly and by mid-1943 the aircraft was the premier U-boat killer. The introduction by the enemy of the schnorchel in mid-1944 completely altered the situation and, although imposing a large measure of immobility on their operations up to the end of the war, the aircraft never regained its former killing properties at sea.

Mainly through the unfortunate reliance on ASDIC as an answer to any U-boat threat the aircraft was totally unprepared to take its part in this vitally important field. Such a tremendous handicap was not surmounted for three years of war and taken in conjunction with the equally slow extension of air escort to convoys goes far to explain why it was not till mid-1943 that our seaborne supplies were made reasonably secure.

Regarding purely air operations against U-boats on their transit routes, these were not productive and except for a three month period in 1943 in the Bay of Biscay the enormous

flying effort here and in the Northern Transit Area did little more than slow down the speed of U-boat passages. It was certainly no deterrent to their North Atlantic operations.

Special conditions in the Straits of Gibraltar did, however, provide a proof that magnetic detection from the air of a submerged U-boat was capable of frustrating U-boat passages into the Mediterranean.

(d) - Conclusions on (b) and (c)

After the defeat of the G.A.F. attack on this country in the 1940 Battle of Britain, the premier adversary threatening our existence was the U-boat. Although convoy had been adopted early in September 1939 for our east coast shipping, ocean convoy was by no means complete even in 1941. There was still a reluctance to "go the whole hog" in spite of heavy sinkings among the numerous independently routed ships. This attitude derived from the pre-war belief that "Convoy" was a rather derogatory defensive measure. Our enemy in two world wars was under no such misapprehension. On both occasions of its adoptance he openly called it "Offensive Strategy" and in due course he was twice defeated by it.

Before giving the lessons of the war on convoy air support and anti-submarine measures there is an all-important aspect of ocean convoy policy to be made clear. For over four years Admiral Doenitz fought the submarine war under his principle of U-boat grouping. He was forced to do this by our adoption of ocean convoy sailing. Such U-boat groups were disposed in lines athwart the probable routes followed by Allied shipping. As soon as a U-boat in one of these lines sighted a convoy the remainder were concentrated by Doenitz from his shore based control centre into a pack for action against that convoy. This procedure resulted in much enemy two way W/T traffic. The D/F ing of this together with other special intelligence enabled a remarkably accurate plot of U-boat positions at sea to be maintained by the Admiralty Submarine Tracking Room. It was possible not only to know which convoy was about to be attacked but to plan diversionary routes for other convoys and single ships so as to keep clear of the waiting lines of U-boats. If such lines could not be avoided the air and surface escort of the convoy in question could be adequately reinforced in plenty of time. Moreover as it was quite impossible to give air escort to every convoy at sea this U-boat position plot could and did enable available aircraft to be conserved and sent to where they were really needed. Of course the information from the Submarine Tracking Room was not 100% accurate on all occasions but it is no exaggeration to state that without it we might well have lost the Battle of the Atlantic and consequently the power to win the war.

Although vital, this information required efficiently trained lethal surface and air escorts to the convoys before bearing fruit in the defeat of the U-boat packs. We were taught a painful lesson in the First World War about the capabilities of enemy submarines and the absolute necessity of adopting convoy with adequate surface and air escort. By 1939 the lesson had been forgotten. Painfully again we re-learned the lesson during the Second World War and by early 1944 the ocean convoy was supreme. However, the lesson was not applied in the air to coastwise convoys during the schnorchel phase in the last year of war. It is significant that the attempt to safeguard such shipping by the discredited area air patrol along the whole coast failed either to prevent

U-boat attacks or to kill them by air action. In the event our shipping losses were not severe but the lesson remains. Air support must be with the convoy wherever it is traversing dangerous waters.

(e) - Action against enemy warships at sea

Major Units

Considering the long peace time arguments and trials regarding Aircraft versus Battleship it is extraordinary that we started the war with no clear cut policy of air attack on enemy major warships. The subject never seemed to get above committee stages. It was generally agreed in these that the torpedo offered the best solution but by September 1939 the only result from this school of thought was a couple of squadrons in Coastal Command equipped with the obsolete and absurdly short range Vildebeeste aircraft. The use of bombers had been discouraged in committee by naval claims that shipborne A/A fire would make air attack suicidal at accurate bombing altitudes. No training had therefore been done to accustom aircraft of Bomber Command to locate warships at sea or to hit them when travelling at high speed. Consequently in the first months of war when German warships were frequently at sea they could not be reached by Coastal Command's torpedo aircraft or located and bombed by Bomber Command.

The malaise which seemed to surround this subject continued throughout the war. Bomber Command, under the Cabinet policy of bombing Germany, managed to shrug off this commitment and Coastal Command never became proficient with the torpedo at fast moving enemy naval targets.

At one time or another it has been put forward that the Air Ministry should have adopted the dive bomber as the standard anti-warship weapon. Such critics draw their support from the successes achieved by German dive bombers against our minor warships and merchant vessels throughout 1940. They forget that this weapon as exemplified in the Ju.87 was short ranged, slow and highly vulnerable to fighter interception. Enemy successes occurred near his advanced air fields and in the absence of British fighter escort. When Fighter Command were able, after the Battle of Britain, to afford such cover it inflicted such heavy loss on enemy dive bombers that their employment on this task was abandoned immediately. As all our own air attacks on enemy warships took place within easy reach of their fighter bases, there is every reason to suppose that had we been armed with dive bombers the same defeat would have been inflicted on us.

Destroyers and E-boats

Very few encounters took place between our aircraft and enemy destroyers. Generally speaking the volume of A/A fire put up kept the aircraft at such a height that accurate bombing was impossible. In the case of E-boats, although the A/A fire was not so intense, their speed and evasive steering was more marked even than destroyers and bombing was equally ineffective. Many attacks were made on them from May 1940 onwards but it was not till March 1943 that one was sunk by air attack. These harmless attacks did have an unlooked for result in that during 1942 the E-boat Command gave up daylight sorties because it was considered inconceivable that they

could continue to escape much longer. They were even more difficult targets at night and although attacked frequently during 1943 and 1944 only five more were sunk at sea by aircraft.

The real value of air interception patrols against them finally emerged in 1945 when their positions were relayed continuously on V.H.F./R.T. by shadowing aircraft thus enabling them to be brought to action by surface forces. This spelt their doom and their operations ceased in mid-April 1945.

#### Conclusion

With no clear naval commitment ever apportioned to them, it is not surprising that Bomber Command scored no success at sea. With Coastal Command the lack of a strike aircraft which could reach enemy waters robbed them of any chances in the early stage of the war. Subsequently the standard of torpedo work left much to be desired. At certain periods, after glaring instances of failure, the training in this weapon was intensified but the Command never mastered its use against high speed targets. Their sole success in the torpedoing of the Lutzow off S.W. Norway in June 1941 confirms this harsh view.

Coastal Command's bombing of minor warships was equally barren but their real success in attack was achieved late in the war in operations against enemy supply shipping - a task not envisaged until April 1940.

#### (f) - Protection of our own shipping against enemy air attack

This question had received much attention during the summer of 1939. It had been proposed that in case of war as much shipping as possible should be diverted from east coast sailing and more use made of westerly ports where it could receive easier protection. Regarding the vulnerable east coast it was realised that Fighter Command could only operate about five miles off shore owing to the necessity of aircraft maintaining R/T touch with their bases. To provide a measure of protection further to seaward, a minimum of four new long range fighter squadrons were sanctioned but the earliest date for their readiness was given as September 1940. In the event and under the stress of war these squadrons actually became operational by January 1940.

There was thus only a belated provision for this task but fortunately for us the Germans were not ready either. No attacks even on east coast shipping took place until October 1939 and no ships were sunk until December. Thereafter the G.A.F despatched an ever increasing number of sorties and shipping casualties rose rapidly in spite of corresponding increases in Fighter Command flying. The problem of interception was far from simple. Enemy attacks were made in dribs and drabs at all hours of the day and eventually at dusk and in moonlight. The narrow swept channel running up our east coast prevented compact convoys and the picture was usually one of long lines of irregularly spaced ships often miles apart. It was quite impracticable to give constant escort along this huge stretch. Fighters either maintained short bursts of general cover or did not take the air until a signal was received from ships who were actually being attacked. More often than not the assailant would be well away before fighters reached the scene. Combats were never

numerous and although enemy aircraft were shot down their losses never became intolerable.

Because of their long range and other details so different from the normal single engine fighter it was decided to turn the four new fighter squadrons over to Coastal Command as they became operational. They were employed not only on east coast interception patrols but to escort naval forces at sea and on enemy coast reconnaissance neither of which tasks had been envisaged before the war.

After the Battle of Britain, Fighter Command was freer to devote more sorties to shipping protection and the G.A.F. daylight attacks fell away but successful dusk and moonlight operations continued unabated. It was not till June 1941 that shipping losses started to fall and this was due far more to the wholesale transfer of G.A.F. groups to the opening Russian Campaign than to British fighter opposition. Night successes persisted into 1942 but on a diminishing scale and had ceased entirely by October.

#### Conclusion

Unless compact convoys could be guaranteed and could receive a standing fighter escort there was no way of stopping enemy air attacks. Conventional A/A fire from the convoy was no answer as enemy convoys were afterwards successfully attacked by our own aircraft amidst a far greater volume of flak than was ever put up by our own convoys.

#### (iv) - Tasks performed which were not envisaged before the war

Besides the relatively minor ones of providing long range fighter escort to naval forces at sea<sup>(1)</sup> and of reconnaissance off enemy coasts<sup>(2)</sup> there were three major commitments:-

##### (a) Air Attack on enemy supply shipping

This was not considered until the opening of the Norwegian Campaign in April 1940. There had been, therefore, absolutely no provision for suitable aircraft, weapons or any study of tactics. All had to be improvised from scratch and methods adapted by trial and error in face of the enemy. The Germans had already gone into convoy because of mining losses (see next section) before any determined air attack was started on their supply shipping. In answer they now increased the flak armament of the sweeper escorts and attached an ever growing number of flak escort vessels. Whenever possible in the case of important ships or convoys they maintained a standing fighter escort. Under these conditions severe aircraft casualties were suffered right through to the end of 1942 with only moderate returns in enemy

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- (1) Prior to the war the Naval Staff had stated that H.M. ships were able to look after themselves and had no fear of bomb attack. However, by the end of 1939 the Admiralty stated "H.M. Ships cannot face the threat of air attack if operating within range of German long range bombing forces".
  - (2) It does not seem to have occurred to pre-war planners that reconnaissance off an enemy coast would have to face enemy fighters and therefore such reconnaissance aircraft must be also of a fighter type in order to survive.

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shipping sunk or damaged. Not until 1943 was it possible to build up homogenous wings of specially equipped aircraft and to train them thoroughly in a successful attack technique. The first of these wings went into action in April 1943 and thereafter air loss fell rapidly though the returns were still only moderate.

By March 1944 three wings were operational and enemy losses started to rise. They continued to mount during the rest of 1944 and into 1945 culminating in March and April in very heavy execution among all types of enemy vessels and minor warships.

Conclusion

The late start made in this branch of air activity inevitably handicapped its development in time of war. The utmost gallantry was shown by aircrews in unsuitable aircraft searching for targets off enemy held coasts and pressing home most high attacks under very heavy flak. It was an expensive way of sinking ships and not until the right type of aircraft and the right combination of weapons were forthcoming did the considerable effort justify itself.

(b) - Aerial minelaying

Very little thought was given in the peace years to use aircraft for laying mines. Attempts to design an airlaid moored mine were abandoned in 1936. Subsequent development of the ground mine, which needs no heavy sinker and cable, re-opened the possibility of air carriage but it was July 1939 before the first air prototype was ready for dropping trials. No pre-war plan considered aerial minelaying and in the first months of war there had been no decision as to what type of aircraft should carry them.

Towards the end of 1939 it was considered that torpedo aircraft would be the most suitable and it was decided that, as the mine would not be available until the spring of 1940, the newly equipped Beaufort squadron in Coastal Command should undertake this task followed by the Botha squadrons as they became operational. Unfortunately this latter aircraft was a total failure and two Bomber Command Hampden squadrons were hastily co-opted in lieu. To augment this tiny force a squadron of naval Swordfish torpedo aircraft were loaned to Coastal Command and the first aerial minelaying took place during April 1940.

From these small beginnings a campaign opened which lasted throughout the war during which 48,148 mines were laid in fields ranging from the southern corner of the Bay of Biscay to the Gulf of Danzig in the Baltic. Excellent dividends in enemy shipping sunk and damaged resulted right from the start and continued in spite of the early adoption by the enemy of convoy and swept channel routing. The operational effort required for minelaying was low and the aircraft casualties were few.

In view of the multifarious duties of Coastal Command and their shortage of suitable long range aircraft the onus of minelaying was laid more and more on Bomber Command and in March 1942 they took over the whole responsibility. At the same time they increased the number of squadrons undertaking this task and pushed the laying rate up to 1,000 per month.

Another upsurge in minelaying took place early in 1944 when developments in the mine and radar position finding equipment in the aircraft enabled release to be made from over 10,000 feet in any conditions of cloud or visibility.

Results were, of course, not uniformly maintained. They varied with the state of enemy defences, his sweeping, routing and convoy discipline and with refinements in the firing circuit of the mines. But in comparison with any other method of air attack on enemy shipping it was quite the most successful and was achieved at a fraction of the cost in air losses or numbers of sorties.

#### Conclusion

This mining campaign was aimed at coastwise shipping which consisted mostly of cargo vessels. It scored relatively few successes against major warships though the mining of both the Scharnhorst and Gneisenau during their escape from Brest to Germany in February 1942 represented the only damage inflicted on them by the entire British forces engaged. However, major units and U-boats were of sufficient importance to the enemy to warrant careful sweeping escort. As a cheap effective way of creating a maximum of disorganisation and loss in waters mainly beyond the reach of surface or submarine minelayers it certainly had no equal.

#### (c) - The bombing of ports or roadsteads

Bomber Command first attempted this on the 4th September, 1939 on the Schilling Roads and off Brunsbuttel but failed to damage any of the warships at anchor. No more bombing attacks were made until June 1940. From then it continued on a rising scale until culminating in the Hamburg "catastrophe raids" in July 1943. All attacks had been made, with very few exceptions, at night and an immense tonnage of bombs had been dropped on one or another of practically every port between Bordeaux and Danzig. Aircraft losses totalled about 1,400 but very little shipping was destroyed (about 70 vessels in all) and such damage as was caused to the various port facilities was repaired in a matter of days.

From August 1943 this night bombing continued for another year but interspersed by a growing number of daylight precision attacks by fighter escorted U.S. Army Air bombers. Casualties continued high but rather more damage was inflicted both to shipping and port facilities. From September 1944 to the end of the war the escorted daytime precision raids caught up with and then greatly outnumbered the night area attacks. Aircraft losses fell rapidly and the damage inflicted rose to unprecedented figures culminating in April 1945 in the complete close down of U-boat construction and enormous destruction amongst shipping.

#### Conclusion

Until mid-1944 a strong German fighter force and powerful ground defence made daylight bombing impracticable. Lack of accurate radar bomb aiming devices limited night operations to area bombing. This type of attack lent itself to the 1942 and 1943 bombing policy against German industry, housing and morale which found expression in the selection of some 30 German cities for mass area bombing. The fact that some of these cities were either naval or commercial ports was



incidental and the docks or building slips in them were seldom made the specific objective of attack. Whatever the judgment on morale and industry, the results from a purely naval assessment were not significant either in shipping destroyed, delays in building output or lasting damage inflicted on dockyard and port facilities.

The change of bombing policy in mid-1944 to German railways, canal communications and oil production coupled with increasing numbers of fighter escorted daylight precision attacks isolated the ports and produced a cumulative paralysis in port traffic, shipbuilding output and naval operational potential. To give only three examples:-

1. E-boat operations and mining against the newly arrived Allied landing in the Seine Bay were crippled because the destruction of railways in Northern France prevented the carriage of torpedoes and mines to Cherbourg, Le Havre and Boulogne.
2. The frequent cutting of the Dortmund/Ems and Mittelland canals from September 1944 onwards prevented the transit of sections of pre-fabricated U-boats to the assembly yards in Hamburg and Bremen thus seriously reducing the scheduled output of completed U-boats.
3. The growing shortage of oil by early 1945 gravely restricted the operations of German minesweepers, patrol and escort vessels and finally of E-boats.

During the last two months of war when much improved radar blind bombing aids were available, night precision bombing together with daylight attacks replaced the old area bombing of ports and, in conjunction with the destruction of communications, finally closed down both ports and construction yards.

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APPENDIX I

Coastal Command  
Order of Battle, Strength and Availability  
5th June, 1944

Ref: C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib.V	Mk. V	15	17	7
No. 120 - V.L.R. Lib.V - fitted L/L	Mk. V	15	14	10
<u>Castle Archdale</u>				
No. 422 R.C.A.F. - Sund. III	Mk. II	12	15	5
No. 423 R.C.A.F. - Sund. III	Mk. II	12	13	4
Total in No. 15 Group - 4 R.A.F. Sqdns		54	59	26

No. 16 Group

<u>Bircham Newton</u>				
No. 415 R.C.A.F. - (Well. XIII Albacore)	Mk. II Mk. II	10 20	10 21	5 13
Detachments at Manston, Thorney I. and Winkleigh				
<u>North Coates</u>				
No. 236 - B/ftr. X - R.P.	Mk. II	20	18	17
No. 254 - B/ftr. X - Torp.	Mk. II	20	22	20
<u>Langham</u>				
No. 455 - R.A.A.F. - B/ftr. X - R.P.	Mk. II	20	19	15
No. 489 - R.N.Z.A.F. - B/ftr. X - Torp.	Mk. II	20	19	15
<u>Manston</u>				
No. 143 - B/ftr. X - Cannon	Mk. II	20	20	18
No. 819 F.A.A. - Swordfish	Mk. XI	12	14	12
No. 848 F.A.A. - Avenger	Mk. IX	12	15	12
<u>Hawkinge</u>				
No. 854 F.A.A. - Avenger	Mk. IX	12	11	9
No. 855 F.A.A. - Avenger	Mk. IX	12	11	11
Total in No. 16 Group - 6 R.A.F. + 4 F.A.A. Sqdns.		178	180	147

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5th June, 1944 (Cont.)

APPENDIX I

No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Leuchars</u>				
No. 333 Norge Flight - Mosq. VI	None	6	7	5
<u>Wick</u>				
No. 1693 Flight - Anson	None	8	8	6
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IB	Mk.II	3	3	3
<u>Sullom Voe</u>				
No. 210 - Cat. IV	Mk.II	12	10	4
No. 330 Norge - Sund. III	Mk.II	9	8	3
Total in No. 18 Group - 3 $\frac{1}{2}$ R.A.F. and Norge Sqdns.		38	36	21

No. 19 Group

<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk.II	12	11	10
<u>Pembroke Dock</u>				
No. 228 - Sund. III	Mk.II & III	12	16	10
No. 201 - Sund. III	Mk.II & III	12	15	11
No. 461 R.A.A.F. - Sund. III	Mk.III	12	14	10
<u>Chivenor</u>				
No. 172 - L/L Well. XIV	Mk.III & VI	15	15	9
No. 612 - L/L Well. XIV	Mk.VI	15	15	12
No. 407 R.C.A.F. - L/L Well. XIV	Mk.IIIB	15	15	8
No. 304 Pole - L/L Well. XIV	Mk.VI	15	15	10
<u>St. Eval</u>				
No. 224 - L/L Lib. V	Mk.V	15	16	10
No. 53 - L/L Lib. V	Mk.V	15	15	9
No. 547 - Lib. V. and VI	Mk.V & VA	15	15	6
No. 206 - Lib. VI	Mk.VA	20	12	5
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk.VA	12	15	7
No. 105 - U.S.N. Lib. PB4Y	Mk.VA	12	15	15
No. 110 - U.S.N. Lib. PB4Y	Mk.VA	12	15	11
<u>St. Davids</u>				
No. 58 - Halifax II	Mk.IIIA	15	15	9
No. 502 - Halifax II	Mk.IIIA	15	15	6
<u>Davidstow Moor</u>				
No. 144 - B/ftr. X - Torp	Mk.II	20	17	17
No. 404 R.C.A.F. - B/ftr. X - R.P.	Mk.II	20	18	13
No. 524 - Well. XIII	Mk.II	10	10	6
<u>Fredannock</u>				
No. 311 Czech - Lib. V - R.P.	Mk.V	15	16	12
No. 179 - L/L Well. XIV	Mk.IIIB	15	13	11
<u>Portreath</u>				
No. 235 - B/ftr. X and XIC - Cannon	Mk.II	20	20	18
No. 248 {	Mosq.VI - Cannon	20	20	16
	Mosq.XVIII - Tsetse 6 pdr.	4	5	2
<u>Perranporth</u>				
No. 816 F.A.A. - Swordfish	Mk.XI	12	13	10
No. 849 F.A.A. - Avenger	Mk.IX	12	15	11
No. 850 F.A.A. - Avenger	Mk.IX	12	15	11
<u>Harrowbeer</u>				
No. 838 F.A.A. - Swordfish	Mk.XI	12	12	11
Total in No. 19 Grp - 20 $\frac{1}{2}$ R.A.F. + 4 F.A.A. + 3 U.S.N. Squadrons		411	423	296

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5th June, 1944 (Cont.)

APPENDIX I

Iceland

	Type of A.S.V.	U.E.	Strength	Available
<u>Reykjavik</u> No. 86 - V.L.R. Lib. IIIA Detachments at Tain and Ballykelly	Mk. II	15	14	12
No. 162 R.C.A.F. - Canso (Cat. IIIA) Detachment at Wick	Mk. II	15	12	12
Total in Iceland - 2 R.A.F. Squadrons		30	26	24

Gibraltar

<u>New Camp</u> No. 202 - Cat. IV (9 with L/L)	Mk. II	16	16	15
<u>North Front</u> Detachment No. 500 - Ventura V	Mk. VIII	6	6	4
Total at Gibraltar - 1½ R.A.F. Squadrons		22	22	19

No. 247 Group - Azores

<u>Lagens</u> No. 220 - Fortress II and IIA	Mk. II	20	18	9
Total in Azores - 1 R.A.F. Squadron		20	18	9

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u> No. 540 - Mosq. IX and XVI	20	17	14
No. 541 - Spitfires of various marks Detachments at St. Eval and Gibraltar	20	33	20
No. 542 - Spitfires of various marks	24	30	21
No. 544 - Mosq. IX and XVI	20	18	11
Total Photographic Reconnaissance - 4 Sqdns	84	98	66

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5th June, 1954 (Cont.)

APPENDIX I

Air Sea Rescue

	U.E.	Strength	Available
<u>Bircham Newton</u> No. 279 - Hudson III, IIIA, V and VI } Detachment in Iceland	20	22	12
<u>Strubby</u> No. 280 - Warwick I	20	21	13
<u>Tiree</u> No. 281 - Warwick I ) Detachments at Leuchars and Limavady	20	20	10
<u>Davidstow Moor</u> No. 282 - Warwick I	20	20	9
<u>Azores - Lagens</u> No. 269 - Hudson, Walrus, Spitfire, ) Martlet, Anson Combined A.S.R. and meteorological }	18	19	9
Total A.S.R. - 5 Squadrons	98	102	53

Meteorological

<u>Aldergrove</u> No. 1402 Flight - Spitfire VI, Gladiator	8	8	5
<u>Tiree</u> No. 518 - Halifax V	14	14	4
<u>Wick</u> No. 519 - Ventura V - Spitfire VI	17	18	11
<u>Bircham Newton</u> No. 521 - Ventura V, Gladiator	9	9	5
<u>St. Davids</u> No. 517 - Halifax V	23	10	4
<u>Iceland - Reykjavik</u> No. 1407 Flight - Hudson III, Ventura	6	7	Nil
<u>Gibraltar - North Front</u> No. 520 - Halifax V, Gladiator	10	8	1
Total Meteorological - 5 Sqdns + 2 Flights	87	74	30

## Summary of Coastal Command for 5th June 1944

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	54	59	26	4 R.A.F.
No. 16	178	180	147	6 R.A.F. + 4 F.A.A.
No. 18	38	36	21	3½ R.A.F.
No. 19	411	423	296	20½ R.A.F. + 4 F.A.A. + 3 U.S.N.
Iceland	30	26	24	2 R.A.F.
Gibraltar	22	22	19	1½ R.A.F.
Azores	20	18	9	1 R.A.F.
Coastal Command Battle Line	753	764	542	38½ R.A.F. + 8 F.A.A. + 3 U.S.N. = 49½
Photo-Recce	84	98	66	4 Squadrons
A.S.R.	98	102	53	5 Squadrons
Meteorological	87	74	30	5 Squadrons + 2 Flights

## Distribution as between A/U and Anti-shipping

Group	Anti - U-boat				Anti - shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 422, 423 4 Squadrons	54	59	26	None	-	-	-
No. 16	None	-	-	-	415, 236, 254, 455 489, 143, 819, 848 854, 855 10 Squadrons	178	180	147
No. 18	210, 330, half 333 half 1693 3 Squadrons	32	29	16	half 333 ½ Squadron	6	7	5
No. 19	10, 220, 461, 201 172, 407, 612, 304 224, 53, 547, 206 58, 502, 311, 179 103, 105, 110, 816 838, 849, 850 23 Squadrons	321	338	226	144, 404, 235, 248 half 524 4½ Squadrons	90	85	70
Iceland	86, 162 2 Squadrons	30	26	24	None	-	-	-
Gibraltar	202, half 500 1½ Squadrons	22	22	19	None	-	-	-
Azores	220 1 Squadron	20	18	9	None	-	-	-
Battle Line	34½ Squadrons	479	492	320	15 Squadrons	274	272	222

Order of Battle, Strength and Availability  
1st September, 1944

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V	Mk. V	15	13	11
No. 120 - L/L Lib. V	Mk. VA	15	15	7
<u>Castle Archdale</u>				
No. 422 R.C.A.F. - Sund. III	Mk. IIIC	12	13	7
No. 423 R.C.A.F. - Sund. III	Mk. IIIC	12	12	10
<u>Limavady</u>				
No. 811 F.A.A. (Swordfish Wild Cats)	Mk. XI None	12 4	12 4	10 4
No. 850 F.A.A. (Avengers Wild Cats)	Mk. IX None	12 4	9 4	4 4
Total in No. 15 Group - 4 R.A.F. + 2 F.A.A. Sqdns		86	82	57

No. 16 Group

<u>Thorney Island</u>				
No. 855 F.A.A. - Avenger	Mk. IX	12	14	12
<u>Swingfield</u>				
No. 119 - Albacores	Mk. II	15	16	11
No. 819 F.A.A. - Swordfish	Mk. XI	16	16	9
<u>Manston</u>				
No. 143 - B/ftr.X - Cannon	Mk. II	20	18	15
<u>Strubby</u>				
No. 144 - B/ftr.X - R.P.	Mk. II	20	19	17
No. 404 R.C.A.F. - B/ftr.X - R.P.	Mk. II	20	18	14
<u>North Coates</u>				
No. 236 - B/ftr.X - R.P.	Mk. II	20	16	14
No. 254 - B/ftr.X - Torp.	Mk. II	20	19	8
<u>Langham</u>				
No. 455 R.A.A.F. - B/ftr.X - R.P.	Mk. II	20	17	14
No. 489 R.N.Z.A.F. - B/ftr.X - Torp.	Mk. II	20	23	5
<u>Bircham Newton</u>				
No. 524 Well. XIII	Mk. II	15	15	6
Total in No. 16 Group - 9 R.A.F. + 2 F.A.A. Sqdns.		198	191	125

1st September, 1944 (Cont.)

No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Sumburgh</u>				
Detachment No. 1693 Flight - Anson	None	2	3	2
<u>Wick</u>				
No. 407 R.C.A.F. - L/L Well. XIV	Mk.VI	15	17	10
Detachment No. 1693 Flight - Anson	None	4	5	5
<u>Stornoway</u>				
No. 58 - Halifax II	Mk.IIIB	15	16	12
No. 842 F.A.A. - Swordfish	Mk.XI	12	12	8
<u>Tain</u>				
No. 86 - V.L.R. Lib.III and V	Mk.II-VA	15	19	4
No. 311 Czech - Lib.V - R.P.	Mk.V	15	15	9
<u>Leuchars</u>				
No. 206 - Lib.VI	Mk.VA	15	16	4
No. 333 Norge Flight - Mosq.VI	None	6	6	3
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat.IB	Mk.II	3	3	1
<u>Sullom Voe</u>				
No. 210 - L/L Cat.IVA	Mk.VIIIA	12	15	5
No. 330 Norge - Sund.III	Mk.IIIC	9	9	3
Total in No. 18 Group - 8½ R.A.F. + 1 F.A.A. Sqdns.		123	136	66

No. 19 Group

<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund.III	Mk.II	12	13	9
<u>Pembroke Dock</u>				
No. 201 - Sund.III	Mk.IIIC	12	12	9
No. 228 - Sund.III	Mk.IIIC	12	12	8
No. 461 R.A.A.F. - Sund.III	Mk.IIIC	12	12	9
<u>Chivenor</u>				
No. 172 - L/L Well.XIV	Mk.VI	15	14	10
No. 612 - L/L Well.XIV	Mk.VI	15	18	15
No. 304 Pole - L/L Well.XIV	Mk.VI	15	16	10
<u>St. Eval</u>				
No. 53 - L/L Lib.V and VI	Mk.VA	15	18	9
No. 224 - L/L Lib.V and VI	Mk.VA	15	20	11
No. 547 - Lib.VI	Mk.VA	15	20	11
<u>St. Davids</u>				
No. 502 - Halifax II	Mk.IIIB	15	14	8
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib.PB4Y	Mk.VA	15	15	11
No. 105 - U.S.N. Lib.PB4Y	Mk.X	15	16	14
No. 110 - U.S.N. Lib.PB4Y	Mk.VA	15	17	15
Detachment No. 114 - U.S.N.S/L Lib.PB4Y	Mk.VA	6	6	3
<u>Predannock</u>				
No. 179 - L/L Well.XIV	Mk.IIIB	15	15	8
<u>Portreath</u>				
No. 235 - Mosq.VI - cannon	None	20	18	12
(Mosq.VI - cannon	None	16	14	11
No. 248 (Mosq.XVIII - Tsetse 6 pdr.	None	8	8	2
Total in No. 19 Group - 14 R.A.F. + 3½ U.S.N. Sqdns.		263	278	185



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APPENDIX I

1st September, 1944 (Cont.)

Iceland

	Type of A.S.V.	U.E.	Strength	Available
<u>Reykjavik</u> No. 162 R.C.A.F. - Cansos (Cat.IIIA)	Mk.II	15	10	5
Total in Iceland - 1 R.A.F. Squadron		15	10	5

Gibraltar

<u>New Camp</u> No. 202 - Cat.IVA (9 with L/L)	Mk.VIIIA	16	15	6
<u>North Front</u> No. 22 S.A.A.F. - Ventura V	Mk.VIII	20	18	16
Total at Gibraltar - 1 R.A.F. + 1 S.A.A.F. Sqdn.		36	33	22

No. 247 Group - Azores

<u>Lagens</u> No. 220 - Fortress II	Mk.II	20	21	17
Total in Azores - 1 R.A.F. Squadron		20	21	17

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u> No. 540 - Mosq. IX and XVI	20	19	16
No. 541 - Spits. X, XI and XIX Detachments at St. Eval and Gibraltar	20	22	19
No. 542 - Spits. X, XI and XIX	20	19	16
No. 544 - Mosq. IX and XVI	20	20	12
Total P.R. - 4 Squadrons	80	80	63

1st September, 1944 (Cont.)

Air Sea Rescue

	U.E.	Strength	Available
<u>Bircham Newton</u> No. 279 - Hudson III, IIIA and VI } Detachment in Iceland	20	17	8
<u>Strubby</u> No. 280 - Warwick I	20	20	8
<u>Tiree</u> No. 281 - Warwick I Detachments at Wick, Leuchars, Thornaby } and Great Orton	20	20	8
<u>Davidstow Moor</u> No. 282 - Warwick I	20	18	6
<u>Azores - Lagens</u> No. 269 - Hudson, Walrus, Spitfire, } Martlet, Anson Combined A.S.R. and meteorological }	18	16	7
Total A.S.R. - 5 Squadrons	98	91	37

Meteorological

<u>Aldergrove</u> No. 1402 Flight - Spit.VI and Gladiator	8	8	6
<u>Tiree</u> No. 518 - Halifax V	22	20	9
<u>Wick</u> No. 519 - Hudson, Ventura V, Spit.VI	15	16	8
<u>Bircham Newton</u> No. 521 - Hudson, Vent.V, Hurricane IIC, Gladiator	14	14	7
<u>St. Davids</u> No. 517 - Halifax V	13	11	6
<u>Iceland - Reykjavik</u> No. 251 - Hudson III and IIIA	12	10	5
<u>Gibraltar - North Front</u> No. 520 - Halifax V, Gladiator	10	5	3
Total Meteorological - 6 Sqdns. + 1 Flight	94	84	44

## Summary of Coastal Command for 1st September, 1944

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	86	82	57	4 R.A.F. + 2 F.A.A.
No. 16	198	191	125	9 R.A.F. + 2 F.A.A.
No. 18	123	136	66	8½ R.A.F. + 1 F.A.A.
No. 19	263	278	185	14 R.A.F. + 3½ U.S.N.
Iceland	15	10	5	1 R.A.F.
Gibraltar	36	33	22	1 R.A.F. + 1 S.A.A.F.
Azores	20	21	17	1 R.A.F.
Coastal Command Battle Line	741	751	477	39½ R.A.F. + 5 F.A.A. + 3½ U.S.N. = 48
Photo-Recce	80	80	63	4 Squadrons
A.S.R.	98	91	37	5 Squadrons
Meteorological	94	84	44	6½ Squadrons

## Distribution as between A/U and Anti-shipping

Group	Anti - U-boat				Anti - shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 422, 423 811, 850 6 Squadrons	86	82	57	None	-	-	-
No. 16	None	-	-	-	119, 143, 144, 404 236, 254, 455, 489 524, 819, 855 11 Squadrons	198	191	125
No. 18	407, 58, 86, 311 206, 210, 330, 842 half 333, half 1693 9 Squadrons	117	130	63	half 333 ½ Squadron ↓ ↓	6	6	3
No. 19	502, 53, 224, 547 172, 304, 612, 10 201, 228, 461, 179 103, 105, 110 half 114 15½ Squadrons	219	238	160	235, 248  2 Squadrons	44	40	25
Iceland	162 1 Squadron	15	10	5	None	-	-	-
Gibraltar	202, 22 2 Squadrons	36	33	22	None	-	-	-
Azores	220 1 Squadron	20	21	17	None	-	-	-
Battle Line	34½ Squadrons	493	514	324	13½ Squadrons	248	237	153

Order of Battle - Strength and Availability  
1st November, 1944

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V	Mk.V	15	16	9
No. 120 - L/L Lib. V.	Mk.VA	15	13	8
<u>Benbecula</u>				
No. 304 Pole - L/L Well. XIV	Mk.VI	15	16	5
No. 842 F.A.A. - Swordfish	Mk.XI	12	12	5
<u>Castle Archdale</u>				
No. 202 - L/L Cat.IVA	Mk.VIIIA	16	15	10
No. 422 R.C.A.F. - Sund. III	Mk.IIIC	12	12	5
No. 423 R.C.A.F. - Sund. III	Mk.IIIC	12	12	8
<u>Limavady</u>				
No. 172 - L/L Well. XIV	Mk.VI	15	13	8
No. 612 - L/L Well. XIV	Mk.VIA	15	16	7
No. 850 F.A.A. - Avenger	Mk.IX	6	6	4
No. 825 F.A.A. - Swordfish	Mk.XI	12	12	8
Total in No. 15 Group - 8 R.A.F. + 3 F.A.A. Sqdns		145	143	77

No. 16 Group

<u>Bircham Newton</u>				
No. 119 Albacores	Mk.II	15	18	8
No. 819 F.A.A. - Swordfish	Mk.XI	16	16	3
<u>Langham</u>				
Detachment of No. 524 - Well.XIII	Mk.II	11	11	6
No. 827 F.A.A. - Barracuda	Mk.IIM	16	17	11
<u>North Coates</u>				
No. 236 - B/ftr.X - R.P.	Mk.II	20	20	18
No. 254 - B/ftr.X - Torp.	Mk.II	20	19	15
Total in No. 16 Group - 3½ R.A.F. + 2 F.A.A. Sqdns		98	101	61

1st November, 1944 (Cont.)

## No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 235 - Mosq.VI - cannon	None	20	20	12
No. 248 { Mosq.VI - cannon	None	16	14	8
{ Mosq.XVIII - Tsetse 6 pdr.		8	7	4
No. 333 Norge Flight - Mosq.VI - cannon	None	6	6	3
No. 143 - Rearming from B/ftrs. to Mosq. VI	-	(20)	(9)	(Nil)
<u>Fraserburgh</u>				
No. 838 F.A.A. - Swordfish	Mk.XI	12	12	10
<u>Dallachy</u>				
No. 144 - B/ftr.X - R.P.	Mk.II	20	21	16
No. 404 R.C.A.F. - B/ftr.X - R.P.	Mk.II	20	20	14
No. 455 R.A.A.F. - B/ftr.X - R.P.	Mk.II	20	20	10
No. 489 R.N.Z.A.F. - B/ftr.X - torp.	Mk.II	20	18	7
Detachment No. 524 - Well.XIII	Mk.II	4	4	4
<u>Leuchars</u>				
No. 206 - Lib.VI	Mk.VA	15	15	2
No. 547 - Lib.VI	Mk.VA	15	13	5
<u>Milltown</u>				
No. 224 - L/L Lib.VI	Mk.VA	15	15	6
<u>Stornoway</u>				
No. 58 - Halifax II	Mk.IIIB	15	16	9
No. 502 - Halifax II	Mk.IIIB	15	14	8
<u>Sullom Voe</u>				
No. 210 - L/L Cat.IVA	Mk.VIIIA	12	8	3
No. 330 Norge - Sund.III	Mk.IIIC	9	9	5
<u>Tain</u>				
No. 86 - V.L.R. Lib.V	Mk.VA	15	16	3
No. 311 Czech - R.P. Lib.V	Mk.V	15	14	4
<u>Wick</u>				
No. 407 R.C.A.F. - L/L Well.XIV	Mk.VI	15	16	11
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IB	Mk.II	3	3	2
<u>Sumburgh</u>				
No. 1693 Flight - Anson	None	6	7	5
Total in No. 18 Group - 18 R.A.F. + 1 F.A.A.	Sqdns	296	288	151

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## APPENDIX I

1st November, 1944 (Cont.)

## No. 19 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 36 - L/L Well. XIV	Mk. IIIB	15	16	10
(No. 14 - L/L Well. XIV - Non-op.)		Just arrived from the Med.		
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk. VA	15	15	12
No. 105 - U.S.N. Lib. PB4Y	Mk. X	15	15	12
No. 110 - U.S.N. Lib. PB4Y	Mk. VA	15	15	11
Detachment No. 114 - U.S.N. S/L Lib. PB4Y	Mk. VA	6	6	5
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk. II & III	12	15	11
<u>Pembroke Dock</u>				
No. 201 - Sund. III	Mk. IIIC	12	12	10
No. 228 - Sund. III	Mk. IIIC	12	12	10
No. 461 R.A.A.F. - Sund. III	Mk. IIIC	12	11	9
<u>St. Eval</u>				
No. 179 - L/L Well. XIV rearming to Warwicks	Mk. IIIB	15	9	3
Total in No. 19 Group - 6 R.A.F. + $3\frac{1}{2}$ U.S.N. Sqdns		129	126	93

## Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib. VI	Mk. VA	15	14	11
No. 162 R.C.A.F. - Cansos (Cat. III)	Mk. II	15	13	5
Total in Iceland - 2 R.A.F. Squadrons		30	27	16

## Gibraltar

<u>North Front</u>				
No. 22 S.A.A.F. - Ventura V	Mk. VIII	20	17	15
Total in Gibraltar - 1 S.A.A.F. Squadron		20	17	15

## No. 247 Group - Azores

<u>Lagens</u>				
No. 220 - Fortress II	Mk. II	15	11	7
Detachment No. 114 - U.S.N. S/L Lib. PB4Y	Mk. VA	6	6	5
Total in the Azores - 1 R.A.F. + $\frac{1}{2}$ U.S.N. Sqdns		21	17	12

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APPENDIX I

1st November, 1944 (Cont.)

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 540 - Mosq. IX and XVI	20	19	13
No. 541 - Spitfire X, XI and XIX	20	21	15
No. 542 - Spitfire X, XI and XIX	20	21	19
No. 544 - Mosq. IX and XVI	20	21	11
Total P.R. - 4 Squadrons	80	82	58

Air Sea Rescue

<u>Bircham Newton</u>			
No. 279 - Hudsons and Warwicks	20	19	8
<u>Beccles</u>			
No. 280 - Warwicks	24	22	9
<u>Tiree</u>			
No. 281 - Warwicks	12	20	10
<u>St. Eval</u>			
No. 282 - Warwicks	10	18	7
<u>Azores - Lagens</u>			
Combined } No. 269 - Warwicks, Hudsons, Walrus, A.S.R. and } Spitfires, Martlet, Anson Met. }	18	16	4
Total Air Sea Rescue - 5 Squadrons	84	95	38

Meteorological

<u>Aldergrove</u>			
No. 1402 Flight - Spitfires, Gladiators	8	17	10
<u>Tiree</u>			
No. 518 - Halifax V	22	20	10
<u>Langham</u>			
No. 521 - Hurricanes, Venturas, Gladiators	9	15	4
<u>Skitten</u>			
No. 519 - Spitfires, Venturas	15	14	7
<u>Brawdy</u>			
No. 517 - Halifax V	13	12	6
<u>Iceland - Reykjavik</u>			
No. 251 - Hudsons	12	10	5
<u>Gibraltar - North Front</u>			
No. 520 - Halifax V, Hurricanes	10	9	3
Total Meteorological - 6 Squadrons + 1 Flight	89	97	45

## Summary of Coastal Command for 1st November, 1944

Group	U.E.	Strength	Available	Number of Squadrons	
No. 15	145	143	77	8	R.A.F. + 3 F.A.A.
No. 16	98	101	61	3 $\frac{1}{2}$	R.A.F. + 2 F.A.A.
No. 18	296	288	151	18	R.A.F. + 1 F.A.A.
No. 19	129	126	93	6	R.A.F. + 3 $\frac{1}{2}$ U.S.N.
Iceland	30	27	16	2	R.A.F.
Gibraltar	20	17	15	1	S.A.A.F.
Azores	21	17	12	1	R.A.F. + $\frac{1}{2}$ U.S.N.
Coastal Command Battle Line	739	719	425	39 $\frac{1}{2}$	R.A.F. + 6 F.A.A. + 4 U.S.N. = 49 $\frac{1}{2}$
Photo-Recce	80	82	58	4	Squadrons
Air Sea Rescue	84	95	38	5	Squadrons
Meteorological	89	97	45	6	Squadrons + 1 Flight

## Distribution as between A/U and Anti-shipping

Group	Anti - U-boat				Anti - shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 304, 202 422, 423, 172, 612 842, 825, 850 11 Squadrons	145	143	77	None	-	-	-
No. 16	None	-	-	-	119, 236, 254 half 524, 819, 827 5 $\frac{1}{2}$ Squadrons	98	101	61
No. 18	206, 547, 224 210, 330, 86, 311 407, half 333 half 1693, 838 10 Squadrons	132	128	56	144, 404, 455, 489 58, 502, 235, 248 half 524, half 333 9 Squadrons	164	160	95
No. 19	10, 36, 179, 201 228, 461, 103, 105 110, half 114 9 $\frac{1}{2}$ Squadrons	129	126	93	None	-	-	-
Iceland	53, 162 2 Squadrons	30	27	16	None	-	-	-
Gibraltar	22, 1 Squadron	20	17	15	None	-	-	-
Azores	220, half 114 1 $\frac{1}{2}$ Squadrons	21	17	12	None	-	-	-
Battle Line	35 Squadrons	477	458	269	14 $\frac{1}{2}$ Squadrons	262	261	156



Order of Battle, Strength and Availability 1st January, 1945Ref. C.C. ConspectusNo. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V	Mk.V	15	20	12
No. 120 - L/L Lib. V and VIII	Mk.VA fitting X	15	23	11
<u>Benbecula</u>				
No. 304 Pole - L/L Well. XIV	Mk.VI	15	15	7
<u>Castle Archdale</u>				
No. 201 - Sund. III	Mk. IIIC	12	12	7
No. 423 R.C.A.F. - Sund. III	Mk. IIIC	12	15	7
No. 202 - L/L Cat. IVA	Mk. VIIIA	16	12	10
<u>Limavady</u>				
No. 172 - L/L Well. XIV	Mk.VI	15	14	7
Total in No. 15 Group - 7 R.A.F. Squadrons		100	111	61

No. 16 Group

<u>Thorney Island</u>						
under	{	No. 838 F.A.A. Swordfish	Mk.XI	12	12	9
No. 19 Grp. control		No. 842 F.A.A. Swordfish	Mk.XI	12	12	11
<u>North Coates</u>						
No. 236 - B/ftr.X - R.P.		Mk.II	20	20	16	
No. 254 - B/ftr.X - Torp.		fitting	20	22	16	
		Mk.XII				
<u>Langham</u>						
No. 612 - Well. XIV		Mk.VIA	15	15	7	
No. 524 - Well. XIII		Mk.II	20	21	5	
		Fitting				
		IIIB				
<u>Bircham Newton</u>						
Detachment No. 119 - Albacore		Mk.II	7	10	8	
Detachment No. 819 F.A.A. - Swordfish		Mk.XI	6	6	6	
<u>Knooke - N. Belgium</u>						
Detachment No. 119 - Albacores		Mk.II	8	8	6	
Detachment No. 819 F.A.A. - Swordfish		Mk.XI	10	10	8	
Total in No. 16 Group - 5 R.A.F. + 3 F.A.A. Squadrons			130	136	92	

1st January, 1945 (Cont.)

No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 143 - Mosq.VI - R.P.	None	20	19	16
No. 235 - Mosq.VI - R.P.	None	20	22	9
No. 248 { Mosq.VI - R.P.	None	16	13	5
{ Mosq.XVIII - Tsetse 6 Pdr.	8	6	2	
No. 333 Norge Flight - Mosq.VI	None	10	9	6
<u>Dallachy</u>				
No. 144 - B/ftr.X - R.P.	Fitting Mk.XII	20	21	13
No. 404 R.C.A.F. - B/ftr.X - R.P.	Mk.II	20	18	10
No. 455 R.A.A.F. B/Ftr.X - R.P.	Mk.II	20	19	10
No. 489 R.N.Z.A.F. B/Ftr.X - Torp.	Fitting Mk.XII	20	20	9
<u>Leuchars</u>				
No. 206 - L/L Lib. VI	Mk.VA	15	16	7
No. 547 - L/L Lib. VI	Mk.VA	15	15	7
<u>Milltown</u>				
No. 224 - L/L Lib. VI and VIII	Mk.VA & X	15	17	5 (re-equip- ping)
<u>Stornoway</u>				
No. 58 - Halifax II	Mk.IIIB	15	14	9
No. 502 - Halifax II	Mk.IIIB	15	12	4
<u>Sullom Voe</u>				
No. 210 - L/L Cat.IVA	Mk.VIIIA	12	10	3
No. 330 Norge - Sund.III	Mk.IIIC	9	9	2
<u>Tain</u>				
No. 86 - V.L.R. Lib. V	Mk.VA	15	15	4
No. 311 - Czech Lib. V - R.P.	Mk.V	15	15	4
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IB	Mk.II	3	2	1
<u>Sumburgh</u>				
No. 1693 Flight - Anson	None	6	8	5
Total in No. 18 Group - 17 $\frac{1}{2}$ R.A.F. Squadrons		289	280	131

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## APPENDIX I

1st January, 1945 (Cont.)

## No. 19 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 36 - L/L Well. XIV	Mk. IIIB fitting VI	15	16	6
No. 407 R.C.A.F. L/L Well. XIV	Mk. VI fitting VIA	15	19	6
No. 14 - L/L Well. XIV (non-op)	still under training			
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk. VA	15	13	11
No. 105 - U.S.N. Lib. PB4Y	Mk. X	15	20	13
No. 110 - U.S.N. Lib. PB4Y	Mk. VA	15	15	15
Detachment No. 114 - U.S.N. S/L Lib. PB4Y	Mk. VA	4	4	2
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk. IIIC	12	14	12
<u>Pembroke Dock</u>				
No. 228 - Sund. III	Mk. IIIC	12	11	10
No. 422 R.C.A.F. - Sund. III	Mk. IIIC	12	12	8
No. 461 - R.A.A.F. - Sund. III	Mk. IIIC	12	12	7
<u>St. Eval</u>				
No. 179 - L/L Warwick V	Mk. IIIA fitting IIIB	15	11	2
Total in No. 19 Group - 7 R.A.F. + 3½ U.S.N. Sqdns		142	147	92

## Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib. VI and VIII	Mk. VA	15	15	5 (re-equip- ping)
No. 162 R.C.A.F. - Cansos (Cat. III)	Mk. II	15	16	10
Total in Iceland - 2 R.A.F. Squadrons		30	31	15

## Gibraltar

<u>North Front</u>				
No. 22 S.A.A.F. - Ventura V	Mk. VIII	20	16	14
Total at Gibraltar - 1 S.A.A.F. Squadron		20	16	14

## No. 247 Group - Azores

<u>Lagens</u>				
No. 220 - (Fortress II) (Lib. VI)	Mk. II Mk. VA	15	17	6 (L/L Train- ing)
Detachment No. 114 - U.S.N. S/L Lib. PB4Y	Mk. VA	9	9	5
Total in the Azores - 1 R.A.F. + ½ U.S.N. Sqdns		24	26	11

1st January, 1945 (Cont.)

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 540 - Mosq. VI, IX, XVI and 32	20	21	10
No. 541 - Spits. X, XI and XIX	20	18	8
Detachments at St. Eval and Gib.			
No. 542 - Spits. X, XI and XIX	20	18	12
No. 544 - Mosq. VI, IX, XVI and 32	20	22	11
Total P.R. - 4 Squadrons	80	79	41

Air Sea Rescue

<u>Tiree</u>			
No. 281 - Warwick	18	12	5
Detachment at Great Orton			
<u>Beccles</u>			
No. 280 - Warwick	24	22	7
<u>Banff</u>			
No. 279 - Warwick, Hudson	28	31	6
Detachment at Thornaby and Wick			
<u>St. Eval</u>			
No. 282 - Warwick	10	10	3
<u>Azores - Lagens</u>			
No. 269 - Warwick, Walrus, Martlet, Spitfire, Anson	18	16	6
Combined A.S.R. and meteorological			
Total A.S.R. - 5 Squadrons	98	91	27

Meteorological

<u>Tiree</u>			
No. 518 - Halifax V	22	21	8
<u>Ballyhalbert</u>			
No. 1402 Flight - Spitfire, Gladiator	9	18	11
<u>Langham</u>			
No. 521 - Hudson, Gladiator	9	13	2
<u>Skitten</u>			
No. 519 - Fortress, Hudson, Spitfire	15	16	4
<u>Brawdy</u>			
No. 517 - Halifax V	13	13	7
<u>Iceland - Reykjavik</u>			
No. 251 - Hudson	12	14	4
<u>Gibraltar - North Front</u>			
No. 520 - Halifax, Hudson, Hurricane	13	13	2
Total Meteorological - 6 $\frac{1}{2}$ Squadrons	93	108	38

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APPENDIX I

Summary of Coastal Command for 1st January, 1945

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	100	111	61	7 R.A.F.
No. 16	130	136	92	5 R.A.F. + 3 F.A.A.
No. 18	289	280	131	17½ R.A.F.
No. 19	142	147	92	7 R.A.F. + 3½ U.S.N.
Iceland	30	31	15	2 R.A.F.
Gibraltar	20	16	14	1 S.A.A.F.
Azores	24	26	11	1 R.A.F. + ½ U.S.N.
Coastal Command Battle Line	735	747	416	40½ R.A.F. + 3 F.A.A. + 4 U.S.N. = 47½
Photo Recce	80	79	41	4 Squadrons
A.S.R.	98	91	27	5 Squadrons
Meteorological	93	108	38	6½ Squadrons

Distribution as between A/U and Anti-shipping

Group	Anti - U-boat				Anti - shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 304, 201 202, 423, 172 7 Squadrons	100	111	61	None	-	-	-
No. 16	838, 842 2 Squadrons	24	24	20	119, 612, 524 236, 254, 819 6 Squadrons	106	112	72
No. 18	206, 547, 224, 210 330, 86, 311 half 333, half 1693 8 Squadrons	105	107	38	143, 235, 248, 144 404, 455, 489, 58 502, half 333 9½ Squadrons	184	173	93
No. 19	36, 407, 10, 228 422, 461, 179, 103 105, 110, half 114 10½ Squadrons	142	147	92	None	-	-	-
Iceland	53, 162 2 Squadrons	30	31	15	None	-	-	-
Gibraltar	22 1 Squadron	20	16	14	None	-	-	-
Azores	220, half 114 1½ Squadrons	24	26	11	None	-	-	-
Battle Line	32 Squadrons	445	462	251	15½ Squadrons	290	285	165

Order of Battle, Strength and Availability  
1st February, 1945

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V	Mk.V	15	19	11
No. 120 - L/L Lib. VIII	Mk.X	15	15	9
<u>Benbecula</u>				
Detachment No. 304 Pole - L/L Well.XIV	Mk.VI	9	9	4
<u>Castle Archdale</u>				
No. 201 - Sund. III	Mk.IIIC	12	9	3
No. 423 R.C.A.F. - Sund. III	Mk.IIIC	12	11	3
No. 202 - L/L Cat. IVA	Mk.VIIIA	16	16	3
<u>Limavady</u>				
No. 172 - L/L Well.XIV	Mk.VI	15	15	7
Detachment No. 304 Pole - L/L Well. XIV	Mk.VI	6	6	-
<u>Mullaghmore</u>				
No. 815 F.A.A. - Barracuda	Mk.XIIIA	12	12	3
No. 1771 F.A.A. - Firefly	None	12	11	10
Total in No. 15 Group - 7 R.A.F. + 2 F.A.A. Squadrons		124	123	53

No. 16 Group

<u>Thorney Island</u>				
under { No. 810 F.A.A. - Barracuda	Mk.XIIIA	12	12	8
No. 19 Grp. { No. 822 F.A.A. - Barracuda	Mk.XIIIA	12	12	8
control { No. 838 F.A.A. - Swordfish	Mk.XI	12	11	9
<u>Langham</u>				
No. 612 - Well.XIV	Mk.VIA	15	15	5
Detachment No. 524 - Well.XIII and XIV	Mk.II & IIIA	14	13	4
<u>North Coates</u>				
No. 236 - B/ftr. X - R.P.	Mk.II	20	18	12
No. 254 - B/ftr. X - Torp.	Fitting Mk.XII	20	18	16
<u>Bircham Newton</u>				
Detachment No. 119 - Albacore	Mk.II	7	10	3
<u>Knocke - N. Belgium</u>				
No. 819 F.A.A. - Swordfish	Mk.XI	16	16	9
Detachment No. 119 - Albacore & Swordfish	Mk.II & XI	8	23	11
Total in No. 16 Group - 4½ R.A.F. + 4 F.A.A. Squadrons		136	148	85

1st February, 1945 (Cont.)

## No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 143 - Mosq. VI - R.P.	None	20	15	9
No. 235 - Mosq. VI - R.P.	None	20	20	8
No. 248 { Mosq. VI - R.P.	None	16	18	6
{ Mosq.XVIII - Tsetse 6 Pdr.	8	6		-
No. 333 Norge Flight - Mosq. VI	None	10	9	5
<u>Dallachy</u>				
No. 144 - B/ftr. X - R.P.	fitting MK.XII	20	16	8
No. 408 <sup>4</sup> R.C.A.F. B/ftr. X - R.P.	Mk.II	20	18	13
No. 455 R.A.A.F. B/ftr. X - R.P.	Mk.II	20	18	8
No. 489 R.N.Z.A.F. - B/ftr.X - Torp.	fitting Mk.XII	20	18	7
Detachment No. 524 - Well.XIII and XIV	Mk.II and IIIA	6	6	2
<u>Leuchars</u>				
No. 206 - L/L Lib. VI	Mk.VA	15	14	9
No. 547 - L/L Lib. VI	Mk.VA	15	16	9
<u>Milltown</u>				
No. 224 - L/L Lib. VI and VIII	Mk.X	15	16	5
<u>Stornoway</u>				
No. 58 - Halifax II	Mk.IIIB	15	11	8
No. 502 - Halifax II	Mk.IIIB	15	13	9
<u>Sullom Voe</u>				
No. 210 - L/L Cat. IVA	Mk.VIIIA	12	12	5
No. 330 Norge - Sund. III	Mk.IIIC	9	7	5
<u>Tain</u>				
No. 86 - V.L.R. Lib.V and VIII	Mk.VA & X	15	19	4
No. 311 Czech - Lib.V - R.P.	Mk.V & VA	15	16	6
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IVA	Mk.VIIIA	3	3	-
<u>Sumburgh</u>				
No. 1693 Flight - Anson	None	6	7	6
Total in No. 18 Group - 18 R.A.F. Squadrons		295	278	132

1st February, 1945 (Cont.)

No. 19 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 14 - L/L Well.XIV	Mk.VI	15	17	2
No. 36 - L/L Well.XIV	Mk.VI	15	16	11
No. 407 R.C.A.F. - L/L Well.XIV	Mk.VIA	15	15	11
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. FB4Y	Mk.VA	15	14	10
No. 105 - U.S.N. Lib. FB4Y	Mk.X	15	16	12
No. 110 - U.S.N. Lib. FB4Y	Mk.VA	15	15	14
Detachment No. 114 - U.S.N. S/L Lib.PB4Y	Mk.VA	6	5	3
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk.IIIC	12	12	7
<u>Pembroke Dock</u>				
No. 228 - Sund. III	Mk.IIIC	12	9	7
No. 422 R.C.A.F. - Sund. III	Mk.IIIC	12	10	5
No. 461 - R.A.A.F. - Sund. III	Mk.IIIC	12	8	8
<u>St. Eval</u>				
No. 179 - L/L Warwick V	Mk.IIIB	15	10	1
<u>Upottery</u>				
No. 112 - U.S.N. Lib. PB4Y	Mk.VA & X	15	14	14
Detachment No. 63 - U.S.N. Cat. - M.A.D. (No. 107 - U.S.N. Lib. non-op.)	Mk.XIIIA	3	3	1
		under training		
Total in No. 19 Group - 8 R.A.F. + 5 U.S.N. Squadrons		177	164	106

Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib.VI and VIII	Mk.VA & X	15	15	2
No. 162 R.C.A.F. - Cansos (Cat.III)	Mk.II	15	15	5
Total in Iceland - 2 R.A.F. Squadrons		30	30	7

Gibraltar

<u>North Front</u>				
No. 458 R.A.A.F. - L/L Well.XIV	Mk.VI	15	13	10
No. 22 S.A.A.F. - Ventura V	Mk.VIII	20	15	10
Total at Gibraltar - 1 R.A.F. + 1 S.A.A.F. Squadron		35	28	20

No. 247 Group - Azores

<u>Lagens</u>				
No. 220 - L/L Libs. VI	Mk.VA	15	10	3
Detachment No. 114 - U.S.N. S/L Lib.PB4Y	Mk.VA	6	8	4
Total in the Azores - 1 R.A.F. + $\frac{1}{2}$ U.S.N. Squadron		21	18	7



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APPENDIX I

1st February, 1945 (Cont.)

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 540 - Mosq. VI, IX, XVI and 32	20	24	11
No. 541 - Spits. X, XI, XIX, Mustang III	23	23	18
No. 542 - Spits. X, XI and XIX	20	20	16
No. 544 - Mosq. VI, IX, XVI and 32	20	23	12
Total P.R. - 4 Squadrons	83	90	57

Air Sea Rescue

<u>Tiree</u>			
No. 281 - Warwick, Sea Otter Detachment at Mullaghmore	18	11	4
<u>Beccles</u>			
No. 280 Warwick Detachments at Thornaby and Langham	24	24	6
<u>Banff</u>			
No. 279 - Warwick Detachments at Wick and Thornaby	20	18	6
<u>St. Eval</u>			
No. 282 - Warwick	10	10	6
<u>Azores - Lagens</u>			
No. 269 - Warwick, Walrus, Martlet Spitfire, Anson Combined A.S.R. and meteorological	18	18	9
Total A.S.R. - 5 Squadrons	90	81	31

Meteorological

<u>Tiree</u>			
No. 518 - Halifax V	22	21	6
<u>Ballyhalbert</u>			
No. 1402 Flight - Spitfire, Gladiator	9	15	9
<u>Langham</u>			
No. 521 - Hudson, Fortress, Gladiator	9	10	6
<u>Skitten</u>			
No. 519 - Hudson, Fortress, Spitfire	15	17	3
<u>Brawdy</u>			
No. 517 - Halifax V	13	12	2
<u>Iceland - Reykjavik</u>			
No. 251 - Hudson	12	12	7
<u>Gibraltar - North Front</u>			
No. 520 - Halifax, Hudson, Hurricane	13	16	6
Total Meteorological - 6½ Squadrons	93	103	39

Summary of Coastal Command for 1st February, 1945

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	124	123	53	7 R.A.F. + 2 F.A.A.
No. 16	136	148	85	4 $\frac{1}{2}$ R.A.F. + 4 F.A.A.
No. 18	295	278	132	18 R.A.F.
No. 19	177	164	106	8 R.A.F. + 5 U.S.N.
Iceland	30	30	7	2 R.A.F.
Gibraltar	35	28	20	1 R.A.F. and 1 S.A.A.F.
Azores	21	18	7	1 R.A.F. + $\frac{1}{2}$ U.S.N.
Coastal Command Battle Line	818	789	410	42 $\frac{1}{2}$ R.A.F. + 6 F.A.A. + 5 $\frac{1}{2}$ U.S.N. = 54
Photo-Recce	83	90	57	4 Squadrons
A.S.R.	90	81	31	5 Squadrons
Meteorological	93	103	39	6 $\frac{1}{2}$ Squadrons

Distribution as between A/U and Anti-shipping

Group	Anti U-boat				Anti-shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 304, 201 202, 423, 172, 815, 1771. 9 Squadrons	124	123	53	None	-	-	-
No. 16	810, 822, 838 3 Squadrons	36	35	25	119, 612, 236, 254 819, half 524 5 $\frac{1}{2}$ Squadrons	100	113	60
No. 18	206, 547, 224, 210 330, 86, 311, half 333, half 1693 8 Squadrons	105	110	49	143, 235, 248, 144 404, 455, 489, 58 502, half 524 half 333 10 Squadrons	190	168	83
No. 19	14, 36, 407, 228, 10, 422, 461, 179 103, 105, 110, 112 half 63, half 114 13 Squadrons	177	164	106	None	-	-	-
Iceland	53, 162 2 Squadrons	30	30	7	None	-	-	-
Gibraltar	22, 458 2 Squadrons	35	28	20	None	-	-	-
Azores	220, half 114 1 $\frac{1}{2}$ Squadrons	21	18	7	None	-	-	-
Battle Line	38 $\frac{1}{2}$ Squadrons	528	508	267	15 $\frac{1}{2}$ Squadrons	290	281	143

Order of Battle, Strength and Availability  
1st March, 1945

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V	Mk.VA	15	16	11
No. 120 - L/L Lib. VIII	Mk.X	15	15	10
<u>Benbecula</u>				
Detachment No. 304 Pole - L/L Well. XIV	Mk.VI	9	9	6
<u>Castle Archdale</u>				
No. 201 - Sund. III	Mk.IIIC	12	11	4
No. 423 R.C.A.F. - Sund. III	Mk.IIIC	12	12	4
No. 202 - L/L Cat. IVA	Mk.VIIIA	16	15	4
<u>Limavady</u>				
No. 172 - L/L Well.XIV	Mk.VI	15	15	6
Detachment No. 303 Pole - L/L Well.XIV	Mk.VI	6	6	3
<u>Mullaghmore</u>				
No. 815 F.A.A. - Barracuda	Mk.XIIIA	12	12	5
Total in No. 15 Group - 7 R.A.F. + 1 F.A.A. Squadrons		112	111	53

No. 16 Group

<u>Thorney Island</u>					
under	{ No. 810 F.A.A. Barracuda No. 822 F.A.A. - Barracuda control }	Mk.XIIIA	12	14	10
No. 19 Grp.		Mk.XIIIA	12	12	9
<u>Langham</u>					
No. 612 - Well.XIV		Mk.VIA	15	12	8
Detachment No. 524 - Well.XIV		Mk.IIIB	16	16	5
<u>North Coates</u>					
No. 236 - B/ftr. X - R.P.		fitting	20	18	10
		Mk.XII			
No. 254 - B/ftr. X - Torp		Mk.XII	20	24	15
<u>Bircham Newton</u>					
No. 819 F.A.A. - Swordfish		Mk.XI	9	9	9
<u>Knocke - N. Belgium</u>					
No. 119 - Swordfish		Mk.XI	15	16	13
Total in No. 16 Group - 4½ R.A.F. + 3 F.A.A. Squadrons			119	121	79

1st March, 1945 (Cont.)

## No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 143 - Mosq.VI - R.P.	None	20	20	16
No. 235 - Mosq.VI - R.P.	None	20	20	14
No. 248 { Mosq.VI - R.P.	18	18	13	
{ Mosq.XVIII - Tsetse 6 pdr.	None	6	6	-
No. 333 Norge Flight - Mosq. VI - R.P.	None	10	9	4
<u>Dallachy</u>				
No. 144 - B/ftr.X - R.P.	Mk.II fitting XII	20	14	7
No. 404 R.C.A.F. - B/ftr.X - R.P.	Mk.II	20	20	10
No. 455 R.A.A.F. - B/ftr.X - R.P.	Mk.II	20	14	7
No. 489 R.N.Z.A.F. B/ftr.X - Torp.	Mk.XII	20	22	5
Detachment No. 524 - Well.XIV	Mk.IIIB	4	5	4
<u>Leuchars</u>				
No. 206 L/L Lib. VI and VIII	Mk.VA & X	15	22	5
No. 547 - L/L Lib. VI	Mk.VA	15	16	9
<u>Milltown</u>				
No. 224 - L/L Lib.VIII	Mk.X	15	14	5
<u>Stornoway</u>				
No. 58 - Halifax II	Mk.IIIB	15	10	6
No. 502 - Halifax II	Mk.IIIB	15	15	7
<u>Sullom Voe</u>				
No. 210 - L/L Cat. IVA	Mk.VIIIA	12	12	5
No. 330 - Norge - Sund. III	Mk.IIIC	9	9	4
<u>Tain</u>				
No. 86 - L/L Lib. VIII	Mk.X	15	15	5
No. 311 Czech - L/L Lib. V and VI	Mk.V & VA	15	18	2
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IVA	Mk.VIIIA	3	2	1
<u>Sumburgh</u>				
No. 1693 Flight - Anson	None	6	8	6
Total in No. 18 Group - 18 R.A.F. Squadrons		293	289	135

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APPENDIX I

1st March, 1945 (Cont.)

No. 19 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 14 - L/L Well.XIV	Mk.VI	15	16	7
No. 36 - L/L Well.XIV	Mk.VI	15	16	8
No. 407 R.C.A.F. - L/L Well.XIV	Mk.VIA	15	16	12
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk.VA	15	20	11
No. 105 - U.S.N. Lib. PB4Y	Mk.X	15	15	13
No. 110 - U.S.N. Lib. PB4Y	Mk.VA & X	15	16	13
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk.IIIC	12	11	9
<u>Pembroke Dock</u>				
No. 228 - Sund. III	Mk.IIIC, VIC	12	10	4
No. 422 R.C.A.F. - Sund. III	Mk.IIIC	12	9	7
No. 461 - R.A.A.F. - Sund. III	Mk.IIIC, VIC	12	9	7
<u>St. Eval</u>				
No. 179 - L/L Warwick V	Mk.IIIB	15	12	2
<u>Upottery</u>				
No. 107 - U.S.N. Lib. PB4Y	Mk.VA	15	11	5
No. 112 - U.S.N. Lib. PB4Y	Mk.VA & X	15	15	13
Detachment No. 63 - U.S.N. Cat. - M.A.D.	Mk.XIIIA	4	4	3
Total in No. 19 Group - 8 R.A.F. + 5½ U.S.N. Squadrons		187	180	114

Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib.VI and VIII	Mk.VA and X	15	21	8
No. 162 R.C.A.F. - Cansos (Cat. III)	Mk.II	15	14	7
Total in Iceland - 2 R.A.F. Squadrons		30	35	15

Gibraltar

<u>North Front</u>				
No. 458 R.A.A.F. - L/L Well.XIV	Mk.VI	15	16	11
No. 22 S.A.A.F. - Ventura V	Mk.VIII	20	17	12
Total at Gibraltar - 1 R.A.F. + 1 S.A.A.F. Squadron		35	33	23

No. 247 Group - Azores

<u>Lagens</u>				
No. 220 L/L Lib.VI	Mk.VA	15	12	3
No. 114 - U.S.N. S/L Lib. PB4Y	Mk.VA	12	12	8
Total in the Azores - 1 R.A.F. + 1 U.S.N. Squadron		27	24	11

1st March, 1945 (Cont.)

