

ENIGMA

The Enigma machine is an encryption device developed and used in the early- to mid-20th century to protect commercial, diplomatic and military communication. It was employed extensively by Nazi Germany during World War II, in all branches of the German military.

Enigma has an electromechanical rotor mechanism that scrambles the 26 letters of the alphabet. In typical use, one person enters text on the Enigma's keyboard and another person writes down which of 26 lights above the keyboard lights up at each key press. If plain text is entered, the lit-up letters are the encoded ciphertext. Entering ciphertext transforms it back into readable plaintext.

The rotor mechanism changes the electrical connections between the keys and the lights with each keypress. The security of the system depends on Enigma machine settings that were changed daily, based on secret key lists distributed in advance, and on other settings that change for each message. The receiving station has to know and use the exact settings employed by the transmitting station to successfully decrypt a message.

As used in practice, the Enigma encryption was broken from 1932 by cryptanalytic attacks from the Polish Cipher Bureau, which passed its techniques to their French and British allies in 1939. Subsequently, a dedicated decryption centre was established by the United Kingdom at Bletchley Park as part of the Ultra program for the rest of the war.

While Germany introduced a series of improvements to Enigma, and these hampered decryption efforts to varying degrees, they did not ultimately prevent Britain and its allies from exploiting Enigma-encoded messages as a major source of intelligence during the war. Many commentators say the flow of communications intelligence from Ultra's decryption of Enigma, Lorenz and other ciphers shortened the war significantly.

Enigma was invented by the German engineer Arthur Scherbius at the end of World War I. The German firm Scherbius & Ritter, co-founded by Arthur Scherbius, patented ideas for a cipher machine in 1918 and began marketing the finished product under the brand name *Enigma* in 1923, initially targeted at commercial markets. Early models were used commercially from the early 1920s, and adopted by military and government services of several countries, most notably Nazi Germany before and during World War II. Several different Enigma models were produced, but the German military models, having a plugboard, were the most complex. Japanese and Italian models were also in use. With its adoption (in slightly modified form) by the German Navy in 1926 and the German Army and Air Force soon after, the name *Enigma* became widely known in military circles.

Pre-war German military planning emphasized fast, mobile forces and tactics, later known as blitzkrieg, which depend on radio communication for command and coordination. Since adversaries would likely intercept radio signals, messages would have to be protected with secure encoding. Compact and easily portable, the Enigma machine filled that need. Around December 1932, Marian Rejewski, a Polish mathematician and cryptanalyst, while working at the Polish Cipher Bureau, used the theory of permutations and flaws in the German military message encipherment procedures to break the message keys of the plugboard Enigma machine. Rejewski achieved this result without knowledge of the wiring of the machine, so the result did not allow the Poles to decrypt actual messages.

The French spy Hans-Thilo Schmidt obtained access to German cipher materials that included the daily keys used in September and October 1932. Those keys included the plugboard settings. The French passed the material to the Poles, and Rejewski used some of that material and the message traffic in September and October to solve for the unknown rotor wiring. Consequently, the Polish mathematicians were able to build their own Enigma machines, which were called Enigma doubles. Rejewski was aided by cryptanalysts Jerzy Różycki and Henryk Zygalski, both of whom had been recruited with Rejewski from Poznań University.

The Polish Cipher Bureau developed techniques to defeat the plugboard and find all components of the daily key, which enabled the Cipher Bureau to read the German Enigma messages starting from January 1933. Over time, the German cryptographic procedures improved, and the Cipher Bureau developed techniques and designed mechanical devices to continue reading the Enigma traffic.

As part of that effort, the Poles exploited quirks of the rotors, compiled catalogues, built a cyclometer to help make a catalogue with 100,000 entries, made Zygalski sheets and built the electro-mechanical cryptologic bomb to search for rotor settings. In 1938, the Germans added complexity to the Enigma machines that finally became too expensive for the Poles to counter. The Poles had six *bomby*, but when the Germans added two more rotors, ten times as many *bomby* were needed, and the Poles did not have the resources.

On 26th and 27th July 1939, in Pyry near Warsaw, the Poles initiated French and British military intelligence representatives into their Enigma-decryption techniques and equipment, including Zygal'ski sheets and the cryptologic bomb, and promised each delegation a Polish-reconstructed Enigma. The demonstration represented a vital basis for the later British continuation and effort.

In September 1939, British Military Mission 4, which included Colin Gubbins and Vera Atkins, went to Poland to evacuate code-breakers Gwido Langer, Marian Rejewski, Jerzy Różycki and Henryk Zygal'ski out of the country with their replica Enigma machines. The Poles were taken across the border into Atkins' native Romania, at the time a neutral country where some of them were interned. Atkins arranged for their release and onward travel to Western Europe to advise the French and British, who at the time were still unable to decrypt German messages.

