

RESTRICTED

1/235
SECRET

AIR HISTORICAL BRANCH

102.
TRANSLATION NO. VII/400/3

THE OPERATIONAL USE OF THE LUFTWAFFE

IN THE WAR AT SEA, 1939 - 43.

A study prepared by German Air Historical
Branch, 8th Abteilung, January, 1944.

RESTRICTED

TRANSLATED BY

AIR MINISTRY A.H.B.6

OCTOBER, 1950.

G. 279027/AR/12/50/50

RESTRICTED

SECRET
RESTRICTED

SECRET

I

The Situation in 1939

The following considerations were of primary importance when the Luftwaffe was being built up:

- 1) The elimination of the threat of air attack on the Reich by neighbouring countries, arising from the central position of the Reich,
- 2) The elimination in the shortest possible time of continental powers directly threatening the Reich on land, and barring access to the Atlantic in the west.

There had never been any doubt of the possibility and the necessity of using the bulk of the Luftwaffe in full force for strategic purposes on land, and later also at sea. The strategic idea was present in the leadership as well as in the technical development of the bombing forces, which were created for and completely suited to these purposes. It was therefore in accordance with the situation to concentrate on this "strategic air force" and to make only parts of it available for direct support of the Army and Navy. The weaker the Luftwaffe formations used for "cooperation" with other branches of the Service, were, the stronger would be the strategic force which could be built up and trained.

These views proved to be absolutely correct then as now, when considered from a long-term aspect.

Owing to these views the German Navy in the West could expect direct support only from a few coastal reconnaissance Gruppen and from aircraft carried on board. In addition, carrier units were being formed for the aircraft-carrier under construction.

These forces had to suffice for the direct support of naval operations, which were necessarily limited to the Baltic and North Sea for the time being, always considered from the view-point of first building up a strategic air force, the effect of which would be felt later on the entire conduct of the war and consequently on strategy at sea.

The exercises for the use of strategic air forces, planned and carried out by these formations before the war, indicated the long-term policy of the Luftwaffe Command regarding the strategic possibilities of air forces used at sea.

History will one day draw special attention to the fact that all these theories were expressed so early in Luftwaffe policy although officers and men were then fully occupied with its re-formation, which (after years of military stagnation on a large and small scale) proved exceptionally difficult as regards personnel and technical matters.

The resultant possibility of Luftwaffe operations in strength over sea areas had also affected maritime air forces since the beginning of the war. Mixed coastal reconnaissance Gruppen were reformed into Gruppen with one type of aircraft, and a bomber Gruppe set up in September 1939 was equipped with Do 17 Z landplanes.

Head of the maritime air forces was termed Luftwaffe General at Naval H.Q. Maritime Luftwaffe H.Q. ceased to exist after 1 April 1939. He was subordinate to C. in C. Navy in matters relating to command and to C. in C. Luftwaffe in all other matters.

/His

G. 279027/AR/12/50/50

SECRET
RESTRICTED
SECRET

~~SECRET~~

- 2 -

SECRET

His duties in 1939 were as follows:

- 1) To prepare the Maritime Air Forces for operational use in cooperation with the Luftwaffe General Staff and Naval Command.
- 2) To supervise serviceability, supply and training of Maritime Air Forces in cooperation with the Luftwaffe Q.M.G.

The Maritime Air Forces were divided into the formations of the "Commander of Maritime Air Forces, West" and "Commander of Maritime Air Forces, East" and were tactically subordinate to the Naval Commanders West and East.

Their primary task was to carry out coastal and sea reconnaissance, to support naval forces in mercantile warfare and, as far as possible, to carry out independent mercantile warfare.

Although the main reconnaissance aircraft, the Do 18 flying-boat, did not always appear equal to British aircraft then being used at sea against Germany, the capture of shipping by the Navy resulted from reconnaissance by the Maritime Air Forces during this period.

The coastal multi-purpose Staffeln (pl.) did not engage in any important actions during 1939.

On the other hand, bomber formations soon attacked the British fleet at Scapa Flow with good results considering their experience at that time. In addition, they were on the alert to repel enemy naval operations against the German coast.

However, the Luftwaffe and the Maritime Air Force did not yet have a decisive influence on the situation at sea. Neither did the strategic position (still as in 1914) provide the preliminary conditions, or overall strategy permit the use of strong forces for this purpose. Preparations were being made first to break open the necessary jumping-off areas to the gates of the world.

II

The Acquisition of the Strategic Position in the Atlantic

With the capture in 1940 of the strategic position from Spitzbergen to the Bay of Biscay, the preliminary conditions for inter-continental warfare by Germany began to take shape. For the first time strong Luftwaffe forces, i.e. not only Maritime Air Forces, were used at great distances over land and sea for decisive land operations.

Strategic cooperation between all three arms of the Wehrmacht introduced in this operation proved successful and led to a complete victory. Above all, it was obvious that the policy of Luftwaffe Command to make the Air Force an independent arm of the Services as regards command and employment and provided with all the necessary auxiliary branches had been correct.

The Luftwaffe compensated for the weaknesses of the German Navy, due to the Versailles Treaty, and by tactical and strategic air transport, operations made the holding of territorial gains possible, particularly in Norway.

The strategic situation at sea, which was characterised by British mastery of the North Atlantic as in 1914, was completely changed by this operation. The dreams of 1914 - 18 became reality in 1940 in a few days.

The strategic situation which had been produced by surprise could moreover be maintained in spite of an inferior Navy, as the Luftwaffe commanded coastal areas and rendered them practically invulnerable.

In the initial major operation by all three branches of the Services, the Luftwaffe was seen at the peak of its performance. There can be no doubt that without the Luftwaffe the attack on the Danish Islands and on Norway would not

~~SECRET~~

SECRET

have resulted in a lasting success.

The conquest of Denmark and Norway will therefore be entered in war history as a classic example of how combined strategy and in particular naval strategy were influenced by the strategic employment of the Luftwaffe.

This impression is further strengthened by the capture of the Channel and Atlantic coasts, achieved by the three branches of the Service acting together.

Considered from the aspect of world-wide operations in this war, the conquest of Holland, Belgium and France in itself can actually be regarded only as a means to an end. The establishment of ocean bases was the vital factor in the war against England, and later probably against America as well, for if Germany did not exploit these bases she could neither exist in this war nor be in a position to strike the enemy where he was weakest.

It was of primary importance that Army operations aimed at capturing these bases should be set in motion as quickly as possible. The collective strength of Luftwaffe operations greatly facilitated the achievement of these aims from the point of view of combined strategy.

Through the preceding operations in northern Europe and present operations in Western Europe, the Luftwaffe now thinks in terms of inter-continental strategy both in questions of command and in operation.

If it did not succeed in decisively blocking the British withdrawal across the Channel from Dunkirk, this was due to unfavourable weather conditions. In any case, the Luftwaffe inflicted such heavy losses on the enemy there, that there was no question of a renewed British strategic threat to the occupied western areas until the end of 1943.

The change in the strategic situation in a main British sea supply area was now regarded as a basis for future Wehrmacht operations against British supply shipping.

III

The commencement of strategic employment of the Luftwaffe against British supply shipping in 1940

From the end of the summer of 1940 combined strategy had to consider the probability of the situation in the east developing into a future war with Russia and assume that the United States would also enter the war at a given time.

A decisive blow had to be struck against Britain, Germany's main enemy, before this happened. First therefore it was necessary to eliminate England as a major factor in the war.

This resulted in the following methods of forcing England to recognise the situation created in Europe by the German Wehrmacht, which was an essential preliminary for later military operations on other fronts:-

- 1) to take the island fortress by storm,
- 2) to destroy centres of vital importance to the British people,
- 3) to paralyse gradually the supply of the island by cutting sea communications.

Immediate occupation of the island would doubtless have had a decisive effect, but in view of the strength of the British fleet and the imperturbability of the R.A.F., an invasion would in all probability have been met by a resistance which would have resulted in a strategic disadvantage for Germany with incalculable consequences.

/Thus

~~SECRET~~

SECRET

REF ID: A66010
SECRET

- 4 -

SECRET

Thus it was decided to use the Luftwaffe in mass operations against England to break down first of all the economic and military strength of England at its root.

At the same time the Navy, now in a more favourable position, would pursue intensified operations against shipping bringing supplies to the island.

The Luftwaffe participated very effectively in this plan of campaign, first of all by dropping magnetic mines.

The 9th Fliegerdivision (later IX Fliegerkorps), which was formed from small units on 1 February 1940 and whose formations were constantly increasing, first became operational by using elements of the Maritime Air Forces (K. Fl. Gr. 106) and was reinforced by bomber formations (K.G. 4, elements of K.G. 30 and 40 and K.Fl.Gr. 100 and 126) in 1940.

