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THE AIR-SEA RESCUE SERVICE OF THE LUFTWAFFE IN WORLD WAR II .

By Lieutenant Colonel Carl HESS (Ret.)

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CONTENTS

CHAPTER I

INTRODUCTION

Before entering on an account of the operations of the German Air-Sea Rescue Service in World War II, the general information contained in the sections of this first chapter is offered to facilitate an understanding of the subject. The equipment used to combat the threat of drowning to which the crews of all Luftwaffe units operating at sea were exposed included ships, boats, aircraft, special items of survival equipment, and signal facilities, plus a large volume of regulations and instructions governing the action of units on air-sea rescue missions and advising personnel on how to act if they were wrecked at sea. All of this was supplemented and improved continuously on the basis of current experience and, together with the ingenuity and earnest will of the air-sea rescue crew members, provided the necessary backing for themorale of airmen on their sometimes long-range missions at sea if they took the trouble to make conscientious preparations against the eventuality of wrecked at sea.

The section on International Law, the RedCross, and the Air-Sea Rescue Service is offered to explain why air-sea rescue activities had to be conducted by the Luftwaffe, a military service, and not by an organization operating

under the protection of the Red Cross.

The information offered on the organization of the Air-Sea Rescue Service prior to World War II will provide at least some insight into the origin and initial stages of the organization.

1. Equipment and Basic Considerations.

a. Air Traffic Control Boats.[1] Ever since aircraft commenced operating at sea, surface craft have been employed to service them. Initially, small boats were used for the purpose, later followed by ships equipped to take aircraft on board. Concurrently with the reestablishment of a German seagoing air arm measures were taken to develop--and constantly improve--a tightly organized service, the Air-Sea Rescue Service to rescue personnel in distress at sea. This initiated the development of surface and aircraft particularly suitable for air-sea rescue operations, for which activities Air Regional Command (Sea), with headquarters at Kiel, was assigned responsibility. In the spring of 1935 Lieutenant Colonel Goltz--later Inspector of the Air-Sea Rescue Service--was transferred to Kiel as Supply and Administration Officer. As an added mission he was assigned responsibility for the administration of the ships and boats and later for that of the entire organization of the Air-Sea Rescue Service, in which duties he was assisted by Naval Construction Councillor Heldt. The surface craft available at the time included Air Traffic Control Ship Krischan, equipped with booms and tackel to hoist smaller types of aircraft aboard and with

facilities astern to take aboard seaplanes. This vessel had been transferred to the Luftwaffe by its former owner, the Air Transport School in List, on the Isle of Sylt, and a similar craft, larger and equipped with cranes, was under construction at the time. Otherwise there were only a number of barely seaworthy air traffic control boats with any appreciable speed, which later were classified as Class B craft, and a number of smaller boats for use in port areas, classified later as Class C craft, besides

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1. This section is based on personal experience of the present author as Regional Commander, Air-Sea Rescue Command, and on a study by Generalleutnant Konrad Goltz: Die Seenotflugzeuge und Seenotfahrzeuge der Luftwaffe.

a seagoing barge for the Commanding Admiral, Air Regional Command VI (Sea).

All surface craft available were now organized in a Ships and Boats Group to command which the Reich Air Ministry assigned a former naval officer, Schantz, later promoted Generalmajor, and, as his assistant, a Captain Bendix. The air traffic control ships were manned by civilians. Operating under the official flag, they were thus marked as government vessels.

The requirement for higher speed in the Class B craft could only be met during the war, when more funds were made available for the purpose, and after the only firm constructing this type of craft--Werft Gebrueder Kroeger, Warnemuende--had gathered appropriate experience. The light and relatively fast Class A craft, although barely seaworthy, could be employed during the war because it was possible to transport them from point to point by rail. Thus, Class A boats were employed at Syracuse and Constanta until relieved of their mission by Class A boats arrived after difficult transportation by way of French canals or rivers, or by Autobahn, as far as Regensburg, from where they had travelled under their own power downstream on the Danube.

In collaboration with the Technical Office of the Reich Air Ministry hard and fast construction programs were worked out for air traffic control ships and Type B craft at a very early stage, probably in 1936. The total number of craft thus constructed is given, together with all constructional details, in Appendix 1: Air Traffic Control Ships, and Appendix 2: Class B Air Traffic Control Boats. Only ten Class A boats were constructed. The total number of Type C boats, commonly known as Sea Swallows (Seeschwalben), and Class C Tunnel boats, both for use in naval air bases, was 63 and 64 respectively.

A diagram prepared by the Kroeger shipbuilding yard, a copy of which is included as Appendix 3, reveals that the speed of Class B boats was increased by the end of the war from 10 to 30 nautical miles per hour, while the displacement increased only from approximately 20 to approximately 60 tons. Unfortunately, the construction of steel Class B boats was started at a very late juncture. These naturally were less vulnerable to air attack than those constructed of timber. Originally all Class B boats had masts for the placing of positional lights and to carry an antenna. In the last years of the war, however, the masts were removed to clear the field of fire for

the weapons which the boats carried.

In the command area of the Third Air Fleet and in response to suggestions by Field Marshal Sperrle, work was resumed under Engineer Kolb to complete the construction of a series of 6 Vedette type speedboats, which were in an advanced stage on the stocks in the shipbuilding yard at Meulan, on the Seine River. These boats had the considerable speed of 60 nautical miles and, owing to the large supply of gas they carried and the consequent vulnerability to air attack, they were very strongly armed with double- and four-barreled automatic weapons. Further particulars on this subject will be given in Chapter 2, Section 3: Air-Sea Rescue Operations in the English Channel and in the Atlantic.

The system of machine-gun groupment developed by Engineer Kolb was also used later to arm the Class B boats and the air traffic control ships, the latter having triple- and four-barrelled 20- and 30-mm guns. The first boats employed in the Channel were unarmed and were painted white and marked with the Red Cross. After the British had refused to recognize these boats as Red Cross units, they were replaced by vessels painted grey and flying the Military Forces Ensign.

The surface craft developed by the Luftwaffe also included a number of salvage barges with engine-driven cranes--most of them constructed by the Stuelken Werft, Hamburg, Class D Air Traffic Control Craft,(motor pinnaces for the movement of personnel and materiel), and a considerable number of powered dinghys. For the sake of completeness, mention must also be made here of the fact that the Luftwaffe also had tanker ships, some of them seagoing and other for use on inland waterways.

The steady growth of the Luftwaffe's fleet of surface craft brought a corresponding increase in the responsibilities of the initially small Ships and Boats Group, which consequently expanded finally into the Ships and Boats Command controlling hundreds of surface craft. For the same reason the Luftwaffe found itself compelled to establish a school of navigation of its own, in which the personnel necessary for the operation of its ships and boats could receive training. Originally at the Marine Air Base at Puettnitz--on the border between Mecklenburg and Pomerania--, the school was transferred later to Lobbe, on the Isle of Ruegen, and was also controlled by the Ships and Boats Command, Kiel.

In addition to the ships and boats enumerated above as organic to the Luftwaffe, numerous other vessels were employed in the Air-Sea Rescue Service, and will be mentioned in the appropriate sections of this study. The flat-botton boats taken over from the Army Engineer Corps also proved useful in shallow coastal waters, while the motor lifeboats of the German, Danish, Norwegian, Dutch, and French life boat societies frequently gave excellent support in air-sea rescue operations.

Following the example set by the British, all air traffic control ships and boats from the autumn of 1942 on were marked with a broad yellow band painted diagonally across the fore third of the deck. This marking was given tacit inofficial recognition by both sides as the sign that the vessel thus marked was engaged in air-sea rescue operations and was generally respected.

Most of the surface craft enumerated above as units employed in air-sea rescue activities are illustrated in pages 1-16 of the Illustration Annex appended to this study

b. Air-Sea Rescue Aircraft. Only a few cases of airmen in distress at sea occurred prior to World War II, and in such cases any of the numerous types of seaplanes in existence at the time were used in the rescue operations. It was only in 1939 that the decision was taken to reconstruct and adapt an older type of seaplane specifically for air-sea rescue operations. The plane selected was a He-59 model, which was a large plane with floats. Fourteen of these planes, taken from first line units, were turned over to the firm of Walter Bachmann, Ribnitz, Mecklenburg, for reconstruction. With assistance and advice from the Luftwaffe Medical Inspectorate one of these planes was first reconstructed and tried out as a test model. The Medical Inspectorate saw to the installation of medical equipment, including electrically heated sleeping bags and an artificial respirator produced by the firm of Draeger. In the process of reconstruction a floor hatch was put in with a collapsible ladder long enough to reach to the surface of the water. In addition a hoist, with a broad belt, was mounted over the loading hatch for use in hauling unconscious personnel into the rump. The reserve fuel tanks were built out to make space for bunks for rescued personnel. Life belts, pneumatic floats,

containers for emergency rations, and signal devices completed the air-sea rescue equipment.

Pursuant to orders from Branch 2 of the Luftwaffe General Staff the He-59 plane was given a coat of white paint and marked with the Red Cross and civilian insignia. However, the branch had failed to clarify first whether the use of air-sea rescue planes was permissible under the international rules of the Geneva Red Cross Convention in times of war. At the beginning of the war and during the Norwegian campaign the British raised no objections. Later, in the English Channel, they refused to recognize such planes as protected by the Red Cross and either shot or otherwise forced them down. More details on the subject will be found in Section 2 of the present chapter under the title International Law and the Red Cross.

Reconstruction of the He-59 took a long time because the entire plane first had to be thoroughly overhauled. Although the appropriate experts were satisfied in general with the finished product, much time passed before

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2. Ibid.

the first air-sea rescue squadron was established.

At the beginning of the war another eighten He-59 planes were reconstructed in the above manner, six of them by the firm of Bachmann, the other twelve at the Kiel-Holtenau air park.

In search of more seaworthy plane models, it was decided to try the Do-24 seaplane model, a number of which had been captured in Holland, where they were produced by the firm of Aviolanda. Urged by the Luftwaffe General Staff this firm was able to deliver one plane monthly after the necessary extensions of its factory had been completed. Since the Do-24 proved exceptionally suitable for use as an air-sea rescue plane, a second Dutch factory was established for its production in the following years in addition to a factory which produced the necessary wings. According to information from the firm of Dornier, the Société National des Constructions Aironautiques du Nord was also awarded contracts, although much later in the war, to construct the newly adopted model in its factories at Le Havre, Caudebec, Meaulte, and Sartrouville..

While the above work was in progress news arrived from France that a number of seaplanes had been captured

there. On routes in the Atlantic, the English Channel, and the Mediterranean Sea the French had made use of the Briguet Bizerte, a 3-engine seaplane with less speed than the Do-24 but exceptionally seaworthy. By overhauling the captured planes at Bourtin and by procuring additional units from unoccupied France through negotiations it was possible to furnish an adequate number of usable seaplanes for the time being to satisfy the needs of the air-sea rescue service along the Atlantic coast.

The He-59 air-sea rescue plane carried a crew of four and occasionally a medical noncommissioned officer. The crews of Do-24 and Breguet-Bizerte seaplanes always included a medical commissioned or non-commissioned officer, a practice which proved its worth when seriously wounded personnel or personnel suffering from exposure to freezing temperatures were rescued.

In the He-59 the observer-commander had his place in a supporting-strap seat in the nose of the plane, from where he had an excellent field of vision ahead and laterally. The pilot seat was slightly higher and approximately eight feet farther back, with the radio operator immediately behind. The flight mechanic was placed roughly in the center, immediately to the rear of the wings, from

where he had a good rearward and lateral field of vision. This was an important point when searching for personnel in distress at sea. Under certain circumstances, for example with the sunlight striking at a certain angle in the front, visibility was poor for the observer-commander and much depended on the observation possibilities and capabilities of the flight mechanic. Inter-communication was possible between all members of the crew.

It can be said in general that the use of air-sea rescue planes greatly increased the scope of rescue operations. An added advantage was that from their normal cruising altitude of around 600 feet a far larger area could be scanned than would have been possible from the deck of surface craft, when visibility was good. By far the most important factor was, however, that the planes could reach a given point and return much faster than any surface craft, an advantage which was often of decisive importance in the rescue of wounded personnel or of personnel adrift in cold water. A disadvantage was that the planes available could only surface at sea under certain weather conditions, as shown in the table which now follows, where the comparative surfacing capabilities are given for the three aircraft types discussed above.

Aircraft Type	Maximum speed in miles per hour	Penetration range	Could surface under conditions of
He-59	112	830 miles, with reserve fuel tanks at normal cruising speed	
Do-24	126	1002 miles at maximum cruising speed 1212 miles at low speed	
Breguet-Bizerte	96	1136 miles at normal cruising speed	

A table showing all types of air-sea rescue planes available and in service in September 1940 to December 1944, together with particulars on the number of crew members carried, is included in the Annex Volume as Appendix 4.

Already in the first years of the war the necessity arose to provide fighter escorts for air-sea rescue planes operating in the English Channel. Towards the end of the war, at a time when the Bight of Helligoland was open to constant control by hostile aircraft and the German fighter commands were no longer able to provide the necessary escort fighters, the 80th Air-Sea Rescue Group was assigned a land-based squadron consisting of Me-410 and FW-190 aircraft, an innovation which produced very satisfactory results. Although manned by untrained personnel from the Air-Sea Rescue Service, these fighters (the Me-410 was intended originally as a night fighter) provided good protection for the air-sea rescue planes, could be used as search planes, and were equipped with facilities to drop air-sea rescue equipment.

A subject not mentioned hitherto is that of auxiliary air-sea rescue planes. These can be divided into two classes. The one class included planes officially intended for the service and equipped to drop such items as pneumatic boats, buoys with emergency rations, and distress signal flares for use at sea. The second class included both land based aircraft and seaplanes from field units. They were of normal construction and were committed temporarily

in air-sea rescue missions under orders from higher headquarters, as was the case with Do-18 seaplane units. The air-sea rescue planes commonly assigned to fighter units were usually land-based FW-58 aircraft with a floor hatch from which the rescue equipment listed above could be dropped. Fieseler Storch liaison planes were also used in the Luftwaffe rescue service. In Norway, for example, they were provided with skids and used in rescue operations under conditions of snow and ice. Other models used in the air-sea rescue service in Norway and Finland were the Arado-196 and 199 float type seaplanes. These were used primarily on swamp missions in this area of numerous lakes, but also flew air-sea rescue reconnaissance missions over the North Sea from bases in Norway.

In the winter of 1941-42, when the North Sea was largely ice bound, the Air-Sea Rescue Service was assigned land-based Ju-52 ambulance planes, which were manned by personnel from the air-sea rescue squadrons. In addition, He-59 planes provided with ice skids were dispatched during this period from the airfield at Zwischenahn.

The air-sea rescue planes and auxiliaries treated above are illustrated in the Illustration Volume, pp. 16-27.

c. Air-Sea Rescue and Signal Equipment.[3] To locate the position of persons in distress at sea when the course had to be plotted by radio signals, navigational computation, and visual observation was a difficult task because of the small size of the target. The persons in distress and the discovering plane had to aid the search and rescue by means of visual signals and marking devices. The success of a rescue operation thus depended largely on whether the crew downed had taken along their rescue and signal equipment and made proper use of them to sustain themselves and reveal their position long enough. With support from the appropriate officers in the Technical Office constant efforts were made to supplement and improve the survival and signal kit in the light of experience gained in operations. Real progress was made in the improvement of the pneumatic floats and the replacement of existing types by newly development ones. A real help here was the indoor swimming pool at Berlin-Neukolln, which was equipped with machinery to produce waves so that the floats could be tested under actual wave conditions. Air Staff Engineer (Fliegerstabsingenieur) Zeller of the 16th Inspectorate deserves special mention in this connection for his tireless efforts in maintaining contact between

the line units and the Technical Office and the testing station.

Due to the ceaseless efforts of all concerned it was possible by approximately mid-1944 to furnish as standard equipment for each crew operating at sea the following very comprehensive survival kit, which they were ordered to take along on their missions:

1 life belt, kapok or air-filled, for each crew member. Both types had a high collar and a chin support to keep the head above water even if the wearer was unconscious.

3. The information offered here hasbeen compiled by the author with the aid of Luftwaffe Field Regulation # 1203--D (Luft) 1203--and the annexes to Bulletins 157 and 164--Beilage zu den Merkblattern 157 und 164.

Single-seater pneumatic floats for fighter and other crews in planes which could not load the standard size, larger, floats. With the parachute and the life belt the boat was strapped to the crew-member's back. It contained a sea anchor to keep the boat's nose in the wind and a bailing container.

Uranin colour pouch, containing a chemical substance which produced a large yellow-green patch of color on the surface of the water.

Signal flash cartridges. These were of a type which could be fired without a pistol and were for use in guiding approaching boats or aircraft.

Red smoke signal cartridges. The smoke from these cartridges could be seen at a great distance and at the same time indicated the best direction for a plane to surface.

NSG 4 Type Radio Beacon. This was a special distress signal transmitter. When a button was depressed it gave out SOS signals.

Distress Signal Flag. This was a yellow silk flag, 10 square feet in size, on a telescoping mast.

Flash Mirror with Aiming Device. To give flash signals to search planes when sun conditions were favorable.

Survival Ration Pack K, Whistle, Jackknife.

T0- or 13-foot Pneumatic Lifeboat. (for larger types of aircraft). In most aircraft these boats could be so installed that they were released and inflated automatically in case of an emergency surfacing. A 13-foot boat, for example, contained the following:

Carbon-Dioxide flask for the initial automatic inflation of the boat.

Sail, mast and drop-keel for use in favorable wind conditions.

Oars (in sections), Rowlocks, and Rubber Cord.

Sea Anchor.

Bailing Bucket.

Concertina Type Hand Pump, with tube and valve for reinflation of the boat.

Catch Ropes by which the boat could be held.

Outboard Ropes to support persons still in the water

Rope Ladder to facilitate entry.

Four Balancing Floats (Pneumatic), to prevent capsizing.

Righting Rope, with which a capsized boat could be turned over.

Kit Packs containingeach

1 Red Smoke Cartridge, see above.

1 Color Pouch " "

1 Distress Signal Flag " "

1 Flash Mirror " "

1 Compass.

1 Repair Kit, to patch puncture in the pneumatic boat.

1 Medical Kit (including salves for protection against over exposure to light and against frost-bite.

8 Sun Glasses.

8 Wide Brim Hats, lined white on one side and blue on the other; to be worn with the blue outside in snow conditions and with the white outside at sea.

8 Rain Capes.

2 Emergency Ration Containers.

1 Distress Radio Signal Container.

1 Skin Cleansing Agent.

1 Copy of Special Bulletin: Behavior in a Pneumatic Lifeboat (Verhalten im Rettungsschlauchboot).

The supplementary equipment carried consisted of 4 distress signal flares, 2 red smoke cartridges, and the NS 2 distress radio beacon pluss a container with the antenna. In case of wind the wire antenna was held aloft by a kite, when there was no wind by a balloon. The balloon was inflated to a size approximately

three feet in diameter by means of a small hydrogen producer which, when placed in water inflated the Balloon within 8-10 minutes. Crew members were also advised if at all possible to take along from their sinking aircraft the following items: color pouches, signal pistols and star signal ammunition, electric torchlights, thermos flasks and waterbottles, containers for drinking water (rubber bags to contain approximately one-and-one-quarter gallons), medical kitbag, and navigation charts.