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 540 - Mosq. VI, IX and XVI	20	21	18
No. 541 - Spit. X, XI, XIX, Mustang III	23	23	13
No. 542 - Spit. X, XI and XIX	20	21	15
No. 544 - Mosq. VI, IX and XVI and 32 Detachment at Leuchars	20	23	16
Total P.R. - 4 Squadrons	83	88	62

Air Sea Rescue

<u>Tiree</u>			
No. 281 - Warwick, Sea Otter Detachment at Mullaghmore	18	18	3
<u>Thorney Island</u>			
No. 278 - Walrus, Sea Otter	16	13	2
<u>Beccles</u>			
No. 280 - Warwick Detachment at Thornaby	24	24	6
<u>Banff</u>			
No. 279 - Warwick Detachments at Wick and Thornaby	28	32	13
<u>St. Eval</u>			
No. 282 - Warwick, Sea Otter	18	14	2
<u>Azores - Lagens</u>			
No. 269 - Warwick, Walrus, Hudson, Martlet, Spitfire, Anson Combined A.S.R. and Meteorological	18	19	5
Total A.S.R. - 6 Squadrons	122	120	31

Meteorological

<u>Tiree</u>			
No. 518 - Halifax III and V	22	24	5
<u>Ballyhalbert</u>			
No. 1402 - Flight - Spitfire, Hurricane, Gladiator	9	11	7
<u>Langham</u>			
No. 521 - Fortress, Hudson, Hurricane	9	12	9
<u>Skitten</u>			
No. 519 - Fortress, Spitfire	15	10	5
<u>Brawdy</u>			
No. 517 - Halifax III and V	13	17	3
<u>Iceland - Reykjavik</u>			
No. 251 - Hudson III and IIIA	13	13	7
<u>Gibraltar - North Front</u>			
No. 520 - Halifax V, Hudson, Hurricane	13	12	5
Total Meteorological - 6½ Squadrons	94	99	41

## Summary of Coastal Command for 1st March 1945

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	112	111	53	7 R.A.F. + 1 F.A.A.
No. 16	119	121	79	4 $\frac{1}{2}$ R.A.F. + 3 F.A.A.
No. 18	293	289	135	18 R.A.F.
No. 19	187	180	114	8 R.A.F. + 5 $\frac{1}{2}$ U.S.N.
Iceland	30	35	15	2 R.A.F.
Gibraltar	35	33	23	1 R.A.F. 1 S.A.A.F.
Azores	27	24	11	1 R.A.F. + 1 U.S.N.
Coastal Command Battle Line	803	793	430	42 $\frac{1}{2}$ R.A.F. + 4 F.A.A. + 6 $\frac{1}{2}$ U.S.N. = 53
Photo-Recce.	83	88	62	4 Squadrons
A.S.R.	122	120	31	6 Squadrons
Meteorological	94	99	41	6 $\frac{1}{2}$ Squadrons

## Distribution as between A/U and Anti-Shipping

Group	Anti U-boat				Anti-shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 304, 201 202, 423, 172, 815 8 Squadrons	112	111	53	None	-	-	-
No. 16	810, 822 2 Squadrons	24	26	19	119, 612, 236, 254 819, half 524 5 $\frac{1}{2}$ Squadrons	95	95	60
No. 18	206, 547, 224, 210 330, 86, 311 half 333, half 1693 8 Squadrons	105	116	42	143, 235, 248, 144 404, 455, 489, 58 502, half 524 half 333 10 Squadrons	188	173	93
No. 19	14, 36, 407, 228 10, 422, 461, 179 103, 105, 107, 110 112, half 63 13 $\frac{1}{2}$ Squadrons	187	180	114	None	-	-	-
Iceland	53, 162 2 Squadrons	30	35	15	None	-	-	-
Gibraltar	22, 458 2 Squadrons	35	33	23	None	-	-	-
Azores	220, 144 2 Squadrons	27	24	11	None	-	-	-
Battle Line	37 $\frac{1}{2}$ Squadrons	520	525	277	15 $\frac{1}{2}$ Squadrons	283	268	153

Order of Battle, Strength and Availability  
1st April 1945

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - V.L.R. Lib. V and VIII	Mk.VA, X	15	15	13
No. 120 - L/L Lib. VIII	Mk.X	15	15	11
<u>Benbecula</u>				
No. 36 - L/L Well.XIV	Mk.VI	15	15	10
<u>Castle Archdale</u>				
No. 201 - Sund. III	Mk.IIIC	12	10	5
No. 423 R.C.A.F. - Sund. III and V	Mk.IIIC	12	13	6
No. 202 - L/L Cat. IVA	Mk.VIIIA	16	16	7
<u>Limavady</u>				
No. 172 - L/L Well. XIV	Mk.VI	15	13	7
Total in No. 15 Group - 7 R.A.F. Squadrons		100	97	59

No. 16 Group

<u>Thorney Island</u>						
No. 19 Grp. control	{	No. 810 F.A.A. - Barracuda	Mk.XIIIA	12	10	10
		No. 822 F.A.A. - Barracuda	Mk.XIIIA	12	11	10
<u>Langham</u>						
No. 612 - Well.XIV		Mk.VIA	15	15	11	
No. 524 - Well.XIV		Mk.IIIA	20	17	9	
<u>North Coates</u>						
No. 236 - B/ftr. X - R.P.		Mk.XII	20	18	14	
No. 254 {	{	B/ftr. X - Torp.	Mk.XII	20	21	11
		Mosq.XVIII - Tsetse 6 pdr.	None	4	4	4
<u>Knocke - N. Belgium</u>						
No. 119 - Swordfish III		Mk.XI	15	15	11	
Total in No. 16 Group- 5R.A.F. + 2 F.A.A. Squadrons			118	111	80	



1st April, 1945 (Cont.)

## No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 143 - Mosq. VI - R.P.	None	20	18	16
No. 235 - Mosq. VI - R.P.	None	20	20	14
No. 248 - Mosq. VI - R.P.	None	20	22	18
No. 333 Norge Flight - Mosq. VI - R.P.	None	10	9	7
<u>Dallachy</u>				
No. 144 - B/ftr. X - R.P.	fitting Mk.XII	20	19	12
No. 455 R.A.A.F. - B/ftr.X - R.P.	fitting Mk.XII	20	22	13
No. 489 R.N.Z.A.F. - B/ftr.X - Torp. (No. 404 R.C.A.F. - re-arming to Mosq.)	Mk.XII	20	20	11
<u>Leuchars</u>				
No. 206 - L/L Lib. VIII	Mk.VA, X	15	15	4
No. 547 - L/L Lib. VI	Mk.VA	15	14	6
<u>Willtown</u>				
No. 224 - L/L Lib. VIII	Mk.X	15	17	8
<u>Stornoway</u>				
No. 58 - Halifax II and III	Mk.IIIB	15	15	6
No. 502 - Halifax II and III	Mk.IIIB	15	15	7
<u>Sullom Voe</u>				
No. 210 - L/L Cat. IVA	Mk.VIIIA	12	10	4
No. 330 Norge - Sund. III	Mk.IIIC	9	8	2
<u>Tain</u>				
No. 86 L/L Lib. VIII	Mk.V & X	15	15	8
No. 311 Czech - L/L Lib. VI	Mk.V & VA	15	15	8
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IVA	Mk.VIIIA	3	3	-
<u>Sumburgh</u>				
No. 1693 Flight - Anson I	None	6	7	5
Total in No. 18 Group - 16½ R.A.F. Squadrons		265	264	149

1st April, 1945 (Cont.)

No. 19 Group

	Type of A. S. V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 14 - L/L Well. XIV	Mk.VI	15	16	11
No. 407 R.C.A.F. - L/L Well. XIV	Mk.VIA	15	14	10
(No. 459 R.A.A.F. - L/L Well. non-op.)				
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk.VA	15	15	13
No. 105 - U.S.N. Lib. PB4Y	Mk.X	15	14	13
No. 110 - U.S.N. Lib. PB4Y	Mk.VA & X	15	15	14
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk.IIIC	12	10	7
<u>Pembroke Dock</u>				
No. 228 - Sund. III	Mk.IIIC, VIC	12	15	8
No. 422 R.C.A.F. - Sund. III	Mk.IIIC	12	11	9
No. 461 R.A.A.F. - Sund. III and V	Mk.IIIC, VIC	12	16	8
<u>St. Eval</u>				
No. 179 - L/L Warwick V	Mk.IIIB	15	12	6
No. 304 Pole - L/L Well. XIV	Mk.VI	15	15	11
<u>Upottery</u>				
No. 107 - U.S.N. Lib. PB4Y	Mk.VA	15	13	11
No. 112 - U.S.N. Lib. PB4Y	Mk.VA & X	15	15	14
Detachment No. 63 - U.S.N. Cat. - M.A.D.	Mk.XIIIA	4	4	3
Total in No. 19 Group - 8 R.A.F. + 5½ U.S.N. Squadrons		187	185	138

Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib. VIII	Mk.VA & X	15	15	5
No. 162 R.C.A.F. - Cansos (Cat.III)	Mk.II	15	13	5
Total in Iceland - 2 R.A.F. Squadrons		30	28	10

Gibraltar

<u>North Front</u>				
No. 458 R.A.A.F. - L/L Well. XIV	Mk.VI	15	16	11
No. 22 S.A.A.F. - Ventura V	Mk.VIII	20	18	13
Total at Gibraltar - 1 R.A.F. + 1 S.A.A.F. Squadron		35	34	24

No. 247 Group - Azores

<u>Lagens</u>				
No. 220 - L/L Lib. VI	Mk.VA	15	15	10
No. 114 - U.S.N. S/L Lib. PB4Y	Mk.VA	15	14	11
Total in the Azores - 1 R.A.F. + 1 U.S.N. Squadron		30	29	21

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1st April, 1945 (Cont.)

APPENDIX I

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 540 - Mosq.VI, IX, XVI and 32	20	21	14
No. 541 - Spit. X, XI, XIX, Mustang III	23	19	14
No. 542 - Spit. X, XI and XIX	20	21	19
No. 544 - Mosq.VI, XVI and 32	20	18	13
Detachment at Leuchars			
Total P.R. - 4 Squadrons	83	79	60

Air Sea Rescue

<u>Tiree</u>			
No. 281 - Warwick, Sea Otter	18	20	5
Detachment at Limavady			
<u>Beccles</u>			
No. 278 - Walrus, Sea Otter	16	14	9
Detachment at Hawkinge			
No. 280 - Warwick	24	26	10
<u>Banff</u>			
No. 279 - Warwick, Hurricane	28	35	15
Detachments at Wick, Leuchars and Thornaby			
<u>St. Eval</u>			
No. 282 - Warwick, Sea Otter	18	19	11
<u>Azores - Lagens</u>			
No. 269 - Warwick, Martlet, Spitfire	17	17	9
Anson			
Combined A.S.R. and Meteorological			
Total A.S.R. - 6 Squadrons	121	131	59

Meteorological

<u>Tiree</u>			
No. 518 - Halifax V	22	24	7
<u>Ballyhalbert</u>			
No. 1402 Flight - Spit.VII, Hurricane IIC	9	8	6
<u>Langham</u>			
No. 521 - Fortress II, Hurricane IIC	9	9	8
<u>Skitten</u>			
No. 519 - Fortress II, Spit.VII	15	14	6
<u>Brawdy</u>			
No. 517 - Halifax V	13	15	4
<u>Iceland - Reykjavik</u>			
No. 251 - Fortress II, Hudson III	12	14	7
<u>Gibraltar - North Front</u>			
No. 520 - Halifax V, Hudson, Hurricane IIC	13	11	5
Total Meteorological - 6½ Squadrons	93	95	43

## Summary of Coastal Command for 1st April 1945

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	100	97	59	7 R.A.F.
No. 16	118	111	80	5 R.A.F. + 2 F.A.A.
No. 18	265	264	149	16½ R.A.F.
No. 19	187	185	138	8 R.A.F. + 5½ U.S.N.
Iceland	30	28	10	2 R.A.F.
Gibraltar	35	34	24	1 R.A.F. 1 S.A.A.F.
Azores	30	29	21	1 R.A.F. + 1 U.S.N.
Coastal Command Battle Line	765	748	481	41½ R.A.F. + 2 F.A.A. + 6½ U.S.N. = 50
Photo-Recce	83	79	60	4 Squadrons
A.S.R.	121	131	59	6 Squadrons
Meteorological	93	95	43	6½ Squadrons

## Distribution as between A/U and Anti-shipping.

Group	Anti-U-boat				Anti-shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 36, 201 202, 423, 172 7 Squadrons	100	97	59	None	-	-	-
No. 16	810, 822 2 Squadrons	24	21	20	119, 612, 236, 254, 524 5 Squadrons	94	90	60
No. 18	206, 547, 224, 210, 330, 86, 311 half 333, half 1693 8 Squadrons	105	104	45	143, 235, 248, 144 455, 489, 58, 502 half 333 8½ Squadrons	160	160	104
No. 19	14, 407, 228, 10 422, 461, 179, 304 103, 105, 107, 110 112, half 63 13½ Squadrons	187	185	138	None	-	-	-
Iceland	53, 162 2 Squadrons	30	28	10	None	-	-	-
Gibraltar	22, 458 2 Squadrons	35	34	24	None	-	-	-
Azores	220, 114 2 Squadrons	30	29	21	None	-	-	-
Battle Line	36½ Squadrons	511	498	317	13½ Squadrons	254	250	164

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APPENDIX I

Order of Battle, Strength and Availability  
1st May 1945

Ref. C.C. Conspectus

No. 15 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Ballykelly</u>				
No. 59 - L/L Lib. VIII	Mk.VA & X	15	14	13
No. 120 - L/L Lib. VIII	Mk.X	15	15	9
<u>Benbecula</u>				
No. 36 - L/L Well. XIV	Mk.VI	15	16	9
<u>Castle Archdale</u>				
No. 201 - Sund. III and V	Mk.IIIIC	12	8	5
No. 423 R.C.A.F. - Sund. III and V	Mk.IIIIC	12	10	3
No. 202 - L/L Cat. IVA	Mk.VIIIA	16	15	7
<u>Limavady</u>				
No. 172 - L/L Well. XIV	Mk.VI	15	19	7
Total in No. 15 Group - 7 R.A.F. Squadrons		100	97	53

No. 16 Group

<u>Beccles</u>				
No. 810 F.A.A. - Barracuda	Mk.XIIIA	12	13	9
<u>Langham</u>				
No. 612 - Well. XIV	Mk.VIA	15	16	12
No. 524 - Well. XIV	Mk.IIIA	20	21	12
Detachment No. 407 - L/L Well. XIV	Mk.VIA	4	4	4
<u>North Coates</u>				
No. 236 - B/ptr. X - R.P.	Mk.XII	20	21	11
No. 254 (B/ptr. X - Torp.	Mk.XII	20	21	16
(Mosq.XVIII - Tsetse 6 pdr.	None	4	4	3
<u>Manston</u>				
No. 822 F.A.A. - Barracuda	Mk.XIIIA	12	11	9
<u>Knocke - N. Belgium</u>				
No. 119 - Swordfish III	Mk.XI	15	15	12
Total in No 16 Group - 5 $\frac{1}{2}$ R.A.F. + 2 F.A.A. Squadrons		122	126	88

1st May, 1945 (Contd.)

No. 18 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Banff</u>				
No. 143 - Mosq. VI - R.P.	None	20	20	15
No. 235 - Mosq. VI - R.P.	None	20	16	13
No. 248 - Mosq. VI - R.P.	None	20	19	14
No. 404 - Mosq. VI - R.P.	None	20	19	12
No. 333 Norge Flight - Mosq. VI - R.P.	None	10	8	8
<u>Dallachy</u>				
No. 144 - B/ftr. X - R.P.	Mk. XII	20	21	11
No. 455 R.A.A.F. - B/ftr. X - R.P.	Mk. XII	20	20	9
No. 489 R.N.Z.A.F. ) B/ftr. X - Torp.	Mk. XII	20	18	10
<u>Leuchars</u>				
No. 206 - L/L Lib. VIII	Mk. VA & X	15	14	8
No. 547 - L/L Lib. VI and VIII	Mk. VA	15	18	4
<u>Milltown</u>				
No. 224 - L/L Lib. VIII	Mk. X	15	17	9
<u>Stornoway</u>				
No. 58 - Halifax II and III	Mk. IIIB	15	12	6
No. 502 - Halifax II and III	Mk. IIIB	15	14	12
<u>Sullom Voe</u>				
No. 210 - L/L Cat. IVA	Mk. VIIIA	12	9	4
No. 330 Norge - Sund. III	Mk. IIIC	9	6	3
<u>Tain</u>				
No. 86 - L/L Lib. VIII	Mk. V & X	15	15	9
No. 311 Czech - L/L Lib. VI	Mk. V & VA	15	14	10
<u>Woodhaven</u>				
No. 333 Norge Flight - Cat. IVA	Mk. VIIIA	3	2	1
<u>Sumburgh</u>				
No. 1693 Flight - Anson I	None	6	7	6
Total in No. 18 Group - 17½ R.A.F. Squadrons		285	269	164

1st May, 1945 (Cont.)

No. 19 Group

	Type of A.S.V.	U.E.	Strength	Available
<u>Chivenor</u>				
No. 14 - L/L Well. XIV	Mk.VI	15	15	9
No. 407 R.C.A.F. - L/L Well. XIV (Detachment at Langham in No. 16 Group)	Mk.VIA	11	13	9
<u>Dunkeswell</u>				
No. 103 - U.S.N. Lib. PB4Y	Mk.VA	15	15	11
No. 105 - U.S.N. Lib. PB4Y	Mk.X	15	14	12
No. 110 - U.S.N. Lib. PB4Y	Mk.VA & X	15	15	12
<u>Mount Batten</u>				
No. 10 R.A.A.F. - Sund. III	Mk.IIIC	12	12	7
<u>Pembroke Dock</u>				
No. 228 - Sund. III and V	Mk.IIIC & VIC	12	12	7
No. 422 R.C.A.F. - Sund. III	Mk.IIIC	12	10	8
No. 461 R.A.A.F. - Sund. III and V	Mk.IIIC & VIC	12	13	10
<u>St. Eval</u>				
No. 179 - L/L Warwick V	Mk.IIIB	15	15	2
No. 304 Pole - L/L Well. XIV	Mk.VI	15	14	2
<u>Upottery</u>				
No. 107 - U.S.N. Lib. PB4Y	Mk.VA	15	11	9
No. 112 - U.S.N. Lib. PB4Y	Mk.VA & X	15	15	13
Detachment No. 63 - U.S.N. Cat. - M.A.D.	Mk.XIIIA	4	4	2
Total in No. 19 Group - $7\frac{1}{2}$ R.A.F. + $5\frac{1}{2}$ U.S.N. Squadrons		183	178	113

Iceland

<u>Reykjavik</u>				
No. 53 - L/L Lib. VIII	Mk.VA & X	15	15	5
No. 162 R.C.A.F. - Canso (Cat.III)	Mk.II	15	11	7
Total in Iceland - 2 R.A.F. Squadrons		30	26	12

Gibraltar

<u>North Front</u>				
No. 458 R.A.A.F. - L/L Well. XIV	Mk.VI	15	16	15
No. 22 S.A.A.F. - Ventura V	Mk.VIII	20	17	11
Total at Gibraltar - 1 R.A.F. + 1 S.A.A.F. Squadron		35	33	26

No. 247 Group - Azores

<u>Lagens</u>				
No. 220 - L/L Lib. VI	Mk.VA	15	15	10
No. 114 - U.S.N. S/L Lib. PB4Y	Mk.VA	15	14	5
Total in the Azores - 1 R.A.F. + 1 U.S.N. Squadron		30	29	15

1st May, 1945 (Cont.)

Photographic Reconnaissance

	U.E.	Strength	Available
<u>Benson</u>			
No. 541 - Spits. X, XI, XIX, Mustang III	23	23	17
No. 542 - Spits. X, XI and XIX	20	20	19
No. 544 - Mosq. VI and XVI	20	22	14
Detachment at Leuchars			
<u>Coulommiers - France</u>			
No. 540 - Mosq. VI and XVI	20	19	9
Total R.P. - 4 Squadrons	83	84	59

Air Sea Rescue

<u>Tiree</u>			
No. 281 - Warwick I, Sea Otter	14	20	4
Detachments at Limavady and Valley			
<u>Beccles</u>			
No. 280 - Warwick I	24	26	7
No. 278 - Walrus, Sea Otter	16	19	12
Detachments at Thorney Island & Hawkinge			
<u>Banff</u>			
No. 279 - Warwick I, Sea Otter, Hurricane IIC	28	38	15
Detachments at Thornaby and Wick			
<u>St. Eval</u>			
No. 282 - Warwick I, Sea Otter	14	23	10
Detachment at Exeter			
<u>Azores - Lagens</u>			
No. 269 - Warwick I, Walrus, Hudson, Spit.VB, Martinet, Anson	17	16	10
Combined A.S.R. and Meteorological			
Total A.S.R. - 6 Squadrons	113	142	58

Meteorological

<u>Tiree</u>			
No. 518 - Halifax III and V	22	29	13
<u>Ballyhalbert</u>			
No. 1402 Flight - Spit.VII, Hurricane IIC	6	10	9
<u>Langham</u>			
No. 521 - Fortress II, IIA, Hurricane IIC	12	9	5
<u>Wick</u>			
No. 519 - Fortress II, IIA, Spit.VII	15	14	6
<u>Brawdy</u>			
No. 517 - Halifax III and V	13	16	7
<u>Iceland - Reykjavik</u>			
No. 251 - Fortress II, IIA, Hudson III, IIA	12	12	3
<u>Gibraltar - North Front</u>			
No. 520 - Hal. III, V, Hudson III, Hurricane IIC	13	11	4
Total Meteorological - 6½ Squadrons	93	101	47



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APPENDIX I

Summary of Coastal Command for 1st May, 1945

Group	U.E.	Strength	Available	Number of Squadrons
No. 15	100	97	53	7 R.A.F.
No. 16	122	126	88	5½ R.A.F. + 2 F.A.A.
No. 18	285	269	164	17½ R.A.F.
No. 19	183	178	113	7½ R.A.F. + 5½ U.S.N.
Iceland	30	26	12	2 R.A.F.
Gibraltar	35	33	26	1 R.A.F. 1 S.A.A.F.
Azores	30	29	15	1 R.A.F. + 1 U.S.N.
Coastal Command Battle Line	785	758	471	42½ R.A.F. + 2 F.A.A. + 6½ U.S.N. = 51
Photo-Recce	83	84	59	4 Squadrons
A.S.R.	113	142	58	6 Squadrons
Meteorological	93	101	47	6½ Squadrons

Distribution as between A/U and Anti-shipping

Group	Anti-U-boat				Anti-shipping			
	Squadrons	U.E.	Str.	Av.	Squadrons	U.E.	Str.	Av.
No. 15	59, 120, 36, 201, 202, 423, 172 7 Squadrons	100	97	53	None	-	-	-
No. 16	810, 822, half 407, 2½ Squadrons	28	28	22	119, 524, 612, 236, 254 5 Squadrons	94	98	66
No. 18	206, 547, 224, 210, 330, 86, 311, half 333, half 1693 8 Squadrons	105	102	54	143, 235, 248, 404, 144, 455, 489, 58, 502, half 333. 9½ Squadrons	180	167	110
No. 19	14, 10, 228, 422, 461, 179, 304, 103, 105, 107, 110, 112, half 407, half 63 13 Squadrons	183	178	113	None	-	-	-
Iceland	53, 162 2 Squadrons	30	26	12	None	-	-	-
Gibraltar	458, 22 2 Squadrons	35	33	26	None	-	-	-
Azores	220, 114 2 Squadrons	30	29	15	None	-	-	-
Battle Line	36½ Squadrons	511	493	295	14½ Squadrons	274	265	176

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APPENDIX IIA

No. 16 Group Standing Operational Instruction No. 12

Co-operation between Wellingtons and Beaufighters in attack of enemy surface forces at night

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Code Name - Operation Percolate

(C.C. File/S. 15,491)

Introduction

1. During forthcoming operations we must be prepared to attack enemy surface forces by night as well as by day.
2. Our main striking forces are the Beaufighter Squadrons.
3. The aim is to locate enemy forces by Wellington cross-over patrols and to home Beaufighters on to the Wellington, which is to illuminate the enemy to facilitate cannon and shallow dive bombing attacks by the Beaufighters. In order to reduce the time interval between locating the enemy and effecting a rendezvous between the Wellington and Beaufighter, the Beaufighters will normally be airborne on standing patrols.

Procedure when Beaufighters are airborne on Standing Patrols

1. On making an A.S.V. contact the Wellington is to make a W/T sighting report using the group '414'. The Wellington is to close in and try to make a visual sighting, and to do this flares and cartridges illuminating may be used.
2. On making a visual sighting of the enemy, the Wellington is to:-
  - (i) Make a W/T sighting report using the group '425' followed by the number and type of the enemy in Self Evident Code.
  - (ii) Switch on 'Speckled Band' and 'Rooster'. (1)
  - (iii) Call the Beaufighters on V.H.F. and repeat the sighting report to them.
  - (iv) Attack the enemy with bombs, using the Mk. XIV bombsight, if possible from 4,000 feet.
3. On intercepting the W/T and/or the V.H.F. R/T sighting report of visual contact, the Beaufighters are to:-
  - (i) Acknowledge the Wellington's message on V.H.F. R/T
  - (ii) Home on to the Wellington
  - (iii) Inform the Wellington by V.H.F. R/T or W/T of their E.T.A.

---

(1) 'Speckled Band' was a special transmitter for retransmitting the aircraft position in Gee co-ordination, when within Gee cover, to base, relay or other aircraft.

'Rooster' was an airborne homing beacon on 150 cms. for A.S.V. Mark II, Lucero or SCR.729.

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APPENDIX IIA

4. Five minutes before the E.T.A. of the Beaufighters, the Wellington is to drop six flame floats which are to be used by the Beaufighter as a datum point.

5. On locating the datum point the Beaufighters are to orbit at heights to be ordered at the briefing. Each aircraft is to transmit by W/T group '491' followed by the aircraft's letter and by V.H.F. R/T the code word 'Contact' followed by the aircraft's letter. The Wellington is to acknowledge these signals.

Procedure when Beaufighters are held at Immediate Readiness on the ground

1. On making an A.S.V. contact the Wellington is to make a W/T sighting report using the group '414'. The Wellington is to close in and try to make a visual sighting and to do this flares and cartridges illuminating may be used.

2. On making a visual sighting of the enemy, the Wellington is to:-

(i) Make W/T sighting report using the group '425' followed by the number and type of the enemy in Self Evident Code.

(ii) Attack the enemy with bombs using the Mk. XIV bombsight, if possible from 4,000 feet.

3. On receipt of the W/T sighting report of visual contact with the enemy, this Headquarters will order off the Beaufighters which are being held at Immediate Readiness.

4. The Beaufighters are to navigate to within 40 miles of the last reported position of the enemy and are then to home on to the Wellington.

5. The Beaufighters are to inform the Wellington by V.H.F. R/T and W/T of their E.T.A. The Wellington is to:-

(i) Fifteen minutes before the Beaufighters' E.T.A., switch on 'Speckled Band' and 'Rooster'.

(ii) Five minutes before the Beaufighter's E.T.A., drop six flame floats which are to be used by the Beaufighters as a datum point.

6. On locating the datum point the Beaufighters are to orbit at heights to be ordered at the briefing. Each aircraft is to transmit by W/T group '491' followed by the aircraft's letter, and by V.H.F. R/T the code word 'contact' followed by the aircraft's letter. The Wellington is to acknowledge these signals.

7. Between the time of despatch of the first report of visual sighting of the enemy and the E.T.A. of the Beaufighters, the Wellington is to transmit by W/T amplifying reports at least once every 15 minutes. The last reported position of the enemy is to be taken by the Beaufighters as the revised rendezvous position.

Illumination of the enemy on dark nights.

1. The Wellington, on receipt of 60% of the '491s' or 'Contacts' is to climb to 4,000 feet and close the enemy, transmitting on V.H.F. R/T and W/T the course being steered. This is to indicate to the Beaufighters the bearing of the enemy from the datum point. When over the enemy at 4,000 feet the Wellington is to set course with the same heading as the enemy and is to drop flares into the wind in the form of a letter 'H'. Two parallel lines of flares are to be laid parallel to the track of the enemy, so that the first flare of each line is half a mile ahead and one mile on each beam of the

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APPENDIX IIA

leading vessels when the flares are at 500 to 1,000 feet. The cross bar of the 'H' is to be approximately half way along the parallel lines of the flares.

2. The flares for the parallel legs of the 'H' are to be spaced at one second intervals and dropped from the bomb-bays. The flares forming the cross-bar of the 'H' are to be dropped at five second spacing through the flare chute.

3. Before dropping the flares the Wellington is to transmit 'Ready' on V.H.F. R/T and group '632' on W/T. At the time of release of the first flare the Wellington is to transmit 'now' on both V.H.F. R/T and W/T.

Illumination of the enemy on moonlight nights

1. When there is a quarter moon or more, and provided that the moon is not obscured by cloud in the target area, flares are to be dropped as described in the preceding section but UP-MOON of the enemy. Allowance is to be made for the direction of the wind in order that the flares should be up-moon of the enemy when the flares are at 500 to 1,000 feet.

2. Inter-communication and spacing of flares is to be as given in the preceding section.

Attack by Beaufighters

Beaufighters are to attack the enemy when the flares are at 500 to 1,000 feet.

Method of homing Beaufighters on to the Wellington

The following methods may be used by Beaufighters for homing on to the Wellington:-

- (i) A.S.V. on to the Wellington's Rooster
- (ii) Gee technique
- (iii) D.R. navigation to the Wellington's position based on frequent Gee fixes taken by the Beaufighter.

Enemy position reports

Enemy positions are to be reported in lettered co-ordinates. Gee co-ordinates are NOT to be used.

Free bombing area

A free bombing area in which all surface craft sighted may be attacked will be detailed by this Headquarters. Outside the free bombing area, surface craft must not be attacked without specific orders.

Bomb Loads

Bombs and Flares are to be carried as ordered by this Headquarters.

Headquarters No. 16 Group

11th May 1944.

No. 19 Group Operation Order No. 2/1944

Operation Canoodle

(C.C. File/T.S. 15,467)

1. Enemy Forces

E-boats operating from bases in the Brest and Cherbourg peninsulas attack our south and southwest coast convoys with torpedoes or lay mines in the swept channels. They normally prefer dark nights, but in an emergency such as a possible invasion may be expected to operate on all nights.

Own Forces

2. Naval

Destroyers and light coastal forces patrol outer covering lines along our coast, and also provide close escort for convoys.

3. Air

- (i) No. 524 Squadron at Davidstow Moor equipped with Wellingtons.
- (ii) Nos. 144 and 404 Squadrons at Davidstow Moor on Beaufighters.
- (iii) No. 235 Beaufighter and No. 248 Mosquito Squadrons at Portreath may be called upon to provide anti-flak cover.
- (iv) Nos. 816 and 838 F.A.A. Squadrons at Perranporth and Harrowbeer respectively equipped with R.P. Swordfish.
- (v) No. 415 Squadron Albacores at Winkleigh operating under G.C.I. control by No. 10 Group F.C.

4. Intention

- (i) To locate and report enemy light surface forces, to illuminate them with flares if so ordered and to home our own surface forces or strike aircraft.
- (ii) To attack enemy surface forces with bombs when so ordered by A.C.H.Q.

5. Execution

When so ordered, No. 524 Squadron is to maintain the cross-over or line patrols as detailed by current Forms Green.

6. On making an A.S.V. contact, the aircraft is to close in and try to make a sighting. Flares will be dropped to identify the craft as laid down in current Forms Green. When it is identified as hostile the aircraft is to switch it's Mark III I.F.F. to stud 4. Rooster is NOT to be used. First sighting and amplifying reports are to be transmitted in the normal way.

7. The aircraft is to continue to shadow the enemy force either visually or by radar, remaining as nearly as possible over it. Once every 20 minutes, or in the event of a change of course by the enemy, an amplifying report is to be made. It is essential that later signals should refer to previous reports in order that A.C.H.Q. may be quite certain that the same enemy force is being referred to.

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APPENDIX IIB

8. Illumination of the enemy for our own surface forces

A succession of flares and/or flame floats is to be dropped to the south of the enemy when ordered by the A.C.H.Q. or as ordered on V.H.F. R/T by the S.O. Naval Striking Force. The Group to be used from A.P.1927 is 631, which is to be read as 'Illuminate the enemy at.....(time)'. When an order to drop flame floats only is transmitted by A.C.H.Q. it will be by A.P.1927 Group 629 - 1, followed by the required time - 'Indicate enemy by flame floats ahead at.....(time)'. Failing an order as above, when our own light surface forces and the enemy are seen on the A.S.V. screen, flame floats only are to be dropped. The procedure to be followed will be covered by specific orders whenever possible in the current Forms Green, but great care is always to be taken to avoid illuminating our own forces.

9. The aircraft is not to close within 5,000 yards of our own surface forces. Should our own surface forces wish to illuminate the enemy with star-shell in addition to the illumination provided by aircraft they will so inform the shadowing aircraft by V.H.F. The shadowing aircraft will then leave the immediate vicinity of the target. It will also do so if star-shell is fired by our own surface forces without warning.

10. Illumination of the enemy for our air striking forces

The aircraft will shadow and report as above with the Mark.III I.F.F. switched to stud 4. It will drop flame floats and a flare near the enemy at the time ordered by A.C.H.Q. to home the striking force. When the leader of our striking force (if Beaufighters) requests illumination by V.H.F., the target will be illuminated with flares as necessary. The executive order from A.C.H.Q. will be A.P.1927 Group 629 - 3, followed by the required time - 'indicate enemy by flame floats and one flare at.....(time)'. This signal will also authorise the shadowing aircraft to attack with bombs at the time indicated. If the captain cannot bomb at the time given or within plus or minus two minutes, the permission to bomb is cancelled and fresh instructions are to be sought from Control.

11. If the striking force is composed of Swordfish aircraft, the shadowing aircraft will be given an E.T.A. by A.C.H.Q. at which to commence dropping flares. It will then continue to illuminate the target until it sees an attack take place, or it runs out of flares.

12. In the event of failure to establish either W/T or V.H.F. contact, the leader of the air striking force will fire green Verey lights on his E.T.A. at the target to indicate that he is ready to attack. The shadowing aircraft will then illuminate the enemy without further orders.

13. Immediately after making the first sighting report of surface vessels the shadowing aircraft is to report weather in the area of the sighting, using Group 540 from A.P.1927. If the sighting is of a U-boat, the weather information is to be sent in A.R.C.

14. Attack on enemy light surface forces by Wellington aircraft

If the area is clear of our own surface vessels and an order is received from A.C.H.Q., bombing attacks may be made by the shadowing aircraft. For this purpose aircraft are to carry, in addition to the maximum number of flares, 4 - 500 lb. M.C. bombs fused with No. 44 (air burst) pistol and tail delay. Bombs so fused must NOT be dropped from below 1,000 feet.

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APPENDIX III

German naval forces available along the Dutch-French  
coastline 6th June 1944

Ref: Admty. F.D.S.2/53

The F.O.I.C. Western Sea Defences was responsible to the C. in C. Naval Group West for the sea defences (patrols, minesweeping, convoy escort etc.) in the area Dutch/Belgian border, through the English Channel and down the west coast of France as far as Bayonne near the Spanish border. The Command was sub-divided into:-

The 2nd Division - Dutch/Belgian border to Cherbourg

The 3rd Division - Cherbourg to Lorient

The 4th Division - Lorient to Bayonne

On the 6th June 1944, it had a personnel strength of 30,940 and 463 miscellaneous vessels:-

- 65 - R-boats
- 53 - M class mine-sweepers
- 41 - gun carrying artillery barges
- 129 - Steam trawlers (auxiliary patrol or convoy escort duties)
- 126 - Steam drifters (auxiliary minesweeping, escort or harbour defence)
- 22 - Sperrbrecher (mine clearance vessels of up to 6,000 tons)
- 27 - Other small auxiliary craft

In addition to these, Naval Group West controlled five 'Z' class destroyers, five Möwe class and one 'T' class torpedo boats and 34 E-boats.

Description of types

'Z' class destroyers	1,800 tons - 8 torpedo tubes, 5 - 15 cm. guns, 4 - 3.7 cm. guns and 10 - 2 cm. flak cannon - speed 36 knots.
Möwe class torpedo boats	800 tons - 6 torpedo tubes, 3 - 10.5 cm. guns and 2 - M.G.s - speed 33 knots.
T class torpedo boat	800 tons - 6 torpedo tubes, 3 - 10.5 cm. guns and 2 - M.G.s - speed 33 knots.
Schnellboot (E-boat)	90 tons - 2 torpedo tubes, 1 - 3.7 cm. gun and 2 - 2 cm. flak cannon. Speed 35 to 40 knots.
Raumboot (R-boat)	90 tons - naval motor minesweeper - 1 - 3.7 cm. gun and 2 - M.G.s Speed 18 to 20 knots.
Minensuchboot (M class)	Navy built minesweeper/escort vessel - 600 to 750 tons. 2 - 10.5 cm. guns, 3 - 3.7 cm. guns and 2 - M.G.s - speed 17 knots.
Sperrbrecher	Mine clearance ships - These were ex-merchant vessels specially strengthened and varying between 1,000 and 6,000 tons.
Artillerieträger (A-boat)	Gunbarges - 300 to 400 tons - 2 - 8.8 cm. guns, 2 - 7.5 cm. guns, 1 - 3.7 cm. gun and 4 - 8.6 cm. rockets - speed 9 knots.

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APPENDIX III

Fischdampfer (trawlers) and Walboot (whalers)	From 150 to 500 tons. Used as patrol vessels, anti-submarine vessels, and escort vessels. Carried flak cannon and M.G.s
Vorpostenboot (Vp boat)	Patrol vessel - see above.
U-bootsjagelboot (U-J boat)	Anti-submarine vessel - see above
KriegsfischKutter (K.F.K. boat)	} Drifters up to 150 tons used as auxiliary minesweepers, harbour defence and local escort duties. Carried flak cannon and M.G.s.
MotorfischKutter (M.F.K. boat)	
Logger	

The disposition of German surface forces - 6th June 1944  
(S-boat = motor torpedo boat. R-boat = motor minesweeper)

Holland to Dunkirk

Ymuiden

8th S-boat flotilla	-	4 boats
2nd S-boat flotilla	-	2 boats

Bruges

8th R-boat flotilla	-	12 boats
18th Vp. flotilla	-	13 boats

Ostend

36th M.S. flotilla	-	35 boats
2nd S-boat flotilla	-	5 boats

Dunkirk

2nd R-boat flotilla	-	11 boats
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Northern France

Boulogne

4th S-boat flotilla	-	8 boats
4th R-boat flotilla	-	11 boats
2nd Gun barge flotilla	-	16 boats

Dieppe

14th R-boat flotilla	-	12 boats
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Fecamp

8th Gun barge flotilla	-	15 boats
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Le Havre

5th Torpedo boat flotilla	-	5 Mowe class torpedo boats
15th Vp. flotilla	-	21 boats
38th M.S. flotilla	-	50 boats



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APPENDIX III

Ouistreham

10th R-boat flotilla - 12 boats

Isigny  
Port en Bessin } 6th Gun barge flotilla - 11 boats  
St. Vaast

Cherbourg

5th S-boat flotilla - 8 boats

9th S-boat flotilla - 7 boats

St. Malo

46th M.S. flotilla - 20 boats

2nd Vp. flotilla - 23 boats

Western France

Brest

One T. Class torpedo boat

40th M.S. flotilla - 28 boats

24th M.S. flotilla - 8 boats

7th Vp. flotilla - 16 boats

Concarneau

6th M.S. flotilla - 7 boats

6th Sperrbrecher flotilla - 12 ships

Benodet

2nd M.S. flotilla - 6 boats

Lorient

14th U.J. flotilla - 16 boats

St. Nazaire

6th V.p. flotilla - 15 boats

Paimboeuf

10th M.S. flotilla - 8 boats

Nantes

26th M.S. flotilla - 8 boats

Les Sables d'Olonne

42nd M.S. flotilla - 20 boats

La Pallice

One destroyer - Z. 23

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APPENDIX III

Gironde Estuary

Royan

Three destroyers - Z.24, Z.32 and ZH.1  
8th M.S. flotilla - 8 boats  
2nd Sperrbrecher flotilla - 10 ships

Paullac

28th M.S. flotilla - 8 boats

Blaye

44th M.S. flotilla - 23 boats

Bordeaux

one destroyer - Z.37

Southern Biscay

Bayonne

4th Vp. flotilla - 12 boats

# PERIODS DURING WHICH U-BOATS WERE PRESENT IN THE CENTRAL CHANNEL (EAST OF A LINE NEEDLES TO CHERBOURG)

U BOAT	JUNE 1944					JULY 1944					AUGUST 1944					SEPTEMBER 1944					ALLIED SHIPPING	
	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	SUNK	DAMAGED		
621	BREST ————— BREST																				1 L.C.P. - 10 TONS	————
984	BREST ————— GUERNSEY ————— BREST																				3- 21,550 TONS	1- 7,240 TONS 2 FRIGATES
671	FROM NORWAY ————— BOULOGNE																				————	————
763	BREST ————— BREST																				1-1,927 TONS	————
953	BREST ————— BREST																				1 A/S TRAWLER	————
390	BREST ————— ③																				1-1,499 TONS	————
678	FROM NORWAY ————— ②																				————	————
741						BREST ————— LE HAVRE															————	————
212						BREST ————— ②															————	————
309						BREST ————— BREST															————	1- 7,219 TONS
621						BREST ————— BREST															1L.S.I.-2,938 TONS	1-10,048 TONS
275						BREST ————— BOULOGNE															————	————
984						BREST ————— ③ SUNK ON PASSAGE															————	————
741						LE HAVRE ————— ②															1 L.C.I. - 380 TONS	————
413						BREST ————— ③															————	————
480						BREST ————— ARRIVED TRONDHEIM 4 OCTOBER															3-15,206 TONS 1 MINESWEEPER	————
764						BREST ————— BERGEN															1- 638 TONS	————
989						BREST ————— KRISTIANSAND															1- 1,791 TONS	1- 7,176 TONS
275						BOULOGNE ————— BERGEN															————	————
92						BREST ————— TRONDHEIM															————	————
<div><div>PASSAGE TIME</div><div>TIME ACTUALLY IN FUNNEL AREA</div><div>SUNK IN FUNNEL AREA</div><div>TOTALS</div></div>																				10 M/Vs OF 42,611 TONS 3 LANDING CRAFT 2 AUX. WARSHIPS	4 M/Vs OF 31,683 TONS 2 FRIGATES	

The Schnorchel Smoke Myth

The salient points giving rise to the Schnorchel Smoke Myth era have been described in Chapter V section (v). The era was born in the growing frustration of failing to sight U-boats known to be in specific areas. The mis-identification of incipient waterspouts, or willywaws as they are called, had an unfortunate sequel. This was the belief that daytime visual look-out was far more likely to pick up schnorchels by seeing their tell-tale smoke than by radar or visual indication of the schnorchel head. The attitude became one of 'Never mind the absence of something tangible, go for the smoke'.

Even in the very early days of schnorchelling little smoke or white looking vapour was emitted, as witness the genuine example in photograph No. 1. From the autumn of 1944 the technique of schnorchelling became highly developed and no U-boat engineer officer would dream of allowing more than a wisp of steamy exhaust smoke to appear, able as he was to verify this by a glance through the periscope. This insignificant emission might in calm weather be visible to aircraft look-outs at a couple of miles or so but such a range was considerably less than could be registered by A.S.V. under these conditions on the protruding schnorchel head. In the rougher sea conditions which defeated radar contact, the wind would disperse all traces of the exhaust immediately. During the night, excessive exhaust smoke could not be checked through the periscope but the cover of darkness made this unimportant.

When reports of sightings and attacks came in supported by photographs such as Nos. 3, 3A, 4, 4A, 5 and 5A it was at a time when there had been a drastic fall in any kind of positive location of the many U-boats known to be at sea. No. 2 photograph had not yet re-appeared from the dusty shelves of 'archives' and everyone had forgotten that way back in June 1943 and earlier there had been some photographs taken of the natural waterspout phenomenon. In any case such objects were at that time of no interest in the U-boat war. As a result the November 1944 photographs, coupled with the circumstantial air crew reports, were adjudged to be of genuine schnorchelling U-boats regardless of the fact that they were quite unlike photograph No. 1. It is now apparent that they are identical with photograph No. 2 and it follows that all sightings which contain the description of 'white smoke', 'white vapour' or 'white water moving at the head of a long or marked wake' are suspect. Where supported by photographs such as Nos. 6, 6A, 7, 7A, 8, 9, 9A, 10 and 11 they become definitely bogus because all are in fact of willywaws. Actually, photographs Nos. 7 and 7A were at last recognised, at the end of March, as being of a waterspout through the production about this time of No. 2 photograph from 'archives' but the harm had been done. It proved impossible to stop the bogus sightings and even at the end of April 1945 willywaws were still being attacked.

If further proof is needed, it comes from the logs of the U-boats themselves or the U-boat Command records. In many cases the precise position of the nearest U-boat at the time and date of the claimed sighting show that the aircraft can only have seen a willywaw or other natural phenomenon. These records also establish that, when on patrol, little or

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APPENDIX V

no schnorchelling was done in daylight hours and even on passage only a minimum was indulged in during the day. At night, whether recharging batteries on patrol or gaining ground on passage, schnorchelling was not continuous but was restricted to relatively short bursts. U-boats rarely schnorchelled down wind if they could avoid it, partly because in a following sea the necessary accurate depth keeping was difficult and partly because a following wind tended to blow the foul exhaust gases straight into the air intake. Although capable of making 7 knots while schnorchelling, U-boats on passage seldom maintained more than 4 knots and those risking its use by day on patrol would make even less speed through the water. Little or no wake mark would be seen.

See Appendix  
VI - Accounts  
(13) and (16)

Other points which have a bearing on the subject are that some aircrews reported a very marked air turbulence when passing low over the head of the wake and which caused severe bumps. This is exactly what one would expect if flying over a twisting column of rapidly rising air. Also even if excessive smoke was being emitted by a genuine U-boat, any wind would blow it away to leeward keeping close to the surface. The bogus photographs all show plenty of wind but the vapour cloud at the head of the wake rises vertically. Finally, the whirling spray being sucked up by a willywaw gave no echo on either Mk.II metric or Mk.III centimetric but was sometimes dense enough to register on Mk.V and later models of radar. When such contact was obtained it had the unfortunate result of influencing current opinion to believe there must be a schnorchel head present to give this echo although the 'smoke' might veil it from visual observation.

Another source of very misleading reports made its appearance at this period. This was the equally natural phenomenon of whales, blackfish and porpoises. In 1942 they had been mistaken for partially submerged U-boats and, after much indoctrination among air crews, had been eliminated from constant and wasteful attack. Now they returned once more to swell the list of bogus sightings because the plumes of vapourised exhalation became identified with "smoke from a schnorchelling U-boat." On closer approach, aircraft look-outs frequently saw a surging object leaving a wake or merely a line of disturbed water with the spout vapour hanging above it. Photograph No. 12 shows one of these mammals actually spouting. In calm weather conditions this spout vapour rises to quite 50 feet, is steamy white in colour visible on clear days for many miles, and persists for 15 minutes or more before gradually dissolving. Furthermore their authors' presence under water registers strongly on hydrophones even to producing measurable beats of their powerful tails accompanied by the cavitation swish which characterizes a propeller. Hence much of the sono-buoy evidence so often ascribed to a submerged U-boat. Such sightings were relatively few up to December 1944, but rapidly increased in 1945, attaining a peak in April when some twenty or more were responsible for "schnorchelling U-boat" reports.

In the succeeding Appendix VI is given a chronological list of suspect sightings starting in September 1944 when they first appeared. The wording of each account is taken from the actual crew reports. A postwar (1955) comment is attached to each. One is forced to the conclusion that all

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APPENDIX V

are bogus. Most are of active or moribund willywaws, some are of whale spouts and some are not identifiable but definitely are not U-boats.

It would seem desirable, now in 1955, to disabuse present day anti-schnorchel branches and training centres of any ideas they may have imbued from 1944/45 recorded experience that a genuine schnorchelling submarine looks anything like the natural whirlwind or whale phenomena so frequently present around our coasts in certain weather conditions. Apart from avoiding mistaken attacks and the squandering of valuable weapons, such failure in recognition can result, as it did in 1944/45, in very wasteful follow-up hunting by relief aircraft and surface forces what time genuine enemy submarines may remain on patrol undetected. Furthermore, the reporting of bogus schnorchelling results in a false picture of hostile submarine dispositions and may cause unnecessary re-routeing of shipping or convoys, possibly into really dangerous areas.



#### No.1

A genuine Schnorchel (U.275). Attacked by U.S.N. Liberator B/110 Squadron at 1654 A hours 18 June 1944, 5 miles north of Guernsey.

The U-boat is steering towards the reader with Schnorchel and the after periscope up.



#### No.2

A whirlwind or incipient waterspout taken on 2 June 1943 by a Sunderland pilot in a position just west of Ireland.

As can be seen, this has nothing in common with No.1 photograph.



No.3

A depth charge attack by Ganso X/162 Squadron on an assumed Schnorchelling U-boat at 1648 A hours, 6 November 1944 in 6012N x 2040W.

The explosions are across the wake and the spray apex can be seen just to the right.

Post war evidence - No U-boat was within 180 miles of this position.



No.3A

Photograph taken after the attack. There is no difference in the phenomenon which is still advancing down wind. Note the long and marked wake.





No.4

The first depth charge attack by Sunderland U/201 Squadron at 1140 A hours 9 November 1944 in 5550N x 0655W on an assumed Schnorchelling U-boat.

The spray apex is on the extreme left at the head of the marked wake.



No.4A

The second depth charge attack nine minutes later on the same object by U/201 Sqn.

Note:- No genuine U-boat would be likely to continue Schnorchelling through two close attacks.



No.5

A depth charge attack by Sunderland Y/201 Squadron at 1408 A hours 16 November 1944 in 5544N x 0909W on an assumed Schnorchelling U-boat.

The explosions are across the wake and the spray apex can be seen just to the right.



No.5A

Photograph taken after the attack by Y/201 from 300 feet. There is no difference in phenomenon which continued to advance down wind.



No.6

Photograph taken by Halifax Y/518 meteorological Squadron from 200 feet at 1400 A hours 21 January 1945 and assumed to be a Schnorchelling U-boat.

Note the broad and marked wake travelling down wind.  
Position - 5837N x 0950W (West of the Butt of Lewis).



No.6A

Another photograph taken a little later. The sprayhead is not so prominent but the "bow wave" is very apparent.



No.7

Photograph taken by Liberator T/86 Squadron at 1632 A hours 30 March 1945 in 6000N x 0510W (North of Cape Wrath) just before depth charges were dropped on it.



No.7A

Photograph taken 16 minutes after the explosions by T/86.

Note the similarity to all the other photographs except No.1.

This was recognised at the time as being an incipient waterspout but the marked similarity to all previous "assumed Schnorchellers" was not appreciated.



No.8

Taken by Catalina Q/202 Squadron at 2014 A hours 29 April 1945 in the Irish Sea two minutes after a depth charge attack on "smoke and moving wake".



No.9

A depth charge attack by Catalina P/202 Squadron on "smoke and a moving wake" at 1950 A hours 30 April in the Irish Sea.

The spray apex is just to the right of the explosions.



No.9A

Photograph taken ten minutes later by P/202 Squadron of the same object from 500 feet. Once more this is nothing like the genuine schnorchel in No.1 photograph.



No.12

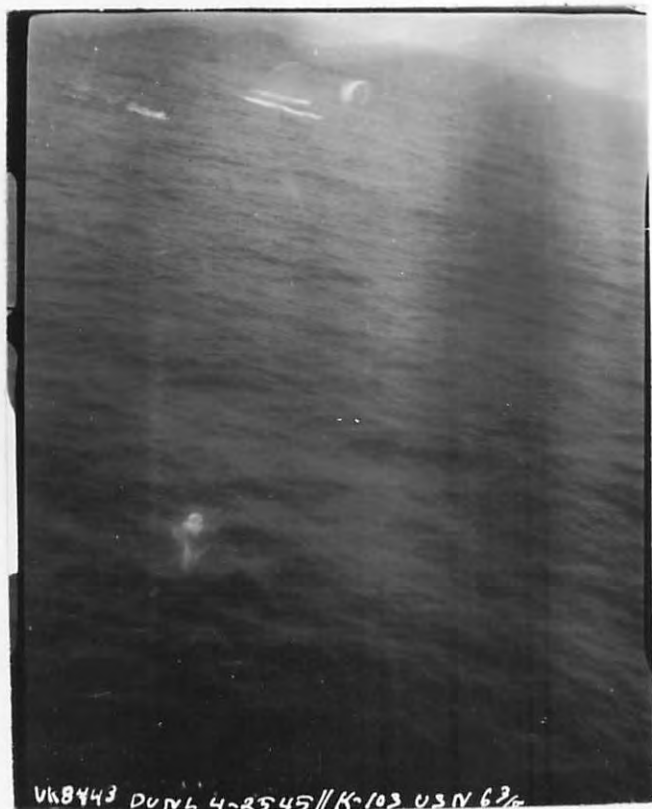
A whale and its spout vapour photographed after an attack on "schnorchel smoke" just southwest of Ireland on 23 February 1945 by U.S.N. Liberator J/103 Squadron.



No.13

A genuine schnorchel and periscope taken as a stick of depth charges splashed into the sea ahead of it. Note no smoke and a very slight wake. This attack was made by Liberator G/86 Squadron at 1839 B hours on 6 May 1945 some 10 miles northeast of the Skaw and sank U.1008.





No. 14

A genuine schnorchel photographed by U.S.N. Liberator K/103 Squadron at 1940 B hours on 25 April 1945 in position 28 miles W.S.W. of Ushant. Note the speed is at least six knots in daylight in this supposed safe area. Even so, no smoke and little wake is being made. Two Mark 24 Mines are entering the sea in the background and a sono-buoy in the foreground.



No. 14A

Three minutes later the Mark 24 Mines have hit the U-boat and are exploding. U.1107 was destroyed. One body came to the surface amidst a pool of oil fuel.



No.10

An attack by Sunderland H/201 Squadron at 1135 B hours 30 April 1945 in the Irish Sea on a presumed schnorchelling U-boat.



No.11

In calm weather a collapsed willywaw often left a little cloudlike formation near the surface. An attack by Sunderland Z/422 Squadron off Northern Ireland at 1412 A hours 8 March 1945.



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APPENDIX VI

Bogus Sightings and Attacks on Supposed U-Boats  
Summary Analysis - U.K. and Iceland Waters

Month	Willywaws		Whales Blackfish or Porpoises		Smoke Markers		Swirlmarks Flotsam etc.		Dubious Sono-buoy evidence		Total of Bogus Sightings		Attacks on oil slicks Non-Sub.		Grand Total Bogus encounters		Total of Genuine Sightings		Overall Total of All types	
	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.	S.	A.
Sept. 1944	2	- 1	2	- 0	-		-		-		4	- 1	-		4	- 1	14	- 6	18	- 7
Oct. 1944	-		-		-		-		-		-		1	- 1	1	- 1	11	- 6	12	- 7
Nov. 1944	9	- 7	1	- 0	1	- 1	3	- 1	-		14	- 9	-		14	- 9	5	- 3	19	- 12
Dec. 1944	5	- 2	7	- 1	-		1	- 1	-		13	- 4	-		13	- 4	8	- 3	21	- 7
Jan. 1945	4	- 2	6	- 3	3	- 2	2	- 1	-		15	- 8	1	- 1	16	- 9	4	- 2	20	- 11
Feb. 1945	4	- 4	6	- 4	2	- 2	1	- 1	2	- 2	15	- 13	1	- 1	16	- 14	7	- 2	23	- 16
Mch. 1945	16	- 12	4	- 2	5	- 2	2	- 2	3	- 2	30	- 20	14	- 14	44	- 34	22	- 12	66	- 46
Apl. 1945	4	- 3	20	- 11	6	- 1	-		1	- 1	31	- 16	15	- 15	46	- 31	16	- 11	62	- 42
May 1945	-		4	- 1	2	- 1	-		-		6	- 2	3	- 3	9	- 5	3	- 3	12	- 8
Totals	44	- 31	50	- 22	19	- 9	9	- 6	6	- 5	128	- 73	35	- 35	163	- 108	90	- 48	253	- 156

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(Geographical distribution)

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APPENDIX VI

The Geographical distribution of bogus Schnorchel Smoke Sightings  
and attacks on non-sub oil-slicks

Area	Willywaws	Whales Blackfish etc.	Smoke Markers	Oil Slicks
Northern Transit	5	12	5	4
Western Transit	5	12	2	2
Off Northern Ireland	10	7	4	12
Butt of Lewis to Orkneys	8	5	1	3
Bristol Channel to S. of Ireland	2	3	-	1
Irish Sea	11	4	4	6
English Channel	2	2	-	2
East Coast Scotland	1	5	3	5
Totals	44	50	19	35

Bogus Sightings and Attacks on supposed U-boats.September 1944 to May 1945North of  
Ireland

(1) 1026 B/2/9/44 - Sunderland N/423 Squadron in weather 5/10 cloud, base 2,000 ft., sea mod., wind 20 to 25 knots, vis. 20 miles: sighted some white vapour on the surface of the sea distant 8 miles in 5508N x 0918W. Binoculars were used on the approach and the vapour appeared to be emitted from a point on the sea. No contact on Mark III A.S.V. When still 4 miles away the vapour disappeared and nothing was seen on arrival over the spot.

Post War - U.482 was the only U-boat in the area and on this day was 50 miles to the north, where she torpedoed a ship. This sighting was probably of whales spouting or a moribund willywaw.

North of  
Ireland

(2) 1525B/7/9/44 - Sunderland C/423 Squadron in weather 3/10 cloud, base 2,000 feet, sea slight, wind 10 knots; sighted a wisp of white vapour or steam coming from a point on the surface of the sea distant 8 miles in 5532N x 0816W. No contact on Mark III A.S.V. Binoculars were used on approach and the vapour disappeared when the aircraft was about a mile away leaving a slight disturbance on the sea. The time interval was too long to justify an attack.

Post War - Although both U.482 and 248 were on patrol in the neighbourhood, neither did any schnorchelling by day. This sighting was probably of a whale spouting.

North of  
Ireland

(3) 1003B/11/9/44 - Sunderland D/423 Squadron in weather 2/10 cloud, base 1,600 feet, sea slight with a few white caps, wind 13 knots 210°T.; sighted whitish vapour or steam coming from the surface about 9 miles away in 5651N x 0804W. No contact on Mark III A.S.V. Binoculars were used on approach and the vapour appeared to be issuing from a hidden source at or just under the surface. When still about 2 miles away the vapour disappeared leaving a short wake about 100 feet long in a direction 0150/1950.

An attack with 4 - Mk. XI D.C.s was made aimed about 700 feet southward of what was assumed as the head of the wake. No significant after results were seen. This attack was credited with the probable sinking of U.484 and was bracketted with an equally probable attack made on 9 September by H.M.C. Ships 26 miles to the southeastward.

Post War - U.398 was on patrol in the neighbourhood but did no schnorchelling by day. In view of the unlikelihood of the sighting being other than a whale spouting or a willywaw, it is considered that U.484 had already been sunk on 9 September by H.M.C. ships.

N.N.E. of  
the Faeroes

(4) 2100B/12/9/44 - Sunderland O/330 Norge Squadron in weather 1/10 cloud, sea calm, little wind; sighted what was described as a schnorchel exhaust cloud about 3 miles distant in 6323N x 0510W. No contact on A.S.V. This disappeared before arrival over the spot leaving no trace.

Post War - It is considered this was the spout vapour from a whale. There were no U-boats within 60 miles.

No suspect sightings of this nature occurred during October 1944.

South of  
Iceland

(5) 0946A/3/11/44 - R.C.A.F. Canso X/162 Squadron in weather snow showers, sea state 5, wind 23 knots 268°T; sighted 3 miles away a pronounced wake with a vapour cloud at the head proceeding down wind in 6150N x 1802W. No contact on Mark II A.S.V. The target was soon lost in a snow shower, re-appeared for a few seconds and was then finally lost in a flurry of snow. Sono-buoys were dropped and were reported to have given positive evidence of a submerged U-boat. An attack was made with one Mark 24 mine but no results were heard or seen.

Post War - The nearest U-boat was U.396 who was 225 miles away to the northeast of this position.

South of  
Iceland

(6) 1648A/5/11/44 - R.C.A.F. Canso X/162 Squadron (with a different crew) in weather 7/10 cloud, base 2,000 feet, sea rough, wind 30 knots 300°T, vis. 10 miles but reduced to less than 2 miles in snow showers; sighted through binoculars an unusual movement in the sea distant 5 miles in 6012N x 2040W. On closing, a vapour cloud was seen rising at the head of a 100 yard frothy wake. An attack was made with 3 - Mark XI D.C.s which straddled the wake. No results followed and the vapour cloud continued to advance. A set of good photographs were taken of the attack.

Post War - The nearest U-boat was U.396, who on this day was 250 miles away to the northeast of this position. The photographs show a very marked similarity to one taken in June 1943 of a known waterspout or willywaw. As we know now that the previous sighting in this list was not of a U-boat, it is virtually certain from the photographic agreement that both were on willywaws.

North of the  
Butt of Lewis

(7) 0817A/8/11/44 - Sunderland R/330 Norge Squadron in weather frequent snow and sleet showers, sea slight, visibility 2 miles; sighted what was described as schnorchel smoke and wake distant 1½ miles in 5935N x 0630W. No A.S.V. contact. As the aircraft ran in to attack, the target was lost in a snow shower.

Post War - U.483 was in the area on return journey to Norway but on this day was over 50 miles away. The similarity of weather and description to X/162's sightings makes it certain that this too was a willywaw.

North of  
Ireland

(8) 1140A/9/11/44 - Sunderland U/201 Squadron in weather 3/10 cloud, base 500 feet, sea moderate, wind 25 knots 352°, visibility 20 miles except in frequent squalls when it was less than 2 miles; sighted 8 miles distant some smoky vapour at the head of a wake in 5550N x 0655W course almost down wind. No contact on Mark III A.S.V. At close range a distinct bow wave was seen at the apex of the wake and a large steady volume of whitish grey smoke coming from the apex being blown by the wind ahead of the moving wake.

An attack was made with 6 - Mark XI D.C.s which exploded close to the apex. After the attack, the vapour continued for a time but gradually lessened in volume. The aircraft then contacted H.M. frigate Burgess some 12 miles away and reported the attack. On return to the scene, the smoke and wake were again sighted from about 3 miles and at 1149A hours another attack was made, with 2 - Mark XI D.C.s, which exploded close behind the apex. Soon afterwards the still advancing vapour cloud was lost in a heavy squall and not re-located. Good photographs were taken of both attacks.

Post War - The only U-boat near this position on this day was U.1003. Her log makes no mention of attacks or explosions being heard on this day and she was not schnorchelling. The photographs are similar to the willywaw photographed by X/162 on 5 November. There seems no doubt that this also was a willywaw, particularly as no genuine U-boat would await a second attack and still take no action to dive deep.

North of  
Ireland

(9) 1435A/15/11/44 - Sunderland G/423 Squadron in weather 5/10 cloud, base 2,500 feet, sea calm, wind 14 knots 122°T, visibility 12 miles; sighted a whitish disturbance on the surface 6 miles away in 5551N x 0930W. No contact on Mark III A.S.V. Binoculars were used on approach and the disturbance appeared to be a hump of whitish water moving in a direction 300°T (i.e. down wind). When just over a mile away, the hump subsided leaving a smooth glassy looking wake mark about 60 feet long. An attack was made up track with 2 - Mark XI D.C.s. Nothing significant was seen afterwards.

Post War - The only U-boat anywhere near was U.1003 and she was 90 miles away to the eastward. From the description this seems to have been a very incipient waterspout in which the rotary suction was not sufficient to lift spray water out of the sea but only to create a hump of foaming water. This collapsed as the aircraft neared the spot and left a slight track mark.

North of  
Ireland

(10) 0846A/16/11/44 - Sunderland S/201 Squadron, in similar weather conditions to G/423, sighted a moving wake leaving a herring-bone shaped pattern of white water on an otherwise calm sea. This was sighted at 5 miles range in 5706N x 0708W. No contact on Mark III A.S.V. Binoculars were used on the approach but the movement ceased before the aircraft arrived leaving a glassy oil like smooth wake mark.

Post War - This position was 75 miles northward from U.1003, the only U-boat anywhere near. This might have been a small collapsing willywaw or a large fish like a whale surging along close to the surface.

North of  
Ireland

(11) 1408A/16/11/44 - Sunderland Y/201 Squadron in weather 6/10 cloud, base 1,600 feet, sea moderate, wind 16 knots 094°T, visibility 15 miles; sighted whitish grey smoke 6 miles away in 5544N x 0909W. No contact on Mark III A.S.V. On the approach it was seen that the source of the smoke was moving at a considerable speed, estimated at 15 knots in a direction 290° (i.e. downwind). When very close, a long wake (100 yards) was seen and at the apex was a very distinct bow wave from which the smoke was issuing. No immediate attack was made. A flame float was dropped and the aircraft turned to circle the spot. However, the target was lost to view but after two more circuits it was picked up again at 4 miles range. This time an attack was made with 6 - Mark XI D.C.s which straddled the track just behind the apex. After the explosions subsided, the smoke and wake were still moving on the same course. Good photographs were taken of the attack.

Post War - U.1003, still the only U-boat anywhere near, was over 70 miles to the eastward. The photographs are similar in all respects to those taken earlier in November and confirm that this also was a willywaw.

(12) 2007A/18/11/44 - L/L Liberator H/86 Squadron in weather 8/10 cloud, base 2,000 feet, sea moderate, wind 15 knots,

N.W. of the  
Shetlands

visibility rather misty; obtained a Mark V. A.S.V. contact at 18 miles in 6048N x 0257W. The aircraft homed and at one mile switched on the Leigh Light which illuminated a white elliptical patch of very disturbed water. Not recognising this as a target the aircraft continued on and then the contact re-appeared dead astern at 5 miles range. H/86 turned, homed on and again the Leigh Light illuminated the patch of white water. Again H/86 carried on and re-contacted the object astern. Once more a homing run was made and once more the patch was lit up when the Leigh Light was switched on. This time, the patch was attacked from 200 feet altitude with 2 - Mark XI D.C.s. After the explosions, the radar operator only got five very small echoes but although the area was swept with searchlight, nothing more was seen.

Post War - It is considered, from the description, that this was a willywaw dense enough to register at 18 miles on Mark V A.S.V. An almost exactly similar object was encountered the next day by B/423 Squadron. See under.

North of  
Ireland

(13) 1715A/19/11/44 - Sunderland B/423 Squadron in weather 5/10 cloud, base 2,000 feet, sea slight, wind 8 knots 070°T, visibility 10 miles; the rear gunner sighted grey smoke apparently issuing from the sea one mile astern of the aircraft. On turning, this was lost to view but 2½ minutes later a disturbance in the sea was sighted 4 miles away in 5616N x 0900W moving very slowly in a southerly direction. On closing, the patch was seen to be elliptical in shape about 200 feet long with more marked disturbance of the water at the southernmost apex. As the aircraft passed over at 75 feet altitude, there was a violent bump, B/423 turned and attacked with 8 - Mark XI D.C.s and again experienced a bump when passing over the apex. At no time was any contact obtained on Mark III A.S.V. After the subsidence of the explosions, nothing further was seen.

Post War - U.1003, still the only U-boat anywhere near, was 75 miles away to the eastward. It is virtually certain that this was a slow moving willywaw, particularly as the bump experienced was just what would be expected if passing low over one of these little whirlwinds.

S.W. of  
Iceland

(14) 1220A/23/11/44 - R.C.A.F. Canso X/162 in weather 6/10 cloud, base 2,000 feet, sea moderate to rough; sighted a moving wake about 10 miles distant in 6247N x 2158W C° southerly. As the aircraft approached, the movement stopped and on arrival no aiming mark could be seen for an attack.

Post War - U.300 was not far away on her return journey from the Reykjavik area but the above description sounds much more like the familiar willywaw.

North of  
Ireland

(15) 1140A/25/11/44 - Sunderland W/201 Squadron in weather 4/10 cloud, base 1,500 feet, sea choppy, wind 18 knots 260°T, visibility 30 miles; sighted a white wake 5 miles away in 5525N x 0746W C° 040° (i.e. nearly down wind). No contact on Mark III A.S.V. On approach, the wake was seen to be some 200 feet long but at 2 miles range it gradually subsided and disappeared leaving a long tapering strip of smooth water quite distinct against the surrounding white capped sea. An attack was made just ahead of the apex with one Mark XI D.C. Nothing significant was seen afterwards.

Post War - U.1003, still the only U-boat anywhere near, was over 40 miles to the eastward. This appears to have been a dying willywaw which left a typical wake mark after collapse.

(16) 1652A/6/12/44 - Sunderland Y/201 in weather 6/10 cloud, base 2,000 feet lowering in showers, sea moderate, wind 20 knots 250°T; Y/201 had been told to co-operate in a U-boat hunt with E.G.19 off Cape Wrath where one of the group (H.M. frigate Bullen) had just been torpedoed. Y/201 joined up at 1053A hours and saw the Bullen in a sinking state in 5846N x 0449W. The Senior Officer E.G.19 instructed Y/201 to patrol between the sinking ship and the Scottish coast, and later to circle round the Group who were still engaged in attacking asdic contacts.

North of  
Cape Wrath

See Account  
No. (11)

Much later, at 1652 hours Y/201 sighted a jet of whitish smoke or steam issuing from the sea about 5 miles away in 5844N x 0429W. There was no contact on Mark III A.S.V. On approach, a considerable wake was seen which indicated that the source of the smoke was travelling at 10 to 12 knots on a course of 050° (i.e. down wind). The aircraft crossed the track ahead of the smoke and the crew identified the object as exactly the same kind of "schnorchel target" as attacked by them on 9 November off Northern Ireland when in U/201. An attacking run was then made directly up track but the depth charges failed to release. As the aircraft passed low over the smoke at the head of the wake, an extremely heavy turbulence was experienced which rendered it almost uncontrollable. Y/201 circled and made a second run up track. This time the 6 - Mark XI D.C.s released. Again there was a violent bump as the aircraft passed over the smoke. The explosions straddled the smokey head of the wake but there was nothing to be seen when the spray subsided except a normal depth charge explosion mark. Y/201 then flew to E.G.19, who were about 8 miles distant, and informed the Senior Officer of the incident. On return to the scene, there was a large elliptical area of discoloured and smooth looking water which had spread to some 1½ miles in length by ½ mile wide.

On the strength of this report, U.297 who vanished in this locality somewhere about this date was credited to this attack.

N.B. The photographs taken were useless owing to the bad light.