There can be no doubt that this first aerial mine-laying operation not only seriously handicapped the enemy's supply shipping by endangering river estuaries and entrances to ports, but also forced him to use a large number of men and ships for mine-sweeping. And so personnel and material available for productive supply shipping was reduced by a not inconsiderable percentage. Only the Luftwaffe was capable of mining distant ports on the north-west coast. During the period from 1 April 1940 to 31 December 1943, 693 vessels totalling 1,408,947 tons were sunk, probably sunk or damaged.

The Luftwaffe continued to pursue the strategic air campaign at sea by aerial mine-laying operations.

The aerial mine-laying campaign was conducted with increasing success in the years that followed and also helped not only to facilitate the task of the Navy itself, but to exercise an important influence in the economic war on enemy military and economic strength. The aerial mine can no longer be ignored in Luftwaffe operations over sea areas. Much attention will continue to be devoted to the constant technical and tactical improvement of this factor in the air campaign.

During these years the Luftwaffe could also point to successes in operations against enemy naval forces. However, decisive successes could not yet be achieved owing to lack of forces, the large number of other tasks necessarily resulting from combined strategy, as well as the fact that the aerial torpedo arm was not yet completely ready for operational use. Nevertheless, the Luftwaffe shared in the losses inflicted on the enemy by making effective attacks on transport vessels and warships. Not until 1944 will remote-controlled bombs bring about a change of tactics in this type of operation.

In addition to IX Fliegerkorps, which carried out anti-shipping operations as well as mine-laying, Fliegerfuehrer Atlantik and Fliegerfuehrer North, later North-East, North-West and Lofoten as well, appeared in 1941 in Luftflotte 3 and Luftflotte 5 Command Areas respectively as Luftwaffe Operations Staffs for marine warfare.

The Fuehrer der Luftwaffe West had already been renamed Fuehrer der Seeluftstreitkraefte on 27 August 1940. From March 1941 he was responsible for reconnaissance over the North Sea between 52° and 58° north. Reconnaissance north of this parallel was carried out by Fliegerfuehrer Nord. Fliegerfuehrer Atlantik was responsible for reconnaissance in the Channel and west of the Scilly Islands - Quessant.

The continued conversion of Maritime Air Forces into bomber formations was also to be seen in the gradual re-equipment of Coastal Reconnaissance Staffeln with Ju 88's. The strategic air force was reinforced by them.

On 7 April 1942 the Commander of Maritime Air Forces was subordinated to

"/Luftflotte 3

G. 279027/AR/12/50/50

SECRET
SECRET

SECRET

- 5 -
SECRET

Luftflotte 3. The 506 Coastal Reconnaissance Gruppe, which was still under his command, was re-equipped as an aerial torpedo formation, trained and re-named III/K.G. 26.

On 17 July 1942 the Commander of Maritime Air Forces was transferred to Chantilly and participated in the bombing attacks from 27 July to 6 August on the British Isles as commander of three Bomber Gruppen of IX Fliegerkorps. He was also in charge of organising defence for the event of a British landing on the Atlantic coast. When this happened at Dieppe on 18 August 1942, he successfully commanded operations by six bomber Gruppen of IX Fliegerkorps.

When these formations were subordinated to IX Fliegerkorps on 7 September 1942 the post of Commander of Maritime Air Forces ceased to exist.

From 25 April 1940 the Luftwaffe General at Naval H.Q. was responsible for sending up reinforcements and supplies to Coastal Reconnaissance formations and shipborne Staffeln equipped with seaplanes.

Thus the years 1940 - 1943 saw the gradual absorption of the Maritime Air Forces into the Luftwaffe and also the concentration of all formations suitable for sea as well as for land operations under C.-in-C. Luftwaffe. The Luftwaffe Supreme Command was therefore in complete control of air operations at sea. Close co-operation with the Navy was assured.

It can justly be said that this adjustment was in complete accord with combined strategy. The entire development of the combined strategy practised by the Navy and Luftwaffe in the western part of the European theatre of operations led inevitably to this solution. This enabled the air forces, under a unified command, and with an allocation of personnel and material according to its total requirements, to exploit even more the potentialities of air warfare, to give operational support to the Navy and to lay the foundations of independent air warfare at sea.

The Luftwaffe was preparing itself technically and in its training for this task, which would probably increase still further later in the war.

As most of the Luftwaffe was required for the Eastern Campaign in 1941, Luftwaffe forces in the West found it extremely difficult to carry out tasks allotted to them, such as sea reconnaissance, anti-shipping and aerial mine-laying operations and attacks on land targets in England. Numerical weakness was an important factor in this instance. Training for operations over sea areas had to be further intensified, particularly in the case of formations which arrived temporarily from the Eastern front. Owing to losses and employment for other tasks, formations were not always able to acquire a full knowledge of air warfare at sea. Thus it is all the more noteworthy that in spite of this the numerically weak air forces in the West scored successes.

For the above reasons, however, the development of combined strategy still prevented the Luftwaffe from concentrating on cutting off British supplies with newly supplemented strength and decisive technical improvements.

However, like Germany, the enemy had also extended the development of his air forces in the direction of operations over the sea, but in addition he had recognised the great importance of air forces in operations over the sea for offensive and, in particular, for defensive purposes and had reinforced and trained his formations accordingly.

Thus for a long time both sides accepted the fundamental idea that the air force should be the deciding influence if not the dominating factor in sea warfare also.

Sea warfare without concentrated air warfare over the sea is no longer conceivable. Swift movement by strong forces over large areas, the annihilating effect of bombs, torpedoes and other modern weapons, long-range

/reconnaissance

G. 279027/AR/12/50/50

SECRET
SECRET

SECRET

- 6 -

SECRET

reconnaissance and fighter cover are the means by which the Luftwaffe is changing the whole aspect of sea warfare.

The air forces of every country have recognised this line of development. One must assume that they will pursue these lines to their ultimate conclusion, as Germany herself has done.

IV

Characteristic Luftwaffe operations in direct support of operations by German surface forces, 1942/43

1.

Cruiser operations in the Atlantic

The first submarine put into Lorient as early as 7 July 1940, but more than six months passed before the first German battleship formation could be transferred to Brest. Consequently, cruiser operations against British supply shipping were first carried out from North Sea bases during 1940.

On 27 October 1940 the "Admiral Scheer" left Brunsbüttel and succeeded in breaking through the Shetland Firth from Stavanger into the open Atlantic to attack shipping on the Halifax convoy route, unobserved by the enemy. The cruiser could not locate the expected convoy without air reconnaissance. When on 5 November the weather at last permitted ship-borne aircraft to operate, the convoy was observed from an altitude of 600m, 30 to 40 sea miles away. The "Admiral Scheer" sank 11 vessels of this convoy totalling 117,400 tons.

The damaged battleships "Scharnhorst" and "Gneisenau" were not ready to put to sea until the end of December 1940 and eventually left Kiel on 22 January 1941.

In the first attempt to break through south of Iceland on 28 January, the formation encountered British patrols. The breakthrough was successfully carried out through the Denmark Strait (between Iceland and Greenland) on 4 February, the C.-in-C. Fleet using air reconnaissance reports on the situation at Scapa Flow and acting accordingly. Thus, for the first time in the history of naval warfare, German battleships had succeeded in breaking into the Atlantic.

For weeks on end the two battleships carried out mercantile warfare in the Atlantic without overseas bases and maintained only by depot ships, making three raids on the Canada - Britain route, and after sinking 22 vessels totalling 116,000 tons, put into Brest unmolested on 22 March 1941.

The appearance of the two battleships in the Atlantic forced the British to use strong Home Fleet forces piecemeal for convoy escort duties, which relieved strategic operations in the Atlantic to the advantage of the Germans.

The ship-borne aircraft proved extremely valuable for close reconnaissance and courier operations, but could not operate at long range.

There is no doubt that if long-range reconnaissance aircraft had been used, the successes achieved would have been even greater. In future cruiser operations will be supported by long-range reconnaissance and bomber formations.

The appearance of the two battleships in the Atlantic also forced the British to make heavy air attacks on them in their bases.

2.

The Bismarck Episode

The successes achieved by the "Scharnhorst" and the "Gneisenau" led to the

/decision

SECRET

~~SECRET~~

- 7 -

SECRET

decision taken by the Naval Staff on 2 April 1941, to put the recently-completed battleship "Bismarck" and the heavy cruiser "Prinz Eugen" into commission at once, so that British naval units employed on convoy escort duties could be opposed by German ships having commensurate fire-power.

In the absence of long-range reconnaissance by the Luftwaffe, such operations had to be carried out by U-boats and disguised motor vessels.

The British Admiralty was informed by agents on 20 May of the break-out of the German ships through the Great Belt. This was confirmed by reconnaissance aircraft flying over the Skagerrak on 21 May. The battle formation steamed out of Grimstadt Fjord at midnight on 21 May. At daybreak it was joined by 40 twin and single-engine fighters of Luftflotte 5 which provided aircover to the limit of their range. Furthermore during the night of 21/22 May British aircraft using flares searched the area at Bergen where the German ships had been anchored.