Gordon Welchman, who became head of Hut 6 at Bletchley Park, has written: "Hut 6 Ultra would never have gotten off the ground if we had not learned from the Poles, in the nick of time, the details both of the German military version of the commercial Enigma machine, and of the operating procedures that were in use."

During the war, British cryptologists decrypted a vast number of messages enciphered on Enigma. The intelligence gleaned from this source, codenamed "Ultra" by the British, was a substantial aid to the Allied war effort.

Though Enigma had some cryptographic weaknesses, in practice it was German procedural flaws, operator mistakes, failure to systematically introduce changes in encipherment procedures, and Allied capture of key tables and hardware that, during the war, enabled Allied cryptologists to succeed and "turned the tide" in the Allies' favour.

"The Secret Capture"

U-110 was captured by the Royal Navy on May 9 1941. This was perhaps the most important capture of the entire war and was so secret that even the crew of U-110 did not know of it! U-110, under the command of Kpt-Lt. Fritz Julius Lemp, had been attacking a convoy in the Atlantic south of Iceland together with **U-201** (Oblt. Adalbert Schnee), when Lemp left his periscope up too long (probably to confirm a kill):

He sank two ships totalling 7500 GRT that day) and the escort corvette HMS Aubretia sighted it, rushed to the scene, and began depth charging.

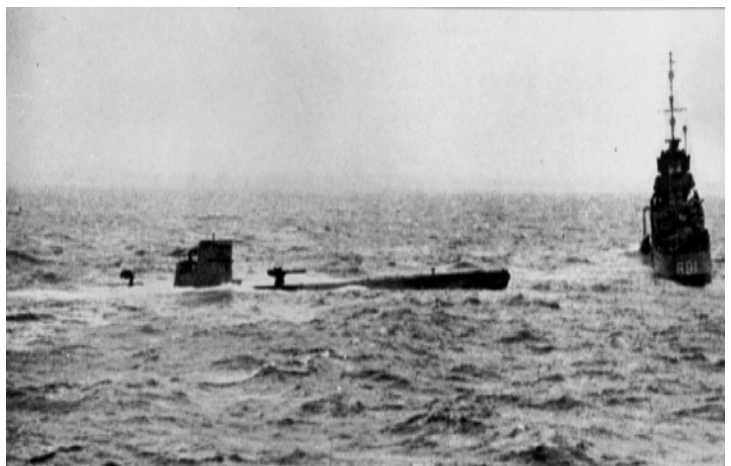
NARRATIVE (including action subsequent to the attack and a rough diagram of the action).

Contact obtained at 1430/9 bg. 2000 1300 yds whilst ship was screening H.M.S. Bulldog. Counter- attack on course 2200 was made with Medium setting pattern. Contact was regained immediately on ship turning to port and attack was made 0350 with first and throwers only. H.M.S. Aubretia dipped J flag 5 secs. after firing. At 1500 both Aubretia and Broadway in contact 1516 Broadway obtained marked hydrophone effect 0700, Aubretia attacked with full pattern.

1532 - Broadway attacked on bearing 1050, 1300 yards with deep setting. 1535 echo bg. 1120 600 yds chasing right slowly, course 1200. 1535-1/2 echo bg. 1150, steered 1240, 1536 fired full pattern. After the attack both Aubretia and Broadway heard echo slowly fade out. A sweep in vicinity was carried out by both ships with no result. 1600 ordered back to screen H.M.S.Bulldog. As surface of sea was covered with oil from Broadway's tanks, any evidence of submarine oil was impossible to see.

U-110 survived the first attacks, but then HMS Bulldog and HMS Broadway joined the hunt. U-110 was forced to surface, and HMS Bulldog immediately set course to ram (its commander realised it might be possible to capture U-110, and veered aside at the last moment) which caused Lemp to order "Abandon Ship".

Lemp assumed the boat would be sunk, and its confidential material would go down with it. When he was in the water he realised the boat was not sinking, and attempted to swim back to prevent capture. That was the last seen of him. Members of U-110's crew later claimed he was shot in the water by the British boarding party, but that was never confirmed.



FLEET
DESIGNER FORM P.

SECRET.
(Blank Forms to be kept locked up.)

REPORT OF ATTACK ON ENEMY SUBMARINE (C.A.F.O 4/40 and H.W.O. 24.)