Post War - Although U.775 as well as U.297 was in this area off the north coast of Scotland, the description by Y/201 is unmistakably of a well developed willywaw, particularly as the tell-tale violent bump was experienced. This opinion is confirmed by the crew's insistence that the details were identical with their attack on 9 November off Northern Ireland which post war evidence has proved to have been on a willywaw. Moreover, no U-boat would dream of trying to escape from an active hunt in daytime on his schnorchel. It is considered that U.297 met her end at the hands of H.M. frigates Loch Inch and Goodall who made promising attacks at 1030 hours in 5846N x 0449W.

North of  
Ireland

(17) 1546A/12/12/44 - I/L Liberator K/53 Squadron in weather 5/10 cloud, base 2,000 feet, sea slight, wind 12 knots 330°T, visibility extreme; sighted a white object about 20 miles away in 5610N x 0810W. While approaching, the object was scrutinised through binoculars. At about 10 miles, it was described as white smoke like a small cloud on the

surface of the water. When 4 miles away, no contact on Mark V A.S.V., the smoke started to disperse and when still closer had dwindled to a wisp about 20 yards in length. An attack was made with 4 - Mark XI D.C.s but nothing more was seen.

Post War - No U-boats were anywhere near. U.482 was on patrol in the North Channel 140 miles to the southeast.

Between  
Cape Clear  
and the  
Scillies

(18) 1027A/27/12/44 - Warwick E/282 Squadron in weather 4/10 cloud, base 2,000 feet, sea slight, visibility 3 to 4 miles; sighted white vapour some 3 miles ahead in 5028N x 0753W. On closing, the vapour disappeared leaving a small smooth oily looking mark on the surface, indicating a southerly course.

Post War - U.680 was in the area returning from the English Channel but this appears much more likely to have been a small moribund willywaw or the spout vapour from a whale.

West of  
Ireland

(19) 1102A/28/12/44 - Sunderland E/423 Squadron in weather 1/10 cloud, base 2,000 feet, sea slight, wind 7 knots 220°T, visibility extreme; sighted a small cloud of whitish smoke distant 20 miles in 5339N x 1026W. As the aircraft approached, a second cloud was sighted near the first, both being about 14 miles away. On nearer approach (with no contact on Mark III A.S.V.), the first cloud disappeared at 2 miles and when  $\frac{1}{2}$  mile from the second cloud this too dispersed and finally vanished. Almost immediately several members of the crew reported a periscope close to, one of them saying that he could see a gradual turning movement as if trained on the aircraft!! An attack was promptly made with 8 - Mark XI D.C.s while, it is stated, the periscope was still visible. It is also stated that the stick straddled the periscope accurately but nothing significant was seen after the explosions. Photographs were taken on the approach.

Post War - U.325, 905 and 1055 were all in the approximate neighbourhood outward bound for the Irish Sea or Channel but it is most unlikely that, if schnorchelling, any were making sufficient smoke to be seen 20 miles away. The description reads far more like a natural phenomenon and the periscope a bit of wishful thinking on a piece of flotsam. None of the three U-boats reported any attack or having heard explosions. The photographs suggest whales blowing.

North of  
Cape Wrath

(20) 1040A/28/12/44 - Liberator E/206 Squadron in weather 6/10 cloud, base 2,000 feet, sea moderate, wind 15 knots 030°T, visibility 12 to 15 miles; sighted white smoke or spray at the head of a wake distant 7 miles in 5934N x 0511W. No contact on Mark V A.S.V. The speed of advance was estimated as more than 10 knots in a direction 210° (i.e. down wind). On turning to close, the smoke faded and finally vanished leaving a foamy wake mark lying up and down wind. No attack was made.

Post War - No U-boats were anywhere near this position. This was a typical willywaw which was dying out on the approach.

Just East of  
the Orkneys

(21) 1355A/28/12/44 - Sunderland G/330 Norge Squadron in weather 5/10 cloud, base 8,000 feet, sea slight with a few white caps, wind 12 knots 030°T, visibility 20 miles; sighted smoke and wake about 5 or 6 miles away in 5845N x 0118W travelling in a southwesterly direction (i.e. down wind). No contact on Mark III A.S.V. When the aircraft was



three miles away, the smoke stopped and on arrival nothing could be seen.

Post War - Although U.1020 was on patrol in the neighbourhood and U.278 was approaching the area, the familiar description seems much more like another dying willywaw.

S.W. of  
Ireland

(22) 0136A/30/12/44 - Searchlight Liberator D/114 U.S.N, Squadron in weather 9/10 cloud, base 2,500 feet, sea slight, wind 10 knots 270° T, night visibility good; obtained a Mark V A radar contact at 5 miles. The aircraft homed and at  $\frac{1}{2}$  mile switched on the searchlight and illuminated a wake of frothy water 150 feet long lying north and south. The aircraft carried on turned at 4 miles and again picked up the radar contact, homed and illuminated the same foamy wake. This was repeated nine times until 0208 hours. Each time the still frothy and bubbling wake was illuminated in 5109N x 0825W. On one of the runs a sonobuoy pattern was dropped and it was reported that positive evidence was given of a submerged U-boat. Accordingly an attack was made with a Mark 24 mine but without result.

Post War - The nearest U-boat was U.1055 but she was nearly 50 miles away. It is considered that the target was a willywaw dense enough for the Mark V A radar to register upon. The episode is similar to that reported by H/86 at 2007/18/11/44.

West of  
the Scillies

(23) 0909A/30/12/44 - Sunderland D/10 R.A.A.F. Squadron in weather 5/10 cloud, base 4,000 feet, sea slight, little wind at all, visibility 10 miles; sighted 8 miles away a puff of white vapour. On approach, a small wake was seen which indicated a movement 270° in position 5000N x 0803W. No contact on Mark III A.S.V. Binoculars were used. On arrival at the spot, the smoky vapour had disappeared leaving only a tapering slick of smooth looking water.

Post War - There were no U-boats within 60 miles. It is considered this was either a whale or another small and dying willywaw.

Just East of  
the Orkneys

(24) 1141A/31/12/44 - Liberator P/206 Squadron in weather 5/10 cloud, base 3,000 feet, sea slight, visibility 25 miles; sighted white smoke distant 4 miles, which rapidly dispersed and on arrival over spot only a wake mark about 30 yards long was seen, lying in a north/south direction in position 5821N x 0221W. No contact on Mark V A.S.V.

Post War - Although U.1020 was on patrol in the neighbourhood, it is considered this was either a dying willywaw or the spout vapour from a whale blowing.

S.W. of  
Ireland

(25) 1334A/31/12/44 - Sunderland D/423 Squadron in weather 5/10 cloud, base 1,600 feet, sea slight, wind 12 knots 320° T, visibility 30 miles; sighted three bluish grey puffs of smoky looking vapour, each about 2 miles from each other and distant about 4 miles in 5047N x 0946W. No contacts on Mark III A.S.V. The puffs were each about 20 feet high above the water and persisted for 10 minutes before dissolving. No wakes or disturbances could be seen on the water. Photographs were taken but no attack was made.

Post War - Although U.325, 905 and 1055 were within 70 miles of the position, all southeast bound, the photographs are

certainly not of a schnorchelling U-boat. It is considered that they are of the vapoury spray emitted into the air by spouting whales.

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January 1945

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West of  
Ireland

(26) 0940A/1/1/45 - Sunderland E/423 Squadron in weather 8/10 cloud, base 3,000 feet, sea calm, slight wind from N.E., visibility 25 miles; sighted a smoke puff presumed to be from a schnorchelling U-boat distant 9 miles in 5338N x 1045W. Binoculars were used on the approach and the ball shaped puff of whitish grey smoke was seen to be hovering at surface level and appeared to be about 50 feet high. The crew stated that it was similar to those photographed by D/423 Squadron on 31 December.

Post War - The description appears to be of a whale spout, particularly as D/423's photographs are considered to be of this phenomenon. The nearest U-boat was 100 miles to the westward.

S.W. of  
Ireland

(27) 1104A/1/1/45 - Sunderland K/423 Squadron in weather 2/10 cloud, base 3,000 feet, sea calm, wind 7 knots 064° T, visibility 20 miles; sighted some blue grey smoke rising to 20 feet at 8 miles range in 5100N x 1036W. The smoke thickened for  $\frac{1}{2}$  minute and then began to dissolve after  $1\frac{1}{2}$  minutes turning white as it did so. There was no indication of a source and no contact on Mark III A.S.V. An attack was made with 3 - Mark XI D.C.s on the dissipating haze. Nothing further was seen.

Post War - There were no U-boats within 40 miles. It is considered this also was the spout vapour from a whale blowing.

North of  
Cherbourg

(28) 1500A/1/1/45 - Liberator E/103 U.S.N. Squadron in weather nil cloud, sea calm, visibility 8 to 10 miles but hazy; sighted blue white smoke near the surface of the sea in 4946N x 0137W. No aiming point was seen and no contact was obtained on Mark V A radar.

Post War - There is no firm explanation. It could have been a smoke float. From the U-boat plot on this day it is unlikely to have been one of them.

nNorth of  
Scotland

(29) 1049A/10/1/45 - Sunderland A/330 Norge Squadron in weather nil cloud, sea calm, wind light 030° T, visibility extreme; sighted schnorchel smoke about 5 miles away in 5916N x 0435W. The Mark III A.S.V. was out of action. The smoke appeared to come from a definite source but at 2 miles it lessened and when  $\frac{1}{2}$  mile distant it dissolved entirely. An attack was made on the estimated spot with 4 - Mark XI D.C.s. About 20 minutes later a quantity of fresh oil appeared and spread into a long patch some 400 yards by 40 yards. Photographs were taken of this.

Post War - The nearest U-boat was U.313 who was on patrol about 40 miles to the southeast. The photographs of thick oil similar to crude tanker bulk cargo. The description appears to be of a spouting whale, the oil could fortuitously have re-started from a wreck. The position is in rock strewn water north of Sule Skerry.

(30) 0122A/12/1/45 - L/L Liberator P/86 Squadron in weather 3/10 cloud, base 3,000 feet, sea calm, wind 10 knots 075° T; obtained contact on Mark V A.S.V. at  $4\frac{1}{2}$  miles range. The aircraft homed and at one mile switched on the Leigh Light

East of  
Orkneys

which illuminated a pear shaped patch of disturbed white water in 5857N x 0148W. The aircraft carried on, returned and again homed on to the radar contact and again illuminated the disturbed patch. A pattern of sono-buoys was dropped and it was reported that these gave positive evidence of the presence of a submerged U-boat. An attack was made with 2 - Mark 24 mines but no result followed.

Post War - There were no U-boats within 60 miles of the position. This episode is similar to those reported by H/86 Squadron on the night of 18/19 November and D/114 Squadron on 29/30 December 1944. All seem likely to have been on natural non-submarine phenomena.

North of  
Ireland.

(31) 1042A/12/1/45 - Wellington BT/6 (c) O.T.U. in weather 2/10 cloud, base 2,000 feet, sea very calm, visibility extreme; sighted schmorchel smoke in 5528N x 0628W. No attack made as no lethal load was being carried.

Post War - The nearest U-boat was U-482 who was 45 miles to the southeast in the entrance to the Firth of Clyde. This could be a whale spout.

West of  
Barra Head  
South  
Hebrides.

(32) 1735A/12/1/45 - Wellington E/304 squadron in weather 3/10 cloud, base 3,000 feet, sea smooth, visibility extreme, wind 240° 2 knots; sighted a veil of trailing white smoke distant 7 miles in 5648N x 0838W. The aircraft closed without any contact on Mk. VI A.S.V. and at one mile the smoke disappeared. When over the spot, what appeared to be a long wake mark was seen. An attack was made ahead of this with two depth charges. After the explosion plume had subsided, a small triangular black object was seen momentarily.

Post War - No U-boats were anywhere near this position. In the similar weather conditions and area as the proceeding report, it could have been a whale.

Just West of  
Hebrides.

(33) 0910A/13/1/45 - Wellington B/304 Squadron in weather 4/10 cloud, base 2,000 feet, sea smooth, visibility after dawn of over 25 miles, wind 290° 5 knots. After a Mk. VI A.S.V. contact, homed and when at  $\frac{3}{4}$  mile range switched on the Leigh Light but owing to haze it was soon switched off. At that moment a long white mark was seen as the aircraft passed over. On the subsequent turn, sparks were seen coming from the sea followed soon after by an orange flame for a short time. Radar contact was regained and the aircraft was manoeuvred so as to home towards the growing dawn sky. At less than  $\frac{1}{2}$  mile a small black object was sighted in 5738N x 0803W and an attack with six depth charges delivered. No unusual after results were seen.

Post War - No U-boats were anywhere near this position. From the account, the object appears to have been a long period marine smoke marker. The canister was quite large enough to register on Mk. VI A.S.V.

West of  
Pentland Firth

(34) 1628A/13/1/45 - Liberator E/206 Squadron in weather 6/10 cloud, base 6,000 feet, sea slight, wind 10 knots 200° T, visibility 15 miles; sighted a bubbly wake with a disturbance at the apex about 3 miles away in 5841N x 0410W tracking in an easterly direction. No contact on Mark V. A.S.V. The wake was seen to be about 20 yards wide and extended for about 400 yards. When the aircraft was 2 miles away the disturbance at the apex ceased but an attack was made up track with

6 Mark XI D.C.s which exploded in the line of the wake mark just ahead of where the disturbed apex had been. There were no after results of any significance.

Post War - Although U.313 was on patrol in the vicinity, this description is plainly of a willywaw, the size of the wake being much too large for a schnorchel.

Irish Sea.

(35) 1615A/15/1/45 - Sunderland H/423 Squadron in weather 7/10 cloud, base 2,000 feet, sea calm, little wind, visibility 15 miles; sighted a swirl patch distant 2 miles which on close approach was described as elliptical about 240 feet long and 120 feet broad with a foaming belt at one end. Good photographs were taken. The Mark III A.S.V. was not switched on. An attack was made with 6 - Mark XI D.C.s but with no significant result. Position 5318N x 0510W.

Post War - The photographs show clearly that, in an otherwise calm sea, the circumference of the patch is being blown into foam crested little waves. Although both U.1055 and 1172 were patrolling in the area, it is considered that this is undoubtedly the initial formation of a willywaw. It is certainly not of a U-boat's making.

110 miles  
W. of Lewis

(36) 1358A/21/1/45 - Halifax Y/518 Meteorological Sqdn. in weather 5/10 cloud, base 1,500 feet, sea moderate, temperature 46° F, wind 20 knots 020° T, air temperature 35° F, humidity 80%, visibility 15 miles; sighted whitish smoke rising to a height of 100 feet from the surface of the sea distant 7 miles in 5837N x 0950W. Binoculars were used on the approach and there was no contact on Mk. II A.S.V. As the aircraft got closer, the object from which the smoke was rising was seen to be travelling at 8 knots 220° (i.e. down wind). The aircraft, being unarmed on an air sea rescue sortie, circled the target for 15 minutes taking a series of excellent photographs. These were subsequently circulated and published as authentic examples of a schnorchelling U-boat.

Post War - No U-boats were in fact within 60 miles of the position. The photographs corroborate previous sets and are certainly of a large willywaw.

Irish Sea

(37) 1017A/22/1/45 - Sunderland E/423 Squadron in weather 3/10 cloud, base 3,000 feet, sea calm, visibility 12 miles, wind 145° 6 knots with snow showers; sighted a continuous stream of smoke distant two miles in 5348N x 0411W 0° 190°. Aircraft closed to attack and a small black object was intermittently sighted with a reddish glow above it. The depth charges failed to release but on a second run two black objects close together were now seen and eight depth charges straddled. No unusual after results were seen. Photographs were taken during the attack.

Post War - Although U.1172 was on patrol in the general area, it is considered that this attack was made on smoke markers. The photographs show a trail which is certainly not from a Schnorcheller.

(38) 1430A/23/1/45 - Halifax G/518 Meteorological Squadron in weather 9/10 cloud, base 500 feet, sea moderate, wind northerly Force 4, visibility 12 miles; sighted white smoke rising from the sea to a height of about 100 feet distant 10 miles in 5807N x 0954W. When the aircraft reached the spot there was a slight disturbance visible with a pall of smoke dissolving above it.

90 miles west  
of Hebrides

Ten minutes later, another cloud of smoke was seen about 10 miles away rising to 500 feet and joining the cloud base. When over the position of the smoke (5815N x 0937W) a clearly defined trail was observed, leaving bubbles in its track and following a course of 150° (i.e. down wind) at a speed of 5 knots. No concrete object was seen but on a second circuit the smoke ceased giving the impression that the U-boat dived deep. As the aircraft was unarmed in neither case could an attack be made. No contacts were made on Mark II A.S.V.

Post War - These sightings are unmistakably of willywaws, in fact the second one nearly became a genuine water spout as the up-draught suction of spray vapour had reached the low cloud base.

North of  
Ireland

(39) 1715A/27/1/45 - Wellington M/304 Squadron in weather clear sky, visibility 10 to 15 miles, sea smooth. Aircraft sighted smoke, closed and when three miles distant sighted a positive Schnorchel in 5603N x 0655W C° 120° 4 knots. The Schnorchel submerged just before arrival but when over the spot, another Schnorchel was sighted a mile away. In both cases smoke and a flickering flame were observed coming from the Schnorchel. No attack was made as no depth charges were carried, the aircraft being on a transit flight.

Post War - No U-boats were anywhere near the position and the objects undoubtedly were long period markers dropped previously by some other aircraft.

West of  
Shetlands

(40) 2015A/31/1/45 - L/L Liberator K/53 Squadron in weather 9/10 cloud, base 2,000 feet, sea calm, wind 7 knots 055° T; obtained a Mark V A.S.V. contact at 8 miles range in position 6048N x 0346W. Two homing runs were made in which the contact faded out at 4 miles. A third run was successful and the Leigh Light was switched on at 1½ miles but nothing was sighted until at 300 yards ahead a white disturbance was seen. It was too late to attack but as the aircraft went over, the Flight Engineer saw through the bomb bay a definite wake astern of the white patch. Further runs were made but the A.S.V. contact was never regained.

Post War - It is considered this was a willywaw on which Mark V A.S.V. registered. It is similar to the other night episodes reported by H/86, D/114 and P/86 in previous accounts. There were no U-boats within 60 miles of this position.

#### February 1945

Irish Sea

(41) 0920A/2/45 - Wellington S/304 Squadron in weather 3/10 cloud, base 900 feet, sea slight, wind 15 knots, visibility 15 miles; sighted a thin wake distant 3 miles in 5410N x 0519W C° 160°. When close to, several puffs of steamy vapour were seen. An attack was made with 6 - Mk.XI D.C.s. No unusual results were seen.

Post War - There were no U-boats in the Irish Sea at this date. The sighting was probably on a whale or black fish spouting.

Irish Sea

(42) 1246A/7/2/45 - Sunderland A/201 Squadron in weather 5/10 cloud, base 2,000 feet, sea very rough, wind 265° 40 knots, visibility up to 10 miles but only 2 miles in showers; sighted a continuous stream of whitish grey smoke trailing horizontally distant 2 miles in 5333N x 0408W C° 250°. As aircraft closed, the smoke started to disperse but one observer noticed a yellowish light underneath it. An attack was made with 6 - Mk. XI D.C.s while some smoke was still visible. It

was claimed that a thin oil patch 100 yards in diameter was observed a hour later near the position of attack. Surface forces were homed by the aircraft but they found no contact.

Post War - There were no U-boats within 80 miles of this position. The sighting was probably of a marine marker dropped much earlier by some other aircraft.

(43) 1506A/9/2/45 - Liberator B/206 Squadron, in weather 9/10 cloud, base 1,500 feet, sea slight, wind 2430 10 knots, visibility 15 miles; sighted a patch of white smoke distant 7 miles in 6005N x 0304W 00 Southwesterly. On approach the flow of smoke ceased when one mile away leaving only a drifting patch. An attack was made first with 6-Mk.XI D.C.s and then with 2 - Mk.24 mines. No unusual results were seen but it was claimed that the Sonobuoy, dropped with the second attack gave positive evidence of the presence of a U-boat. A further Sonobuoy pattern confirmed this. Homing was started and ultimately another Liberator and an escort group arrived but obtained no contacts,

West of the  
Shetlands.

Post War - There were no U-boats within 80 miles of this position. I cannot explain this phenomenon, it might have been a spent smoke float or a collapsing Willywaw or a whale blowing.

(44) 1113A/10/2/45 - Liberator Z/59 Squadron in weather 7/10 cloud, base 1,200 feet, sea rough, wind 2350 35 knots, visibility 5 miles but nil in frequent hail showers; obtained a Mk. VA radar contact at 5 miles range. Almost simultaneously smoke and vapour were sighted in 5445N x 0919W. As the aircraft closed, the radar contact was lost in sea returns at 2 miles range. By now a marked wake was seen at the head of which was a small funnel like structure in the midst of the spray. An attack was made with 6 - Mk.XI D.C.s but no result was seen as a hail storm obscured the scene. Sono buoys were dropped which it was claimed positive evidence of the presence of a U-boat. Another Liberator was homed to the position but obtained no contacts.

In Donegal  
Bay.

Post War. The nearest U-boat was 110 miles to the westward. The phenomenon was almost certainly a dense willywaw on which 10 centimetre radar registered. The weather conditions were favourable to these formations. Both the funnel like structure and the Sono buoy evidence were sheer imagination.

(45) 1743A/10/2/45 - Sunderland F/330 Squadron in weather 4/10 cloud, base sometimes down to sea level, sea slight, wind 2700 15 knots, visibility patchy but sometimes extreme; sighted some smoke distant 12 miles in 5933N x 0512W. On close approach, a long tapering oil slick was seen and near one end appeared occasional puffs of greyish white smoke. These ceased as aircraft ran in to attack with 4 - Mk. XI D.C.s. No unusual after results were seen. Details were passed to base and to an escort group in the vicinity.

North of  
Cape Wrath.

Post War - There were no U-boats within 90 miles of the position. The sighting appears to have been whales spouting with an old oil slick fortuitously nearby.

(46) 1713A/11/2/45 - Liberator K/59 Squadron in weather 8/10 cloud, base 1,500 down to 800 feet in showers, sea slight,

70 miles  
West of the  
Butt of Lewis.

wind 217° 15 knots, visibility in clear weather 15 miles; sighted smoke five miles away in 5839N x 0828W. On approach, it was described as bluish white and rising from a disturbed hump of water travelling down wind. The radar was not in use at the time. An attack was made with 2 - Mk. 24 mines while the smoke was still seen at the head of a frothy wake. When passing over it a bump was felt in the aircraft. Nothing further of note was observed.

Post War - Although both U.327 and 927 were on passage somewhere in the neighbourhood, it is considered that, from the above description, the object was undoubtedly a willywaw, particularly as the weather conditions were favourable for such formations and the aircraft sustained a bump when passing over.

14 miles West  
of Islay.

(47) 1110A/20/45 - Sunderland F/201 Squadron in weather 2/10 cloud, base 4,000 feet, sea slight but heavy swell, wind 250° 20 knots, visibility 15 miles; sighted a small patch of smoke 4 miles away in 5543N x 0654W. The smoke dissolved before aircraft reached the spot. Twenty minutes later another small patch of smoke was sighted in much the same position which also dissolved in about 1½ minutes but when over the spot a solid brown object was seen about one foot across and sloping up a foot out of water which disappeared almost immediately. Smoke floats and marine markers were dropped and a report made to base. Liberator Y/120 Squadron was diverted from patrol to investigate. This aircraft reached the scene at 1353 hours and also dropped markers, after which a sono buoy pattern was laid. Loud positive evidence of a U-boat was claimed and an attack was made with 2 - Mk. 24 mines at 1452 hours. Further loud U-boat noises together with a reverberating tearing sound lasting several seconds ensued and continued intermittently until 1630 hours. Homing transmissions were ordered by base and Liberator Q/120 Squadron arrived at 1800 hours followed by two escort vessels at 1830 hours. Nothing further transpired.

Post War - In spite of the fact that U.1064 was not far away on her way into the Irish Sea via the North Channel, it is considered that F/201's sightings were on one or more whales blowing. Similarly Y/120's Sono buoy evidence is also considered to be of whales as it is well known that they register on hydrophones even to producing cavitation swish.

Off Cape  
Wrath.

(48) 1902A/20/2/45 - Wellington E/304 Squadron in weather 2/10 cloud, base 3,000 feet, sea moderate, wind 230° 24 knots, visibility 6 miles; sighted a very white wake about 50 yards long and 20 yards wide distant 2 miles in 5853N x 0512W 0° 180° 10 knots. There was a swirling foam point at the apex and when passing near the rear end of the wake it was claimed that a pencil like black object was seen in the centre. No radar contact had been obtained on the Mk. VI A.S.V. The aircraft circled and attacked the still visible foaming apex with 6 - Mk. XI D.C.s. No unusual after effects were observed.

Post War - There were no U-boats within 100 miles of this position. Although the cloud conditions do not seem particularly favourable it is considered that this was a willywaw.

(49) 1623A/22/2/45 - Liberator S/120 Squadron in weather 9/10 cloud, base 2,000 falling to 1,000 feet; sea slight, wind 232° 17 knots, visibility 4 miles in haze; sighted what the pilot thought was smoke from a smoke float distant one mile

Just South-  
East of Islay  
in the Jura  
Sound.

in 5536N x 0554W. The aircraft closed and passed slightly to starboard when all the crew reported the cause of the smoke to be a brownish Schnorchel from which it was streaming down wind. The aircraft turned and attacked with 6 Mk.XI D.C.s just after the object had been lost but smoke was still visible. No results were seen and a Sono buoy pattern was laid which it was claimed gave positive evidence of the presence of a U-boat for a further three hours. Another Liberator arrived at 1854 hours and surface forces at 2030 hours. Nothing resulted from an all night search.

Post War - There were no U-boats within 60 miles of this land locked position. It seems probable that the pilot's first identification was correct and that the object seen was the canister of a marine marker.

17 miles N.W.  
of Holyhead.  
Irish Sea.

(50) 1124A/23/2/45 - Sunderland O/423 Squadron in weather 6/10 cloud, base 1,000 feet, sea moderate, wind 327° 18 knots, visibility 15 miles but hazy; sighted some whitish smoke distant 6 miles in 5325N x 0503W. This was 6 miles 300° from convoy MH.32. The smoke was rising from the water and then forming a low lying cloud. On approach it started to dissipate and an attack was made on the remnants with 6 - Mk.XI D.C.s. Photographs were taken. After the attack the aircraft circled and two minutes later another similar cloud was sighted five miles to the northward. Another attack was made with the remaining 2 - Mk.XI D.C.s. Photographs were again taken. W/T and R/T reports were sent out and first of all the trawler escort to the convoy arrived followed by a Liberator and an escort group. No contacts were obtained.

Post War - Although both U.1276 and 1064 could have been in the area, the photographs reveal a natural cloud-like phenomenon which is likely to be similar to a willywaw origin. In any case a genuine U-boat would be unlikely to Schnorchel by day in this area and certainly not so close to a convoy.

20 miles south  
of Fastnet.

(51) 1349A/23/2/45 - U.S.N. Liberator J/103 Squadron in weather nil cloud, sea slight, wind 2600° 12 knots, visibility extreme; sighted what was claimed as a submerging U-boat distant 1½ miles in 5103N x 0942W C° 050°. All the crew then say they identified Schnorchel smoke and bubbles. The aircraft attacked with 2 - Mk.24 mines, dropping Sono buoys and taking photographs. Immediately loud U-boat noises were heard with cavitation swish and countable beats indicating 120 revs. per minute. Two explosions were heard at 12 minutes after release of the mines followed a quarter of an hour later by eight more muffled explosions. At 1740 hours, fresh light oil slicks were sighted.

Post War - One of the photographs disclosed a whale in the act of spouting. Two other Liberators, who arrived in the area shortly after the attack, both reported whales spouting and disporting on the surface. There were no U-boats within 80 miles.

30 miles N.W.  
of Scillies.

(52) 0854A/24/2/45 - Halifax G/517 in weather nil cloud, sea calm, visibility 10 miles but hazy; sighted a U-boat diving and then a periscope distant 3 miles in 5015N x 0658W C° southwesterly. The aircraft closed and with binoculars saw a small feathery wake at intermittent intervals caused by a dark object very indistinctly sighted in spray. No depth charges were being carried but the object was machine-gunned.



Post War - There were no U-boats within 60 miles. The object is considered to have been a fish (whale, blackfish or porpoise).

30 miles N.W.  
of Holyhead.

Irish Sea.

(53) 1524A/26/2/45 - Liberator X/59 Squadron sighted a long tapering oil slick in 5339N x 0507W. The oil looked suspiciously fresh and a Sonobuoy pattern was laid. For the next three hours strong evidence of a U-boat was claimed including propeller beats varying between 120 and 132 revs. per minute. An attack was made with 2 - Mark 24 mines but no explosions resulted and the hydrophone noise ceased soon after. Surface forces were homed to the scene but found nothing after searching.

Post War - No U-boat was present. The position was, however, very close to a recent wreck. This attack is a sample of an increasing number of similar attacks on oil slicks accompanied by wishful hearing on the Sono buoy patterns laid around them.

Middle of  
North Sea.

(54) 0228A/27/2/45 - L/L Liberator N/224 Squadron obtained a Mk.X (3 cm.) A.S.V. contact range 10 $\frac{1}{2}$  miles. The aircraft homed but the contact vanished at 5 miles. The range was run off and at the spot a Sono buoy pattern was laid. Positive evidence of a U-boat was claimed from three of the buoys giving a rough course for the U-boat of 075° in position 5735N x 0220E (half way across the North Sea). A blind attack was then made with 8 - Mk.XI D.C.s.

Post War - There were no U-boats anywhere near this position.

14 miles off  
the Irish Coast  
North of  
Tuscar Rock.

(55) 0831A/28/2/45 - Wellington A/36 Sqdn. in weather 3/10 cloud, base 3,000 feet, sea moderate, wind 30 knots, visibility 20 miles; sighted a small patch of smoke distant 2 miles in 5237N x 0551W. Aircraft closed to identify and reported that smoke was as from a Schnorchel. Aircraft then circled and observed that the smoke came up in puffs at the bases of which were short wake marks. An attack was made on the most recent mark with 6 - Mk.XI D.C.s. No results were seen and no more smoke occurred. A Liberator arrived at 0850 hours but saw nothing.

Post War - There were no U-boats anywhere near this position. From the description the attack was made on one or more whales or blackfish spouting.

#### MARCH 1945

North of  
Scotland.

(56) 1019A/1/3/45 - Liberator V/547 Squadron in weather 5/10 cloud, base 1,800 feet, sea rough, wind 315° 30 knots, squally with snow showers, visibility 6 miles; sighted Schnorchel smoke distant 4 miles in 5907N x 0509W. On closing, a large wake was seen and the disturbance at head estimated as travelling southerly at 6 knots. Owing to a breakdown in the intercom, no attack was made and when aircraft turned the smoke and disturbance had dispersed.

Post War - A typical willywaw in typical weather for their formation.

(57) 1456A/1/3/45 - U.S.N. Liberator P/103 Squadron flying at 4,500 feet in good weather and maximum visibility, sighted an oil slick in 5148N x 0702W. This was lying in a northeasterly direction and was 300 yards long. A Sono buoy

South of  
Ireland.

pattern was dropped which it was claimed gave positive evidence of a U-boat. For nearly  $1\frac{1}{2}$  hours, the operator reported unmistakable cavitation swish and propeller beats at 156 revs. per minute. Finally an attack was made with 2 - Mark 24 mines, followed it was claimed, by two explosions and long drawn out rumbling and cracking noises.

Post War - The nearest U-boat was U.1019, 35 miles to the N.E. The position of attack was within 1000 yards of a known wreck and the tidal stream at the time was setting  $225^{\circ}$ . The Sono buoy evidence was entirely wishful hearing. This and the next example are given as typical of thirteen other attacks made during March on oil slicks which are not mentioned in the text of Chapter IX (vi) because they are so plainly non-sub.

S.E. of  
Lizard.

(58) 1337A/4/3/45 - U.S.N. Liberator C/105 Squadron flying in calm weather, visibility 10 miles, sighted a suspicious oil slick in 4948N x 0547W. A pattern of Sono buoys was laid which it was claimed confirmed a U-boat at 150 revs. per minute. An attack was made with 2 - Mark 24 mines, followed by the sound of two explosions. No break-up noises were heard but the revolutions dropped to 100 per minute.

Post War - There were no U-boats within 50 miles. At the time the tidal set was  $225^{\circ}$  which again would give the impression that oil from a wreck was advancing northeasterly. The Sono buoy evidence appears to be wishful hearing in this case also.

Close S.E. of  
Scilly Isles.

(59) 1303A/4/3/45 - U.S.N. Liberator C/110 Squadron in weather 2/10 cloud, base 1,800 feet, sea slight, wind  $360^{\circ}$  12 knots, visibility 18 miles; sighted two small puffs of smoke distant 3 miles in 4952N x 0611W. Aircraft, when over the position, noted that the puffs were just down wind of two small patches of disturbed water. A Sono buoy pattern was laid which, it was claimed, gave evidence of a U-boat proceeding at 120 revs. per minute. An attack was made with 2 - Mark 24 mines. No explosions were heard and the regular beats continued.

Post War - The nearest U-boat was 40 miles away. The sighting appears to have been on whales or black fish blowing. It is known that the powerful flukes of such mammals produce rhythmic beats and cavitation swish in hydrophones.

West of  
Hebrides.

(60) 1427A/3/4/45 - Liberator D/547 Squadron in calm weather and visibility 5 miles obtained a radar contact momentarily at a range of  $1\frac{1}{2}$  miles. A patch of bluish smoke was then seen in 5835N x 0900W which rapidly faded and had disappeared on arrival leaving no aiming mark for an attack.

Post War - The nearest U-boat was over 30 miles away. The sighting appears to have been on a whale or black fish spouting.

North of  
Scotland.

(61) 1541A/4/3/45 - Liberator N/224 Squadron in weather 4/10 cloud, base 2,500 feet, sea moderate, wind  $296^{\circ}$  27 knots, visibility 15 miles; sighted a cloud of pale blue Schnorchel smoke distant 6 miles in 5846N x 0427W moving  $030^{\circ}$  8 knots. Simultaneously a radar contact was obtained on the Mk.X (3 cm.) A.S.V. When about 300 yards away the smoke ceased, leaving a long trail of disturbed water. An attack was made with six depth charges and as the aircraft passed over the head of the trail a distinct bump was experienced. About a minute later the Flight Engineer reported seeing momentarily a periscope

and Schnorchel  $1\frac{1}{2}$  miles away but on turning to close the pilot could not pick up any trace. Twenty minutes later another sighting of Schnorchel smoke was reported two miles away but this vanished on closing. Finally a Sono buoy pattern was laid in the area and for four hours it was claimed that U-boat noises were heard ranging from propeller beats at 92 revs. per minute to high speed machinery and the operation of hydroplanes.

Post War - U.978 had just arrived in the area but makes no mention of any attack. The evidence of a long trail of disturbed water and the bump experienced when passing over the head of it points unmistakably to a willywaw. The rest of the report appears to be imagination and wishful hearing.

West of  
Ireland.

(62) 1204A/5/3/45 - Sunderland I/423 Squadron in weather 5/10 cloud, base 2,300 feet, sea slight, wind  $255^{\circ}$  6 knots, visibility extreme; sighted a stream of whitish grey smoke two miles away in  $5344N \times 1300W$ . The smoke was dense, rising from the sea and billowing down wind. It ceased when aircraft was about one mile distant but eight depth charges were released on the estimated source. Markers were dropped.

Liberator Z/59 Squadron was homed to the spot arriving at 1354A hours and laid a Sono buoy pattern around the markers. U-boat noises were, it was claimed, immediately picked up and at 1510 hours an attack was made with 2 - Mark 24 mines. The noises continued with propeller beats for another two hours.

Post War - There were no U-boats within 40 miles. The whole episode appears to have originated from another aircraft's smoke marker.

Firth of Clyde

(63) 1642A/5/3/45 - Barracuda A/815 F.A.A. in weather 7/10 cloud, sea slight, wind  $300^{\circ}$  20 knots, visibility 10 miles; sighted smoke and later a wake distant 2 miles in  $5512N \times 0506W$ . The smoke source was moving  $330^{\circ}$  at 4 knots leaving a white wake 200 yards long. An attack was made with four depth charges after which nothing more was seen.

Post War - There were no U-boats anywhere near. This appears to have been a willywaw.

Irish Sea

(64) 1920A/5/3/45 - Sunderland O/201 Squadron in weather 8/10 cloud, base 5,000 feet, sea slight, wind  $320^{\circ}$  20 knots, visibility 15 miles but haze increasing; sighted a small cloud of whitish smoke 8 miles away in  $5352N \times 0450W$ . On approach, the smoke appeared to be hovering in the air but was denser at the lower end near the surface of the sea. As the aircraft ran in to attack, the smoke had almost dispersed so only two depth charges were released. When passing over the spot the tail of the aircraft was heavily jolted.

Post War - U.483, the nearest U-boat, was about 30 miles to the westward. The jolt experienced by the aircraft points to a willywaw being the object attacked.

Irish Sea.

(65) 0959A/6/3/45 - Sunderland V/422 Squadron in weather 10/10 cloud, base 2,000 feet, sea moderate, wind  $337^{\circ}$  20 knots, visibility 20 miles; sighted Schnorchel smoke and wake distant 5 miles in  $5408N \times 0500W$   $0^{\circ}$   $300^{\circ}$ . An attack was made with eight depth charges and as they exploded the beam lookout reported a marked turbulence in the water at the head of the wake. Nothing remained after the subsidence of the

explosion. At 1910A hours, Sunderland V/201 Squadron, after a radar contact, homed and sighted in fading light conditions a dome-like hump of water moving 020° at 10 knots or more and leaving a long wake of disturbed water in 5415N x 0503W. The sighting was too close for prompt attack and after turning on reciprocal the target could not be seen.

Post War - Both these sightings were plainly of willywaws.

S.E. of  
Portland Bill.

(66) 1114A/8/3/45 - Barracuda A/810 Squadron in weather no cloud but slight sea fog on surface, sea slight, wind 340° 10 knots, visibility 6 miles in clear patches; sighted a trailing patch of white vapour about 4 miles away in 5022N x 0210W. When aircraft closed, the trail was 200 yards long and no precise source could be seen: nearby was a long wake mark indicating a northwesterly course by some object. The head of the wake was attacked with six depth charges. No unusual after results were seen.

Post War - Although U.683 was on patrol in the neighbourhood, this sighting appears more likely to have been a natural phenomenon, probably a willywaw.

Irish Sea.

(67) 1115A/8/3/45 - Sunderland U/461 Squadron in weather 10/10 cloud, base 2,000 feet, sea calm, wind 340° 12 knots, visibility 10 miles; sighted a small cloud of whitish smoke distant 6 miles in 5240N x 0539W. On approach, the cloud was seen to be hanging in the air just above the surface and slowly dispersing down wind. An attack was made with two depth charges with no unusual after result.

Post War - This sighting appears likely to have been a natural phenomenon.

North of  
Ireland

(68) 1412A/8/3/45 - Sunderland Z/422 Squadron in weather 8/10 cloud, base 2,000 feet, sea calm, wind 338° 12 knots, visibility 5 miles; sighted Schnorchel smoke distant 5 miles in 5537N x 0650W. On close approach the smoke was hanging in the air in a crescent curve having apparently drifted down wind from a patch of disturbed water. Two depth charges were released to leeward of this patch but no unusual results followed.

Post War - Excellent photographs were taken by Z/422 which make it plain that the hanging cloud is vaporisation from a small round whirlwind patch showing on the calm surface. This is obviously a calm weather phenomenon and probably applies to the previous two sightings, both of which occurred on this day and in similar weather conditions.

St. George's  
Channel.

(69) 1402A/9/3/45 - Sunderland X/461 Squadron in thick haze from sea level up to 1,500 feet, sea calm, visibility 1½ miles; sighted smoke rising from a small patch of bubbling water at the head of a wake distant ½ mile in 5150N x 0514W 0600. No attack was possible as aircraft was on a radar exercise and not carrying depth charges.

Post War. This again is a calm damp weather whirlwind phenomenon; moreover the only U-boat near was U-1019 and from her log she was at this hour proceeding submerged at 80 feet in a position 35 miles to the northwest.

(70) 1053A/14/3/45 - U.S.N. Liberator X/107 Squadron in weather 10/10 cloud, base 1,200 feet, sea rough, wind 220° 20 knots

South of  
Ireland

visibility 10 miles in hazy conditions; sighted a long white wake with a hump of disturbed water at the head distant  $\frac{1}{4}$  mile in 5146N x 0710W 08 0408 5 knots. No attack was made as the wake was too close at the first sighting and had disappeared before a run-in could be lined up.

Post War - There were no U-boats within 35 miles. The description is of a typical willywaw.

Off  
Aberdeen.

(71) 1027A/16/3/45 - Liberator K/547 Squadron in fine weather, moderate sea, wind 275° 25 knots, visibility 10 miles; sighted a puff of whitish smoke distant 3 miles in 5703N x 0150W. On closing, the smoke had dispersed and there was no sign of a wake. Five depth charges were released on the estimated position and by an error 2 - Mk. 24 mines also dropped at the same time.

Post War - U.778 was on patrol in the general area but this sighting is considered to be of a whale or black fish spouting.

North of  
Shetlands.

(72) 0237A/17/3/45 - Catalina J/210 Squadron, after a radar contact, homed to  $\frac{3}{4}$  mile range but the Leigh Light revealed nothing in a calm sea. Another run was made on the same radar contact and at  $\frac{1}{2}$  mile nothing was illuminated so a blind attack with four depth charges was made. Just after release a barrel-like object with a short vertical pipe was seen almost under the aircraft in 6222N x 0120W.

Post War - There were no U-boats within 60 miles so the object was undoubtedly non-submarine flotsam.

Northwest  
of Shetlands

(73) 0753A/17/3/45 - Liberator E/547 Squadron in fine weather, calm sea and maximum visibility; obtained a radar contact and simultaneously sighted greyish smoke at 7 miles range in 6114N x 0232W. On turning to home, the radar contact was lost and as the position was closed the smoke dispersed gradually. On arrival at the estimated spot a small black cylindrical object was seen sticking up about a foot out of water. An attack was made with 2 - Mark 24 mines but without result and no evidence was obtained from a subsequently laid Sono buoy pattern.

Post War. - This seems a clear case of a nearly expended smoke marker being picked up and attacked.

Irish Sea

(74) 1015A/17/3/45 - Anson DA/3S of the General Reconnaissance Squadron in good weather, calm sea, wind 250°, 5 knots, visibility 15 miles; sighted a Schnorchelling U-boat making thick whitish smoke 8 miles distant in 5335N x 0521W 0° 215° 3 knots. As the aircraft closed, the smoke was seen to be coming from a moving point of origin and rising vertically for some feet and trailing away in a plume 400 yards long. On arrival the smoke had ceased and there was no wake mark.

Post War - There were no U-boats anywhere in the Irish Sea at this date. The sightings must therefore have been either a smoke marker or a natural phenomenon.

S.W. of  
Needles.

(75) 1120A/18/3/45 - U.S.N. Liberator U/107 Squadron in weather nil cloud, sea slight, wind 210° 20 knots, visibility extreme; sighted a white looking wakemark distant 6 miles in 5016N x 0200W moving westerly at about 3 knots. On close approach this was seen to be a swirl foaming at the perimeter, horseshoe

in shape and about 30 yards in diameter. This was attacked with eight depth charges without unusual result. A few minutes later, another similar but smaller swirl was seen some 250 yards from the first and also estimated as moving in the same direction. This was attacked with four depth charges, again without result. No indications were received from Sono buoys dropped near the spot.

Post War - There were no U-boats within 120 miles. At this time and date the tidal stream was setting easterly at 3 knots and swirls over an uneven bottom might well cause the phenomenon reported.

North of  
Lossiemouth.

(76) 1655A/18/3/45 - Liberator U/224 Squadron in slightly hazy weather, sea slight, wind 183° 20 knots, visibility 10 miles; sighted a narrow wake 50 yards long distant 3 miles in 5752N x 0312W travelling in a northerly direction at 10 knots. Nothing solid was seen at the head of the wake. On closing, the wake ceased to move leaving a swirl of disturbed water at the apex. An attack was made with six depth charges without result.

Post War - The only U-boat anywhere near was U.778 and she was over 40 miles to the eastward. The description has all the features of a willywaw.

Off  
Milford Haven

(77) 1945A/20/3/45 - Sunderland S/461 Squadron in weather nil cloud, sea slight, wind 230° 20 knots, visibility 12 miles; sighted smoke and a wake distant 1½ miles in 5123N x 0546W travelling 030°. The smoke ceased immediately after the sighting and on arrival there was no aiming mark to attack.

Post War - A natural phenomenon, either a black-fish spouting or a small willywaw.

West coast  
of Norway.

(78) 1745A/23/3/45 - Mosquito D/248 Squadron in hazy weather, sea calm, wind 180° 5 knots, visibility 2 miles; sighted Schnorchel smoke and wake distant 700 yards in 6123N x 0332E. The smoke rose to about 30 feet and trailed for about 100 yards. It was reported that the point of origin showed a constant yellowish light.

Post War - An obvious smoke marker still burning.

West coast  
of Norway.

(79) 1610A/25/3/45 - Mosquitoes P and L/248 Squadron in hazy weather, sea slight, wind 160° 15 knots, visibility 3 miles; sighted a trail of whitish smoke rising to 30 feet and about 200 yards long distant one mile in 6105N x 0256E.

Post War - Probably another smoke marker.

St. George's  
Channel.

(80) 1915A/26/3/45 - Sunderland X/228 Squadron in little cloud, sea calm, wind 280° 10 knots, visibility 15 miles; obtained a radar contact range 2¼ miles in 5202N x 0526W. Nothing could be seen through binoculars and the contact was homed on down to ¼ mile range. Immediately following loss of contact the aircraft, at 150 feet altitude, experienced a very violent bump although air conditions were exceedingly smooth prior to and after this occurrence. A marine marker was dropped and an attack made with two depth charges.

Post War - This appears undoubtedly to have been an atmospheric disturbance similar to a willywaw and upon which Mark VI A.S.V. registered.

North of  
Banff

(81) 1103A/28/3/45 - Liberator B/224 Squadron in weather 4/10 cloud, base 3,000 feet, sea slight, wind 230° 8 knots, visibility 15 miles; sighted smoke distant 6 miles in 5752N x 0245W. No attack was made as the smoke ceased when still 1½ miles away. A Sono buoy pattern was laid which, it was claimed, gave positive evidence of a U-boat travelling eastwards at 140 varying to 180 revs. per minute until 1247 hours when the noises died away. No attack was made as the U-boat was considered to be too deep.

Post War - There were no U-boats anywhere near. No explanation can be given but it is quite certain that it was not a U-boat.

North of  
Scotland

(82) 1632A/30/3/45 - Liberator T/86 in weather 8/10 cloud, base 1,500 feet, sea rough, wind 250° 35 knots, visibility 5 miles but less in frequent showers; sighted smoke and wake distant 3 miles in 6000N x 0510W travelling fast in a direction 060°. A Sono buoy was dropped near the apex and attack made with 2 - Mark 24 mines. There was no result and no evidence came from the Sono buoy. A depth charge attack was then made on the apex which had no effect on the rapidly travelling smoke. Everytime the aircraft ran over the target a very severe bump was felt which, in the light of existing doctrine, was thought to be caused by the hot exhaust gases from a Schnorchel. Finally the pilot was forced to conclude that these bumps resulted from a terrific draught above an incipient waterspout which by 1650 hours was reaching up to a low cumulus nimbus cloud directly overhead. Two minutes later, while taking photographs, the aircraft was struck by lightning and left to resume patrol. At 1700 hours a report to this effect was made to base. However, No. 18 Group ordered a U-boat hunt until P.L.E.

Post War - The pilot was, of course, quite correct. His photographs confirm that it was a large willywaw which nearly became a genuine waterspout.

West of  
Ireland.

(83) 1636A/30/3/45 - Liberator F/59 Squadron in weather 6/10 cloud, base 1,500 feet, sea moderate, wind 250° 26 knots, visibility 10 miles but less in showers; sighted Schnorchel smoke and wake distant 8 miles in 5338N x 1026W travelling fast downwind 070°. As the aircraft approached, a disturbance was seen at the apex of the wake from which smoky spray rose to a height of about 400 feet. An attack was made with one Mark 24 mine without result. While turning after the attack, the scene was viewed down sun during a break in the clouds and the pilot realised that the target was an incipient waterspout.

Post War - These two reports were the first occasion on which willywaws were positively identified as such at the time. Henceforward it was at last suspected at H.Q. Coastal Command that all Schnorchel smoke sightings were not necessarily genuine.

In addition to this list of bogus sightings and attacks for March 1945, there were during the month 14 attacks made on oil slicks under the mistaken impression that a U-boat was present. These occurred in various positions around the British Isles and many were accompanied by so called positive evidence from Sono buoy patterns.

APRIL 1945

S.E. of  
Iceland

(84) 0911B/1/4/45 - Canso O/162 R.C.A.F. Squadron in weather 4/10 cloud, base 1,600 feet, sea state 4, wind 336° 23 knots, visibility extreme; sighted small puffs of smoke distant 18 miles in 6321N x 1419W. On the approach, more puffs of whitish wispy smoke were seen to come from the surface of the sea. There was no contact on Mk. VIII 3 cm. A.S.V. The impression given was of an object breaking surface at frequent but irregular intervals. A sono buoy was dropped which, it was claimed, gave 52 revs. per minute. An attack was made with one Mk.24 Mine but nothing resulted. Another sono buoy was dropped which also gave 52 revs. per minute. The puffs of smoke persisted until 0934 hours after which they ceased.

Post War. There was no U-boat within 110 miles. From the description the whole episode appears to be a school of either whales or porpoises. N.B. 52 revs. per minute is impossible in a U-boat. Dead slow is at least 100 r.p.m. on both shafts or 150 r.p.m. on one.

Bristol  
Channel

(85) 1407B/2/4/45 - Mosquito PZ of No. 8 O.T.U. in weather 7/10 cloud, sea moderate, wind 280° 20 knots, visibility 7 to 12 miles; sighted puff of smoke and a small wake distant 2 miles in 5048N x 0512W. The smoke dissolved rapidly. At 1415B hours more smoke and a small wake were sighted distant 3 miles in 5058N x 0522W. Again the smoke soon disappeared.

Post War. There was no U-boat within 90 miles. The description fits whales or black fish spouting.

Donegal Bay

(86) 0745B/4/4/45 - Sunderland Z/201 Squadron in weather 7/10 cloud, base 5,000 feet, sea state 2, wind 240° 15 knots, visibility 7 miles with slight haze; obtained a Mk. III A.S.V. contact range  $3\frac{1}{2}$  miles. Five seconds later, smoke was seen on the sea distant about 5 miles in 5426N x 0904W. The smoke was dirty white issuing in a steady column from a point on the surface and travelling slowly down wind. As the aircraft approached, the issue ceased and the smoke dispersed. Liberator Q/59 arrived at 0854 hours and laid a sono buoy pattern. No positive evidence was received.

Post War - There were no U-boats within 300 miles. This appears to be either a willywaw or a nearly spent smoke marker.

Moray  
Firth

(87) 1226B/4/4/45 - Mosquito Q/333 Squadron in weather 8/10 cloud, base 2,000 feet, sea slight, wind 300° 15 knots, visibility extreme; sighted schnorchel smoke and apparent wake distant one mile in 5744N x 0227W 0° 330° 7 knots. Aircraft attacked smoke with cannon fire without result.

At 1435B hours, similar smoke was sighted distant 5 miles in 5747N x 0201W. Again the smoke was attacked with cannon fire and photographs were taken.

Post War. There were no U-boats within 120 miles. Both episodes were smoke markers and the photographs confirm this.

Inside the  
Hebrides

(88) 1322B/5/4/45 - M.A.D. Catalina V/63 U.S.N. Squadron in weather 3/10 cloud, base 2,000 feet, sea smooth, wind 220° 10 knots, visibility extreme; sighted a moderate amount of bluish smoke rise from the sea about 15 feet distant  $3\frac{1}{2}$  miles in 5803N x 0610W. Binoculars were in use and as the aircraft



approached the smoke slowly dissolved. An M.A.D. sweep was carried out but nothing was registered.

Post War. There were no U-boats within 80 miles. This was most likely a whale or black fish spouting.

N.W. of  
the Faeroes

(89) 0846B/6/4/45 - Catalina A/210 Squadron in weather nil cloud, sea moderate, wind 154° 22 knots, visibility extreme; sighted through binoculars some bluish white smoke rising from the sea distant 10 miles in 6255N x 0855W. The smoke formed a little cloud, faded and had disappeared at 4 miles range.

Post War. This was almost certainly a whale spouting. The nearest U-boat was U.773 inward bound about 60 miles to the westward.

N.E. of  
the Faeroes

(90) 1944B/7/4/45 - Liberator F/547 Squadron in weather 5/10 cloud, base 1,500 feet, sea state 3, wind 243° 16 knots, visibility 20 miles; sighted smoke, presumed to come from a schnorchelling U-boat, distant 8 miles in 6259N x 0524W. On the approach the smoke dissolved and had vanished at 4 miles range. A sono buoy was dropped but results were negative.

Post War. There were no U-boats within 100 miles. This also appears to have been a whale spouting.

N. of Ireland

(91) 1829B/8/4/45 - L/L Wellington W/172 Squadron in weather 6/10 to 9/10 cloud, base 3,500 feet, sea slight, wind 170° 10 knots, visibility 3 miles; sighted puffs of smoke distant 2 miles in 5546N x 0800W. At one mile range a definite short wake was seen and, it was claimed, a positive schnorchel head which was attacked with 6 - Mk.XI D.C.s. At 2105 hours a long oil streak four miles by 100 yards wide was observed in a position 4 miles N.E. of the attack position.

Post War. There were no U-boats within 150 miles. The position of the oil was very near two known wrecks. The smoke sighting was probably on a whale or black fish spouting, and the 'schnorchel head' was the fish actually breaking surface.

N.W. of  
Ireland.

(92) 1210B/10/4/45 - Liberator G/59 Squadron in weather nil cloud, sea calm, wind 146° 12 knots, visibility 5 miles hazy; sighted smoke distant 2 miles in 5502N x 1033W. The smoke, which was about 50 feet above the surface, faded out as the aircraft arrived over the spot. A pattern of sono buoys was laid but gave no evidence.

Post War. This was almost certainly another case of spout exhalation from a whale or black fish as there were no U-boats within 60 miles.

S.W. of  
Faeroes

(93) 1327B/10/4/45 - Liberator Q/53 Squadron in weather 10/10 cloud, base 1,500 feet, sea slight, wind 290° 7 knots, visibility less than 2 miles hazy; obtained contact on Mk.X 3 cm A.S.V. at 12 miles range. The aircraft homed but the contact was intermittent and was finally lost at about 2 miles range. The aircraft continued on same course and two objects were seen in the water under the port wing and two puffs of smoke came from them. The position was 6052N x 1150W. The objects were moving and soon afterwards there was a disturbance on the water and a fairly large puff of whitish smoke. The aircraft turned back but nothing more was observed. A sono

buoy pattern was dropped which, it was claimed, gave positive evidence of a U-boat at 120 beats per minute. An attack was made with 2 - Mark 24 Mines. Nothing resulted.

Post War. It is difficult to understand why the obvious identity of whales did not occur to the crew or subsequently to base headquarters. There were no U-boats within 110 miles.

West of the  
Shetlands

(94) 2029B/10/4/45 - Liberator H/547 Squadron in weather 8/10 cloud, base 8,000 feet, sea slight, wind 110° 20 knots, visibility extreme; sighted small puffs of whitish smoke distant  $\frac{1}{4}$  mile in 6027N x 0420W. The puffs appeared at  $\frac{1}{2}$  second intervals, lasted about 4 seconds and faded out giving the impression of a schnorchelling U-boat travelling in a westerly direction at 3 to 4 knots. There was no well defined wake but with every puff there was a slight hump of disturbed water and once the top of the schnorchel head and a periscope was seen. An immediate attack was made with 2 - Mark 24 Mines and sono buoys were dropped. Ten minutes later the puffs were seen again and, it was stated, positive evidence of propeller beats (120 per minute) and various mechanical noises were heard followed by explosions and a loud rumbling at 2114 hours. (N.B. This was long after the Mark 24 Mines' endurance had lapsed).

Post War. In spite of the fact that there was a U-boat about 30 miles away, this is obviously another case of whales, black fish or a school of porpoises being seen and being subsequently heard on the sono buoys.

Irish Sea at  
north end of  
I. of Man

(95) 1711B/13/4/45 - Wellington BX of No. 6 (c) O.T.U. in weather 8/10 cloud, with haze up to 1,000 feet, sea calm, wind 210° 10 knots, visibility 6 miles; sighted a small amount of smoke and short wake distant one mile in 5427N x 0422W. There was no contact on Mk.III A.S.V. No attack was made as the aircraft was unarmed.

Post War. Probably a black fish or porpoise.

S. E. of  
Milford Haven

(96) 1720B/16/4/45 - Sunderland E/461 Squadron in weather 10/10 cloud, base 400 feet, sea clam, slight westerly wind, visibility 6 miles but lessening as sea fog developed; sighted smoke distant  $\frac{3}{4}$  mile in 5137N x 0444W C° 300° or reciprocal. The aircraft made three runs over the source to find a specific aiming mark and reported distinct bumps each time when over the smoke. A sono buoy pattern was dropped which, it was claimed, gave definite beats at 120 per minute with hard hammering heard. No attack was made as the U-boat was considered too deep to be affected by depth charges.

Post War. There were no U-boats within 120 miles. In view of the bumps experienced, this is considered to have been a willywaw.

Moray Firth  
North of  
Kinnaird Head

(97) 1749B/16/4/45 - Liberator P/224 Squadron in weather 3/10 cloud, base 3,000 feet, sea state 3, wind 210° 16 knots, visibility 5 miles hazy; obtained a Mk.X 3 cm. A.S.V. contact range 5 miles. The aircraft homed and sighted a white disturbance on the water resembling a diving swirl in position 5757N x 0155W. An attack was made with 2 Mark 24 mines. The parachute of one of these failed to open and the weapon circled on the surface for ten minutes before disappearing. The sono buoys, released with the mines, gave no evidence until three minutes after the attack when a prolonged underwater

'explosion' was heard followed some minutes later by the appearance of yellow and blue coloured objects over an area 100 yards square and ten minutes later by a cylindrical object 8 feet by 2 feet. (This latter was probably the damaged mine). More sono buoys were dropped which gave a variety of noises ranging from faint explosions to loud bubbling sounds. Liberator G/224 arrived at 1924 hours and Liberator K/86 Squadron at 1937 hours. Both aircraft added to the extensive sono buoy pattern and both reported bubbling and chugging noises. At 2012 hours, K/86 carried out an attack near the loudest buoy with 2 - Mark 24 mines but nothing resulted and at 2130 hours all noises had ceased.

Post War. There were no U-boats in the area. No satisfactory explanation of the object sighted can be given but it was definitely not a U-boat, neither can the wreckage seen be identified. The 30th Escort Group arrived on the scene at 2310 hours but saw no signs of wreckage and obtained no asdic contact.

Off Tarbet Ness  
right up the  
Moray Firth

(98) 2022B/16/4/45 - Liberator G/311 Squadron in weather 8/10 cloud, base 2,000 feet, sea state 2, wind 252° 15 knots, visibility 15 miles but hazy on surface; obtained a Mk. VA A.S.V. contact at 7½ miles range. The aircraft homed and sighted a very long oil streak. On reaching the head of this, the co-pilot sighted 5 miles further on a object thought to be part of a U-boat just showing above water in 5803N x 0323W moving northeastwards slowly. When two miles away, the object disappeared leaving a short swirl. This was attacked on arrival with 6 - Mk.XI D.C.s. There was no result but at the same time another disturbance leaving a wake was sighted ½ mile to the eastward. This had disappeared before investigation was possible.

Post War. There were no U-boats in the area. Here again there is no satisfactory explanation of the sightings. The most likely appears to be whales or black fish.

North of  
Orkneys

(99) 1110B/17/4/45 - Fortress B/512 Squadron in weather 3/10 cloud, base 4,000 feet, sea state 4, wind 210° 15 knots, visibility 15 miles; sighted a wake with a little smoke above it distant 4½ miles in 5950N x 0321W 0° southerly. While approaching, another wake with smoke was sighted distant 2 miles away to the south of the first. As the first wake and smoke had faded out on arrival, the second was attacked with 4 - Mk.XI D.C.s. Nothing unusual followed.

Post War. There were no U-boats within 80 miles and both the sightings are considered to have been on whales spouting.

In the North Sea  
80 miles east  
of Aberdeen.

(100) 1759B/17/4/45 - Liberator J/206 Squadron in weather 2/10 cloud, base 3,000 feet, sea state 2, wind 195° 15 knots, visibility 6 miles hazy; sighted, it was claimed, the conning tower of a partly surfaced U-boat distant 3 miles in 5633N x 0008W 0° N.E. slow. An attack was made with 2 - Mark 24 mines about 20 seconds after the object had disappeared. One minute later the rear gunner reported two small domes of water, indicating the explosions of the two mines, about 400 yards from the point of attack. A pattern of sono buoys was laid and from 1810 hours propeller beats at 72 per minute were heard.

At 1836 hours a wake of oil was sighted stretching from near the position of attack to a distance of 1½ miles in a southwesterly direction and a minute later this was attacked at

its apex with 6 - Mk.XI D.C.s. Just as the D.C.s. were released a small dark object was seen short of the apex and as the aircraft tracked over the Flight Engineer reported seeing an outline as of a submerged U-boat. Shortly after he reported a small dark object to have momentarily broken surface at the head of the wake. As the D.C.s were exploding, the rear gunner reported seeing a cylindrical shaped dark object lifted up and subsiding with the explosion plumes. No more propeller beats were heard on any of the sono buoys. Oil started to appear on the surface and gradually spread after five minutes to an area of one mile in diameter.

Post War. There were at this date only two U-boats anywhere in the North Sea. U.2329 was on patrol close off Montrose and U.2324 on patrol close off St. Abb's Head. Both subsequently regained harbour unharmed. The whole episode is therefore non-submarine and might well have been on whales or black fish, one of which was wounded by the Mark 24 mines and finally killed and blown to pieces by the D.C.s.

(101) 1457B/21/4/45 - Canso R/162 R.C.A.F. Squadron in weather 1/10 cloud, base 2,500 feet, sea slight, wind 300° 7 knots, visibility extreme sighted smoke at about 10 miles. On the approach this was seen to be a continuous succession of bluish white smoke puffs and ceased when the aircraft was  $\frac{1}{2}$  a mile distant. At the spot, in 6218N x 1316W, wisps of smoke and a small patch of disturbed water could still be seen so an attack with 2 - Mark 24 mines was made. Nothing resulted and the one sono buoy released gave no evidence. Ten minutes later the puffs were seen again about 2 miles away. Sono buoys were dropped round this spot which gave regular beats of 120 per minute.

S.E. of  
Isleland

Liberator L/53 now joined up and reported that very positive evidence of a U-boat was given by the pattern including cavitation swish and revs. of 84 per minute. Finally one buoy gave loud 110 beats per minute and at 1614 hours an attack was made with 1 - Mark 24 mine. No explosion was heard but the U-boat noises continued until 1750 hours.

Post War. There were no U-boats within 120 miles. The initial sighting is considered to have been on whale spouts and the subsequent sono buoy evidence on whale movements under water.

(102) 1408B/22/4/45 - Halifax P/518 Squadron on a meteorological flight in weather 5/10 cloud, base 2,500 feet, sea calm, wind 010° 4 knots, visibility extreme; sighted greyish smoke up to about 20 feet above the sea distant 10 miles in 5628N x 1039W. As the aircraft closed, the smoke dispersed and a fleeting glimpse was seen of a dark object on and then under the surface. No attack was made as the aircraft was unarmed.

N.W. of  
Ireland

Post War. There were no U-boats within 70 miles. This was almost certainly a whale spouting.

(103) 1536B/22/4/45 - Beaufighter N/489 Squadron on transit flight from Dallachy to Leuchars flying at 700 feet; sighted smoke coming from the top of a schnorchel distant one mile in 5746N x 0228W. No attack as no weapon was being carried.

In the  
Moray Firth

Post War. There were no U-boats in this area. The sighting is considered to have been on a smoke marker.

English Channel  
off  
Cape Barfleur

(104) 1729B/22/4/45 - U.S.N. Liberator L/110 Squadron in weather 4/10 cloud, base 10,000 feet, sea calm, wind 165° 12 knots, visibility 8 miles in slight haze; sighted three puffs of hazy looking smoke distant  $\frac{3}{4}$  mile in 4944N x 0105W. The A.S.V. was not in use. An immediate attack was made with 2 - Mark 24 mines. Sono buoys were dropped which, it was claimed, gave positive evidence of a U-boat at 250 revs. per minute reducing later to 200. Three quarters of an hour later (long after the mines' endurance had lapsed) a loud explosion was heard on one of the buoys. At 1915 hours two escort vessels and M.A.D. R/63 Squadron arrived but no contacts were obtained.

Post War. There were no U-boats within 150 miles. It appears more than likely that the whole episode started with the sighting of a school of porpoises.

In the  
Firth of Tay

(105) 1635B/23/4/45 - Liberator G/206 Squadron in weather nil cloud, sea calm, wind 230° 5 knots, visibility 12 miles; sighted a small plume of smoke about 50 feet high with a possible dark object at the base distant 5 miles in 5624N x 0202W. During the approach the water disturbance ceased at 4 miles and the smoke was disappearing at 3 miles distant. On passing over the spot only a faint swirl mark and a wisp of vapour remained. An attack was made with 3 - Mk.XI D.C.s and as they were released a dark cigar shaped object was seen under the aircraft.

Post War. There were no U-boats within 60 miles and the object is considered to have been a whale.

Irish Sea  
Off the west  
side of the  
I. of Man.

(106) 1038B/24/4/45 - Sunderland F/423 Squadron in weather 5/10 cloud, base 5,000 feet, sea calm, wind 195° 6 knots, visibility 4 miles; sighted an extensive cloud of white smoke billowing from a point in the sea distant  $\frac{1}{2}$  mile in 5414N x 0448W 0° 160° slow. Two of the crew sighted a small black object from which the smoke was coming. No wake was seen and there was no contact on the Mark III A.S.V. An attack was made with 6 - Mk.XI D.C.s but nothing unusual resulted though the smoke was not seen again. At 1150 hours the 2nd Escort Group arrived but found nothing.

Post War. This was a smoke marker and is confirmed by the photographs taken at the time.

South of  
Iceland

(107) 1409B/24/4/45 - Canso M/162 R.C.A.F. Squadron in weather 3/10 cloud, base 2,000 feet, sea state 2, wind 030° 10 knots, visibility 5 miles hazy; sighted a line of greyish wispy smoke distant 2 miles in 6011N x 1650W. The smoke stretched for 150 yards hanging low over the surface and dispersed as the aircraft approached, one of the crew reported a black vertical tube just visible in the sea near the head. A sono buoy pattern was laid but gave no positive results and as there was by then no aiming mark no attack was made.

Post War. There were no U-boats within 150 miles. It is considered this was a smoke marker.

N. of  
Shetlands

(108) 0933B/25/4/45 - Catalina N/210 Squadron in weather 4/10 cloud, base 2,000 feet, sea calm, wind light and variable, visibility extreme; sighted a white disturbance in the water followed by a large puff of white hazy smoke and then three more smaller puffs in succession distant 5 miles in 6323N x 0112W. The vapoury haze was visible clearly down to  $1\frac{1}{2}$  miles,

faded rapidly at  $\frac{1}{2}$  mile and left a slick of smooth water. An attack was made with 4 - Mk.XI D.C.s. Nothing unusual resulted.

Post War. The nearest U-boat (U.234 outward) was about 40 miles to the westward. This is considered to be the exhalations of one or more whales.

(109) 1202B/26/4/45 - Canso B/162 R.C.A.F. Squadron in weather fog patches, sea state 3, wind 025° 15 knots, visibility clear except in occasional cloud down to sea level; sighted bluish smoke puffs issuing from a dark coloured dome shaped object with waves breaking on it distant 200 yards in 6226N x 1715W. Several of the crew saw the object and the pilot states that a single short vertical aerial was visible on top of the dome. There was no contact on the Mk.VIII 3 cm. A.S.V., indicating that the object had only just surfaced and too close to register. About five seconds after the sighting the aircraft was enshrouded in a snowstorm and when this cleared nothing could be seen of the object.

Post War. There were no U-boats within 110 miles. This seems to be another case of a whale surfacing to spout plus wishful sighting of an aerial.

(110) 1553B/26/4/45 - Liberator N/224 Squadron in weather 2/10 cloud, base 2,000 feet, sea calm, wind 265° 8 knots, visibility 20 miles; obtained a Mark X 3 cm. A.S.V. contact at  $4\frac{1}{2}$  miles but only held it for about one minute. Aircraft homed and sighted a small patch of smoke, greyish in colour and stationary, distant 3 miles in 6215N x 0250W. The smoke had dispersed before arrival over the spot and no attack was made. A sono buoy pattern gave negative results.

Post War. There were no U-boats within 60 miles. Once again this appears to be a whale spout and the 3 cm. A.S.V. registered on the whale as it broke surface.

(111) 2030B/27/4/45 - Sunderland F/228 Squadron in weather 10/10 cloud with patches of very low cumulus nimbus, sea state 4, wind 310° 21 knots, visibility up to 15 miles; sighted smoke and a foaming wake of a schnorchelling U-boat distant 4 miles in 5012N x 0547W 0° south. An attack was made with 6 - Mk.XI D.C.s and immediately after passing over the smoky head the aircraft became unmanageable and crashed into the sea.

Post War. There were no U-boats in this area. Having regard to the weather conditions this appears to have been a large willywaw, hence the loss of control and crash into the sea.