Four British battleships and six cruisers at anchor in Scapa Flow were sighted by Fliegerfuehrer Nord, during reconnaissance on the afternoon of 22 May. The C.-in-C., Fleet, believed that he could assume from this report that the main body of the Home Fleet had certainly not yet put to sea and that thus it could not reach the southern tip of Greenland ahead of the German force. Marinegruppe Nord (Naval Group Command, North) still believed on the evening of 22 May that the enemy was so far unaware of the movement of the German ships. Actually, as a result of British air reconnaissance of 21 May, the cruisers "Norfolk" and "Suffolk" were able to make contact with the German force at 19.22 hours before nightfall on 23 May and to maintain it throughout the night. The battleships "Hood" and "Prince of Wales" had been approaching by the shortest route south of Iceland since early morning of 22 May and at 05.45 hours on 24 May they closed in on the German formation in the Strait of Denmark. In the ensuing engagement at a range of between 20 and 30 km the "Hood" was sunk by hits in the after magazine and the "Prince of Wales" was shaken off. However, the "Bismarck" was hit in the oil tanks and left a wide trail of oil in its wake, thus making it easier for the enemy to maintain contact.

As he did not know the whereabouts of the battleship "King George V" and probably hoped to be able to recommence his assigned task after putting in to St. Nazaire for repairs, C.-in-C., Fleet decided against returning to Norway through the Strait of Denmark where the Luftwaffe could have provided cover for the "Bismarck" halfway between Iceland and Norway. 1)

On the night of 24/25 May the aircraft carrier "Victorious" and the Flagship of the Home Fleet, the "King George V", sailing from Scapa Flow had been brought up far enough under the guidance of the cruisers shadowing the German ships, for an attack to be launched by carrier-borne aircraft against the "Bismarck". The attack was made in two waves at midnight but was without noteworthy result. According to British sources, contact was lost with the German force after this attack, though the German C.-in-C., Fleet, was quite unaware that this was the case.

The British units passed to the west of the German warship. Under the mistaken impression that the enemy knew its position anyhow through the ships by which it assumed it was being shadowed, the "Bismarck" betrayed itself by a W/T exchange which lasted for an hour and a half and enabled the enemy to pinpoint its position. The "Bismarck" proceeded all day on 25 May without interference and hopes of saving the ship rose accordingly.

A decisive event occurred on the morning of 26 May: a Catalina flying-boat of Coastal Command 600 sea miles from its base, that is to say, at the utmost limit of its range, sighted the "Bismarck" at 10.30 hours on its dash for the Bay of Biscay. The report from the flying-boat summoned the aircraft-

/carrier

1) According to British accounts, the "King George V" was about 300 sea miles south-west of the "Bismarck" and not, as the C.-in-C. supposed, north-east of him in the Straits of Denmark.

SECRET

G. 279027/AR/12/50/50

~~SECRET~~

carrier "Ark Royal" from Gibraltar whose aircraft in turn maintained contact with the "Bismarck" until the cruiser "Sheffield" was able to take over. As the slower warships of the British Home Fleet lay astern and the only battle cruiser of the Gibraltar Squadron, the "Renown", was no match for the German battleships, the Commander of the British Fleet launched an attack by torpedo-carrying aircraft of the "Ark Royal". In a second attack at 21.15 hours they scored two hits. The steering gear of the "Bismarck" was damaged so that the ship could only go round in circles.

Luftflottenkommando 3 received word at 16.00 hours on 24 May from Group Command West that the "Bismarck" would dock at St. Nazaire. The Commander of Luftflotte 3 accordingly reinforced Fliegerfuehrer Atlantic (comprising one long-range reconnaissance Staffel, one bomber Gruppe and two coastal command Gruppen) on 26 May by two bomber Gruppen 1) and on 27 May by three further bomber Gruppen. 2) In addition, balloon barrage units and a battery of anti-aircraft artillery were sent to St. Nazaire.

Fliegerfuehrer Atlantic then initiated extensive sea reconnaissance operations to pin down the British naval forces that were cutting of the escape route of the "Bismarck". On 26 May, a FW 200 of I/K.G.40 on a twelve hour flight sighted a British battleship at 15.45 hours at 19° 15' W and 50° 30' N - that is, almost at the limit of the aircraft's range. This battleship was taken to be either the "Rodney" or the "Nelson" and was escorted by four destroyers. The formation was steering a course of 170°.

Thanks to the preparatory measures that had been taken, on 27 May a force of 3FW 200s, 8 Ju 88s and 10 He 115s was able to take off on armed reconnaissance beginning at 03.07 hours, while it was still dark. At 9.45 hours two battleships were sighted at 17° 5' W and 48° 20' N. From the appearance of their funnels they were taken to be the "Renown" and the "Repulse". They were accompanied by two destroyers and the aircraft-carrier "Ark Royal", in other words the Gibraltar Squadron, steering a course of 40°. The reconnaissance aircraft immediately notified U-boats of the position of the British units by D/F signals. At 10.43 hours W/T messages giving exact information were discontinued.

At about the same time 5 JU 88s of the 606th Coastal Command Group observed the "Bismarck" being engaged by 2 heavy and 2 light units at 15° 45' W and 47° 25' N. The aircraft joined battle but a dive-bombing attack on a cruiser was frustrated by the strong defensive action of Gladiator aircraft.

Its steering gear out of action, the "Bismarck" was within easy target range and was badly hit by the combined fire of the "King George V", the "Rodney" and the heavy cruisers "Dorsetshire" and "Norfolk". When its guns had been silenced, the "Dorsetshire" moved in to make a short range attack with torpedoes. The defenceless "Bismarck" went down at 11.01 hours, its flag still flying.

In view of information obtained during reconnaissance operations the previous day, a further force of

17 He 111s of I/KG 28 and
12 He 111s of KG 100

based at Nantes and Vannes, was sent out at 05.48 hours (first light in Lorient 05.38 hours) to attack the British naval units.

I/KG 28 reached the battle area about 11.00 hours, probably shortly after the "Bismarck" capsized, and sighted an aircraft carrier, a battleship and a
/destroyer

- 1) I/KG 28 (Nantes) and KG 100 (Vannes).
- 2) I/KG 77, II/KG 54, III/KG 1 (Lannion).

SECRET

- 9 -

SECRET

destroyer in line ahead. The attack on the aircraft carrier did not succeed owing to strong defence. KG 100 missed the British fleet altogether.

At 15.37 hours further bomber formations were sent out to follow the enemy ships:

13 Ju 88s of I/KG 77,
5 Ju 88s of II/KG 1 and
16 Ju 88s of II/KG 54.

An aircraft of 3(F)/123 (long distance recce) sighted at 16.10 hours the homeward-bound Gibraltar fleet at $17^{\circ} 10' W$ and $48^{\circ} 10' N$ on a course of 210° .

The bomber formations were unable to find the enemy ships owing to bad visibility.

The returning Home Fleet was not sighted by reconnaissance aircraft on this day until dusk. 8 aircraft of the 406th Coastal Command Group sighted:

20.40 hours, $13^{\circ} 30' W$ and $50^{\circ} 10' N$, 4 large ships and 8 destroyers,
course 30°
21.40 " $12^{\circ} 15' W$ and $51^{\circ} 25' N$, 1 destroyer, course 50° .
22.30 " $12^{\circ} 35' W$ and $50^{\circ} 50' N$, 1 battleship and 2 cruisers,
course no longer determinable.

Two British battleships, the "King George V" and a ship of the "Nelson" class escorted by seven destroyers on a course of 60° , were sighted on the morning of 28 May by long-range reconnaissance aircraft at $10^{\circ} 10' W$ and $54^{\circ} 10' N$, 150 km west of the Irish coast. In an attack made by the bomber formations, which had been sent out in pursuit of the enemy formations since the early morning, a British cruiser and a destroyer were heavily damaged. 1) The destroyer was observed to be going down at 10.20 hours 100 km from the Irish coast. It was the destroyer "Mashona", the loss of which was admitted by the British. The search for survivors of the "Bismarck" on 27 and 28 May was fruitless.

The reasons for the unhappy outcome of the "Bismarck" episode were: the more favourable strategic position of the British Navy in the Atlantic to the west of its home bases, and hence its ability to deploy aircraft carriers at short notice, secondly the prompt transmission of agent's reports, and lastly, the luck attending British air reconnaissance.

The reports of British air reconnaissance on 21 May and on the night of 21/22 May were largely responsible for the correct deployment of the British naval units. This applies particularly to the contact that was maintained on the course round the north of Iceland and to the fact that the British battleships set a straight course from Scapa Flow to the west in order to intercept the German battle formation. What decided the fate of the "Bismarck", however, was being sighted by a Catalina flying-boat on 26 May and the resultant summoning of the aircraft carrier "Ark Royal" from Gibraltar.

It was not British naval power which sank the "Bismarck" but the reconnaissance and torpedo-carrying aircraft of the Royal Air Force.