H.M.S. BROADWAY.....
Date 9th May 1941

No. _____

1. SHIP. H.M.S. Broadway
2. Date and time. 1430 - 1830 9th May 1941
3. Position (latitude and longitude). 61° 36'N, 32° 30'W
4. Wind, weather, visibility. West force 4, Cloudy 6, Sea and swell 31
5. Tidal information (height, direction and speed). -----
6. Depth of water. 1200 fathoms
7. Reason for attack - * (a) Sighted/obs./ * (b) Asdic Contact. * (c) ~~Asdic Contact~~ ~~Asdic Contact~~
(d) ~~Asdic Contact~~ ~~Asdic Contact~~
8. Range on sighting or initial range of Asdic Contact. 1st 1300 yds, 2nd 1500 yds, 3rd 1300 yds.

ASDIC INFORMATION.

9. Nature of Contact - (a) Inclination *10° to 15°* (b) Hydrophone Effect. *Yes, marked after 2nd attack*
(c) Did target appear to move? *Yes*
(d) General Remarks. *Unsubstantiated by a submarine, attacks had to be made by stop watch as marking of records was poor on chart scale*
10. Range at which contact was lost. Contact lost by fading out
11. Method of obtaining time to fire - * (a) ~~Stopwatch~~ * (b) ~~Log~~ * (c) ~~Stopwatch~~ ~~Stopwatch~~ (d) Stopwatch
12. Was contact confirmed by other ships? yes
13. Was contact re-established after attack? yes
14. Asdic conditions. good

ATTACK BY DEPTH CHARGES (O.U. 5485, Chapter 1, paragraph 3).

15. (a) Mk. of Depth Charge. MK VII (b) No. carried. 33
(c) No. dropped and/or fired from throwers. 16
(d) Depth settings. 1st attack Medium, 2nd attack Deep, 3rd attack Deep.
(e) Whether they functioned correctly? yes

ATTACK BY GUNFIRE.

16. (a) Size of gun. (b) Range
(c) Type of shell and fuze. (d) No. of rounds fired.
(e) No. of hits and their position on enemy.
(f) Were all shells which hit seen to burst or penetrate?

ATTACK BY TORPEDO.

17. (a) No. of torpedoes fired. (b) Depth setting.
(c) Course and speed of torpedoes. (d) Course and speed of enemy.
(e) Ship's head on firing

RESULT OF ATTACK.

18. * (a) Submarine seen to surface. * (b) Oil patches seen.
* (c) Wreckage seen. * (d) Doubtful.
* (e) Unsuccessful.
* Delete those inapplicable.

19. NARRATIVE (including ...



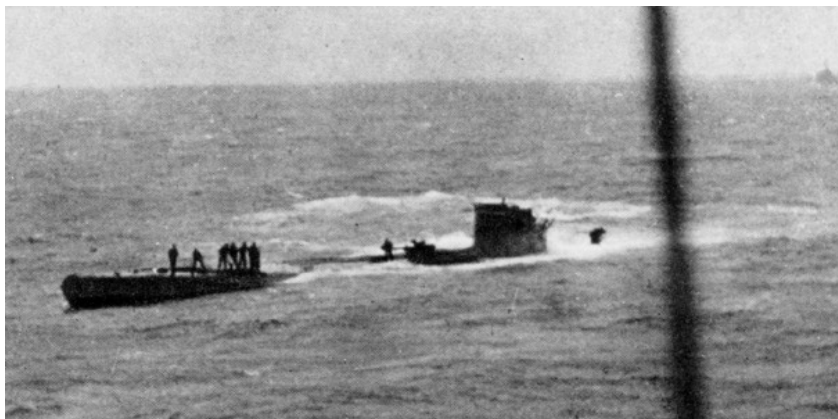
The boarding party commanded by Lt David Balme made several journeys between U-110 and HMS Bulldog to collect whatever they could get their hands on inside the boat. This proved to be very fruitful, as U-110 was abandoned in a hurry, and being a Type IXB U-boat, did not sink as rapidly as a Type VIIC would have. It is almost certain that many U-boats were sunk as a result of the material found inside U-110, including an Enigma machine with rotors

set and current code books.

The day after the capture, the British Admiralty realised the importance of this, and that if the Germans knew the boat had been captured, they would assume the worst, change their codes, and cipher system. The boat was accordingly ordered to be scuttled while being towed to Britain, the surviving crew were taken straight to Iceland to be interned, and everyone involved in the capture sworn to secrecy. 15 of U-110's crew died in the action and 32 were interned.

In January 2016, at the age of 95, Lieutenant Commander David Balme died a hero. Credited with capturing the top-secret Enigma machine that turned the tide of the deadliest war ever fought and thus shortening it by two years, he helped save hundreds of thousands of lives across the world.

NARRATIVE (including action subsequent to the attack and a rough diagram of the action).