(112) 1950B/29/4/45 - Catalina P/202 Squadron in weather 6/10 cloud, base 3,000 feet, but numerous showers from lower nimbus clouds, sea state 5, wind 340° 30 knots, visibility good but down to 2 miles in showers; sighted white steamy smoke distant 4 miles in 5316N x 0511W and through binoculars made out a long wake astern of it indicating a southerly course at about 10 knots. While still clearly visible an attack was made with 5 - Mk.XI D.C.s which straddled the head of the wake. Good photographs were taken. After the explosion plumes had subsided, the object was seen continuing on the same course and at the same speed. Catalina Q/202 Squadron was contacted on R/T and arrived in the vicinity at

S. of  
Iceland

E. of  
Faeroes

N. of  
Lands End

Irish Sea  
20 miles W  
of Holyhead

2010B hours. This aircraft obtained a Mk.VIIIA 3 cm. A.S.V. contact and simultaneously sighted at 2 miles range another moving wake with smoke at the head in 5320N x 0520W also travelling south. An attack was made with 5 - Mk.XI D.C.s while the target was clearly visible. As the aircraft went low over the smoke a violent turbulence was experienced which threw it about so as to be almost unmanageable. Good photographs were taken and after subsidence of the explosion plumes the smoke was seen still continuing on the same course. It was followed by the aircraft until it lessened and faded away at 2115 hours some 12 to 15 miles south of the attack position.

All this occurred about 3 miles west of the southbound convoy BB.97 whose trawler escort was informed and came over to the scene at 2020 hours. Depth charge attacks were delivered by her on reputed asdic contact at 2055 and 2103 hours but without result.

Post War. The photographs of both attacks reveal obvious willywaws and subsequently were admitted to be such by H.Q. Coastal Command and the Admiralty Assessment Committee.

(113) 0810B/30/4/45 - Sunderland H/201 Squadron in weather 10/10 cloud, base 500 feet, sea state 4, wind 340° 17 knots, visibility 5 miles but nil in snow squalls; sighted smoke distant 4 miles in 5342N x 0455W. During approach it was stated that a schnorchel making a pronounced wake was seen. An attack from 300 feet was attempted but the bomb doors failed to open. Another run was made at 200 feet but this time the depth charges failed to release, after which the smoke and wake disappeared. Sono buoys were dropped but gave no evidence.

Irish Sea  
20 miles S. of  
I. of Man.

At 1135B hours, in similar weather conditions, white smoke and spray were sighted at the head of a wake distant 2½ miles in 5355N x 0445W travelling at 4 knots in a southerly direction. An attack was made with 6 - Mk.XI D.C.s and photographs were taken. It was noticed that just before the release the smoke appeared to be dispersing and the foaming wake diminishing. Immediately after the attack the weather closed down in a heavy snow storm. During a break in this, the markers dropped with the depth charges were relocated and a sono buoy was released near them. Only water noises were heard. The position was lost in a renewed heavy squall of snow.

At 1200B hours the aircraft listened in to the sono buoys dropped earlier in the first sighting position but only water noises were heard, and at 1300B the aircraft resumed patrol. Ten minutes later the snow squall lifted and three frigates were sighted and contacted on R/T. Details of both the sightings were given and at the S.O.'s orders a marker was dropped on the estimated position of the 0810 hours sighting, after which at 1445B hours the aircraft carried on with its patrol.

The frigates, which were the 14th Escort Group (S.O. in Hesperus), searched in the vicinity and at 1900B hours picked up asdic contact on a bottomed object in 5342N x 0453W. Depth charge attacks on this brought up diesel oil, bits of wood and several old tins of German origin. For a day or two it was thought that these came from the wreck of U.1024 sunk in this vicinity on 12 April. However, a search on 2 May by EG.10 confirmed that it was definitely another U-boat.

After the war the Assessment Committee debated as to which of four U-boats, which disappeared without trace during the last month of hostilities, this might be. The four concerned were U.242, 325, 326 and 398. A decision was made in 1946 to allot U.325 to this attack and to credit H/201 Squadron with a share as having been the means of bringing the Escort Group to the scene.

Post War in 1956. The photographs taken by H/201 Squadron of the attack show conclusively that the target was a willywaw and the weather conditions at the time fully bear this out as being typical for their formation. Without such photographic evidence on the first sighting it is not possible to decide if this too was a willywaw but in view of EG.14's subsequent depth charge attack results, it is more likely that it was a genuine U-boat schnorchelling by day under cover of bad weather.

Regarding the identity of the U-boat destroyed, recent examination of German U-boat records has disclosed that U.325 was detailed by signal on 10 April (when southbound well west of Ireland) to patrol along the south Cornish coast between Lizard and Plymouth so it is most unlikely that she ever went into the Irish Sea. On the other hand, U.242 was detailed for the Irish Sea and probably arrived there at the end of March. Her whereabouts in the Irish Sea during April are unknown as she made no signals and was never heard of again. It seems far more likely therefore that it was U.242 who was destroyed on this date by EG.14.

In addition to this list of bogus sightings and attacks for April 1945, there were during the month 15 attacks made on oil slicks in various positions round the British Isles under the mistaken impression that a U-boat was present. Many of them were accompanied by so called positive evidence from sono buoy patterns.

#### MAY 1945

(114) 1144B/1/5/45 - Sunderland E/228 Squadron in weather 7/10 cloud, base 2,500 feet, sea slight to moderate, wind 015° 16 knots, visibility 10 miles; obtained a contact on Mk.VIC A.S.V. at 11 miles range. The aircraft homed until a small cloud of white smoke or spray was sighted distant 5 miles in 4939N x 0649W moving down wind although no wake could be seen. The smoke faded on approach and at 2 miles range had disappeared. A sono buoy pattern was laid round the estimated position which, it was claimed, gave positive evidence of cavitation swish and banging noises. The M.A.D. fitted Catalina V/63 U.S.N. Squadron was homed to the scene but got no results. Later the 17th E.G. arrived and after attacking a doubtful contact, classified it as on a known wreck.

Post War. There were no U-boats within 80 miles. From the description the sighting could have been on whales surfacing to spout.

(115) 1915B/2/5/45 - L/L Wellington Q/36 Squadron in weather 8/10 cloud, base 2,000 feet, sea calm, wind 355° 12 knots, visibility extreme; while investigating a long stream of oil, sighted a trail of steamy looking vapour distant  $\frac{3}{4}$  mile in 5550N x 0840W. During the run in the pilot sighted a rusty pipe protruding about one foot from which the stream of vapour

S. of  
Scillies.

N. of  
Ireland.



was coming. An attack was made with 6 - Mk.XI D.C.s. and nothing further was seen.

Post War. There were no U-boats within 50 miles. At this position there were at least two known oil exuding wrecks and it was of frequent occurrence, in spite of this knowledge, for aircraft to think the oil suspicious and investigate with markers to try and decide whether streaks were moving. In this case there is little doubt that the sighting and attack were on a smoke marker dropped earlier by some other aircraft.

W. of  
Hebrides.

(116) 0709B/3/5/45 - Halifax HS/No.1674 H.C.U. in weather 2/10 cloud, base 2,000 feet, sea calm, wind 048° 6 knots, visibility extreme; obtained a short lived contact on Mk.III A.S.V. at 1½ miles range and simultaneously sighted smoke and small wake in 5701N x 1010W. On arrival, the smoke had faded into a slight haze and there was a small patch of disturbed water. No attack was made as only practice bombs were carried.

Post War. There were no U-boats within 50 miles. This appears to have been a whale spouting.

North Channel  
off  
Rathlin Island

(117) 1759B/3/5/45 - Catalina M/202 Squadron in weather 3/10 cloud, base 2,800 feet, sea calm, wind 325° 7 knots, visibility extreme; sighted light grey smoke issuing from the surface distant 4 or 5 miles in 5523N x 0635W. Bino-oculars were used and a short wake was seen above which the smoke was hanging and a dark object protruded slightly at the head of the wake. The smoke was similar to steam out of a kettle and formed a little cloud before dispersing. An attack was made with 5 - Mk.XI D.C.s after which some dead fish were seen followed by a white object which soon sank. The 25th Escort Group, supporting the nearby convoy SC.173, searched the vicinity but only reported numerous black fish.

Post War. This is a very good description of a black fish breaking the surface to spout. The nearest U-boat was U.1305 who was on patrol about 65 miles to the west.

The middle  
of the  
North Sea

(118) 2008B/3/5/45 - Mosquitoes X and D/248 and R/404 Squadrons in weather 4/10 cloud, base 1,500 feet, sea calm, wind 300° 4 knots, visibility 7 miles; sighted momentarily some white smoke ten yards in length with very smooth water like a wake in rear distant ¾ mile in 5633N x 0359E. The pilot of D/248 states he saw a schnorchel head momentarily under the smoke and fired a burst of cannon fire at it before it disappeared.

Post War. There were no U-boats within 90 miles and this was undoubtedly a black fish surfacing to spout.

N.W. of  
Ireland.

(119) 1653B/4/5/45 - Sunderland O/423 Squadron in weather 3/10 cloud, base 2,500 feet, sea state 3, wind 090° 15 knots, visibility extreme; the aircraft had been detailed to investigate an oil streak on the way to the patrol area. This had just been done when a dense trail of grey smoke, lying close to the surface and more than ½ mile long, was sighted distant 15 miles in 5502N x 1011W. As the aircraft approached, the smoke lessened, ceased to issue from the sea at 7½ miles and had dispersed at 4 miles range. The aircraft tracked over the estimated position but could see no aiming mark to attack. A sono buoy was dropped which gave loud clanking noises from 1716 to 1755 hours.

Post War. There were no U-boats within 50 miles and this is fairly obviously a smoke marker.

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During the first week of May 1945, there were, in addition to the foregoing, three attacks on oil slicks under the mistaken impression that a U-boat was present.

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This concludes the list of bogus sightings and attacks. In case the reader doubts the accuracy of U-boat positions deduced from the postwar study of German records on which is based the continual postwar comment of there being no U-boats within so many miles, it is remarked here that up to 29 May (long after all U-boats at sea had either surrendered or left our inshore waters) reports were coming in from aircraft describing schnorchelling U-boats under the same old familiar 'smoke moving at head of a wake', 'smoke puffs with subsequent positive sono buoy evidence', 'smoke which ceased on approach and dispersed', 'smoke coming from positive schnorchel head', 'positive schnorchel and periscope submerging on approach of aircraft with subsequent sono buoy evidence' etc. etc.

SECRET

1

APPENDIX VII

Growth of the U-boat Fleet and its operational dispositions  
Reference - War Diary of B. d U. but is approximate after Jan. 1945

		1944						1945				
		July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Atlantic ops.	Based in Biscay ports	95	30	5	2	2	1	1	1	1	1	1
	Based in S. Norway	29	66	94	93	105	104	119	123	128	124	103
Arctic ops.	Based in N. Norway	31	29	26	30	26	31	20	20	19	19	17
Baltic ops.	Based in N. Baltic	8	12	15	14	15	16	15	12	8	6	5
Based in Mediterranean		11	8	3	-	-	-	-	-	-	-	-
Based in Black Sea		6	6	3	-	-	-	-	-	-	-	-
Total number operational		180	151	146	139	148	152	155	156	156	150	126
Training Force		90	94	100	100	105	104	102	105	104	104	100
New boats on test and working up		162	166	156	163	161	170	183	200	203	190	167
Total U-boat Fleet at end of each month		432	411	402	402	414	426	440	461	463	444	393
No. of new U-boats put into commission		12	14	20	16	20	29	30	25	15	10	-
No. of fully trained boats sailing on first cruise		7	20	7	11	11	14	14	18	19	16	3
Average No. at sea in Atlantic and Home Waters		34	55	68	45	41	51	35	43	54	54	44
Average No. actually on patrol in billets		13	15	16	7	11	17	12	10	12	16	13
U-boat Wastage	Paid off	6	1	6	4	-	4	?	?	?	?	?
	Sunk - All causes	23	34	23	12	8	12	12	22	34	57	28
Planned U-boat Construction	Conventional Types	9	7	4	2	3	-	-	-	-	-	-
	Prefabricated XXI and XXIII	14	20	27	25	38	46	39	34	32	10	10
Actual building output	Conventional Types	6	3	6	-	2	1	1	-	-	-	-
	Prefabricated XXI and XXIII	9	11	20	22	16	34	28	19	10	5	1

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APPENDIX VIII

Enemy Vessel casualties by aircraft attack at sea in the  
Southern North Sea, off the coast of Norway  
and in the Kattegat/West Baltic area.

In the Southern North Sea

SEPTEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Night - 1st/2nd	Aux. minelayer - Tilly	Ge	60	-	254	off Ymuiden
Night - 5th/6th	Patrol boat - VP.416	Ge	637	-	855	N.E. of Walcheren
Day - 6th	M.V. - Rosafred lightship - Emil M.V. - Breda	Swe Ge Nor	1,496 400 1,261	- - -	455 489	N.E. of Wangeroog
Night - 10th/11th	R-boat - R.80	Ge	90	-	819	S. of Walcheren
Night - 11th/12th	Torpedo boat - T.61 Landing craft - MFP.185 Landing craft - MFP.186 Landing craft - MFP. Landing craft - MFP. Gun barge - AF.49 Gun barge - AF.59 Aux. minesweeper - M.3246 Harbour Defence - HD.09 Harbour Defence - HA.06 Dredger - Goolland	Ge Ge Ge Ge Ge Ge Ge Ge Du Du Du	600 175 175 175 175 250 250 150 150 60 239	- - - - - - - - - - -	143 524 855	In and off the estuaries of the Scheldt
Night - 15th/16th	Aux. minesweeper M.3203	Ge	200	-	855	off Terneuzen
Night - 16th/17th	Harbour Defence - HR.72 Harbour Defence - HHA.07	Du Du	103 120	- -	855	West Scheldt
Day - 17th	Patrol boat - VP.1201 Patrol boat - VP.1202	Ge Ge	210 194	- -	143, 236, 254	South of Heligoland
Night - 18th/19th	Aux. minesweeper - M.3663 Gun barge - AF.89 Tug - Buffon	Ge Ge Fr	200 250 250	- - -	855	West Scheldt
Day - 25th	M. classminesweeper - M.471 Harbour Defence - HD.07	Ge Du	750 107	-	143, 455, 489, 236, 254	off Den Delder
Night - 28th/29th	Harbour Defence - HM.06 Tug - Rotte	Ge Ge	60 50	- -	855	Maas River
Total by R.A.F. at Sea in September - 29 vessels sunk totalling 8,837 tons						
Total by Naval surface forces in the area - 6 vessels sunk totalling 895 tons						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 16	958	358	20
F.C. escort	123	18	-
F.C. Recce	162	27	2

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APPENDIX VIII

Off the coast of Norway

SEPTEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Day - 8th	Coaster - Hengelo	Du	195	-	236, 455, 254, 489	S.W. Norway
Day - 11th	M. class minesweeper - M.426	Ge	750	-	236, 254, 455, 489	Off Kristiansand South
	M. class minesweeper - M.462	Ge	750	-		
Day - 14th	Patrol boat - VP.1608	Ge	264	-	144, 404, 235, 248	Off Kristiansand South
	M. V. - Iris	Ge	-	3,323		
Day - 19th	M. V. - Lynx	Nor	1,367	-	144, 404, 235	West Norway
	M. V. Tyrifjord	Nor	3,080	-		
Day - 21st	Coaster - Vangsnes	Nor	191	-	144, 404, 235, 248	S.W. Norway
	Coaster - Hygia	Nor	104	-		
	fishing vessel	Nor	75	-		
Day - 24th	Harbour Defence - - NB.02	Ge	168	-	248	West Norway
	Coaster - Storesund	Nor	-	563		
Day - 28th	Harbour Defence - NK.02	Ge	80	-	248	Off Kristiansund South
Total by R.A.F. at sea in September - (11 vessels sunk totalling 7,024 tons ( 2 vessels dam. totalling 3,886 tons						
In the same area by H.M. submarines - 7 vessels sunk totalling 13,845 tons by surface craft - 1 vessel sunk of 140 tons  by carrier borne F.A.A. - (2 vessels sunk totalling 280 tons (2 vessels dam. totalling 5,515 tons						
Total by Naval forces in the area - (10 vessels sunk totalling 14,265 tons ( 2 vessels dam. totalling 5,515 tons						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 16	195	50	-
No. 18	448	104	3
F.C. escort	28	-	1

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APPENDIX VIII

In the Southern North Sea

OCTOBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Night - 1st/2nd	M.V. - Wachtel	Ge	992	-	143 855	off Hook of Holland
Night - 4th/5th	M.V. hull in tow	Ge	1,923	-	524	Off Borkum
Night - 7th/8th	Gun barge - A.F 76	Ge	250	-	855	off Terschelling
Day - 15th	Harbour Defence - DB.50	Du	339	-	236	off Norderney
	Harbour Defence - DB.21	Du	110	-	254	
	L.A.T. 15	Ge	200	-	455	
Total by R.A.F. at sea in October - 6 vessels sunk totalling 3,814 tons						
Total by Naval surface forces in the area - 1 sunk of 301 tons - 1 Dam. of 90 tons.						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C Loss
No. 16	542	99	8
F.C. escort	43	-	-
F.C. Recce	138	-	1

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APPENDIX VIII

Off the coast of Norway

OCTOBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Day - 9th	M.V. - Rudolf Oldendorff M.V. - Sarp escort vessel - UJ.1711	Ge Nor Ge	1,953 - 485	- 1,116 -	144 404 235	off Egersund S.W. Norway
Night - 12th/13th	M.V. - Havenstein	Ge	-	7,973	502	Skagerrack
Day - 15th	M.V. - Inger Johanne escort vessel - V.1605	Nor Ge	1,202 426	- -	144, 404, 235, 248	off Kristiansand South
Night - 15th/16th	Fishing vessel - Concord	Swe	150	-	58	Skagerrack
Day - 21st	M.V. - Eckenheim M.V. - Vestra	Ge Nor	1,923 1,422	- -	404, 235, 248	At Haugesund
Night - 22nd/23rd	M.V. - Irania	Nor	2,184	-	502	Skagerrack
Day - 23rd	M.V. - Biri escort vessel - V.5506	Nor Ge	- 100	940 -	235 248	West Norway
Total by the R.A.F. at sea in October - (9 vessels sunk totalling 9,845 tons (3 vessels dam. totalling 10,029 tons						
In the same area by H.M. submarines - 2 vessels sunk totalling 1,791 tons by surface craft - 2 vessels sunk totalling 1,363 tons  by carrier borne F.A.A. - (4 vessels sunk totalling 3,846 tons (8 vessels dam. totalling 10,060 tons						
Total by naval forces in the area - (8 vessels sunk totalling 7,000 tons (8 vessels dam. totalling 10,060 tons						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 18	544	171	5

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APPENDIX VIII

In the Southern North Sea

NOVEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Day - 21st	Harbour Defence - DW.04	Ge	165	-	236	Off R. Weser
	Harbour Defence - DW.42	Ge	169	-		
Night - 25th/26th	Gun barge - AF.4	Ge	250	-	254	N. of Borkum
Night - 29th/ 30th	M.V. hull in tow	Ge	1,923	-	254	Off R. Weser
Total by R.A.F. at sea in November - 4 vessels sunk totalling 2,507 tons						
Total by Naval surface forces in the area - 1 vessel sunk of 500 tons						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 16	361	84	6
F.C. Recce	44	-	-

DECEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Night - 24th/25th	Coaster - PiJo	Du	50	-	524	Off the Hook of Holland
Total by R.A.F. at sea in December - 1 vessel sunk of 50 tons						
Total by Naval surface forces in the area - 2 vessels sunk totalling 180 tons						

Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C Loss
No. 16	340	38	3
F.C. Recce	26	-	-



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## APPENDIX VIII

## Off the Coast of Norway

NOVEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Night - 4th/5th	M.V. - Palos	Ge	-	997	502	N. Kattegat
Day - 8th	M.V. - Aquila	Ge	3,530	-	144	West Norway
	M.V. Helga Ferdinand	Ge	2,566	-	404	
	Coaster - Frammaes	Nor	-	307	455 333	
Day - 13th	M.V. Rosenberg I	Nor	-	1,964	144	S.W. Norway
	R-boat - R.32	Ge	90	-	235	
	A.S.R. boat - No. 529	Ge	75	-	248	
Day - 14th	Coaster - Sardinien	Nor	177	-	143	West Norway
	Coaster - Gula	Nor	-	264	235 248	
Night - 21st/22nd	M.V. - Kiel	Ge	3,703	-	502	N. Kattegat
Night - 24th/25th	M.V. - Borbeck	Ge	-	6,002	502	Oslo Fjord
Day - 27th	M.V. - Jersbeck	Ge	-	2,804	404	West Norway
	M.V. - Fidelitas	It	-	5,740	489	
Night - 30th/1st	M.V. - Korsvik	Nor	1,229	-	58	Skagerrack
Total by the R.A.F. at sea in November - (7 vessels sunk totalling 11,370 tons 7 vessels dam. totalling 18,078 tons)						
In the same area by H.M. submarines - 1 vessel sunk of 50 tons						
by surface craft - (12 vessels sunk totalling 17,201 tons 1 vessel dam. of 1,461 tons)						
by carrier borne F.A.A. - (3 vessels sunk totalling 6,365 tons 6 vessels dam. totalling 7,602 tons)						
Total by naval forces in the area - (16 vessels sunk totalling 23,616 tons 7 vessels dam. totalling 9,063 tons)						

## Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 18	677	120	5
F.C. escort	72	-	-

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## APPENDIX VIII

DECEMBER 1944

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Day - 5th	M.V. Radbod	Ge	4,354	-	143	West Norway
	M.V. - Albert Janus	Ge	2,275	-	235	
	M.V. - Ostland	Ge	-	5,273	248	
	M.V. - Tucuman	Ge	-	4,621	455	
	M.V. - Lagadalena	Ge	-	3,283	489	
	M.V. Helene Russ	Ge	-	993		
Day - 9th	Coaster - Havda	Nor	678	-	144, 404, 455	West Norway
Day - 10th	M.V. - Gudrun	Ge	1,485	-	143, 235, 248	S.W. Norway
Night - 10th/11th	Coaster - Molla	Nor	-	815	58	West Norway
Day - 12th	M.V. - Wartheland	Ge	3,678	-	143, 235, 248	West Norway
Day - 13th	Coaster - Molla	Nor	-	815	143, 235, 248	West Norway
Day - 16th	M.V. - Fernedale Tug - Parat	Nor Nor	5,684 135	- -	143, 235, 248	West Norway
Day - 26th	M.V. - Cygnus	Nor	-	1,349	143, 235, 248	S.W. Norway
Day - 28th	Coaster - La France	Nor	617	-	143, 235, 248	S.W. Norway
Night - 28th/29th	M.V. - Orion	Nor	-	8,064	502	E. Skagerrack
Night - 30th/31st	M.V. - Winrich von Kniprode	Ge	-	10,123	58	E. Skagerrack
	M.V. - Ulanga	Ge	-	6,860	and	
	M.V. Stahleck	Ge	-	1,663	502	
Day - 31st	M.V. - Palermo	Ge	1,461	-	143	S.W. Norway
	M.V. - Wally Paulbaums	Ge	-	1,675	235	
	M.V. - Achilles	Ge	-	998	248	
Total by the R.A.F. at sea in December - { 9 vessels sunk totalling 20,367 tons 13 vessels dam. totalling 46,532 tons						
In the same area by surface craft - 3 vessels sunk totalling 6,019 tons by carrier borne F.A.A. - 1 vessel sunk of 90 tons						
Total by Naval forces in the area - 4 vessels sunk totalling 6,109 tons						

### Numbers of aircraft concerned

Group	No. of sorties	No. of attacks	A/C loss
No. 18	823	213	15
F.C. escort	141	-	3

In the Southern North SeaJANUARY 1945

Date	Description and name	Flag	SUNK Tonnage	DAM Tonnage	Squadrons concerned	Position
Night 5th/6th	One barge out of a tow	Du	630	-	612, 119	Off the Hook
Day 14th	Linsen motor boats	Ge	-	Several	2nd T.A.F.	Hellevoetsluis
Day 17th	Patrol boat - VP.1417	Ge	300	-	236, 254	At Den Helder
Total by the R.A.F. at sea in January - { 2 vessels sunk totalling 930 tons (Several Linsen damaged)						
Total by Naval forces in the same area - { 1 E-boat sunk - 90 tons 4 Seehunde sunk - 48 tons 1 E-boat damaged - 90 tons						

Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 16	312	79	9
2nd T.A.F.	249	249	1
F.C. recce	9	-	-
F.C. escort	22	-	-

FEBRUARY 1945

Total by the R.A.F. at sea in February - none sunk or damaged	
Total by Naval forces in the same area	{ 2 E-boats sunk - 180 tons 2 Moloh sunk - 20 tons

Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 16	575	75	5
2nd T.A.F.	23	23	-
F.C. recce	30	-	-

## APPENDIX VIII

Off the Norwegian coast and in the Kattegat

JANUARY 1945

Date	Description and Name	Flag	SUNK Tonnage	DAM. Tonnage	Squadrons concerned	Position
Day 6th	Lighter - MW.151	Du	300	-	144, 404 455	Hjelte fjord
Day 8th	Passenger vessel - Fusa fishing craft - Trygg	Nor Nor	172 28	- -	144, 404, 455	Kors fjord
Day 9th	cargo vessel - Claus Rickmers	Ge	5,165	-	143, 235, 248, 333	Lervik
	cargo vessel - Sirius salvage vessel - Blaaveis	Nor Nor	938 50	- -	144, 404, 455, 489	Sogne fjord
Night 10th	Aux. minesweeper - M.5610	Ge	110	-	502	Off Lepso
Night 13th/14th	cargo vessel - Vaga	Nor	1,615	-	58	East of Kristiansand
Day 15th	Whaler - Seehund	Ge	320	-	143, 235, 248, 333	Lervik
Day 25th	cargo vessel - Ilsa Fritzen	Ge	5,099	-	143, 235, 248	Feje fjord
	cargo vessel - Bjergfin	Nor	696	-		
Night 25th	cargo vessel - Pergamon	Ge	2,998	-	502	N. of Bud
Total by the R.A.F. at sea in January - 12 vessels sunk totalling 17,491 tons						
In the same area by naval surface forces - 6 vessels sunk totalling 26,742 tons						
by H.M. submarines - 2 vessels sunk totalling 1,153 tons						
by carrier-borne F.A.A. - 4 vessels sunk totalling 1,148 tons						
1 vessel damaged of 3,347 tons						
Total by Naval forces -			(	12 vessels sunk totalling 29,043 tons		
			)	1 vessel damaged of 3,347 tons		

Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 18	477	119	14
F.C. escort	47	-	2

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Off the Norwegian coast and in the Kattegat

FEBRUARY 1945

### Numbers of aircraft concerned

Group	Sorties	Attacks	A/C Lost
No. 18	491	90	12
F.C. escort	60	-	1

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APPENDIX VIII

In the Southern North Sea

MARCH 1945

Date	Description and Name	Flag	SUNK Tonnage	DAM. Tonnage	Squadrons concerned	Position
Day 10th	One Seehund midget	Ge	12	-	254	off Goeree
Day 11th	Two Biber midgets	Ge	12	-	119	off Schouwen
Day 12th	Two Biber or Molch	Ge	12	-	119	off Goeree
	Two Biber or Molch	Ge	12	-	236	off Schouwen
	One Biber or Molch	Ge	6	-	2nd T.A.F.	off Domberg
	Three Linsen motor boats	Ge	3	-	119	off Goeree
	Two Linsen motor boats	Ge	2	-	2nd T.A.F.	off Goeree
	Eight Linsen motor boats	Ge	8	-	2nd T.A.F.	Hellevoetsluis
Night 21st/22nd	One E-boat - S.181	Ge	90	-	236	40 miles off Den Helder
Day 24th	One armed coaster	Ge	600	-	236, 254	18 miles N. of Ameland
Day 25th	One Biber midget	Ge	6	-	254	off Goeree 35 miles
	One Seehund midget	Ge	12	-	254	S.W. of Ymuiden
Total by the R.A.F. at sea in March - 25 craft totalling 775 tons						
Total by Naval forces in same area - $\left. \begin{array}{l} (7 \text{ Seehunde} \\ 9 \text{ Biber or Molch} \\ 8 \text{ Linsen} \end{array} \right\} 24 \text{ craft totalling } 146 \text{ tons}$						

Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 16	686	126	6
2nd T.A.F.	76	67	1
F.C. recce	6	-	-

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## APPENDIX VIII

## Off the Norwegian Coast and in the Kattegat

MARCH 1945

Date	Description and Name	Flag	SUNK Tonnage	DAM. Tonnage	Squadrons concerned	Position
Night 1st/2nd	Cargo vessel - Isar	Ge	-	9,026	502	W. Skagerrack
Night 2nd/3rd	Cargo vessel - Kattegat Cargo vessel - William Blumer	Ge Nor	-	6,031 3,604	58	entrance to Oslo fjord
Night 5th/6th	Cargo vessel - Betty	Nor	-	2,567	58	W. Skagerrack
Day 7th	Four M.F.P. landing craft Patrol boat - VP.1610	Ge Ge	520 256	- -	143, 235, 248, 333	N. of Skaw
Day 8th	Cargo vessel - Phoenicia Cargo vessel - Heimdall	Ge Da	- -	4,124 978	144, 404, 455, 489	Midgulen fjord
Night 8th/9th	Coaster - Hoendeep	Du	-	194	58	E. Skagerrack
Night 10th/11th	Cargo vessel - Theda Fritzen	Ge	-	2,882	502	E. of Skaw
Night 12th/13th	Cargo vessel - Rolandseck	Ge	1,845	-	58	off Laeso I.
Night 16th/17th	Escort vessel - UJ.1105	Ge	477	-	502	E. Skagerrack
Day 17th	Cargo vessel - Iris Cargo vessel - Remage Cargo vessel - Log Cargo vessel - Erna	Ge Ge Nor Ge	3,323 1,830 1,684 -	- - - 865	143, 235 248, 333	Aalesund
Day 21st	One R-boat	Ge	-	90	333	Bjorne fjord
Day 23rd	Cargo vessel - Dione	Nor	-	1,620	333	Off Porsgrund
	Cargo vessel - Lysaker	Nor	910	-	144, 489	S.W. of
	Escort vessel - Romssdale	Ge	-	138	143	Aalesund
	Cargo vessel - Inga Essberger	Ge	-	1,827		
	Cargo vessel - Rotenfels	Ge	-	7,854	235	Dalsfjord
Night 23rd/24th	Cargo vessel - Priamus	Ge	760	-	58	N.E. of Skaw
Day 24th	Cargo vessel - Thetis Cargo vessel - Sarp	Ge Nor	2,788 1,116	- -	144, 404 455, 489	Egersund
Day 30th	Cargo vessel - Scharhorn Cargo vessel - Gudrid Borgstad Cargo vessel - Svanefjell Cargo vessel - Gudrid Cargo vessel - Torafire	Ge Nor Nor Nor Nor	2,643 1,664 1,371 1,305 823	- - - - -	143, 235 248, 333	Porsgrund
Total by the R.A.F. at sea in March - (19 vessels sunk totalling 23,315 tons (14 vessels damaged totalling 41,800 tons)						
Total by naval forces in same area (by surface craft - 2 vessels sunk totalling 1,863 tons (by H.M. s/m - 1 vessel sunk of 998 tons)						

## Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 18	847	279	19
F.C. escort	165	-	2

In the Southern North SeaAPRIL 1945

Date	Description and Name	Flag	SUNK Tonnage	DAM. Tonnage	Squadrons concerned	Position
Day 9th	One Seehund midget	Ge	12	-	236	20 miles W. of the Hook
Day 10th	One Seehund midget	Ge	12	-	254	35 miles W. of the Hook
Day 11th	One Biber midget	Ge	6	-	236	10 miles off Goeree
Day 12th	One Seehund midget	Ge	12	-	236	35 miles W. of the Hook
	One Seehund midget	Ge	12	-	236, 254, 524	25 miles W. of the Hook
	Two Biber midgets	Ge	12	-	119	19 miles off Schouwen
Day 13th	One Seehund midget	Ge	12	-	810	25 miles W. of the Hook
Night 19th/20th	Two lighter barges	Du	200	-	254	off Terschelling
Day 25th	Cargo vessel - Alwine Russ	Ge	988	-	2nd T.A.F.	River Elbe
	Depot ship - Eisen Two Tugs	Ge Ge	750 50	- -	2nd T.A.F.	off Brunsbuttel
Night 25th/26th	Tug - RS.12	Ge	50	-	524	off Norderney I.
Total by the R.A.F. at sea in April - 15 craft sunk totalling 2,116 tons						
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> Total by naval forces in same area - <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> 4 E-boats 4 Seehunde 6 Linsen </div> <div style="font-size: 3em; margin: 0 10px;">}</div> <div> 14 craft sunk totalling 414 tons </div> </div> </div> </div>						

Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 16	897	104	2
2nd T.A.F.	499	437	3
F.C. recce	14	-	2



## Off the Norwegian Coast and in the Kattegat

APRIL 1945

Date	Description and Name	Flag	Sunk Tonnage	DAM. Tonnage	Squadrons concerned	Position
Day 2nd	Cargo vessel - Concordia	Nor	5,154	-	143, 235 248, 333	Sandefjord
	Cargo vessel - William Blumer	Ge	3,604	-		
	Cargo vessel - Espana	Ge	-	7,465		
	Cargo vessel - Kattegat	Ge	-	6,031		
	Cargo vessel - Hektor	Nor	-	5,742		
	Cargo vessel - Balpamela	Nor	-	3,165		
Night 2nd/3rd	Cargo vessel - Gertrud Ohlrogge	Ge	1,307	-	58	N.E. of the Skaw
Evening 4th	Cargo vessel - Palmyra	Ge	-	3,007	455, 489	Aardals fjord
Night 4th/5th	Cargo vessel - Feodosia	Ge	3,075	-	58	E. of Laeso I.
Day 5th	Escort vessel - Helmi Sohle	Ge	453	-	143, 235	W. of Anholt I.
	One unnamed vessel	Ge	50	-	248, 333	
Day 7th	Cargo vessel - Oldenburg	Ge	4,595	-	144, 455 489	Up Sogne fjord
Night 7th/8th	Motor boat - Kosmos	Da	50	-	502	E. of Laeso I.
Night 8th/9th	Cargo vessel - Carsten Russ	Ge	994	-	58	N. Skagerrack
Day 9th	U.804, U.843, U.1065	Ge	All sunk	-	143, 235 246, 333	E. of the Skaw
Night 9th/10th	Torpedo boat - T.13	Ge	1,132	-	58	S.E. of Laeso I.
	Cargo vessel - Hansa I	Ge	1,923	-		
Day 11th	Escort vessel - M.2	Ge	750	-	144, 455 489	Fedefjord
	Cargo vessel - Dione	Nor	1,620	-	143, 235 248, 333	Porsgrund
	Cargo vessel - Kalmar	Ge	964	-		
	Coaster - Trass	Nor	190	-		
	Coaster - Nordsja	Nor	178	-		
	Cargo vessel - Helgoland	Ge	-	535		
	Fishing craft - Skagen	Swe	-	150		
Night 13th/14th	Cargo vessel - Ostland	Ge	-	5,273	58	S.W. of Anholt I.
Night 18th/19th	Cargo vessel - Damtor	Ge	2,834	-	58	off the Skaw
Day 19th	Escort vessel - M.403	Ge	750	-	143, 235	S.E. of Anholt I.
	U.251 and U.2335	Ge	sunk	damaged	248, 333	
Night 19th/20th	Cargo vessel - Treuenfels	Ge	-	8,457	58, 502	Westward of Anholt I.
	Cargo vessel - Trondhjem	Nor	-	1,147		
Night 20th/21st	Minelayer - Ostmark	Ge	3,047	-	502	E. of Anholt I.
Night 21st/22nd	Cargo liner - Schleswig	Ge	-	10,243	502	Laurvik Frederikshavn
	Cargo vessel - Neukuhren	Ge	4,518	-	502	
Day 22nd	Cargo vessel - Elmar	Ge	1,000	-	455, 489	Maaloy
Day 23rd	Cargo vessel - Ingerseks	Nor	4,969	-	144, 455 489	Risne fjord
Night 23rd/24th	Cargo vessel - Tubingen	Ge	5,453	-	502	S.W. of Laeso I.
(23 vessels sunk totalling 48,610 tons { 4 U-boats sunk Total by the R.A.F. at sea in April - (11 vessels damaged totalling 51,215 tons { 1 U-boat damaged Total by naval forces in same area - 1 vessel sunk of 1,501 tons						

## Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 18 Group	772	350	29
F.C. escort	206	-	5

## Combined

Norwegian Coast, Kattegat, The Belts, Western Baltic and Heligoland Bight

MAY 1955

Date	Description and Name	Flag	SUNK Tonnage	DAM. Tonnage	Squadrons concerned	Position	
Day 2nd	M. class escort - M.293 U. 2359	Ge Ge	750 sunk	- -	143, 235 248, 333 404	N.E. of Laeso I.	
	Cargo vessel - H.C. Horn	Ge	4,132	-	2nd T.A.F. Typhoons	Lubeck Bay	
	Cargo vessel - Gertrud Fritzen	Ge	2,999	-			
	Cargo vessel - Florida	Ge	5,542	-			
	Coaster - Dwarssee U.1007	Ge Ge	552 sunk	- -			
Dawn 3rd	Repair vessel - Adrianus	Ge	250	-	236, 254	Heligoland Bight	
Day 3rd	Cargo vessel - Java	Da	8,681	-	144, 455	Langeland Channel	
	Cargo vessel - Falstria	Da	-	6,992	489		
	Cargo vessel - Jutlandia	Da	-	8,457	-		
	Cargo vessel - Irmtraut Cords	Ge	2,814	-	236, 254	Great Belt down to Kiel Bay	
	Cargo vessel - Ramfoss	Nor	1,165	-			
	Coaster - Pallas	Ge	627	-			
	Coaster - Amstel 12	Du	242	-			
	Coaster - Wolgast	Ge	164	-			
	U.2524	Ge	sunk	-			
	Hospital ship - Der Deutsche	Ge	-	11,453	2nd T.A.F. Typhoons	Kiel Bay	
	Cargo vessel - Taifun	Ge	-	6,405			
	Minelayer Dorpat	Ge	3,535	-			
	Salvage ship - Energie	Ge	1,866	-	2nd T.A.F. Typhoons	Kiel Bay	
	Coaster - Jade	Ge	536	-			
	Coaster - Diana	Ge	516	-			
Coaster - Erna Gaulke	Ge	400	-				
Cargo vessel - Inster	Ge	4,747	-				
Patrol boat - V.S. 524	Ge	50	-				
Tug - Cecilie	Ge	50	-				
U.1210	Ge	sunk	-				
Cargo vessel - Insterburg	Ge	-	2,030	2nd T.A.F. Typhoons	Fehmarn Belt		
Cargo vessel - Swakopmunde U.2540, U.3030, U.3032	Ge Ge	6,133 All sunk	- -				
Night 3rd/4th	Cargo vessel - L.M. Russ	Ge	1,600	-	58	off Aarhus	
	M. clas escort - M.301	Ge	750	-	-	-	
	Cargo vessel - Thielbek	Ge	2,815	-	524, 612	Kiel Bay	
Cargo - Ernst Hugo Stinnes 11	Ge	-	3,295				
Cargo - Else Hugo Stinnes 15	Ge	-	3,291				
Day 4th	Cargo - Wolfgang L.M. Russ	Ge	3,750	-	143, 235	S.E. of Aarhus	
	Cargo vessel - Angamos	Da	-	3,540	248, 333		
	Cargo vessel - Gunther Russ	Ge	-	998	404		
	R-boat escort	Ge	90	-	-	2nd T.A.F. Typhoons	Fehmarn Belt
	Cargo vessel - Vega	Ge	7,287	-			
	Cargo vessel - Bolkoburg	Ge	3,436	-			
	M. class escort - M.36	Ge	750	-			
	Cargo vessel - Frieberg	Ge	-	5,165	2nd T.A.F. Typhoons	In the Flensburg and Eckernforde area	
	Cargo vessel - Wurzburg	Ge	-	1,337			
Oil refinery - Walter Rau	Ge	-	13,751				
U.579, 733, 746, 876, 904	Ge	All sunk	-				
	U.236, 393, 2338, 2503	Ge	All sunk	-	236, 254	Little Belt	
Total by the R.A.F. at sea - (16 U-boats sunk (29 vessels sunk totalling 66,229 tons (12 vessels damaged totalling 66,714 tons							
Total in the same area by naval forces (F.A.A.) - (1 U-boat sunk (2 vessels sunk totalling 5,893 tons							

## Numbers of aircraft concerned

Group	Sorties	Attacks	A/C lost
No. 16	305	85	2
No. 18	189	97	5
2nd T.A.F.	747	686	6
F.C. escorts	136	-	5

Types of German Small Battle Units

Reference - Admiralty N.I.D. 1/PW/REP/15/45 and F.D.S. 65/54.

Linsen

These were developed from the Italian explosive motor boats of the 10th M.A.S. Flotilla. A Linse unit comprised one control boat and two explosive boats, each of the latter carrying a 300 kg. charge in the bow. The boats displaced 1.2 tons and had a maximum speed of 31 knots for two hours or a cruising speed of 15 knots for  $4\frac{1}{2}$  hours. Each explosive boat carried a steersman who took the boat to within striking distance of the target. He then dropped overboard and the final run-in was directed from the control boat by radio remote control, the pilot of which also had the task of picking up the ditched men. In the event of the explosive boats missing the target, they could be sunk by radio from the control boat. Linsen were first used in the Normandy invasion area towards the end of June 1944.

Marder

Originally called Neger, these were one-man weapons consisting of an electric 21 inch carrier torpedo with an explosive headed 21 inch torpedo slung underneath. The combination could be launched from an open beach. The pilot, sitting in the cockpit of the carrier torpedo and shielded by a plexi-glass hood, steered on the surface towards the target area. When at point blank range, he released the explosive torpedo and then made the best of his way back to his starting place.

The combined weight of the carrier and torpedo was 2.8 tons. It had a range of 35 miles and maximum speed of  $2\frac{1}{2}$  knots. The Marder was not envisaged as a regular weapon of war but was an improvisation, capable of rapid production, for use from a beach against an enemy landing. They were first used against the Allied invasion forces off the Normandy coast on the night of 5/6 July 1944. The original flotilla was reformed, after the retreat from France, and sent to Italy in September. A new flotilla, similarly equipped, went to Denmark at the end of August 1944.

A submersible Marder was produced in later months. This had a small flooding compartment added to the carrier torpedo and an air pressure container for adjusting the trim and for surfacing. Breathing conditions were secured by an oxygenised mixture with facilities for ejecting impure air. A compass was fitted for steering and depths down to 50 feet could be maintained. Three flotillas of these Marder were formed which were sent to Denmark, Norway and Italy during the last three months of 1944, but none were used in operations.

Molch

This was an early type of one-man midget submarine and was designed by the Torpedo Experimental Establishment at Eckernforde with the object of providing, at short notice and with the minimum of personnel training, an offensive submarine weapon for operations near the coast.

Molch were built at Lübeck. They were designed for submerged travel only and were driven by an electric motor powered by torpedo-type batteries. The displacement was  $10\frac{1}{2}$  tons, length 35 feet and beam (without torpedoes) of  $3\frac{1}{2}$  feet. The armament was two underslung 21 inch torpedoes. The endurance was 43 miles at five knots with a maximum diving depth of about 90 feet.

SECRET

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APPENDIX IX

The first 38 Molch were delivered in July 1944 followed by 125 in August, 110 in September, 57 in October, 28 in December and 32 in January 1945 - total 390. There is no record of the operational use of Molch against the Allied invasion fleet but a large number was sent to beaches in Denmark and Norway in readiness if an invasion occurred in those waters, and also to Italy whence, in September 1944, they operated off the French Riviera.

Biber

This was a one-man submersible capable of both surfaced and submerged travel. It was originally intended for operations from a beach against enemy landing forces but met with little success owing to its limited diving capacity and slow speed. Flotillas of Biber were later used successfully for mining in the Scheldt and, in conjunction with frog-men, for the destruction of river bridges in Eastern Germany.

The displacement was six tons, length 28 $\frac{1}{2}$  feet, beam (with torpedoes) 4 $\frac{3}{4}$  feet. The lower part of the hull was recessed on both sides into troughs to provide close stowage for two 21 inch torpedoes or two mines. Surfaced propulsion was by a six cylinder petrol engine and submerged by an electric motor powered by torpedo-type batteries. The surfaced endurance was 13 hours at the maximum speed seven knots and submerged for 23 hours at five knots. Only a fixed and unrotating periscope was fitted and the maximum diving depth was 96 feet.

Biber were built at Bremen. The first three were delivered in May 1944. Later consignments were six in June, 19 in July, 50 in August, 117 in September, 73 in October and 56 in November - total 324. Their first and only operation against the Normandy beach-heads was on the night 30/31 August 1944 when they effected nothing. They were withdrawn back to Lubeck and, after a short period on the coast of Jutland as an anti-invasion measure, they were next employed in December 1944 from bases near the Hook of Holland against Allied shipping in and off the Scheldt estuaries using both torpedoes and mines.

Hecht

This was a two-man submersible fitted with only electric propulsion. It was also known as U-boat Type XXVII and was originally intended for carrying limpet mines to enemy ships lying behind net protection. They were first produced in Italy for delivery by rail to Neustad but during the summer of 1944 production ceased owing to Allied air attacks on the building yard. Hechte damaged in these attacks were transferred to the Germania Werft - Kiel for repair and completion. By the time they came forward in any numbers, the operational opportunities for which they were intended had disappeared and the boats were reconstructed as torpedo carriers for use against moving targets at sea. However, before reaching operational numbers, they were already considered as superseded by the Seehunde and were for a time used to train the crews for these latter. They were never used in active operations.

Their characteristics were - Displacement 12 tons, length 46 feet, beam 4 feet and armament one torpedo and one mine. Propulsion was by an electric motor powered by a submarine type battery giving a maximum range of 60 miles at four knots. A gyro-compass and a rotatable periscope were fitted and the maximum diving depth was about 150 feet. The first two were delivered in May 1944 followed by one in June, seven in July and 43 in August after which production was cancelled.

Seehund

These were also known as U-boats Type XXVII B and were true miniature seagoing submersibles capable of operating for up to seven days from base. They had a crew of two men and were of 12.3 tons displacement, length 39 feet, beam 5 $\frac{1}{4}$  feet and the hull, which was six feet in depth, was formed of two circular tubes superimposed, the larger above the smaller. Two 21 inch torpedoes were carried snugged along the space between the upper and lower tubular sections.

Submerged propulsion was by a 25 h.p. electric motor powered by a steel-alkaline battery of 192 cells giving four knots for 20 hours or the maximum seven knots for eight hours. Surfaced travel was by a 60 H.P. six cylinder Diesel engine with a maximum speed of eight knots and surfaced range of 275 miles. A clutch between the Diesel engine and motor enabled the battery to be re-charged at sea. The effective range, surfaced and submerged with occasional re-charging, was some 400 miles.

A non-retractable but fully rotational periscope was supplied which extended about six feet above the superstructure and had a sky searcher. Three compasses, one of which was semi-gyroscopic, were fitted and the ordinary cruising depth submerged was 17 feet but the boats could dive to 150 feet.

These craft were being produced by the Germania Werft in Kiel during June 1944 but, owing to delays by modifications, shortage of supplies and air raids, the first three were not delivered until September 1944 after which there were 35 in October, 61 in November, 70 in December, 35 in January 1945, 27 in February and approximately 20 in March and April - total 250. The first flotilla (24 boats) to become operational arrived at Ymuiden on 23 December 1944 for use against the Thames/Scheldt convoy traffic. Their first operation took place on 1 January 1945.

Reasons for the Virtual absence of G.A.F. minelaying or attack in the Scheldt area

Reference: German Records in A.H.B.6.

On 20 September 1944 the strength of Fliegerkorps IX on the west front was about 100 bombers. This was made up of LG.1 with 36 Ju.88s and KG.26 with 53 Ju.88s and 12 Ju.188s. Of these, only 57 Ju.88s and one Ju.188 were serviceable. The only other bomber unit which was operational in the west was KG.3 who were responsible for air-launched flying bomb attacks on the United Kingdom. At this date the whole of Fliegerkorps IX was committed to tactical operations in support of the German Army against our airborne landings at Arnhem.

By the end of October 1944, the programme of converting G.A.F. bomber units into fighter units was nearing completion. This was a policy decided upon by Speer, the Minister of Armaments and War Production and was the inevitable consequence of the Luftwaffe having been forced on to the defensive by Allied air attacks. New Bomber Production had virtually ceased by October. On 1 November 1944 the only bomber Geschwader left in existence were:-

KG.4.....in Russia  
KG.26.....in Norway for operations against the convoys to and from Russia.  
KG.53 (formerly KG.3) engaged solely on airborne V.1 operations.  
LG.1.....based in N.W. Germany and Denmark  
KG.66.....Pathfinders for V.1 operations

Thus the only Geschwader available for minelaying operations during the last six months of the war was LG.1 which consisted of only two Gruppen instead of the normal three and had on the average some 50 serviceable Ju.88s at its disposal. This small force was, however, often under priority orders to operate in a tactical role against Allied ground forces, as for instance the Ardennes counter-offensive in the second half of December and early in 1945.

Another reason why Luftwaffe operations were severely curtailed was the shortage of fuel. Allied attacks on synthetic oil targets had by 1 October 1944 reduced production from 175,000 tons in April to 53,000 in June, 29,000 in July and a mere 9,400 tons during September. There was a slight revival in October but thereafter the situation rapidly deteriorated. As consumption for May was 195,000 tons it was not surprising that stocks had almost vanished in spite of drastic curtailment of flying.

On 21 February 1945, General Koller, the Chief of Air Staff, sent a memorandum to Hitler's Adjutant (Colonel von Below), Goering, Jodl and other Service Chiefs. He began with a categorical statement that "if the Luftwaffe continues to carry out the attacks to which it is committed on all fronts the flying units will soon be brought to a complete standstill as all stocks of fuel will have been exhausted." He went on to enumerate the various commitments (no mention was made of minelaying) and the estimated daily fuel consumption. He came to the conclusion that, even using OKW reserve stocks, there was only enough fuel for 18 days' air operations on the existing reduced scale. He had no recommendations to make - he merely asked the Fuhrer to "take note" of the facts stated in the memorandum. The time for remedies had long since passed.

OPERATION ASHFIELDIntention

To locate and destroy enemy shipping off the Norwegian coast by night.

Execution

The code name is Ashfield. When it is possible to operate, torpedo aircraft will be ordered by No. 18 Group H.Q. and crews brought to states of readiness. The operation entails the laying of a "Rendezvous" Drem system by means of marine markers at a pre-determined sea position 40 miles from the Norwegian coast and approximately midway along the Wellingtons' search patrol. Two Wellingtons of No. 524 Squadron will carry out parallel searches off the coast as ordered by H.Q. One of these aircraft first of all proceeds to the "Rendezvous" position and lays the Drem. The torpedo Beaufighters (Torbeaus) will time their arrival at this position to coincide approximately with the end of the Wellingtons' search. The Torbeaus will then orbit the "Rendezvous".

If shipping has been located, a W/T sighting report will be sent to Group H.Q. in the usual way and will be repeated back to the Wellington. The Torbeaus should receive one of these messages at least. A second Drem will be laid by the Wellington making the sighting, 12 miles to seaward of the target and one mile ahead of it. This will be known as the "Attack" Drem. The Wellington will then orbit and pass to the Torbeaus on R/T and W/T a magnetic course and distance from the "Rendezvous" to the "Attack" Drem. (This is Vector One.) The Wellington will switch on Speckled Band, a transmitter for re-transmitting aircraft position in GEE co-ordinates.

The second Wellington, having heard Vector One will proceed to the "Attack" Drem to join first Wellington so as to assist in the illumination of the target. The sighting Wellington will control the operation throughout. While the Torbeaus are proceeding to the "Attack" Drem, the Wellington will send by R/T and W/T the composition, course and speed of the target.

On receipt of the Vector One, the Torbeaus will complete their circuit and set course for the "Attack" Drem. When this is reached they will break R/T silence with "Contact" and the letter of the aircraft, and send "491" by W/T. When 75% have so reported, the Wellington will give by R/T and W/T the magnetic course and distance to the target repeated twice. (This is Vector Two.) No acknowledgement is required from the Torbeaus.

The Wellington will return to the target and prepare to drop target indicating flares (T.I.s). He will send "Ready, Ready" by R/T and "632" by W/T. The Torbeaus will then set course for the target to make their torpedo attack. At the same time the Wellington sends "Now, Now" by R/T and W/T as he drops the first stick of T.I.s. He then positions himself for dropping the third stick. The second Wellington drops the second stick as soon as the first stick fades out.

Flares should be dropped, if possible, three miles from the target but at least one mile from the shore. The sticks should be laid at a slight angle to the target's track, converging on the bow and tending to overshoot the bow.

Statistics of Sorties - mines laid and casualties

During these three months, minelaying aircraft were detailed from Lancasters of Nos. 1 and 5 Groups, Lancasters and Stirlings of No. 3 Group, and Halifaxes of Nos. 4 and 6 Groups. Special operations were performed by Mosquitoes of No. 8 Pathfinder Group.

Month	Group	A/C despatched		Mines laid		Casualties		
		High Level	Low Level	High Level	Low Level	High Level	Low Level	Crash
June	No. 3	25	147	116	666	-	1	1
	No. 4	107	15	330	68	-	-	1
	No. 5	5	1	24	6	-	-	-
	No. 6	63	92	221	339	-	-	-
	No. 8	-	8	-	8	-	-	-
Totals		200	263	691	1,087	-	1	2
		463		1,778		3		
July	No. 1	-	6	-	24	-	-	-
	No. 3	34	34	115	170	-	-	-
	No. 4	25	8	116	32	-	-	-
	No. 5	-	18	-	64	-	2	-
	No. 6	41	12	149	38	-	-	-
Totals		100	78	380	328	-	2	-
		178		708		2		
Aug.	No. 1	37	28	180	162	4	-	1
	No. 3	24	52	117	182	-	1	-
	No. 4	51	44	195	155	-	-	1
	No. 5	23	41	110	150	-	4	-
	No. 6	77	11	284	44	3	-	-
	No. 8	-	10	-	7	-	-	-
Totals		212	186	886	700	7	5	2
		398		1,586		14		
Three months		512	527	1,957	2,115	7	8	4
Totals		1,039		4,072		19		



During these four months the only change in the types of minelaying aircraft was that Stirlings ceased to operate and No. 3 Group was wholly composed of Lancasters.

Month	Group	A/C despatched		Mines laid		Casualties		
		High Level	Low Level	High Level	Low Level	High Level	Low Level	Crash
Sept.	No. 1	26	11	116	57	-	-	-
	No. 3	36	5	165	30	3	-	-
	No. 4	43	-	158	-	-	-	-
	No. 5	4	10	24	53	-	-	-
	No. 6	50	-	145	-	1	-	-
Totals		159	26	608	140	4	-	-
		185		748		4		
Oct.	No. 1	39	5	215	30	2	-	-
	No. 3	-	31	-	173	-	-	-
	No. 4	53	-	196	-	1	-	-
	No. 5	27	33	125	191	3	-	-
	No. 6	60	-	194	-	2	-	-
	No. 8	-	9	-	9	-	-	-
Totals		179	78	730	403	8	-	-
		257		1,133		8		
Nov.	No. 1	39	9	216	54	-	-	-
	No. 3	1	14	6	70	-	1	-
	No. 4	19	17	63	64	-	-	-
	No. 5	22	6	126	-	-	-	-
	No. 6	29	14	103	48	-	-	1
Totals		110	60	514	236	-	1	1
		170		750		2		
Dec.	No. 1	37	3	196	16	-	-	-
	No. 3	8	25	38	128	-	-	-
	No. 4	38	-	135	-	-	-	-
	No. 5	77	10	389	26	2	-	-
	No. 6	1	60	4	228	-	1	-
Totals		161	98	762	398	2	1	-
		259		1,160		3		
Four months Totals		609	262	2,614	1,177	14	2	1
		871		3,791		17		

Month 1945	Group	A/C despatched		Mines laid		Casualties		
		High Level	Low Level	High Level	Low Level	High Level	Low Level	Take off or land crash
Jan.	No. 1	42	2	223	12	1	-	-
	No. 3	9	-	34	-	1	-	-
	No. 4	41	-	137	-	1	-	-
	No. 5	30	-	143	-	-	-	-
	No. 6	35	-	119	-	3	-	-
Totals		157	2	656	12	6	-	-
		159		668		6		
Feb.	No. 1	64	11	359	66	2	-	-
	No. 3	1	13	6	57	-	-	-
	No. 4	61	-	213	-	3	-	-
	No. 5	51	5	274	2	-	-	-
	No. 6	39	46	159	218	3	1	-
Totals		216	75	1,011	343	8	1	-
		291		1,354		9		
Mch.	No. 1	51	14	279	83	3	-	-
	No. 3	5	-	26	-	-	-	-
	No. 4	47	13	184	52	-	-	-
	No. 5	25	48	139	128	-	1	-
	No. 6	46	21	203	104	-	1	-
Totals		174	96	831	367	3	2	-
		270		1,198		5		
Apr.	No. 1	77	-	422	-	3	-	-
	No. 3	28	-	141	-	-	-	-
	No. 4	55	-	203	-	-	-	-
	No. 5	6	30	35	132	-	-	-
	No. 6	42	33	239	190	-	-	-
Totals		208	63	1,040	322	3	-	-
		271		1,362		3		
May	-	-	-	-	-	-	-	-

During these last four months, minelaying aircraft were detailed from Lancasters of Nos. 1, 3 and 5 Groups, Halifaxes of No. 4 Group, Lancasters and Halifaxes of No. 6 Group and Mosquitoes of No. 627 Squadron in No. 5 Group.

## Monthly Summary of Mines laid by Bomber Command by areas

	Bay of Biscay	N. France	Belgium and Netherlands	N. German Coast		S. Norway	Kattegat	Sound and Belts	Kiel Canal and Bay	Western Baltic	
	Deodars Cinnamon Beech Artichokes Jellyfish Saltanas	Urea Tree Ryeinith Hostile Air Hostile Oxone Scallops	Cypress Iris Wetka Limpets	Dortmund-Em Canal Xeranthemum Yams Eglantine Rosemary Hawthorn	Polyanthus Onions Tomatoes Krauts Silverthorn Yew Tree	Carrots Pumpkins Forget-me-nots Lettuces Melons Quince Radishes Wallflowers Garvium Jasmine Privet Spinach Sweet Peas Tangerine Willow	Total laid Mines Jettisoned Mines Lost No. of sorties A/c Lost				
June 1944	35 163 179 395 98	11 57 70 24 204	93 282 67 8	54 - - - 30 -	- - - -	8 - - -	- - - -	- - - -	23 - - - -	- - - -	1,778 39 9 463 1
July	8 8 48 76 166 -	- - - -	6 12 6 -	80 - - - 16 127 36	- - - -	96 - - -	- - - -	- - - -	- - - -	- - - -	708 20 12 178 2
Aug.	290 381 12 12 222 -	- - - -	- - - -	7 - - - -	- - - -	- - - -	- - - -	199 - - - -	219 - 40 55 73 76 -	- - - -	1,586 41 51 398 12
Sept.	- - - -	- - - -	- - - 18	- - 16 24 24 53 -	- - 40 -	22 130 6 -	- - - -	123 - - - 76 -	83 - - 41 58 34 -	- - - -	748 18 15 185 4
Oct.	- - - -	- - - -	- - - 24	- - - 30 - 134 -	- - 128 -	98 651 59 -	- - - -	- 9 - - - -	- - - - - -	- - - -	1,133 46 40 257 8
Nov.	- - - -	- - - -	- - - -	- - - - 48 147 -	- - 329 16 -	98 112 - -	- - - -	- - - - - -	- - - - - -	- - - -	750 10 10 170 1
Dec.	- - - -	- - - -	- - - -	- - - - 8 55 -	60 232 32	40 354 115 -	- - - -	- - - - - -	97 - 29 84 54 - -	- - - -	1,160 15 14 259 3
Total	298 424 223 267 783 98	11 57 70 24 204	99 294 73 50	134 7 16 54 96 546 36	60 729 48	160 1,337 292	- -	345 9 - - 76 -	399 - 69 180 135 110 -	- - - -	7,863 189 151 1,910 31
Jan. 1945	- - - -	- - - -	- - - -	- - - - - -	- 87 -	- 149 53 -	- - - -	62 - - - - 36	152 - 30 65 - 34 -	- - - -	668 12 24 159 6
Feb.	- - - -	- - - -	- - - -	- - - 54 92 97 -	80 228 72	- 173 102 -	- - - -	143 2 - - - -	40 - - - 160 - 71	- - - -	1,354 35 43 291 9
Mar.	- - - -	- - - -	- - - -	- - - 60 115 199 -	38 292 -	- 314 - - -	- - - -	- 12 26 - - 60	- - - - - - 82	- - - -	1,198 31 26 270 5
Apr.	- - - -	- - - -	- - - -	- - - - - -	- 156 -	- 238 - 44 5	723 - 30 1 - 159	- 6 - - - -	- - - - - -	- - - -	1,362 18 18 271 3
May	- - - -	- - - -	- - - -	- - - - - -	- - - -	- - - -	- - - -	- - - - - -	- - - - - -	- - - -	- 56 - 11 0
Total	- - - -	- - - -	- - - -	- - - 154 207 296 -	118 763 72	- 874 155	44 5	928 14 56 1 - 255	192 6 30 65 160 34 153	- - - -	4,582 152 111 1,002 23
Grand Total	298 424 223 267 783 98	11 57 70 24 204	99 294 73 50	134 7 16 208 303 842 36	178 1,492 120	160 2,211 447	44 5	1,273 23 56 1 76 255	591 6 99 245 345 144 153	- - - -	12,445 341 262 2,912 54

## The Minelaying Code - 1944 and 1945

Alderney harbour	Hostile Ozone	Artichokes	Lorient
Brest	Jellyfish	Beech	St. Nazaire
Cadet Channel-W. Baltic	Sweet Peas	Carrots	Little Belt
Danzig	Privet	Cinnamon	La Pallice
Dortmund-Ems Canal	Dortmund-Ems Canal	Cypress	Dunkirk
Dunkirk	Cypress	Deodars	Gironde river mouth
Eckernforde	Melons	Dortmund-Ems Canal	Dortmund-Ems Canal
Esbjerg and Jutland Coast	Hawthorn	Eglantines	River Elbe estuary
Fehmarn Belt	Radishes	Forget-me-nots	Kiel harbour
Frisian islands	Nectarines	Geranium	Swinemunde
Gdynia	Spinach	Hawthorn	Esbjerg and Jutland Coast
Gironde river mouth	Deodars	Hostile Air	St. Peter Port, Guernsey
Great Belt (north)	Pumpkins	Hostile Ozone	Alderney harbour
Heligoland Bight	Rosemary	Hyacinth	St. Malo
Ijmuiden	Whelks	Iris	W. Scheldt and Hook of Holland
Kattegat (Laeso channel)	Yew Tree	Jasmine	Warnemunde
Kattegat (various areas)	Silverthorn	Jellyfish	Brest
Kiel Bay	Quince	Krauts	Lim Fjord (Aalborg to Hals)
Kiel Canal	Lettuces	Lettuces	Kiel Canal
Kiel harbour	Forget-me-nots	Limpets	Texel (north)
Kiel harbour	Wallflowers	Melons	Eckernforde
Kristiansand S., Lillesand, Grimstad, Arendal, Tromsund, Porsgrund, Laurvik, Sandefjord	Polyanthus	Nectarines	Frisian islands
La Pallice	Cinnamon	Onions	Oslo harbour, Moss, Horten, Solberg Bugten
Le Havre	Scallops	Polyanthus	Kristiansand S., Lillesand, Grimstad, Arendal, Tromsund, Porsgrund, Laurvik, Sandefjord.
Lim Fjord (Aalborg to Hals)	Krauts	Privet	Danzig
Little Belt	Carrots	Pumpkins	Great Belt (north)
Lorient	Artichokes	Quince	Kiel Bay
Morlaix	Upas Tree	Radishes	Fehmarn Belt
Oslo Fjord (Frederikstadt)	Tomatoes	Rosemary	Heligoland Bight
Oslo harbour, Moss, Horten, Solberg Bugten	Onions	Scallops	Le Havre
Pillau	Tangerine	Silverthorns	Kattegat (various areas)
River Elbe estuary	Eglantines	Spinach	Gdynia
River Ems (east)	Xeranthemum	Sultanas	Ushant
Rivers Jade and Weser estuaries	Yams	Sweet Peas	Cadet Channel-W. Baltic
St. Malo	Hyacinth	Tangerine	Pillau
St. Nazaire	Beech	Tomatoes	Oslo Fjord (Frederikstadt)
St. Peter Port, Guernsey	Hostile Air	Upas Tree	Morlaix
Sassnitz	Willow	Wallflowers	Kiel harbour
Swinemunde	Geranium	Whelks	Ijmuiden
Texel (north)	Limpets	Willow	Sassnitz
Ushant	Sultanas	Xeranthemum	River Ems (east)
Warnemunde	Jasmine	Yams	Rivers Jade and Weser estuaries
W. Scheldt and Hook of Holland	Iris	Yew Tree	Kattegat (Laeso Channel)

# Details of casualties to R.A.F. laid mines

1st June 1944 to 8th May 1945

The Types underlined are German Navy and naval auxiliaries

VS and VP = patrol craft M = auxiliary minesweepers HD = harbour defence Sperr = sperrbrecher, a mine protection ship.