Working in close co-operation with the command of the German Navy, the Luftwaffe did everything it could by using the forces available, which were tactically and technically suited, to ensure the safe passage of the "Bismarck".

/Survey

1) A total of 63 bombers took part in the operations on 28 May 1942.

SECRET

G.279027/AR/12/50/35

SECRET

~~SECRET~~
~~SECRET~~
~~SECRET~~

Survey of operational use of the Luftwaffe
against enemy supply shipping, 1941/43

At the turn of 1940 - 41, preparations for the defensive battle against the Russian threat in the east began to take shape. This necessarily led to a transfer of air power eastwards.

The favourable strategic position on the Atlantic and the plans for Luftwaffe operations in strength against British supply could not be used.

There are three large sea areas for future air operations

- 1) the central Atlantic as area of main effort,
- 2) the Northern waters as supply for the Soviet Union,
- 3) the Mediterranean as the main battle area for the German and Italian Armed Forces in this sea area itself and in Africa.

These sea areas, particularly the central Atlantic, would develop into the main battle areas of combined strategy following the entry of the U.S.A. into the war, which was expected sooner or later. The enemy realised this and made every effort to secure air superiority over the Atlantic and in coastal areas. The effect produced by his air forces on German submarines and the Luftwaffe was of decisive importance to combined strategy on both sides.

1

In the Atlantic

In March 1941 the Fliegerfuehrer Atlantik was appointed by order of the Fuehrer and made subordinate to Luftflotte 3.

His task was to co-operate closely with the C.-in-C. Submarine Fleet in operations against enemy supply shipping in the Atlantic, that is on the convoy routes from the Mediterranean to Britain and on the eastern part of the U.S. - Britain line, as well as on the eastern, southern and western coasts of Britain.

At first successes were surprisingly great, particularly in the Atlantic, as the attacks on enemy shipping encountered only slight opposition, whether from A.A. or aircraft. 1)

1) During the period from 15 March - 31 October 1941 the Luftwaffe reported 56 convoys and shadowed many of them for several days at a time, thus enabling submarines to close in. Through close co-operation between submarines and air reconnaissance 74 merchant vessels totalling 390,000 tons, 1 aircraft-carrier and 1 destroyer were sunk. Between 13 March - 31 December 1941 bombing attacks by aircraft under the command of Fliegerfuehrer Atlantic produced the following results:

Sunk:	161 vessels totalling 903,000 GRT
Probably sunk:	7 " " 31,000 GRT
Damaged	113 " " 590,000 GRT

During this period the following warships were sunk or damaged:

<u>Sunk</u>	<u>Damaged</u>
2 destroyers	1 battleship
1 mine-layer	3 destroyers
1 submarine	1 A.A. cruiser
1 M.T.B.	1 light cruiser
	1 anti-submarine trawler

/However

~~SECRET~~
~~SECRET~~
~~SECRET~~
SECRET

~~SECRET~~

- 11 -

SECRET

However, in six months this situation had already undergone a radical change.

Owing to strong enemy defensive armament, low-level lateral attacks by Condors which until then were the usual and only possible method of attack owing to the equipment of this aircraft, had to be discontinued, first against convoys and then also against single vessels.

However, the Condors still had a useful task in carrying out reconnaissance for C.-in-C. Submarine Fleet so that submarines could be directed towards convoys.

Attacks on convoys escorted by destroyers and to an increasing extent by aircraft were now presenting even submarines with a difficult task.

The submarines transferred their point of main effort beyond the range of the Condors to attack the important convoys from America and operated exclusively in American waters from the late autumn of 1941.

Thus in the middle of December 1941 co-operation with C.-in-C. Submarine Fleet in the joint campaign against enemy shipping in the eastern Atlantic came practically to a standstill. Some of the Condor Staffeln were used in other theatres of operations. Owing to their limited range, the aircraft still at the disposal of the Atlantikfuehrer (K.Fl.Gr.106) could be used only for operations against convoys around the British Isles.

For this reason IX Fliegerkorps also took over anti-shipping operations in the waters off the eastern coast of England.

During the period from July 1940 to 31 December 1943 bombers of the IX Fliegerkorps scored the following successes:

Sunk:	42 vessels totalling	167,000 GRT
Probably sunk:	38 vessels totalling	171,000 GRT
Damaged	118 vessels totalling	439,000 GRT
Total:	198 vessels totalling	777,000 GRT

Fliegerfuehrer Atlantic confined himself to the area off the English south and west coasts. There were no extensive successes as for reasons of combined strategy torpedo aircraft were used on other fronts and the available bombers had to be concentrated for attacks on the British mainland.

In May 1942 C.-in-C. Submarine Fleet again requested the assistance of Fliegfuehrer Atlantic, but at first only for protection against the rapidly increasing threats to U-boats moving into and out of the Bay of Biscay by enemy anti-submarine craft. During the whole of 1942 and part of 1943 this was Fliegerfuehrer Atlantic's main task of co-operation with the C.-in-C. Submarine Fleet

The twin-engined fighter formations set up by the Fliegerfuehrer Atlantic succeeded in driving British anti-submarinescraft out of the Bay of Biscay into the Atlantic.

For the purpose of bringing blockade-runners in or out, cooperation in reconnaissance over the Atlantic was transferred from C.-in-C. Submarine Fleet to Marinegruppe West.

During reconnaissance operations carried out between 1 March and 22 April 1943 by a daily average of 6 aircraft over a sea area from 38° to 49° north and 10° to 20° west approximately 4,000,000 tons of merchant shipping and warships totalling about 300,000 tons were observed, the convoys moving within the effective range of German long-range bombers for at least four to five days.

/During

G. 279027/AR/12/50/35

~~SECRET~~

SECRET

~~SECRET~~
~~RESTRICTED~~

- 12 -

SECRET

During these 6 weeks about one seventh of the enemy's serviceable merchant shipping lay within reach of long-range bombers, but as there were no formations available for a concentrated attack owing to the predominance of reconnaissance operations for Marinegruppe West, only a few vessels were sunk by aircraft on armed reconnaissance. Moreover, high-altitude bombing operations could not be carried out owing to low cloud.

Since the summer of 1942 the Fliegerfuehrer Atlantic had urged that the Fw 200 be equipped with bomb-sight C 7 D and that crews be trained in dropping bombs. The results obtained in the spring of 1943 after the re-equipment of III/K.G. 40 show that extensive successes are possible in the greater Atlantic area if the necessary forces, suitably equipped and with properly trained crews are available.

At first it was estimated that it would take 10 - 12 months to re-equip Condors with radio bomb control sets (Kehlgeraet). Today the Fw 200 is fitted in a considerably shorter time.

The more dangerous mercantile warfare became for Great Britain, the greater were the efforts to organise defensive measures, particularly in the air.

The enemy provided his convoys from Britain to Gibraltar with air cover in addition to moving them further and further out of range of the Fw 200. New location equipment and methods made U-boat operations more difficult.

The importance the enemy attached to keeping the Bay of Biscay under observation can be estimated by the fact that in one month during the spring of 1943, 2,070 aircraft were picked up by radar.

2.

Northern Waters

During 1942 rather more than half of the Soviet Union's supplies from overseas passed through Northern waters.

A total of 2,300,000 tons were imported as follows:

through White Sea ports (Murmansk, Archangel):	1,200,000 tons
through Persian ports (Karachi, Bushir, Bender-Schrapur)	600,000 tons
through Far-Eastern and northern ports (Vladivostok, Nikolajevsk, Lena, Jenissei)	500,000 tons

Supplies brought into the White Sea during 1942 fell into the following categories:

210,000 tons of war material	= 18%
1,600,000 tons of industrial raw materials	= 49%
240,000 tons of food	= 20%
160,000 tons of mineral oil	= 13%

The war material comprised:

- 1,880 aircraft,
- 2,350 tanks,
- 8,300 trucks,
- 6,400 other vehicles,
- 2,250 field guns.

Cooperation between Naval H.Q.s and Luftflotte 5 in Norway became extremely cordial. Moreover, the Luftwaffe had an extremely large share in the successful operations against convoys to Russia during the summer of 1942.

~~SECRET~~
~~RESTRICTED~~
~~SECRET~~

~~SECRET~~

- 13

SECRET

- a) Between 25 and 30 May 1942 311 sorties were flown in cloudless weather against convoy "PQ 16", which consisted of 30 transports, 2 heavy cruisers and 8 destroyers.

16 merchant vessels totalling 111,000 tons were sunk.

- b) Between 9 and 10 July 1942 the Luftwaffe flew 212 bombing and torpedo sorties against convoy "PQ 17", which comprised 30 merchant vessels and was protected by a double cordon of escorts (1 cruiser and a large number of destroyers), inflicting the following losses:

24 merchant vessels totalling 156,000 GRT,
1 cruiser of 9,000 tons

- c) Convoy "PQ 18", consisting of 40 transports and escorted by an aircraft-carrier and a large number of destroyers, sustained the following losses between 13 and 19 October 1942 in 337 sorties carried out with cloud at 300 to 1,000 metres:

24 merchant vessels totalling 170,000 GRT,
1 destroyer of 1,200 tons,
2 escort vessels of 2,000 tons

The aircraft-carrier was badly damaged.