At 2058 G.M.T. contact classified as doubtful was made whilst in position "A" of convoy O.B.318. This contact was received at 1000yds and held for 2-1/2 minutes only and might easily have been classed as that of a whale, which latter had been reported continually throughout the day. Contact was lost and a precautionary sweep was made into the convoy without result. Upon reaching the end of the 7th column two ships in the after end of the 3rd and 4th columns were seen to be hit by torpedoes whereupon "Bulldog" immediately counter attacked.

This course was closely followed by "Rochester" who sighted a periscope. "Bulldog" then swept out to the port and after end of the convoy where "Rochester" and "Amazon" made contacts. "Amazon" then fired a pattern followed by "Rochester" with "Bulldog" as directing ship. These attacks were repeated shortly afterwards and the explosions following "Amazon's" 2nd attack made considerable impressions on "Bulldog's" receiver. "Bulldog" then attacked firing a full pattern of charges.

HOME FLEET
INCIDENT FORM P.

24

SECRET.
(Blank Forms to be kept locked up.)

REPORT OF ATTACK ON ENEMY SUBMARINE (C.A.F.D. 4/40 and H.W.D. 24)

R.M.S. Bulldog
Date 10/1/41

No.

1. SHIP. R.M.S. Bulldog.
2. Date and Time. 01.00.00. 7th May, 1941.
3. Position (Latitude and longitude). 51.30°N. 01.30°W.
4. Wind, weather, visibility. Foggy. S. S. S.
5. Tidal information (height, direction and speed). Over 1000 Paces.
6. Depth of water.
7. Reason for attack - * (a) ~~Sighting~~. * (b) Asdic Contact. * (c) ~~Torpedo launch seen~~.
(d) Any other reason? Ships torpedoed.
8. Range on sighting or initial range of Asdic Contact.
ASDIC INFORMATION.
9. Nature of Contact - (a) Inclination. ~~51.30°N. 01.30°W.~~ (b) Hydrophone Effect. ~~None~~.
(c) Did target appear to move? ~~Yes~~.
(d) General Remarks. ~~Yes~~.
10. Range at which contact was lost. 1000 Yds.
11. Method of obtaining time to fire - * (a) Recorder. * (b) Log. * (c) ~~Observing Ship~~.
12. Was contact confirmed by other ships? ~~Yes~~.
13. Was contact re-established after attack? ~~Yes~~.
14. Asdic conditions. ~~Cool~~.
ATTACK BY DEPTH CHARGES (C.O. 3485, Chapter 1, paragraph 3).
15. (a) Mk. of Depth Charge. ~~1000 Yds~~. (b) No. carried. ~~10~~.
(c) No. dropped and/or fired from throwers. ~~11~~.
(d) Depth settings. ~~1000 Yds~~. (e) ~~Whether they functioned correctly?~~ ~~Yes~~.
ATTACK BY GUNFIRE.
16. (a) Size of gun. ~~1000 Yds~~. (b) Range. ~~1000 Yds~~.
(c) Type of shell and fuse. ~~1000 Yds~~. (d) No. of rounds fired. ~~1000 Yds~~.
(e) No. of hits and their position on enemy. ~~1000 Yds~~.
(f) Were all shells which hit seen to burst or penetrate?
ATTACK BY TORPEDO.
17. (a) No. of torpedoes fired. ~~1000 Yds~~. (b) Depth setting. ~~1000 Yds~~.
(c) Course and speed of torpedoes. ~~1000 Yds~~. (d) Course and speed of enemy. ~~1000 Yds~~.
(e) ~~Ships hit on firing~~.
RESULT OF ATTACK.
18. * (a) ~~Submarine came to surface~~. * (b) Oil patches seen. ~~1000 Yds~~.
* (c) ~~Wreckage seen~~. * (d) ~~Doubtful~~. ~~1000 Yds~~.
* (e) ~~Unsuccessful~~.
* ~~Delete these inapplicable.~~
19. NARRATIVE (including ...

At 2157 "Amazon" again attacked followed by "Bulldog" at 2320 and finally "Amazon" at 0010 after which the steadily decreasing echo disappeared. Search was however continued throughout the night until 0030 Thursday 8th May, when a thorough search of the area was successfully completed.

As a sub-lieutenant on HMS Bulldog in 1941, David Balme led a boarding party on to the captured German submarine U-110, tasked with getting "whatever you can out of her – documents, books, charts, the wireless settings, anything like that." It gave the crew of HMS Bulldog a unique opportunity to discover the sub's complete contents, which included a wealth of intelligence material and an intact Enigma machine. Faced with the unprecedented task of leading an Allied boarding crew on to a German U-Boat, the vulnerable lieutenant feared certain death as he had to holster his pistol while climbing down three sets of ladders to the control room. Should any submariner have chosen to wait in ambush aboard the Nazi sub, Balme was a sitting duck.