To contrast with the color of water, the boats, sails, rain capes, drop buoys, and similar items were painted yellow.

Besides the He-59, Do-24 and Breguet-Bizerte aircraft employed specifically as air-sea rescue planes, the land-based Me-410 and FW-190 aircraft employed by the Air-Sea Rescue Service in search and escort missions were equipped to drop various items of survival and signal equipment, as follows:

Me-410: Type Lux S and N drop signal flares; distress smoke signals and color signals to mark the location of persons in distress. One pneumatic boat and one ration container, connected by a buoyant line approximately 250 feet long; these were so dropped that the wind would necessarily carry them

to the men in distress, the boat on one side and the container on the other of them.

FW-190: Type Lux S and N drop signal flares; color signals to mark the location of the persons in distress. One pneumatic boat in a special marine emergency pack.

Auxiliary air-sea rescue planes: Type Lux S and N drop signal flares; floating ration containers, and pneumatic boats.

Most of the rescue and signal devices used are shown in the Illustration Volume, pp. 34-36.

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d. Air-Sea Rescue Service Signal Communications. One of the most important conditions for successful air-sea rescue operations was a well planned and smoothly functioning signal communications system. The operating centers of the service were connected by means of a well-functioning communications network with the command posts of all units operating at sea, with the air traffic control centers, and with all other agencies which might have anything to do with air-sea distress signals. If a reporting agency had no direct wire to the air-sea rescue post, connections could be established rapidly for what was called a Special Message-Distress at Sea (Ausnahmegespraech--Seenotfall), which was given priority over all other emergency communications.

In cases where an air-sea rescue post could not avail itself of the radio facilities of an air base, such as that at Norderney, or of a combat command bunker, such as that at Stade, the regional air-sea rescue headquarters and the individual air-rescue commands in most cases had their own radio stations. These stations were operated by highly qualified personnel trained for this specific purpose. The radio personnel on air-sea rescue planes and surface craft were furnished by the same special signal unit, and those assigned to surface craft also received

nautical training.

The air-sea rescue units were equipped with Types 19, 16, and 141 radio instruments (Fu.G. 10, 16, and 141). Aircraft and surface craft tuned their Type 10 instrument for reception on the 4208 KHz wave-length, which was their tactical wave-length for telegraph communications in a special code (see Appendix 5) with their headquarters on the ground. Wave-length 4863 KHz was their locating and alternate channel. The same instrument was also tuned in to the short-wave channel used by units on attack missions, on which wave-length control messages were received from the appropriate air traffic control center. In the vicinity of the coast they could, if ordered to do so, communicate by voice radio on the 3400 KHz channel. The Fu. G 16 was the voice radio instrument used by the German fighters. It was used to receive distress signals and was only to be used for transmission in cases of emergency. The Fu. G. 141 instrument was tuned to the

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4. This section is based on personal experience and on a study of the instructional material used in the special courses for air-sea rescue personnel held at Aalborg.

532 KHz, on which wave-length contact planes and the distress radio beacons transmitted; 500 KHz, the international distress signal wave-length; and the long-wave channel used by units on attack missions. The contact plane and distress radio beacon wave-length was tuned in when a plane from the unit concerned was standing by and transmitting signals to guide the approaching air-sea rescue plane. The 500 KHz or 600-meter wave-length is generally known as the "distress at sea" wavelength, to which the locator instruments of the large coastal radio stations are permanently set. The German NSG 2 and NSG 4 instruments also transmitted on this wave-length, and their automatically transmitted SOS signals could be used as a radio guide beacon. It is not generally known that it was possible to communicate with the enemy on this frequency, which happened on a number of occasions during the first years of the war. The frequency was used, for example, to draw the opponent's attention to persons in distress in an area inaccessible to the British because it was too far in German controlled regions or by the Germans because it was to far inside British controlled waters. A point which deserves mention here is that it was obligatory at the time, as it still is today, for all radio transmitters to observe radio silence from the fifteenth to eighteenth

and the fortyfifth to fortyeighth minute of each hour to facilitate reception of messages on the 500 KHz frequency during these periods of radio silence.

Air units at sea used two standard distress signals, the emergency signal (Pan-Meldung) and the acute distress signal. The emergency signal was transmitted in the case of engine failure or other defects which placed the safety of the plane concerned in jeopardy; it was transmitted on the units tactical frequency in code as a priority message. The message was required to contain all particulars, including location, which might be of significance if the plane crashed. On receipt of an emergency signal call all air-sea rescue units concerned were placed on acute alert status. In cases of acute distress the distress signal was sent in the clear, for example, SOS SOS SOS 7415 DK-RO, giving the SOS call, the location, and the identity of the plane in distress. This message could be picked up on any of the frequencies to which the receivers were tuned. Messages from planes which had observed personnel in distress were also given first priority.

In the year preceding the end of the war a new device was installed in the later models of aircraft. It was known as the ZG 16 (signal transmitter 16). Wired parallel

with the transmitting key it transmitted SOS and directional signals automatically on the frequency at which the istrument happened to be set. If the radio operator was disabled, any crew member could set the ZG 16 in function by depressing one of the buttons installed at various points in the plane.

Because of the importance of radio communications in cases of distress it was obligatory for all airborne radio personnel to have their distress message and distress signal ready for transmission at a moments notice, together with currently checked information on their location, and at all times to have their instruments notched to the frequencies in use.

In addition to wire and radio communications, messages could also be transmitted by visual signals if no other possibility existed. The visual signals used are shown in the May 1944 issue of the Marine Distress Signal Chart (Seenotsignaltafel) included in this study as Appendix 6.

e. Basic Considerations.[5] It would exceed the scope of this introduction to the history of the Air-Sea Rescue Service in World War II to cite here the numerous regulations, bulletins, and other mediums of advice with which an aircraft crew in distress, the unit to which it belonged, and the appropriate air-sea rescue units were required theoretically to concern themselves. Quite apart from the fact that theory and practice differed widely in air-sea rescue operations, the intention is to offer here only such items of information which will serve to facilitate an understanding of what is to be said later in this study.

Theoretically, the procedure if a plane was in distress was to be as follows: A plane forced down at sea would transmit its distress signal, consisting of the SOS call, its location, and its identity, to its parent unit. The unit would alert the Air-Sea Rescue Service and dispatch its own search planes and its own FW-58 auxiliary air-sea rescue plane to establish the precise location, deliver by air drop a pneumatic boat, a Lux signal flare, color pouches, and similar items, and remain over the spot as contact plane. While this was going on the air-sea rescue plane or boat to be dispatched would wait on alert

or take off on the probable course (the positions given in distress signals were usually very inexact when last-minute bearings could not be taken) in order to be nearer to the scene when the precise location of the distressed plane was established.

If at all possible the search was to proceed by two methods: in the lane search method the search plane if possible was to fly against or with the wind in order to secure compound navigation and at the end of its lane the search plane was to make a blind turn, which insured that the lanes would be 2-3000 yards apart; in the spiral search method the search plane would circle the assumed location of the downed unit in spirals at an angle varying in according to local visibility conditions. Once the search planes had discovered the precise location of the downed plane, one remained on the spot as a contact plane (if necessary it was relieved later) to guide the air-sea rescue plane or boat to the spot either by visual signals or by radio direction signals.

In actual practice events rarely followed this ideal course. Units actually did frequently carry out a search for a lost plane, but it was by no means infrequent to receive a message reading approximately as follows: "We have lost a Ju-88 between Exeter and Cherbourg. Position unknown." The radiod query: "Are search planes out?" would bring forth the reply: "Cannot detach search planes, are 120 miles from coast and were all in action." A message of this type nevertheless provided some basis for action, since it gave the course by which the unit had crossed the sea, so that the air-sea rescue units could fly over the same course in their search. In daylight operations fighter escorts had to be provided and, being much faster than the rescue planes, they were able to help by scanning the sea on both sides of the course. At night no escort fighters were available but it was possible to also dispatch a Type B boat, which was not very helpful in a daylight search but could be helpful at night because it could be assumed that the persons in distress would use light signals.

When plotting a search course, air-sea rescue units naturally allowed for drift due to wind and tide and other factors, but this often caused personnel in shore units

to shake their heads in consternation. In one case, for example, an antiaircraft artillery observer who had reported a plane crashing into the sea telephoned his protest to the command post: "Your rescue plane is searching the wrong spot, much too far west." In this case, however, the crew of the crashed plane were picked up in their pneumatic boat two hours after they had crashed and by that time they had drifted to a point 14 nautical miles west of the reported direction.

When one of their planes was in distress fighter units usually conducted a vigorous search and also furnished numerous escort fighters. This not infrequently drew hostile fighters to the scene and fierce air battles would develop, resulting in further planes being downed in the original distress area. Frequently air-sea rescue planes and surface craft searched fruitlessly for days on end. On other rare occasions a plane in distress would give its precise location and, after flying out over the Atlantic

a distance of some 250 miles and describing the first curve of its search, the rescue seaplane would spot the signal lights of its quarry right in the middle of the curve.

Operations were facilitated greatly when the Air-Sea Rescue Service was assigned a land-based squadron of Me-410 and FW-190 planes, which made it possible to conduct searches strictly in accordance with regulations before a seaplane or surface boat was dispatched to the rescue. Unfortunately this only happened in the summer of 1944 after numerous urgent requests.

A map diagram depicting an air-sea rescue operation which proceeded practically in accordance with the theoretical pattern on 3 and 4 January 1943 in the Baltic will be found as Appendix 6a in the Appendix Volume.

2. International Law, the Red Cross, and the Air-Sea Rescue Service. A significant development which was a turning point point for the German Air-Sea Rescue Service occurred at the end of August 1940, when the British suddenly commenced taking advantage of every opportunity to attack German rescue aircraft and surface craft operating under the protection of the Red Cross and appropriately marked. The crews of the attacked units were treated by the British as prisoners of war. This action was taken pursuant to orders from the highest British authority, an order which Sir Winston Churchill attempts to justify in the second volume of his memoirs as follows:

> .....However, the enemy may have underestimated the disadvantages to which they would be subject in combat over the Channel and our south coast in comparison with the operations in France and Belgium. That they had expected serious difficulties is evident from their efforts to organize an efficient service to rescue personnel in distress at sea. In July numerous German transport planes marked with the Red Cross began to appear over the Channel wherever an air battle was in progress. This measure to save enemy airmen who had been shot down, so that they could return once more and bomb our civilian

population, we refused to acknowledge as legitimate. We rescued these airmen ourselves whenever possible and made them prisoners of war. But all Germ ambulance planes were forced or shot down pursuant to an express order approved by the Cabinet. The German crews and doctors from these planes acted as though very surprised at being treated in this way and maintained that our action was in contravention with the Geneva Convention. However, there had been no talk of such possibilities at the Geneva Convention, since the Convention had not taken this form of warfare into consideration..... They (the Germans) soon gave up their efforts, and rescue operations were carried out by both parties with small boats.

Sir Wonston Churchill's statement is contradicted to a certain extent by the following paragraph which appears on page 15 of the British regulation Air-Sea Rescue published by His Majesty's Stationery Office, London, in 1942:

> The boats employed in these rescue operations frequently came under attack by enemy aircraft. Some were damaged and casualties were incurred although

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1. This section is based on excerpts from the Geneva Convention (see Appendix 7), and letters from the Comité de la Croix-Rouge (see Appendix 8), the Forschungsstelle fuer Luftrecht (see Appendix 9), and Dr. Fokken (see Appendix 10).

it had seemed for some time as though an unwritten law was observed according to which rescue boats, both ours and those of the enemy, would not be attacked if they stayed on their side of the Channel.

In view of the fact that the enemy powers, including the British, had raised no objections at the beginning of the war against the use of German air-sea rescue planes under the protection of the Red Cross, the German side had assumed that such use of aircraft could be allowed. If the British or any other enemy power had entertained doubts at the time concerning the legality of the use of air-sea rescue planes it would have been their duty to instigate an inquiry into what they considered an infringement of Article 30 of the Geneva Convention of 27 July 1929, which deals with measures to alleviate the lot of wounded and sick personnel. This the British failed to do, probably because it was in their own interests to have their crews, when in distress off the Norwegian coast, rescued by German air-sea rescue planes if the necessity arose.

All responsible German military authorities assumed that the use of air-sea rescue planes had been established as fully justifiable under the international rules then valid. Unfortunately this proved later to have been a mistake. For reasons inconceivable Branch 2 of the Luftwaffe

General Staff had neglected to examine the applicable international rules, particularly those of the Geneva Convention, to determine whether the reconstructed planes, painted white and marked with the Red Cross, used to rescue personnel in distress at sea would not be attacked by a possible future enemy but would enjoy protection because of the humanitarian nature of their mission.[2]

Furthermore, the Air-Sea Rescue Service was not at any time during or before the war furnished a copy of a printed compilation, entitled Kriegsvoelkerrecht, of international agreements which were of importance for higher level commands. The compilation was prepared and completed by 1 October 1939, printed in 1940, and published as an Army, Navy, and Luftwaffe field manual (H.Dv. # 231, II; M. Dv. # 435, II; and L. Dv. # 64, II). It was only after the war that General Goltz , wartime Inspector of the Air-Sea Rescue Service, received a copy for study from Oberkriegsgerichtsrat Fokken, Dr. Jur., who serven in the Reich Air Ministry during the war. The rules contained in the compilation state clearly and unequivocally in the preliminary remarks that an agreement on air warfare

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2. Generalleutnant K. Goltz: Der Seenotdienst der Luftwaffe im II Weltkrieg, p. 6.

existed in the draft form but had not yet been ratified.

To facilitate a better understanding of the overall situation at the time, the applicable rules contained in international agreements will now be quoted:

(1) X. Hague Convention Concerning the Application of the principles of the Geneva Convention to Naval Warfare, 18 October 1908:

Article 4, Par. 3: These ships (meaning hospital ships) must in no way impede the movements of warships

Par. 4: During the battle and after the battle they act at their own risk.

Article 16, Par. 1: So far as military purposes permit, the two opposing parties shall, after every battle, take steps to pick up the shipwrecked, wounded, and sick persons, and shall protect them and the killed against pilfering and maltreatment.

(2) Article 3, Par. 3 of the Agreement to Ease the Lot of Wounded and Sick Persons with the Armies in the Field, 6 July 1906:

After every battle the party remaining in possession of the battlefield shall take steps to pick up the wounded and protect them and the killed against pilfering and maltreatment. (Compare te almost

identical wording of Article 3, Par. 1 of the agreement quoted under (4) below).

(3). Article 23, Section c, of the Agreement Concerning the Laws and Usages of Land Warfare, 18 October 1907 (Hague Convention--The Rules of Land Warfare):

Apart from the prohibitions established by special treaties, it is expressly forbidden:

.....

c. to kill or wound an enemy who abandons his weapons and surrenders unconditionally.....

(4) Article 18 of the Geneva Agreement to Alleviate the Lot of Wounded and Sick Army Members in the Field, 27 July 1929:

Par. 1: Aircraft employed as means of medical transportation are protected by the Agreement as long as they are used exclusively for the purposes of moving wounded and sick personnel and the transportation of medical personnel and medical supplies.

Par. 3: Except when special and express permission is obtained, it is forbidden to fly over the firing line, the zone forward of the main field dressing stations, and enemy terrain or territory occupied by the enemy.

The British Government undoubtedly based its action on Par. 3 of Article 18, quoted under (4) above, when, in June 1940, it published by broadcast a declaration which it described as a "Warning to Germany." The declaration stated that Britain was not willing to tolerate the presence of air-sea rescue planes over the battlefield or in the vicinity of the British coastline, alleging that German air-sea rescue planes had been observed above British convoys, where they obviously were engaged in reconnaissance activities.[3]

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3. Muenchener Neueste Nachrichten, # 214, 31 July 1940, Appendix 41.

On this point it can be said that German air-sea rescue planes could not evacuate wounded personnel from behind a closed front. Their rescue operations were necessitated by air battles which in some circumstances took place over areas controlled by the enemy, thereby requiring them to fly into those sea areas which belonged within the enemy zone. This also afforded them an insight into what was taking place in those zones in which the enemy had their convoy route. It could hardly be expected of the crew members that they would make no use of their observations.

From the agreements quoted above it is quite clear, however, that there actually was no covenant in existence by which international law prohibited action to shoot down air-sea rescue planes. These considerations were probably what led Fleet Judge Advocate Kranzbuehler, generally recognized as an eminent jurist and as an authority on international law, to declare, among other things, at the Nuremburg trials:

> The air-sea rescue planes were shot down with full justification (meaning the German planes by British air units) because no agreement prohibiting such action existed. The British air forces also

did not allow moral considerations to deter them in shooting down air-sea rescue planes when such action was permissible by international law.

An international agreement concerning air warfare thus did not exist. As head of the Institute for Air Jurisprudence (Forschungsstelle fuer Luftrecht), University of Cologne, Professor Dr. Alex Meyer expresses himself as follows on the subject:

> Generally accepted views, however, apply the general rules governing land and naval warfare to air warfare in an appropriate manner. In particular it appears justifiable to make analogous application of the rules governing naval warfare (see agreement quoted under (1) above) to air warfare, since there can be no difference whether the personnel in distress at sea are from warships or from military aircraft. An analogous application also appears to be indicated from the humanitarian point of view if for no other reasons.
>
> Given an appropriate application of the agreement quoted under (4) above the question must be clarified whether the air-sea rescue planes infringed the terms of Article 18, Par. 3. If this must be

presumed, application of the protective rules relative to ambulance aircraft probably would not be possible. It must be borne in mind, however, that the agreement quoted, which represents a supplementation and improvement of the agreement quoted under (2), was patterned exclusively to meet the requirements of land warfare. It seems impossible to talk of a firing line in the true sense of the word when discussing naval and air warfare. Article 4 of the Geneva Agreement on Naval Warfare (see (1) above) can only be understood in this light.

Finally, it must be stated here that one could understand if the British took action against air-sea rescue units if these penetrated into British waters, since their action was designed to prevent German naval reconnaissance even though reconnaissance was not the intended purpose. However, the downing of air-sea rescue planes and boats attempting to rescue from drowning airmen who had been shot down, regardless of their nationality--and frequently the drowing men were comrades of the attacking British--, in the immediate vicinity of the German-occupied French, Belgian, and dutch coast, was contrary to international law according to the Geneva Convention and from the

humanitarian viewpoint.

The Second Geneva Convention of 12 August 1949, which is still pending ratification by Germany, has admittedly made important progress in the matter of sea rescue craft. According to Article 27 of the new agreement the coastal lifeboats employed by a state or by an officially recognized lifesaving society are to be spared and protected insofar as the requirements of current operations permit. Furthermore, according to Article 43, Par. 3, such lifeboats may be marked with the Red Cross.