Thus Thus in 860 sorties, of which 243 were made by torpedo-carrying aircraft, the Luftwaffe inflicted the following losses on the three convoys:

437,000 GRT
1 cruiser,
1 destroyer and
2 escort vessels sunk.

In addition 42 torpedo and 49 bomb hits were scored, badly damaging a large number of other merchant vessels.

A comparison of successes obtained by torpedo-carrying and bomber aircraft is very revealing.

For each ship sunk the following sorties were made:

- a) in the case of the "PQ 16" convoy under the best weather conditions for dive-bombing attacks:

9.8 torpedo sorties as compared with
23.6 dive-bomber sorties.

- b) in the case of the "PQ 17" convoy, similarly in the best weather conditions:

7 torpedo sorties as compared with
9.2 dive bomber sorties.

- c) in the case of the "PQ 18" convoy in unfavourable weather conditions for dive-bomber attacks:

7.3 torpedo sorties as compared with
24.3 dive-bomber sorties.

Of 340 aerial torpedoes launched 84 hit the target, i.e. 25%
32 torpedoes were duds, i.e. 9%

/3.

~~SECRET~~

~~SECRET~~

~~SECRET~~

- 14 -

SECRET

3.

Mediterranean

Under cover of his Air Force and for some time practically without restriction, the enemy was able to bring over war material produced in the U.S.A. to North Africa as well as to Europe. This fact seriously affected the German campaign in the Mediterranean.

Whilst the enemy moved a monthly average of

640,000 tons of material and
160,000 tons of petroleum

Total: 800,000

up to the North African front, the monthly rate of discharge in German-controlled ports in Tunisia amounted to -

about 65,000 tons during February 1942 and
about 50,000 tons during March 1942.

For this reason and because German sea transport in the Mediterranean could not be adequately protected, the German bridgehead in North Africa and also Sicily and southern Italy could not be held. In this instance enemy air superiority had a decisive effect. Large warships, especially battleships and aircraft-carriers, could not be sunk.

The situation improved in the autumn of 1942 when K.G. 26 was brought in. Between May 1942 and October 1943 K.G. 26 made 2139 sorties and launched 1653 aerial torpedoes, of which 342 (21.1%) hit the target.

In 18 months the following vessels were sunk by aerial torpedoes:

77 merchant vessels totalling about 552,000 GRT
1 cruiser,
4 destroyers and
5 escort vessels

The following were damaged:

165 merchant vessels totalling about 1,100,000 GRT
1 aircraft-carrier,
12 cruisers and
18 destroyers.

August, September and October 1943 were the most successful months. In six major (234 sorties) and 9 minor (82 sorties) attacks

64 merchant vessels totalling 423,000 GRT and
10 warships

were sunk or damaged. In the course of these operations 55 aircraft and 31 aircrews were lost. In all K.G. 26 lost 141 aircrews in 18 months.

In August 1943 1140 bomber sorties were carried out:

33,000 GRT were sunk and
506,000 GRT damaged.

Compared with this the following losses were caused by only 65 aerial torpedo sorties:

88,000 GRT sunk and
106,000 GRT damaged.

~~SECRET~~

SECRET

SECRET

The year 1943 shows a marked change in the air war at sea as the situation again permitted an intensified employment of well-trained formations at full strength. Successes achieved in air operations during this year are mounting again. It is expected that the situation will develop favourably in future.

On the other hand the enemy has brought about a radical change in the situation by reinforcing his air force, so that successes will certainly not be achieved easily.

However, in face of the continual reinforcement of the Luftwaffe, the opportunities which the enemy has used to achieve successes will no longer exist.

Note

According to K.G. 26 reports 999/44 of 4 March 1944 and 1238 of 18 March 1944 the following were sunk or damaged between 1 March 1943 and 29 February 1944.

167 merchant vessels totalling 1,106,000 tons and
27 warships including
5 cruisers,
17 destroyers
5 escorts

Results of Fliegerfuehrer Atlantic's anti-shipping operations in 1942 and 1943:

1942

Merchant Shipping:

Sunk:	13 vessels totalling	43,000 GRT
Probably sunk:	6 " "	17,000 "
Damaged:	19 " "	92,000 "

Warships:

<u>Sunk:</u>	<u>Damaged</u>
1 auxiliary cruiser	2 destroyers
1 destroyer	2 trawlers
2 M.T.B.s	
3 trawlers	

1943

Merchant Shipping:

Sunk:	13 vessels totalling	98,000 GRT
Probably sunk:	7 " "	34,000 GRT
Damaged:	16 " "	106,000 GRT

Warships:

<u>Sunk</u>	<u>Damaged</u>
2 destroyers	2 light cruisers
	2 destroyers
	1 mine-layer

/Part 2

~~SECRET~~

- 16 -

SECRET

Part 2

I.

Survey of supply to Great Britain in 1943

The importance of convoys to the whole economy of the British Isles as well as to Anglo-American strategy can be ascertained from the following figures:

In 1938 British importation amounted to 71 million GRT. This figure fell to 35 million GRT in 1942, a rate which the enemy had to maintain to guarantee a minimum standard of existence.

These 35 million tons comprised:

10 million GRT of raw materials,
9 " " " food,
9 " " " mineral oils,
and 7 " " " ready made goods.

In addition there were 1,800,000 GRT for military supplies required for the British war effort. A monthly average of 5 million GRT was used on the North Atlantic route from the U.S.A. to Britain alone. Of this an average per month of more than two million GRT crossed the Atlantic, while the remainder was in port at either end of the route.

From July to October 1943 three convoy routes were apparent in the Atlantic, these being from the U.S. to Gibraltar, from Britain to Gibraltar and from the U.S. to Britain and back.

Troop convoys usually consisted of 5 to 20 large passenger vessels or large freighters suitable for use as troop-transports.

Supply convoys generally comprised 20 to 25 freighters. Both types of convoy, and tankers in particular, are extremely important objectives and their destruction has a lasting effect on the enemy war effort.

The strength of the escorting force varies widely and is provided according to the value and importance of the convoy. A temporary shortage of warships has also probably enforced restricted employment of escort vessels. For example, a convoy of 14 troop transports was escorted by:

1 auxiliary cruiser
1 aircraft depot ship
aircraft-
3 auxiliary/carriers
2 destroyers and
6 small escort vessels.

The composition of escorts for freighter convoys varies a great deal, ranging between 5 and 18 warships for every 45 freighters. So far no aircraft-carriers have been reported acting as escorts and even a cruiser is rarely seen.

The U.S. - Britain convoys move from the large ports of the American east coast along the great circle to the northern entrance of the Irish Sea. If submarines attack, or even if they are only located, the convoys take evasive action by moving below the coast of Greenland and Ireland. According to statistical data, which extends over a sufficiently long period, one troop-transport convoy runs at the same time interval on this double route every sixth or seventh day and one freighter convoy every thirteenth day.

Convoys from U.S. to Britain generally comprise 35 vessels escorted by a varying number of destroyers and corvettes and frequently by cruisers as well, according to the value of the cargo.

/In

G. 279027/AR/12/50/35

~~SECRET~~
~~SECRET~~

~~SECRET~~

- 17 -

SECRET

In March 1943 the following vessels arrived at ports on the Irish Sea through the northern channel:

from Iceland:	25 vessels = 100,000 GRT
from U.S.A.	150 vessels = 900,000 GRT
from Central and South America and S.Africa	35 vessels = 200,000 GRT
from Gibraltar and North Africa	• 110 vessels = 600,000 GRT

The material which had been brought in was distributed amongst the ports on the southern and eastern coasts of the British Isles by coastal shipping moving round Lands End to Southampton and south of the Orkney Islands to Dundee and Edinburgh. In addition there was heavy coastal traffic - 300 vessels totalling 750,000 GRT - from Edinburgh southwards to the Thames and it is probable that a large part of the goods unloaded on the western coast were moved by railway across the narrowest part of the British Isles from Glasgow to Edinburgh and thence by sea to London under cover of the coast.

On the south coast of England 110 vessels totalling 275,000 tons passed through the St. Georges Channel to Southampton during the same period.

II

The strategic air situation in the Atlantic, 1943/44

A fundamental change has occurred recently in the political and military situation in the Atlantic. Conditions for the conduct of air and sea warfare have also changed accordingly.

The construction of bases in the Atlantic was urged primarily by the British.

The Americans were more inclined to protect routes across the Pacific, but as they had invested considerable capital in African undertakings, they turned their attention to acquisition of operational bases in the Atlantic.