Date	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Position	Garden	Area
1944								
June								
1st	Arken	f.v.	Da	38	-	5720N x 0829E	Hawthorn	No.3
3rd	Kerday	M.4003	Ge	252	-	close off Brest	Jellyfish	No.5
3rd	Ruesterseil	tug	Ge	120	-	5441N x 0758E	Rosemary	No.3
3rd	Randwijk	cargo	Du	-	2,439	off Hook of Holland	Iris V	No.3
4th	Blanc Nez	VP.724	Ge	330	-	4810N x 0439W	Jellyfish	No.5
5th	Julius Madsen	cargo	Da	2,490	-	5446N x 1211E	Sweet Pea	No.1
5th	Aigrette	f.v.	Fr	135	-	4712N x 0226W	Beech	No.5
5th	Almuth	VP.622	Ge	269	-	4706N x 0226W	Beech	No.5
6th	Rau II	VP.1509	Ge	354	-	4926N x 0005E	Scallops	No.4
6th	Pesce Spada	M.4031	Ge	329	-	close off Brest	Jellyfish	No.5
7th	KW.217	f.v.	Du	50	-	5230N x 0430E	Whelks	No.3
9th	Jytte	f.v.	Da	99	-	5639N x 1055E	Krauts	No.1
10th	Emsstrom	cargo	Ge	-	4,517	South of Copenhagen	Daffodil	No.1
10th	R.110	R-boat	Ge	90	-	5205N x 0403E	Iris V	No.3
12th	Rau I	VP.1507	Ge	354	-	close off Le Havre	Scallops	No.4
12th	MFP.920	Landing craft	Ge	150	-	In Veeregat - E. Scheldt	Newts 4	No.3
12th	HF.340	VS.217	Ge	35	-	5400N x 1414E	Geranium	No.1
12th	Utrecht	VS.201	Ge	322	-	5415N x 1402E	Geranium	No.1
12th	Malmedy	sperr.167	Ge	-	1,506	German coast N. Sea	Nectarines	No.3
14th	Emma	f.v.	Da	50	-	5639N x 0914E	Hawthorn	No.3
15th	Ernst Gunther	DC.31 (H.D.)	Ge	50	-	5440N x 0805E	Rosemary	No.3
15th	Neidenfels	cargo	Ge	-	7,838	5600N x 1100E	Silver XV	No.1
17th	(Sch. Y2)	M.3238	Ge	115	-			
	(KFK.273)	M.3240	Ge	100	-			
	(KFK.275)	M.3242	Ge	100	-	5126N x 0328E	Iris II	No.3
21st	Memelland	cargo	Ge	1,899	-	5404N x 0810E	Rosemary	No.3
22nd	Bohnsack 5	f.v.	Ge	35	-	off Danzig	Privet	No.1
23rd	KFK.412	M.3248	Ge	100	-	5125N x 0325E	Iris II	No.3
25th	KFK.255	M.3443	Ge	100	-	5226N x 0430E	Whelks	No.3
27th	Hernia	cargo	Ge	717	-	In Aarhus Bay	Silver XV	No.1
27th	Deutschland	cargo	Ge	218	-	5439N x 2004E	Tangerine	No.1
28th	Sohwan	cargo	Ge	-	3,111	N. of Great Belt	Silver XV	No.1
29th	Libau	cargo	Swe	334	-	5425N x 1350E	Willow	No.1
30th	Frinchen Behrens	DW.07 (H.D.)	Ge	218	-	5348N x 0735E	Nectarines	No.3
30th	Norden	Buoy layer	Ge	210	-	5350N x 0750E	Nectarines	No.3
Total - June 1944				30-9,663	5-19,411			
July								
1st	Katherina	Aux. minelayer	Ge	282	-	Just off Hook of Holland	Iris V	No.3
2nd	Tatihou	M.4225	Ge	240	-	4710N x 0218W	Beech	No.5
2nd	MFP.827	Landing craft	Ge	365	-	off Schouwen	Iris V	No.3
3rd	Vinita	f.v.	Swe	-	59	off the Skaw	Silver X	No.1
3rd	Liana	f.v.	Swe	-	31	North of Anholt	Silver XI	No.1
4th	Ketty	f.v.	Da	99	-	5522N x 1236E	Daffodil	No.1
5th	Molly	f.v.	Da	150	-	off Esbjerg	Hawthorn	No.3
7th	Solbris	cargo	Swe	466	-	estuary R. Weser	Nectarines	No.3
12th	Eem	cargo	Du	1,316	-	off Borkum	Nectarines	No.3
14th	U.415	U-boat-Type VIIIC	Ge	Sunk	-	4822N x 0429W	Jellyfish	No.5
14th	Leipzig	VP.713	Ge	246	-	close off Brest	Jellyfish	No.5
17th	Venzig	cargo	Ge	-	4,803	N. of the Belts	Silver XIII	No.1
18th	Venny	f.v.	Da	5	-	S.E. of Skaw	Silver X	No.1
19th	(Barge B.41)	barge	Fr	30	-	close off Le Havre	Scallops	No.4
	(Barge R.03)	barge	Fr	300	-			
20th	Mode	cargo	Swe	1,146	-	S.W. of Marstrand Fd.	Silver X	No.1
21st	Hans Christophersen	cargo	Ge	1,599	-	close off The Texel	Limpets	No.3
24th	AF.96	gunboat	Ge	250	-	5122N x 0306E	Iris II	No.3
24th	Orion	f.v.	Swe	-	31	near Anholt	Silver XI	No.1
26th	Nystad	cargo	Fi	-	1,742	Kiel Bight	Forgetmenots	No.1
29th	Halmstad	cargo	Ge	-	1,546	estuary R. Elbe	Eglantine	No.3
Total - July 1944				14-6,494 plus one U-boat	6-8,212			

SECRET

APPENDIX XI

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Position	Garden	Area
Aug. 2nd	Schwan	D.C.10(H.D.)	Ge	50	-	estuary R. Elbe	Eglantine	No.3
5th	(Gefion	f.v.	Da	9	-	near Hantsholm	Hawthorn	No.3
	(Immanuel	f.v.	Da	8	-			
5th	Gunnaren	f.v.	Swe	62	-		Hawthorn	No.3
5th	Delara	f.v.	Swe	-	50	15 miles W. of Vinga	Silver X	No.1
7th	KFK.462	M.3201	Ge	220	-	off Zeebrugge	Iris II	No.3
8th	Rikke	cargo	Da	-	1,432	5525N x 1243E	Daffodil	No.1
11th	Gotland	f.v.	Swe	50	-	off Hantsholm	Hawthorn	No.3
11th	Erling Lindoe	cargo	Nor	1,281	-	West of Nidingen	Silver XI	No.1
11th	M.27	mine-sweeper	Ge	750	-	4515N x 0115W	Decdar	No.5
12th	Namolo	cargo	Swe	2,860	-	5351N x 0857E	Eglantine	No.3
12th	Dora	f.v.	Ge	90	-	5355N x 0802E	Rosemary	No.3
12th	U.981	U-boat - Type VIIC	Ge	-	dam	off La Pallice	Cinnamon	No.5
14th	Gachucha	M.4463	Ge	35	-	off La Rochelle	Cinnamon	No.5
14th	Arthur Dunker	VP.605	Ge	278	-	4603N x 0120W	Cinnamon	No.5
16th	Poseidon	cargo	Ge	-	3,911	5435N x 1054E	Forgetmenot	No.1
17th	Les Baleines	M.4207	Ge	253	-	off Le Verdon	Decdar	No.5
17th	KFK.510	NB.72 (H.D.)	Ge	110	-	off Stettin	Geranium	No.1
17th	Eberhard	cargo	Ge	-	749	5443N x 1240E	Sweet Pea	No.1
17th	VS.214	patrol	Ge	-	100	5401N x 1417E	Geranium	No.1
Mid-Aug	U.547	U-boat - Type IXC	Ge	-	dam	Mouth of Gironde	Decdar	No.5
19th	Hermine	cargo	Ge	119	-	off Stettin	Geranium	No.1
19th	Sperr.104	sperrbrecher	Ge	-	1,000	5348N x 1421E	Geranium	No.1
20th	VS.409	patrol	Ge	-	100	In Little Belt	Endive	No.1
20th	(B.19	Barge	Fr.	200	-	Mouth of Gironde	Decdar	No.5
	(B.119	Barge	Fr.	150	-			
21st	T.155	T-boat	Ge	-	800		Geranium	No.1
22nd	U.180	U-boat - Type IXD	Ge	sunk	-	5409N x 1409E	Decdar	No.5
22nd	VS.231	Patrol	Ge	-	100	4500N x 0200W	Geranium	No.1
22nd	Eisbahr	cargo	Ge	385	-	5402N x 1421E	Silver X	No.1
22nd	Baltic	f.v.	Swe	50	-	East of Skaw	Silver X	No.1
22nd	Lolli	ferry	Da	-	500	West of Vinga	Silver XV	No.1
23rd	David	icebreaker	Nor	114	-	5604N x 1020E	Geranium	No.1
23rd	Wittekind	cargo	Ge	218	-	off La Pallice	Cinnamon	No.5
25th	Richard Hoko	tug	Ge	50	-	In La Pallice roads	Cinnamon	No.5
25th	U.667	U-boat - Type VIIC	Ge	sunk	-	4610N x 0114W	Cinnamon	No.5
26th	Soharnhorn	tug	Ge	150	-	In La Pallice roads	Cinnamon	No.5
26th	Pommern	M.4043	Ge	430	-	off La Pallice	Cinnamon	No.5
26th	KFK.506	V.6719	Ge	110	-	5345N x 1425E	Geranium	No.1
26th	Luderitz	Depot ship	Ge	-	2,000	5405N x 1412E	Geranium	No.1
28th	Titti	cargo	Swe	209	-	W. of Nidingen	Silver XI	No.1
29th	U.2327	U-boat - Type XXIII	Ge	-	Dam	Kiel fjord	Forgetmenot	No.1
30th	KFK.512	NB.66 (H.D.)	Ge	110	-	off Stettin	Geranium	No.1
31st	KFK.364	VS.345	Ge	110	-	5441N x 2011E	Tangerine	No.1
31st	VS.55	patrol	Ge	-	100	5437N x 1046E	Forgetmenot	No.1
31st	U.1000	U-boat - Type VIIC	Ge	Sunk	-	5441N x 1949E	Tangerine	No.1
Total - August 1944				28-8,461 plus three U-boats	12-10,842 plus three U-boats			
Sept. 2nd	Weilburg	cargo	Ge	1,923	-	5439N x 1035E	Forgetmenot	No.1
2nd	Seefalke	tug	Ge	-	110	5424N x 1013E	Forgetmenot	No.1
3rd	Hydra	cargo	Ge	-	200	5409N x 1409E	Geranium	No.1
8th	Westfalen	depot ship	Ge	5,367	-	5741N x 1110E	Silver X	No.1
8th	VS.163	patrol	Ge	-	100	in West Baltic	?	No.1
13th	KFK.330	naval aux.	Ge	110	-	off Stettin	Geranium	No.1
14th	Schultz Grund	Lightship	Da	-	150	5609N x 1111E	Silver XV	No.1
15th	Sperr.104	sperrbrecher	Ge	-	1,000	Swinemunde Bay	Geranium	No.1
17th	Fire Float	-	Ge	30	-	Kiel fjord	Forgetmenot	No.1
17th	Cap Guir	cargo	Ge	-	1,536	N.W. of Anholt	Silver XI	No.1
	(Chios	cargo	Ge	1,731	-	Near Brunsbüttel		
24th	(Ferdinand	f.v.	Ge	167	-		Eglantine	No.3
	(Hermod	cargo	Ge	-	5,193			
25th	VS.153	patrol	Ge	-	100	5436N x 1224E	Sweet Pea	No.1
26th	Monte Rosa	liner	Ge	-	13,882	5427N x 1135E	Radish	No.1
27th	Johann Georgius	VP.1214	Ge	209	-	5512N x 0805E	Hawthorn	No.3
28th	Agerso	cargo	Da	298	-	5446N x 1209E	Sweet Pea	No.1
28th	Oslo	cargo	Da	1,412	-	5406N x 1411E	Geranium	No.1
30th	Hartmuth	cargo	Ge	2,713	-	5651N x 1037E	Krauts	No.1
30th	Josse	f.v.	Da	22	-	5526N x 0819E	Hawthorn	No.3
Total - September 1944				11-13,982	9-22,271			



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Date 1944	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Position	Garden	Area
<u>Oct.</u>								
1st	Nordstjarnan	f.v.	Swe	46	-	Near Nidingen	Silver XI	No.1
3rd	Schwalbe	VS.906	Ge	215	-	5650N x 1125E	Silver XI	No.1
3rd	Fladstrand	f.v.	Da	70	-	5715N x 1113E	Yew Tree	No.1
4th	Doriana	cargo	Da	108	-	5425N x 1048E	Radish	No.1
4th	Fischotter	tug	Ge	-	50	5500N x 1830E	Spinach	No.1
5th	Neptun	cargo	Ge	-	1,594	5439N x 1231E	Sweet Pea	No.1
6th	Sperr. 22	sperrbrecher	Ge	-	1,500	5435N x 1841E	Spinach	No.1
8th	Sperr. 13	sperrbrecher	Ge	-	1,500	5437N x 1839E	Spinach	No.1
9th	Mette	cargo	Ge	-	1,909	5609N x 1115E	Silver XIII	No.1
11th	Nina	cargo	Nor	-	1,488	5616N x 1215E	Silver XIV	No.1
13th	Steinbutt	aux.	Ge	291	-	In the Kiel Canal	Lettuce	No.1
14th	Telde	cargo	Ge	-	2,978	Oslo Fjord	Onions	No.2
17th	Braunau	cargo	Ge	-	211	5614N x 1215E	Silver XIV	No.1
19th	Kattrepel	naval aux.	Ge	267	-	5752N x 1045E	Silver X	No.1
20th	Tormilind	VS.909	Ge	494	-	5652N x 1047E	Krauts	No.1
20th	U.2510	U-boat - Type XXI	Ge	-	dam	By Kiel Lightship	Forgetmenot	No.1
21st	Hohenhorn	cargo	Ge	2,997	-	5746N x 1122E	Silver X	No.1
23rd	VS.1011	patrol	Ge	-	200	5602N x 1040E	Silver XV	No.1
23rd	Grethe	f.v.	Da	83	-	5527N x 1212E	Daffodil	No.1
23rd	Treff 3	UJ.1411	Ge	331	-	4530N x 0120W	Deodar	No.5
25th	Hunte	cargo	Ge	3,000	-	5340N x 0635E	Nectarines	No.3
26th	VS.802	patrol	Ge	-	200	5645N x 1158E	Silver XII	No.1
27th	Suderoog	survey ship	Du	70	-	5445N x 0805E	Rosemary	No.3
27th	Nina	cargo	Nor	1,488	-	5612N x 1120E	Silver XIII	No.1
27th	VS.828	patrol	Ge	-	200	5738N x 1041E	Silver X	No.1
30th	M.584	mine-sweeper	Ge	750	-	5652N x 1048E	Kraut	No.1
31st	Libau I	dredger	Ge	-	1,000	5443N x 1948E	Tangerine	No.1
Total - October 1944				14-10,210	12-12,830 plus one U-boat			
<u>Nov.</u>								
3rd	Irma	sailing ship	Ge	119	-	5401N x 1427E	Geranium	No.1
3rd	Sperr.154	sperrbrecher	Ge	-	1,500	5639N x 1148E	Silver XII	No.1
4th	Phonix	cargo	Da	-	895	5651N x 1056E	Kraut	No.1
10th	KFK.540	VP.6327	Ge	110	-	off Skaw	Silver X	No.1
10th	Freja	cargo	Da	347	-	5529N x 1227E	Daffodil	No.1
13th	Stad Dordrecht	cargo	Ge	3,781	-	5439N x 1040E	Forgetmenot	No.1
16th	Sveinerein	f.v.	Nor.	50	-	West of Moss	Onion III	No.2
19th	Kong Trygve	cargo	Nor.	-	1,141	5519N x 1231E	Daffodil	No.1
19th	Frederikshavn	cargo	Da	-	1,480	5650N x 1100E	Silver XI	No.1
20th	Baku	ocean tug	Ge	538	-	5449N x 1242E	Sweet Pea	No.1
20th	T.34	T.B.	Ge	1,780	-	5453N x 1340E	Willow	No.1
	TF.4	naval aux.	Ge	750	-			
23rd	KFK.286	VP.1535	Ge	110	-	In Oslo fjord	Onions	No.2
23rd	KFK.368	NO.45 (H.D.)	Ge	110	-	off Horten	Onions IV	No.2
23rd	Eichberg	cargo	Ge	-	1,923	5451N x 1754E	Spinach	No.1
23rd	Marta Halm	cargo	Ge	-	984	5600N x 1049E	Silver XV	No.1
24th	VS.302	patrol	Ge	-	100	5436N x 1652E	?	No.1
24th	Elie	cargo	Da	1,873	-	5450N x 1750E	Spinach	No.1
24th	Spreeufer	f.v.	Ge	216	-	5427N x 1545E	?	No.1
27th	Gotenhafen	cargo	Ge	-	4,356	West Baltic	?	No.1
29th	M.3889	aux - M/S	Ge	-	200	5605N x 1116 E	Silver XV	No.1
29th	Viktor	tug	Nor	35	-	Near Horten	Onions IV	No.2
30th	Orion	cargo	Ge	-	211	5506N x 1258E	Daffodil	No.1
Total - November 1944				13-9,819	10-12,790			

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APPENDIX XV

(85404) 4-34

SECRET

Date 1944	Name	Type	Flag	Sunk Tonnage	Dem. Tonnage	Position	Garden	Area
Dec.								
1st	U.2515	U-boat - Type XXI	Ge	-	dam	By Kiel Lightship	Forgetmenot	No.1
1st	Venus	f.v.	Da	50	-	off Gilleleje	Silver XIV	No.1
1st	Ib	f.v.	Da	17	-	In the Sound	Silver XIV	No.1
1st	Konstancia	cargo	Ge	-	1,777	5614N x 1215E	Silver XIV	No.1
1st	Sperr.172	sperrbrecher	Ge	-	1,500	5611N x 1118E	Silver XIII	No.1
4th	Kong Halfdan	cargo	Nor	1,456	-	5748N x 1125E	Silver X	No.1
4th	NO.42	H.D.	Ge	-	110	5936N x 1025E	Onions II	No.2
4th	Seeburg	naval aux.	Ge	12,181	-	In Puok Bay	Spinach	No.1
13th	Abssalon	cable ship	Da	457	-	5600N x 1055E	Silver XV	No.1
13th	Ost V	f.v.	Ge	50	-	5359N x 1413E	Geranium	No.1
13th	Strahl	naval aux.	Ge	-	200	5506N x 1437E	Pollock	No.1
14th	Perseus	cargo	Ge	658	-	Near Moss	Onions III	No.2
14th	Eros	f.v.	Swe	44	-	5748N x 1105E	Silver X	No.1
14th	No.48	H.D.	Ge	-	110	5925N x 1039E	Onions III	No.2
14th	Konigsau	cargo	Ge	-	966	5615N x 1215E	Silver XIV	No.1
15th	R.26	R-boat	Ge	-	90	5952N x 1039E	Onions I	No.2
19th	VS.916	patrol	Ge	-	200	5925N x 1039E	Onions III	No.2
21st	Leda	cargo	Ge	-	594	off Gdynia	Spinach	No.1
22nd	Friedericus Rex	VS.60	Ge	247	-	5356N x 1416E	Geranium	No.1
26th	U.2342	U-boat - Type XXIII	Ge	sunk	-	5355N x 1417E	Geranium	No.1
27th	Zeus	cargo	Ge	275	-	off Swinemunde	Geranium	No.1
29th	Ulla	f.v.	Da	7	-	off Laeso Ronde	Yew Tree	No.1
29th	Poseidon	f.v.	Da	6	-	S. of Vorsna	Yew Tree	No.1
29th	Walter Korte	buoy layer	Ge	350	-	off Swinemunde	Geranium	No.1
29th	Thann	cargo	Ge	-	7,412	5441N x 1235E	Sweet Pea	No.1
29th	VS.203	patrol	Ge	-	100	5356N x 1416E	Geranium	No.1
30th	Vita	cargo	Da	118	-	South of Moen I.	Sweet Pea	No.1
31st	Sperr. 24	sperrbrecher	Ge	-	1,500	E. of Anholt	Silver XI	No.1
Total - December 1944				14-15,916 plus one U-boat	12-14,559 plus one U-boat			
Jan. 1945								
1st	No.51	Harbour Defence	Ge	-	50	5953N x 1042E	Onions I	No.2
1st	Ingeborg	cargo	Ge	895	-	5651N x 1123E	Silverthorn XI	No.1A
4th	Sperr. No.11	sperrbrecher	Ge	-	1,500	off Aarhus	Silverthorn XV	No.1A
4th	Lutjehorn	cargo	Ge	1,953	-	5442N x 1237E	Sweet Pea II	No.1B
5th	Elsasa	minelayer	Ge	3,047	-	5542N x 1054E	Silverthorn XV	No.1A
5th	M.575	minesweeper	Ge	-	750	In Kattegat	Silverthorn ?	No.1A
5th	Esperance	fishing vessel	Da	565	-	5733N x 1057E	Silverthorn X	No.1A
7th	VS.230	patrol boat	Ge	15	-	5405N x 1415E	Geranium I	No.1B
7th	Jaguar	Harbour Defence	Ge	50	-	off Copenhagen	Verbena	No.1B
12th	Otto Petersen	cargo	Ge	2,832	-	5902N x 1015E	Polyanthus 7	No.2
12th	Aardal	coaster	Nor	-	467	5906N x 1013E	Polyanthus 7	No.2
12th	U.2337	U-boat - Type XXIII	Ge	-	Damaged	off Pillau	Tangerine	No.1B
12th	D. 06. K	Harbour Defence	Ge	70	-	5423N x 1012E	Forget-me-nots	No.1B
13th	Beltana	fishing vessel	Swe	63	-	West of the Skaw	Silverthorn X	No.1A
14th	VS.130	patrol boat	Ge	110	-	5450N x 0946E	Wallflowers	No.1B
16th	Donsau	cargo	Ge	9,035	-	5938N x 1038E	Onions II or III	No.2
20th	M.415	minesweeper	Ge	-	750	5557N x 1105E	Silverthorn XV	No.1A
23rd	Laura	fishing boat	Da	7	-	In Aarhus Bay	Silverthorn XV	No.1A
26th	Sperr.No.132	sperrbrecher	Ge	-	1,500	5615N x 1215E	Silverthorn XIV	No.1A
26th	M.16	minesweeper	Ge	-	750	5404N x 1427E	Geranium II	No.1B
27th	Sirius	salvage vessel	Ge	115	-	off Gdynia	Spinach I	No.1B
29th	Viborg	cargo	Da	2,028	-	off Rugenwalde	?	No.1B
29th	Memel	Torpedo service	Ge	181	-	5401N x 1402E	Geranium I	No.1B
29th	F.5	Fleet escort	Ge	600	-	5420N x 1355E	Geranium I	No.1B
31st	Planet	cargo	Ge	5,821	-	5455N x 1425E	Pollock	No.1B
31st	U.3520	U-boat - Type XXI	Ge	sunk	-	5430N x 1010E	Forget-me-nots	No.1B
31st	Berlin	Liner	Ge	15,286	-	5401N x 1418E	Geranium I	No.1B
31st	Pantos	cargo	Ge	-	3,410	5357N x 1428E	Geranium II	No.1B
Total - January 1945				18-42,673 plus one U-boat	8-9,177 plus one U-boat			

SECRET

APPENDIX XV



Date 1945	Name	Type	Flag	Sunk Tonnage	Damaged Tonnage	Position	Garden	Area
<u>Feb.</u>								
1st	Jasmond	tug	Ge	-	50	off Swinemunde	Geranium I	No.1B
6th	VS.218	patrol boat	Ge	100	-	54.05N x 14.15E	Geranium I	No.1B
6th	MAA.33	fishing vessel	Ge	50	-	54.39N x 10.10E	Wallflower	No.1B
7th	Spykar I	barge	Ge	150	-	54.05N x 14.15E	Geranium I	No.1B
7th	Pollux	icebreaker	Ge	518	-	N.W. of Pillau	Tangerine II	No.1B
8th	VS.152	patrol boat	Ge	-	100	54.28N x 10.45E	Forget-me-nots	No.1B
9th	M.3892	Aux. minesweeper	Ge	-	110	In the Samso Belt	Silverthorn XV	No.1A
10th	Sund	cargo	Ge	1,923	-	In the Elbe estuary	Eglantine	No.3
10th	Nordfahrt	cargo	Ge	2,543	-	54.36N x 10.57E	Forget-me-nots	No.1B
12th	Osnabruck - MRS.11	M.R.S.	Ge	5,095	-	54.05N x 14.15E	Geranium I	No.1B
12th	Neufundland	trawler	Ge	394	-	In the Elbe estuary	Eglantine	No.3
13th	Tijuca	cargo	Ge	-	5,918	S.E. of Anholt	Silverthorn XII	No.1A
13th	M.421	minesweeper	Ge	750	-	54.25N x 15.25E	?	No.1B
13th	Hedwigshutte	cargo	Ge	2,221	-	54.40N x 10.55E	Forget-me-nots	No.1B
14th	Ditmar Koel	pilot vessel	Ge	670	-	54.18N x 14.05E	Geranium I	No.1B
14th	VP.1104	patrol boat	Ge	330	-	53.51N x 09.00E	Rosemary I	No.3
15th	M.3681	Aux. minesweeper	Ge	-	110	54.26N x 12.15E	Sweet Pea I	No.1B
16th	Monte Rosa	liner	Ge	-	13,882	off Gdynia	Spinach I	No.1B
16th	Dieter Hugo							
	Stinnes 12	cargo	Ge	2,545	-	off Swinemunde	Geranium I	No.1B
16th	Drechijk	cargo	Ge	-	9,338	off Swinemunde	Geranium I	No.1B
17th	U.1273	Type VIIC U-boat	Ge	sunk	-	59.23N x 10.30E	Onions IV	No.2
18th	M.265	minesweeper	Ge	-	750	56.08N x 11.04E	Silverthorn XIII	No.1A
18th	U.3010	Type XXI U-boat	Ge	-	Damaged	54.50N x 09.45E	Wallflowers	No.1B
19th	Consul Cords	cargo	Ge	1,572	-	54.23N x 12.05E	Sweet Pea I	No.1B
20th	Sperr. No.145	sperrbrecher	Ge	-	479	In Frederikshavn roads	Silverthorn X	No.1A
21st	Lopra	coaster	Da	134	-	In the Samso Belt	Silverthorn XV	No.1A
21st	DC.43	Harbour defence	Ge	50	-	53.50N x 08.9E	Rosemary I	No.3
21st	Giselau	m. lighter	Ge	100	-	In Frederikshavn roads	Silverthorn X	No.1A
22nd	Sperr. No.27	sperrbrecher	Ge	-	4,200	N. of Danzig	Spinach I	No.1B
22nd	Braunsberg	cargo	Ge	-	2,349	In the Samso Belt	Silverthorn XV	No.1A
24th	M.3618	Aux. minesweeper	Ge	-	110	Precise position not known	?	No.1B
24th	Ellen Larsen	cargo	Ge	1,938	-	off Warnemunde	Sweet Pea I	No.1B
24th	Bertram V	m. lighter	Ge	150	-	E. of Pillau in Frische Haff	Tangerine I	No.1B
25th	Erika Fritzen	cargo	Ge	4,169	-	off Warnemunde	Sweet Pea I	No.1B
25th	Hertha	m. lighter	Ge	100	-	In the Jade/Weser estuary	Yams	No.3
25th	Gertje	motor S.V.	Ge	50	-	In the Jade estuary	Yams	No.3
26th	U.267	Type VIIC U-boat	Ge	-	Damaged	S.E. of Anholt	Silverthorn XII	No.1A
27th	Jaspis	cargo	Nor	-	6,094	54.30N x 12.03E	Sweet Pea I	No.1B
28th	R.177	R-boat	Ge	90	-	54.48N x 17.05E	?	No.1B
Total - February 1945				23-25,642 plus one U-boat	13-43,490 plus two U-boats			

Date 1945	Name	Type	Flag	Sunk Tonnage	Damaged Tonnage	Position	Garden	Area
<u>Mar.</u>								
1st	VP.2002	patrol boat	Ge	-	150	5442N x 1237E	Sweet Pea II	No.1B
1st	Gerda	motor s.v.	Da	342	-	5650N x 1123E	Silverthorn XI	No.1A
2nd	U.3519	Type XXI U-boat	Ge	sunk	-	N. of Warnemunde	Sweet Pea I	No.1B
2nd	Erna	motor s.v.	Da	215	-	5545N x 1104E	Silverthorn XV	No.1A
2nd	Rixhoft ex Smok	tug	Pol	200	-	N. of Warnemunde	Sweet Pea I	No.1B
2nd	Kalmar	cargo	Ge	-	964	off Porsgrunn	Polyanthus 6	No.2
3rd	Irene Oldendorf	cargo	Ge	-	1,923	N. of Warnemunde	Sweet Pea I	No.1B
5th	Hansa	cargo liner	Ge	21,131	-	N. of Warnemunde	Sweet Pea I	No.1B
5th	one fishing boat	fishing boat	Ge	50	-	In the Elbe estuary	Rosemary I	No.3
7th	Hamburg	cargo liner	Ge	22,117	-	off Sassnitz	Willow III	No.1B
7th	one fishing boat	fishing boat	Da	50	-	5605N x 1105E	Silverthorn XV	No.1A
7th	Sofia	cargo	Ge	-	4,450	off Swinemunde	Geranium I	No.1B
8th	VS.250	patrol boat	Ge	100	-	off Sassnitz	Willow III	No.1B
9th	Svanen	fishing boat	Da	43	-	West Langeland Channel	Wallflowers	No.1B
10th	Dorthea	motor s.v.	Da	109	-	5652N x 1041E	Krauts	No.1A
12th	Emmanuel	motor s.v.	Da	97	-	5501N x 1132E	?	No.1B
14th	Hugo Zeye	Torpedo training	Ge	600	-	5433N x 1045E	Forget-me-nots	No.1B
14th	Marco Brunner	cargo	Ge	-	8,150	N. of Sjaellands Odde	Silverthorn XIII	No.1A
14th	T.3	Torpedo boat	Ge	1,132	-	5434N x 1856E	Spinach I	No.1B
14th	T.5	Torpedo boat	Ge	1,132	-	5434N x 1856E	Spinach I	No.1B
15th	VS.247	patrol boat	Ge	-	100	5431N x 1344E	Willow III	No.1B
15th	U.367	Type VIIC U-boat	Ge	sunk	-	5440N x 1950E	Tangerine I	No.1B
15th	Castor	cargo	Ge	6,217	-	N. of Warnemunde	Sweet Pea I	No.1B
16th	K.F.K. -	fishing vessel	Ge	110	-	off Sassnitz	Willow III	No.1B
16th	K.F.K. -	fishing vessel	Ge	-	110	off Sassnitz	Willow III	No.1B
16th	K.F.K. -	fishing vessel	Ge	-	110	off Sassnitz	Willow III	No.1B
16th	Tijuca	cargo	Ge	5,918	-	off Sjaellands Odde	Silverthorn XIII	No.1A
18th	VS.1014	patrol boat	Ge	50	-	In the Samso Belt	Silverthorn XV	No.1A
18th	Brunhilde	cargo	Ge	-	1,923	5422N x 1204E	Sweet Pea I	No.1B
19th	Mar del Plata	cargo	Bel	-	7,340	off Sjaellands Odde	Silverthorn XIII	No.1A
20th	New York	liner	Ge	-	23,337	5436N x 1106E	Forget-me-nots	No.1B
21st	M.3827	Aux. minesweeper	Ge	130	-	N. entrance to the Sound	Silverthorn XIV	No.1A
22nd	Robert Muller	cargo	Ge	986	-	S.W. of Nidingen	Silverthorn XI	No.1A
23rd	Ostara	cargo	Ge	1,281	-	5555N x 1033E	Silverthorn XV	No.1A
23rd	Dejro	motor s.v.	Da	82	-	5604N x 1155E	Silverthorn XIII	No.1A
23rd	Utviken	cargo	Nor	3,502	-	N. of Langeland I	Broccoli	No.1B
27th	Hermann	tug	Ge	63	-	off Kiel fjord	Forget-me-nots	No.1B
29th	Alwine Russ	Cargo	Ge	988	-	Elbe estuary - Salved	Rosemary I	No.3
30th	Jersbek	cargo	Ge	2,804	-	near Pillau	Tangerine I	No.1B
Total - March 1945				26-69,449 plus two U-boats	11-48,557			

Date 1945	Name	Type	Flag	Sunk Tonnage	Damaged Tonnage	Position	Garden	Area
<u>April</u>								
2nd	Franken	Supply ship	Ge	-	8,053	5429N x 1853E	Privet I	No.1B
5th	No.56	Harbour defence	Ge	110	-	Horten Roads	Onions IV	No.2
10th	Z.43	Destroyer	Ge	-	3,660	N.E. of Rixhoft	?	No.1B
12th	VS.55	patrol boat	Ge	344	-	Eckernforde Bay	Melons	No.1B
12th	VS.112	patrol boat	Ge	100	-	Eckernforde Bay	Melons	No.1B
13th	Wotan	tug	Ge	357	-	off Sjaellands Odde	Silverthorn XIII	No.1A
14th	VS.1004	patrol boat	Ge	-	100	off Sjaellands Odde	Silverthorn XIII	No.1A
14th	Serda	coaster	Da	500	-	5530N x 1225E	Daffodil I	No.1B
14th	R.126	R-boat	Ge	90	-	5435N x 1025E	Forget-me-nots	No.1B
15th	VS.58	patrol boat	Ge	325	-	5432N x 1045E	Forget-me-nots	No.1B
15th	Persante	tank lighter	Ge	200	-	Kiel fjord	Forget-me-nots	No.1B
16th	M.3856	Aux. minesweeper	Ge	-	110	In the Samso Belt	Silverthorn XV	No.1A
16th	Magdalene Vinnen	cargo	Ge	-	4,594	In the Samso Belt	Silverthorn XV	No.1A
16th	Hedvig	tug	Ge	168	-	5439N x 1246E	Sweet Pea II	No.1B
16th	AB.73	tug	Ge	170	-	5439N x 1246E	Sweet Pea II	No.1B
17th	VS.1012	patrol boat	Ge	-	100	5440N x 1045E	Forget-me-nots	No.1B
17th	Tacuman	cargo	Ge	4,621	-	5431N x 1030E	Forget-me-nots	No.1B
19th	C.31	Barrage vessel	Ge	80	-	5528N x 0943E	Carrots II	No.1A
20th	VS.53	patrol boat	Ge	344	-	5435N x 1025E	Forget-me-nots	No.1B
21st	M.3243	Aux. minesweeper	Ge	-	110	Kiel fjord	Forget-me-nots	No.1B
21st	Ann Helen Clausen	coaster	Da	261	-	5527N x 0942E	Carrots II	No.1A
22nd	Ingrid Leonhardt	cargo	Ge	1,923	-	5435N x 1055E	Forget-me-nots	No.1B
24th	Nordsterne	fishing boat	Da	43	-	5650N x 1022E	Krauts	No.1A
Total - April 1945				16-9,636	7-16,727			
May								
3rd	M.14	minesweeper	Ge	750	-	Off Swinemunde	Geranium I	No.1B
4th	Schlesien	Old battleship	Ge	14,400	-	Off Swinemunde	Geranium I	No.1B
4th	T.36	Torpedo boat	Ge	1,780	-	Off Swinemunde	Geranium I	No.1B
Total - May 1945				3-16,930	Nil			

The U-boat Training Organisation

Reference - Admt. F.D.S. 108/56

Introduction

Between 1939 and 1943 the German organisation for training U-boat personnel and for working up new boats and crews was greatly expanded, the increase being dictated by the steady growth in numbers of U-boats in commission which rose from 57 when the war started to 450 at the end of 1943.

See Table after  
conclusion

On 1 November 1943 there were 432 U-boats in commission, but of these only 198 were operational - that is operating from Atlantic, Norwegian, Mediterranean or Black Sea bases, resting or undergoing routine refits. Of the remaining 234 boats, 148 were newly commissioned and at various stages of their 3½ months trials and working-up exercises in the Baltic and 86 were older boats permanently allocated to the four training flotillas based on Danzig, Gotenhafen, Memel and Pillau.

ibid

This meant that 54% of the U-boats in commission were non-operational which by reference to the accompanying table will be seen as not unusual. In a period of over three years it fluctuated between 40% and 70% and depended on a number of factors such as the completion rate of new boats, losses, teething troubles while on trials, and set-backs in the U-boat campaign. Such fluctuations were not allowed to affect the periods allocated to the basic training of officers and men or the time for working-up exercises of new boats, which remained constant until mid-1944 when R.A.F. bombing and mining in the Baltic began to cause delays and dislocation.

Training Facilities

All training took place in the Baltic and came under the control of the Second Admiral of U-boats. In November 1943 the following establishments and flotillas constituted the training organisation:-

1. Six shore training establishments at Pillau, Gotenhafen, Schleswig, Plon, Neustadt and Hela.
2. Four flotillas of older U-boats, numbering 86 in all, which had been withdrawn from active operations and were based on Pillau, Memel, Gotenhafen and Danzig.
3. Four flotillas of newly commissioned U-boats, numbering 148 boats in all, which were at various stages of their 3½ months' working-up exercises, based on Stettin, Kiel and Danzig.
4. Numerous target ships, torpedo boats and motor minesweepers for use in tactical and torpedo firing practices.

See Map 8

Almost the whole Bay of Danzig, covering about 1,600 square miles, was allocated to the training flotillas, each having its own practice area, target ships and torpedo recovery vessels. The final tactical training of new boats against a target convoy heavily escorted by surface and aircraft took

place anywhere between the 55th and 56th parallels of latitude bounded by Bornholm Island to the west and the Lithuanian coast to the east.

### Details of Training

#### (a) Basic training of officers and ratings

This took place at the U-boat schools at Pillau and Gotenhafen as follows:-

Officers - Deck and Engineer officers did an eight weeks course including a minimum of 18 days at sea in U-boats of the Training flotillas. Candidates for Senior Engineer underwent a further three months course in electrics, diesels and diving mechanism.

Ratings - All seamen and technical Chief Petty Officers and Petty Officers passed through an eight weeks basic course, most of the training being done in U-boats lying alongside at the training base or going to sea for short periods. All other ratings received a similar course but torpedo and W/T ratings received a further five weeks instruction. Electrical and Engineer ratings were sent to the big diesel engine and electrical equipment manufacturing firms. Gunnery ratings went to the Flak School at Swinemunde.

On completion of all these courses, officers and men were held in the depots ready to be sent to the building yards to commission new U-boats in which they then carried out the further  $3\frac{1}{2}$  months exercises as described in section (c).

#### (b) Candidates for C.O. of a U-boat

All underwent a special course. The first part took four to ten weeks depending on the trainee's previous experience, and consisted of elementary instruction in the theory of submarine warfare. In the second part the trainees were attached for six weeks to the U-boat Training Flotillas based on Memel and Danzig. Here they received practical instruction in torpedo control and attack problems, each officer carrying out between 20 and 30 attack exercises on various targets from the single unescorted ship to the heavily guarded convoy. During these exercises as many as 50 practice torpedoes were fired by each candidate and the results of the attacks analysed. In the 'detection school' trainees were taught the art of locating targets when surfaced or submerged using the latest devices.

On qualifying, the officers were usually appointed to command new U-boats which they took over at the building yard, but some were sent to operational bases to relieve other C.O.s who were then given a rest period or appointed to the U-boat Training Flotillas. Thus the officer instructors in the Training Flotillas usually had quite recent experience of active service conditions.

#### (c) Operational training of new U-boats

After acceptance trials each new U-boat was attached for at least  $3\frac{1}{2}$  months to one of the four 'Transit Training Flotillas' in the Baltic where with its own permanent crew it

underwent a rigorous routine of working-up procedure in the following stages:-

(1) Flak training - one week.

The new U-boat proceeded to Swinemunde where, under instructors from the local Flak School, six days were spent at Anti-aircraft firing practice. This was to ensure that if during the subsequent training it was attacked from the air, the U-boat would be able to defend itself.

(2) Preliminary Shake-down - one week

This consisted of harbour drills, practicing going alongside, navigational training and adjustments.

(3) Technical Operational Training - four to seven weeks

Twenty-five to thirty-five working days were allocated to various exercises such as crash dives, damage control against depth charge attacks, deep diving practice and (from 1944 onwards) schnorchel training, which included two days continuously submerged.

(4) Pre-tactical Training - ten days

This included elementary tactics, shadowing, unobserved attainment of 'ahead' firing position, conduct in the presence of hostile aircraft, attack exercises, and A/A practice.

(5) Torpedo Firing Training - fourteen to sixteen days

The exercises ranged from simple attacks on unescorted ships to attacks on convoys with air and surface escorts, night surface and night submerged attacks. Each boat made from 30 to 35 attacks. Other exercises were in gun firing against surface targets and initiation into being attacked with depth charges. To accustom the crew to exploding depth charges, live charges were dropped at various ranges to as close as 150 yards.

(6) Final Tactical Training - ten days

In this final phase the U-boat was attached to the 27th Flotilla based on Gotenhafen. (In 1943 this was under the Command of Captain Topp, a well-known 'ace'). The course started with a discussion of the latest operational experience of U-boats in the Atlantic and included air/sea co-operation and new developments in radio, radar and decoy devices. In the latter part of the course each boat carried out five tactical exercises under realistic conditions and working in a large area of water in conjunction with about eight other U-boats, whose duty was to find and attack a target convoy consisting of four ships with heavy surface and air escorts.

This completed the operational training of the new boat which then proceeded to one of the Baltic dockyards for final adjustments and to Kiel to embark live



torpedoes. The boat was then sent straight to one of the operational bases or direct out to an operational area.

### Conclusion

Although the foregoing is dated to the end of 1943, very much the same procedure was in force throughout 1944 though far more attention was given in the final stages to schnorchel exercises and inshore patrol tactics of attack and avoidance of counter attack. Considering the rigorous lengthy training syllabus it is not surprising that between mid-1941 and the end of 1944, six school and 17 new U-boats were lost in accidents. Six more foundered on mines laid in the area by R.A.F. Bomber Command.

Table showing the categories of boats in the U-boat Fleet\*

Date	Operational	New boats training	School boats	Total in Commission	Percentage non-operational
1. 5.41	34	38	50	122	72.2
1. 7.41	64	46	43	153	58.2
1.10.41	80	63	55	198	59.6
1. 1.42	105	96	57	258	59.3
1. 4.42	122	111	57	290	57.9
1. 7.42	145	133	55	333	56.4
1.10.42	217	97	53	367	40.9
1. 1.43	226	122	52	400	43.5
1. 9.43	204	151	61	416	51.0
1. 1.44	195	167	88	450	56.7
1. 5.44	185	183	88	456	59.4
1.10.44	156	151	106	412	62.1
1.12.44	162	146	110	418	61.2

\* Note: These figures are taken from the official German monthly returns. Because operational U-boat losses were often unknown till some time after the completion of the return, columns 1 and 4 are higher than actual for the date. There are also discrepancies between the figures given in columns 2 and 3 and those recorded in B. d U's War Diary but they do not affect the percentages in column 5 to any great extent.

ENEMY VESSELS SUNK, DESTROYED AND DAMAGED IN PORT BY  
R. A. F. BOMBER COMMAND AND THE U. S. 8th AIR FORCE

VP. = Patrol craft. (H.D) = harbour defence craft. M. = auxiliary minesweepers.

The 750 ton minesweepers were the standard naval escort vessels with L.A. guns and flak.

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
2 June	Condor	VP.1810	Ge	220	-	Boulogne - U. S. A. F.
3 June	AF. 58	gunboat	Ge	250	-	Boulogne - U. S. A. F.
8 June	AF.15	gunboat	Ge	250	-	Dieppe - U. S. A. F.
14 June	Jaguar	torpedo boat	Ge	1,132	-	Le Havre - B.C.
	Falke	torpedo boat	Ge	1,132	-	
	Mowe	torpedo boat	Ge	1,132	-	
	S. 171	E-boat	Ge	90	-	
	S. 172	E-boat	Ge	90	-	
	S. 173	E-boat	Ge	90	-	
	S. 187	E-boat	Ge	90	-	
	S. 188	E-boat	Ge	90	-	
	S. 84	E-boat	Ge	90	-	
	S. 100	E-boat	Ge	90	-	
	S. 138	E-boat	Ge	90	-	
	S. 142	E-boat	Ge	90	-	
	S. 143	E-boat	Ge	90	-	
	S. 144	E-boat	Ge	90	-	
	S. 146	E-boat	Ge	90	-	
	S. 150	E-boat	Ge	90	-	
	S. 169	E-boat	Ge	90	-	
	RA. 9	R. class M/S	Ge	90	-	
	R. 51	R. class M/S	Ge	90	-	
	R. 182	R. class M/S	Ge	90	-	
	Viotoria	M. 3801	Ge	275	-	
	Westfalen	M. 3802	Ge	354	-	
	Kurmark	M. 4627	Ge	473	-	
	Vimy	M. 3855	Ge	268	-	
	KW. 101	M. 3822	Ge	130	-	
	Fecamp 2	M. 3873	Ge	300	-	
	Fecamp 3	M. 3874	Ge	300	-	
	Wal. 8	VP. 1505	Ge	348	-	
	Wal. 9	VP. 1506	Ge	348	-	
	KFK. 288	VP. 1537	Ge	100	-	
	KFK. 295	VP. 1540	Ge	100	-	
	KFK. 296	VP. 1541	Ge	100	-	
	PA. 2	VP. PA. 2	Ge	200	-	
	AF. 69	gunboat	Ge	250	-	
	Heinrich Burren	VP. 207	Ge	389	-	
	Passerau	FH. 01 (H.D)	Ge	420	-	
	Oceanie	Auxiliary	Ge	300	-	
	Le Puissant	tug	Fr.	245	-	
	Thames	tug	Bel.	144	-	
	Trapu	tug	Fr.	226	-	
	Spiekeroog	tug	Ge	111	-	
	Hafenkapitan	tug	Ge	100	-	
	Fregatte	tug	Fr.	100	-	
	Schonhoven	tug	Ge	100	-	
	Petrel	tug	Ge	100	-	



Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
14 June Contd.	Leithdm	tug	Ge	100	-	Le Havre - B.C.
	Simoun	tug	Fr.	109	-	
	Midouze	tug	Fr.	58	-	
	Jeanne d'Arc	tug	Fr.	50	-	
	Gironde	tug	Fr.	50	-	
	Furans	tug	Fr.	60	-	
	Lot	tug	Fr.	47	-	
	Jean Navarre	tug	Fr.	35	-	
	Ancre	tug	Fr.	35	-	
	France	tug	Fr.	30	-	
15 June	Von der Lippe	Minesweeper	Ge	750	-	Boulogne - B.C.
	Von der Groeben	Minesweeper	Ge	750	-	
	M. 402	Minesweeper	Ge	750	-	
	Brommy	R-boat depot	Ge	750	-	
	R. 81	R. class M/S	Ge	90	-	
	R. 92	R. class M/S	Ge	90	-	
	R. 93	R. class M/S	Ge	90	-	
	R. 125	R. class M/S	Ge	90	-	
	R. 129	R. class M/S	Ge	90	-	
	R. 232	R. class M/S	Ge	90	-	
	R. 237	R. class M/S	Ge	90	-	
	AF. 1	gunboat	Ge	250	-	
	AF. 3	gunboat	Ge	250	-	
	AF. 6	gunboat	Ge	250	-	
	AF. 11	gunboat	Ge	250	-	
	AF. 57	gunboat	Ge	250	-	
	Senetuer				-	
	L. Brindeau	VP. 1805	Ge	281	-	
	Linz	VP. 1814	Ge	245	-	
	A. 6	VP. 1815	Ge	250	-	
	KW. 132	M. 3815	Ge	110	-	
	KFK. 427	M. 3880	Ge	100	-	
	Herolde	FBO. 08 (H.D.)	Ge	44	-	
	Ave Maria	FBO. 05 (H.D.)	Ge	26	-	
	Arno Schou	FBO. 29 (H.D.)	Ge	36	-	
	Paloma	FBO. 07 (H.D.)	Ge	36	-	
	Gunnar Schou	FBO. 30 (H.D.)	Ge	37	-	
	Floandi	FBO. 11 (H.D.)	Ge	114	-	
18 June	Bugsee	cargo	Ge	2,307	-	Hamburg - U. S. A. F.
	Henry John	cargo	Ge	1,995	-	
	Marie Leonhardt	cargo	Ge	2,594	-	
	Juno	cargo	Ge	558	-	
	Meersburg	VS. 57	Ge	340	-	
	Dora Fritzen	cargo	Ge	-	6,888	
	Sigrid Reuter	cargo	Swe	-	5,542	
20 June	Bergex 2	salvage	Ge	350	-	Hamburg - U. S. A. F.
	Kassar Wiek	cargo	Ge	528	-	
	Falke	DC. 30 (H.D.)	Ge	42	-	
	Lisa	DC. 28 (H.D.)	Ge	40	-	
	Danzig	tug	Ge	216	-	
	Holfast	tug	Ge	200	-	
	Brunshausen	tug	Ge	119	-	
	Hercules	tug	Ge	136	-	
	Ellinor	cargo	Swe	-	1,095	

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
24 June	Von Humboldt	Hospital	Ge	783	-	Bremen and Wesermunde U. S. A. F.
	Mewa IX	VP. 1250	Ge	109	-	
	R. 141	R. class M/S	Ge	90	-	
	Storo	cargo	Swe	-	1,256	
	Havsbris	cargo	Swe	-	1,973	
	Viking	cargo	Swe	-	1,310	
23/24 July	W.A. Riedemann Nordstern	tanker	Ge	10,326	-	Donges - B.C.
		cargo	Ge	6,994	-	
23/24 July	Axel	cargo	Ge	1,652	-	Kiel - B.C.
	Erwin Wassner	cargo	Ge	3,866	-	
	Ingrid Horn	cargo	Ge	4,066	-	
	U. 239	U-boat	Ge	sunk	-	
	U. 1164	U-boat	Ge	sunk	-	
	U. 2323 (Type XXIII)	U-boat	Ge	sunk	-	
	General Osorio	cargo	Ge	-	11,590	
26/27 July	Emsriff	cargo	Ge	4,935	-	Hamburg - B.C.
28/29 July	Petropolis	cargo	Ge	-	4,845	Hamburg - B.C.
	Eriksborg	cargo	Swe	-	1,476	
	Banana	cargo	Swe	-	1,207	
29 July	T. 2	torpedo boat	Ge	1,132	-	Bremen - U. S. A. F.
	T. 7	torpedo boat	Ge	1,132	-	
	Vienti	cargo	Finn	-	1,713	
	Vesuvius	cargo	Swe	-	1,595	
	C.A. Banck	cargo	Swe	-	1,839	
	U. 872	U-boat	Ge	sunk	-	
31 July	Cimier	salvage	Fr.	77	-	Le Havre - B.C.
	Fier	tug	Fr.	35	-	
	Anna Marie	Lighter	Fr.	50	-	
	Ostpreussen	FH. 16 (H.D.)	Ge	60	-	
	Forelle	FH. 18 (H.D.)	Ge	30	-	
	S.	E-boat	Ge	-	90	
	S.	E-boat	Ge	-	90	
	S.	E-boat	Ge	-	90	
2 Aug.	Delphin I	M. 4430	Ge	253	-	Le Havre - B.C.
	Planet	net tender	Ge	150	-	
	Orme	FH. 02 (H.D.)	Ge	100	-	
	Seille	tug	Fr.	35	-	
	S. 14	E-boat	Ge	90	-	
	S. 39	E-boat	Ge	90	-	
	S.	E-boat	Ge	-	90	
	S.	E-boat	Ge	-	90	
4 Aug.	M. 271	minesweeper	Ge	750	-	Paullac - B.C.
	M. 325	minesweeper	Ge	750	-	
	Havik	Sperrbrecher	Ge	479	-	
	Petit Poilu	VP. 725	Ge	368	-	
5 Aug.	La Mailleraye	cargo	Fr.	490	-	Paullac - B.C.
5 Aug.	Francais	tug	Fr.	60	-	Brest - B.C.

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
6 Aug.	Karlshafen	cargo	Ge	-	1,923	Hamburg U.S.A.F.
	Ekenes	cargo	Nor.	-	4,387	
	Weissensee	cargo	Ge	-	5,066	
6 Aug.	Odin	cargo	Ge	1,137	-	Danzig - U.S.A.F.
10 Aug.	Tulane	Sperrbrecher	Ge	5,485	-	La Pallice - B.C.
	Guepe	tug	Fr.	63	-	
14 Aug.	Sudetenland	tanker	Ge	11,309	-	Brest - B.C.
	M. 444	minesweeper	Ge	750	-	
	Elle	M. 4001	Ge	199	-	
	Jeanne Marie	VP. 723	Ge	338	-	
16/17 Aug.	Otto Alfred	cargo	Ge	1,589	-	Stettin - B.C.
	Muller		Ge	1,478	-	
	Artushof		Ge	1,478	-	
	Gunnar		Swe	1,297	-	
	Viandra		Ge	947	-	
	Swinemunde		Ge	225	-	
	Camborne		Ge	-	3,059	
	Finnland		Fi	-	7,569	
	Usko		Fi	-	1,876	
	Ariel		Fi	-	2,198	
18/19 Aug.	Nautio	cargo	Swe	-	519	Bremen - B.C.
	Bleking	cargo	Swe	-	171	
	Fauna	cargo	Ge	1,698	-	
	Vesta	cargo	Ge	1,620	-	
	Philipp	cargo	Ge	2,042	-	
	Heineken		Ge	2,042	-	
	Gunhild	cargo	Da	1,142	-	
	Leda	cargo	Fi	1,283	-	
	Margrete	cargo	Da	1,196	-	
	Juno	cargo	Ge	558	-	
24 Aug.	Castor	cargo	Ge	519	-	Ymuiden - B.C.
	Polaris	cargo	Swe	-	2,163	
	Orest	cargo	Ge	-	652	
25/26 Aug.	A. F. 41	gunboat	Ge	250	-	Brest - B.C.
	Deister	VP. 1401	Ge	242	-	
	Eckenharzer	HY. 11 (H.D.)	Ge	50	-	
25/26 Aug.	Midas	Sperrbrecher	Ge	2,750	-	Brest - B.C.
	Delia	Sperrbrecher	Ge	1,297	-	
	Adolf Kirsten	Sperrbrecher	Ge	995	-	
	Cennebec	M. 4000	Ge	100	-	
	Caprina	M. 4023	Ge	138	-	
	Oden Wald	M. 4040	Ge	639	-	
	Ibis	auxiliary	Ge	208	-	
	John A. Essberger	cargo	Ge	739	-	
26 Aug.	Neckar	Sperrbrecher	Ge	8,417	-	Brest - U.S.A.F.
	Saar	Sperrbrecher	Ge	3,261	-	
	Sourya	FB. 16 (H.D.)	Ge	136	-	
	Michel Therese	FB. 02 (H.D.)	Ge	150	-	
	Trouville	FB. 05 (H.D.)	Ge	294	-	
	KFK. 76	FB. 06 (H.D.)	Ge	110	-	

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
26/27 Aug.	M. 266 Grenadier Vestvag	minesweeper cargo cargo	Ge Ge Swe	750 2,767 -	- - 144	Kiel - B.C.
27 Aug	Oakland	Sperrbrecher	Ge	6,757	-	Brest - B.C.
29/30 Aug.	Alexandra Zullchow 6 Korso Finnland	cargo. cargo cargo cargo	Ge Ge Swe Ge	592 500 - -	- - 2,762 5,281	Stettin - B.C.
5Sept.	Not known Not known Not known Not known	FH. (H.D.) FH. (H.D.) FH. (H.D.) tug	Ge Ge Ge Ge	60 60 60 50	- - - -	Le Havre - B.C.
15Sept.	Tirpitz	Battleship	Ge	-	52,700	Kaa Fjord - B.C.
15/16	Mexphalte St. Louis	cargo liner	Ge Ge	2,578 -	- 16,732	Kiel - B.C.
17/18 Sept.	Olbers	cargo	Ge	1,236	-	Bremen - B.C.
4 Oct.	Elizabeth Bornhofen Sten Radoy U. 92 U. 228 U. 437 U. 993 Schwabben Hertha Hedvig I Kong Harold Polarlys Eystein Orre Sif Varholmen	cargo cargo cargo U-boat U-boat U-boat U-boat cargo cargo cargo cargo cargo fishing fishing fishing	Ge Nor. Nor. Ge Ge Ge Ge Ge Nor. Nor. Nor. Nor. Nor. Nor. Nor. Nor.	2,289 1,464 182 sunk sunk sunk sunk - - - - - - - -	- - - - - - - 7,773 1,365 1,287 1,151 1,069 103 85 38	Bergen - B.C.
6 Oct.	Triton	Survey vessel	Ge	123	-	Stralsund - U. S. A. F.
6/7 Oct.	Hanseat Oldenburg	Depot ship Diving vessel	Ge Ge	305 177	- -	Bremen - B.C.
9/10 Oct.	Excelsior Energie II No. 2457 Claus Gunther Adler U. 777	D 39W - (H.D.) D 38W-(H.D.) D 37W-(H.D.) D 36W-(H.D.) DW 12 (H.D.) U-boat	Ge Ge Ge Ge Ge Ge	121 121 100 100 163 sunk	- - - - - -	Wilhelmshaven B.C.
15/16 Oct.	Lotte	DW 46 (H D )	Ge	136	-	Wilhelmshaven B.C.

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
22/23 Oct.	AT. 87	gunboat	Ge	250	-	Hamburg - B.C.
	Stadt Rustringen	cargo	Ge	400	-	
	Martha Russ	cargo	Ge	-	996	
28/29 Oct.	B. S. L.	Lighter	Nor.	50	-	Bergen - B.C.
	Fjeld	cargo	Nor.	-	2,960	
	Trygg	fishing	Nor.	-	28	
29 Oct.	Prinz Hendrick	H.V. 02 (H.D.)	Ge	208	-	Flushing - B.C.
4 Nov.	Stettiner Grief	cargo	Ge	2,825	-	Hamburg - U.S.A.F.
	Najade	auxiliary	Ge	115	-	
	O.P. Rausching	auxiliary	Ge	60	-	
	Hohmann					
	Petersen	tug	Ge	60	-	
	Eilbek	cargo	Ge	-	3,013	
	Signal	cargo	Ge	-	3,137	
6 Nov.	Hermann Fritzen	cargo	Ge	-	3,844	Hamburg - U.S.A.F.
6 Nov.	Randwijk	cargo	Du	2,439	-	Hamburg - U.S.A.F.
	Oxhoft	cargo	Ge	1,736	-	
12 Nov.	Tirpitz	Battleship	Ge	52,700	-	Tromso - B.C.
21 Nov.	Fasan	cargo	Ge	1,275	-	Hamburg - U.S.A.F.
	Trostburg	cargo	Ge	-	3,833	
	Clara L.M. Russ	cargo	Ge	-	1,600	
11/12 Dec.	Rival	cargo	Ge	835	-	Hamburg - B.C.
15 Dec.	S. 198	E-boat	Ge	90	-	Ymuiden - B.C.
18/19 Dec.	Heinz-Horn	cargo	Ge	3,994	-	Gdynia - B.C.
	Warthe	cargo	Ge	4,921	-	
	Trude					
	Schunemann	cargo	Ge	1,260	-	
	Theresia L.M.					
	Russ	cargo	Ge	1,694	-	
	Blexen	cargo	Ge	715	-	
	Zoppot	salvage	Ge	274	-	
	W. Kophamel	U/B depot				
		ship	Ge	2,500	-	
	Leverkusen	depot ship	Ge	1,273	-	
	T. 10	torpedo boat	Ge	1,132	-	
28/29 Dec.	U. 2512 (Type XXI)	U-boat	Ge	-	dam.	Horten - B.C.
	Unitas	oil refinery	Ge	-	21,846	
	Schleswig					
	Holstein	battleship	Ge	-	14,800	
28/29 Dec.	Nordvard	cargo	Ge	4,111	-	Horten - B.C.
	Holmengraa	cargo	Ge	791	-	
	U. 735	U-boat	Ge	sunk	-	
	Angamos	cargo	Da	-	3,540	
	Saone	lighter	Nor.	-	800	
	U. 682	U-boat	Ge	-	dam.	

Date 1944	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Port and Author of raid
31 Dec.	Hermod	cargo	Ge	5,193	-	Hamburg - U.S.A.F.
	Brita	cargo	Fi	2,621	-	
	Mannheim	cargo	Ge	897	-	
	M. 445	minesweeper	Ge	750	-	
	U. 2515 (Type XXI)	U-boat	Ge	-	dam.	
	U. 2530 (Type XXI)	U-boat	Ge	-	dam.	
	U. 2532 (Type XXI)	U-boat	Ge	sunk	-	
	U. 2537 (Type XXI)	U-boat	Ge	sunk	-	
	H. 322	tug	Ge	50	-	
	Veendam	Depot ship	Ge	15,450	-	
	Argenfels	cargo	Ge	-	6,500	
31 Dec. /1 Jan.	Darss	cargo	Ge	-	7,000	Oslo - B.C.

Date 1945	Name	Type	Flag	Sunk Tonnage	Dam Tonnage	Port and Author of raid
17 Jan.	Ammon	cargo	Ge	7,134	-	Hamburg - U. S. A. F.
	Emma Sauber	cargo	Ge	2,548	-	
	Johanna	cargo	Ge	860	-	
	Christian Russ	cargo	Ge	975	-	
	Martha Peters	cargo	Ge	687	-	
	U. 2515 (Type XXI)	U-boat	Ge	sunk	-	
	U. 2523 (Type XXI)	U-boat	Ge	sunk	-	
	U. 2530 (Type XXI)	U-boat	Ge	sunk	-	
	Weisse See	cargo	Ge	-	5,066	
	Sund	cargo	Ge	-	3,600	
Mangan	cargo	Ge	-	1,066		
U. 2547 (Type XXI)	U-boat	Ge	-	dam.		
10 Feb.	S. 193	E-boat	Ge	90	-	Ymuiden - U. S. A. F.
21/22 Feb.	U. 3052 (Type XXI)	U-boat before commissioning	Ge	sunk	-	Bremen - B. C.
	U. 3042 (Type XXI)	U-boat before commissioning	Ge	-	dam.	
	U. 3043, 3048, 3049 and 3053	Types XXI on the slips	Ge	Blocked from launching by damage		
23/24 Feb.	Huldra	cargo	Nor.	2,112	-	Horten - B. C.
	Neptune	cargo	Ge	211	-	
	Kvitoy	trawler	Nor.	209	-	
	Vardoe	VP. 6108	Ge	469	-	
	Widder	VP. 6733	Ge	100	-	
	Nap	salvage	Nor.	100	-	
24 Feb.	U. 3007 (Type XXI)	U-boat	Ge	sunk	-	Bremen - U. S. A. F.
24 Feb.	Haukefjell	cargo	Nor	2,627	-	Hamburg - U. S. A. F.
	Beverwyk	cargo	Du	2,948	-	
6/7 Mar.	Z. 28	destroyer	Ge	3,664	-	Sassnitz - B. C.
	FD. 236	UJ. 1119	Ge	500	-	
	MAL. 37	landing craft	Ge	130	-	
	Lohme	fishing	Ge	14	-	
	Robert Mohring	cargo	Ge	-	3,344	
	B. M.	sperrbrecher	Ge	-	1,000	
8/9 Mar.	U. 682	U-boat	Ge	sunk	-	Hamburg - B. C.
	Robert Ley	liner	Ge	-	27,288	
11 Mar.	M. 266	minesweeper	Ge	750	-	Kiel - U. S. A. F.
	M. 804	minesweeper	Ge	750	-	
	M. 805	minesweeper	Ge	750	-	
	U. 2502 (Type XXI)	U-boat	Ge	-	dam.	
	U. 2503 (Type XXI)	U-boat	Ge	-	dam.	
	U. 1201	U-boat	Ge	-	dam.	

Date 1945	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Port and Author of raid
11 Mar.	Orion	cargo	Nor.	3,062	-	Hamburg - U.S.A.F.
	Gotenhafen	cargo	Ge	4,356	-	
	Arion	cargo	Ge	2,297	-	
	Rhon	cargo	Ge	1,778	-	
	Electra	cargo	Ge	654	-	
	Pylades	cargo	Ge	651	-	
	Gisella	trawler	Ge	256	-	
	Lotti	trawler	Ge	231	-	
	Esmeralda	cargo	Ge	-	5,066	
	Cambronne	cargo	Fr.	-	3,026	
	Karl Douro	cargo	Da.	-	806	
	U.2547 (Type XXI)	U-boat	Ge	-	dam. again	
12 Mar.	Cordillera	liner	Ge	12,055	-	Swinemunde - U.S.A.F.
	Andros	cargo	Ge	2,995	-	
	Heiligenhafen	cargo	Ge	1,923	-	
	Hilde	cargo	Ge	491	-	
	Kehrwieder	trawler	Ge	144	-	
	Karsburg	VP.2003	Ge	250	-	
	R.243	R. class M/S	Ge	90	-	
20 Mar.	Venus	naval	Ge	5,407	-	Hamburg - U.S.A.F.
	M.15	auxiliary minesweeper				
	Wirpi	cargo	Ge	1,227	-	
	Egeria	cargo	Ge	627	-	
	Celebes	cargo	Du	-	10,500	
	Martha Russ I	cargo	Ge	-	996	
21 Mar.	Z.51	new destroyer	Ge	3,660	-	Bremen - B.C.
30 Mar.	Koln	light cruiser	Ge	8,200	-	Wilhelmshaven - U.S.A.F.
	Ostfriesland	cargo	Ge	5,391	-	
	Juno	cargo	Ge	2,038	-	
	M.329	minesweeper	Ge	750	-	
	Ostertill	salvage	Ge	322	-	
	Deutschland	trawler	Ge	218	-	
	Martyk	M.3430	Ge	50	-	
	Eider	tug	Ge	50	-	
	U.3508 (Type XXI)	U-boat	Ge	sunk	-	
	U.429	U-boat	Ge	sunk	-	
	U.96	U-boat	Ge	sunk	-	
30 Mar.	Martha Russ	cargo	Ge	996	-	Hamburg - U.S.A.F.
	List	cargo	Ge	602	-	
	Liselotte	tank barge	Ge	573	-	
	Sierra Cordoba	liner	Ge	-	11,469	
	Stormarn	cargo	Ge	-	1,459	
	U.2340 (Type XXIII)	U-boat	Ge	sunk	-	
	U.1167	U-boat	Ge	sunk	-	
	U.348	U-boat	Ge	sunk	-	
	U.350	U-boat	Ge	sunk	-	



Date 1945	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Port and Author of raid
30 Mar.	Gijon	cargo	Ge	2,032	-	Bremen - U.S.A.F.
	Stella	cargo	Ge	479	-	
	U.72	U-boat	Ge	sunk	-	
	U.329	U-boat	Ge	sunk	-	
	U.430	U-boat	Ge	sunk	-	
	U.870	U-boat	Ge	sunk	-	
	U.886	U-boat	Ge	sunk	-	
	U.884	U-boat	Ge	sunk	-	
	U.3045 (Type XXI)	not yet commissioned	Ge	sunk	-	
	U.3046 (Type XXI)		Ge	sunk	-	
	U.3036 (Type XXI)		Ge	sunk	-	
31 Mar.	Ammon (salved)	cargo	Ge	-	7,134	Hamburg - B.C.
	Weisse See	cargo	Ge	-	5,066 again	
	Dania	cargo	Ge	-	1,099	
3 Apr.	S.201	E-boat	Ge	90	-	Kiel - U.S.A.F.
	U.2542 (Type XXI)	U-boat	Ge	sunk	-	
	U.3505 (Type XXI)	U-boat	Ge	sunk	-	
	U.1221	U-boat	Ge	sunk	-	
	Dar-es-Salam	cargo	Ge	-	6,130	
4 Apr.	New York	liner	Ge	22,337	-	Kiel - U.S.A.F.
	Monte Olivia	liner	Ge	13,750	-	
	Detlef	cargo	Ge	1,809	-	
	Irben	mine				
		transport	Ge	1,253	-	
	Brummer	minelayer	Ge	750	-	
	M.802	minesweeper	Ge	750	-	
	Seefalke	salvage	Ge	569	-	
	R. ?	R. class M/S	Ge	90	-	
	R. ?	R. class M/S	Ge	90	-	
	R. ?	R. class M/S	Ge	90	-	
	Goldbutt	tug	Ge	50	-	
	U.3003 (Type XXI)	U-boat	Ge	sunk	-	
	U.237	U-boat	Ge	sunk	-	
	U.749	U-boat	Ge	sunk	-	
7 Apr.	Dromming					Ymuiden - B.C.
	Alexandrine	cargo	Da	-	1,854	
7 Apr.	name unknown	Block ship	Ge	1,000	-	Ymuiden - B.C.
8/9 Apr.	Wilhelm Bauer	U/B depot ship	Ge	5,000	-	Travemunde - B.C.
	T.F.16	Torpedo recovery	Ge	500	-	

Date 1945	Name	Type	Flag	Sunk Tonnage	Dam. Tonnage	Port and Author of raid
8/9 Apr.	Dockenhuden	cargo	Ge	3,525	-	Hamburg - B.C.
	Hansa	cargo	Ge	831	-	
	Koln	cargo	Ge	882	-	
	Kate	cargo	Ge	448	-	
	Hermann	cargo	Ge	400	-	
	U. 2509 (Type XXI)	U-boat	Ge	sunk	-	
	U. 2514 (Type XXI)	U-boat	Ge	sunk	-	
	U. 3512 (Type XXI)	U-boat	Ge	sunk	-	
	Falkenfels	cargo	Ge	-	6,318	
	Ludwigshafen	cargo	Ge	-	1,923	
	Landsee	cargo	Ge	-	959	
	Frigga	cargo	Ge	-	557	
	Herma	cargo	Ge	-	519	
	Pax	cargo	Ge	-	513	
9/10 Apr.	Admiral Von Scheer	pocket battleship	Ge	15,650	-	very severe damage  Kiel - B.C.
	Admiral Hipper	Heavy cruiser	Ge	-	19,000	
	Bmden	Light cruiser	Ge	6,931	-	
	T. 1	torpedo boat	Ge	1,132	-	
	Franz Jurgen	cargo	Ge	2,166	-	
	Langsee	cargo	Ge	998	-	
	M. 504	minesweeper	Ge	750	-	
	Gauleiter Burkel	auxiliary	Ge	489	-	
	Falkenstein	trawler	Ge	132	-	
	General Osorio	tanker	Ge	-	11,590	
	Axenfels	cargo	Ge	-	6,000	
16 Apr.	Lutzow	pocket battleship	Ge Nor.	15,206	-	Swinemunde - B.C.
	Gerdmor	cargo		-	800	
18 Apr.	Paul Von Rensen	VP. 1207	Ge	100	-	Heligoland - B.C.
Between 9/10 Apr. and 24/25 Apr.	U. 3525 (Type XXI)	U-boat	Ge	sunk	-	Kiel - B.C.  These U-boats were sunk during eight raids which took place after 9 Apr.
	U. 2516 (Type XXI)	U-boat	Ge	sunk	-	
	U. 56	U-boat	Ge	sunk	-	
	U. 677	U-boat	Ge	sunk	-	
	U. 747	U-boat	Ge	sunk	-	
	U. 906	U-boat	Ge	sunk	-	
	U. 982	U-boat	Ge	sunk	-	
	U. 1131 U. 1227	U-boat U-boat	Ge Ge	sunk sunk	- -	

Analysis of flying hours in each Inshore and Transit Area  
1 January to 8 May 1945

The Irish Sea Area

Limits - Line Mull of Kintyre/N.E. Ireland to the line  
St. David's Head/S.E. Ireland started 10th to 31st January 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Patrol	Day	507	669	-	1	1	-
		Night	{ - 406 L/L	{ 38 (N) 473 L/L	- - -	- - -	- - -	
	Convoy escort		Day	19	23	-	-	-
		Night	-	2 (N)	-	-	-	-
No. 19	Patrol	Day	505	678	-	-	-	-
		Night	{ 210 (N) 254 L/L	{ 278 (N) 300 L/L	- - 1 L/L	- - -	- - -	
	Convoy escort		Day	12	13	-	-	-
		Night	-	3 (N)	-	-	-	-
Overall total			1,913	2,477	1	1	1	-

February 1945

No. 15	Patrol	Day	1,149	1,402	2	-	-	-
		Night	{ 3 (N) 406 L/L	{ 48 (N) 486 L/L	- - -	- - -	- - -	- - -
No. 19	Patrol	Day	782	1,056	2	-	-	-
		Night	{ 265 (N) 218 L/L	{ 328 (N) 255 L/L	- - -	- - -	- - -	- - -
Nos. 15, 19	Convoy escort	Nil	-	-	-	-	-	-
Overall total			2,823	3,575	4	-	-	-

Irish Sea - March 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Patrol	Day	1,014	1,210	-	1	1	-
		Night	{ - 313 L/L	{ 22 (N) 374 L/L	- - -	- - -	- - -	
	Convoy escort		Day	17	19	-	-	-
		Night	-	{ 1 (N) 2 L/L	- - -	- - -	- - -	
No. 19	Patrol	Day	1,227	1,544	-	3	1	-
		Night	{ 722 (N) 162 L/L	{ 788 (N) 190 L/L	- - -	- - -	- - -	
	Convoy escort		Day	9	12	-	-	-
		Night	-	1 (N)	-	-	-	-
Overall total			3,464	4,163	-	4	2	-

April 1945

No. 15	Patrol	Day	528	638	-	1	0	U.242 sh. sunk
		Night	{ 2 (N) 203 L/L	{ 9 (N) 230 L/L	- -	- -	- -	- -
	Convoy escort	Day	3	6	-	-	-	-
		Night	-	-	-	-	-	-
No. 19	Patrol	Day	879	1,112	-	-	-	-
		Night	{ 327 (N) 103 L/L	{ 357 (N) 127 L/L	- -	- -	- -	- -
	Convoy escort	Day	28	37	-	-	-	-
		Night	-	2 (N)	-	-	-	-
Overall total			2,073	2,518	-	1	0	1 shared sunk

May 1945

No. 15	Patrol	Day	173	207	-	-	-	-
		Night	{ 1 (N) 54 L/L	{ 9 (N) 58 L/L	- - -	- - -	- - -	- - -
No. 19	Patrol	Day	192	293	-	-	-	-
		Night	{ 49 (N) 19 L/L	{ 54 (N) 24 L/L	- - -	- - -	- - -	- - -
Nos. 15, 19	Convoy escort	Nil	-	-	-	-	-	-
Overall total			488	645	-	-	-	-

English Channel Area - including Lands End/LizardJanuary 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 19	Patrol	Day	1,764	2,234	2	-	-	-
		Night	( 377 (N) ( 497 L/L	( 625 (N) ( 564 L/L	- -	- -	- -	
	Convoy escort	Day	32	39	-	-	-	-
		Night	-	3 (N)	-	-	-	-
Overall total			2,670	3,465	2	-	-	-

February 1945

No. 19	Patrol	Day	1,270	1,621	-	3	1	U.927 sunk
		Night	( 74 (N) ( 237 L/L	( 94 (N) ( 326 L/L	- - -	- - -	- - -	U.327 sh. -
	Convoy escort	Day	24	34	-	-	-	-
		Night	-	3 (N)	-	-	-	-
Overall total			1,655	2,078	-	3	1	1 sunk 1 shared

March 1945

No. 19	Patrol	Day	2,720	3,395	1	3	3	U.681 sunk
		Night	( 271 (N) ( 813 L/L	( 304 (N) ( 920 L/L	1 L/L	1 L/L	0 L/L	-
	Convoy escort	Day	130	169	-	1	0	-
		Night	-	2 (N)	-	-	-	-
No. 15	Convoy escort	Day	14	22	-	-	-	-
		Night	-	( 3 (N) ( 4 L/L	-	-	-	-
Overall total			3,948	4,819	2	5	3	1 sunk

April 1945

No. 19	Patrol	Day	1,727	2,170	-	-	-	-
		Night	( 315 (N) ( 277 L/L	( 375 (N) ( 326 L/L	1 L/L	-	-	-
	Convoy escort	Day	262	324	-	-	-	-
		Night	( - ( 1 L/L	( 19 (N) ( 4 L/L	-	-	-	-
No. 15	Convoy escort	Day	7	17	-	-	-	-
		Night	-	( 4 (N) ( 4 L/L	-	-	-	-
Overall total			2,589	3,243	1	-	-	-

May 1945

No. 19	Patrol	Day	637	806	-	-	-	-
		Night	( 50 (N) ( 119 L/L	( 60 (N) ( 133 L/L	-	-	-	-
	Convoy escort	Day	28	36	-	-	-	-
		Night	-	-	-	-	-	-
Overall total			834	1,035	-	-	-	-

Bristol Channel to the south of Ireland AreaJanuary 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Patrol	Day	102	147	-	-	-	-
		Night	{ - 64 L/L	{ 35 (N) 85 L/L	- - -	- - -	- - -	
	Convoy escort	Day	19	26	-	-	-	-
		Night	-	9 (N)	-	-	-	-
No. 19	Patrol	Day	223	261	-	-	-	-
		Night	{ 10 (N) 58 L/L	{ 34 (N) 66 L/L	- - -	- - -	- - -	
	Convoy escort	Day	344	433	-	-	-	-
		Night	1 (N)	88 (N)	-	-	-	-
Overall total			821	1,184	-	-	-	-

February 1945

No. 19	Patrol	Day	229	302	-	-	-	-
		Night	{ 6 (N) 120 L/L	{ 12 (N) 144 L/L	- - -	- - -	- - -	- - -
	Convoy escort	Day	266	406	-	-	-	-
		Night	-	61 (N)	-	-	-	-
No. 15	Patrol	Nil	-	-	-	-	-	-
	Convoy escort	Day	183	275	-	1	0	-
		Night	{ 5 (N) -	{ 76 (N) 15 L/L	- - -	- - -	- - -	- - -
	Overall total		809	1,291	-	1	0	-

March 1945

No. 19	Patrol	Day	1,404	1,741	-	2	0	-
		Night	{ 370 (N)	{ 410 (N)	-	-	-	-
			{ 557 L/L	{ 634 L/L	-	-	-	-
	Convoy escort	Day	396	560	-	-	-	-
Night		-	63 (N)	-	-	-	-	
No. 15	Patrol	Day	8	11	-	-	-	-
		Night	-	-	-	-	-	-
	Convoy escort	Day	144	253	-	-	-	-
		Night	{ 1 (N)	{ 30 (N)	-	-	-	-
			{ -	{ 39 L/L	-	-	-	-
Overall total			2,881	3,741	-	2	0	-

Bristol Channel to the south of Ireland AreaApril 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 19	Patrol	Day	601	727	-	2	1	-
		Night	{ 184 (N)	{ 199 (N)	-	-	-	-
			35 L/L	37 L/L	-	-	-	-
	Convoy escort	Day	637	863	-	-	-	-
Night		{ 3 (N)	{ 62 (N)	-	-	-	-	
		3 L/L	23 L/L	-	-	-	-	
No. 15	Patrol	Day	23	33	-	-	-	-
		Night	-	-	-	-	-	-
	Convoy escort	Day	93	157	-	-	-	-
		Night	-	{ 24 (N) 14 L/L	- -	- -	- -	- -
Overall total			1,579	2,139	-	2	1	-

May 1945

No. 19	Patrol	Day	90	113	-	-	-	-
		Night	25 (N)	28 (N)	-	-	-	-
	Convoy escort	Day	157	212	-	-	-	-
		Night	-	{ 5 (N) 4 L/L	- -	- -	- -	- -
No. 15	Convoy escort	Day	53	98	-	-	-	-
		Night	-	{ 16 (N) 8 L/L	- -	- -	- -	- -
	Patrol	Nil	-	-	-	-	-	-
Overall total			325	484	-	-	-	-

## Off Northern Ireland

January 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Patrol	Day	23	67	-	-	-	-
		Night	40 L/L	49 L/L	-	-	-	-
	Convoy escort	Day	186	244	-	-	-	-
		Night	-	{ 24 (N) 6 L/L	-	-	-	-
Overall total			249	390	-	-	-	-

February 1945

No. 15	Patrol	Day	156	180	-	-	-	-
		Night	{ - 56 L/L	{ 5 (N) 68 L/L	- - -	- - -	- - -	
	Convoy escort	Day	217	292	-	-	-	-
		Night	-	{ 27 (N) 15 L/L	- - -	- - -	- - -	
Overall total			429	587	-	-	-	-

March 1935

No. 15	Patrol	Day	417	508	-	2	1	U.296 sunk
		Night	{ - 178 L/L	{ 4 (N) 211 L/L	- - -	- - -	- - -	
	Convoy escort	Day	416	547	-	-	-	-
		Night	{ - 1 L/L	{ 19 (N) 56 L/L	- - -	- - -	- - -	
Overall total			1,012	1,345	-	2	1	1 sunk

April 1945

No. 15	Patrol	Day	1,263	1,473	-	1	1	U.1017 sunk
		Night	{ 1 (N) 299 L/L	{ 25 (N) 335 L/L	- -	- 2 L/L	- 2 L/L	- -
	Convoy escort	Day	221	323	-	-	-	-
		Night	-	{ 7 (N) 23 L/L	-	-	-	-
					-	-	-	-
Overall total			1,784	2,186	-	3	3	1 sunk

May 1945

No. 15	Patrol	Day	501	615	-	2	2	U.956 Sl. dam.
		Night	{ 4 (N) 208 L/L	{ 23 (N) 222 L/L	- - -	- - -	- - -	- - -
	Convoy escort	Day	147	186	-	-	-	-
		Night	-	{ 5 (N) 20 L/L	- - -	- - -	- - -	- - -
Overall total			860	1,071	-	2	2	1 slight dam.