In contrast, no such favorable solution was found for aircraft intended for use in rescue operations at sea. Both during the preparatory work and during the diplomatic conference of 1949 resistance was general to the suggestion that ambulance aircraft should be permitted to search the open seas systematically for the purpose of rescuing possible shipwrecked persons. Article 39 of the new agreement lays down, however, where the subject of ambulance aircraft is dealt with, that these may be used to move out shipwrecked persons. Such aircraft thus could rescue

shipwrecked persons whose location is known, but would not be permitted to conduct search flights merely for the purpose of ascertaining whether no shipwrecked persons were in any given area. Unfortunately the protective clauses apply to ambulance aircraft only when they are flying at altitudes, at times, and on routesexpressly agreed upon by all belligerents. This is a retrogressive development compared with the terms of the 1929 Agreement Concerning the Alleviation of the Lot of Wounded and Sick Personnel of Armies in the Field. It is hard to conceive of anyone being willing to wait for the conclusion of an operational agreement when the known presence of persons in distress at sea demands immediate action. To give real effect to any such rule an agreement should be reached between the belligerents that all air-sea rescue communications must be sent in the clear.

The new agreement also prohibits flight over enemy territory. This undoubtedly applies to hostile territorial waters. And what about the high seas? To preclude controversial concepts on this point the belligerent powers should establish between themselves what areas of the ocean are to be considered as their zone of military operations. This would imply that each power would have

to accept the binding obligation to rescue all persons in distress at sea, both friend and foe, within the areas claimed as its zone of military operations.

3. Development of the Luftwaffe Air-Sea Rescue Service up to the Beginning of World War II. While the Luftwaffe was being built up, concern for the safety of crews operating at sea raised the necessity to organize an air-sea rescue service.

Land-based aircraft were not committed in missions at sea in those days, so that initially the need for such an organization existed only in the area of Air Regional Command VI (Marine). The mission of organizing this service was assigned to the Chief of the Supply and Administration Section (Ground Service Organization), at that time Lieutenant Colonel Goltz, who was also assigned responsibility for the administration of Luftwaffe ships and boats, and who later was appointed Inspector of the Air-Sea Rescue Service.

To begin with a "Temporary Air-Sea Rescue Service Regulation" was issued in the form of a standing order by the Regional Air Command. The North Sea and the Baltic were divided into Air-Sea Rescue Zones--the North Sea having two and the Baltic three and later four such zones. The Marine Air Base Commander in each such zone was simultaneously the responsible chief of the zonal Air-Sea Rescue Command within his area and the air base

radio stations organic to his command served simultaneously as air-sea rescue radio stations. Each zone was assigned an air traffic control ship and the air traffic control boats of the Marine air bases within the zone--each such base having at least one of these boats--, and in addition could make use of the squadrons of aircraft and of the planes of the aviation schools within the zone. in air-sea rescue operations. In addition support by naval craft could be requested if necessary through the naval commands at Kiel and Wilhelmshaven, and the Life-Boat Society could be requested by telephone or radio to participate with its life boats. Appropriate arrangements had been made with the central administration of the Life-Boat Society, and activities involving the rescue of aircraft personnel in distress at sea were included in what were called the Activities Programm Distribution (Weitergabeplan).

Orders were issued to establish a regular standby service for all air traffic control ships and all air traffic control boats of Class A and Class B, which were all manned by civilians, so that these surface craft would be ready for immediate action in rescue operations.

If the need arose, distress signals could be relayed

through the coastal radio stations of Norddeich or Arkona, on the Isle of Ruegen, to naval and merchant ships at sea with the request to be on the look out for missing aircraft and, if possible, to salvage them or at least rescue the crews.

No supplementary personnel or material were made available for specific use exclusively in air-sea rescue operations. Responsibility for the overall control of the entire service was assigned to Regional Air Command VI (Marine), with headquarters at Kiel.

A few cases occurred during this period of aircraft in distress at sea, due in most cases to engine trouble. The necessary rescue operations were carried out most conscientiously in each case by the Marine Air Base command ordered to do so by the Regional Air-Sea Rescue Command: On receipt of the distress alert signal the gates of the base were closed immediately, and no personnel were allowed to leave the base area without express permission from the base commander; cars held on standby alert were sent to pick up off-duty surface craft personnel living outside of the base area and other key personnel who were absent; and search planes patrolled the area from which the distress signal had been given or the known route

of the overdue plane. The base alert was not lifted until the rescue operation was over.

In the initial stages this procedure proved adequate for the marine air units and the Marine Aviation Schools on the North Sea and Baltic coasts. In the interests of civil aviation and in view of the expected use of land-based aircraft on trans-sea routes, however, the need existed for legislation making assistance to shipwrecked aircraft crews obligatory and establishing a basis on which compensation could be required for assistance rendered. Germany was not a member of the Convention International de Navigation Aéronautique and the appropriate German ministries refused to agree to an overall legislative arrangement similar to the Italian pattern. Therefore, appropriate clauses were embodied in the Law Concerning General Requisition and Man-Power Control for Defense Purposes (Wehrleistungsgesetz) and later in the Law Concerning General Requisition and Man-Power Mobilization in Wartime (Reichsleistungsgesetz). More details on the subject will be found in Appendix 11.

In the spring of 1939 land-based aircraft participated for the first time in maneuver-type operations at sea. At the proper time the units participating were

furnished copies of the following air-sea rescue service regulations prepared by the Air-Sea Rescue Section of Branch 8, Luftwaffe General Staff:

L.Dv 92/Part 1: Temporary Air-Sea Rescue Service Regulation (Vorlaeufige Seenotdienstordnung);

L.Dv. 92/Part 2: List of Air-Sea Rescue Facilities on the German North Sea and Baltic Coasts(Verzeichnis der Seenothilfsmittel an der deutschen Nord- und Ostseekueste);

L.Dv. 92/Part 4: Legislation and Administrative Regulations Concerning Assistance to Aircraft in Distress at Sea (Rechtsvorschriften und Verwaltungsbestimmungen ueber Hilfeleistung fuer Luftfahrzeuge in Seenot).

At the same time the units slated for operations at sea received pneumatic lifeboats and instructions on their use.

No incidents occurred, so that no experience in air-sea rescue operations or the efficacy of the precautionary measures taken was gathered. However, it was found that radio communication procedures and performances were far from satisfactory. With the approval of the Luftwaffe General Staff, General Martini, the Chief of Luftwaffe Signal Communications, therefore decided to establish an Air Traffic Control Center at Bremen as an experiment. Major Spindler, of the Luftwaffe Signal Corps, was placed in command of the new center to which was attached Air-Sea Rescue Center North, at the time under Major Engelhorn. The new establishment proved satisfactory, the only disadvantage being its control over the Air-Sea Rescue Center, because the commander of the new air traffic control center had no nautical training. To remedy this defect, Air-Sea Rescue Center North was transferred to Wilhelmshaven at the beginning of the war and placed under the North Sea Patrol Command (Befehlshaber der Sicherung Nordsee) for tactical purposes. At the same time direct wire communications were established between it and the air traffic control center.

A similar establishment was planned for the Baltic, where the center was to be at Stettin-Altdamm, but before it could be carried out the war began.

The above was the situation at the outbreak of the war. No orders had been given by the Luftwaffe General Staff for the preparation of mobilization plans for the Air-Sea Rescue Service, so that no such preparations could be carried out.[1]

The organization of the air-sea rescue service prior to the war is shown in Appendix 12, two maps showing the regional divisions for air-sea rescue operations in the North and Baltic Seas are included as Appendixes 13 and 14.

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1. Generalleutnant K. Goltz: Der Aufbau des Seenotdienstes bis zum Beginn des zweiten Weltkrieges.

CHAPTER 2

AIR-SEA OPERATIONS IN WORLD WAR II

(1) The North and Baltic Seas Prior to Expansion of the Zones of Operations at Sea. At the outbreak of the war the Inspectorate for Marine Aviation (L. In 8) was assigned to the Luftwaffe General with the Commander in Chief of the Navy and was attached to his headquarters staff. This placed the direction of the Air-Sea Rescue Service under the command of the Luftwaffe General with the Commander in Chief of the Navy.

As Generalleutnant Goltz reports he, at that time in the rank of colonel and holding the post of Chief of the Air-Sea Rescue Service Section, remained with the Air Inspectorate 8 of the Luftwaffe General Staff and was assigned an assistant, Second Lieutenant Steidle, who had served as a naval officer and naval air pilot in World War I.

Combat operations in the first phase of the war remained restricted to the Polish campaign, so that the peacetime regulations for the Air-Sea Rescue Service for the time being remained unchanged. Air Traffic Control Center East was not established as yet, for which reason Major Dreyer, who was slated to command the new center and at the same time was Chief of the Air-Sea Rescue Service East received orders to operate from the headquarters of Patrol Command East.

It is regrettable that the plan to consolidate the air traffic control and the air-sea rescue services in the Baltic area did not materialize. If they had been, much valuable experience could have been gained in this field which would have proved highly useful in organizing the air-sea rescue services in other important theaters of operations.

The only means available to the service were the small number of special air-sea rescue planes under construction--which were arriving only slowly--, and normal seaplanes, ships, and boats organic to the Luftwaffe; in

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1. This section is based on experience gained by the present author while serving as Chief of the Regional Air-Sea Rescue Command North and Baltic Seas and on the following studies: Generalleutnant K. Goltz: Der Seenotdienst der Luftwaffe vom Beginn des Zweiten Weltkrieges bis Juli 1940; and Colonel O. Dreyer: Seenotzentrale Ost vom September 1939 bis Juli 1940. Maps to this section will be found in Appendixes 13 and 14.

addition, surface units of the Navy were made available to a limited extent.

Only a few cases of aircraft in distress at sea occurred during this period. Colonel Dreyer mentions two such cases which may regarded as typical for such occurrences in the Baltic: (1) After surfacing in an emergency south of the Swedish coast, near Karlskrona, a seaplane drifted with a south wind into Swedish territorial waters before the surface craft dispatched to salvage it could reach the spot. The crew members were interned; (2) In the second case a seaplane had to surface west of Libau and was blown by an inshore wind towards the port jetties. During the night it was seized by the Russians before the mine-layer Tannenberg, dispatched to salvage it, could arrived In this case also the crew members were interned.

Conditions were similar in the North Sea. As general-leutnant Goltz reports, Major Engelhorn carried out his orders to shift his staff to Wilhelmshaven-Sengwarden and for tactical purposes was attached to the staff of Patrol Command North. In every respect this was a sound solution in view of the increasing air-sea rescue activities and the existing circumstances in the North Sea. The possibility existed here to remain currently posted on the

general situation in the areas of responsibility, on current weather conditions, changes in mine-free lanes, the location of German and enemy minefields, and all the numerous similar items which were of importance in the operations of surface- and aircraft. The information thus gathered on the spot could be posted in the operational maps and checked in the situation conference room of the Patrol Command North. Furthermore, an excellent signal communications network was available.

Each of the two air-sea rescue centers was now given a separate table of organization which, however, allowed them only small strengths. Thus, the three radio operators authorized per regional air-sea rescue command could only monitor one wave-band, and were therefore totally inadequate unless the command was situated at an existing air base or could obtain support from some other radio station.

As explained in detail in Chapter 1, (1) b, the firm of Bachmann, Ribnitz, received a contract to reconstruct first fourteen and later another six Type He-59 seaplanes and convert them as air-sea rescue planes. The reconstruction was a slow process, since the fuselages and engines first required a thorough overhauling. In

July 1940 there were thus only eleven He-59 planes available for air-sea rescue operations. These planes were manned by personnel from the auxiliary air service units, which were not organic to the Luftwaffe but were employed in various support missions, such as the towing of air targets. The flight personnel of these units were transferred to the Luftwaffe and were given a brief course of basic military training and then assigned to Zwischenahn, Oldenburg, where they received training under the command of Lieutenant Colonel Eiffe as air pilots for the Air-Sea Rescue Service. Some of these personnel developed into extremely capable air pilots, squadron leaders, and group commanders.

The available rescue aircraft were organized into air-sea rescue commands, which were assigned to stations in Nordeney, List auf Sylt, Kiel-Holtenau, and Bug--on the Isle of Sylt, as well as Pillau as they came into existence.

Since no appreciable number of cases of aircraft in distress at sea occurred during the initial stages, the time available was spent in improving and supplementing the available rescue equipment. At the instigation of the Air Inspectorate 8, the C Office organized a display in

in the Reich Air Ministry at which officials of the Ministry had an opportunity of seeing the items of equipment used in air-sea rescue operations and acquainting themselves with the methods of their use. Furthermore, the crews of air traffic control ships and boats assigned to the Luftwaffe General with the Commander in Chief of the Navy received advance training in air-sea rescue activities in a number of courses conducted during the winter of 1939-40.

The first air-sea rescue operation of any appreciable size was carried out at the end of 1939, when the 1st Fighter Wing, under Wing Commander Schuhmacher, and stationed at Jever, attacked and almost completely annihilated a British bomber force off the North Sea coast. As far as can be established at present, Air-Sea Rescue Center North, pursuant to instructions from Patrol Command North, dispatched a large number of its surface boats to conduct a search for drowning personnel, in which action the boats were supported by seaplanes operating from Hoernum. Allegedly, a number of British airmen were rescued in the operation. This first case of fighters operating at sea led to a recommendation by the 1st Fighter Wing that each fighter unit stationed near the coast shoul

be assigned a number of auxiliary air-sea rescue planes to be manned by personnel from the fighter unit concerned. The recommendation was approved, and a number of FW-58 aircraft were equipped by the firm of Focke-Wulf to drop pneumatic lifeboats for this purpose. As time passed all

fighter units stationed near the coast were assigned aircraft thus equipped. Where these auxiliary rescue planes were maintained constantly ready for operations and were employed properly they rendered valuable services and it is regrettable that they were used occasionally for other purposes and then were not available when needed.

In the autumn of 1939 and throughout the winter months the 26th Bomber Wing flew a number of missions over the North Sea, some of them as far as the 61st Parallel, and the Orkney and Shetland Islands, in the course of which the wing attacked the British Fleet and some of its airraft were damaged by antiaircraft artillery shells and in combat with British fighters. Here, the Air-Sea Rescue Service was not always able to save the crews of planes downed at sea, and the Do-18 long-range naval reconnaissance planes dispatched occasionally from Hoernum were not very suitable for use in rescue missions. As a result Undersecretary of State Milch, of the Reich Air Ministry, requested the adviser on air-sea rescue affairs to submit recommendations for the improvement of the service. The memorandum submitted in reply contained approximately 40 points, and called in particular for an accelerated delivery of rescue planes and surface craft.

Other recommendations concerned the improvement of items of rescue equipment. These recommendations the Under Secretary discussed with the Technical Office and a number of improvements were carried out. Nothing much could be done about stepping up the delivery of surface craft, however, since only one shipbuilding yard engaged in the construction of this type of vessel and since the construction of the necessary engines took almost a full year. Unfortunately, the request submitted by Regional Air Command VI (Marine) to Branch 2 of the Luftwaffe General Staff in 1936 for the construction of a number of Class B and Class C boats to be stored by the Luftwaffe Special Supply and Procurement Office (Marine) at Travemuende had been turned down at the time by the responsible section chief, later General Olbrich. As a result, no reserve surface craft were available when the war broke out. This was one of the circumstances which necessitated improvizations to meet the requirements of the expanding zones of naval operations and which thus seriously impeded the build-up and efficacy of the Air-Sea Rescue Service for some time.

Because no mobilization plans had existed for the service, and because of the above reasons, the Air-Sea Rescue

Service was unable at the time when the zones of operations expanded at sea to make adequate personnel and materiel available. For this reason General Goltz, at that time still in the rank of a colonel and had been assigned by the Luftwaffe General with the Commander in Chief of the Navy as Chief of the Section for Air-Sea Rescue Services, was ordered to report at General Headquarters of the Luftwaffe High Command in Wildpark. Here, he first conferred with the Chief of Branch 2 of the Luftwaffe General Staff* and then reported on the current status of the service to General Jeschonnek, Chief of the Luftwaffe General Staff.

General Jeschonnek showed great interest in the complaints and recommendations submitted by General Goltz and, in the interests of the front line units, undertook to see that the situation was remedied. On his own initiative he ordered the establishment of and Inspection for Air-Sea Rescue Services (Inspektion des Seenotdienstes) under the Chief of Luftwaffe Supply and Adminstration and instructed Colonel Erdmann* to take the necessary steps. The order to establish the new inspectorate, Inspectorate 16, was issued within a few days under General Goltz as acting chief.

The Luftwaffe Personnel Office encountered considerable difficulties in finding qualified personnel, who had to have training in aviation and nautical subjects, for assignment to the new section, so that quite some time passed before the inspectorate was established.

The table of distribution finally established provided for the following organization[2]:

Section (Referat)	Activities	Chief
A	Organization; recommendations of key personnel for the service; rescue under ice conditions; rescue under desert conditions.	Major Freiherr von Buddenbrock.
B	Allocation of rescue seaplanes; reports on operations and losses; statistics; non-commissioned and enlisted aviation personnel.	Major Lesch.
C	Ships and boats, including lifeboats of the Lifesaving Society.	Captain Schumacher, Merchant Marine.

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2. Generalleutnant K. Goltz: Der Seenotdienst der Luftwaffe vom Juli 1940 bis zur Umorganisation im Fruehjahr 1942, pp. 1-2, with supplementary information by the present author.

*. Colonel Erdmann, GSC.

Section	Activities	Chief
D	Air-Sea rescue and survival equipment.	Chief Air Engineer Zeller.
NVW (Signals)	Air-Sea Rescue Signal Communication Services.	Captain Stedtler.

2. Air-Sea Rescue Service in Denmark, Norway and Finland.[1] The occupation of Denmark and Norway by German forces should have been the occasion for large-scale air-sea rescue operations and should have proved the crucial test for the efficiency of the service. This unusual operation, calling for the sea-borne transportation of highly qualified land troops over long sea routes and the commitment of air forces over wide sea areas should have been provided meticulously planned protection against the eventuality of losses at sea without regard for the requirements of the Bight of Helligoland in this respect, which during the operation were of secondary importance. However, while preparations were being made for the operation in the spring of 1940 the Luftwaffe General with the Commander in Chief of the Luftwaffe considered that the terms of Hitler Directive # 1 precluded the possibility of initiating his adviser on air-sea rescue activities. When the operation was launched on 9 April the responsible air-sea rescue chiefs, according to General Goltz, were thus unprepared and also had no knowledge concerning the nature of this bold amphibious undertaking.[2] Even worse was the fact that the commanders of the air units participating in the operations over sea were

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1. This section is based on personal experience gained by the present author in an assignment as Chief of Regional Air-Sea Rescue Command North Sea and Baltic Sea and on the following: Generalleutnant Konrad Goltz: Der Seenotdienst der Luftwaffe im II Weltkrieg, Chapters 2, 3, and 4; Lieutenant Colonel Ludwig Wahl: Der deutsche Seenotdienst in Norwegen im II. Weltkrieg; Captain Rudolf Neuber: Die Geschichte der 5. Seenotstaffel in der Zeit vom 1. 1. 4. bis 1. 9. 43 im Einsatzgebiet Norwegen; Ibid: Die 10. Seenotstaffel im Einsatzgebiet Suednorwegen in der Zeit vom 1.9.43 bis 1. 3. 45; Commander Karl Eugen Schoen (Navy): Letters to present author dated 20 and 26 March 1945; Commander Erich Linke (Navy) Letter to present author dated 3 April 1957; Captain W. L. Conrad: Letter to present author dated 27 March 1957. All geographical points mentioned in the present report will be found in the map included a # 15 in the Appendix Volume.