It was, he later recalled, "Terrifying. Going down those ladders and thinking there may be Germans ready to shoot you. We couldn't believe that they would have just abandoned this submarine." He concluded: "I still dream about it sometimes; it was the most frightening moment of my life going down that U-boat"

Capturing the Enigma hardware marked a vital turning point in the Battle of the Atlantic. In the aftermath of Balme's heroics, the cipher salvaged from U-110 played a significant role in cryptanalysis led by Alan Turing at Bletchley Park. The intact machine was used to break codes and intercept U-Boat 'Wolfpacks' with measurable success.

MOST SECRET.

From. The Senior Officer, (D) 3rd Escort Group H.M.S. BULLDOG.
Date. 10th May, 1941
To. The Captain (D), Greenock

Subject. Capture of U-110.

Submitted :

At 1202 G.M.T. on 9th May, two ships of convoy O.B. 318, which was being escorted by the 3rd Escort Group, were torpedoed in position 60 20 N 33 40 W. Escorts were disposed as found in the diagram attached. It was evident to me that the attack had come from a position between Broadway and Aubretia. Both ships were in contact almost immediately and attacked, Broadway at 1208, Aubretia shortly afterwards. Bulldog was also in contact, and I could see that Aubretia's attack was a good one. Bulldog had moved over to join in the hunt.

At 1235 a conning tower was sighted at about 800 yards range on the port beam. Fire was immediately opened by 4.7-inch, 3-inch, 2 pounder pom-pom and stripped Lewis guns. One 3-inch shell struck the conning tower, and men were seen to be abandoning the submarine. Fire was ceased by the heavier guns, but the men were speeded on their way by small arm fire. H.M.S. BROADWAY was then seen to be about to ram. The submarine turned her stern on to her and Broadway only grazed the submarine and in doing so had her port forward fuel tank holed. She dropped a depth charge close to the submarine's bow. Oil covered the water.

2. H.M.S. Bulldog stopped within 100 yards of the submarine and sent away an armed whaler's crew. No sign of a white flag was seen, and two men appeared to be manning the submarine's forward gun. Fire was again opened by Lewis gun and two or three men were hit. My object was to keep the crew rattled. They already appeared dazed and uncertain what to do.

By the time the whaler was alongside the submarine, the whole crew appeared to have jumped into the water. There was a moderate sea running and waves were breaking over the U. boat's deck. The officer in charge of the whaler, appreciating the necessity of speed, ran his boat hard on board the submarine and a wave carried it on to the deck where it was smashed. The crew found that the conning tower hatch was closed. They opened it and went below without delay. (Their orders were to seize all books and anything that looked important). Shortly afterwards they signalled that the U-boat had been abandoned, and appeared to be sound and in no danger of sinking. I therefore decided to take her in tow and passed her a 3-1/2" wire. (See report by Sub Lieutenant Balme).

3. I had ordered Aubretia to pick up all German survivors.

4. The submarine was trimmed slightly by the stern and had a slight list to port. She was making a little headway down wind.