North Minch to East Orkneys AreaJanuary 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-Boats		
						Sight	Attack	Result
No. 15	Patrol	Day	17	27	-	-	-	-
		Night	9 L/L	16 L/L	-	-	-	-
	Convoy escort	Day Night	35 -	48 12 (N)	- -	- -	- -	- -
No. 18	Patrol	Day	264	349	-	-	-	-
		Night	{ 46 (N) 230 L/L	{ 62 (N) 285 L/L	1N 1L/L	- -	- -	- -
	Convoy	Nil	-	-	-	-	-	-
Overall total			601	799	2	-	-	-

February 1945

No. 15	Patrol	Day	67	84	-	-	-	-
		Night	50 L/L	61 L/L	-	-	-	-
	Convoy escort	Day Night	32 -	40 9 (N)	- -	- -	- -	- -
No. 18	Patrol	Day	116	172	-	-	-	-
		Night	{ 17 (N) 6 L/L	{ 21 (N) 14 L/L	- -	- -	- -	- -
	Convoy escort	Day Night	13 -	16 4 L/L	- -	- -	- -	- -
Overall total			301	421	-	-	-	-

March 1945

No. 15	Patrol	Day	80	101	-	-	-	-
		Night	48 L/L	61 L/L	-	-	-	-
	Convoy escort	Day Night	10 -	16 3 L/L	- -	- -	- -	- -
No. 18	Patrol	Day	223	312	-	-	-	-
		Night	{ 11 (N) 64 L/L	{ 21 (N) 80 L/L	- -	- -	- -	- -
	Convoy escort	Day Night	23 -	38 { 5 (N) 2 L/L	- -	- -	- -	- -
R.A.F. Iceland	Convoy escort	Day Night	9 -	20 4 L/L	- -	- -	- -	- -
Overall total			468	663	-	-	-	-

## SECRET

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## APPENDIX XVIII

North Minch to East Orkneys AreaApril 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Period	Day	32	38	-	-	-	-
		Night	1 L/L	2 L/L	-	-	-	-
	Convoy escort	Day	88	125 ( 2 (N)	-	-	-	-
		Night	-	( 17 L/L	-	-	-	-
No. 18	Patrol	Day	132	185	-	-	-	-
		Night	16 L/L	20 L/L	-	-	-	-
	Convoy escort	Day	28	44	-	-	-	-
		Night	-	2 L/L	-	-	-	-
Overall total			297	435	-	-	-	-

May 1945

No. 15	Patrol	Day	25	28	-	-	-	-
		Night	1 L/L	2 L/L	-	-	-	-
	Convoy escort	Day	17	34 ( 2 (N)	-	-	-	-
		Night	-	( 3 L/L	-	-	-	-
No. 18	Patrol	Day	19	30	-	-	-	-
		Night	11 (N)	13 (N)	-	-	-	-
	Convoy escort	Nil	-	-	-	-	-	-
Overall total			73	112	-	-	-	-

SECRET

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APPENDIX XVIII

Reykjavik - Iceland

January 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
R. A. F. Iceland	Patrol	Day	-	-	-	-	-	-
		Night	3 L/L	4 L/L	-	-	-	-
	Convoy escort	Day	19	28	-	-	-	-
		Night	40 L/L	( 1 (N)	-	-	-	-
				( 56 L/L	-	-	-	-
Overall total			62	89	-	-	-	-

February 1945

R.A.F. Iceland	Patrol	Day	-	-	-	-	-	-
		Night	2 L/L	3 L/L	-	-	-	-
	Convoy escort	Day	59	71	-	-	-	-
		Night	{ 11 (N) 8 L/L	{ 19 (N) 10 L/L	-	-	-	-
Overall total			80	103	-	-	-	-

March 1945

R. A. F. Iceland	Patrol	Day	449 ( 14 (N)	504 ( 41 (N)	-	-	-	-
		Night	( 120 L/L	( 135 L/L	-	1 L/L	1 L/L	-
	Convoy escort	Day	116 ( 4 (N)	158 ( 23 (N)	-	-	-	-
		Night	( 91 L/L	( 98 L/L	-	-	-	-
Overall total			794	959	-	1	1	-

April 1945

R. A. F. Iceland	Patrol	Day	36	41	-	-	-	-
		Night	-	-	-	-	-	-
	Convoy escort	Day	141	178	-	-	-	-
		Night	1 (N)	13 (N)	-	-	-	-
Overall total			178	232	-	-	-	-

May 1945

R. A. F. Iceland	Patrol	Day	111 ( 6 (N)	119 ( 9 (N)	-	-	-	-
		Night	( 2 I/L	( 4 I/L	-	-	-	-
	Convoy escort	Day	19	23	-	-	-	-
		Night	8 (N)	14 (N)	-	-	-	-
Overall total			146	169	-	-	-	-

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APPENDIX XVIIIEast coast of Scotland and N.E. EnglandJanuary 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 18	Patrol	Day	42	52	-	1	0	-
		Night	( 16 (N) 22 L/L	( 17 (N) 31 L/L	-	-	-	-
	Convoy	Nil	-	-	-	-	-	-
Overall total			80	100	-	1	0	-

February 1945

No. 18	Patrol	Day	58	82	-	-	-	-
		Night	( 22 (N) 82 L/L	( 29 (N) 104 L/L	-	-	-	-
	Convoy	Nil	-	-	-	-	-	-
Overall total			162	215	-	-	-	-

March 1945

No. 18	Patrol	Day	123	140	-	-	-	-
		Night	( A night op. 83 L/L	exercise 96 L/L	-	1 N	0 N	-
	Convoy	Nil	-	-	-	-	-	-
Overall total			206	236	-	1	0	-

April 1945

No. 18	Patrol	Day	454	519	-	3	2	possibly
		Night	40 L/L	67 L/L	-	-	-	U. 398 sunk
	Convoy	Nil	-	-	-	-	-	-
Overall total			494	586	-	3	2	1 possibly sunk

May 1945

No. 18	Patrol	Day	31	36	-	-	-	-
		Night	-	2 L/L	-	-	-	-
	Convoy	Nil	-	-	-	-	-	-
Overall total			31	38	-	-	-	-

Bay of Biscay Inshore AreaApril 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 19	Patrol	Day	285	445	-	-	-	-
		Night	25(N)	70 (N)	-	-	-	-
	Convoy escort	Day	23	40	-	-	-	-
		Night	-	7 (N)	-	-	-	-
Overall total			333	562	-	-	-	-

May 1945

No. 19	Patrol	Day	67	91	-	-	-	-
		Night	-	3 (N)	-	-	-	-
Overall total			67	94	-	-	-	-

Northern Transit AreaLimits - Norway to the line Reykjavik/South HebridesJanuary 1945

Group	Patrol Area	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 18	Norway to Faeroes/Shets. to line N.W. of Lewis	Day	186	275	-	1	0	-
		Night	( 31 (N)	( 48 (N)	-	-	-	-
			( 152 L/L	( 221 L/L	-	-	-	-
Nos. 15 & 18	Outside	Day	490	648	-	-	-	-
	Hebrides	Night	( 29 (N)	( 97 (N)	-	-	-	-
( 383 L/L			( 492 L/L	-	1 L/L	1 L/L	-	
Iceland	Iceland to Faeroes	Day	280	435	-	-	-	-
		Night	( 10 (N)	( 198 (N)	-	-	-	-
			( 168 L/L	( 242 L/L	-	-	-	-
Overall total			1,729	2,656	-	2	1	-

February 1945

No. 18	Norway to Faeroes/Shets. to line N.W. of Lewis	Day	1,303	1,974	-	1	0	-
		Night	( 182 (N)	( 283 (N)	-	-	-	-
			( 698 L/L	( 1,170 L/L	-	-	-	-
Nos. 15 & 18	Outside the Hebrides	Day	670	846	-	1	1	U.1019 Sl. dam.
			( 7 (N)	( 60 (N)	-	-	-	-
		Night	( 138 L/L	( 206 E/L	-	-	-	-
Iceland and No. 18	Iceland to Faeroes	Day	334	553	-	-	-	-
			( 2 (N)	( 125 (N)	-	-	-	-
		Night	( 115 L/L	( 183 L/L	-	1 L/L	0 L/L	-
Overall total			3,449	5,400	-	3	1	1 sl. dam.

March 1945

No. 18	Norway to Faeroes/Shets to line N.W. of Lewis	Day	1,768	2,616	-	5	4	U.905 ) U.1106) - sunk U.249 - dam
		Night	{ 77 (N) { 609 L/L	{ 106 (N) { 1,038 L/L	- -	- 1 L/L	- 1 L/L	- -
Nos. 15 & 18	Outside the Hebrides	Day	896	1,246	-	1	0	-
		Night	{ 6 (N) { 262 L/L	{ 51 (N) { 430 L/L	- -	- -	- -	- -
Iceland and No. 18	Iceland to Faeroes	Day	322	578	-	-	-	-
		Night	{ 4 (N) { 127 L/L	{ 81 (N) { 215 L/L	- -	- -	- -	- -
Overall total			4,071	6,361	-	7	5	2 sunk 1 dam.

Northern Transit AreaLimits - Norway to the line Reykjavik/South HebridesApril 1945

Group	Patrol Area	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 18	Norway to Faeroes/Shets. to line N.W. of Lewis	Day	1,621	2,357	-	2	2	U.1276) sunk U. 396)
		Night	( 1 (N) ( 177 L/L	( 7 (N) ( 463 L/L	- 1 L/L	- -	- -	- -
No. 15	Outside the Hebrides	Day	1,734	2,294	-	-	-	-
		Night	( 7 (N) ( 26 L/L	( 52 (N) ( 116 L/L	- -	- -	- -	- -
Iceland and No. 18	Iceland to Faeroes	Day	1,170	2,162	3	-	-	-
		Night	( 6 (N) ( 63 L/L	( 101 (N) ( 310 L/L	- -	- -	- -	- -
Overall total			4,805	7,862	4	2	2	2 sunk

May 1945

No. 18	Norway to Faeroes/Shets. to line N.W. of Lewis	Day	744	1,028	-	1	1	U.320 sunk
		Night	( 4 (N) ( 25 L/L	( 10 (N) ( 100 L/L	- -	- -	- -	- -
No. 15	Outside the Hebrides	Day	102	151	-	-	-	-
		Night	( - ( 38 L/L	( 5 (N) ( 52 L/L	- -	- -	- -	- -
Iceland and No. 18	Iceland to Faeroes	Day	193	302	-	-	-	-
		Night	( 3 (N) ( 2 L/L	( 20 (N) ( 26 L/L	- -	- -	- -	- -
Overall total			1,111	1,694	-	1	1	1 sunk

Western Transit AreaLimits - Outside Ireland and to Scilly IslesJanuary 1945

Group	Patrol Area	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	The whole area	Day	260	401	-	-	-	-
		( 25 (N)	( 104 (N)	-	-	-	-	
		( 100 L/L	( 170 L/L	-	-	-	-	
Overall total			385	675	-	-	-	-

February 1945

No. 15	Outside Ireland	Day	295	397	-	-	-	-
		(	-	( 18 (N)	-	-	-	-
		Night	( 75 L/L	( 121 L/L	-	-	-	-
No. 19	S.W. Ireland to Scillies	Day	85	133	-	-	-	-
		(	8 (N)	( 16 (N)	-	-	-	-
		Night	( 40 L/L	( 48 L/L	-	-	-	-
Overall total			507	733	-	-	-	-

March 1945

No. 15	Outside Ireland	Day	645	913	1	-	-	-
		( 35 (N)	( 102 (N)	-	-	-	-	
		Night	173 L/L	266 L/L	-	-	-	-
No. 19	Sono buoy barrier	Day	162	332	-	-	-	-
		Night	1 (N)	17 (N)	-	-	-	-
No. 19	S.W. of Ireland	Day	369	448	-	-	-	-
		( 6 (N)	( 22 (N)	-	-	-	-	
		Night	1 L/L	22 L/L	-	-	-	-
Overall total			1,392	2,122	1	-	-	-

April 1945

No. 15	Outside Ireland	Day	557	784	-	1	0	-
		Night	16 L/L	( 22 (N)	-	-	-	-
				( 51 L/L	-	-	-	-
No. 19	S.W. of Ireland	Day	1,185	2,218	-	4	3	U.321, 1107, and 1055 sunk
		Night	( 212 L/L	( 124 (N)	-	-	-	-
				( 366 L/L	-	-	-	-
No. 19	W. of Scillies to W. of Ushant	Day	631	1,007	-	-	-	-
		Night	( 236 L/L	( 90 (N)	-	-	-	-
				( 282 L/L	1 L/L	-	-	-
Overall total			2,894	4,944	1	5	3	3 sunk



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Western Transit Area

May 1945

Group	Patrol Area	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 15	Outside Ireland	Day	215	278	-	-	-	-
		Night	58 L/L	( 10 (N) 86 L/L	-	-	-	-
No. 19	W. of Scillies to W. of Ushant	Day	196	319	-	-	-	-
		Night	( 56 (N) 4 L/L	( 62 (N) 5 L/L	-	-	-	-
Overall total			529	760	-	-	-	-

Eastern Transit Area

Limits - Skagerrack, Kattegat and West of Denmark

12th to 28th February 1945

No. 18	Skagerrack and Kattegat	Day	-	23	-	-	-	-	
		(	4 (N)	(	16 (N)	-	-	-	-
		(	49 L/L	(	163 L/L	1 L/L	1 L/L	1 L/L	-
Overall total			53	202	1	1	1	-	

March 1945

No. 18	Skagerrack and Kattegat	Day	-	10	-	-	-	-
		Night	28 L/L	100 L/L	-	1 L/L	0 L/L	-
Overall total			28	110	-	1	0	-

April 1945

No. 18 A/U Sqdns.	Skagerrack and Kattegat	Day	-	107	-	-	-	-
		Night	121 L/L	363 L/L	3 L/L	4 L/L	4 L/L	-
A/U Overall total			121	470	3	4	4	-

No. 18 Anti-ship Sqdns.	Skagerrack and Kattegat	Day	113	312	6	9	7	U. 843, 804, 1065, and 251 sunk
		Night	2 (N)	9 (N)	-	2 (N)	2 (N)	U. 2335 dem. -
Anti-ship overall total			115	321	6	11	9	4 sunk 1 dem.

Eastern Transit - May 1945

Group	Patrol Area	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 18 A/U Sqdns.	Skagerrack and Kattegat	Day	131	451	1	12	9	1008, 3503, 3523, 534, 2521, 2365 sunk
		Night	3 (N) 37 L/L	12 (N) 141 L/L	- -	- 2 L/L	- 2 L/L	- 2534 sunk
	West of Denmark	Day	13	28	-	-	-	-
		Night	1 L/L	3 L/L	-	-	-	-
A/U Overall total			185	635	1	14	11	7 sunk

No. 18 Anti-ship Sqdns.	Kattegat	Day	70	177	1	9	2	U.2359 sunk U. ? dam.
No. 16 Anti-ship Sqdns.		Day	51	223	-	8	5	236, 393, 2524, 2503, 2338 sunk
Anti-ship overall total			121	400	1	17	7	6 sunk 1 dam.

R.A.F. 2nd TAF Anti-ship	W. Baltic and the Belts	Day	about 150	about 200	-	32	49	10 sunk *
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\* The individual U-boats sunk by the 2nd T.A.F. were:-

U.1007, 2540, 3030, 3032, 1210, 746, 876, 904, 733 and 579.

Western Baltic U-boat exercising areaaround Bornholm IslandOne operation in February 1945

Group	Task	Period	Eff. hours	Total hours	A/C lost	U-boats		
						Sight	Attack	Result
No. 18	Patrol Sweep	Day	-	27	-	-	-	-
		Night	15 L/L	130 L/L	-	4 L/L	3 L/L	-
Overall total			15	157	-	4	3	-

Two operations in March 1945

No. 18	Patrol	Day	-	61	-	-	-	-
	Sweeps	Night	43 L/L	342 L/L	-	13 L/L	11 L/L	-
Overall total			43	403	-	13	11	-

One operation in April 1945

No. 18	Patrol Sweep	Day Night	- 3 L/L	9 21 L/L	- -	- 1 L/L	- 1 L/L	- -
Overall total			3	30	-	1	1	-

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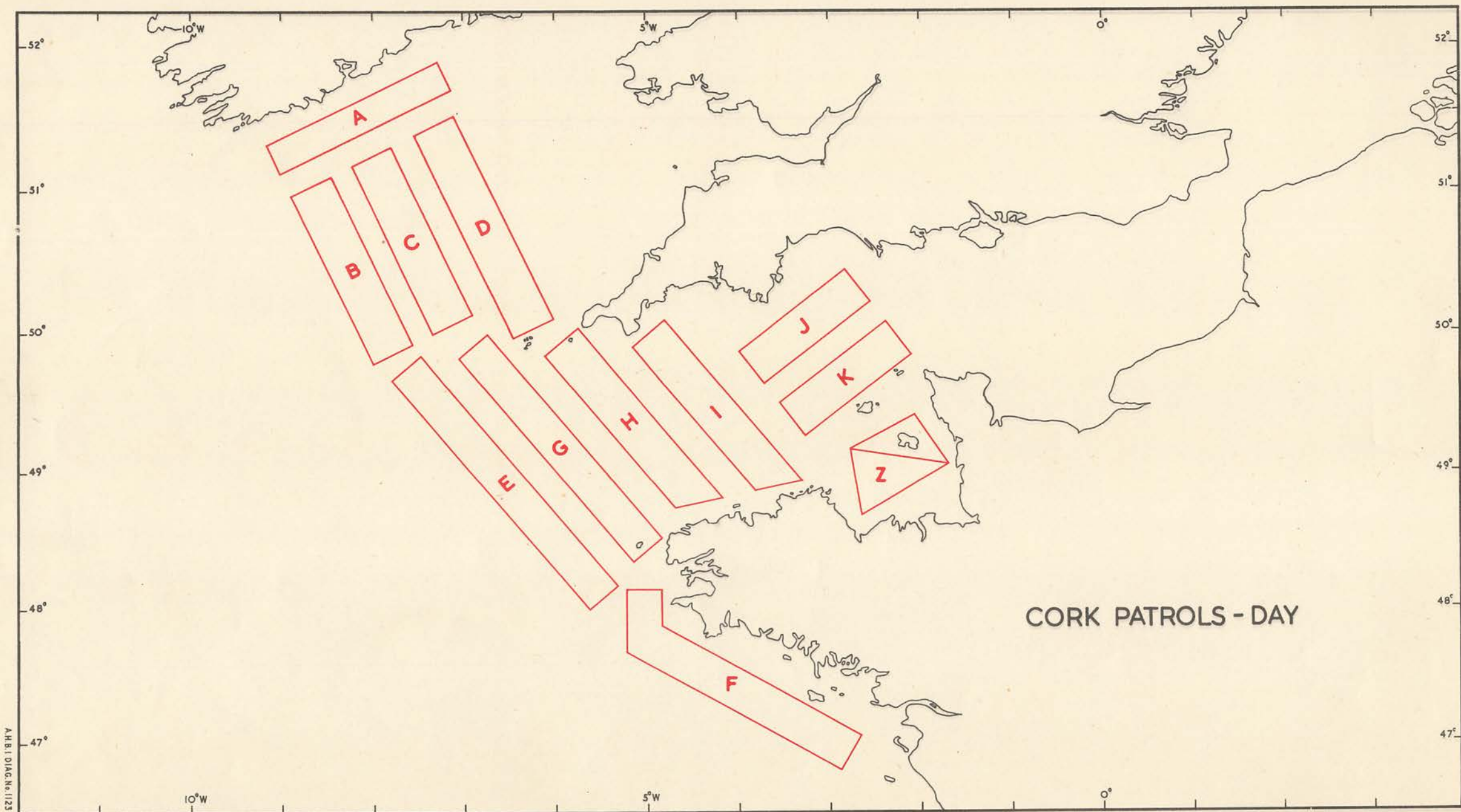
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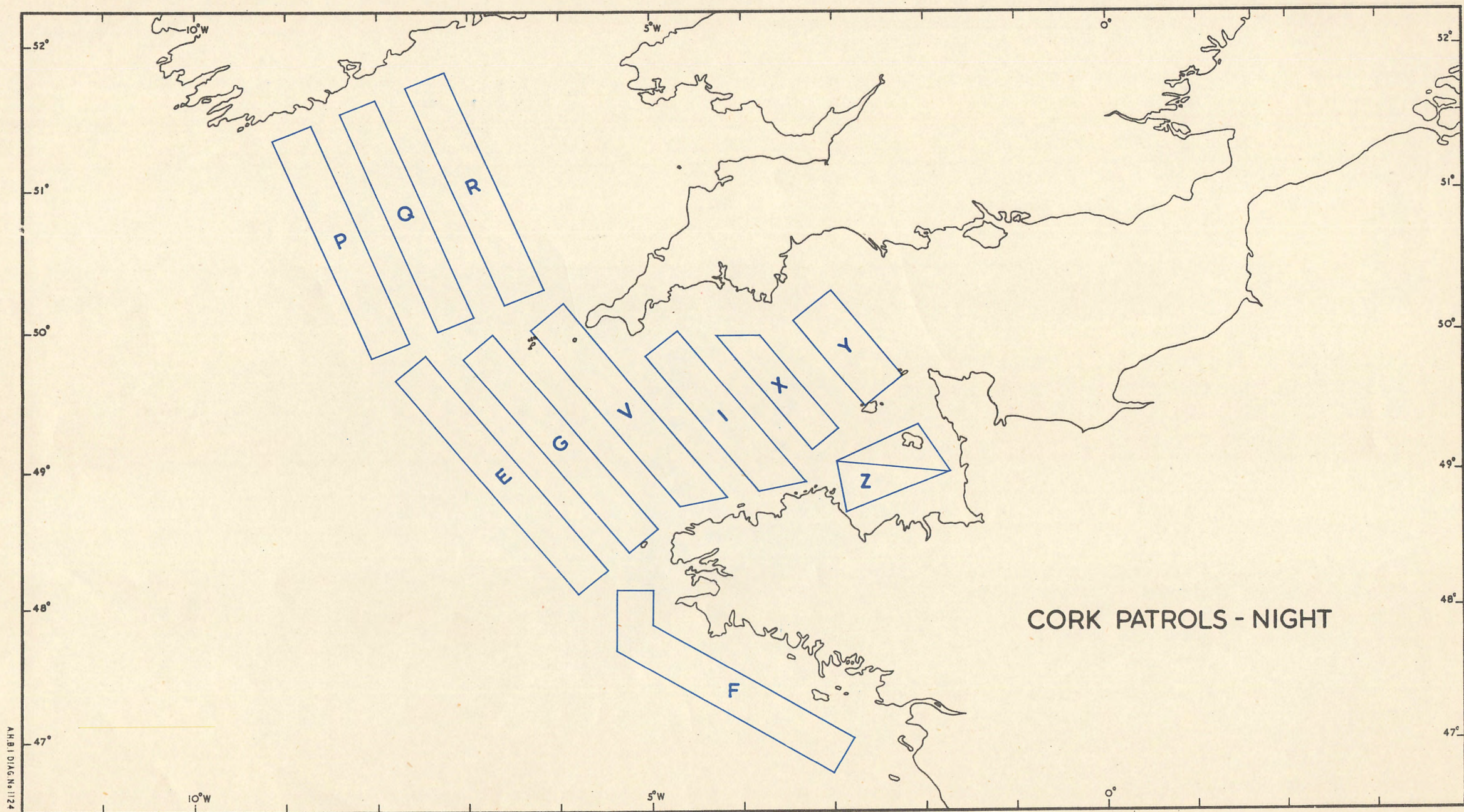
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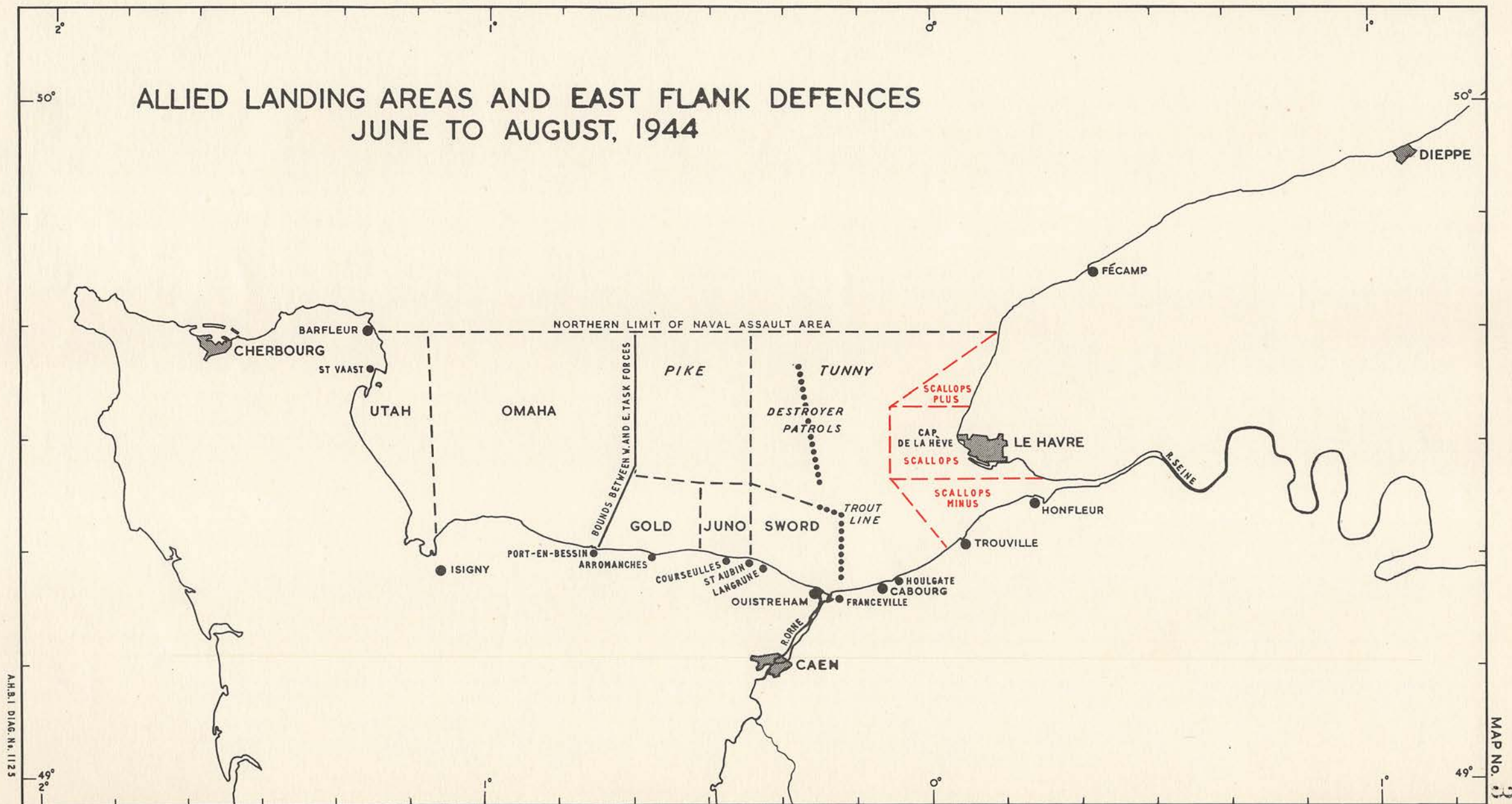








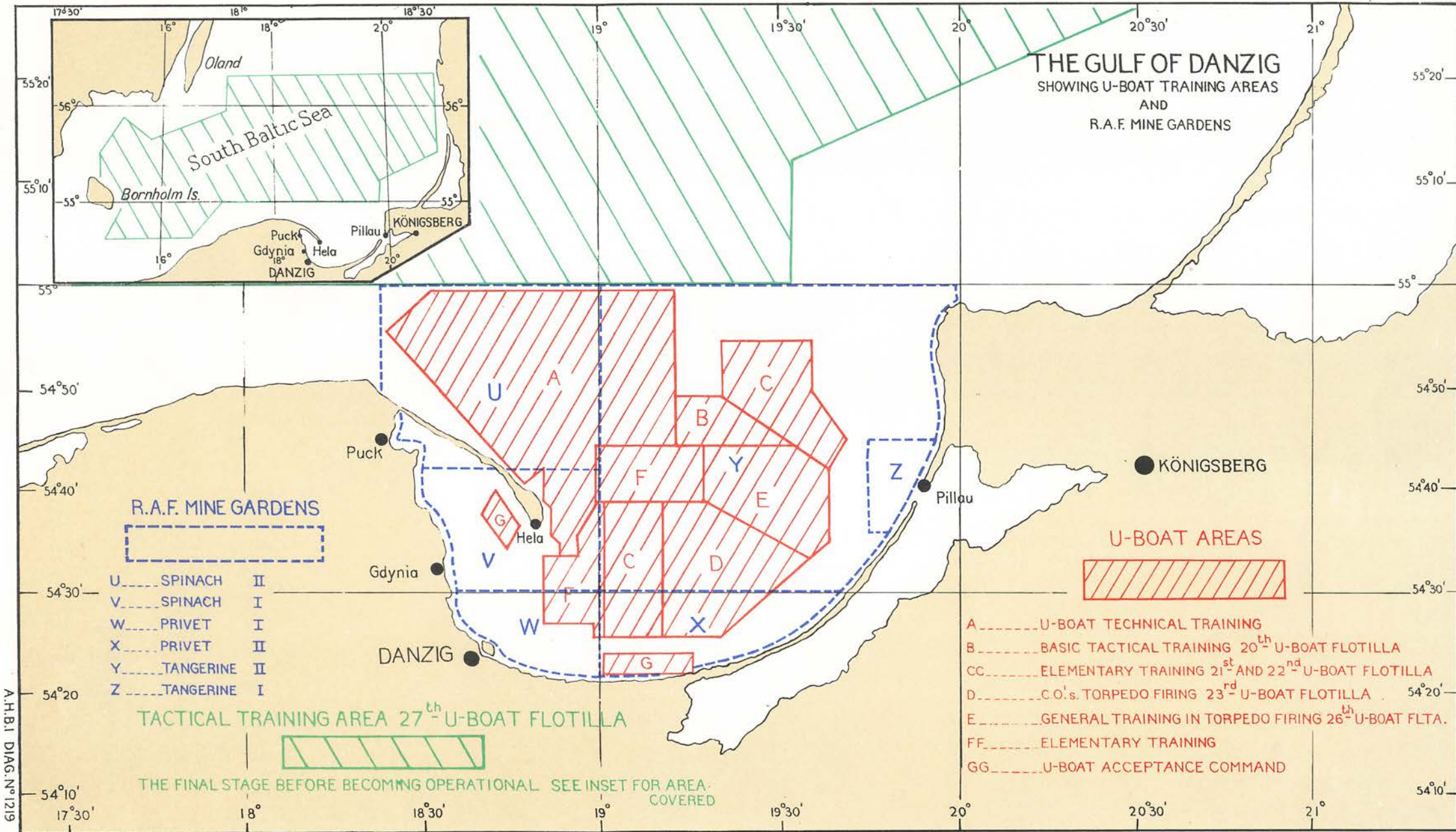
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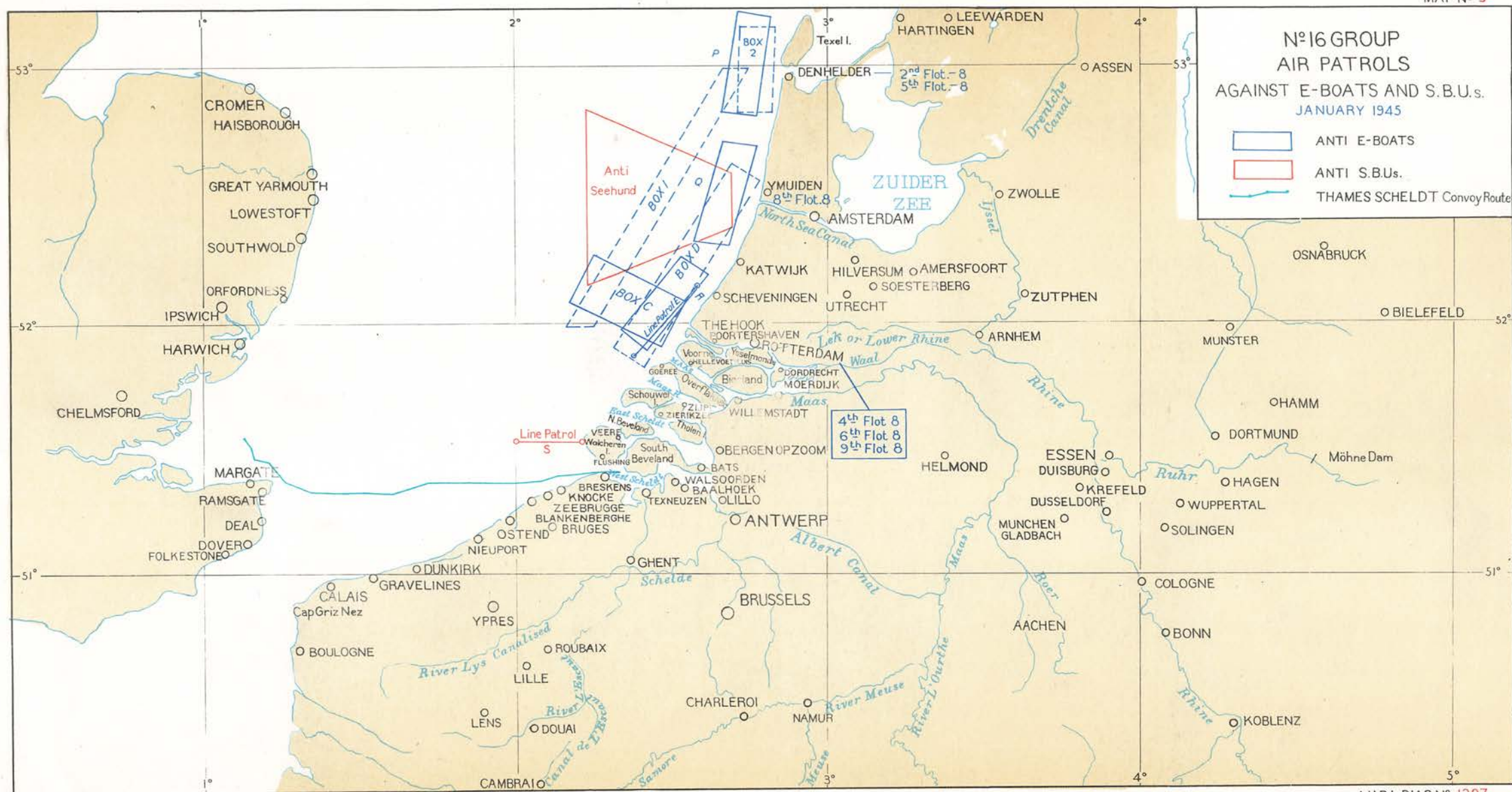


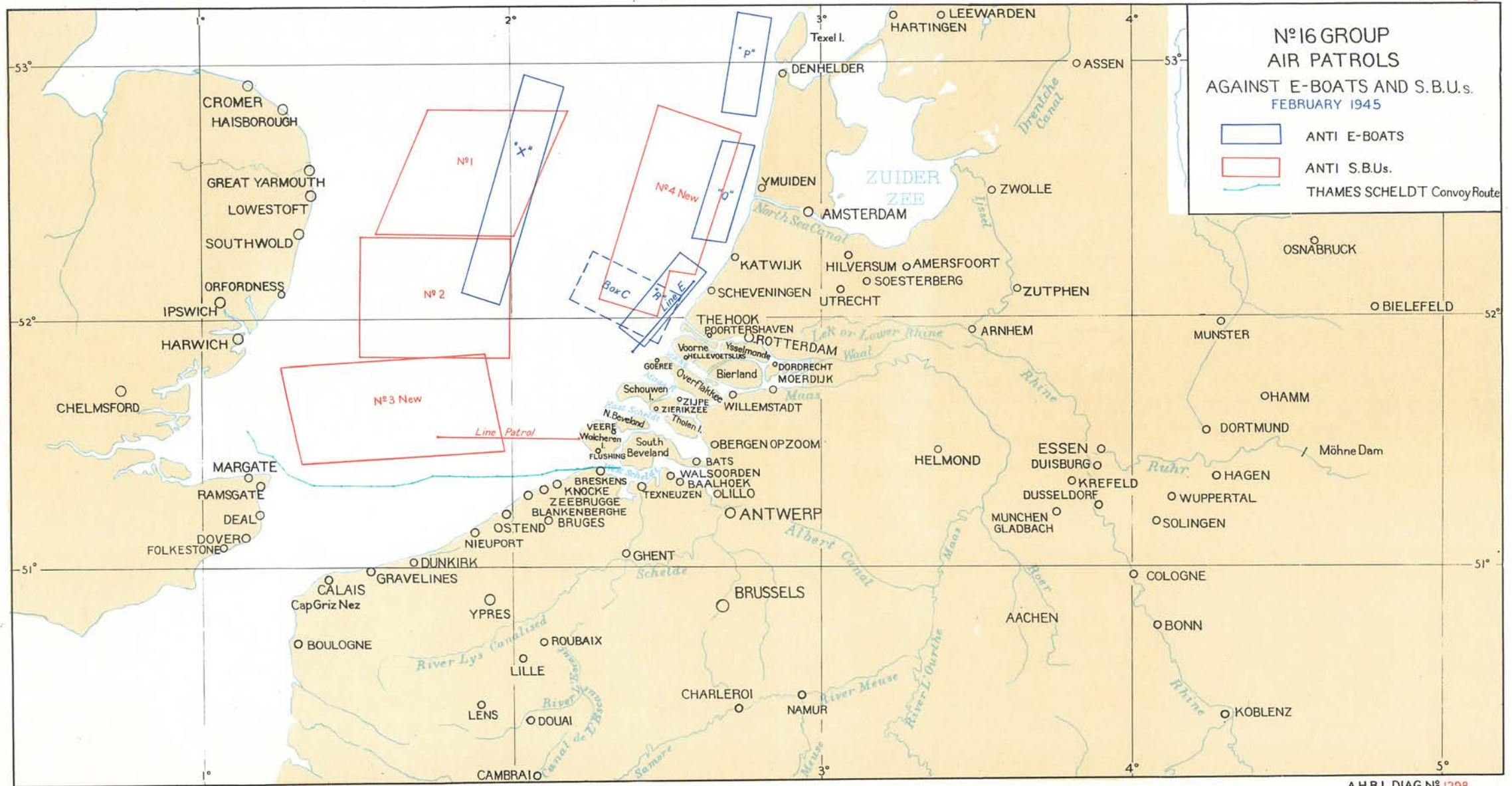


# THE GULF OF DANZIG SHOWING U-BOAT TRAINING AREAS AND R.A.F. MINE GARDENS

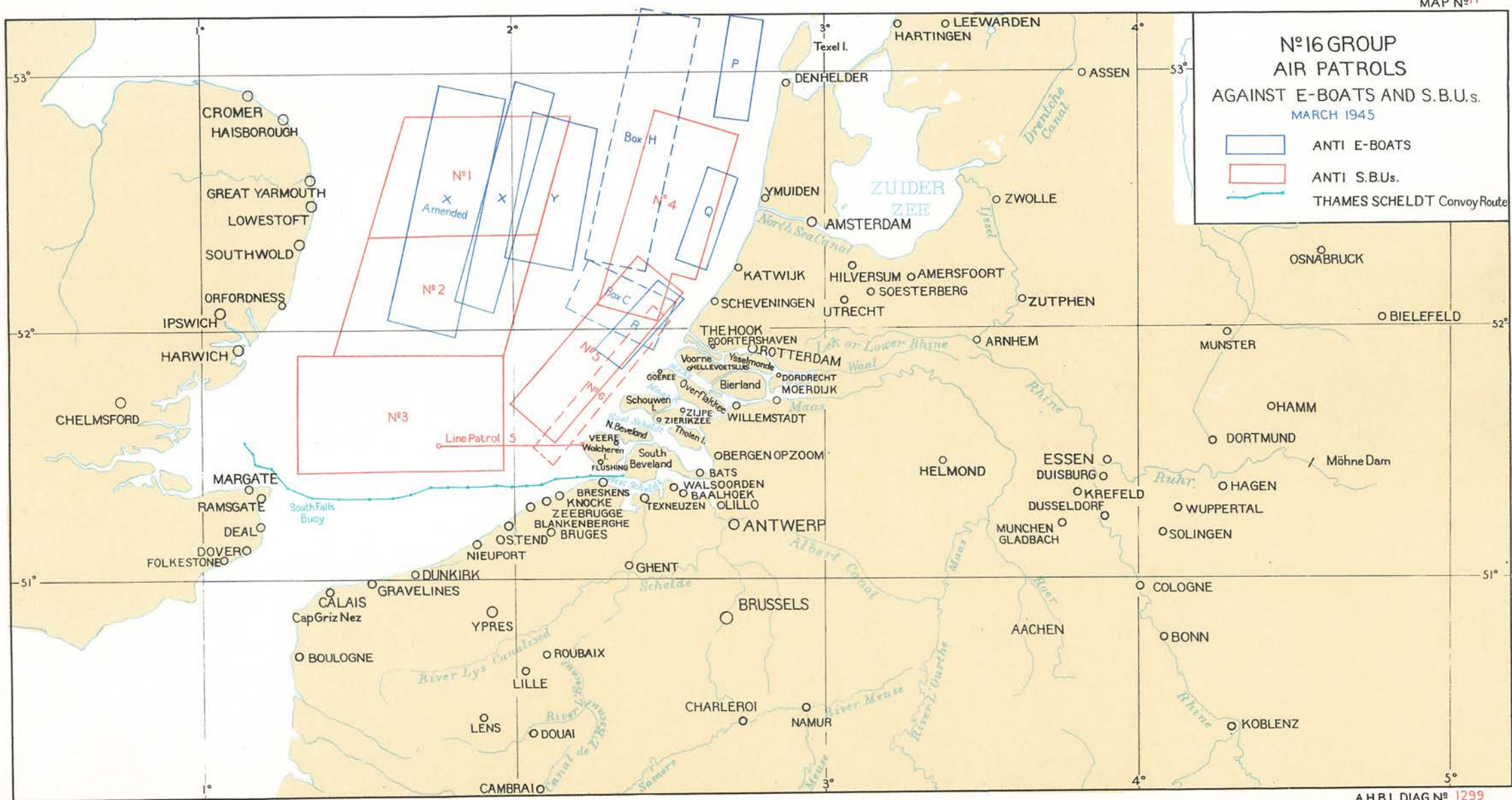


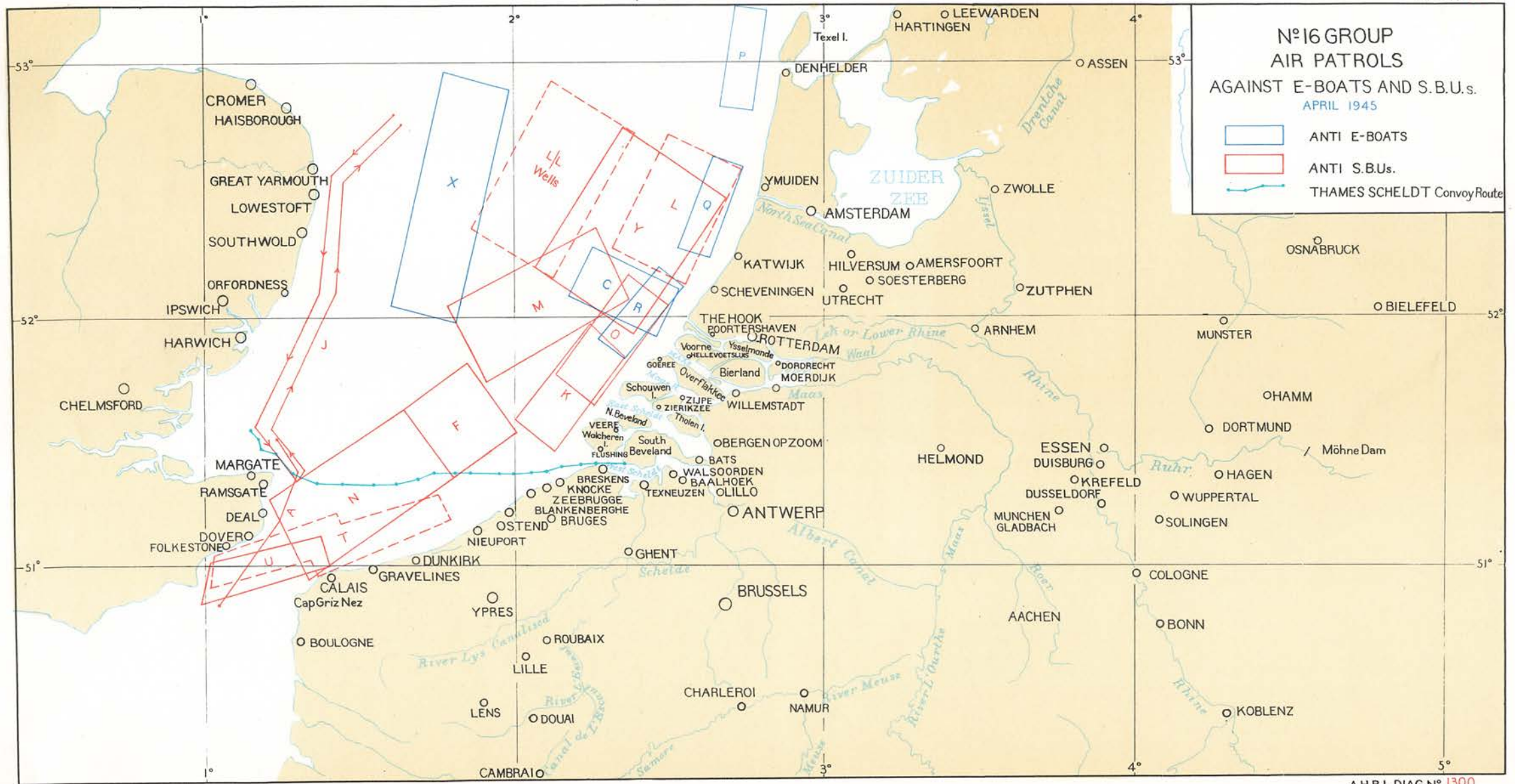












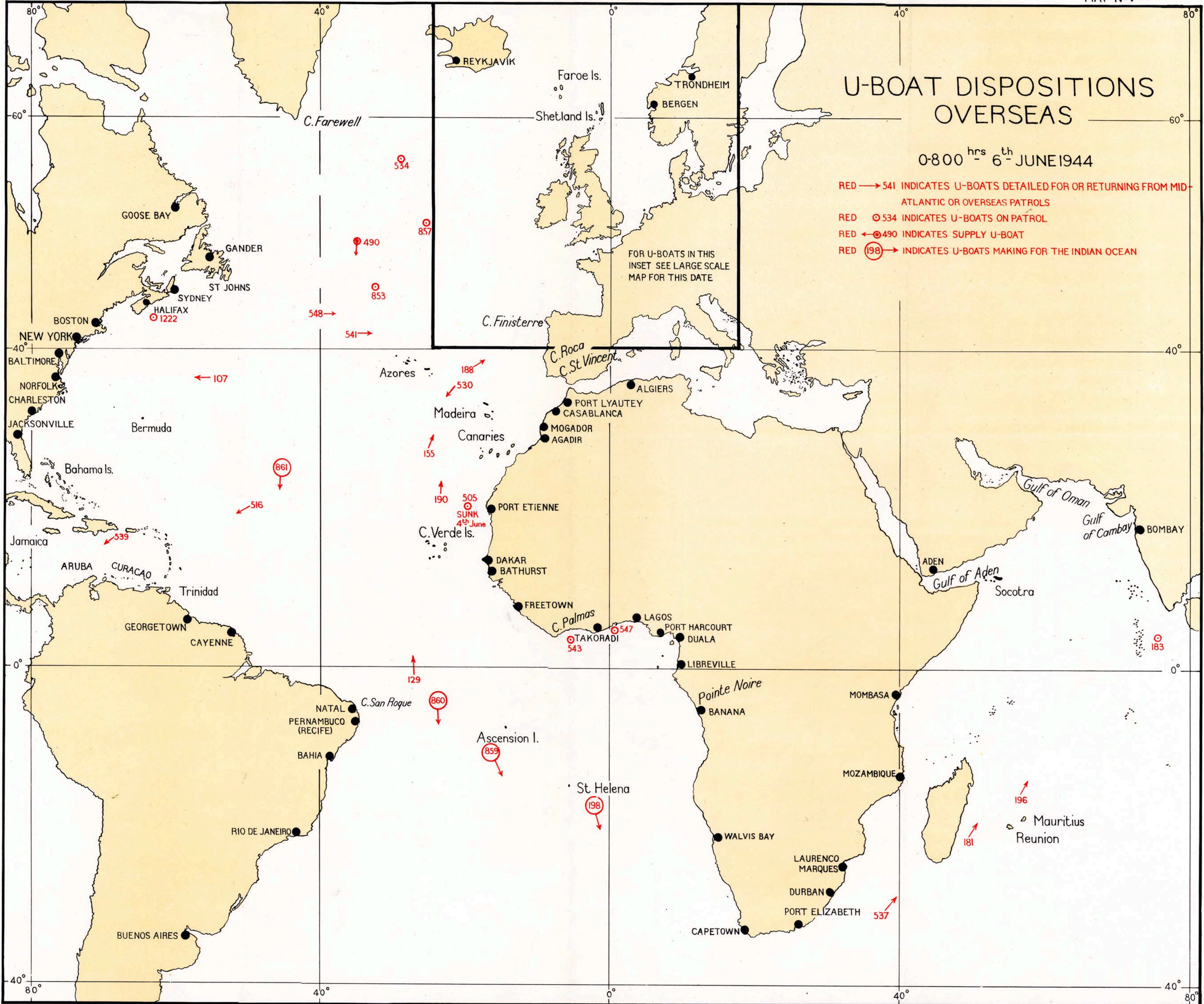


# U-BOAT DISPOSITIONS OVERSEAS

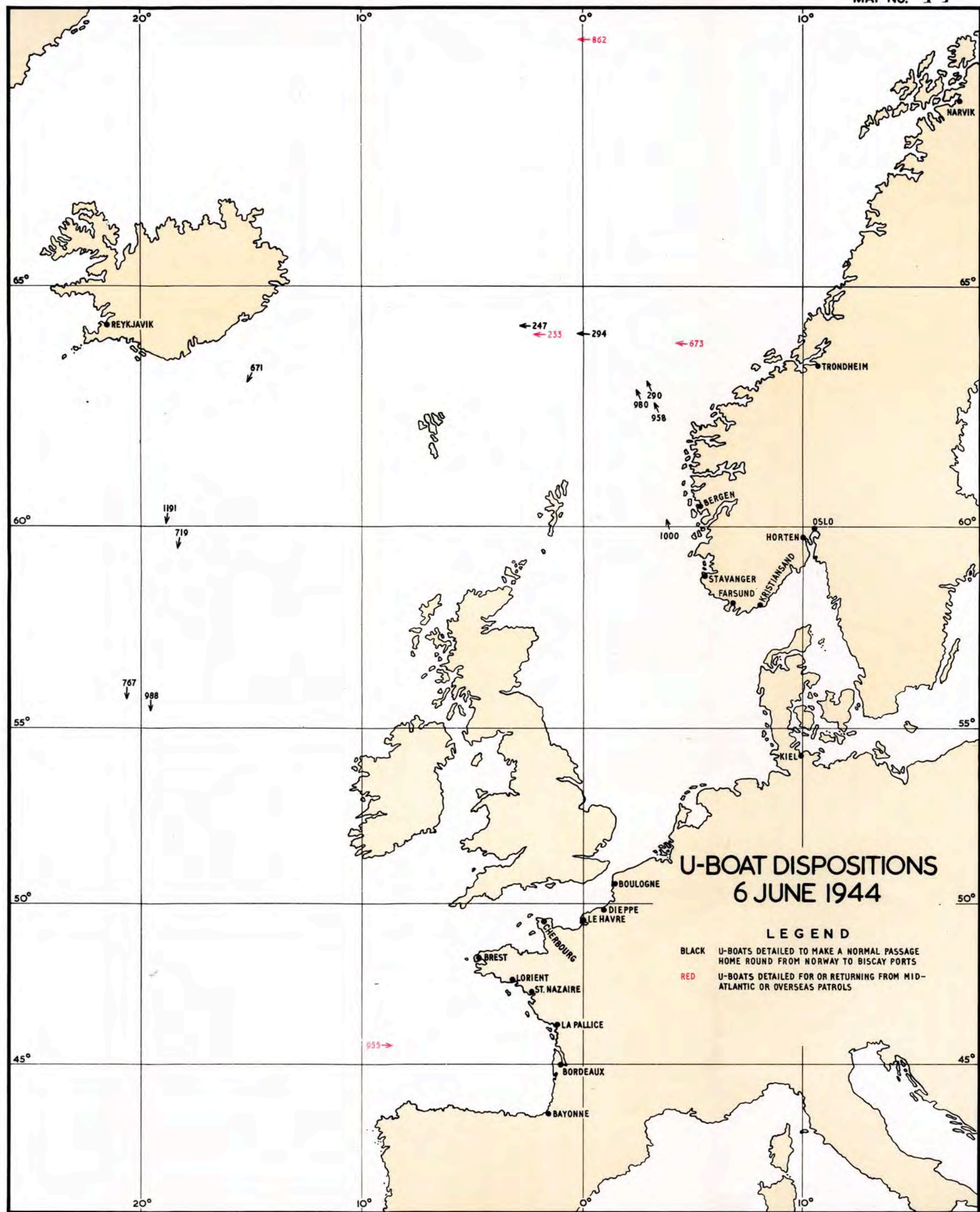
0800 hrs 6<sup>th</sup> JUNE 1944

- RED → 541 INDICATES U-BOATS DETAILED FOR OR RETURNING FROM MID-ATLANTIC OR OVERSEAS PATROLS
- RED ○ 534 INDICATES U-BOATS ON PATROL
- RED ← 490 INDICATES SUPPLY U-BOAT
- RED (198) → INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN

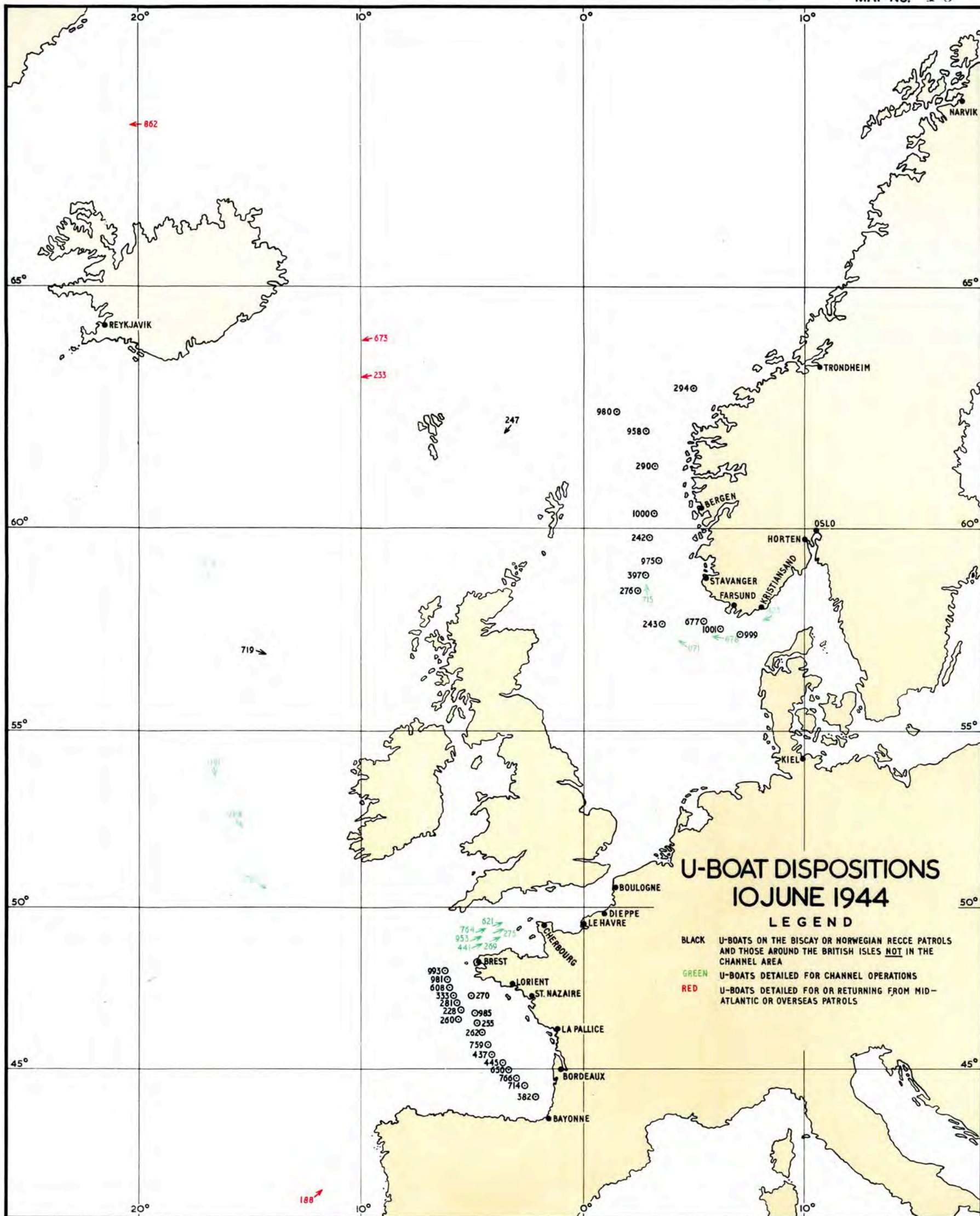
FOR U-BOATS IN THIS INSET SEE LARGE SCALE MAP FOR THIS DATE