2. Generalleutnant K. Goltz: Der Seenotdienst der Luftwaffe im II Weltkrieg, Chapter 2, pp. 6 ff.

totally ignorant of the existence of an air-sea rescue service. This explains the grotesque fact that Colonel Freiherr von Gablenz, in command of supply transportation to Norway, did not know what to do when he received the report on the first day of the operation that a Ju-52 had been forced to surface at sea north of Jutland with a cargo of gas in drums. In reply to a telephone inquiry addressed to the Chief of Staff, X Air Corps (General der Flieger Geisler) that he heard for the first time of the existence of the service and that air-sea rescue planes were stationed on Sylt. By the time the planes were alerted much valuable time had been lost and, although two planes took off immediately they were able to rescue only two members left alive of the crashed crew.

After the invasion of Norway the Commander of the Patrol Service Baltic boarded the Meteor, a ship formerly used for expeditions, for transfer from Swinemuende to Aarhus. However, the ship was too small to provide space for the staff of Air-Sea Rescue Center East, which was under his command. The staff therefore had to move into premises in the town of Aarhus, where it remained isolated for a considerable time. Having nothing to do in this situation, the Chief of the center, Major Dreyer, who was a regular air pilot with wide aviation experience,

repeated his former request for transfer to a line units. This request could not be granted, however, because the lack of suitable officers for the Air-Sea Rescue Service made it necessary to retain him for later assignments.

Most of the rescue operations in the new Norwegian zone of naval operations were carried out by units based at North Sea stations. Immediately after he was informed of the landing in Norway, the Chief of the Air-Sea Rescue Services Section ordered the transfer of a number of He-59 rescue planes from Sylt to Aalborg. This former Danish seaplane base was favorably situated at Lim Fiord in Northern Jutland and became the main center of rescue activities in this area. The rescue planes stationed here were placed under the command of the local seaplane base commander. Take-off and landing conditions were good at this base both for daylight and night operations , and

ramps and a crane to lift the seaplanes ashore were also available. The missions flown from here were designed to serve the dual purpose of protecting seaborne and airborne supplies to Norway and providing rescue services for the fighter and bomber units stationed on the two airfields at Aalborg.

The steadily expanding areas of operations now created the urgent necessity to also allocate rescue planes to the individual areas of main effort, the take-off bases of the operational air units in Norway. For this reason rescue planes were moved from List to Stavanger, Bergen, Drontheim, and later also to Tromsoe and Kirkenes, after the Chief of the Air-Sea Rescue Services Section had made the necessary arrangements at these points for the transfer. For the time being these planes, as well as those stationed at Aalborg, had to be returned to List for technical and squadron maintenance services. This was done in a monthly rotation system, the planes remaining under the tactical control of the local air-sea rescue centers, base commanders, and so forth, while in operation.

In July 1940 an air-sea rescue center was established in Bergen under Major Wahl, who had served as a naval aviator in World War I, and who now assumed responsibility

for rescue operations in the Norwegian zone.

On 1 August 1941 the 5th Air-Sea Rescue Squadron transferred to Stavanger-Sola and all rescue planes stationed in Norway were consolidated as part of this squadron.

There were no high mountains in the vicinity of Stavanger, which had an extensive land air base with a lake near by which was suitable for seaplane operations. The shores and near shore areas of the lake had been developed, and hangars and landing ramps had been constructed, so that area offered a good substitute for the seaplane base at List. The fact that the lake froze during severe cold necessitated preparations in the early winter of each year for transfer of the seaplane units to the port of Stavanger. The transfer was not necessary every year, but when it had to be carried out extraordinary complications and difficulties had to be surmounted. The transfer also hampered operations, since the command post had to remain at Sola because of the signal communications center installed there.

The transfer of the squadron to Stavanger-Sola noticeably relieved the strain on personnel assigned to

outside stations, particularly those in Northern Norway. These units could now be rotated regularly and could be adequately reinforced whenever necessary for anticipated periods of increased operations. Furthermore, the possibility now at last existed for the squadron to maintain direct contact with the land based air units and the naval patrol craft it was to serve.

The take-off, surfacing, and general conditions for rescue planes stationed along the Norwegian and Polar coastline were not easy in all cases, for which reason a brief description of conditions at the more important points now follows.

Bergen had a floating landing ramp at which seaplanes could refuel and undergo minor maintenance service. Even in lightwinds, however, the planes were forced to leave the ramp and tie up to anchor buoys. The steep mountains surrounding the port gave rise to eddies and downward gusts which could be dangerous for surfacing aircraft. Although no night-landing facilities existed, experienced crews nevertheless carried out night operations. As a rule only one rescue plane was stationed at Bergen. Throughout their four-week assignment the crew members therefore were on constant alert. The very small squad room in existence was totally inadequate in these circumstances,

a deficiency which was remedied later.

Drontheim had night landing facilities. However, the BV-138 and He-115 naval squadrons also based here claimed such excessive priority in the use of the two landing ramps, the anchor sites, boats, and other facilities, that it was not unusual for planes taking off on a rescue missio to be seriously delayed.

Tromsoe had a seaplane port equipped with night operating facilities, a floating landing ramp, and a small repair hangar with a slipway. Better relations were established with the naval reconnaissance squadron stationed here than was the case at Drontheim, so that rescue units were always able to take off promptly in response to distress signals.

Kirkenes (Finland) was the most northerly port for rescue planes. It had a landing ramp and the two planes stationed here had safe anchorages in the inner harbor during the summer months. In winter, however, ice formed on the surface in the inner harbor, so that the planes had to anchor in the outer harbor, where they were exposed

to the hazards of stormy weather and frequently endangered by drift ice. The necessity therefore arose not infrequently to transfer the planes temporarily to Tromsoe. Although conditions were not so difficult during the period of the midnight sun, the personnel stationed here were completely isolated. Living in their imperfect shelters throughout the Polar night and waiting for weeks to be relieved, they had to fall back on improvizations in practically all fields. It is impossible to appreciate fully the feats performed by air-sea rescue units under these conditions.

Because of the long distances involved in the Norwegian Theater, particular attention was paid to the establishment of radio stations. The atmospheric disturbances resulting from such factors as the Northern Lights and the structure of the coast were so serious that they interfered markedly with the operations of the radio stations installed at the various naval air bases. For this reason much thought and time was devoted to the selection of suitable sites for additional stations. In the course of time such stations were installed at Oslo, Lister, Stavanger-Sola, Bardufoss, Barnak, Kirkenes, Pori, and Kemi, each staffed by one commissioned and two

noncommissioned officers and six to eight radio operators.

In Denmark and Norway also, the Air-Sea Rescue Service collaborated with the local lifesaving societies, the activities of which, similar to those of the German Lifesaving Society, proved a real blessing to the crews of seagoind and coastal craft in the difficult waters of the long coastline, and the personnel of which were outstandingly good seamen.

Because of the special political status of Denmark, air-sea rescue operations there were directed by the Danish admiral stationed at Horten and were based on a telephone line circling the entire Danish coast. The complicated methods involved not infrequently resulted in considerable delays in German rescue operations.

In Norway the 28 lifeboats distributed along the coast between Oslo and the Far North each had a radio station and maintained constant contact with radio stations ashore. Operating under the Norwegian flag, the boats were called in the Norwegian language at regular intervals and in this way were given their operational instructions.

During the first years, and particularly prior to the arrival of German air traffic control boats, the Norwegian lifeboats were a highly valuable and reliable support for the Air-Sea Rescue Service. As the Resistance Movement gained momentum, however, the crews became steadily less reliable according to Captain Neuber.[3] Finally, it became necessary to establish regular controls after it became known that lifeboat crews maintained contact with units of the Resistance Movement on wave-lengths other than their officially assigned frequencies, and that some of the boats would leave their stations secretly to support British espionage activities. Unfortunately, experience with the Danish lifeboat service was similar during the last two years of the war.

The number of German rescue surface units operating in the Norwegian Theater was inadequate during the initial stages; the only such craft were the two air traffic control ships stationed at Bergen and Drontheim. The situation was partially relieved when the Navy transferred to the service two whalers, Wal 10 and Wal 11, and through cooperation with Norwegian lifeboats, as mentioned above. A valuable addition to the service was the salvage barge moved in later, which could take seaplanes

on board for repairs.(Photo Appendix # 14). It was only at a later stage that the bases received Type-400 air traffic control boats. These boats proved unsuitable for operations in the difficult Norwegian seas and were therefore replaced gradually by Type 500 and Type 5000 units (Photo Appendix ## 6, 7, and 13).

Initially, plans for the organization of air-sea rescue services in Norway provided for one air-sea rescue center in Stavanger. This center was to be under the command of Naval Command Norwegian West Coast and responsible for the establishment of general operating policies, the allocation of equipment, the development of areas of main effort and so forth. Rescue operations as such were to be directed by the Regional Air-Sea Rescue Commands, usually headed by the local air base commander or, as was the case in the Far North, by the local commander of naval air forces.

Early in 1941 a position was established for a Chief

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3. Captain Rudolf Neuber: Die Geschichte der 5. Seenotstaffel in der Zeit vom 1.1.41 bis 1.9.43 im Einsatzgebiet Norwegen, p. 7.

of Air-Sea Rescue Services at Headquarters of the Fifth Air Fleet, Oslo. Lieutenant Colonel von Temsky, hitherto Deputy Chief Supply and Administration Officer, Fifth Air Fleet, was assigned to fill this post. Under the Fifth Air Fleet he assumed command over the entire rescue service organization in Norway.

In the meantime, a new center of operations at sea by forces of the Fifth Air Fleet had developed north of North Capein the form of increased attacks against supply convoys to the Soviet Union. Major Wahl, Chief of Air-Sea Rescue Center Stavanger was therefore transferred to Kir-Kenes in October 1941 with instruction to establish a new center there, while his post at Stavanger was taken over by Captain Westphal, in command of the 5th Air-Sea Rescue Squadron. When Kirkenes was ice-bound, the center shifted temporarily to Tromsoe. The concentration of air operations in Northern Norway and North Finland also resulted in the establishment of an advanced command post by the Fifth Air Fleet at Kemi, Finland, under the Air Fleet Chief of Staff, Generaloberst Stumpff.

A new regional air-sea rescue service command was now established at Billefiord, near the large Banak airfield, where an operational port was developed for surface craft and rescue planes. In addition to two Do-24 planes--which

for the time being had to tie up to anchor buoys when in port--, two air-traffic control ships, the Karl Meyer and the Max Stinsky, were stationed here in rotation. With their ships cranes and their modern radio equipment these ships were a valuable support in rescue operations. The flight and headquarters personnel were housed in extremely primitive conditions in prefabricated houses until Billefiord was developed as an air base, from which the He-115 planes also operated. According to Commander Linke, Navy, Billefiord, where Second Lieutenant Kohl commanded the air-sea rescue detachment, was one of the best seaplane bases in Northern Norway. With its good take-off and surfacing conditions it was operable under summer and winter conditions. It lacked a runway and a crane, but it did have a slipway and a landing ramp. Only small maintenance jobs could be carried out on the spot, large repairs had to be carried out in Tromsoe. Good quarters were available

for the crew members.

In addition to the above, air-sea rescue units were stationed, according to First Lieutenant Schoen,[4] at Hammerfest, Honningswaag, and Akkerfiord. Hammerfest had the whaler Wal 11 and one or two air traffic control boats, which docked at a pier, and one or two planes, which operated from a small seaplane port, while Honningswaag and Akkerfiord each had one plane. There was also a pier at Honningswaag. Akkerfiord was the most northerly post of the Air-Sea Rescue Service.

A tragic incident occurred at the time in this most northerly area of operations which has since been recounted in various versions. The true facts, as related by an eye witness, were as follows:* On 7 July 1942 Air Traffic Control Ship Max Stinsky a ship of 1 053 tons, put to sea under its commander, Captain Pampe, in response to a distress signal from a Do-18 plane. While en route the ship ran into a fog bank and was carried by the currents onto a rock. After repeated efforts had failed, Wal 11 and two naval units finally towed the ship clear during the next high tide. Although the foreship was flooded, the Max Stinsky reached its berth under its own steam. Since repair was impossible on the spot with the means available, the ship was

the ship was to return to Germany for repairs. This damage to his ship so affected Captain Pampe that he shot himself in his cabin shortly before reaching a German port. He was buried with military honors at Tromsoe.

The fate of Captain Pampe has been reported in some detail here because he was one of the best-known, most reliable, and most active shipmasters in the service. His characteristic signal when entering an air-sea rescue port "Always ready, Pampe" still lives in the memory of many former members of the service. (See Illustration Appendix 2).

For rescue operations, Norwegian waters were now divided into two separate zones. The one zone comprised the southern coastal waters with an air-sea rescue center at Stavanger and regional commands at Stavanger, Bergen, and Drontheim; the other comprised the northern coastal

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4. Commander K. E. Schoen: Letter to present author dated 20 March 1957

* Commander Schoen, who was on board the Max Stinsky when she was wrecked.

waters--including the Polar coast--with the air-sea rescue center at Kirkenes-Tromsoe and the regional commands at Tromsoe, Kirkenes, Billefiord, and later Pori. At times the Stavanger center also controlled the regional command at Aalborg. In summer 1943 the Aalborg command was included permanently in Air-Sea Rescue Command North Sea but its place was taken by a seaplane port established at Kristiana and in Southern Norway.

On 1 June 1942 the air-sea rescue centers were re-designated regional air-sea rescue commands and the regional detachments under their command were redesignated air-searescue detachment commands. The Chief of the air-sea rescue centers became chiefs of regional air-sea rescue commands with the status of air group commanders and had tactical, administrative, and disciplinary command authority over the personnel of planes and surface craft within their command zones. The surface craft within the command zones. The surface craft within the command area were consolidated under a flotilla leader, and wherever this had not already been done, as was the case in Norway, the planes were consolidated in a squadron under a squadron captain.

The reorganization just described was not carried out without opposition, but, although the changes were not very obvious, they did improve the efficiency of the service and created firmer controls. More details on the subject will be found in Section 3, below, which deals with operations in the Atlantic and the English Channel.

Meanwhile deliveries of Do-24 planes had commenced. These planes replaced the old He-59 model and greatly improved the conditions for operations in thewide expanses of the Norwegian seas. The new model was faster, so that the time spent on missions was reduced appreciably, it was far more seaworthy, and, it had the very important advantage of an adequate power reserve to take off in heavy seas even if overloaded.

In July 1942 the Chief of Staff, Fifth Air Fleet, requested the Inspector of Air-Sea Rescue Services, whowas on a tour of inspection in Norway at the time, to assign an additional rescue squadron to his command area. His request was granted and a new squadron, designated 10th Air-Sea Rescue Squadron, was activated in August 1942 and stationed at Tromsoe, under Squadron Leader Lieutenant Koerner,

The entire Norwegian-Finnish theater thus was now organized in two Regional Air-Sea Rescue Commands, the VIII and the IX, with two flotillas of surface craft and two squadrons of rescue planes, and seven air-sea rescue detachment commands. The new order of battle is shown in Appendix 16, the order of battle as of 1 July 1943 in Appendix 15.

A point worth mention here is that the Chief of Air-Sea Rescue Services Norway was also responsible for the Finnish area. In addition to an air-sea rescue service, this area also required units capable of carrying out rescue operations under conditions of snow and ice and in marshy areas; at the same time arrangements had to be made for the evacuation of wounded personnel from the lake area.

For emergency landings in snow, aircraft on combat or reconnaissance missions initially used special snow tyres. After these had been found unsatisfactory, each plane carried detachable skis or skids, which were small enough to be stowed even in fighter planes. After some initial failures, the new skid proved satisfactory. The survival kit included a hack knife to shape ice for an igloo. The rescue operations were carried out by

Fieseler Storch liaison planes on runners, which were also used to rescue personnel in distress under ice conditions. Combat planes operating over ice terrain carried the same survival equipment as that carried for survival in snow.

A swamp rescue service was organized in the summer, because it was usually impossible for crews forced down in swampy or lake areas to return to the German lines on foot. Float-supported Arado 196 and 199 seaplanes were used for the purpose and operated from a small lake at Rovaniemi. These aircraft were used also for the evacuation of wounded personnel, who were flown to a hospital on the banks of the Kemi Jervi River, on which the planes could surface.

Air-sea rescue planes also carried supplies to ice-bound ships and delivered survival kits to the crews of aircraft forced down in mountainous terrain.

Another point which deserves mention is that the Chief Air-Sea Rescue Officer, Fifth Air Fleet, in the summer of 1943 established an Air-Sea Rescue Detachment Command Finland, which was to service the southern part of the Gulf of Bothnia. Unfortunately, no information could be obtained on the activities of this detachment command.

As was the case in other areas, the combat units operating at sea in Norway were assigned one FW-58 plane each. These planes were equipped to deliver by airdrop all manner of survival and signal equipment for personnel in distress at sea or under ice, snow, or swamp conditions, and to serve as contact planes during rescue operations. The experience with these auxiliary rescue planes was not always encouraging.

In the autumn of 1943 an order was issued for the two air-sea rescue squadrons in Norway to exchange stations by This measure was due to a report/ Lieutenant Koerner, commanding the 10th Squadron, who considered it unwise to leave that squadron in the Far North for another winter. According to Captain Neuber, all personnel had shown signs already in the first winter of the depressing effects of the long Polar night. At the same time, many of the squadron's aircraft were only conditionally operable, so that it was to be feared that a high percentage would become inoperable at the beginning of the winter. The repair shop at Tromsoe actually was too small to handle all maintenance and repair jobs.

The two squadrons exchanged stations on 20 September 1943 and at the same time the squadron leader of the 10th squadron was transferred to another unit. He was

replaced by Captain Neuber, an assignment which produced very good results since Neuber was very familiar with conditions in the Stavanger region. Captain Westphal remained in command of the 5th Squadron during its assignment in Northern Norway.

Up to this stage steady progress in the organizational development, the improvement of rescue equipment, and the successful achievement of rescue missions is noticeable. The units now available comprised two auxiliary air traffic control ships--Wal 10 and Wal 11--, twelve air traffic control boats, twelve Do-24 seaplanes, two Fieseler Storch Liaison type planes (mounted on runners in winter), a number of Arado 196 and 199 seaplanes, and twentyfive lifeboats of the Norwegian Life Saving Society.