5. Meanwhile another submarine had torpedoed two more ships of the convoy and was being counter-attacked by H.M.S. Amazon and other corvettes and trawlers of the 3rd Escort group. H.M.S. Broadway and H.M.S. Aubretia had obtained a further contact and were dropping depth charges. They eventually reported having lost contact. Aubretia reported that it had been doubtful. I therefore ordered Broadway to close and lower a boat.
6. A periscope was reported from two look-outs in Bulldog. The tow was slipped and a search made. Nothing was seen and no contact obtained, but a plank was passed near the position reported.
7. Tow was again passed to the U. boat. I ordered Aubretia to search round me. I sent my Engineer Officer and two E.R.A's to the U. boat, but unfortunately had no one on board with sufficient submarine experience to attempt to blow the after tanks, as none could understand the technical German. The Engineer Officer found that the port motor was running slow ahead with all switches put to the same position on the port side as on the starboard side, the engine still would not stop, and the gauge showed 10 amps. The Engineer Officer reported that the bilges were dry and the pressure hull watertight, but that there was the bubbling noise of an air leak or an open vent somewhere aft. (See Engineer Officer's report).
8. Broadway's boat made two journeys to bring back books, charts and documents. The wind and sea were rising all this time, and the visibility had shut down to four miles. The convoy had turned away from the U. boat after the first attack and was soon out of sight. Consequently no ship in the convoy witnessed the capture of the submarine. From the amount of gunfire they must have heard, it may be supposed that they imagined the submarine to have been sunk.
9. It was now considered most important to get clear of the area as it was thought that other submarines may be near. As I had nobody who could work on the U-boat in any way I considered it best to withdraw all men from on board her. She seemed to have some starboard wheel on, and it was only with difficulty that she could be turned to port on the homeward course. This was eventually done however, and she rode quite easily slightly on the starboard quarter and heading slightly to starboard of my course. When she was towing nicely at 4 knots I ordered all watertight doors and hatches to be closed and the crew to re-join Bulldog in Broadway's boat.
10. Everyone was back on board by 1830 speed increased to 6 knots and the U. boat, although she had settled slightly more aft, seemed perfectly seaworthy.
11. I had ordered Broadway to escort me, carrying out a broad zig zag astern, and had told Aubretia to re-join the convoy. Bulldog set course 045.
12. There were no incidents that night and the submarine seemed to be quite comfortable at the speed of the tow.
13. The wind had risen slightly and was S.W. force 4 at 0400. by 0700 it had veered to W. by S. and increased to force 6 with a nasty lumpy sea. It was now impossible to hold the course, and it was decided to let the submarine head down wind, as she seemed comfortable in this position, and to keep the wire just taught.
14. Suddenly at 1100 the U-boat began to sink by the stern. Very shortly her bow was standing vertically out of the water. She slowly sank and the wire was cut. The prize must have been working slightly in the heavy sea, and this may have aggravated any damage caused by depth charges or contact with Broadway. Her loss was a bitter blow as it was felt that having survived so many shocks, particularly Broadway's depth charge close to her bow, she should be able to stand the 400-mile tow to Iceland.
15. I consider that she was forced to the surface in the first place by Aubretia's well executed attack. Great credit is therefore due to her Commanding Officer, Lieutenant Commander V.F. Smith R.N.R., for contributing directly towards the destruction of U 110.



Commander D.

From when the machine became operational in June 1941, Allied shipping losses were around 432,000 tons. By August, this had dropped to less than 80,000 tons. King George VI said the capture of the U-110 cipher material had been "the most important single event in the whole war at sea".

Despite this, Balme did not receive any recognition for his actions until the enforced secrecy surrounding Enigma relaxed in the Seventies. Prior to that, Bletchley Park and everyone attached to it was sworn to silence. Since then Lt Cdr Balme has been recognised and presented with a Bletchley badge, alongside a certificate signed by Prime Minister David Cameron for his actions.



David Balme

SECRET.

From. Sub/Lieutenant D.E. Balme. R.N.
Date. 11th May, 1941.
To. The Commanding Officer, H.M.S.Bulldog.

Subject. **Boarding Primrose.**

Submitted:

At 1245 9th May, I left "Bulldog" in charge of a boarding party to board an enemy submarine which had surfaced. The crew consisted of 6 seamen, 1 telegraphist and 1 stoker. "Bulldog" was lying to windward of U boat and there was a heavy swell running so to save valuable time I made for the weather side (Port). There were numerous holes in the Conning Tower casing caused by "Bulldog's" 3" and Pom-pom.

As no small arm fire was opened up at the whaler from the U boat, I was fairly confident that there was no one in the Conning Tower. This proved correct after having entered conning tower through opening on starboard side. The hatch down was closed tight. (This hatch was 18" to 24" in diameter, spherical surface with wheel for screwing down; on unscrewing this the hatch sprung open as soon as a clip was released).

I went down the ladder to the lower Conning Tower where there was a similar closed hatch. On opening this hatch I found the Control Room deserted! hatches leading forward and aft were open and all lighting on. On the deck there was a large splinter from the conning tower. There was a slight escape of air in the control room but no sign of Chlorine so gas-masks which had been taken were now discarded. So also were revolvers which now seemed more of a danger than an asset.

The U-boat had obviously been abandoned in great haste as books and gear were strewn about the place. A chain of men was formed to pass up all books charts etc. As speed was essential owing to possibility of U boat sinking (although dry throughout) I gave orders to send up ALL books, except obviously reading books, so consequently a number of comparatively useless navigational books etc were recovered.

All charts were in drawers under the chart table in the Control Room; there were also some signal books, log-books etc here. The metal sheet diagrams were secured overhead. Meanwhile the telegraphist went to the W/T office, just forward of the control room on starboard side. This was in perfect condition, apparently no attempt having been made to destroy any books or apparatus. Here were found C.B's., Signal Logs, Pay Books, and general correspondence, looking as if this room had been used as ship's office. Also the coding machine was found here, plugged in and as though it was in actual use when abandoned.