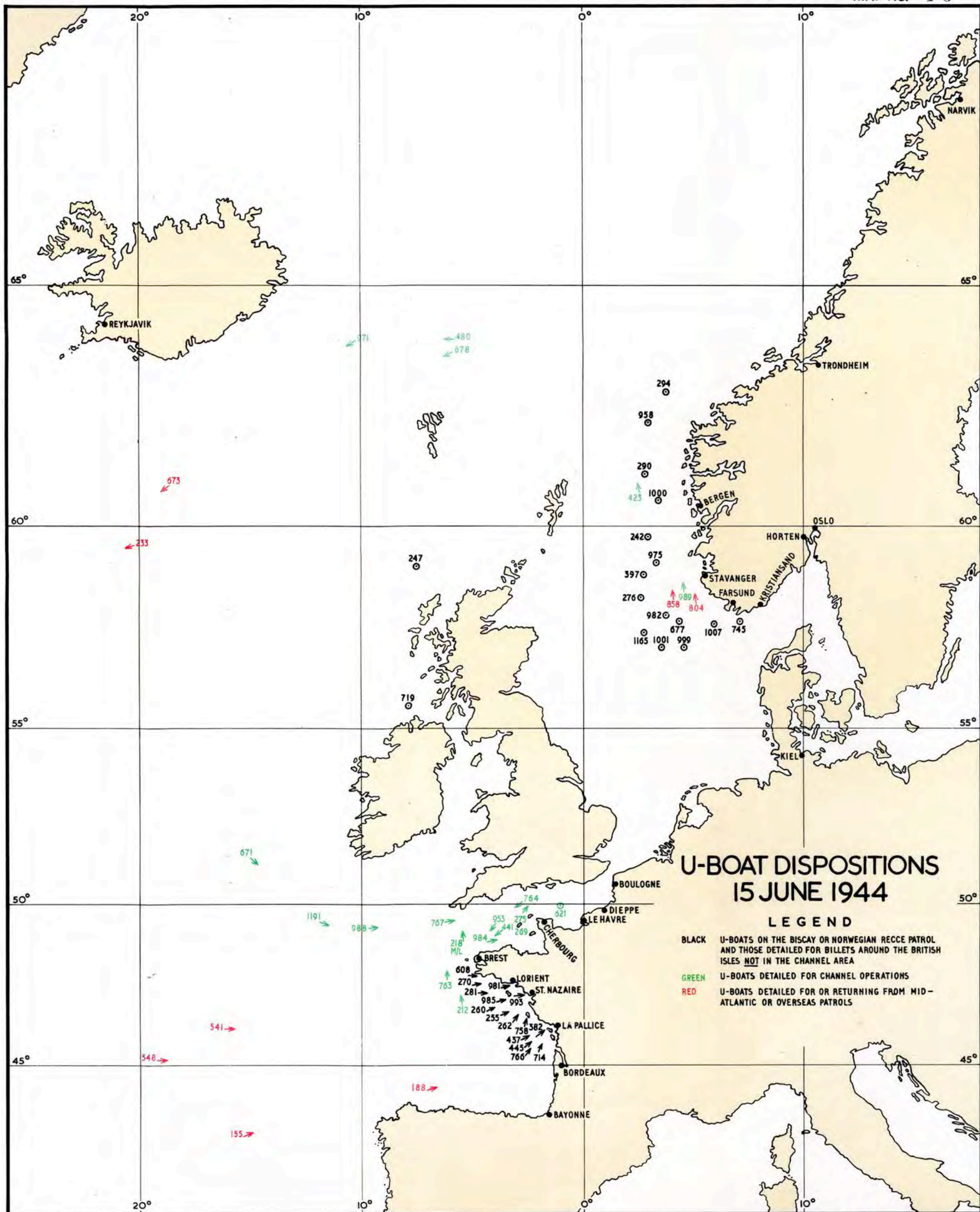




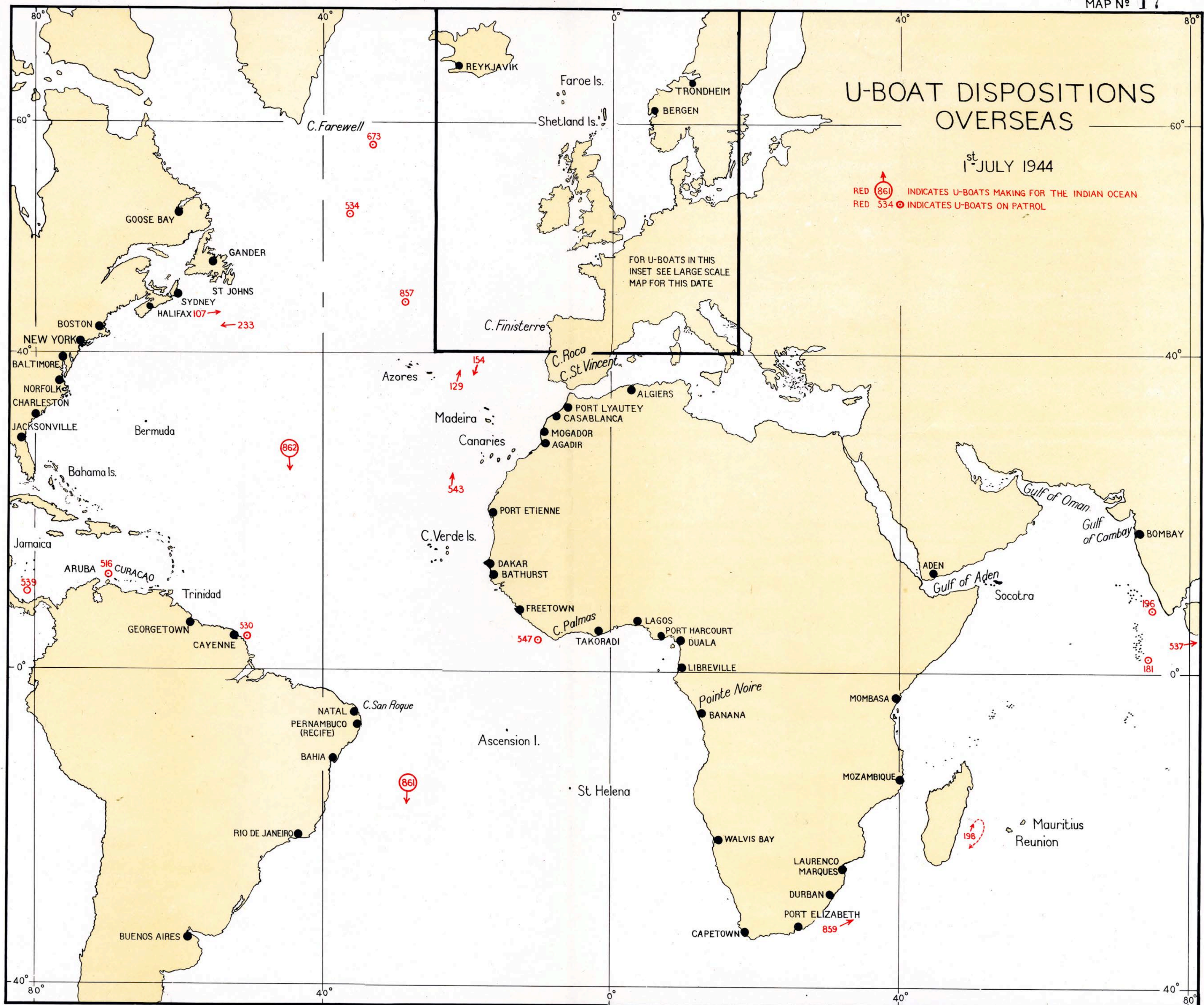




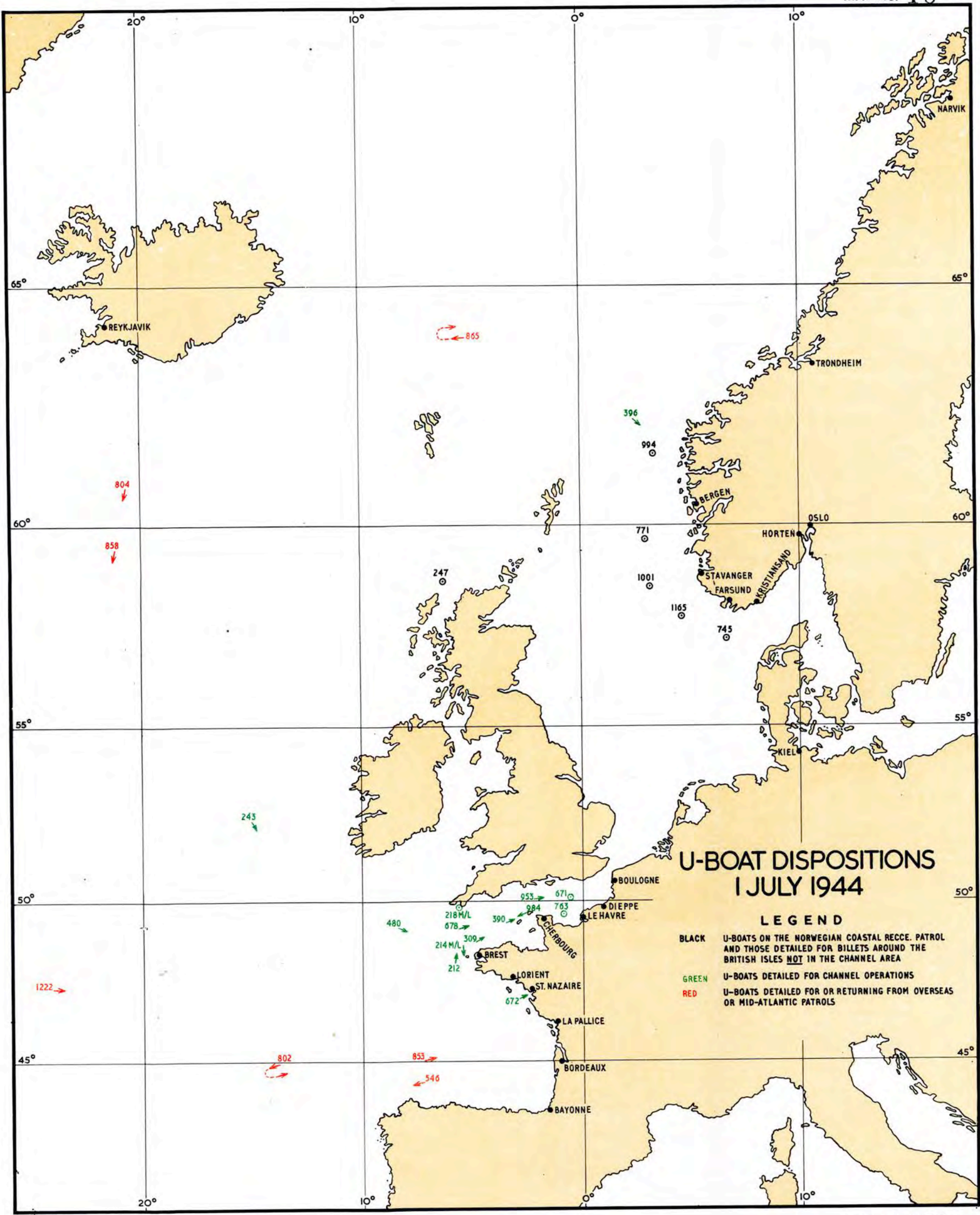














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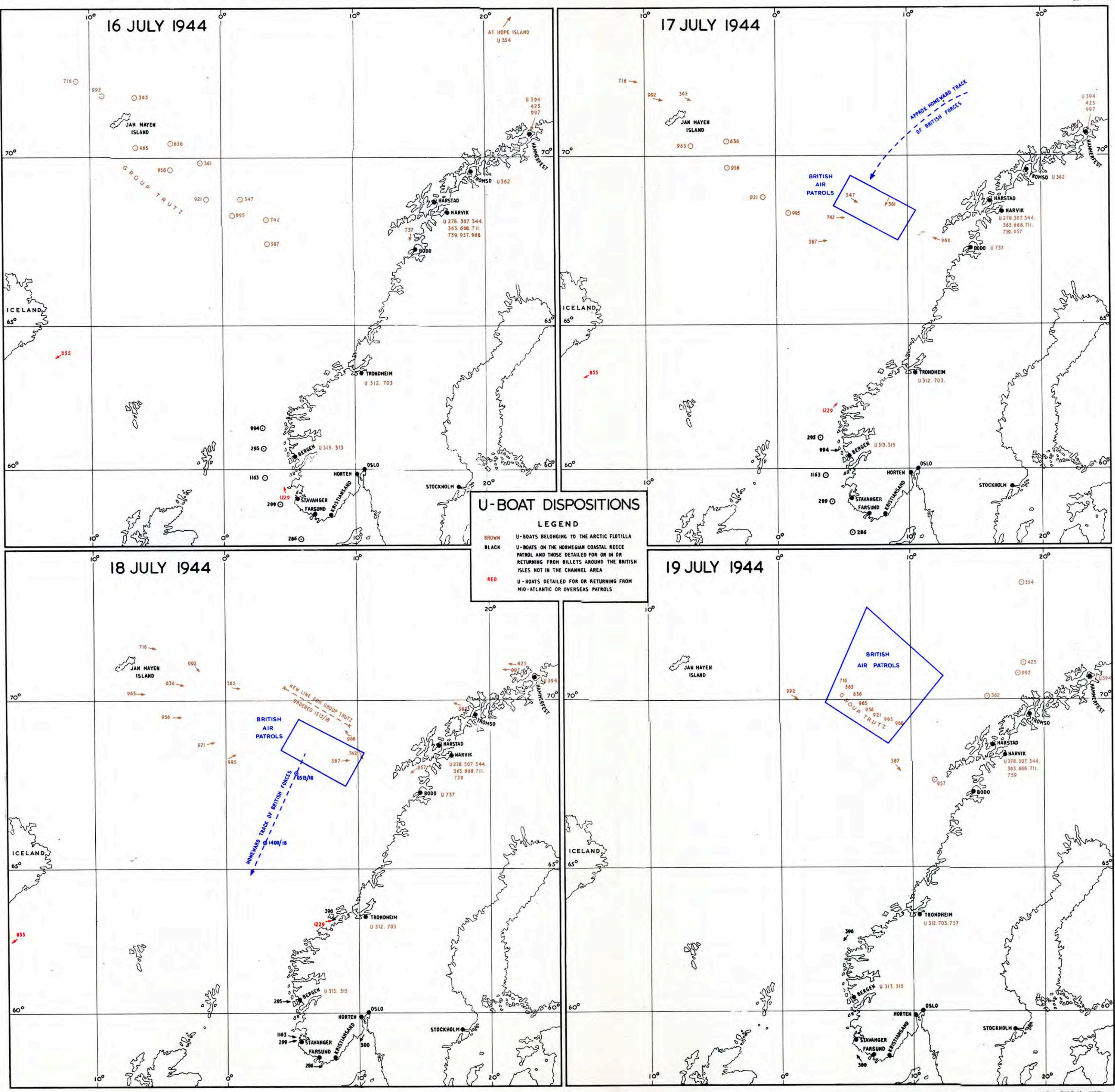
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# U-BOAT DISPOSITIONS

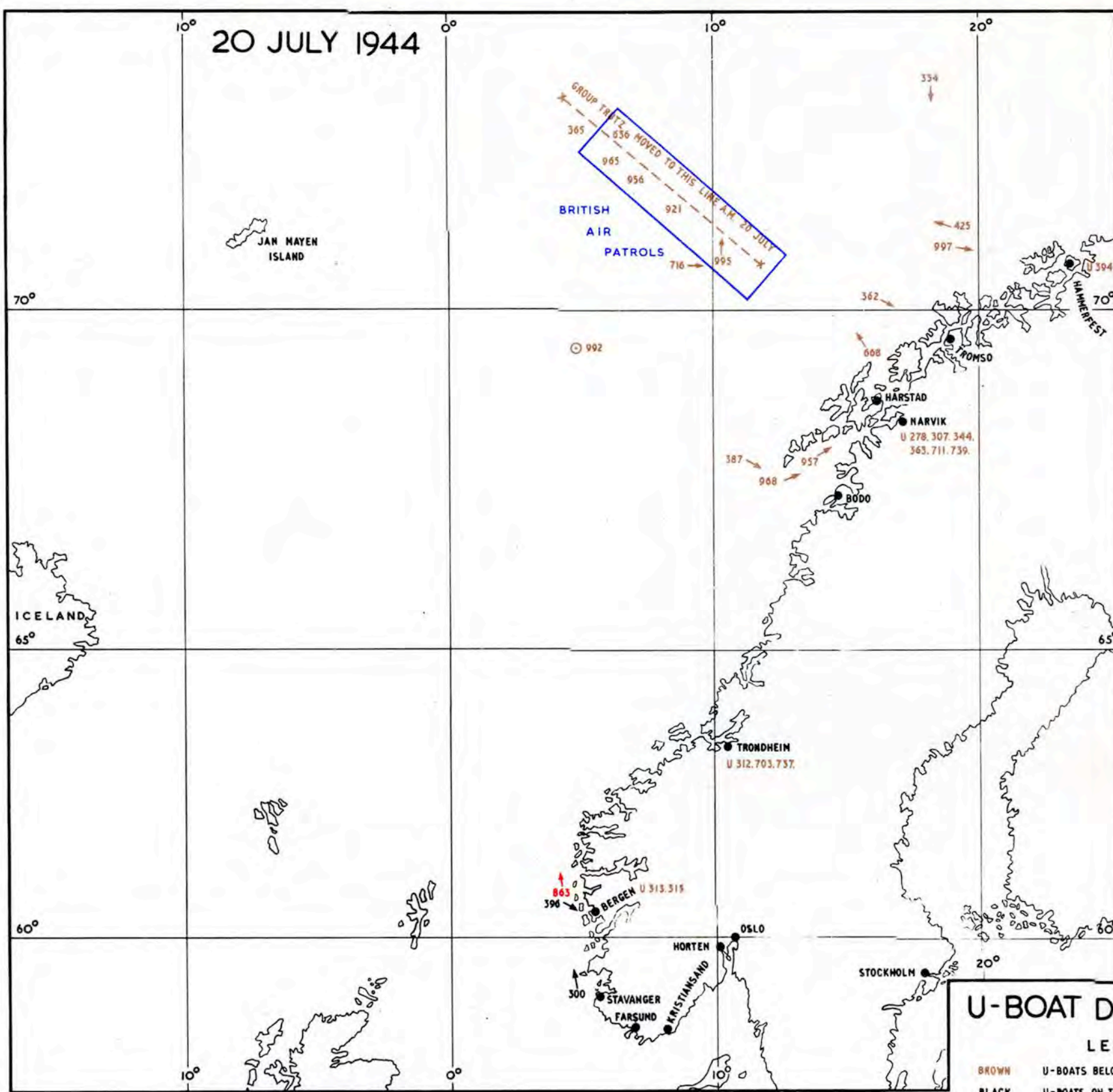
## LEGEND

- BROWN U-BOATS BELONGING TO THE ARCTIC FLOTILLA
- BLACK U-BOATS ON THE NORWEGIAN COASTAL RECCO PATROL AND THOSE DETAILED FOR OR IN OR RETURNING FROM BILLETTS AROUND THE BRITISH ISLES NOT IN THE CHANNEL AREA
- RED U-BOATS DETAILED FOR OR RETURNING FROM MID-ATLANTIC OR OVERSEAS PATROLS

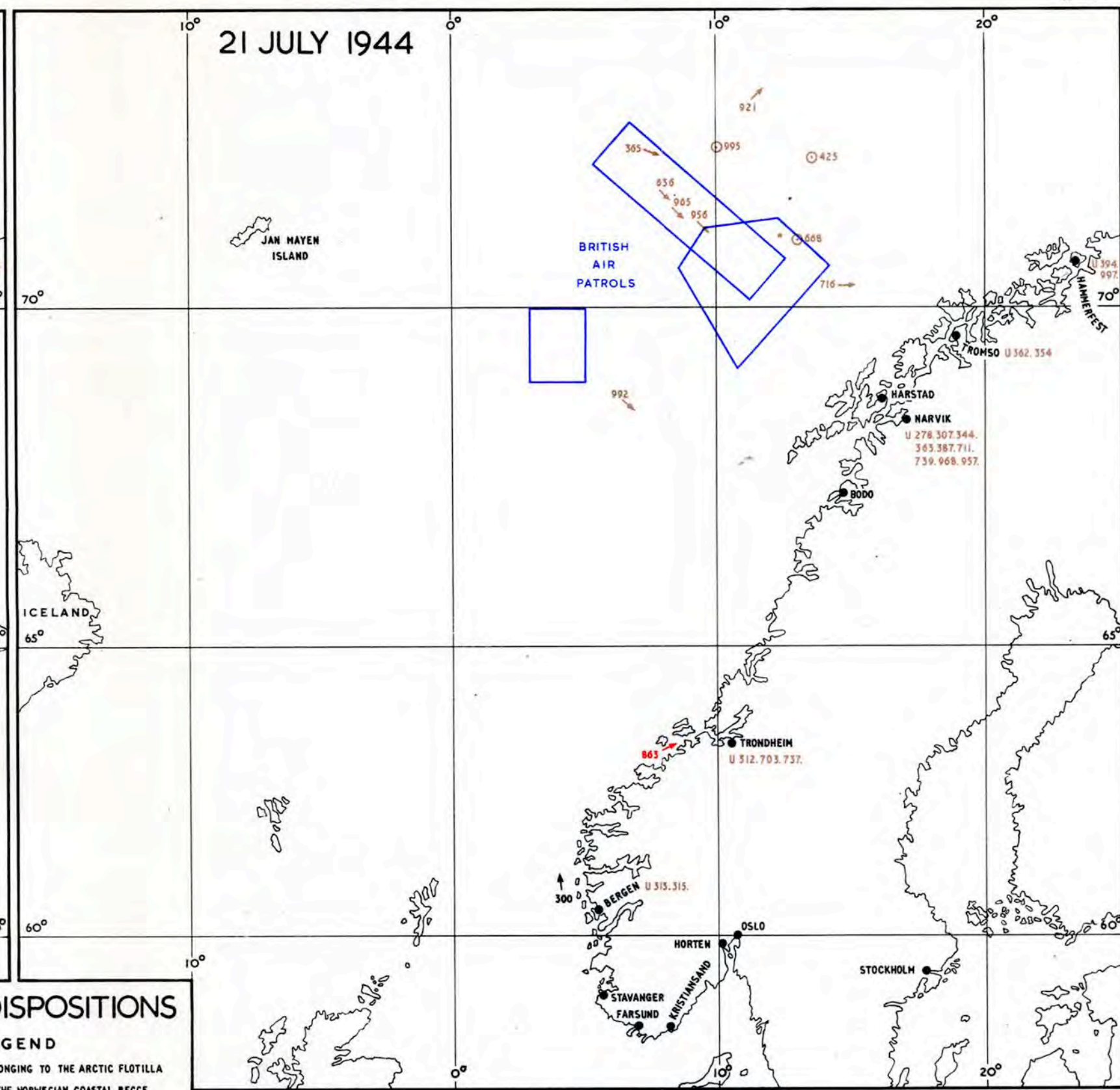




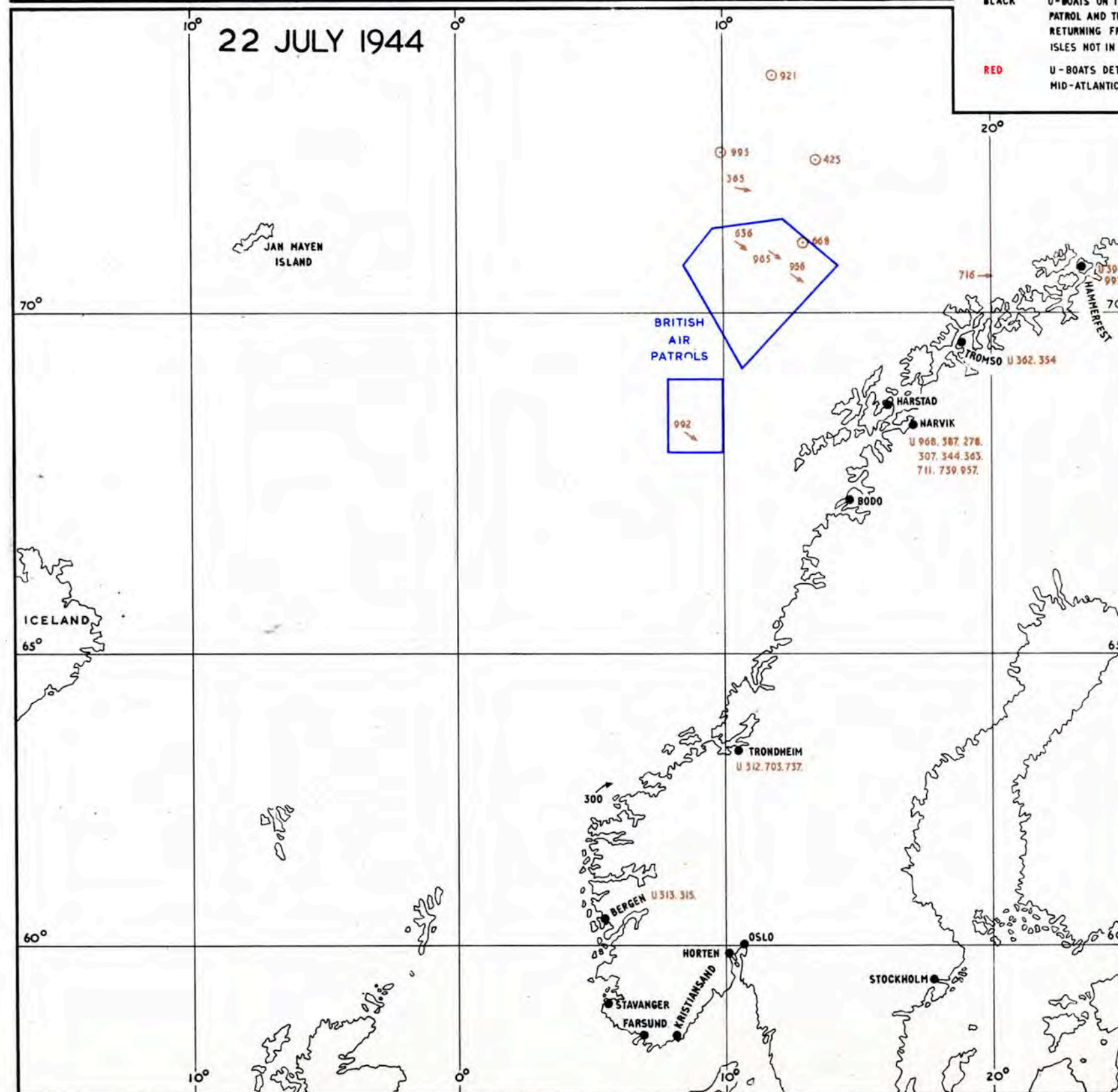
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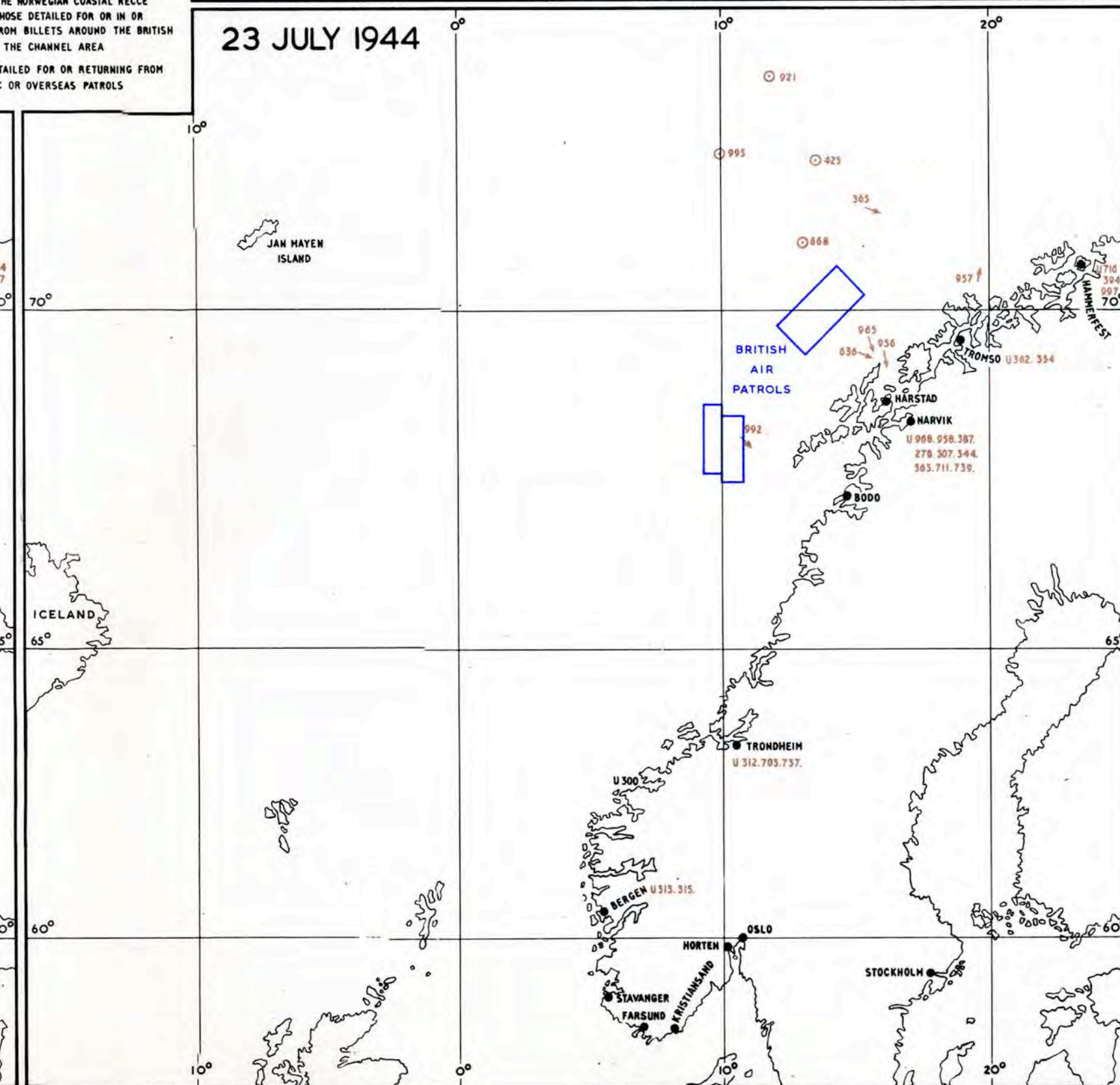
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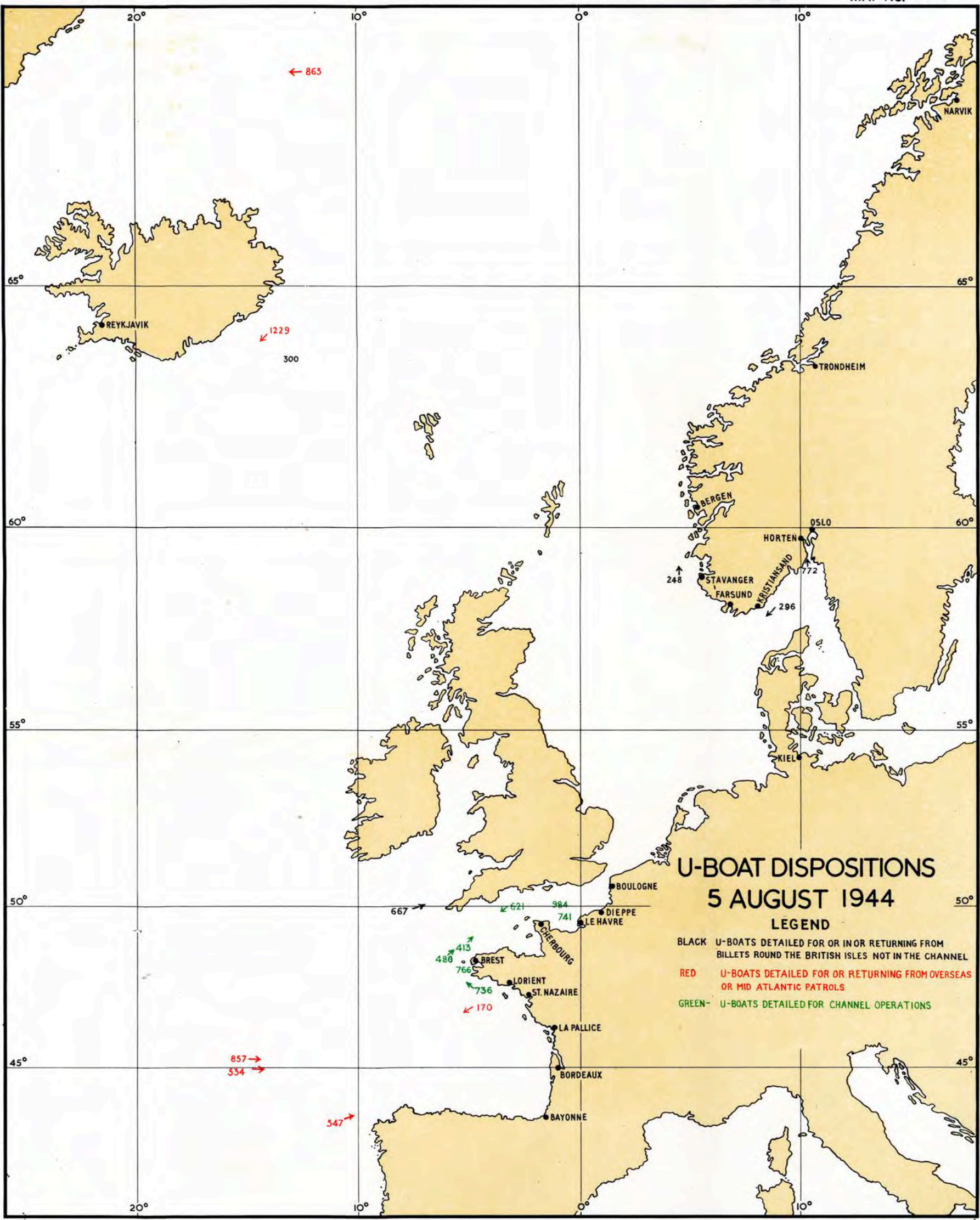
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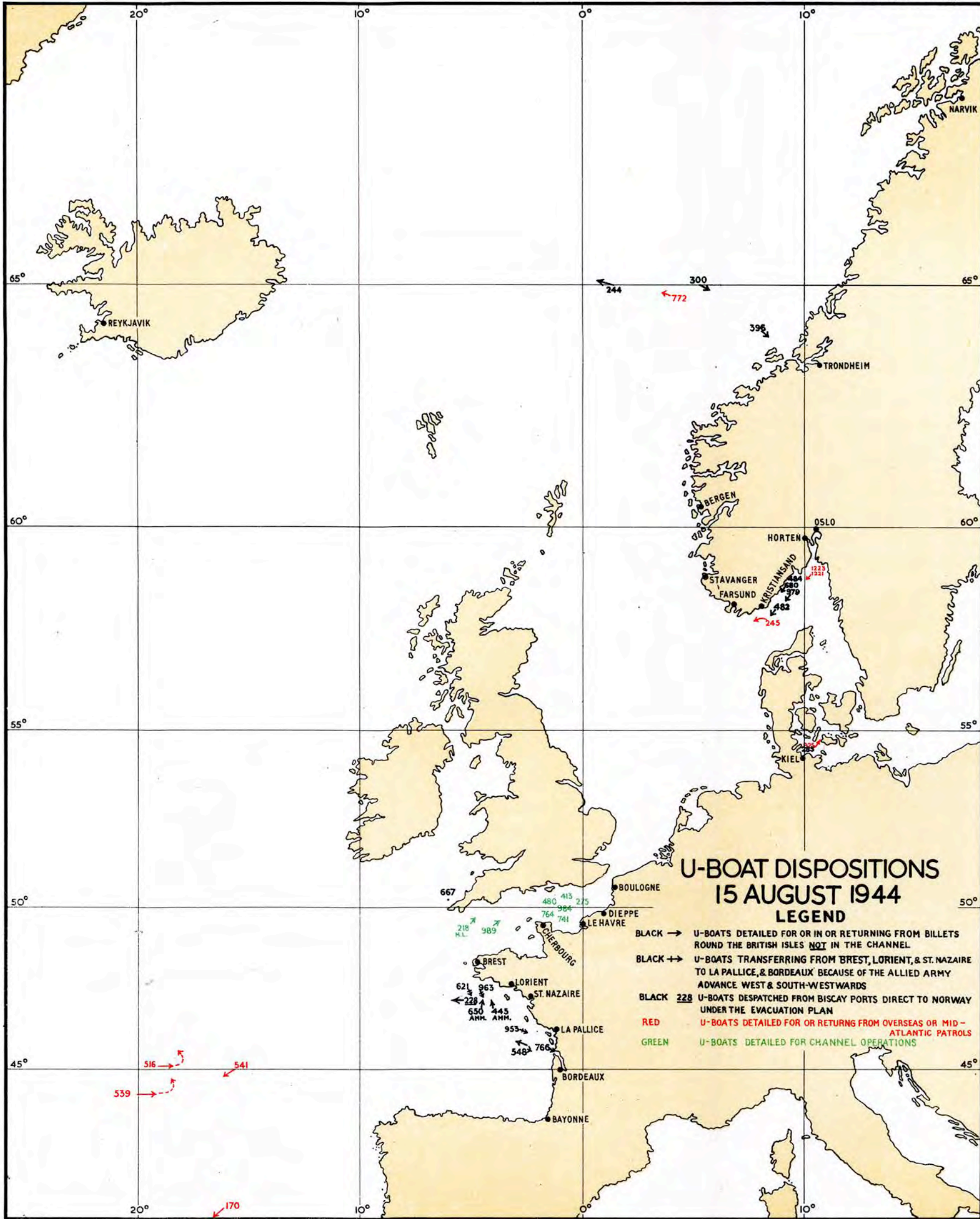


# U-BOAT DISPOSITIONS 5 AUGUST 1944

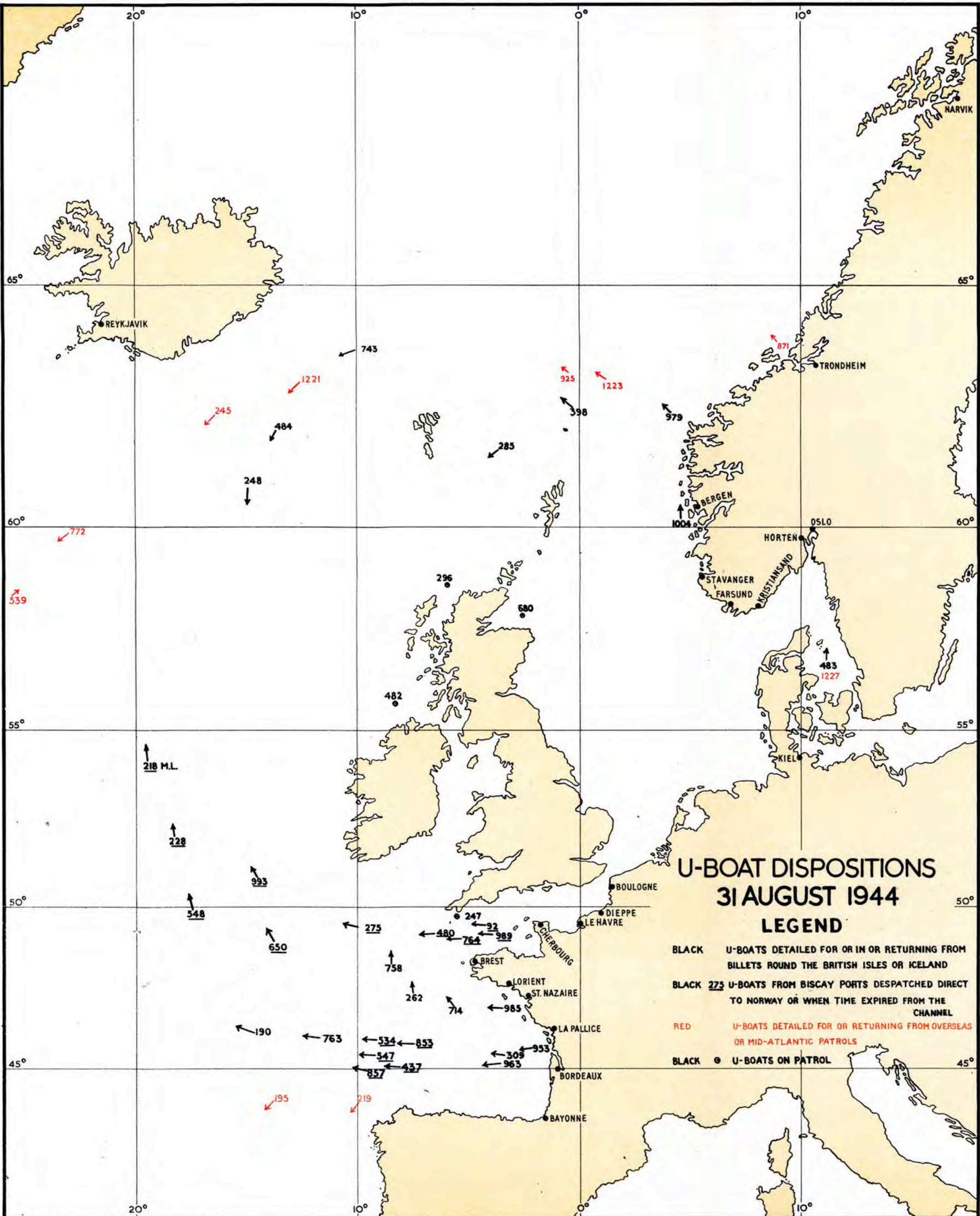
## LEGEND

- BLACK U-BOATS DETAILED FOR OR IN OR RETURNING FROM  
BILLETTS ROUND THE BRITISH ISLES NOT IN THE CHANNEL
- RED U-BOATS DETAILED FOR OR RETURNING FROM OVERSEAS  
OR MID ATLANTIC PATROLS
- GREEN U-BOATS DETAILED FOR CHANNEL OPERATIONS









# **U-BOAT DISPOSITIONS 31 AUGUST 1944** **LEGEND**

- BLACK U-BOATS DETAILED FOR OR IN OR RETURNING FROM BILLETTS ROUND THE BRITISH ISLES OR ICELAND
- BLACK 275 U-BOATS FROM BISCAY PORTS DESPATCHED DIRECT TO NORWAY OR WHEN TIME EXPIRED FROM THE CHANNEL
- RED U-BOATS DETAILED FOR OR RETURNING FROM OVERSEAS OR MID-ATLANTIC PATROLS
- BLACK • U-BOATS ON PATROL



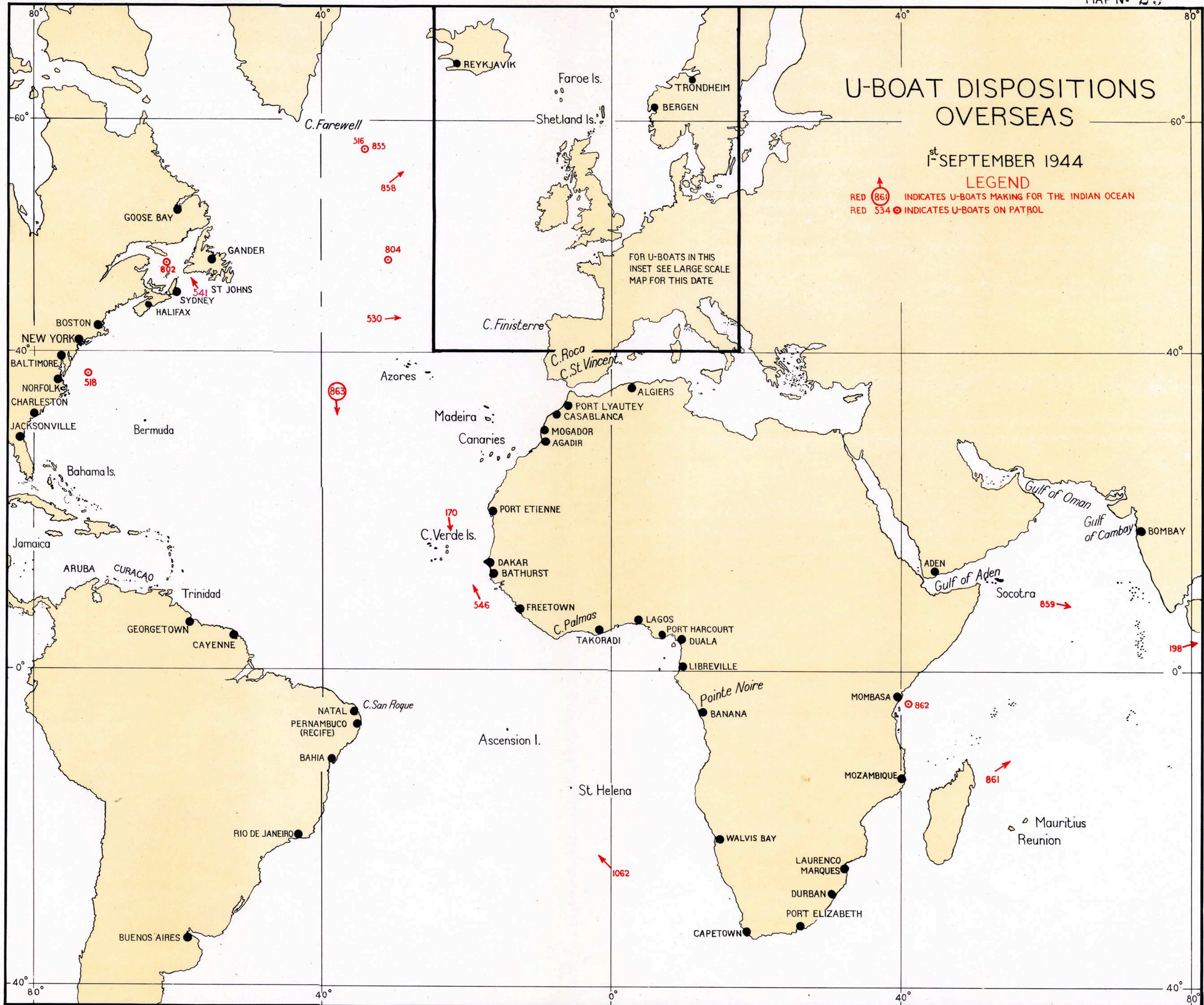
# U-BOAT DISPOSITIONS OVERSEAS

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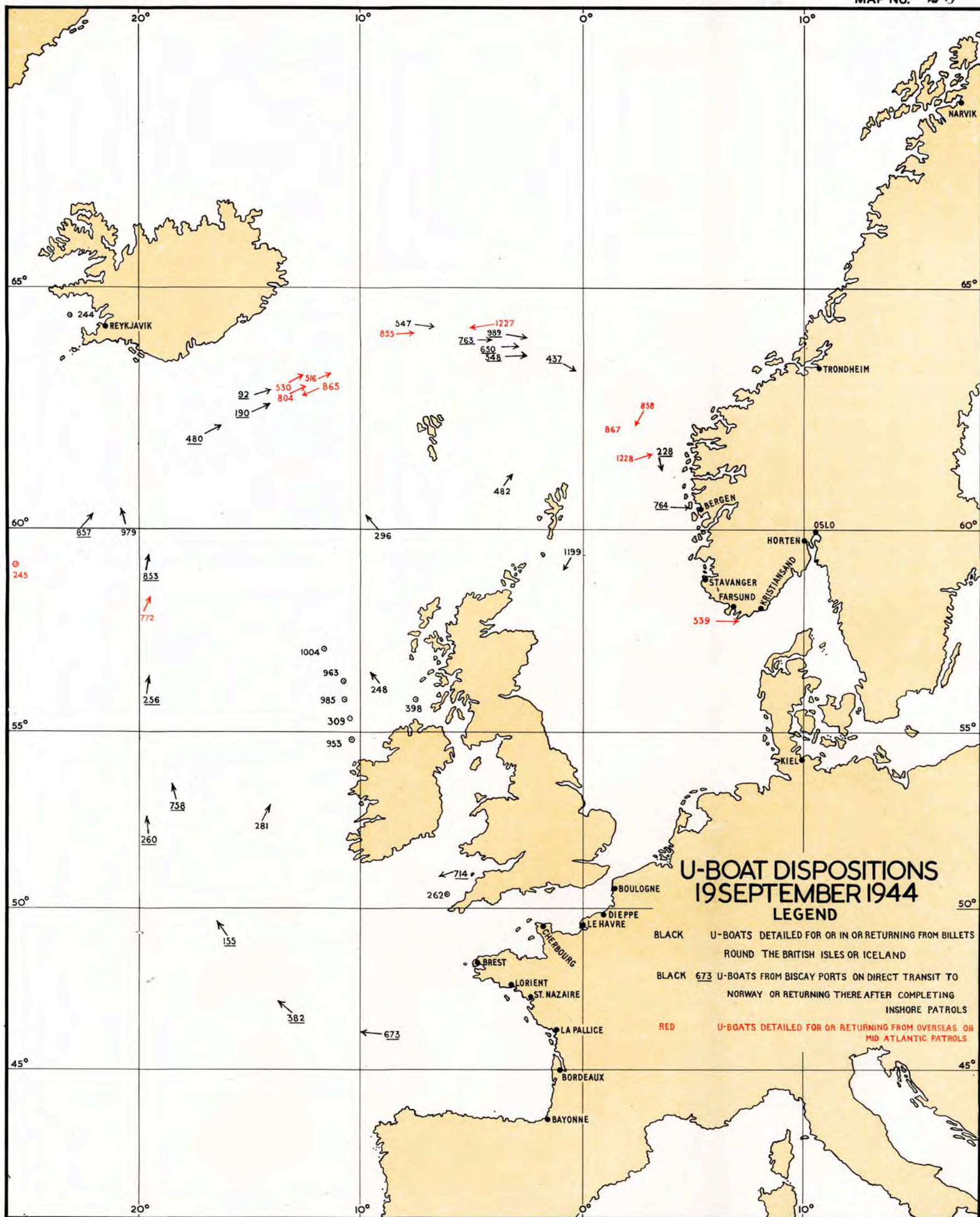
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RED 861 INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 ○ INDICATES U-BOATS ON PATROL

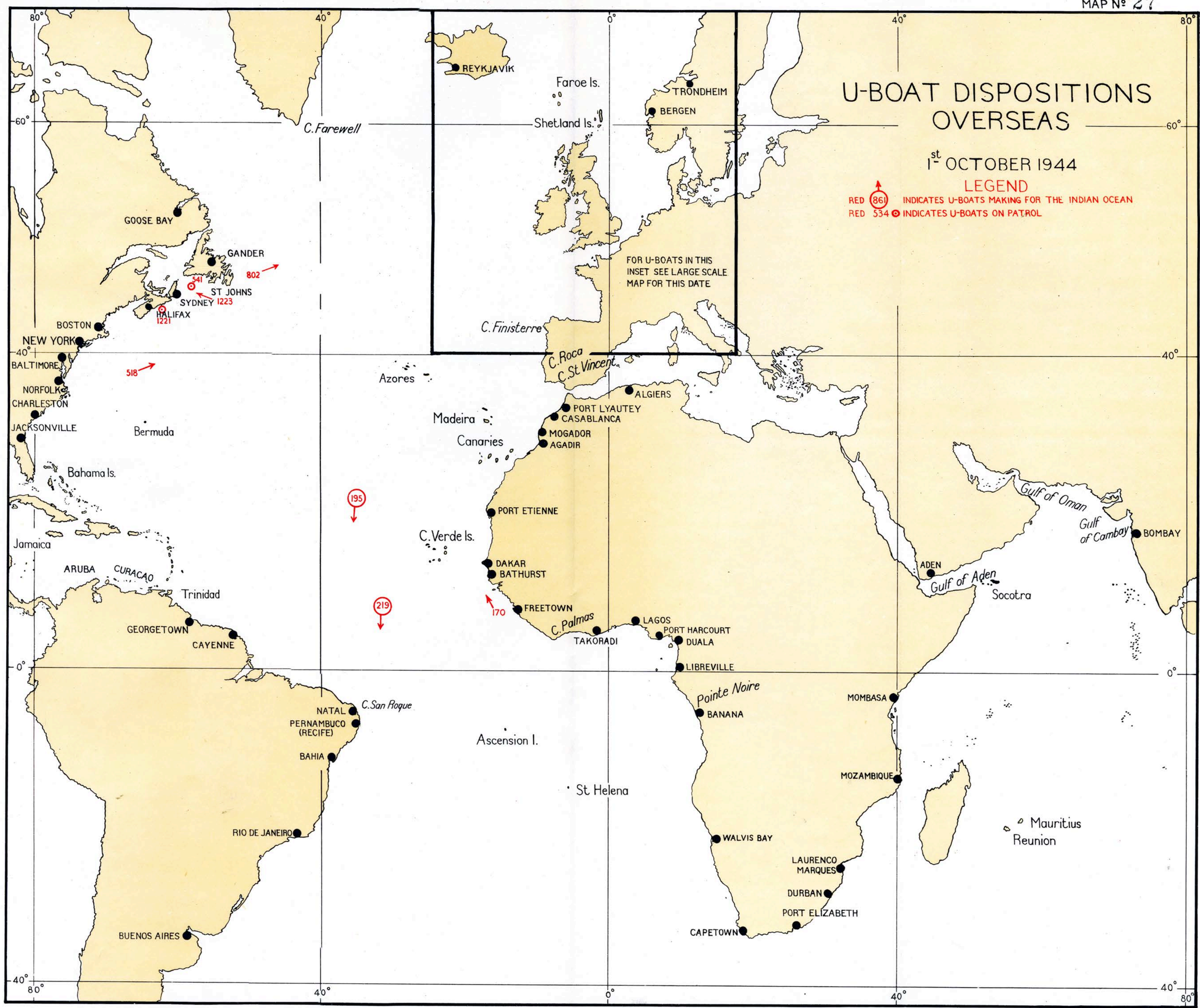
FOR U-BOATS IN THIS  
INSET SEE LARGE SCALE  
MAP FOR THIS DATE











# U-BOAT DISPOSITIONS OVERSEAS

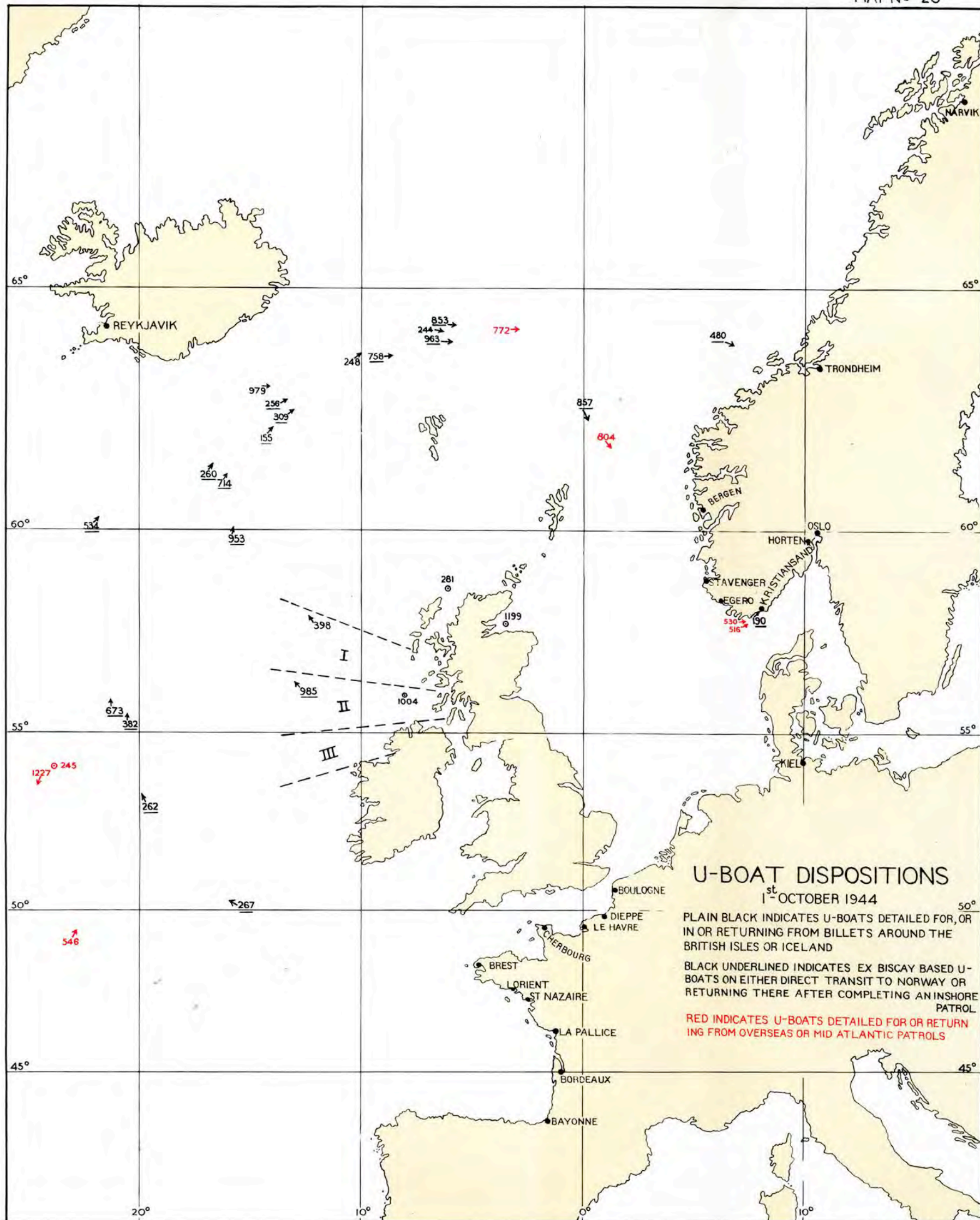
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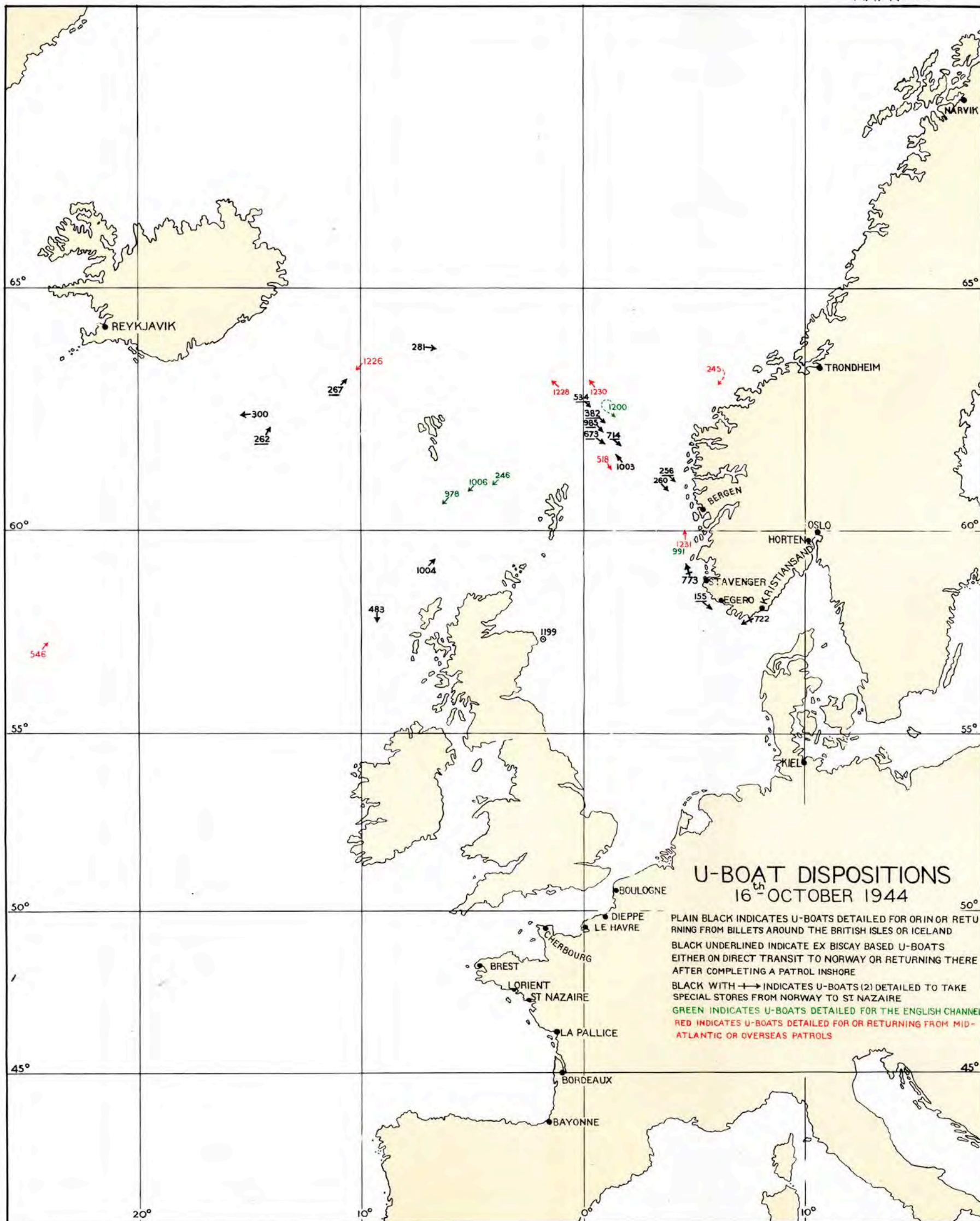
RED (861) INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 ● INDICATES U-BOATS ON PATROL

FOR U-BOATS IN THIS INSET SEE LARGE SCALE MAP FOR THIS DATE











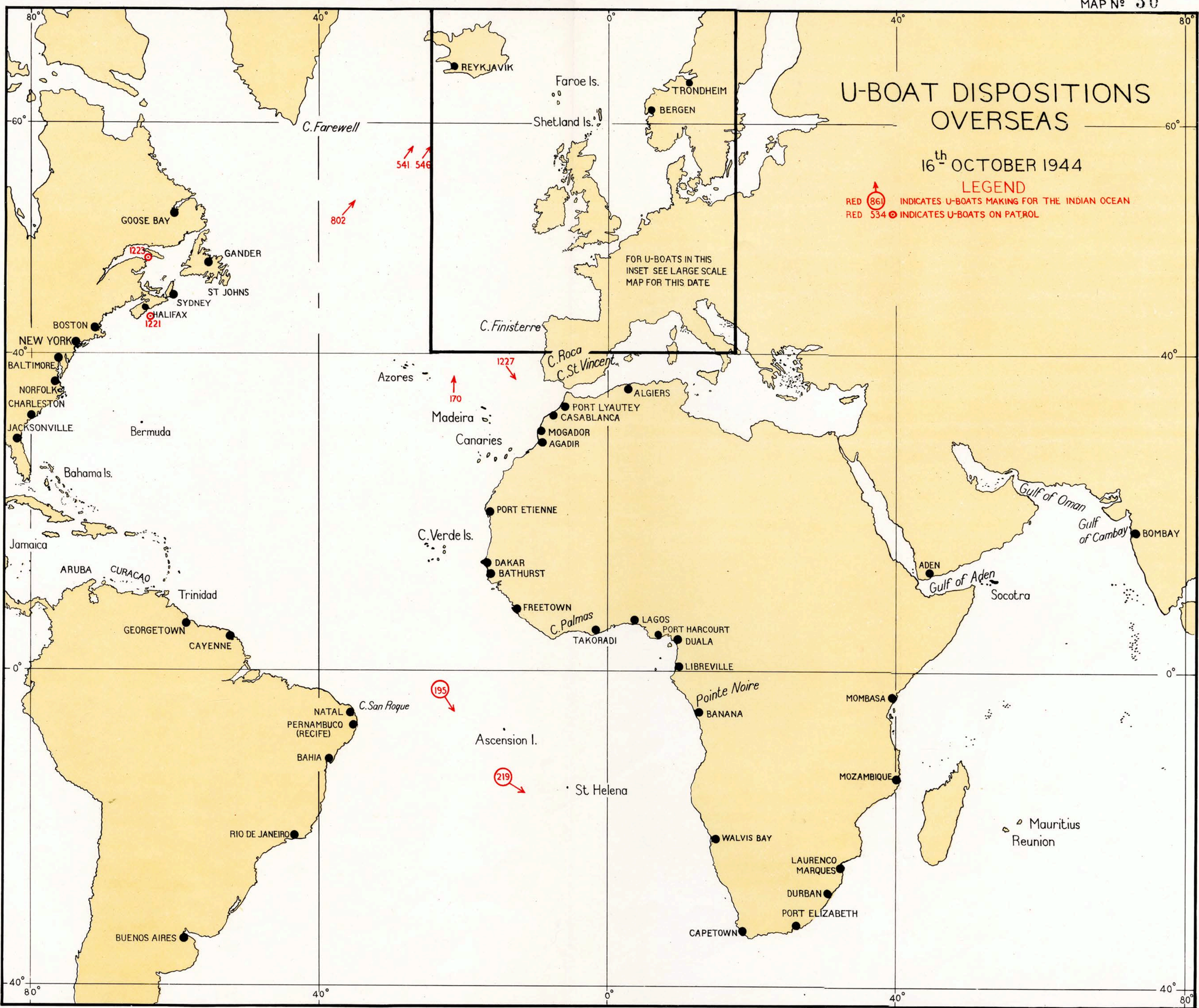
# U-BOAT DISPOSITIONS OVERSEAS

16<sup>th</sup> OCTOBER 1944

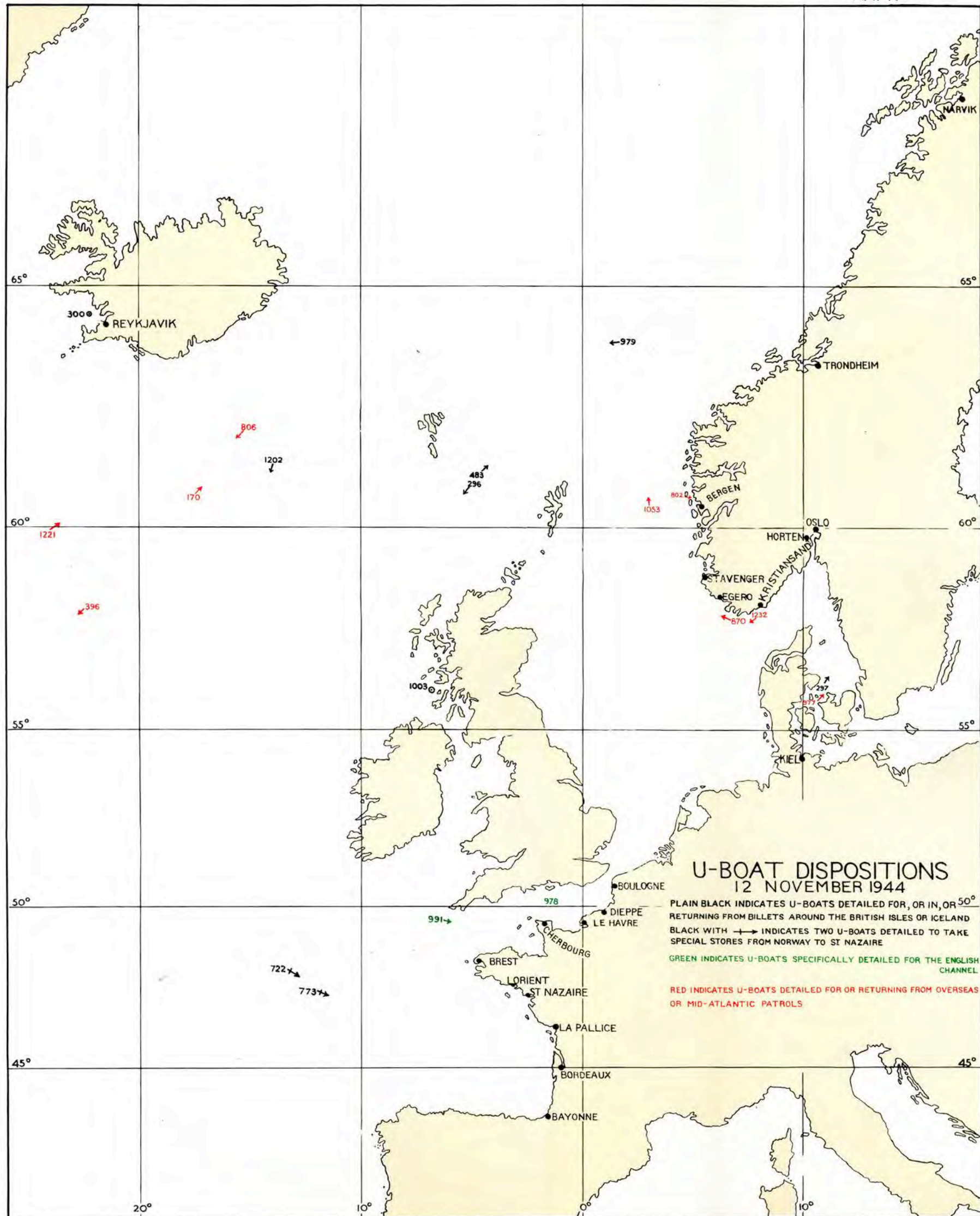
## LEGEND

RED (86) INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 ○ INDICATES U-BOATS ON PATROL

FOR U-BOATS IN THIS  
INSET SEE LARGE SCALE  
MAP FOR THIS DATE









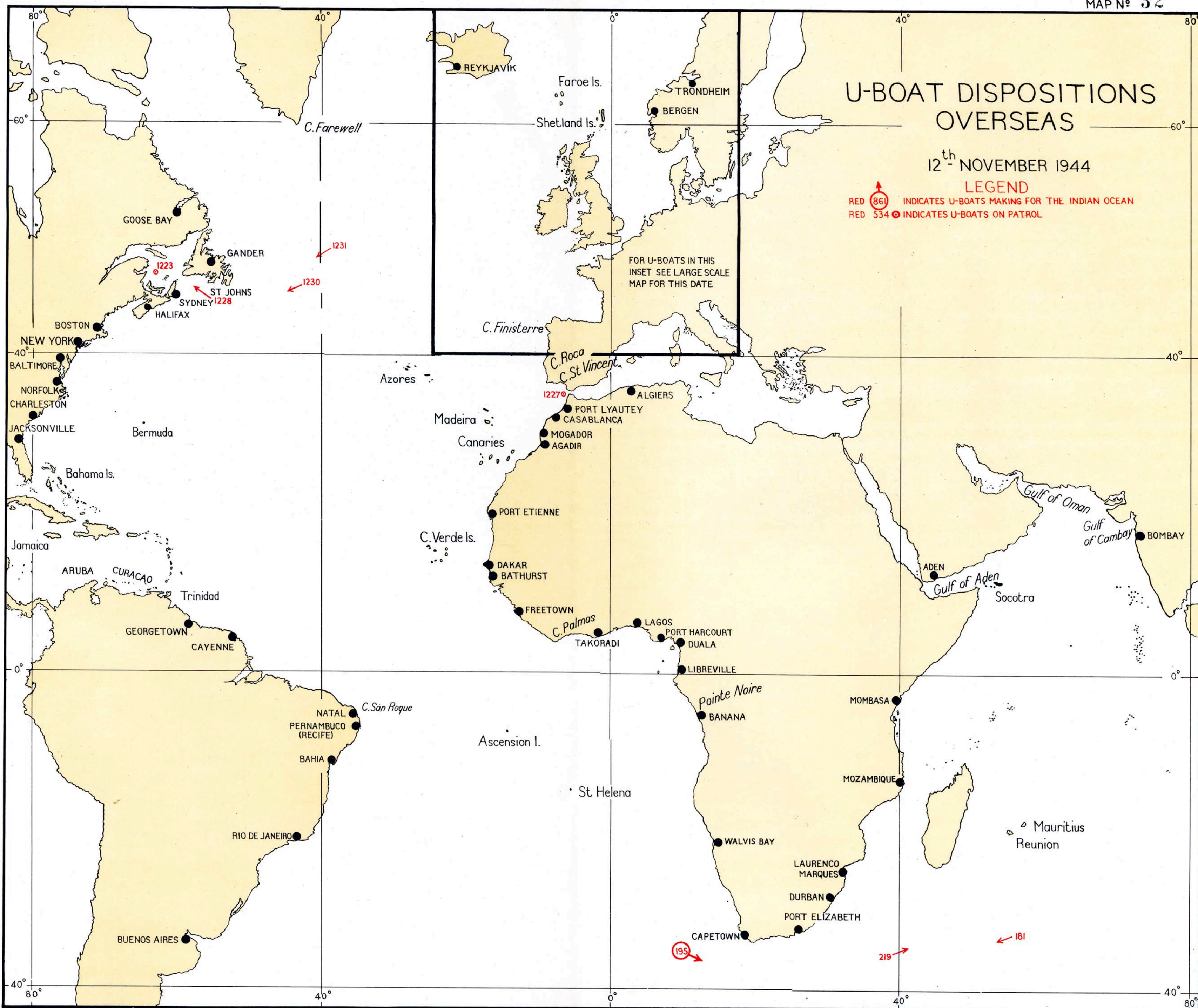
# U-BOAT DISPOSITIONS OVERSEAS

12<sup>th</sup> NOVEMBER 1944

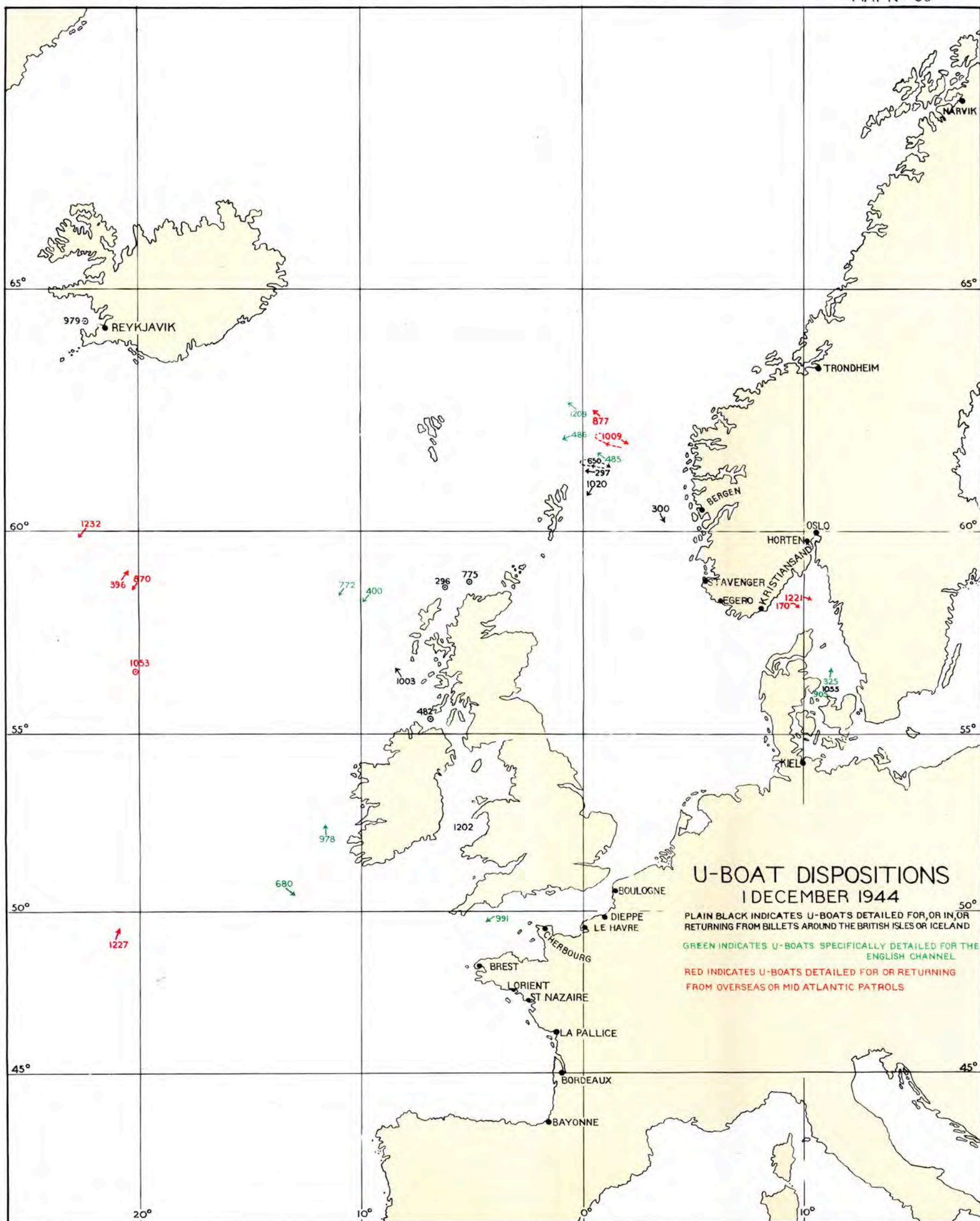
## LEGEND

RED 861 INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 INDICATES U-BOATS ON PATROL