Lieutenant Colonel L Wahl[5] estimates that approximately 2 000 Germans and Norwegians and 200 enemy aliens were rescued in the period from commencement of the occupation of Norway to the end of 1943. These figures cannot be

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5. Lieutenant Colonel L. Wahl: Der deutsche Seenotdienst in Norwegen im II Weltkrieg, p. 11.

verified because of the lack of authentic records. The only authentic document available is an excerpt from this War Diary of the Fifth Air Fleet (See Appendix 17), according to which 121 air-sea rescue operations involving 106 rescue missions by planes and 68 by surface craft were carried out in the period from 21 February-10 November 1943. Sixty two of these operations were successful but the number of persons rescued is not given. Before entering on an account of the second phase of air-sea rescue services in Norway a few of the more interesting and typical out of the large number of rescue and support missions carried out in the Norwegian theatermow follow.

As was the case in all theaters of operations, excellent relations existed in Norway between Air-Sea Rescue Services and the Navy. Both supported and assisted each other whenever possible. Thus, in addition to their activities when German convoys were attacked, the two powerful and seaworthy air traffic control ships, Wal 10 and Wal 11, were dispatched on a number of occasions to tow allowed wrecked naval units, while the fast air traffic control boatsperformed numerous services for naval units, such as moving their wounded personnel to shore.

During the counter-convoy operations in the Polar region air-sea rescue service units were employed on a number of occasions. As Lieutenant Colonel Wahl reports, the first convoy, consisting of 38 ships, was attacked by an He-115 formation just before dark. When the aircraft returned from their attack mission around midnight, Wahl assisted their landing so ably by means of a prearranged pattern of lights, that all aircraft were able to make a safe though difficult landing. On the following day the attack against the convoy was repeated under similar conditions. Because of an expected Soviet air attack, the naval command had ordered the outer light beacon at Hammerfest darkened for the night. Lacking this light to guide them, the returning bombers passed the port and had to make an emergency surfacing near Nordkyn owing to fuel shortage. Two of the planes were lost. [illegible] Do-24 rescue planes sent out to search for the missing planes finally found a pneumatic boat with three men, one of them the squadron leader. The plane which had made the find surfaced in spite of the high seas. In surfacing part of the fuselage broke off together with the tail assembly.

Fortunately, the men in the tail end of the plane had come forward on surfacing in accordance with instructions and had closed the partition. The plane therefore remained afloat and manouverable, so that the three men could be taken aboard soon from the pneumatic boat. During this maneuver a technical sergeant fell overboard and it was only at the third attempt that he was fished out of the icy water. Steering with its engines, the Do-24 then reached Kjoelle Fiord, where it was picked up on the next day by an air traffic control ship. (See Illustration Appendix 19). Allegedly the 38 ships of the attacked convoy were all sunk. A month later the second convoy was taken under attack. Among the ships sunk was the freighter Carlton, of 5 000 tons. Although the ship was 300 nautical miles north of North Cape a Do-24 plane from Kirkenes managed to save 24 men of its crew, a feat which caused quite a sensation at the time.

A number of other cases are on record of Do-24 planes losing their tail assembly, which in most such cases broke in the rear third of the fuselage. Thus, Captain Neuber reports a case in the spring of 1942, when a Do-24 lost its tail assembly when surfacing in the Skagerrak. Here again the crew members had acted correctly so that, in

spite of the fairly rough sea, the tailless plane was able to roll along for two-and-a-half hours to meet the air traffic control boat called to the rescue by radio, which then towed it to Kjevik.

'Proper precautions by aircraft crews operating at sea are an important aid to successful rescue operations, as the following account will show. In response to a distress call from a Me-110 plane downed in the Skagerrak, a rescue plane was sent out and after a very brief search found oil patches and wreckage wich indicated that it was here that the plan had crashed. As Captain Neuber reports it was only after a long search that a man in a lifebelt was sighted. The sea was relatively rough, with the breakers just beginning, but no difficulties were encountered in surfacing and rescuing the man. He was the pilot of the crashed plane and stated that another crew member, also wearing a lifebelt, had been within calling distance of him when the plane arrived , but that since then voice contact had been broken and he had lost sight of the other man. The area was searched very carefully and crisscrossed by the plane in all directions. In a breaking sea the line of vision is very restricted from a seaplane traveling aflost, however, for which reason the plane took off

to continue the search from the air. After a fruitless search lasting some time it became necessary to return to port where the rescued man could received the needed medical attention. The plane then returned to the spot and continued its search. In order to make quite sure that nothing had been missed, it surfaced again and conducted another careful search afloat of the spot where the first man had been found. After some time the missing man was fo found with his head hanging forward under water. Attempts at resuscitation were made immediately and continued during the return flight, but were unsuccessful.

The commander of the twin-engine fighter group concerned requested that the rescue crew be tried by court martial and punished for manslaughter through negligence. No trial took place, however, because investigations showed that the victim had been dead when the rescue plane first flew over the spot.

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The following remains to be said here concerning the case just related: According to the person reporting on the matter, who was the rescue squadron leader, the crew of the rescue plane in question was known as well-trained, experienced, and particularly conscientious in the executio of missions. Anybody who has ever flown over the site of

and aircraft crash at sea under conditions such as those described will admit that a man wearing a lifebelt would be hard to discover. This was why aircraft crews operating at sea had instructions to carry along various means by which they could reveal their presence. It is naturally a moot point whether a person would be in any condition to use those means when his rescuers arrive if he has been in the water for any considerable length of time by then. It was for such cases that the basic means of identification, the color pouches, were intended, which would mark the location of a crew member even if he was unconscious and thus unable to do anything himself to reveal his presence. Both of the crew members of the Me-110 in question here obviously had neglected to take along this indispensable survival item, otherwise they definitely both would have been sighted immediately. This answers the question as to guilt in the above case, and unfortunately it was

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6. Captain R. Neuber: Die Geschichte der 5. Seenotstaffel in der Zeit vom 1.1.41 bis 1.9.43 im Einsatzgebiet Norwegen, pp. 4-5.

not the only incident of its kind.

That rescue missions were carried out far inside areas of sea dominated by the enemy is shown by the following case mentioned by Lieutenant Colonel Wahl. Toward evening a Do-18 was reported in distress. Returning from a reconnaissance mission between southern Norway and Northern England it had been forced down into the sea with its crew of four when about halfway home, and had then given out locational signals. There was no possibility to take lateral bearings, so that the exact position of the downed plane could not be established. Because of the stormy weather, with sea condition 5-6 prevalent, Air Traffic Control Ship Wal 10, a ship of 500 tons and suitable for operations in such weather, was dispatched under Captain Gerling. Disregarding the minefields known to be present in these waters the ship immediately departed on its ordered course and at approximately 0700 on the following day reached the designated spot. In response to a radio order to search farther south, the ship proceeded southward and only an hour later found the sinking seaplane, the crew members already standing breast-deept in water. Taking the men aboard, the ship rammed the seaplane to sink it properly. During all this time a British land-

based aircraft circled the area at an altitude of about 3 000 feet. Finally, the aircraft flew at the salvage ship with its bomb shaft opened, but dropped no bombs. Then, after a last low-level flight over the area, but without using its weapons, the aircraft departed, transmitting the following radio messages which we intercepted and decoded: "German ship in Grid X attacked with bombs and sunk." Obviously, the crw of the British plane had observed the rescue operation and wanted to spare the rescue ship, a noble gesture which deserves particular mention. The rescue ship and the rescued airmen reached port 24 hours later.

One rescue incident which led to a dramatic reunion occurred off Stavanger. As Captain Neuber reports, an important military transport of three ships bound for Stavanger came under sudden attack by torpedo boats using artillery fire and torpedos. All three ships were sunk in the attack, which occurred at around 0200 hours. Norwegian lifeboats put to sea immediately, but it was dawn before the three He-59 planes could take off from Stavanger and Bergen. Among the personnel helping to move the rescued men from the rescue planes, one man suddenly recognized his father, who had just escaped death by drowning and

was wearing only a shirt and trousers.

The following account by Lieutenant Colonel Wahl of a rescue mission in the tundra is offered as the last example. From a twin-engine fighter shot down between Murmansk and Petsamo, the flight mechanic and a war correspondent were able to escape by parachute. However, they became separated in the jump and, to make matters worse, the war correspondent had lost his eyeglasses in the jump and now found himself helpless and alone in the tundra. Shortly after, he was able to make his dilemma clear to a search plane from his squadron circling overhead. Very soon a plane dropped him a new pair of eyeglasses and precise instructions on how to reach a nearby lake, where he was to be picked up. Both he and his comrade now made their way to the lake, where an Arado-199 plane had already surfaced to pick them up. Just before it could take off, however, the Arado was destroyed by weapons fire from Soviet fighters, so that the crew and the two men they were to transport had to make their way on foot to the German lines, which they reached safely at Kirkenes in three days.

Towards the end of 1943 and in early 1944 the German supply bases in Norway and supply routes as well

convoys came under increasingly frequent air attacks, so that the necessity for constant air-sea rescue support arose. Apart from the protection provided by the Patrol Command North, particularly important convoys now required Luftwaffe support in the form of counter-submarine air reconnaissance units, fighter escorts as protection against air attack, and air-sea rescue units to rescue personnel who might be lost at sea during the convoy battles. For this purpose it was essential for one rescue plane to follow the convoy constantly while two others remained on alert at appropriate points. To make assurance doubly sure, the convoy was followed by one or more air traffic control boats. These boats by now were well armed and, owing to their small size, were usually overlooked by attacking enemy forces, so that in an emergency they were able to move in speedily to carry out rescue operations. Frquently, however, even these small craft were attacked by enemy aircraft. Thus, an air traffic control boat accompanying a convoy in the Stavanger area was destroyed by rocket fire after a tenacious defense in which it shot down a number of enemy aircraft.[7]

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7. Captain Neuber: Die Geschichte der 5. Seenotstaffel in der Zeit vom 1.1.41 bis 1.9.43 im Einsatzgebiet Norwegen.

Owing to the withdrawal of German infantry units from Norway, the necessity increased steadily to employ personnel at the construction of field fortifications and in coastal defense missions. Since these personnel had no training or experience in ground combat, they had to undergo intensive training. This was particularly necessary in view of the fact that in the end each unit was assigned a sector, for the development and defense of which it was responsible.

In order to remain ready for rescue operations when a coastal sector was endangered, the squadrons had to provide suitable alternate anchorages for their rescue aircraft, the normal stations of which were at the focal points of the seaward front. Thus, the 10th Squadron reconnoitered a bay in Lyse Fiord and prepared it as an alternate anchorage for its planes normally stationed at Stavanger.

While these added responsibilities had to be assumed, the steadily deteriorating overall military situation resulted in a steady decrease in personnel strengths. This had disastrous results, since the air-sea rescue units were required on the one hand to detach personnel for guard and fortification construction duties--activities

completely outside their normal line of duty--, and on the other hand had to be on constant alert because of the continually increasing frequency of enemy attacks against supply bases and convoys.

It now also became evident that the service had too few bases along the extended coastline to cope with the increasing requirements, which was particularly true of the area between Bergen and Drontheim. The decision was therefore taken to station andArado-196 plane in the port of Aalesund and an air traffic control boat at a nearby island.

Owing to the increasingly close cooperation with the Navy, Regional Air-Sea Rescue Command VIII, now under the command of Lieutenant Colonel Wildhagen, was transferred back to Bergen from Stavanger. In Oslo Colonel von Temsky was replaced by Colonel von Schiller as Chief Air-Sea Rescue Services Officer.

In conformance with a directive from the Luftwaffe High Command dated 19 August 1944, which will be discussed more fully in Section 5, the air-sea rescue service in Norway was reorganized in October 1944 to cut personnel requirements. The post of a Chief Air-Sea rescue Services

Officer was discontinued, together with the regional and detachment commands. These agencies were replaced by Air-Sea Rescue Group 50 (Seenotgruppe 50) in Southern Norway with the 50th Air-Sea Rescue Squadron and the 50th Air-Sea Rescue Flotilla, and Air-Sea Rescue Group 51 in Northern Norway with the 51st Air Sea Rescue Squadron and the 51st Air-Sea Rescue Flotilla. Group 50 was stationed at Oslo under Captain Conrad, whose adjutant was First Lieutenant Hoffmann; the 50th Squadron was commanded by Captain Neuber, succeeded on 1 March 1945 by First Lieutenant Sepke Major Bojert was assigned to command the 50th Flotilla. Group 51, under Captain Kersten, was stationed at Tromsoe; the 51st Squadron was under Captain Kuehne and later, from 1 March 1945 on, under First Lieutenant Linke; Major Grubbe commanded the Flotilla.

The reorganization brought no important changes in the distribution of planes and boats. Rescue missions were requested through the appropriate local air commands. Administrative controls varied widely and cannot be determined with any degree of precision.

The fact that the air signal company of the air-sea rescue services in Norway also was disbanded created problems--as was the case also in other areas of air-sea rescue

operations--which in some cases necessitated extreme improvizations. These disadvantages had to be accepted because of the serious reductions made in the personnel strengths of the squadrons and flotillas.

The personnel cuts affected all units of the Marine Air Arm in Norway, and some of the squadrons were completely disbanded. In all matters, home defense was awarded first priority, and personnel had to be released for the purpose. Thus, Stavanger was stripped of naval reconnaissance air units, which consisted of BV-138 squadrons, so that the air-sea rescue squadron was the only air units left there. In the winter of 1944 and in 1945 the squadron received three BV-138 planes with crews from the Naval Reconnaissance Group Drontheim. The mission of these planes was to carry out radio locator reconnaissance missions designed to protect German convoys against surprise attacks. In spite of this precaution, however, attacks by enemy aircraft, and speedboat and destroyer units inflicted grievously heavy losses on German shipping.

Agencies of the steadily growing Resistance Movement usually kept the enemy precisely posted on the position, size, and importance of the German convoys. The Air-Sea Rescue Service remained in operation up to the end of the war.

In Northern Norway all German forces withdrew from Kirkenes prior to the end of the war. After the capitulation First Lieutenant Linke moved his squadron to Bodoe, where the planes were dismantled and turned over to the local air bases after flying a few more missions under instructions from the British. A Do24 plane stationed previously at Bodoe escaped to Germany on its own initiative. The ground service personnel were carried by a catapult ship to Tromsoe and from there to Rognan in Salz Fiord. Practically all personnel of the air-sea rescue service, excluding the crews of surface craft, were concentrated in the camp here. After the capitulation the flotilla had left Tromsoe on a southerly course, but undoubtedly was stopped by the British. All other personnel were moved later to a labor camp at Hattfjelldal, and in August were transferred to discharge camps in Germany.

In Southern Norway Group 50 surrendered its boats after the capitulation. The crews and the ground service personnel were placed in the usual Norwegian "reservations." The planes, in contrast, took off for transport missions in the Baltic in response to orders from higher headquarters. No information is available on the fate of the crew members of these aircraft.

3. The English Channel and the Atlantic.[1] Even after the occupation of Holland, Belgium, and France by German forces the fact that no mobilization plans had existed and that the responsible organs of the Luftwaffe High Command had made no advance preparations in the air-sea rescue field continued to exercise an adverse effect on air-sea rescue services in the new sea areas. Everything therefore hinged upon emergency solutions devised to meet the exigencies of current situations. It seems inconceivable in retrospect that the General Staff could have planned for air warfare and even for the invasion of England without providing for an efficient air-sea rescue service in conjunction with these operations.

In response to urgent representations by the Second and Third Air Fleets, which were operating in France and Belgium, the newly established Air Inspectorate 16 made

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1. The account given in this section is based on personal experience gained by the present writer in assignments as Chief of the Air-Sea Rescue Center at Brest and as Commander of the Regional Air-Sea Rescue Command at Cherbourg, and on the following:
Generalleutnant Konrad Goltz: Chapter 3: Der Seenotdienst der Luftwaffe vom Juli 1940 bis zur Neuorganisation im Fruehjahr 1942, I. Teil: Kanalgebiet und Holland

and Chapter 4: Der Seenotdienst der Luftwaffe vom Herbst 1941 bis Ende 1943;

Colonel Otto Dreyer: Der Seenotdienst der Luftflotte 3 vom August 1940 bis Juni 1941.

General der Flieger A. Vierling: Stellungnahme zom Bericht von Oberst A. Dreyer.

Lieutenant Colonel M. G. Fengler: Seenotbereichskommando Holland.

Lieutenant Colonel Carl Hess: Das erste Jahr der Seenotzentrale Brest am Atlantik und die Rettungsboje Generalluftzeugmeister.

Major Dr. Poessel: Letter to Generalleutnant Goltz dated 16 July 1953.

Captain Gottfried Luchmann: Einsaetze von Seenotflugzeugen im Kanal und in der Suedwestlichen Nordsee in den Jahren 1941 und 1942.

First Lieutenant Dr. Th. Wagner: Erfolgreiche Seenoteinsaetze im Bereich der Luftflotte Reich.

the necessary preparations in the fields of personnel and materiel to assist the air fleets in organizing an air-sea rescue service.

After the inspector had discussed the current status of the Air-Sea Rescue Service, and the most urgently needed measures, with the Chief of Luftwaffe Supply and Administration, General von Seidel--the latter issued instructions that the Schools Inspectorate on the same day was to transfer twelve He-59 planes, with crews, to the Marine Air Park at Kiel-Holtenau. There the planes were to be converted to air-sea rescue planes under the direction of Air Engineer Heitmann. The requirement to deliver one plane every third day could not be met, but the work nevertheless progressed more rapidly than at the firm of Walter Bachmann, Ribnitz. Of the 14 planes turned over to th the latter firm at the outbreak of the war only 11 were completed by July 1940.

While their planes were being converted, the crews reported for duty at the inspectorate in Wildpark, where they received instructions on their new duties.

In the meanwhile the inspector had toured France

and Belgium and had found among other things that Zeebrugge, which had served as the main German seaplane base in World War I, was no longer suitable for this purpose for a number of reasons. Consequently, the Channel port of Boulogne, in the zone of the Second Air Fleet, was selected as the center of air-sea rescue operations. On the occasion of a later thorough discussion of all problems at the headquarters of the Third Air Fleet, in Paris-St Cloud, the decision was taken to establish two air-sea rescue centers in the air fleet zones because of the long coastline. One center was to be at Cherbourg on the Channel coast, the other at Brest on the Atlantic coast, both under a Theater Chief of Air-Sea Rescue Services.

The Luftwaffe General with the Commander in Chief of the Navy assigned two elderly air officers with experience in air-sea rescue operations, one to control the services in each air fleet zone. Major Engelhorn, hitherto Chief of Air-Sea Rescue Center North, Wilhelmshaven, was assigned to the Second Air Fleet, and Major Dreyer, hitherto Chief of Air-Sea Rescue Center East, to the Third Air Fleet.