The general appearance of this machine being that of a typewriter, the telegraphist pressed the keys and finding results peculiar sent it up the hatch. This W/T office seemed far less complicated than our own-sets were more compact and did not seem to have the usual excess of switches, plug holes, knobs, 'tally's' etc on the outside.

Forward of the W/T office was the Hydrophone Office. This was about the same size as the W/T office and about twice as large as the A/S Cabinet in 'Sealion', the only one have been out in. The Hydrophone set was still running, and the sensitivity could be increased or decreased by a control knob and the bearing on the gyro dial could be altered. The first quick look around below took about 5 minutes after which I went up the conning tower and signalled to "Bulldog" that the U boat seemed seaworthy and towable, and requested that an E.R.A. might be sent over to see if any machinery would work. Meanwhile our whaler had been carried on to the U boat by the swell and was now firmly lodged between the conning tower and the steel guard rails; it was eventually a total loss.

During this time I had two hands on the F'xle who located the towing bollards which were hollow steel 6" diameter flush with the deck but could be pulled up to a height of about 18" and clipped in position. They had also located wires and hawsers in a porous locker. The only wire was an old and rusty 2" F.S. Wire.

"Bulldog" now came up my port side and stopped with her stern just off the U boat's bows and the end of the 2" was sent over to her. I had hoped that this would hold while we got the proper tow secured but as soon as any tension came on it the wire parted. The heavy swell and wind made it impossible for "Bulldog" to remain very close for long as she was drifting to Leeward faster than the U boat. However a grass was now being hauled in, but I still only had my original party of 8 men and by the time we had got the end of the wire "Bulldog" had been carried some-way off which made the wire heavy to man-handle. Two turns were then taken around the bollard, but we did not have a shackle to secure the thimble of the wire back on to its own part; the end of the 2" wire was used as a temporary seizing. Meanwhile "Broadway's" boat had brought over the C.E.R.A. and party from "Bulldog". Having inspected the engine rooms etc, he reported that the port engine was running slow ahead and that he thought it was best not to touch any switches for fear of causing damage. I agreed with this and reported the situation to "Bulldog". All watertight doors were now closed except for the two hatches down and the first one forward.

Some equipment from the Hydrophone office was now unscrewed but on trying to pass it up the hatch by heaving line it was found to be too large to go through. All officers gear was now searched and several slips of paper, wallets, cameras, etc were found and sent up. A cine-camera was found in the W/T office and with this I took a few shots of W/T and H/D offices at point blank range but as I afterwards discovered range on camera was set to 25 feet and aperture to f 2.5. I doubt if they will come out at all.

Another boat load had arrived by this time, with the Engineer Officer, Gunner (T) and party. They were sent to see if they could stop the port motor, but having turned all the switches they found they could neither do that nor start the starboard motor. They did however collect some further important documents. The wire had now got under the U-boat's bows and was being severely chaffed on the sharp edge of the U- boat's casing. If this had carried on it would certainly have parted, so I decided to slip the wire. This was probably just as well as "Bulldog" now sighted a periscope and went off on an A/S sweep.

I had now been onboard about 5 hours during this time the U-boat had been going down very slowly by the stern and taken on a list to port as if the port after ballast tank was slowly flooding. It seemed as if all possible material had been recovered so it was decided to batten down and wait for "Bulldog's" return. On "Bulldog's" return she again came up the port side and with the extra hands and shackle having previously supplied by boat the tow was again successfully secured. All hands then returned to "Bulldog".

Here are some of my impressions of the U-boat. She was new and a fine ship both in the strength of the hull, in the fittings and instruments and general interior construction. Absolutely nothing "Ersatz" about her. Excellent A.A. armament abaft the conning tower, consisting of a Bofor and Oerlikon type gun. Deck around the forward gun was wood. Spotlessly clean throughout. Ward-Room finished off in light varnished woodwork and all cupboards were numbered with corresponding keys to fit.

No signs of a safe and there was only one cupboard for which I could not find the key; this cupboard was over the captain's desk, so I broke into it, and it revealed a medicine chest. In W/T Room there were several sets of writing paper and envelopes, well printed and illustrated reading books, cards, dice, and the usual art studies. Bunks were one on top of another both in officer's and crews spaces.

An S.R. Equipment was running all round the boat with very compact S.R.E. receiver (3 feet by 1 foot by 1 foot) in the W/T office with names of about 200 stations written on its dial. Plenty of tinned ham, corned beef, cigars, players cigarettes (German printing on packets) and a plate of shrimps were all found in the W/room. Magnificent galley forward of W/room. No signs of voice-pipes but I think loud-speakers and telephones were used definitely a telephone in the conning tower. One Tommy gun was found in officers clothes drawer; other L.C.T. with anti-tank type of rifle. Officer gear consisted of very good clothing including well designed anti-weather garments.