In autumn 1940 Britain gave permission for the construction of naval and air bases on Newfoundland, on the Bermuda and Bahama Islands, on Jamaica, Antigua and St. Lucia. After Curacao, Aruba and Dutch Guiana were occupied and American bases established in Brazil, the defence belt extended far into South America. In 1941 the United States occupied Greenland Iceland and Jan Mayen. Spitzbergen was included in cooperation with the British. A base was also set up in northern Ireland and American troops landed in Scotland. In Africa they acquired the use of ports in French, West and Equatorial Africa and in the Belgian Congo area. Even Monrovia, the capital of Liberia, came under their influence. In addition, Dakar, Casablanca and other ports on the west coast of Africa were claimed by the Americans. In 1943 the Portugese were forced to make the Azores available for the establishment of bases. Pressure was maintained to achieve the same result on Madeira and the Cape Verdure Islands.

Gibraltar is Britain's most important base for operations in the Atlantic and Mediterranean. In addition, she possesses a number of ports on the western coast of Africa as well as several islands in the southern Atlantic. In the near north British control extends to the Faroes.

There is no longer a gap in the Atlantic. The enemy can cover the whole of the north Atlantic from the Bermudas, Newfoundland, Iceland, the British Isles, Gibraltar and the Azores. Enemy radar posts may be set up in Spain and Portugal.

However, Germany has also broken out from Heligoland Bay to the open sea. Her operational coastal bases in the west extend from Norway to Biarritz.

/The

G. 279027/AR/12/50/35

SECRET

~~SECRET~~

~~RESECRET~~
418
~~SECRET~~

The Channel Islands (Guernsey and Jersey) are in German hands. The British Isles are now within striking distance of the German-held coast. German submarines from French and Norwegian bases have created a serious threat to enemy sea routes. The Luftwaffe is also advancing further and further into the Atlantic.

It is an essential condition for the Luftwaffe that units can be transferred rapidly between the north Atlantic and the Mediterranean to provide a concentration of forces suitable for the strategic situation and the weather.

However, owing to the weather, it will not always be possible to transfer formations from France to Norway and back without delays.

The standard of training of aircrews and the equipment of aircraft will, however, enable long-range bombers to take off in bad weather. Rainfall, low clouds and even light ground mist do not present insuperable obstacles to aircrews trained in blind flying. The bad weather areas occurring near the coast usually diminish further out to sea, so that even if the aircraft of a formation are compelled to take off singly and fly blind for a short time owing to the weather, they can soon re-assemble. However, aircraft returning from an operation must be directed to a home base where the prevailing weather conditions will permit a landing.

A glance at the map will show that there are ample supply lines from any direction at the enemy's disposal to encounter air attacks at sea. There is only a slight threat to his ocean bases owing to the weakness of German naval surface forces and the range of the bombers available at present. Thus there is no doubt that the enemy can concentrate his defence forces in any area of operation which may be selected by the Luftwaffe and U-boats.

Very great strength will therefore be necessary if successful operations are to be carried out far over the Atlantic.

This leads to the question whether air superiority over Atlantic shipping routes must be gained as a preliminary condition for the conduct of anti-shipping operations.

Whereas the conquest and occupation of a country must be preceded by a battle on land, vital sea communications can be cut without "occupying" the sea area. This is possible as the range of U-boats and aircraft has reached an unprecedented extent and is constantly increasing. Thus, in spite of their superiority at sea, that is according to former conceptions, the Anglo-Americans cannot deprive their enemy of every opportunity of carrying out operations.

Constant air superiority as regards time and space cannot be achieved. Even Britain and America could not supply the forces required for this purpose. However, air superiority can certainly be achieved temporarily by concentrating all available forces. The degree of effect varies according to the geographical location of air bases which offer the best possibilities. It is much more difficult to achieve air superiority over convoy routes far out in the Atlantic where even the enemy cannot at present maintain continuous air cover.

An enemy air force can be destroyed only under exceptional circumstances. In the Polish Campaign this was brought about by a surprise air attack with greatly superior forces. In the war against France an adequate measure of success was achieved, the preliminary conditions still being favourable. However, the prolongation of the war for several years led not only to parity of forces but later to enemy superiority both in defence and attack. The enemy has acquired a knowledge of tactics and has reached our standard. At present he has surpassed us in the technical field and his total production capacity exceeds ours. In addition to the question of operational strength, it is vital that the available bases should be used to best advantage.

/The

~~RESECRET~~
~~SECRET~~

SECRET

- 19 -

SECRET

The struggle for air superiority will be confined to areas in which targets of economic importance, in this case convoys, must be protected or destroyed. Although the enemy may be stronger, even in fighters, locally limited air superiority is not absolute, as no barriers are possible in infinite space.

If these theories prove correct, German air operations in the Atlantic have great prospects of success in spite of present inferiority.

III

Possible courses of action open to enemy

After the main effort of the Luftwaffe has been transferred to the Atlantic it will not be long before enemy counter-measures become evident. Preparations are already being made to meet this situation. At the moment the enemy appears to be rather negligent as he feels he has the advantage over the Germans. Knox, the U.S. Navy Minister regards the present situation in the Atlantic as such an improvement that he has cancelled plans for building 427 submarine chasers. However, a reduction in the forces engaged in air defence over the Atlantic must not be expected.

Faced by the success of the German submarine offensive, the enemy considered building a large number of transport aircraft. Indeed, such plans may to a certain extent have been put into practice. Nevertheless, the transportation of merchandise will still be carried on largely by merchant ships, for even the American 70-ton "Mars" transport aircraft with a carrying capacity of about 25 tons have a normal operational load capacity of only 15 to 20 tons. This shows the maximum operational load one aircraft is able to carry. How many aircraft would be required to carry American freight alone may be deduced from the statement of President Roosevelt that in the period between May and August 1943 no fewer than 4,000 American ships had been convoyed across the Atlantic by the U.S. Navy.

The German air and submarine menace is being met rather in other ways:

The simplest solution would be to move the shipping routes beyond the range of German bombers. It is scarcely to be expected, however, that the enemy will stop using the eastern part of the middle Atlantic as long as he can provide his convoys with adequate protection. Besides this, he must expect German attacks to occur very soon also in the northern part of the Atlantic, as modern naval strategy can plan operations on a scale hitherto unknown, on account of the constant increase of efficiency of the Luftwaffe and the U-boats. Whilst the British could afford to vacate the North Sea in the years from 1914 to 1918 because they had nothing to defend there, they are obliged now, in the Atlantic to call upon all their forces, in order to safeguard their economy. For that purpose it is also necessary to bring the convoys by the shortest possible routes to their destinations. The enemy will therefore combat the threat to his supply lines principally by offensive action. Consequently an increasing number of small and medium aircraft-carriers will be used to protect convoys. The Azores will assume great importance as a new base for operations. The inshore escorts on the English coast will receive appropriate reinforcements.

The enemy High Command will also endeavour to put the ground organisation of the German formations operating in the Atlantic out of action by bombing raids. Such bombing operations can be carried out without difficulty from the air bases in Britain, Gibraltar and Africa. Moreover the enemy's forces are sufficient to meet German defence.

Another measure must be taken into account, namely the establishment of air bases in Spain and Portugal, though this would necessitate at least, partial occupation of those countries. This step would have the advantage of

/considerably

SECRET

G. 279027/AR/12/50/35

SECRET

~~SECRET~~

- 20 -

SECRET

considerably shortening the shipping routes. Convoys could then sail close to the Iberian coast under the protection of strong fighter cover. This would severely restrict operations of the Luftwaffe and U-boats.

In the final analysis it is the task of the enemy to capture the German bases. This is possible only by the establishment of a second front in the occupied areas of Western Europe. The enemy might also land in Jutland and the south of Norway and then attack north Germany across the Baltic. Moreover, the threat remains of a flanking attack through the Balkans.

Other remaining possibilities of attacking supply shipping must be viewed in the light of these considerations. It must be admitted that the enemy is able to put up powerful resistance to the measures introduced by the Germans.

On the other hand it is clear that to cripple Anglo-American merchant shipping would hit the enemy where he is most vulnerable.

This aim can be achieved by operations on a scale which is both practical and justified for a campaign, the probable success of which will considerably improve the general situation.

The great efforts the enemy is making to develop his air force are intended primarily to establish numerical and technical superiority. The German aircraft industry, for its part, will do all it can to keep the air power of the Reich on a par with the enemy air force. In view of the significant productive capacity of Britain and America, this task will not be an easy one. However, skilful leadership and superior technical resources will to a great extent counteract the numerical ascendancy of the enemy.

IV

Conclusions

Basically, the anti-shipping campaign can be waged in three ways, namely:

by the surface craft and submarines of the Navy,
by long-range reconnaissance aircraft and bombers of the Luftwaffe,
by the combined operations of both services.

At the present time the operations of U-boats are being hampered because they can be spotted promptly and fairly accurately by aircraft and warships equipped with D/F apparatus and forced to submerge by air attacks and naval artillery.