Two He-59 planes were assigned to Boulogne and two to Cherbourg, while four air traffic control boats were

prepared and manned with civilians for transfer to the Channel coast from Borkum and Nordeney. The planes and the surface craft were painted white and marked with the Red Cross. The use of the boats was reported, in accordance with international requirements, to the British Foreign Ministry by the German Foreign Office through the Swiss Political Department, and were acknowledged by the British Government.[2] According to international requirements, the surface craft, in addition to the identification number, had to be marked with names. All of them were given names with the prefix "See," such as Seebaer, Seeadler, and so forth. The personnel wore Red Cross arm bands and were provided identification cards as medical personnel. No rules existed which required that the enemy government be notified concerning the air-sea rescue planes classed as ambulance planes.

Major Engelhorn found favorable conditions for the establishment of an air-sea rescue service. As had been the case in the North Sea, he was attached for operational control to the Navy and placed under Admiral Fleischer, Naval Command Channel Coast, with headquarters at Wimille near Boulogne. His responsibility extended from Dieppe to the German-Dutch border. As Chief of the Air-Sea

Rescue Service for the entire theater, Major Engelhorn, who simultaneously was in command of Air-Sea Rescue Center Boulogne, was under the tactical and administrative command of the Second Air Fleet.

In the meanwhile the two He-59 planes had arrived at Boulogne, and further rescue planes of the same type were to follow. After enough planes had arrived to make up a squadron, an able and energetic squadron leader, Lieutenant Woelke was assigned. Together with his squadron personnel he moved into two houses near the port, in which telephones, alert facilities, and an air raid shelter cellar were installed. By means of a hand crane on the shore the planes could be lifted into the water in the inner harbor. Later, a requisitioned barge was anchored in the outer harbor to expedite take-offs and after a while this barge was replaced by an aircraft salvage bargeequipped with a crane to lift aircraft aboard.

In Wimille Major Engelhorn had his headquarters in the same premises as the Chief ofNaval Command Channel Coast, so that excellent conditions existed for cooperation.

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2. Generalleutnant K. Goltz: Part I: Kanalgebiet und Holland, p. 5.

On 5 August 1940 the Wehrmacht High Command issued orders that the Navy was to participate in air-sea rescue operations in the Channel.

The necessary signal personnel and materiel were furnished by the Second Air Fleet, and direct telephone lines were established to the operating units. In addition the excellent Naval signal communication system was available.

To supplement the two air traffic control boats which had arrived from the North Sea in the late summer, eight support bases, each with two assault boats from the Army Engineer Corps were established along the beach between Boulogne and Dunkirk. Specially selected personnel from the Luftwaffe were assigned to man these boats, which could render quick assistance in coastal waters during quiet weather. Having direct telephone lines to the command post, these outpost bases at the same time served as good and reliable observation posts for the coastal areas.

Shortly after the above, Major Engelhorn was also assigned responsibility for air-sea rescue services in the Dutch area. In agreement with Air Administrative Area Command Holland Captain Dr. Possel, the extremely active air base commander at Schellingwoude was given

command over the services in this area, and was assigned as Chief of Regional Air-Sea Rescue Command Holland. At a later date, the air-sea rescue services along the Dutch coast were consolidated in an Air-Sea Rescue Center attached to headquarters of Naval Command Hague. Initially one air traffic control boat was stationed at Helder and two He-59 planes at Schellingwoude.

The establishment of an air-sea rescue service in the command zone of the Third Air Fleet proved far more difficult. When Major Dreyer arrived at Cherbourg in mid-July with his two He-59 planes, which was all that the Luftwaffe General with the Commander in Chief of the Navy had furnished him, he found nothing on the spot, according to his own report, but a usable French seaplane port. He gave immediate orders to have the port, and particularly an aircraft plane there, placed in order. First inquiries of the local military authorities revealed that the 2d Fighter Wing, stationed at the Querqueville air base, northwest of Cherbourg, was making use of a small motorboat found lying on the beach to operate a very inadequate rescue service of its own, and that the Port Captain at Cherbourg had only an open unseaworthy motor boat available. On the day of Major Dreyers arrival

General von Richthofen, Commanding General, VIII Air Corps, had him picked up by airplane and brought to his command post, where the general demanded the establishment of a lavish rescue service as an urgent requirement. From the discussion it became obvious that General von Richthofen also intended assuming direct command over the service which was to be organized. This intention had to be rejected as a too one-sided solution of a problem affecting the entire air fleet, although the priority of the VIII Air Corps units in the matter was admitted. The difference of opinions here produced strained relations from the very start of the air-sea rescue service in the Third Air Fleet command zone, and these relations were to affect later developments.

At headquarters of the Third Air Fleet in Paris-St Cloud the commanding general, Generaloberst Sperrle and his Chief of staff, Colonel Korten, GSC, promised generous support and instructed Major Dreyer to cooperate with the air fleet operations officer, Lieutenant Colonel Koller, very closely. The French had either removed to England or scuttled all servicable surface craft, and the German Navy still had no floating units at all in this area of the Channel coast. The only means available

for air-sea rescue operations were thus the two He-59 planes, which could only operate in relatively good weather, with a maximum sea condition of Scale 3. In this difficult situation a careful search was made, on the general authority of the commanding general of the air fleet, in all ports along the northern and northwestern coast of France and in the shipbuilding yards on the Seine River, and all ships and boats found which could be used at all for rescue operations were confiscated and adapted for the purpose. In this way the service found itself in possession of a widely varying collection of surface craft, ranging from coastal lifeboats through motor yachts to a solid fishing cutter and even including a privately owned steam yacht of 450 tons found at Trouville.

The Navy was exceedingly helpful in furnishing the necessary personnel with nautical training. Noncommissioned personnel were brought in by air and a few hundred men by rail from Germany. In spite of this, however, it was weeks before these surface craft could be put into operation.

In the meantime the officers (5 majors, 2 captains, and 1 lieutenant) made available by the Luftwaffe General with the Commander in Chief of the Navy for assignment

in command of the various rescue stations had arrived.

After exhaustive discussions, in which the Inspector of Air-Sea Rescue Services participated, the following points were selected as centers for air-sea rescue operations: Le Havre, Cherbourg, Brest, St. Nazaire, and Royan. At each of these posts the locally assigned chief was to have tactical control over the aircraft and surface craft allocated to him. Responsibility for the entire system and for cooperation with the Third Air Fleet was to be assigned to a Chief of Air-Sea Rescue Services exercising the command authority of a regimental commander. The person selected for this post was Major Dreyer. On the occasion of these discussions Colonel Goltz promised the delivery of further He-59 rescue planes--to be followed later by Do-24 planes--and air traffic control boats.

The discovery of two 3-engine naval seaplanes of the Breguet-Bizerte type in the Hourtin seaplane base on a lake close to the coast northwest of Bordeaux greatly facilitated the procurement of rescue planes for the Atlantic area. After their engines had been repaired by German specialists these seaplanes proved exceptionally seaworthy. Efforts of the commanding general of the air

fleet, through the Franco-German Armistice Commission, to obtain more of these boats which were in Southern France met with success, so that ultimately eight planes of this type were available to the Atlantic Air-Sea Rescue Service. All eight planes were organized in a squadron, two of them stationed at Hourtin and the rest at the Poulmic seaplane base at Brest. Lieutenant Ziegler, a highly capable officer who was extremely versatile in technological fields, was assigned to command the squadron, and with the use of spare parts found at Poulmic managed to maintain his squadron operable at all times.

An incident occurred toward the end of August 1940 which was to have a decisive impact on the further development of the air-sea rescue service. A plane painted white and marked with the Red Cross which had taken off from Cherbourg on a rescue mission was circling low over the sea northwest of the Channel Islands in search of an aircraft crew in distress. Suddenly, as Colonel Dreyer reports,[3] it was taken under weapons fire by a British bomber. According to statements from the crew members, the British bomber continued the attack even after the rescue plane was forced down when its engine was struck. As chance would have it, the crew escaped uninjured and

left their sinking plane by their pneumatic boat. Twenty-four hours later they drifted ashore on the Island of Alderney. A few days later another rescue plane which had just picked up a wrecked crew south of the English coast was attacked by an enemy plane but managed to escape with only minor damages.

These two incidents, which were followed by numerous others, showed that the enemy was determined not only to attack rescue planes inside British coastal waters-- a contingency skeptics had feared from the outset,-but

had decided not to respect the Red Cross insignia under any circumstances in any part of the Channel in the case of craft employed in air-sea rescue operations. The subject has been treated in more detail in Chapter 1, 2.

In view of what had happened the air fleet decided to arm with machine guns and paint with camouflage colors the only seaplane of the rescue service left at Cherbourg and all others which were to arrive later. The necessity to arm the planes was reported to the Reich Air Ministry and to the Luftwaffe General with the Commander in Chief of the Navy. After initial resistance these authorities also had to adapt themselves to the situation created by enemy action.

Although the outdated seaplane models used as rescue planes were no match, with the types of machine guns they now mounted, for a modern plane in air combat, the very fact that they had weapons, no matter how inadequate, necessarily improved the morale of the otherwise completely defenseless crews of rescue planes. In compliance with a general order issued later, all rescue units of the other air fleets followed the example of the Third Air Fleet. A short time later orders were also given for all rescue units to use the rescue service signal

code in all radio communications.

All surface craft seized in the confiscation action previously described and which were found to be usable had been outfitted as speedily as possible and had been furnished radio equipment. They were now also armed, given a coat of camouflage paint, and concentrated at Le Havre. Here, they were organized in three half-flotillas, one of which was to be stationed at Le Havre, one at Cherbourg, and the other at L'Aberwrach a small Channel port north of Brest. A point worthy of mention here is that Sergeant Rogge, a very able amateur high sea sailor, who was later promoted to the rank of lieutenant, reached the small port of L'Aberwach safely with his small flotilla after an adventurous trip lasting several days and nights.

Air traffic control boats and speed boats arriving later were assigned to the three half-flotillas described above.

The speedboats of the Third Air Fleet were a chapter to themselves. In the search for surface craft two speedboats were found under construction at a shipbuilding yard near Meulen on the Seine River. Following negotiations with the shipbuilding yard these two boats were completed and were followed later by another four

four of the same model. These boats appeared exceptionally suitable for rescue operations. Powered by four Rolls-Royce engines, each 700 horsepower, they had a speed of 40 nautical miles. In addition they had a smaller engine with which they could cruise at a speed of approximately 6 nautical miles for use in port or in the event of the main power plant failing. Staff Engineer Kolb of the Third Air Fleet completed the equipment of the boats for air-sea rescue operations in the light of the first experience gained and gave them exceptionally strong armament. The disadvantage of these boats was that they were extremely sensitive to engine trouble, as is usually the case with such highly specialized craft. Furthermore, they could operate only in fairly calm seas, up to about sea condition scale 3. Occasionally, brilliant rescue missions were accomplished with them.

Early in September 1940 the Chief of the Air-Sea Rescue Service, Third Air Fleet, moved with his staff to from Paris to Cherbourg, the probable main area of operations for the rescue units of the Third Air Fleet.

After abandonment of the base at St. Nazaire, the overall organization of the air-sea rescue services for the Atlantic and the English Channel was approximately

as follows:

THIRD AIR FLEET

Headquarters, Chief of Air-Sea Rescue Service, Third Air Fleet. Chief: Major Dreyer; Adjutant: Hanebutt; Operations Officer: Lieutenant Kretschmar; Boats Section(Chief): Captain Soemmichsen; Signal Staff Officer: First Lieutenant Hagemann; Administrative Officer: Inspector Warthemann.

Royan
Regional Air-Sea Rescue Command/(Controlled by Brest)

Chief: Major Siepermann.

Aircraft: Two Breguet-Bizerte seaplanes at Hourtin from the squadron stationed at Brest.

Surface craft: Detached as required by Naval Command Royan.

One Air-Sea Rescue Service ground radio station.

Air-Sea Rescue Center Brest, Atlantic Coast.

Chief: Major Hess.

Aircraft: Four Breguet-Bizerte seaplanes under Squadron Leader Lieutenant Ziegler.

Surface craft: Six motorboats from the air-sea rescue flotilla at L'Aberwrach, under Flotilla Leader Lieutenant Rogge.

Air Traffic Control Ship: Bernhard von Tschirschky stationed in the port of Brest.

Radio Station: One Air-Sea Rescue Service ground radio station.

Air-Sea Rescue Center Cherbourg.

Chief: Major Grave.

Aircraft: Four He-59 planes, and a squadron of Do-18 planes, under Squadron Leader First Lieutenant Schriek, temporarily assigned by the Luftwaffe General with the Commander in Chief of the Navy.

Surface Craft: Six to eight motorboats, two speedboats, steam yacht Ariane, under Flotilla Leader First Lieutenant Suerig.

Regional Air-Sea Rescue Command Le Havre (controlled by Cherbourg.

Chief: Major Boedecker.

Aircraft: Two He-59 planes.

Surface craft: One air traffic control boat and two motorboats.

Radio Station: One Air-Sea Rescue Service ground radio station.

SECOND AIR FLEET

Headquarters, Air-Sea Rescue Service, Second Air Fleet.

Chief: Major Engelhorn; names of headquarters staff members unknown.

Air-Sea Rescue Center Boulogne (later at Wimreux).

Chief: Major Engelhorn.

Aircraft: Four He-59 planes, under Squadron Leader Lieutenant Woelke.

Surface Craft: Two air traffic control boats, sixteen assault boats from Army Engineer Corps, under Flotilla Leader First Lieutenant Schirmack.

Regional Air-Sea Rescue Command Holland (controlled by Boulogne).

Chief: Captain Dr. Poessel, at Schellingwoude.

Aircraft: Two He-59 planes.

Surface Craft: One air-traffic control boat, 1 crash boat Type A.

Whereas the organization described above remained basically unchanged until the end, the key personnel, only some of whom could be ascertained at writing, did not remain long in their posts. The most important changes will be mentioned in this account.

The air-sea rescue service for the Atlantic and the Channel thus covered a coastline roughly 1 200 miles long, in which the most varied topographical, coastal, and sea conditions were encountered, ranging from hundreds of miles of sandy beaches to phantastically rugged rocky stretches projecting far out to sea, with ports having a tidal rise and fall of up to more than 40 feet and a tidal current at their entrances of up to 8 nautical miles per hour. The sea and coastal conditions in the theater were thus such that they could hardly be compared with German conditions and made great demands on the capabilities of aircraft and surface craft crew members, just as they seriously

complicated the direction of air-sea rescue activities. The fact that improvised rescue boats within a few weeks were carrying out rescue operations lasting days at a time while rescue planes were already able to surface hundreds of miles out in the Atlantic was a feat that deserves the highest commendation.

On the Atlantic coast the service was based on Royan, at the mouth of the Gironde River--, and at Brest. The seaplanes controlled by Royan operated from Hourtin. Lake Etang de Hourtin previously mentioned repeatedly in this study was a slowly silting up body of water separated from the Atlantic by a coastal belt of dunes. Its disadvantage was that it was covered frequently by a dense fog. At such times the Breguet Bizerte planes, which were not equipped for blind navigation, were unable to operate, a circumstance which produced extremely unpleasant situations.

Brest had an excellent and large harbor with numerous bays. In one of these bays was the well protected Poulmic seaplane base, which had good hangars, workshops, and an-

aircraft crane. The air-sea rescue center was housed in the naval school of Brest at the entrance to the harbor. Early in August these premises had to be cleared, however, and the center was moved to a very suitable building at the commercial port. The cellars had been blasted into the solid rock, so that a large air shelter could be constructed without difficulty. This shelter soon proved very necessary, when the two battleships Scharnhorst and Gneisenau went into hiding nearby, drawing frequent attacks by British bomber units. Access from the harbor to the Atlantic was through the Goulet de Brest, a channel about four miles long and in parts less that 1 800 yards across, with tidal currents so strong that slow vessels could only enter or leave the harbor with a favorable current. Only the air traffic control ship and the air traffic control boat assigned later tied up at the flotilla pier below the naval school. With their speed of 24 nautical miles these craft could negociate the channel easily and rendered excellent rescue services along the difficult coast of Brittany and the western exit from the English Channel. A point which deserves mention here is that the two obsolete motor lifeboats of the French Lifesaving Society stationed on the Island of Ouessant were overhauled and

and thus were also available for rescue operations. With the exception of the above surface craft, the rest of the rescue flotilla was about 24 miles north of Brest, at the entrance to the English Channel. Here it was based at L'Aberwrach, a small harbor with little protection, which the Americans had developed as a seaplane base in World War I according to reports. Use had to be made of this port because it was the only point from which the slower boats could operate in the western exit of the Channel.

In Brest also the Navy during the initial stages supported the rescue service generously with its signal and other facilities, and initially the rescue center was attached to headquarters of Naval Command Bretagne, under Admiral Arnauld de la Perière.

What made the Cherbourg rescue center so important was its location at the northern tip of the Cotentin Peninsula, which jutted far into the English Channel and, besides the region around Calais-Boulogne, provided the shortest route across the Channel to England. The rescue boats and planes here operated from the very spacious

local air base, where a crane and hangars were available together with adequate facilities for the maintenance and repair of surface boats and aircraft. The Air-Sea Rescue Rescue Center was located immediately south of the base at the southern edge of the large and well protected harbor, where excellent conditions existed for take-off and landing of the planes. One boat was stationed at St. Peter Port on Guernsey Island. An engineer assault boat detachment was in Ravennoville, opposite St. Marcouf Island on the east coast of the peninsula.

In Le Havre the rescue service had headquarters in the outer harbor, with its boats stationed immediately opposite; the planes were stationed farther inland at a shipbuilding yard at Caudebec on the Seine River. Two rescue boats controlled by the Le Havre post were at Dieppe, where they were so well protected in the inner harbor that they remained untouched by the repeated British air attacks. Later, a rescue detachment command was based at Dieppe.

Dieppe was the beginning of the long chain of small air-sea rescue posts, each having two engineer assault boats. First came Le Treport and Cayeux, controlled by Le Havre and Dieppe, followed by Quend Plage, Berck sur Mer, Le Touquet, Hardelot, Wimereux, Audresselles, Cap

Gris Nez, all controlled by Boulogne; Wissan, Sangatte, Fort Philippe, controlled by Calais; and Malo, La Panne, and Nieuport, controlled by Ostende. In between, one air-traffic control boat was stationed in the port of Calais and one in the port of Dunkirk.

Air traffic control boats and initially a squadron of rescue planes were stationed at Boulogne, where the harbor was suitable for operations by both surface and aircraft. The increasing frequency of British air attacks against this base in the autumn necessitated the withdrawal of the squadron from here, however, and only two planes were left to operate in the area. The rescue squadron itself transferred to Ostende, where suitable conditions were created for the operations of a seaplane base in in what was called the "Wash Basin" east of the twonship and the canal. (See Appendix 18). In operations, however, the basin proved extremely small for the surfacing and take-off of He-59 planes, so that difficulties were encountered on windless days. Furthermore, the new base was not equipped for night operations, had no crane, and had only workshops in which minor repairs could be carried out. Planes were compelled to fly as far as List, on the Isle of Sylt,

for partial and general overhauling. In other respects conditions were good at Ostende, and the surfacing area was large enough for the locally stationed Do-24 planes. Two air traffic control boats could be held under constant alert at the seaplane base as well as in the large port installations.