FOR U-BOATS IN THIS  
INSET SEE LARGE SCALE  
MAP FOR THIS DATE







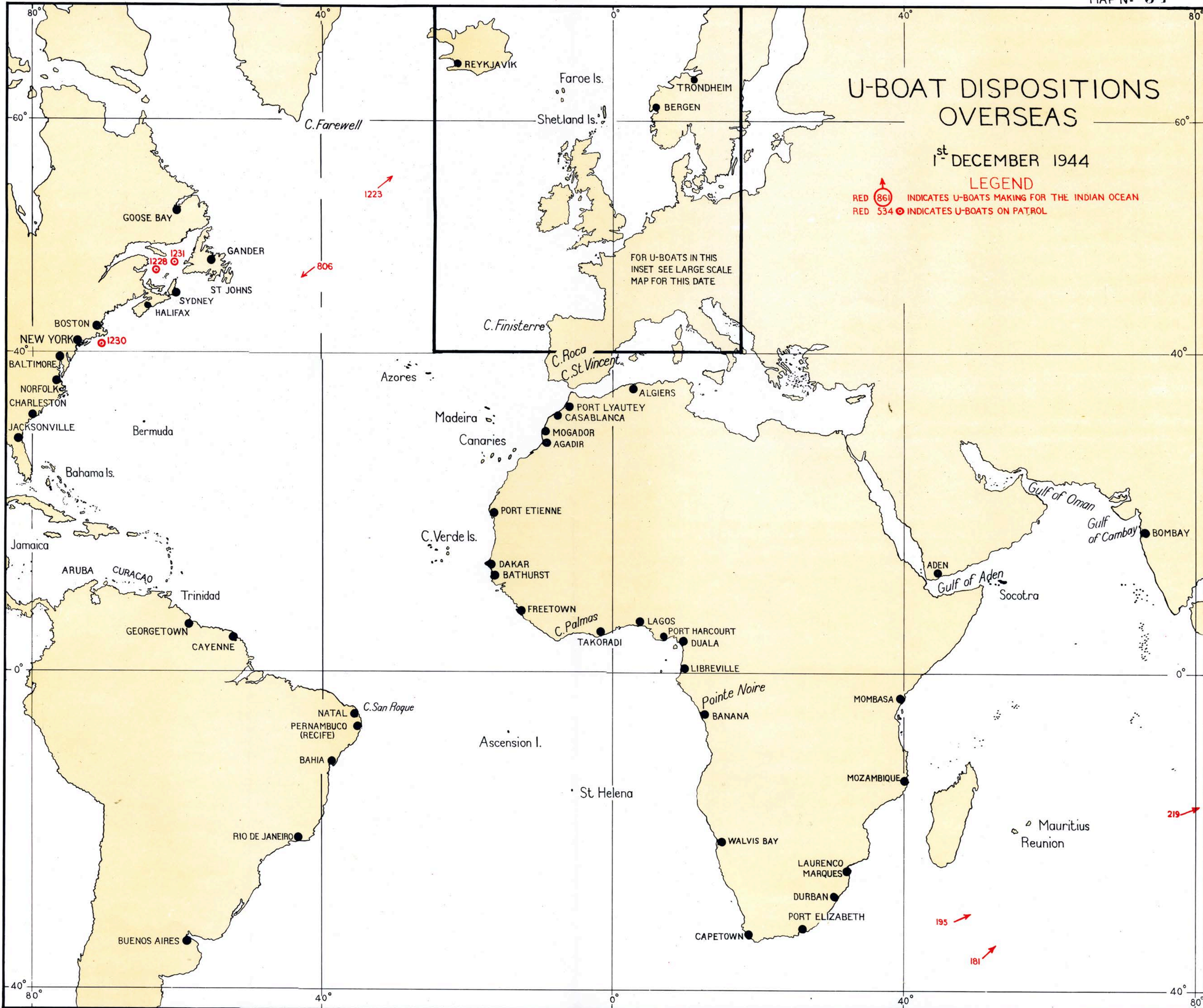


# U-BOAT DISPOSITIONS OVERSEAS

1<sup>st</sup> DECEMBER 1944

## LEGEND

RED 861 INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 ○ INDICATES U-BOATS ON PATROL



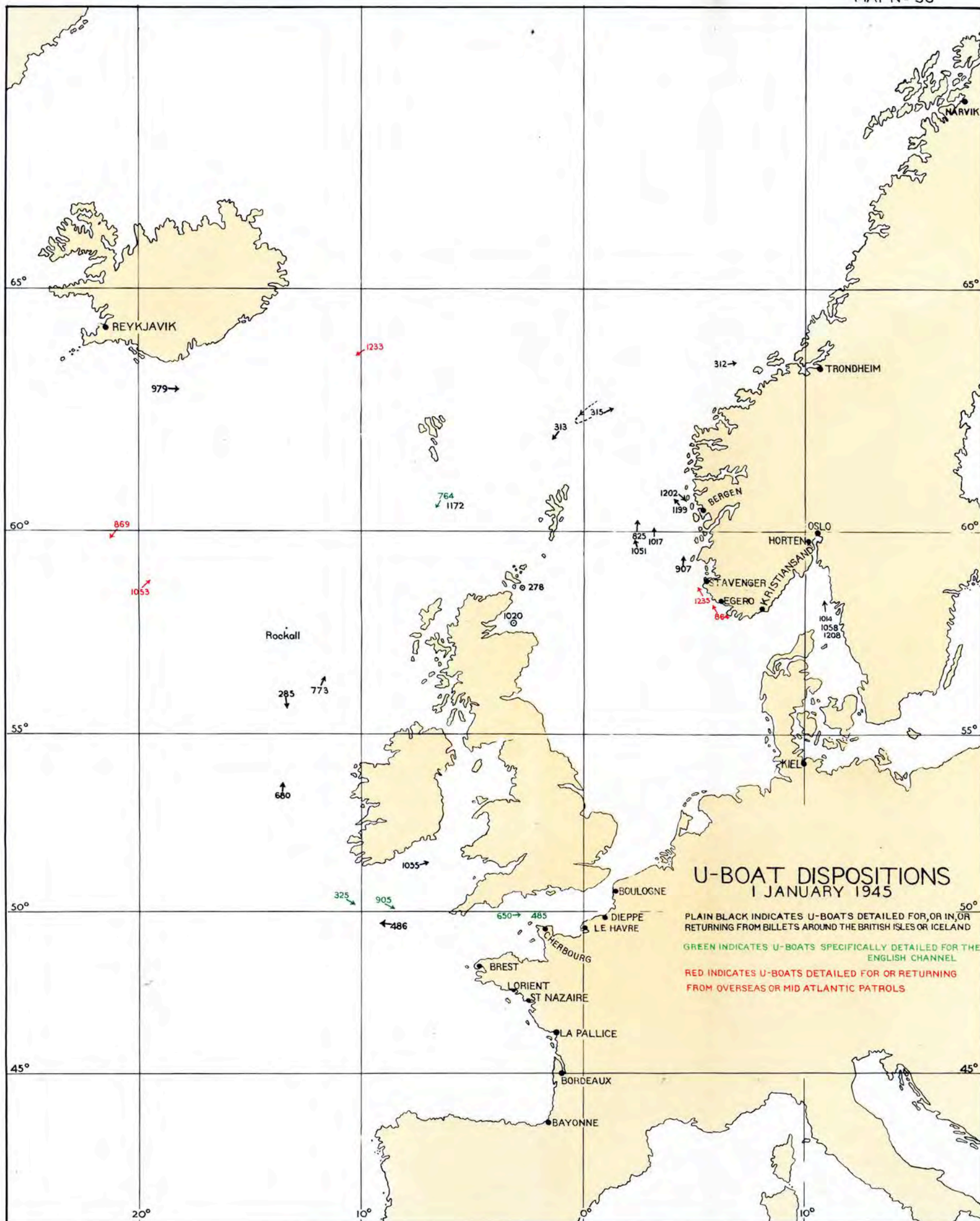


PLAIN BLACK INDICATES U-BOATS DETAILED FOR, OR IN, OR RETURNING FROM BILLETTS AROUND THE BRITISH ISLES OR ICELAND

GREEN INDICATES U-BOATS SPECIFICALLY DETAILED FOR THE ENGLISH CHANNEL

RED INDICATES U-BOATS DETAILED FOR OR RETURNING FROM OVERSEAS OR MID ATLANTIC PATROLS







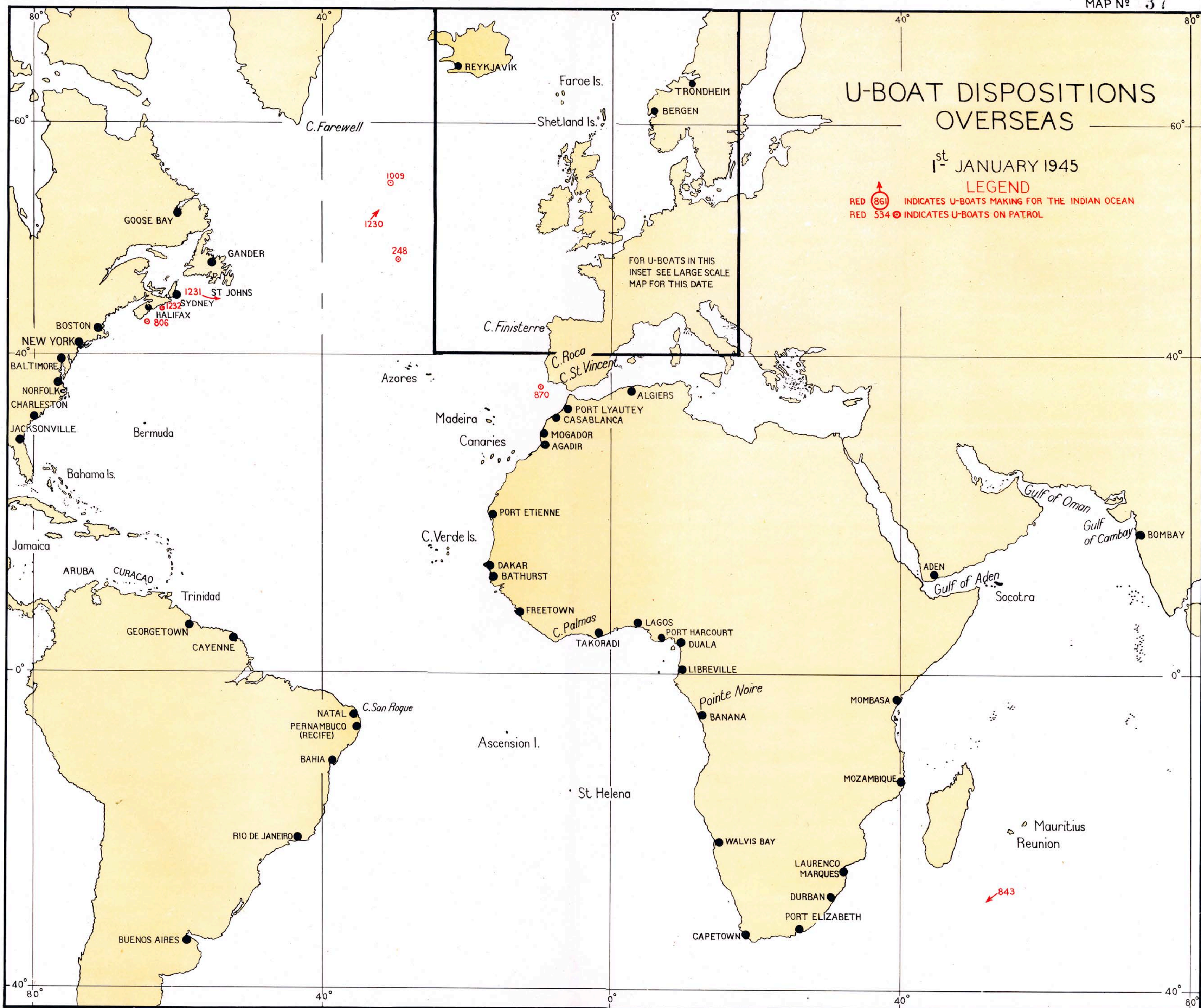
# U-BOAT DISPOSITIONS OVERSEAS

1<sup>st</sup> JANUARY 1945

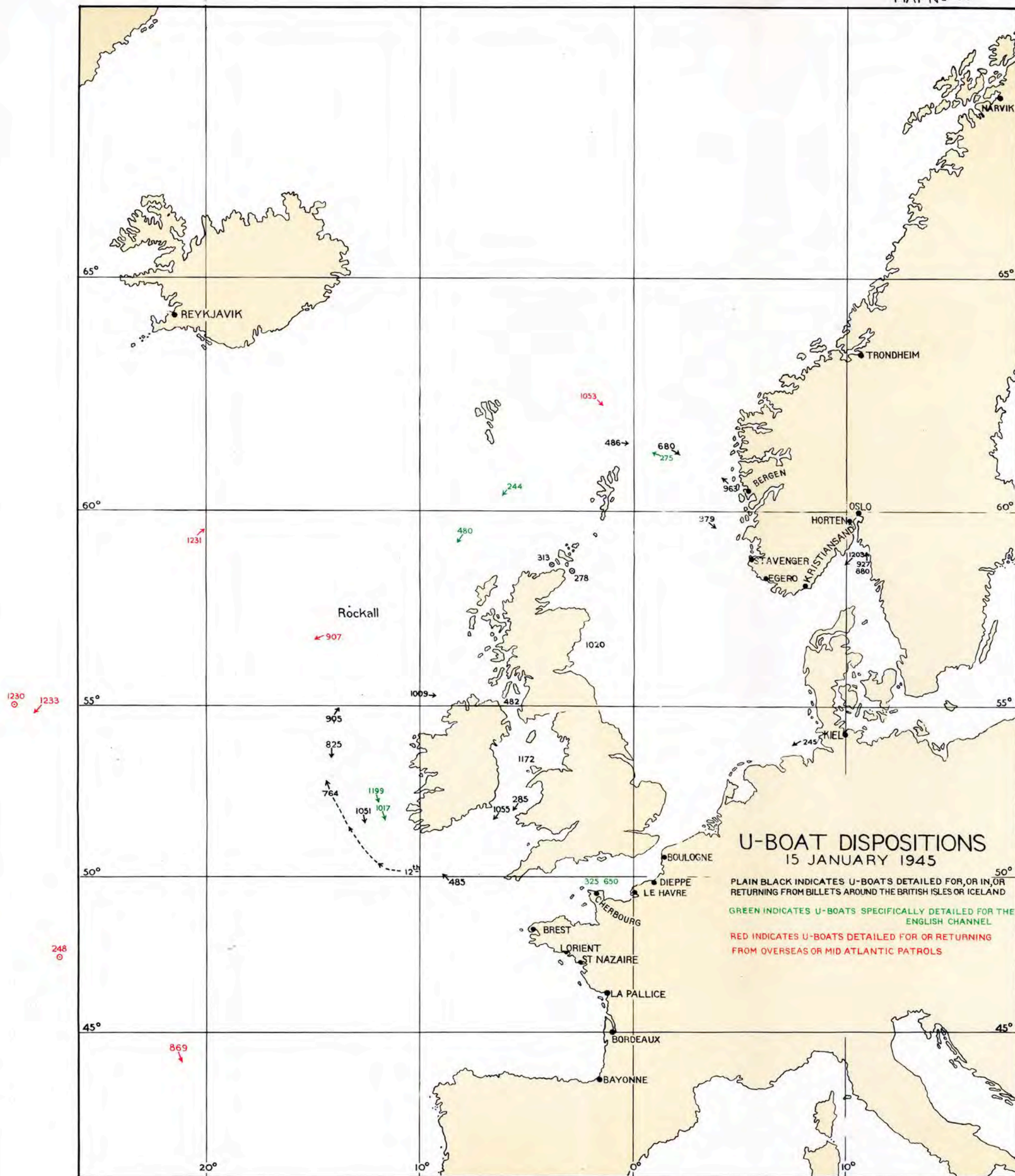
## LEGEND

RED (86) INDICATES U-BOATS MAKING FOR THE INDIAN OCEAN  
RED 534 ○ INDICATES U-BOATS ON PATROL

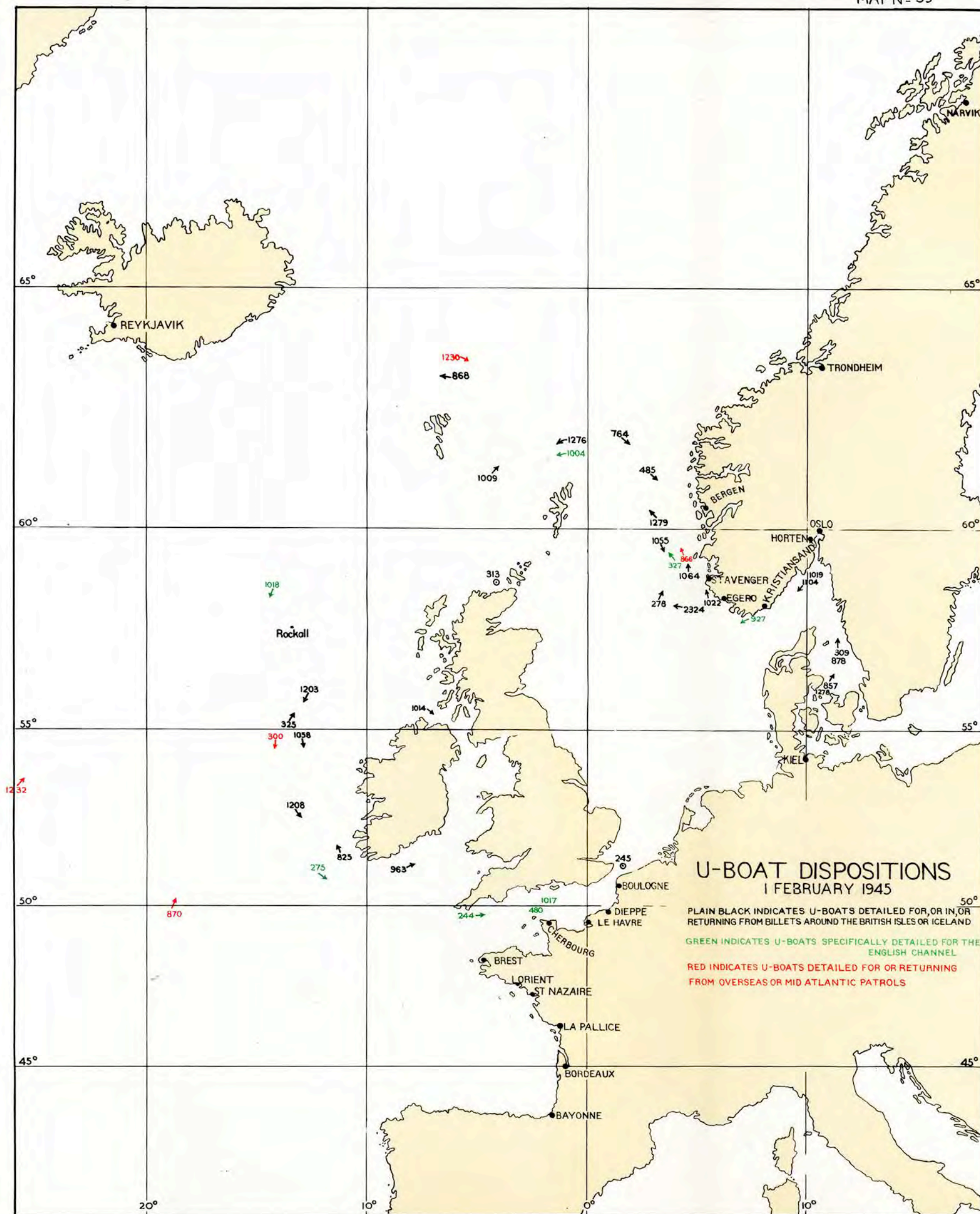
FOR U-BOATS IN THIS  
INSET SEE LARGE SCALE  
MAP FOR THIS DATE



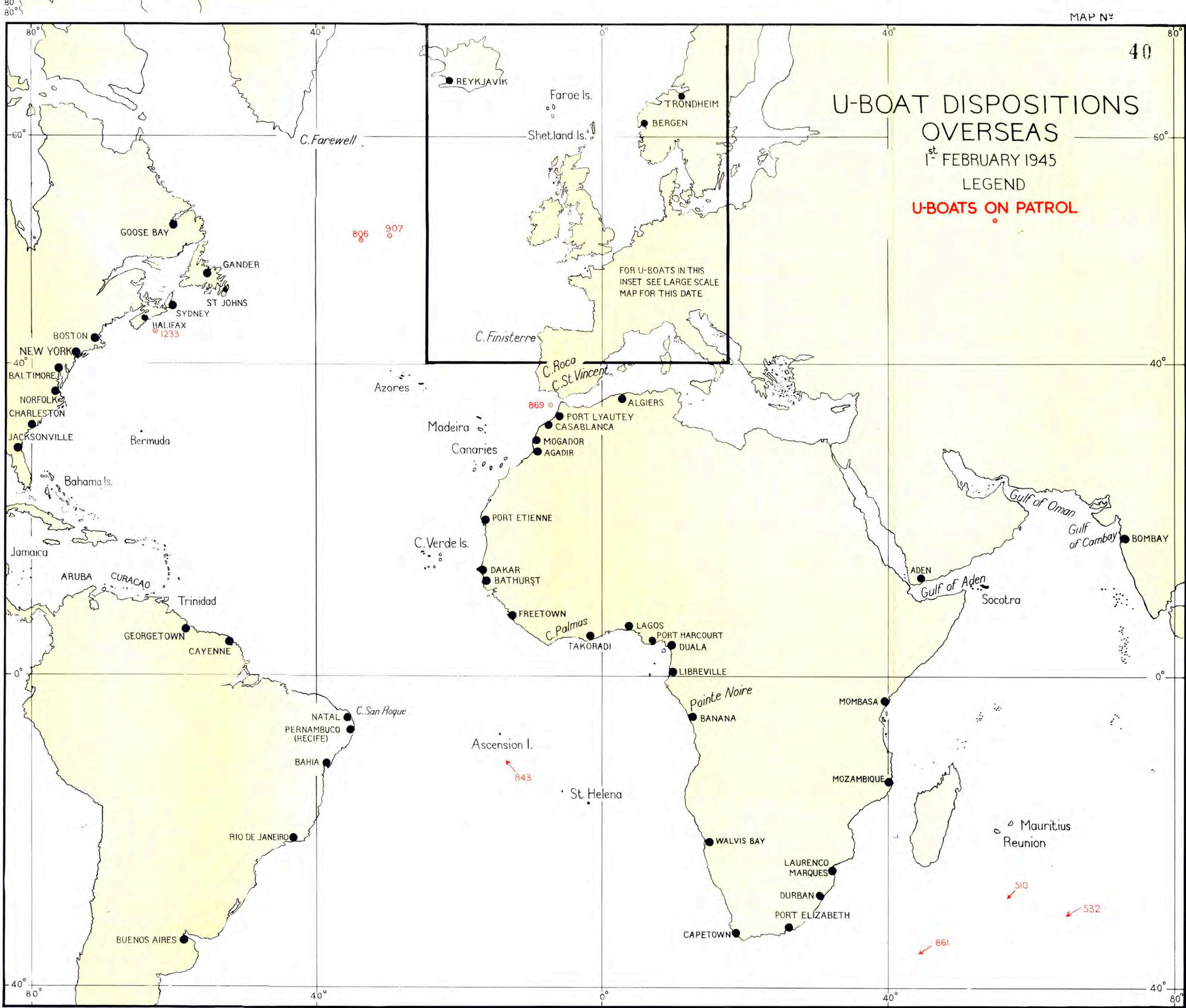




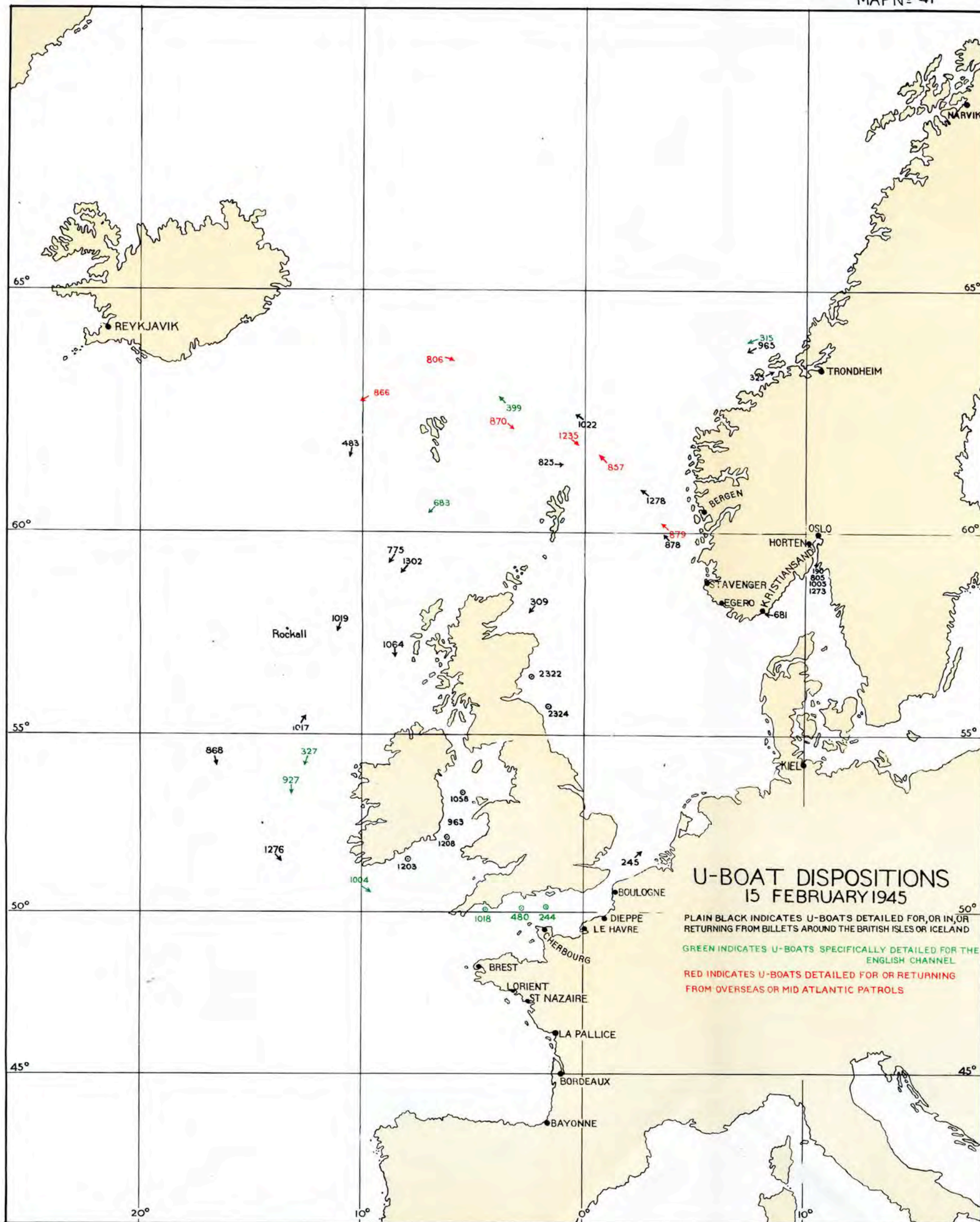




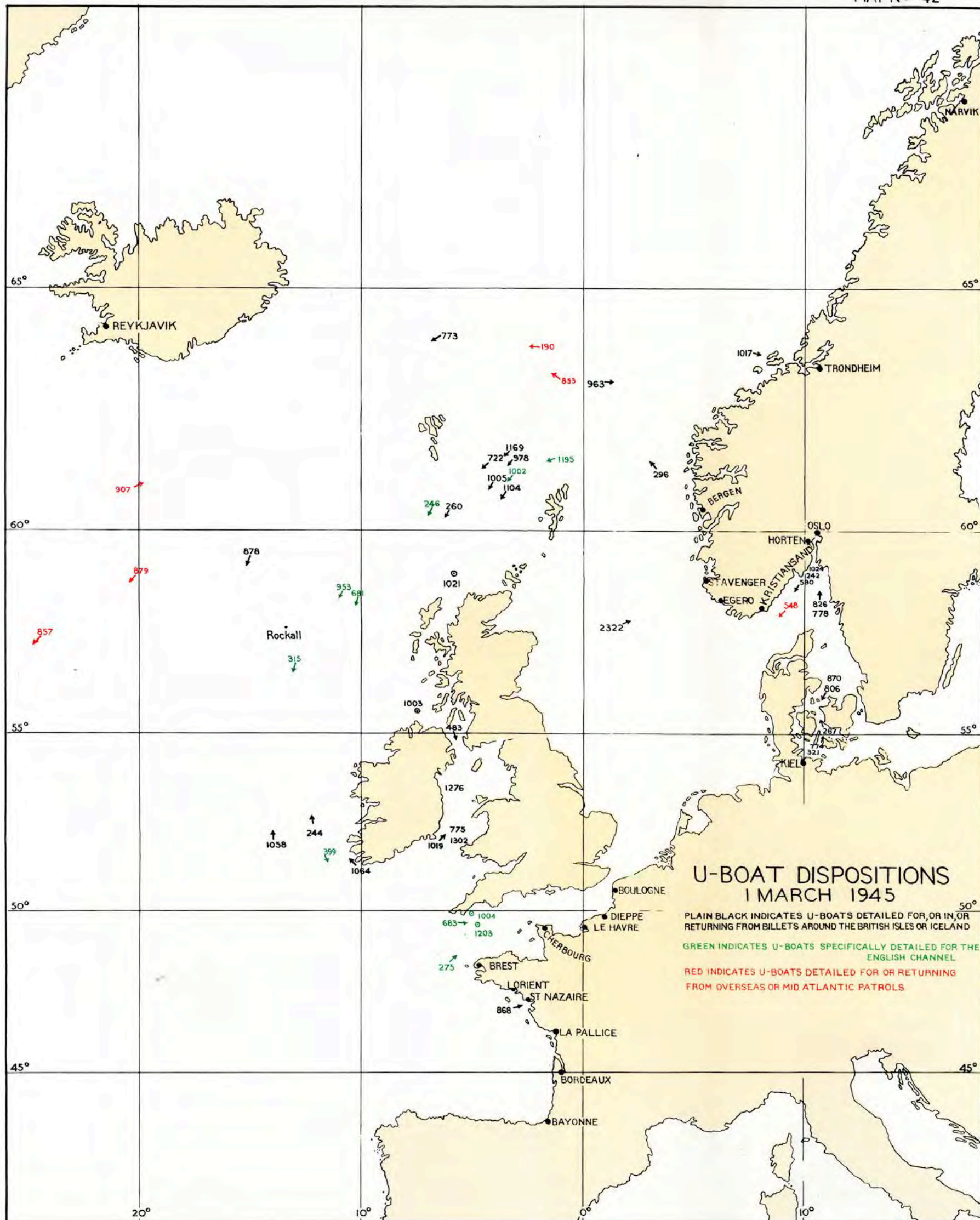






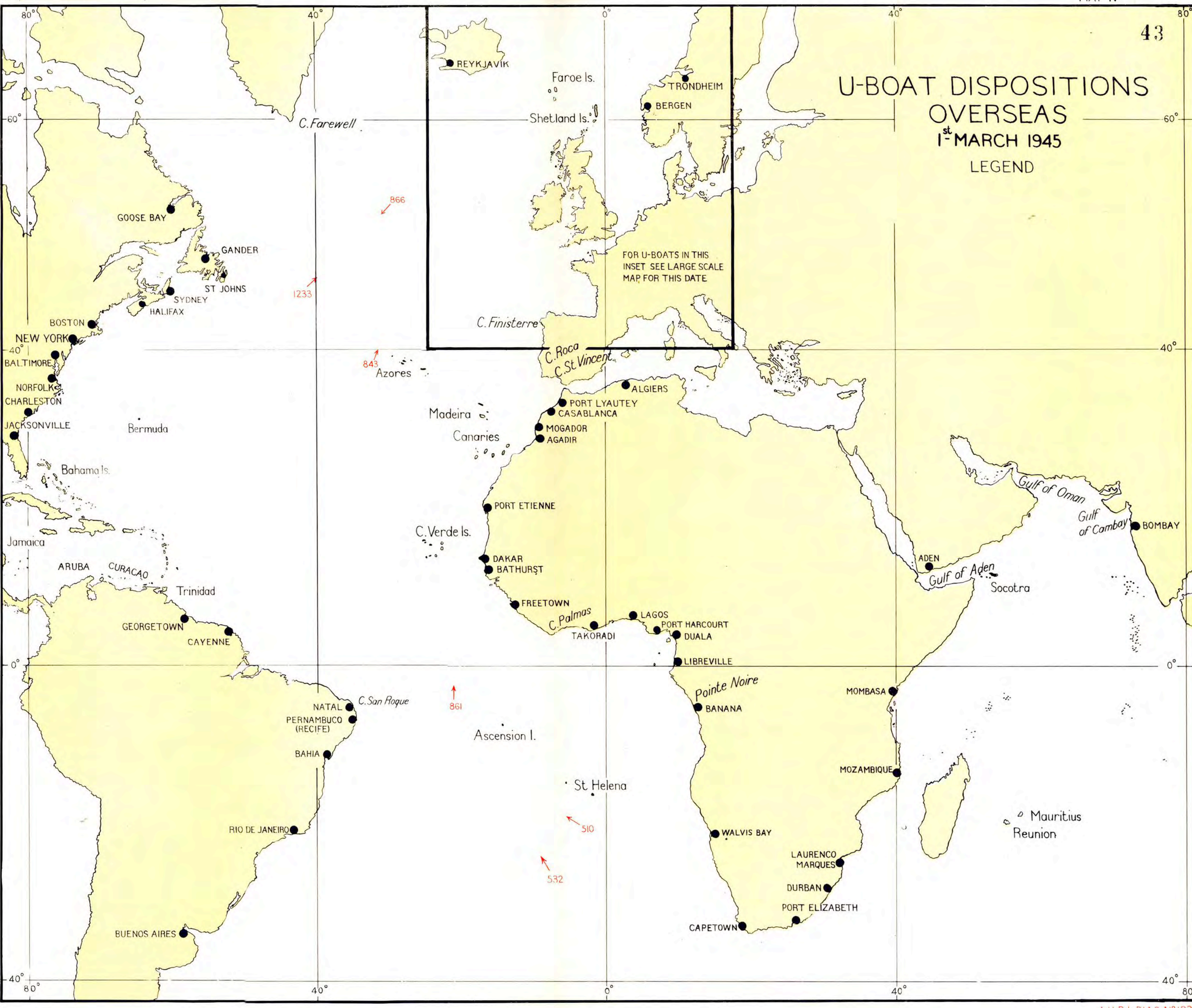




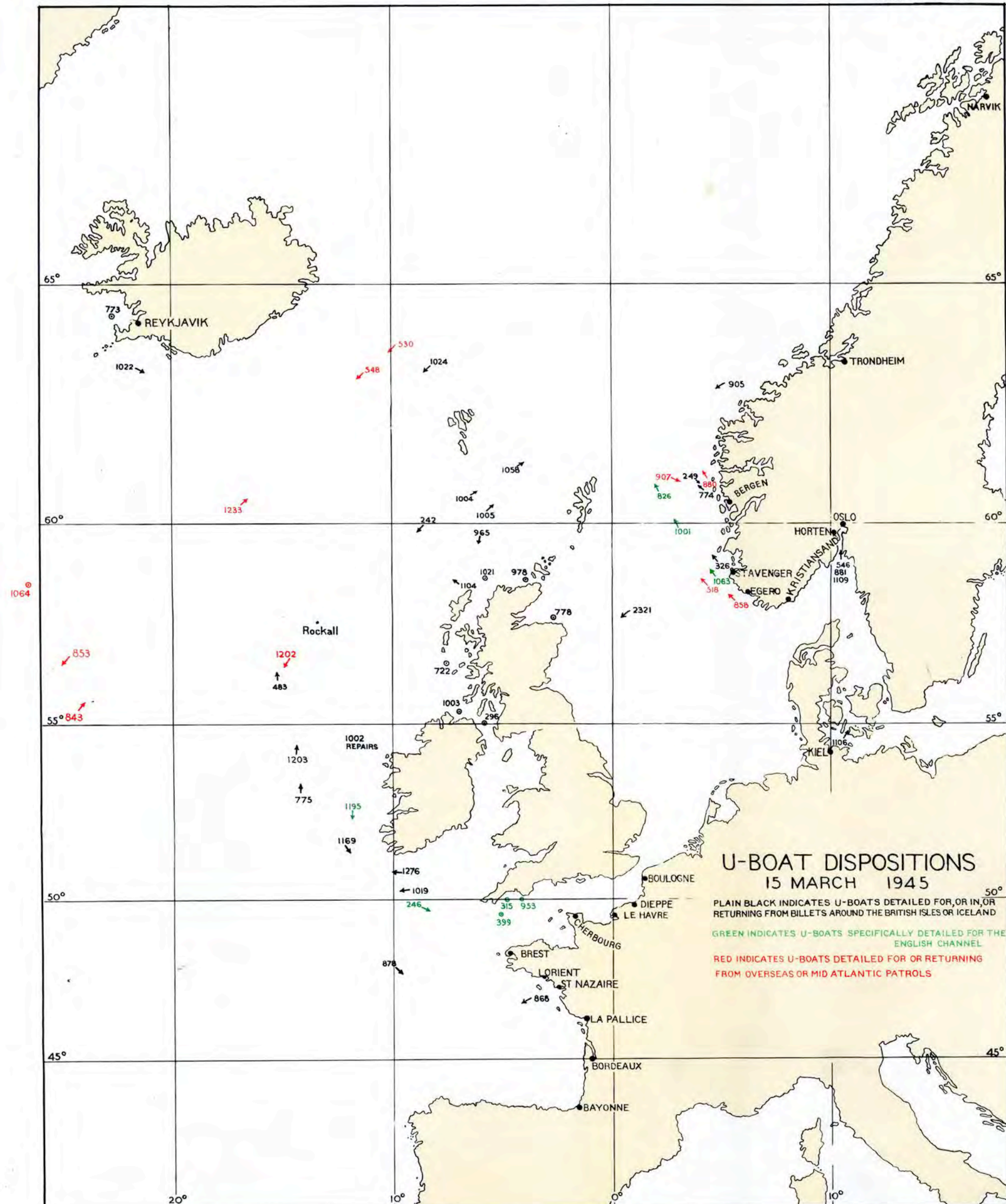




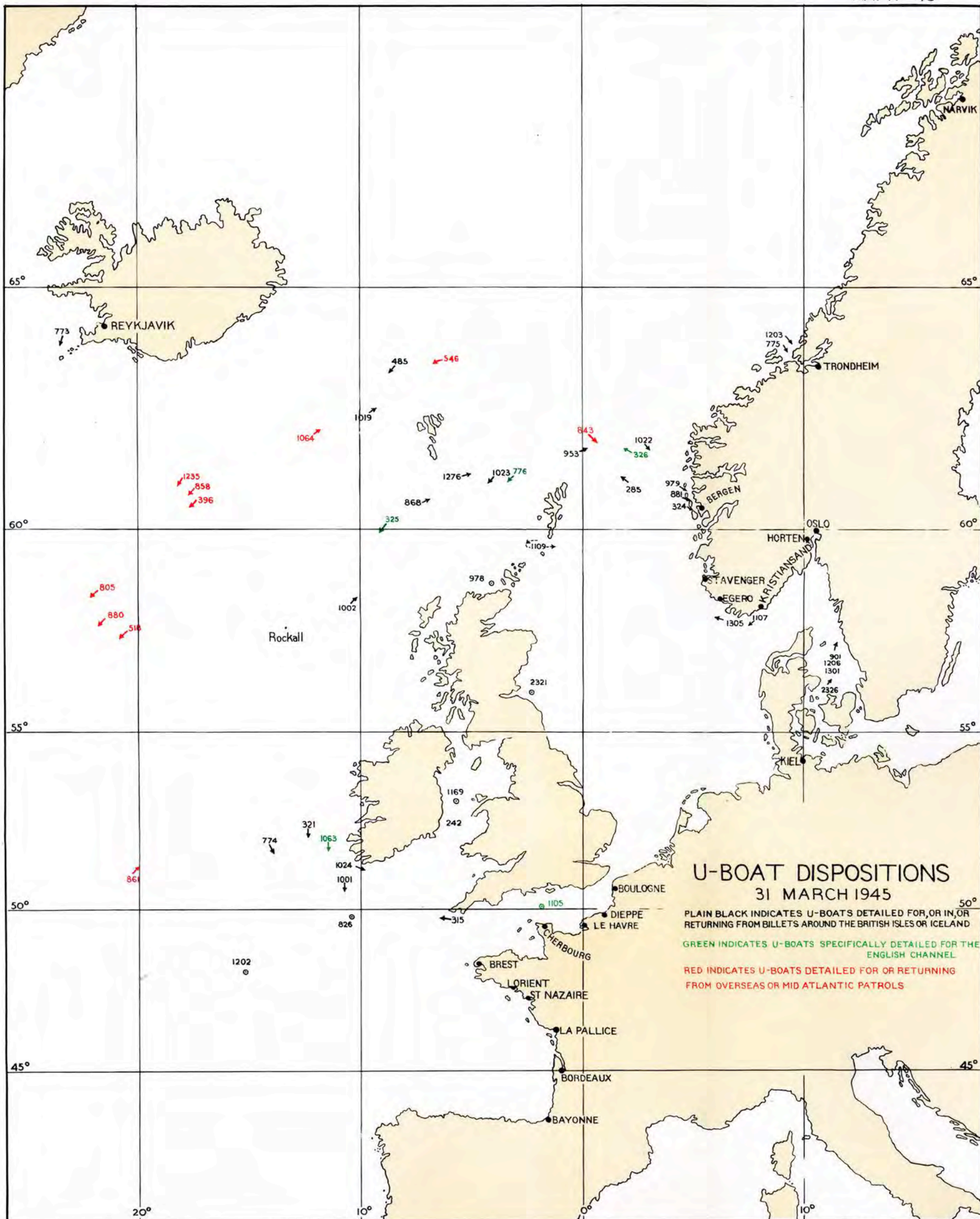
# U-BOAT DISPOSITIONS OVERSEAS 1<sup>st</sup> MARCH 1945 LEGEND











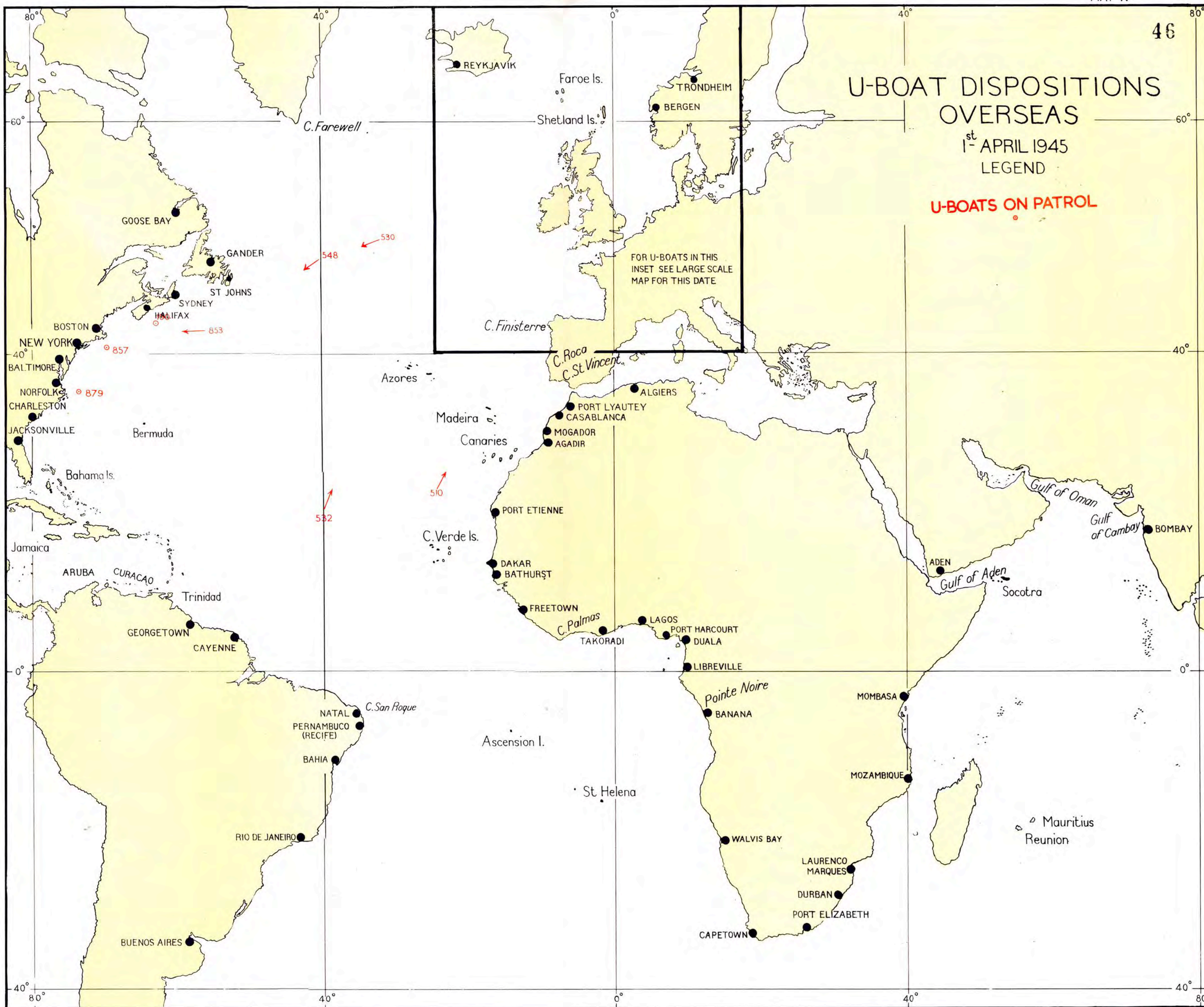


# U-BOAT DISPOSITIONS OVERSEAS

1<sup>st</sup> APRIL 1945

LEGEND

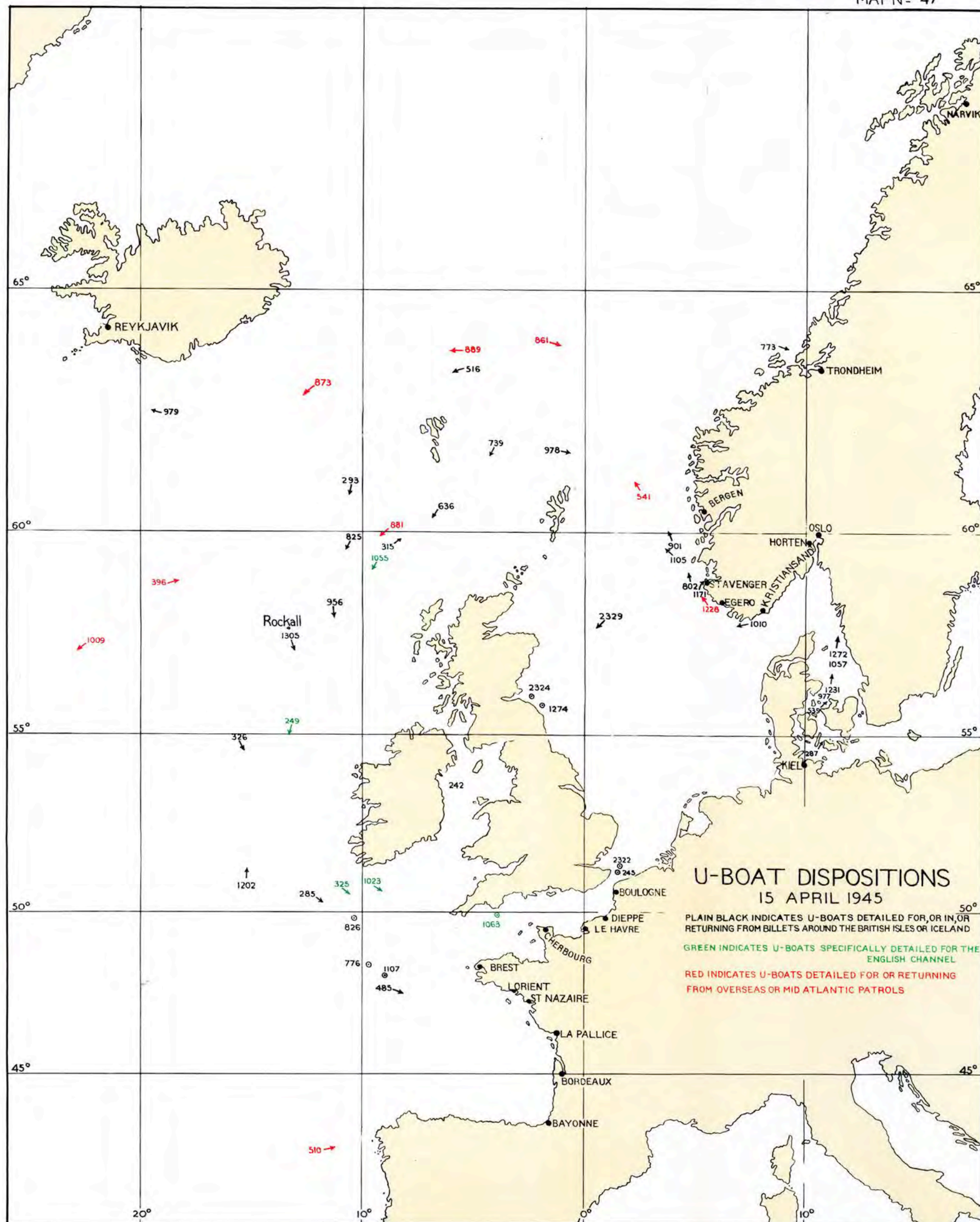
**U-BOATS ON PATROL**





546  
858  
805  
518  
1235  
880

GROUP  
Seawolf



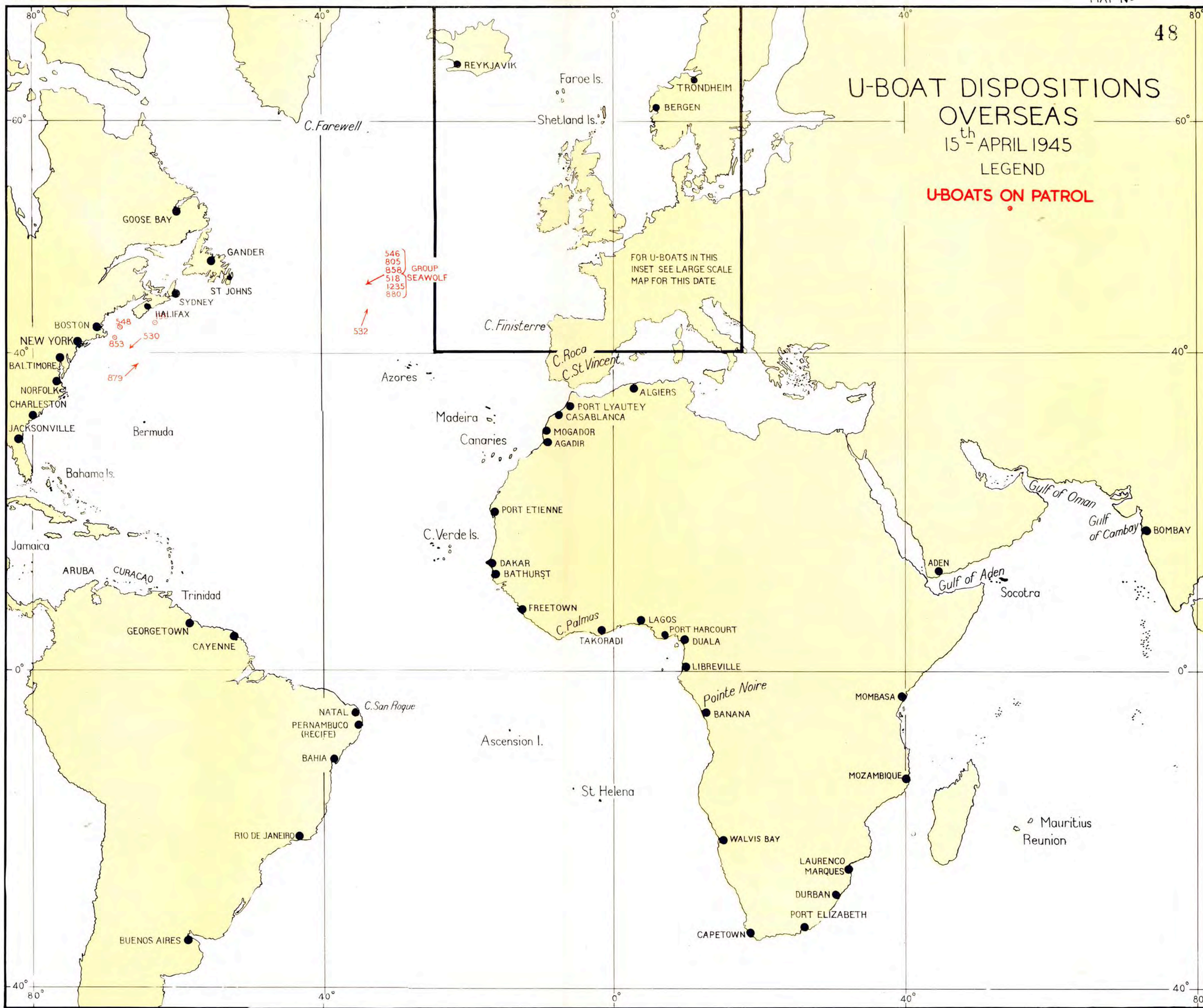


# U-BOAT DISPOSITIONS OVERSEAS

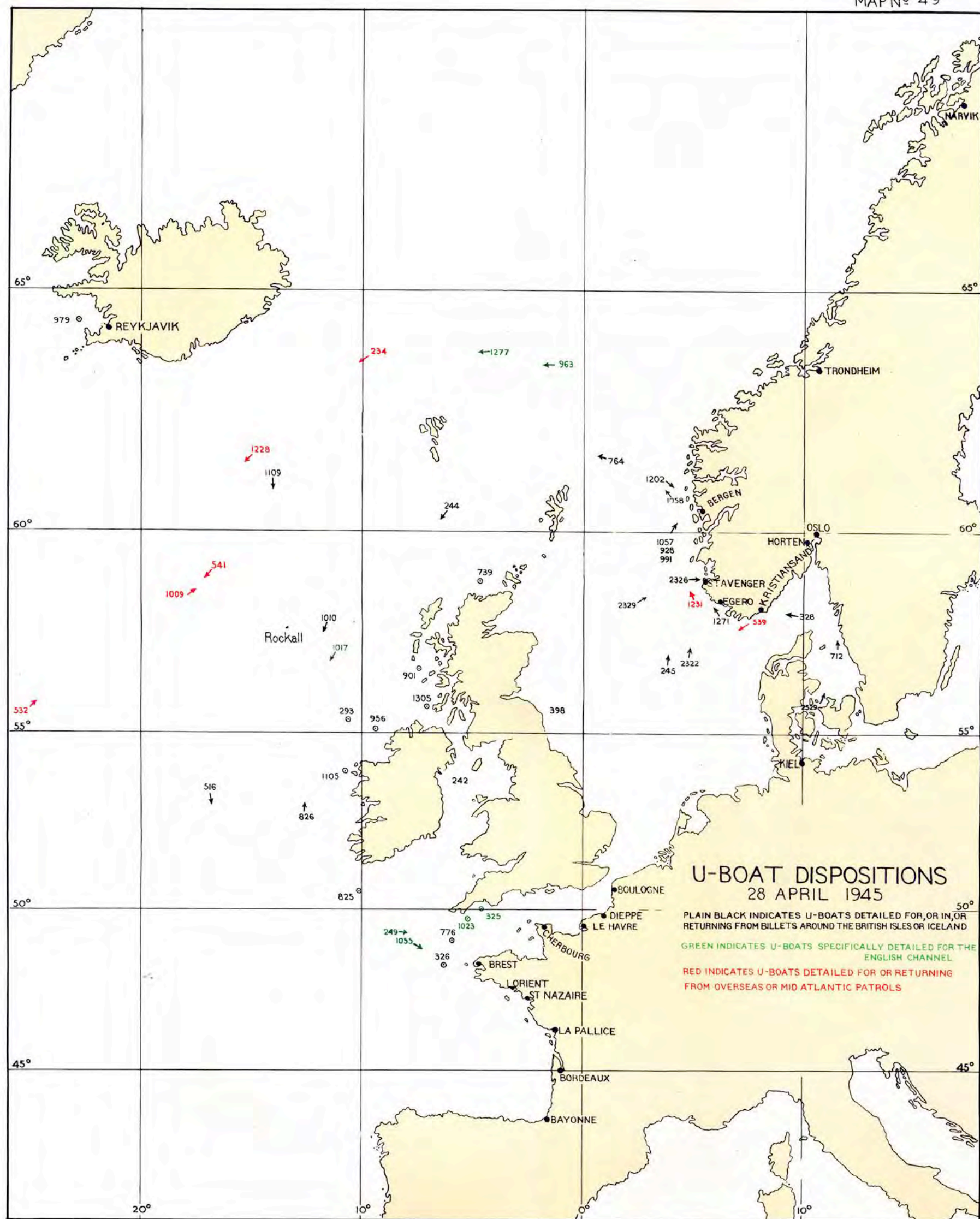
15<sup>th</sup> APRIL 1945

LEGEND

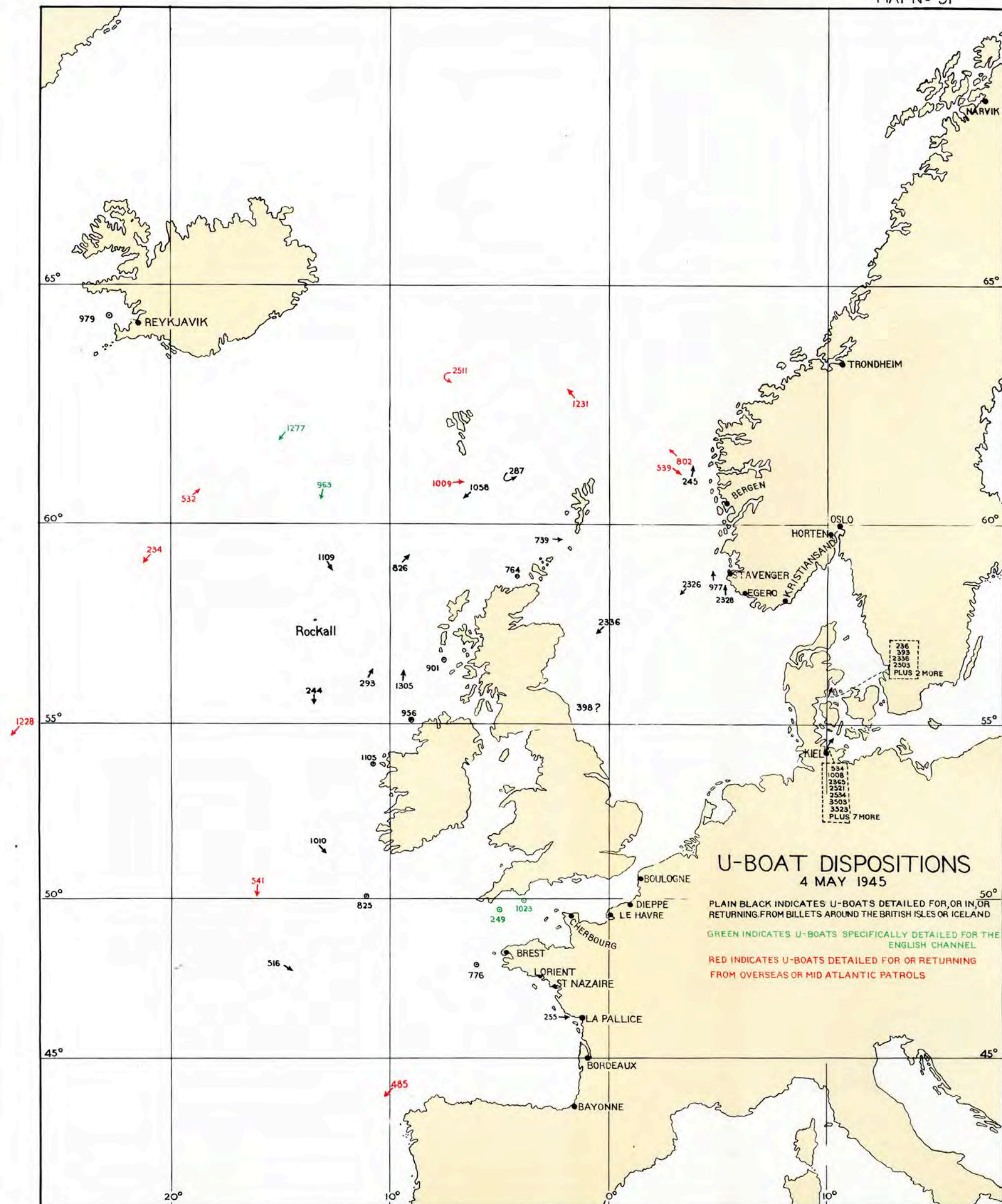
**U-BOATS ON PATROL**











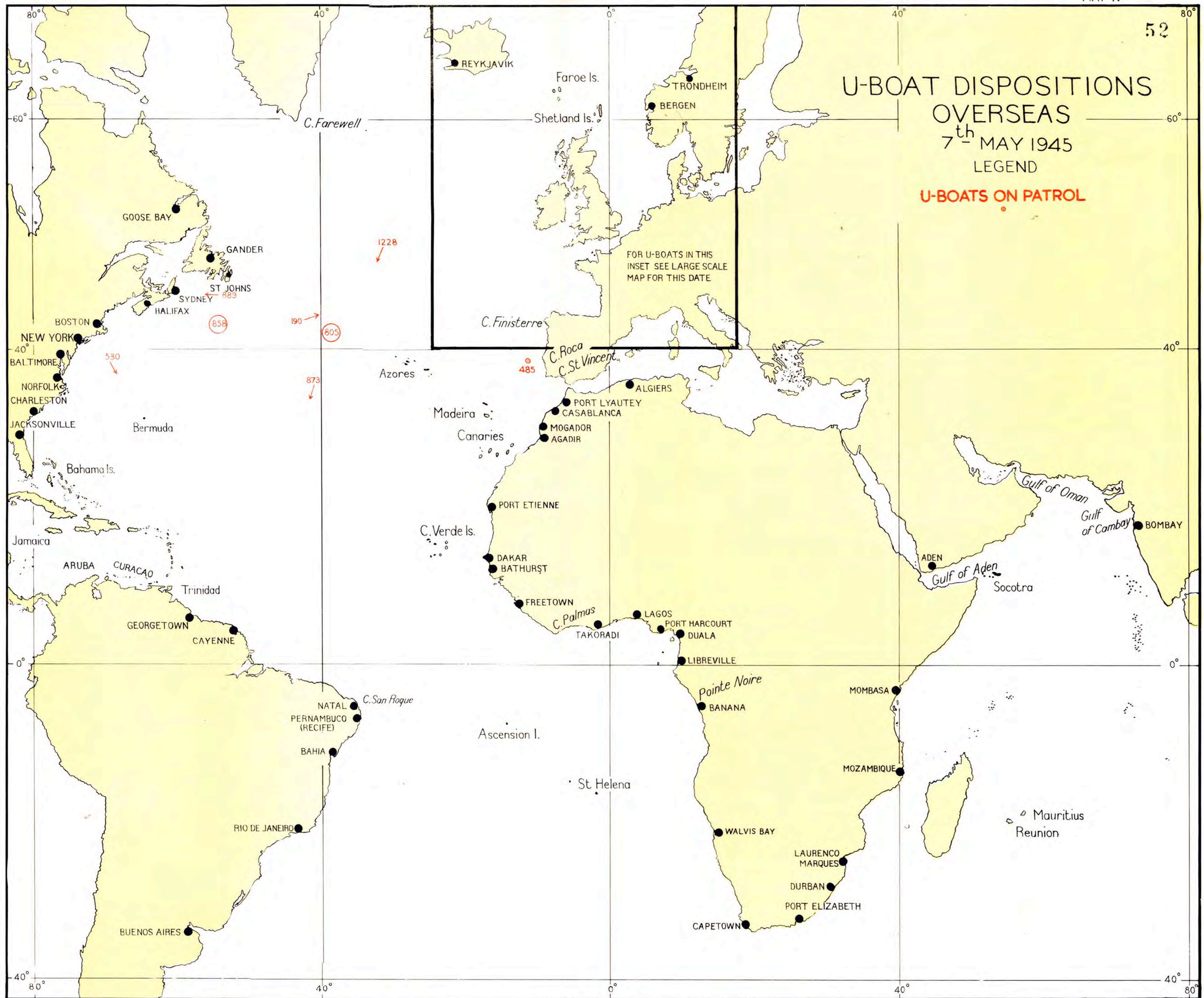


# U-BOAT DISPOSITIONS OVERSEAS

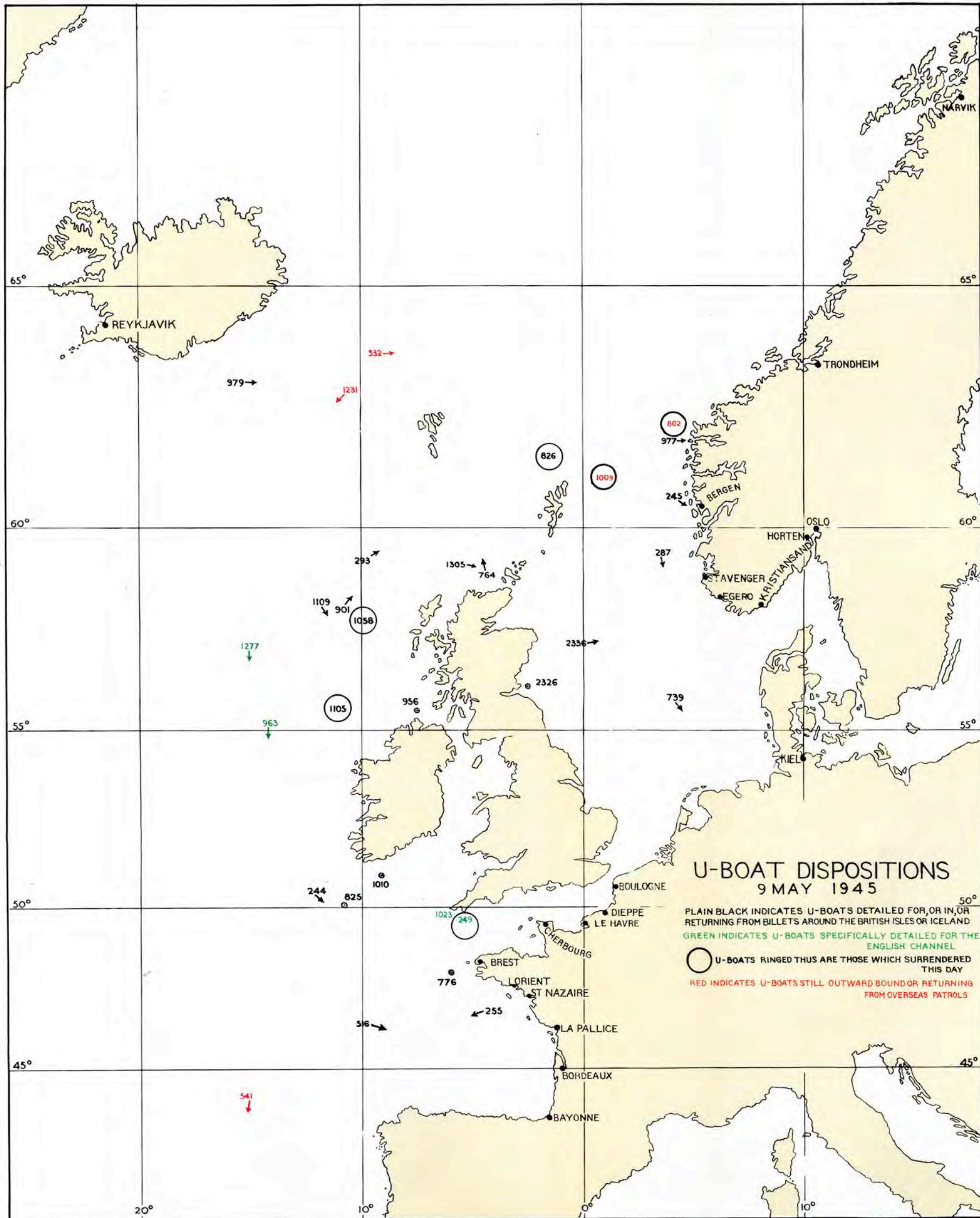
7<sup>th</sup> MAY 1945

LEGEND

**U-BOATS ON PATROL**









# U-BOAT DISPOSITIONS OVERSEAS 9<sup>th</sup> MAY 1945 LEGEND

U-BOATS WHO SURRENDERED THIS DAY

(889)

FOR U-BOATS IN THIS  
INSET SEE LARGE SCALE  
MAP FOR THIS DATE