The use of reconnaissance aircraft to serve as "eyes" for submarines is certainly not the only way in which this situation can be overcome. The first consideration must be to succeed in effectively jamming the enemy's D/F apparatus at the moment an attack is being launched, or to disarm individual ships by torpedo and bombing attacks carried out by the Luftwaffe.

The Luftwaffe has a great advantage over U-boats in operations against enemy convoys. The special character of aerial warfare over the sea at the present time derives from the immense areas involved.

In the first World War U-boats were by themselves the main weapon of economic warfare. The scene of their operations was the North Sea. Even at that time aircraft gave tactical support to U-boats, but only to a limited extent owing to the short range of aircraft.

After the Luftwaffe had been reformed, its unique quality, its effectiveness as an instrument of war and hence its significance, led to its being made responsible only to Supreme Command. This fact has a bearing on the special position of the Luftwaffe in the organisation of the Supreme Command. The independence of the Luftwaffe will again become evident after its main effort

/is

~~SECRET~~

SECRET

SECRET

- 21 -

SECRET

is transferred to the Atlantic, as it has already proved that it can carry an independent air warfare also at sea.

This applies as much to operations with purely military objectives as to those concerned with economic warfare. For example, it was the Luftwaffe alone that made the capture of Crete possible. The Luftwaffe was also able to hamper the transportation of supplies by sea from Africa to such an extent that the enemy had to forgo the shipment of essential reinforcements. As the first German troops with equipment were on the whole transported to the island by air, interference by enemy naval forces was accordingly ruled out.

It has been proved that in economic warfare the percentage of enemy shipping sunk as a result of the independent use of the Luftwaffe in sufficient force is so high, that a decisive reduction in the delivery of supplies to Britain can be achieved by this means alone.

In 1942 the principle hunting-ground of the Luftwaffe was over the area where Atlantic traffic was picked up by inshore escort forces. In these waters convoys were concentrated in a small area. Convoys could be located by navigational aids. The disadvantage of strong defence could be overcome by attacking at dusk and during the night. Holland offered excellent opportunities as a base for these attacks. Flying from darkness towards a bright horizon assured excellent possibilities for offensive action. For this reason the number of ships sunk off the south-west coast of Britain was high.

Convoys were assembled also on the west coast. In particular, the area between Land's End and the Bristol Channel and also the sea area off Pembroke offered opportunities for successful operations. In this case, however, it was disadvantageous to fly in from the light towards a darkening horizon. Attacks in the Irish Sea could be made successfully only at night, as otherwise the German formations flying in to attack by day could be intercepted by British fighters.

Conditions have changed to the disadvantage of the German attackers since the enemy has reinforced his defence forces more and more. Attacks therefore are undertaken only where defence is weakest. This means that the formations must fly far out over the Atlantic, that is to those areas as remote as possible from enemy air bases in the Azores, Gibraltar and the British Isles. But this increases the difficulties under which the Germans operate, especially as fighter protection must be reckoned with even in these sea areas. Another situation would be created if the enemy could give protection to his convoys from Spanish and Portuguese bases.

The following conclusions may be drawn from a study of these factors.

1.

Aircraft and submarines are engaged in the anti-shipping war as equal partners.

This is the conclusion to which one must necessarily come in considering the possibilities of combined operations by the Luftwaffe and U-boats.

The Luftwaffe is particularly mobile. It is the Luftwaffe that as a rule locates the convoy and directs U-boats to it. It is the Luftwaffe that seeks out aircraft carriers in order to sink them first. It is the Luftwaffe that fights the U-boats worst enemy, the fighter and destroys enemy shipping unaided. But the engagements of the Luftwaffe are only of short duration. If an attack is unsuccessful, then the submarines are at an advantage, because they can lurk along the convoy route for a long period and make another attack later. The submarine can also summon the Luftwaffe to make surprise attacks. If contact with the enemy is lost it can again call on the Luftwaffe to carry out reconnaissance so that this may be restored. Both services accordingly help

/each

SECRET

SECRET

~~SECRET~~

SECRET

each other as well as possible. From this it is understood that the Commands of the Luftwaffe and the U-boats must be closely connected.

The ideal solution lies in a combined order of battle for the Luftwaffe and Navy, where the Luftwaffe would have the following tasks:

- a) to locate convoys by long-range reconnaissance,
- b) to attack with torpedoes and put out of action the aircraft carriers which no doubt will in future accompany all convoys,
- c) to jam the D/F apparatus and hence the AA artillery of convoys,
- d) to sink a large number of ships immediately by bombing and torpedo attacks or eliminate them from further action.

It would then be the task of the U-boats to attack and completely destroy the scattered and defenceless convoy.

2.

From an organisational standpoint, the procedure adopted hitherto appears to be the most effective: the command authorities of the Luftwaffe (Luftflotte) are responsible for the strategy employed in the battle of the Atlantic and have at their disposal the Norwegian bases and close co-operation from others nearby.

If two subordinate H.Q.'s are set up to direct the battle of the Atlantic, - if the increase in the size of forces engaged warrant this, - it may be considered desirable to entrust this function to a General H.Q., as a sort of Fernkampf-fuehrer Atlantik (Long Range Atlantic Command), with unified control along lines laid down by the Luftflottenkommando.

3.

Considered from a strategical point of view one can deduce from the possibilities open to the enemy that air warfare carried out for any length of time at sea can only be successful if strong forces are employed.

Really substantial successes can be recorded only if the formations summoned by shadowing aircraft to attack convoys can deal the enemy crippling blows in a combined attack.

The services of twin-engined fighters will also be used in this connection so as to provide cover for formations operating far out over the Atlantic.

Fighters will be able to keep the enemy out of the Bay of Biscay area and also protect German bases from enemy air attacks.

In order to intensify the campaign it would be necessary to provide formations of long range bombers and reconnaissance aircraft and twin and single-engine fighters in sufficient numbers, which would, however, depend on the requirements of the war as a whole. Even if only a limited amount of fighter cover can be counted on in the distant areas of the Atlantic, at least it is possible with the latest long-range fighters to make persistent attacks on the enemy air force in the approaches between the Scilly Isles and the Irish coast.

Under the above conditions there would be a decisive increase in the number of vessels sunk.

If the enemy should succeed in establishing air bases in Spain or Portugal, the war against shipping could be continued only after further development of a strong day - and night-fighter organisation. The advantages of

/supporting

G. 279027/AR/12/50/35

~~SECRET~~

~~SECRET~~

- 23 -

SECRET

supporting air operations from bases on the Iberian peninsula and in southern England would be on the enemy's side, only as long as German forces were inadequate for their task.

In this connection the question of the vulnerability of the German ground organisation assumes a special significance. As long as the long-range bomber formations with their special equipment remain to a great extent dependent on technical facilities of their operational bases, it will be impossible to avoid building bombproof hangars. If this is not possible for technical reasons, other methods of protecting German bases will have to be found.

4.

With the whole of the Luftwaffe being turned over to meet the needs of the war at sea, the question of the training of personnel assumes foremost importance.

Study of documents salvaged from British and American aircraft shows that entries are made in log-book fashion and so meticulously that fractions of a second are taken into consideration. Apart from this, an exceedingly high standard of navigational skill can be discerned which can be acquired only after much practice. Of the German formations, the crews that have been most successful are those whose proficiency has been maintained by constant practice in the use of navigational aids in long-range operations. In contrast to this, the formations that have been employed for years in support of the army not only lack professional dexterity but often also the right temperamental approach for carrying out the precise manoeuvres of navigation that are needed in locating targets on the sea. The crews are not to blame for this as they are usually concerned with terrestrial navigation. They seldom have opportunities for enlarging the knowledge of general navigation they acquired during training.

For these reasons there is an all-round shortage of qualified personnel

The basic reason for the shortage referred to is the fact that the Luftwaffe had to be utilised primarily for supporting the army. Indeed, in the course of the land fighting the concept of the Luftwaffe as a means of overall strategy receded further and further into the background. It will not be easy to recreate a proper strategic air force.

It is obvious that air crews engaged in operations over land need additional training for air warfare at sea. The junior officers of the Luftwaffe should have been familiarized from the beginning with the ideas of warfare over vast areas not only of land but also of sea. We cannot give our officers a one-sided training, confined to either Army, Navy or Luftwaffe operations; they must be schooled in the operations of all three services so that they can play their part successfully in achieving the aims of the general war strategy and later be able to take their places as real leaders of the Wehrmacht.

The question of the training of subordinates also arises in this connection, as the war at sea is governed from the point of view of strategy and tactics by special laws which must be made absolutely clear to them. It is incumbent on all instructors at Luftwaffe training centres to relate their teaching to the intercontinental character of the war strategy as a whole. When Lord Salisbury said "Study large maps!" he epitomized a lesson which we have still to learn after centuries of thinking in terms of single continents.