The air traffic control boats providing air-sea rescue services along the coast of Holland had good ports in the coastal towns of Scheveningen, Ymuiden, and Helder, and could communicate with the operating center through the naval signal communications network. An air traffic control boat provided rescue services on Lake Yssel. It was stationed at Schellingwoude, a popular base with all aircraft operating at sea, at which a number of rescue planes were also based. Later, when Ostende and Boulogne became too exposed to enemy attack, the 3d Air-Sea Rescue Squadron transferred to this base. Air-Sea rescue activities were supported considerably by the large number of ships and boats made available by the two Dutch Lifesaving Societies for use in rescue operations. However, the operating range of these boats and ships had to be restricted later.

Air Inspectorate 16 had initiated measures as far back as in the late summer of 1940 to provide for flight

personnel replacements. The fact that surfacing under what other seaplane pilots would have considered as emergency conditions--in rough seas of up to sea condition Scale 5 and as far as 100 nautical miles at sea--was a normal operation for air-sea rescue planes, necessitated a careful selection to obtain only first rate and highly qualified personnel with training in aviation and nautical subjects. The same applied to the required navigational abilities of the observers carried along. It was sometimes hard to convince the appropriate section chiefs on the staff of the Luftwaffe General with the Commander in Chief of the Navy of the extreme importance of the personnel problem, and for this reason a special air-sea rescue group command was established under Major Klintsch andassigned responsibility for the training of flight personnel for the service. This group command was stationed initially at Nordeney, later at Schellingwoude, and again later at Kiel-Holtenau, and finally at Bug on the Isle of Ruegen. In addition, a Luftwaffe Marine School was established under Lieutenant Colonel Beulwitz, whose last headquarters were at Lobbe, also on the Isle of Ruegen. The marine school was necessary because it was to be expected that sooner or later the Navy would require

the return of its personnel and because of the steadily mounting requirements in personnel with marine training.

A seriously hampering factor in air-sea rescue operations was the complete lack of familiarity with sea conditions which the air units operating at sea, and particularly some of their commanders, displayed. Time and again it was brought home to all concerned that the mere act of flying over the sea imparts no knowledge of seamanship, and that the combat crews therefore frequently showed a complete lack of understanding for what could and what coul not be done in rescue operations. A cardinal requirement was to prevent interference by such commands in the conduct of rescue operations by the responsible air-sea rescue service chiefs. To this end the Commanding General, Third Air Fleet decided on the temporary appointment of Generalleutnant Vierling as Chief of Air-Sea Rescue Services, Third Air Fleet, in order to lend more weight to the authority of Major Dreyer, who now acted by order of the general.

No support and no protection could be expected for rescue operations from naval seaborne units in the Channel during the first year of the war, since the German Navy still had no surface craft available for such action. The almost incredible situation thus arose that a few large

and numerous small seagoing craft of the rescue service operated almost daily in the Channel, sometimes within sight of the English coast, without any naval support in any form. Valuable vessels, such as Air Traffic Control Ship Bernhard von Tschirschky operated in Channel waters escorted by two speedboats of the Air-Sea Rescue Service to provide protection against submarine attack. Characteristic of the period is the fact that, at the request of the responsible naval authorities at Brest, the Bernhard von Tschirschky was detached in the early dawn of a day in late summer, 1940, to await the arrival of the last five German destroyers en route from Narvik at the western entrance to the English Channel in order to pilot the destroyers, under Commodore Beye, through the difficult Goulet de Brest Channel into the harbor of Brest.[3] Also at about the same time a triple outpost line of air-sea rescue surface craft for two nights protected the entrance to Cherbourg against a mining operation which the Navy expected the British would undertake against the harbor.[4]

In spite of what has just been said, the best conceivable

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3. Lieutenant Colonel C. Hess: Das erste Jahr der Seenotzentrale Brest am Atlantik, p. 6.

4. Colonel C. Dreyer: Der Seenotdienst der Luftflotte 3 vom August 1940 bis Juni 1941, p. 11.

relations existed between the rescue service and the Navy, which rendered all assistance it could. Thus, the sometimes excellent signal communications of the Navy were frequently a highly valuable support, and it was the Navy that for the time being made crews temporarily available for the majority of the surface rescue craft. Later, the Navy naturally had a fairly large number of highly valuable combat vessels in these areas, but the opinion so frequently heard that these could have given any appreciable support in rescue operation is erroneous. The naval units which were suitable for the purpose, such as E-boats, minesweepers, and escort vessels, had their own specific missions to perform, and when they returned to port they were not ready for immediate action. No intention exists here to criticize this circumstance, which was only natural, but its natural consequence was that naval units only very rarely could be used to support air-sea rescue activities, which called for immediate action in response to distress calls, even when naval personnel were the ones to be rescued. The present writer personally experienced a case in point during his assignment as Chief of the Cherbourg Regional Air-Sea Rescue Command: In the summer (?) of 1942 a German convoy level with Alderney Island suffered heavy losses in an attack by British naval units; a

between midnight and early dawn a speedboat of the rescue service proceeded twice from Cherbourg to the 24-miles distant battle area to rescue crew members from the destroyed naval craft, some of whom were found clinging to rocks. This action by the rescue boat was necessary in spite of the face that naval E-boats were already in port at the time.

The desire to provide other means of succour for airmen wrecked at sea produced the idea of anchoring floats along the most frequently used air routes. It was thought that crew members from disabled aircraft might be able to land on the floats, from where they could be rescued later by the rescue service. The Chief of Air-Sea Rescue Services, Third Air Fleet, put the plan into practice with improvized means as a trial (Illustration Appendix 28). However, owing to the strong tidal currents in the Channel, not a single rescue materialized from this effort, for which reason all floats that had not been carried away by the currents were recovered and the service depended once more exclusively on the use of planes and surface craft.

Unfortunately, the idea just described was taken up

by General Udet--Chief of the Special Supplies and Procurement Services--, and his chief engineer, Lucht, who endeavored to put it into effect without consulting naval experts or airmen with experience at sea, and who themselves had no experience in seamanship. From a tour of inspection which carried them through the various areas of the coast, they brought home the plan of constructing what they called rescue buoys to be anchored in the Channel, and proceeded immediately to put their pland into effect. It was only through general talk that the appropriate staff division, Air Inspectorate 16, became aware of this extremely expensive project. The rescue buoys finally produced were rectangular in shape, measuring approximately 7'x13'x10', and were so constructed that, when anchored, the 7' front surface necessarily would catch the full force of the current. Each buoy had a tower with a signal mast on which w wrecked airman could hoist a flag to reveal his presence. Four beds were istalled and everything concsivable for the survival of wrecked personnel was supplied. In exceedingly difficult operations these monstrous buoys were towed into position outside of Boulogne by the two air traffic control ships, the Bernhard von Tschirschky and the Kirschan. In months of hard labor, often requiring fighter protection, they were anchored

with heavy chains and huge stone blocks.

The swift currents had an even more pronounced effect on these buoys with their broad fronts than on the improvized floats used in the first trial. Not a single person was saved through these buoys, which had the official designation Special Supplies and Procurement Lifebuoy (Rettungsboje Generalluftzeugmeister). On the other hand they caused extra work for the rescue planes, which were required to fly a check round each day to ascertain whether anyone had managed to board one of them. Another troublesome item was that the batteries of the anchor lights required by the Navy had to be changed each month. Finally, a considerable number of the buoys dragged their anchors or were torn loose by storms or currents and made the dangerous waters even more dangerous. Some drifted ashore on the French coast, some on the English, where the British repainted them and anchored them for their own wrecked airmen, but with considerably less generous survival supplies.(See Illustration Appendix 32). In the end orders were received to recover all buoys, a task which proved even more difficult than the original operation of mooring them hadbeen (Illustration Appendixes 30 and 31).

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30 and 31).

From what has been said so far it is evident that what happened in air-sea rescue activities in the Atlantic and English Channel was the focus point of developments in the service, that the experience gained and the rescue equipment tested here were of the utmost importance for rescue operations in other areas. Some of the important measures in this respect were the introduction of Do-24 planes; the use of assault type boats of the Army Engineer Corps and rescue speedboats; the increased armament for rescue planes and surface craft; the development of pneumatic boats--particularly the new type for fighter aircraft; the improvement of signal equipment; the introduction of the NS 2 and NSG 4 radio distress signal transmitter; the introduction of voice radio communications with fighter pilots; and the use of directional radio in directing the operations of rescue planes.

Because of the impact British attacks against German rescue units had on the development of the entire air-sea rescue service, it seems advisable to give a little more detailed information on the subject here. To everybody who had any knowledge of circumstances in the English Channel it was clear at the time that the British could not afford

to allow German planes and surface craft engaged in rescue operations an insight into the coastal waters south of the English coast, with their convoy routes, minefields, etc.

On the other hand no unprejudiced observer can condone British action in shooting down German rescue planes in other areas of the Channel, and in the coastal areas of France, Belgium, and Holland, particularly since the planes involved could by no stretch of imagination be considered anything like a match for any combat plane because of their low speed, their lack of maneuverability, and their inferior armament. The rescue planes were employed exclusively in humanitarian missions, and it was emphasized repeatedly at the time that they made no difference in their activities between friend or foe. What is particularly hard to understand is that, without regard for this fact the British continued their attacks although aware that they were frequently shooting down planes carrying British personnel who had just been rescued from drowning. Taking into consideration that the British action was known to the German rescue personnel, it can be taken as a sign of high humanitarian idealism that they continued to take off on their errands of mercy in response to distress calls even when they knew that those they were going out to

rescue were the enemy. The various interpretations given of the terms of the Geneva Convention and other pertinent international agreements play an extremely inconsequential role in any judgment of the moral issues under the given circumstances. The action of the British forced the German

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5. Lieutenant Colonel C. Hess: Die Rettungsboje General-luftzeugmeister, with comments by Generalleutnant K. Goltz.

side to take countermeasures, and so rescue planes were assigned fighter escorts when on missions from 1941 on. Escort fighters either were to join the rescue unit at its base or at a prearranged point along the route. Any relief of the escort fighters was to take place over the rescue mission, and if the necessity arose to cease fighter protection prematurely, the appropriate air-sea rescue command was to be informed in good time. It is only natural that complete fighter protection could not be furnished, and this applied particularly to rescue planes on missions carrying them beyond the operating range of German fighters. The effectiveness of the protection given hinged upon local conditions, and the attentiveness and combat experience of the fighter pilots assigned on the escort mission. When out on long missions, rescue personnel were grateful for the knowledge that escort fighters relieving each other at regular intervals were maintaining watch far above them. It also happened, however, that a pair of fighters would be curving around 3 000 feet up completely ignorant of the fact that at an altitude of only 300 feet two He-59 rescue planes were being shot down below them. On one occasion a He-59 plane and a rescue speed boat on a mission about half-way across the Channel north of Cherbourg were assigned an entire squadron as escort. This

brought British fighters to the scene and a regular dog-fight developed, so that the He-59 was compelled to leave the rescue spot in order to escape destruction. The speed boat, on the other hand, had to pick up not only the German fighter pilot involved in the original search, but another three (one German and two British) fighter pilots in addition, thus rescuing four persons within a very short time. In the heat of the battle the speedboat almost fell prey to two British E-boats. These attempted to intercept it on its way back to Cherbourg, but with its speed of 40 nautical miles the German boat was able to escape.

Apart from minor incidents, cooperation between fighter and air-sea rescue units was good on the whole. This was due in no small measure to the installation of Fu G 16 radio instruments in rescue planes around mid-1941, so voice radio communication with fighter pilots was possible.

With the transfer of numerous fighter units from the Channel areas, the provision of fighter escorts became increasingly difficult. Rescue operations with planes therefore gradually became so costly, that the use of

planes in the air-sea rescue service had to be almost completely discontinued in certain segments, for example, between Boulogne and Calais.

Advantage is taken gladly of the opportunity provided here to express appreciation for the unselfish services rendered on so numerous occasions by the German fighter arm to the air-sea rescue service. Conversely, a number of fighter commanders have expressed their gratitude and appreciation to the various air-sea rescue units and to particularly deserving individual crew members. (See Appendix 19).

The best solution of the problem of protection during air-sea rescue operations would have been a special fighter which could at the same time function as a search plane. This solution was recommended by experts as early as in 1942. Unfortunately, this solution was only realized in 1944, and then chiefly only because no other use could be found for the Me-410 aircraft, which hadbeen rejected as night fighters. Towards the end of the war the Me-410 proved excellent in support of air-sea rescue operations over the North Sea.

At Cherbourg, the center of air-sea rescue activities in the zone of the Third Air Fleet, the initial difficulties had been overcome in the meantime with assistance

from Major Dreyer, the Chief of Air-Sea Rescue Services, Third Air Fleet. Major Dreyer then moved his headquarters to Peppinwast Castle, near Cherbourg. Here, away from the premises of the local rescue center, he and his staff were able to devote their attention to all agencies of the rescue service and to obtain a better overall picture and benefit from overall experience.

In the spring of 1941 the units of the Second Air Fleet were transferred away from the Channel coast for general rehabilitation, in which they were to be brought up to strength and their aircraft engines and fuselages were to be thoroughly overhauled. Thereupon they were to assemble in the Zone of Interior for redeployment, and the Third Air Fleet was to assume responsibility for the areas hitherto under the Second Air Fleet. This brought the rescue center at Boulogne-Wimille, which now moved to Wimereux, and the center in Holland, which moved to headquarters in Utrecht, under the Chief of Air-Sea Rescue Services, Third Air Fleet.

In July 1941, some time after General Vierling had assumed other responsibilities once again, Major Dreyer was transferred to the North Sea. His place was taken by Major Klintsch, who moved with his headquarters to the

command post of the Third Air Fleet at Cabourg and later at Paris-Sèvres.

In contrast with conditions at the Third Air Fleet, where the air fleet commander, Field Marshal Sperrle, exerted his personal influence in support of the rescue service, the rescue service units of other air fleets all suffered under personnel shortages. To find a remedy for this weakness, and at the same time to work out plans for a reorganization of the whole service wa the difficult task which Air Inspectorate 16 set itself in the autumn of 1941. After a thorough study of all recommendations received, Inspectorate 16 submitted to Branch 2 of the Luftwaffe General Staff the following basic organizational plan:

1. To direct air-sea rescue activities in each air fleet zone: A Chief of Air-Sea Rescue Services with an appropriate staff and with the command authority of a regimental commander;

2. Under each such headquarters one or more Regional Air-Sea Rescue Commands, each under a commanding officer with the status of a battalion commander;

3. Organic to each Regional Air-Sea Rescue Command: 1 air-sea rescue squadron under a squadron

captain; 1 air-sea rescue flotilla (surface craft) under a flotilla leader; and 1 signal platoon under a platoon leader;

4. Wherever necessary the Regional Air-Sea Rescue Command should be assigned: air-sea rescue detachment commands under a commander with the status of a company commander. Each such detachment command to receive signal personnel, planes, and boats from the controlling regional command;

5. Air fleets not stationed directly at a coast should, whenever necessary, be given a separate regional air-sea rescue service command.

After approval of the recommended personnel strengths for the new air-sea rescue service signal companies by General Martini, Chief of Luftwaffe Signal Communications, orders prescribing the reorganization of the air-sea rescue services could at last be issued in the spring of 1942. It should be noted here that the various air fleet commands ordered occasional deviations from the organizational plans worked out by Inspectorate 16. In frequent tours of inspection, General Goltz, Inspector of the Air-Sea Rescue Service, insured that the newly ordered organization was established and maintained.

Unfortunately, it has not been possible to trace the Luftwaffe General Staff directive ordering the organizational changes discussed above. For this reason the reader is referred to the copy of an authentic order issued by the Third Air Fleet in this matter which will be found in Appendix 20. What makes this order particularly important and interesting is the fact that it shows not only the personnel assigned to key positions, but also the allocation of planes and surface craft and signal communication facilities to the various local commands throughout the zone of the Third Air Fleet from the Franco-Spanish to the German-Dutch frontiers. No other records are available showing personnel assignments in the air-sea rescue service in the English Channel and Atlantic areas, but a list has been compiled from various material uncovered and is included as Appendix 21.

To return to air-sea rescue operations as such it can be said that in the initial years the enemy, apart from occasional incidents, did nothing to interfere with these activities in the Channel or at the western exit from the Channel. However, high demands were made in respect to the abilities of personnel in navigation, seamanship, and aviation. Above all, seaplane pilots had to master the

art of surfacing far out in the Atlantic under the difficult conditions of rollers, breakers, and wind. After initial difficulties had been surmounted, units were dispatched occasionally to surface far out in the Atlantic even in cases not actually within the air-sea rescue category. For example, a rescue plane was ordered 300 miles out in the Gulf of Biscay to pick up a seriously ill member of a submarine crew.

A singular case occurred in September 1940 in the Atlantic, when a plane from the Weather Observation Squadron was shot down about 200 nautical miles west of Brest by a British twin-engine fighter. The radio operator of the downed plane had radioed his assumed position and the squadron leader took off immediately to establish and maintain contact. A Briguet-Bizerte seaplane dispatched to rescue the reported wrecked crew found the pilot of the contact plane, which had also been shot down in the meantime, in his pneumatic boat. In spite of a long search, nothing was found of the wrecked crew first reported, which presumably had given a wrong position. About ten days later a French fishing fleet arrived at Concarneau landed the missing crew, unfortunately including one corpse. The airmen had been

given excellent care by the French fishermen, and all members of the French fishing fleet received a considerable reward.

Features worthy of note in the above instance are (a) the excellent navigational computing which made the rescue of the downed search pilot possible; and (b) the strange behavior of the attacking British: after having

shot down the German weather plane, the British attacked and destroyed the pneumatic boat into which the crew escaped and injured the meteorologist severely. Then, whenn the men in the water had given up all hope, a British Sunderland seaplane returned and dropped them a new float. No suitable explanation has been found for such contradictory behavior.[6]

In another case a rescue plane was dispatched to rescue the crew of a Ju-88 in distress in the Gulf of Biscay. The rescue plane, a Briguet-Bizerte not equipped for blind navigation took off at 1900 hours, piloted by an exceptionally able air-sea rescue aviator, First Lieutenant Dr. Wagner. After flying south along the coast, the plane flew out into the Bay of Biscay just as the sun was setting. It was guided to the spot by contact planes and surfaced in the dark. After a long search one man was found in a poorly inflated pneumatic float filled with water. Further search resulted in the rescue, purely by chance, of another crew member floating unconscious in the water. The rescue plane returned to its base at midnight and the two rescued men were returned to their unit after a few days.[7]

Another rescue operation in which First Lieutenant

Wagner participated called for excellent navigation and remarkable ability in seamanship and aviation. It was the case of a fighter downed in the English Channel. The fighter had been one of a pair of fighters operating together, and the other plane had observed the mishap, and had taken precise bearings, so that the exact location of the plane in distress was known. It was approximately 30 miles southeast of the Scilly Islands and 90 miles northwest of Brest. It was by no means a pleasant task to fly into these waters, since large numbers of British single- and twin-engine fighters were stationed on the Scilly Islands. The rescue plane took off at about 2200 hours, escorted by fighters. Visibility was none too good, although it was still light, but due to excellent navigation the rescue plane, a Briguet-Bizerte, found the spot. The downed plane had proper survival equipment aboard and the pilot commenced firing red signal shots at regular intervals as soon as he heard the engines of the approaching plane. The patch of oil over the spot where the fighter had sunk was found and not far off the long yellowish-green streak produced by the color pouch came into sight, at the end of which was the fighter's pneumatic boat. In spite of the heavy seas and the high rollers, the seaplane surfaced

perfectly, although it seemed at times as though it would

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6. First Lieutenant C. Hess: Das erste Jahr der Seenot-zentrale Brest am Atlantik, pp. 9-10.