In the training given to air crews the emphasis must be placed on the teaching of navigation (including astronomical navigation). In addition, the rudiments of naval tactics must also be taught, and a special study made of the use of naval forces, in order to be able to recognise the tactical situation and the most favourable position for attack. This requires the

/co-operation

G. 279027/AR/12/50/35

~~SECRET~~

SECRET

~~SECRET~~

- 24 -

SECRET

cooperation of the training, surface and submarine forces of the Navy. The combined effort of the services participating, Luftwaffe (bombing, lateral, dive-bombing, long-range and torpedo attacks) and the Navy (especially submarines) will be demonstrated by practical exercises.

5.

From a technical standpoint the efficiency of aircraft employed in the battle of the Atlantic is dependent upon great range, high speed, and adequate armament and bomb load.

The fact that the "Liberator" has proved superior to the Ju 290 serves as another reminder of the enormous strides German aircraft development must make to enable the Luftwaffe to achieve tactical successes in spite of numerical inferiority.

Medium-fast bombers must have a tactical radius of 3,000 km. and a bomb-load of 4,000 kg. Aircraft should be capable of rapid conversion for carrying bombs, torpedoes or Kehlgeraet (apparatus for controlling the trajectory of bombs).

The interior arrangements of aircraft could undergo examination when new developments occur. Operations carried out far out over the Atlantic call for constant navigation. It therefore seems expedient not to burden the members of the crew responsible for this with other duties. The observer and the wireless operator would then be concerned solely with navigation, while the rear gunners would be responsible exclusively for observing and rear defence. Such an arrangement and the provision of the necessary accommodation would guarantee perfect identification of targets and effective use of armaments.

A long-range fighter having a high top speed and carrying full armament would have an operational radius of about 1,000 km. Such aircraft have the double task of covering German bombers during attacks on enemy shipping in the Bay of Biscay and of protecting the arrival and departure of submarines. As already stated, British aircraft used for hunting submarines are equipped with ship locating apparatus of such outstanding quality that they are able to find U-boats through dense cloud and on dark nights, so that generally the submarines do not have time to submerge before being bombed. The enemy is using Beaufighters, Whitleys, Hudsons, Wellingtons, Sunderlands and Liberators. Their performance serves as a guide of what must be accomplished in the development of new long-range fighters.

Long-range twin-engined fighters used for operations far out over the Atlantic must have an operational radius of 3,000 km in addition to improved dependability and performance after air engagements.

Medium-fast reconnaissance aircraft should have an operational radius of 5,000 km. To operate successfully they must have the heaviest armament.

The Kehlgeraet opens new possibilities in the way of weapons. According to the London press, the enemy believes that the battleship "Roma" was destroyed by a remote-controlled rocket-bomb. It is regarded as conclusive proof that the new bomb has its own propelling unit and guiding fins which can be controlled by radio.

Insofar as the controlled flight of this bomb cannot be interfered with, it is a menace to enemy shipping. Tactical manoeuvrability will be improved when it can be released at any altitude and be certain to strike the target with accuracy.

When the development of long-range bombers make it possible for heavier loads to be carried, it will also be possible to increase the effectiveness of torpedoes. This could certainly be achieved if their weight could be increased.

/In

~~SECRET~~

SECRET

~~SECRET~~
SECRET

- 25 -

SECRET

In addition to the question of weight, the following developments might be made with regard to torpedoes:

Increase in range and bombing altitude

Raising the speed of torpedoes and increasing the distance they can travel; enlarging the war-head.

Introducing new methods of fusing.

Using an apparatus that will give a torpedo a zig-zag course on the convoy route.

Using an apparatus which would enable a torpedo to guide itself to a target.

Eliminating the effect of high seas and cross winds.

In considering the relative values of the bomb and the torpedo the conclusion was reached that the bomb, including the remote-controlled bomb, could not take the place of the torpedo and that the torpedo could not be used to the exclusion of other weapons. Thus, torpedoes, Kehlgeraet and bombs can all be used effectively, the actual weapon chosen for a given operation depending upon the situation and other factors.

As regards radio, the chances of success will be increased by the development of panoramic search and D/F radar to enable torpedoes, bombs and remote-controlled bombs to be launched through cloud and at night.

The need for the development of apparatus for observing and giving warning of radar search signals of enemy origin is indicated, for the use of German reconnaissance aircraft. The range and performance of radar generally needs to be improved. In regard to navigation, it is necessary to evolve a radio system unaffected by altitude and the time of day

It is not within the scope of this study to go into technical details, but they must always be kept well in the foreground.

B.

Prospects

In considering all the possibilities, one comes to the conclusion that the Luftwaffe can raise not only the diminishing number of ships sunk by U-boats, but can first of all operate independently and strike a decisive blow against British sea power, by paralysing her supplies. The Luftwaffe would fulfil its true purpose if so used. The struggle against British supply shipping is not a matter of applied tactics, but of applied strategy. The situation brought about by the course of the war confirms the intercontinental character of air warfare.

The theories put forward by Alexander de Seversky in his book "Victory through Air Power", which has been widely read in enemy countries, are of interest in this connection. Seversky is of the opinion that the Germans estimated the effectiveness of the Luftwaffe incorrectly. Mainly short-range aircraft for Army co-operation were produced and the Reich was therefore compelled to carry out the majority of its campaigns on land. These, it is true, resulted in the capture of air bases for operations against Britain, but at that time there were no long-range aircraft available.

Seversky's theory does not make allowance for the circumstances. At the beginning of the war it was correct to use the Luftwaffe against the most important enemy of the moment, the enemy Army and Air Force. Destruction of

/supply

G. 279027/AR/12/50/35

~~SECRET~~
SECRET

supply bases would have had little influence on events at that time, as motorised operations against inferior enemy forces came to an end too quickly.

After the attempt to defeat the enemy quickly failed, the Luftwaffe had to concentrate on sources of economic strength. The enemy also appeared to be taking the same course. The Anglo-Americans did not open the full-scale strategic air offensive with terror attacks until last year. So far Russia has not made any such attempt, as her forces are at present fully committed in the struggle against the German Army. However, long-range bomber operations from Russia must be expected, at least by Anglo-American bombers with Russian or foreign crews.

The Germans made allowance for these facts by transferring the main Luftwaffe effort to operations at sea at the present stage of the war. It is now only a matter of assembling the necessary forces to produce the desired result.

The following statements illustrate the importance of full-strength, concentrated Luftwaffe operations against British supply shipping.

A report by Fliegerfuehrer Atlantic shows, for example, that during the period from 1 March to 22 April 1943 a total of 3,772,000 GRT sailed within effective range of our long-range bombers. If it is correct to assume that the total merchant shipping tonnage at the enemy's disposal amounts to approximately 22 million tons, then this comprises almost one seventh of enemy supply shipping. Thus the methodical and concentrated employment of all available forces under a unified command could not fail to be effective. During the above mentioned period 25 convoys comprising 617 merchant vessels were escorted by 12 cruisers, 38 destroyers, 118 escort vessels and 3 aircraft-carriers. Apart from the aircraft from the carriers, air cover from Gibraltar, the Azores and the British Isles would not present any great difficulty, as until now this has been provided only by long-range bombers or flying-boats. In view of the limited number of aircraft-carriers, fighter cover would not at present be fully effective. However, it is expected that the enemy may use long-range fighters in future also.

Even if one can believe statements made by Knox the U.S. Navy Minister to the effect that ship construction in 1942 exceeded sinkings by more than 1½ million tons, the gap between sinkings and construction could be widened again considerably in favour of the former.

This would result in Luftwaffe operations in the Atlantic striking a heavy blow against British industries without actually attacking them.

There have never yet been any miracles in a war.

New weapons, revolutionary both in number and effect, new ideas of command etc, which would give the weaker side immediate and complete superiority, have never made a sudden appearance.

Military miracles arise only from intense preparation and the use of adequate first rate forces at a favourable moment, at the same time having nullified possible enemy counter-measures.

The air war over the Atlantic, which may be further intensified in the future, must also be considered in this light.

However, a sudden change in the supply battle against Britain and America cannot be expected immediately. Success will rather be achieved only after a lengthy period of operations by numerically and technically adequate forces.

This must be clearly understood.

/The

~~SECRET~~
SECRET

- 27 -

SECRET

The number of ships sunk will certainly not rise as quickly as might be hoped, as it will not be possible to release the number of aircraft required and raise technical standards in a short time. The general war situation also makes this impossible, in so far as it precludes a permanent and effective concentration of forces due to difficulties which can scarcely be surmounted even with the closest cooperation between commands.

However, it is all the more necessary to adhere to the primary strategy in the West, namely the widest possible employment of the Luftwaffe in co-operation with U-boats against Anglo-American supply lines. Plans should be made and put into operation on a long-term basis irrespective of any theories and obstacles which can only weaken in every possible way any decision which may be made.

A.H.B.6 Distribution

Same as for Translation VII/98

~~SECRET~~
SECRET