7. First Lieutenant Dr. Th. Wagner: Schilderungen von Seenotfaellen in the journal Seeflieger, 1943, ## 8 and 10. The account given above is abridged.

break apart. After some time spent in search the pilot was found and taken aboard, where he was placed in a heated sleeping bag. The Briguet-Bizerte had only a small power reserve and its pilot realized that to take off in the dark under the existing stormy conditions was a grave risk. However, to remain on the surface so close to the British air bases seemed even more hazardous, and he decided to accept the lesser risk of a take off under the extremely difficult conditions. After several hard bumps, in which the seaplane threatened to founder, it finally rose. The rest of the return flight was made without any difficulty and with the aid of night beacons this exceedingly difficult rescue operation was brought to a successful conclusion by a safe landing.

Besides such rescue operations in the Atlantic, the missions which rescue planes and boats had to carry out in the dangerous coastal waters of Brittany made equally great demands on the aircraft employed and their crews. On many occasions seaplanes were forced by sudden storms to remain surfaced and make their way with damaged floats and wings to one of the numerous small ports or bays. When this happened during high tide or during a northwesterly storm, the seaplaneswere left stranded so high

later that they could only be re-floated with great difficulty.

Owing to its unprotected fuel tanks, the Briguet-Bizerte unfortunately was easily set in flames by weapons fire. One such case occurred in the vicinity of the Ile de Batz, northwest of Morlaix. Under attack, the pilot, Master Sergeant (Oberfeldwebel) Jahnke, immediately landed his burning plane and escaped with the rest of the crew, while the escaping gasoline and oil were already burning on the surface of the water. Suddenly it was noticed that one of the crew members, who had been wounded had been unable to leave the burning plane. Although already suffering from burns, Jahnke swam back to the plane, rescued the wounded man, and swam back with him under the burning surface. Shortly after, the entire crew was rescued. For his heroic action Master Sergeant Jahnke wasregisteredtin the Golden Book of the Luftwaffe.

In the zone of Air-Sea Rescue Center Cherbourg it is only natural that far more missions were carried out in 1940 and 1941 than otherwise. This was particularly true of the periods during which our bomber units were attacking the British Isles. It was not at all infrequent at

the time for three or even five rescue missions to be under way simultaneously. Large-scale search operations also were not infrequent, particularly after days of heavy attack with a correspondingly high number of planes reported lost at sea. In such cases rescue planes were dispatched in a careful search of specific sea areas. In the first year these search operations resulted in more than 100 rescues in the Cherbourg-Le-Havre area alone.

Quite often search missions were unsuccessful. For example in October 1940 Wing Commander Helmut Wiek, decorated with the Oak Leaf Cluster, was reported shot down south of the Isle of Wight. All operable rescue planes and surface craft, including those stationed in the zone of the Third Air Fleet, carried out a systematic search of the entire area lasting two days, but without success. An inquiry addressed to the British by way of the international radio frequency produced the reply that they also had found no sign of Major Wiek.

In other cases, success was due to exceptional luck. Thus, the case of an He-111 seems almost incredible. The plane was en route back from England with damaged engines and was slowly losing altitude. It his distress signal, the radio operator was able to give the precise point

at which the plane left the British coast on its cross-Channel flight. It was after midnight and the plane was flying with position lights on a course to Cherbourg. An air traffic control boat was dispatched immediately to meet it. Even before the plane was forced to surface its position lights had been sighted from the rescue boat, which arrived on the spot within a few minutes and was able to take all crew members aboard.

A report in the troop newspaper "Frontnachrichten-blatt der Luftwaffe", # 44 of 14 November 1942, presents a typical case of the exemplary devotion to duty displayed by air-sea rescue crews and their complete defenselessness against fighter attack as follows:

> While on a rescue mission two of our air-sea rescue planes came under attack by a sizable British fighter force. One of the planes was badly damaged, its pilot was killed and the flight mechanic was severely injured. Although he had no training in aviation, and although all instruments were destroyed, the observer, Lieutenant Wagner, managed to level out the plane just before it struck the water and then fly it back and surface it safely at its home base. Immediately after surfacing, Lieutenant

Wagner boarded another plane and flew back with a new crew to the scene of the disaster, where he was able to rescue the other two members of his downed plane. The commanding general of the air fleet expressed his gratitude to and admiration for Lieutenant Wagner for his flight performance and his personal initiative.

Similarly to the Cherbourg zone, numerous cases of airmen in distress at sea occurred in the zone of Regional Air Command III (Wimereux), formerly Air-Sea Rescue Center Channel Coast (Boulogne-Wimille), because of the narrowness of the Channel at the Straits of Dover and the adjacent areas. Furthermore, the French Channel coast between Boulogne and Calais came under particularly frequent British air attack because of the British fear of a German invasion from the area, so that a large number of enemy airmen also were brought down at sea here. Unfortunately, no details are available on the dramatic phase of air-sea rescue operations in this area during the first year. Our rescue craft, most of them surface craft in this area, frequently came under British air attack even while endeavoring to rescue British airmen in distress. For example, one of our best speedboats,

under Helmsman Andersen, a very capable seaman, was lost in this way outside of Calais on 5 August 1941. Under attack by six British fighers it was shot on fire after offering bitter resistance. Lieutenant Colonel von Bredow, at the time Chief of the Air-Sea Rescue Center, also came under attack while participating in a rescue mission with a boat outside of the Somme River estuary and was severely wounded. The 3d Air-Sea Rescue Squadron was so endangered by these constant air attacks while based at Boulogne that it had to be withdrawn to Ostende, leaving only three planes behind for local operations, as previously described in more detail.

After the opening of the Russian campaign in June 1941, British air superiority gradually became apparent in all Channel areas, including the zone of Regional Air-Rescue Command III, where its impact on air-sea rescue operations were particularly serious. It even occurred that an Ha-59 was shot down off the coast of Belgium while en route of departure, and in another case British Hurricane fighters in a low-level attack shot on fire and destroyed three air-sea rescue planes at the Ostende seaplane base. British bombing attacks

against Ostende--where the seaplane base was not equipped for night operations anyway--also became so frequent that the aircraft crews had to be moved to quarters in Blankenberghe. Unfortunately so many air units were withdrawn after the Russian campaign commenced that it was impossible in many cases to provide fighter escorts, so that the losses incurred in air-sea rescue operations increased steadily. Finally the service had to be discontinued completely in the Boulogne-Calais areas.

The 3d Air-Sea Rescue Squadron, at the time under Captain Luchmann, provided planes not only for Air-Sea Rescue Center Channel Coast but also for the area of Holland, for which purpose it had stationed a number of planes at Schellingwoude, where the effects of British air superiority were still not so marked.

The few authentic sources still in existence include a report on operations and achievements as part of a Third Air Fleet after-action report on the Air-Sea Rescue Service (See Appendix 22). An interesting point is that the report covers the June-December 1941 period, and thus the period of the crucial change dealt with above, when British air superiority was beginning to become noticeable. The changing situation is clearly illustrated

by the figures given for losses incurred. Prior to the Russian campaign the personnel rescued occasionally included a number of British. In the period mentioned above, the 197 air personnel rescued at sea included 82 British, making more than 40 percent of the total number. Since the report in a number of cases deals separately with the four air-sea rescue centers, it also clearly reveals how the emphasis in air activities was shifting from west to east.

At the end of 1941 severe winter conditions set in in the eastern Channel areas. The danger existed that the brack water in the basin of the Ostende seaplane base might freeze, so that all seaplanes had to be moved to Schellingwoude. In February 1942 the basin at Schellingwoude also froze, so that no seaplanes were able to operate until mid-April, during which period air-sea rescue operations had to be carried out by surface craft alone.

It is worthyof note that it was during this period, namely on 11 February 1942, that the German warships Scharnhorst, Gneisenau, and Prinz Eugen forced their way thorugh the English Channel into the North Sea. To provide maximum air-sea rescue services for the operation all air-sea rescue planes at Brest, Cherbourg, and Le

Havre, where the seaplane basins were ice free, and all surface rescue craft were held under alert, and a number of modern air-sea rescue boats were included in the fast convoy. An exceptionally large number of airmen from British torpedo bombers were rescued during this operation. Unfortunately no authentic figures are available on the subject.

In April 1942 the 3d Air-Sea Rescue Squadron received its first Dp-24 seaplane. Captain Luchmann, squadron leader at the time, summarizes the advantages of this model in ten points, as follows:

(1) It required a shorter take-off run and could take off without difficulty on a smooth surface wnd without wind;

(2) It could take off in a circular run and could thus operate from a smaller water surface;

(3) It had a lower landing speed and a shorter surfacing run;

(4) It was between 36 and 42 miles faster than the previous models;

(5) It had better weapons: one 20-mm cannon and two Model 131 machine guns;

(6) It had considerably improved navigational, sea-going, and radio equipment;

(7) It had a larger carrying capacity and pay load;

(8) It was easy and simple to maneuver with three engines even in a quarterly wind;

(9) It was more seaworthy: it could take off and surface at sea in conditions up to sea condition 4;

(10) It had good flying properties.

A full year passed, however, before the 3d Air-Sea Rescue Squadron received its full complement of Do-24 planes.

The seaplane base at Schellingwoude on the Yssel Sea was admirably suited for the retraining of crews for the new model and at the same time for giving them additional training in seamanship. At the time only few rescue missions were flown from this base.

The following rescue mission carried out from the Schellingwoude base is recounted here because it was the first successful operation involving the use of the newly introduced distress radio transmitter, Model NS 2. In the evening dusk a He-111 had been struck, and its engines damaged, by AAA fire. For a while it had been able to hold its course with only one engine but had then been forced down over sea, approximately 84 miles

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northnorthwest of the Dutch Island of Walcheren. The crew had remained uninjured and had been able to board their pneumatic boat without undue haste and completely dry. Then they had readied their distress signal transmitterand, because there was no wind, had hoisted their antenna by means of their balloon. Being fairly far from shore they were by no means certain that their SOS signals would be picked up by shore stations. The signals were picked up, bearingswere taken, and the position of

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8. Captain G. Luchmann: Einsaetze von Seenotflugzeugen im Kanal und in der Suedwestlichen Nordsee in den Jahren 1941-1942, p. 13.

the downed plane was established with relative accuracy. Two planes took off on the rescue mission in the early dawn and reached the computed grid square in about ninety minutes. In spite of extremely poor visibility because of fog, a white star signal was sighted after some time and shortly thereafter the four crew members of the downed plane were taken aboard. Apart from other favorable circumstances, the crew owed their rescue to their own careful survival preparations and to their proper action, since they had come down in an area which was crossed only rarely by aircraft.

During 1942 the activities of the operational Luftwaffe declined considerably in the entire area of Northern France and Belgium. Furthermore, British fighter interference with rescue air missions became so serious that the rescue planes were withdrawn from Boulogne in the summer and from Ostende in the autumn of 1942, so that the entire squadron was now based at Schellingwoude. From then on all air-sea rescue missions within the new zone of Regional Air-Sea Rescue Command 3 (Wimereux) were handled by rescue boats of the 3d Air-Sea Rescue Flotilla, under the able command of Captain Schirmack.

The 3d Air-Sea Rescue Squadron, in contrast,

displaced in December 1942 to Southern France, after a number of its aircraft had transferred to there in October. Schellingwoude was then included in the zone of the 2d Air-Sea Rescue Squadron, with headquarters at Cherbourg.

Surface rescue operations also now became increasingly difficultbecause escort fighters were only rarely avilable. The armament of the rescue boats was therefor improved; double and triple machinegun mounts were developed for the boats, so that each boat with its eight or more antiaircraft machine guns was able to defend itself fairly well against direct attack. However, the seaworthiness of the boats was reduced since the weight of the numerous weapons rendered them top-heavy. In spite of these difficulties the crews of the flotilla continued to display exemplary devotion to duty.

In the meantime the frequency of British air incursions into German territory had begun to increase, a circumstance which resulted in the emphasis in air-sea rescue operations shifting even farther east, to the areas of the Dutch and north German coastline. The strong German fighter forces at Schipol and Deelen not only provided appreciable protection for the air-sea

rescue units operating off the coast of Holland, but also inflicted heavy losses on the attacking British air forces. This increased the frequency of missions to rescue British airmen in distress at sea, which were carried out with the same alacrity as missions to rescue German personnel. Within six months almost thirty British and Canadian airmen thus were rescued off the coast of Holland. This number included seven British rescued by a Do-24 plane, which flew a distance of 42 miles over the western North Sea for the purpose, which was no small risk in the existing air situation. (see Illustration Annex Volume, p. 38).

Numerous British planes also made crash or emergency landings in the Yssel Sea, but strangely enough only a smaller percentage of these could be rescued. The salvage barge of the Schellingwoude seaplane base succeeded in recovering the airplane wrecks, however, and newly developed rescue equipment items were secured in this way in addition to hitherto unknown weapons and navigational instruments.

The last Chief of Regional Air-Sea Rescue Command IV (Holland), Major Dr. Poessel, had transferred his headquarters from Utrecht to Schellingwoude in the meanwhile

(in February 1944) in order to be closer to his operating units. However, the enemy were becoming increasingly active in the air over this area, and the German air-sea rescue units suffered considerable losses in spite of strong fighter escorts. The British radar and intelligence services were so effective that every plane crossing the coastal areas was detected and attacked, including rescue planes and rescue surface craftdispatched to rescue British personnel. Finally, German rescue operations became well-nigh impossible when severe restrictions were imposed on fighter operations in the coastal areas and when orders arrived that escort fighters were to be provided only on direct orders from the Third Air Fleet.

A point worth mention here is that during this period First Lieutenant Herlinghaus had developed an excellent signal communications system in Schellingwoude. In premises within the air-sea rescue command post all normal radio channels plus the fighter frequency were under constant control, so that it was possible from here to remain posted on all current operations. During the invasion and later during the evacuation of France this communications post rendered highly valuable services

as a radio relay station to General Headquarters.[9]

The Allied landing in Normandy on 6 June 1944 put an almost complete end to the activities of the German Air-Sea Rescue Service in the Channel areas. All planes were withdrawn from Regional Air-Sea Rescue Command IV (Holland) which from then on functioned for a while as a separate Air-Sea Rescue Command until consolidated with Regional Air-Sea Rescue Command V (North Sea).

In spite of diligent efforts it has not been possible to obtain reports on the final fate of the other Regional Air-Sea Rescue Commands at Brest, Cherbourg, and Wimereux, which had to cease operations after the Allied landing in Normandy.

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9. Major Dr. Poessel: Letter to Generalleutnant K. Goltz, 16 July 1953.

4. The Mediterranean Sea and the Black Sea.

a. The Mediterranean.[1] On 10 January 1941 German air units flew their first mission in the Mediterranean, thus expanding the activities of the Air-Sea Rescue Service to include another theater of operations.

In the course of time four distinct zonal missions developed, as follows:

(1) To provide rescue services for the air forces of the X Air Corps, under General der Flieger Geisler, operating from Sicily against Malta.

(2) To provide rescue services for sea-borne transportation of the Africa Corps activated to support the Italians in Africa, and the establishment of air-sea rescue bases along the coastline of Lybia.

(3) To provide rescue services for German air units operating from the French Mediterranean coast again against hostile convoys and other movements in the western Mediterranean.

(4) To provide rescue services during operations to conquer Greece and the Island of Crete.

This time the Chief of Luftwaffe Supply and Administration had given Inspectorate timely warning of the impending military operations, thus enabling the

1. The following sources were used in the preparation of this section:

Generalleutnant K. Goltz: Mittelmeer, Schwarzes Meer, und Ostsee.

Colonel Bartels: Der Seenotdienst der Luftwaffe im Mittelmeer vom April-Dezember 1941.

Lieutenant Colonel M. Fengler: Seenotzentrale Aegaeisches Meer.

Major W. Kretschmar: Der Aufbau des Seenotdienstes an der Lybischen Kueste.

Major Hans Haeger: Der Seenotdienst Italien, November 1943-Mai 1945.

Captain G. Luchmann: Der Einsatz von Seenotflugzeugen und Seenotfahrzeugen im westlichen Teil des Mittelmeeres im Jahre 1943.

See also map, Appendix Volume, ## 23 a and b, in which all places mentioned in the text have been entered.

inspectorate to make the necessary advance preparations so far as the personnel and materiel supply situation permitted.

For the execution of zonal missions (1) and (2), above, plans provided for the establishment of an air-sea rescue center at the X Air Corps in Taormina, and Major Bartels was dispatched to Sicily for the purpose in early March 1941. Major Engelhorn, who was able to draw on his valuable experience in the North Sea and the English Channel, assisted him in organizing the new center.

The service along the European side of the Mediterranean in the new center's zone was organized as follows:

Air-Sea Rescue Center Sicily,
Headquarters in Taormina at the command post of the X Air Corps;

One air-sea rescue squadron of nine He-59 and Do-24 planes at Syracuse under Squadron Leader Lieutenant Woelke, who had distinguished himself in an equivalent assignment at Boulogne in the English Channel area; The planes were transferred to various points within the zone as circumstances required;

One air traffic control boat at Syracuse (moved from Germany to Italy by rail as previously described). An additional number of boats moved into the Mediterranean through France at the end of April served to reinforce the

the facilities at Syracuse and to provide boat services at various sub-bases. Thus, one boat was assigned to Trapani (later Marsalla) on Sicily to provide rescue services on the west coast of the island.

The Italian air-sea rescue service, which cooperated with the German, was based at Elmas, near Cagliari in the island of Sardinia. The Italian service employed sea-planes of the former commercial air lines, which were flown also during the war by their former civilian pilots. The planes were still operating under the Red Cross, but it soon became evident that the British respected the Red Cross on the Italian rescue planes just as little as they had done formerly with the German rescue planes operating in the English Channel.

In the second half of March 1941 Colonel Goltz, Inspector of Air-Sea Rescue Services, inspected all of the points mentioned above in the company of Majors Bartels and Engelhorn. Using a Do-24 plane for his tour of inspection, Colonel Goltz also visited Tripoli, also a sub-base of Air-Sea Rescue Center Sicily and the first established on the coast of Lybia. First Lieutenant Kretschmar was assigned to establish this sub-base.