In engine room I noticed a plate of mashed potatoes as if action stations had been sounded suddenly while dinner was being taken from galley to after crew's space. Escape chamber was in C.R. just abaft the upper hatch (see plate diagram). My original whalers crew worked splendidly throughout the time. They comprised of:

Sidney George Pearce.	Able Seaman.	Arnold Hargreaves.	Able Seaman.
Cyril Arthur George Dolley.	Able Seaman.	John Trotter.	Able Seaman.
R. Roe.	Able Seaman.	Allen Osborne Long.	Telegraphist.
Claude Arthur Wileman.	Able Seaman.	Cyril George Lee.	Stoker 1 st Class.

I submit that service revolvers are far too cumbersome and dangerous for boarding and that small police model automatics should be supplied to all boarding officers. Possibly in addition to ransacking the W/room the crews quarters should have been thoroughly searched, but owing to frequent depth charge attacks continuing in the vicinity, I considered it safer to keep these watertight doors closed.

The reason why no attempt to destroy any books or material is obviously because they thought the U-boat was certain to sink at once, the necessary demolition switches or other devices had been set; this was corroborated by statements from prisoners who had no idea that U boat had been boarded. But then again, Why Were Both Conning Tower Hatches Closed?.

**I have the Honour to be, sir
your obedient servant,
David E. Balme
Sub/Lieutenant. R.N.**

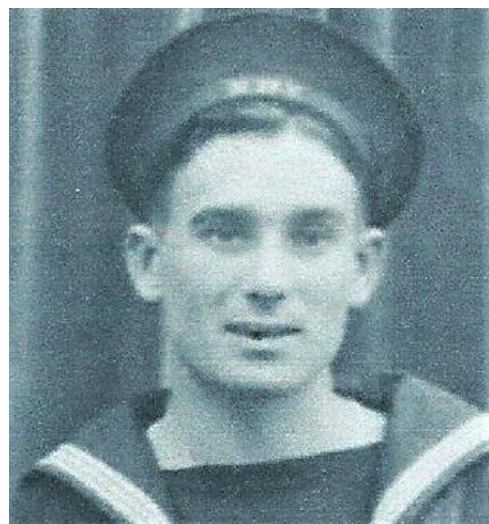
Arthur Leonard Sims (1920- 1998)

Arthur was mentioned in dispatches during this encounter with U-110 being on "HMS Bulldog" and it could well be that he was in the second party sent to connect the tow onto the submarine. He is from Pitsea and obviously we are pleased that he can also be remembered for his, and all his comrades who sailed in HMS Bulldog" on the Russian Convoys and for this particular special part of the country's history.

He was also given the honour of 'piping' the Admiral's aboard "HMS Bulldog" when the German Armed forces surrendered the Channel Islands on the 9th May 1945. His whistle is a family heirloom

MOST SECRET

Subject. Operation "Primrose".
From. Engineer Officer, H.M.S.Bulldog.
Date. 11th May, 1941.
To. Commanding Officer, H.M.S. Bulldog.



Submitted:

On boarding "Primrose" I considered the object of my visit was.

1. To ascertain her sea worthiness.
2. To stop the Port Motor which was going "Ahead".

It was ascertained that the Pressure Hull was intact and that there was negligible quantity of water in the bilges. "Primrose" was down by the stern with approximately a 150 list to port. A slight bubbling noise was heard outside the Pressure Hull on the Port side of the Motor Room which was the After Compartment. This bubbling noise was considered to be air leakage through a Tank vent Valve being watertight, or the outer Shell of The Flooding Tank leaking, it being presumed that this damage having been sustained during the action. "Primrose" was considered sea-worthy provided the suspected flooding of a Port Tank was not rapid or the Tank too large.

My attention was directed to the Port Motor, which was turning at between 30 & 40 R.P.M. What was presumed to be the Central Rheostat was operated & put in Off position, (Pointer turned anticlockwise till no further movement was possible), & the speed of the shaft reduced to 15 R.P.M., the shaft continued to move at this speed with a reading of 10 Amperes on the Meter indicated in Red on the attached rough sketch. The rheostat was moved in the opposite direction, causing an increase of Motor speed. The Rheostat being then turned to the Off Position.

The switch in No.1 in sketch was then placed in Mid Position the shaft continuing to turn, but the rheostat when operated would not increase the Motor Speed. The Switches No.1,2,3,4, & 5, were now all in the same position on both Port & Starboard Switchboards. The Rheostat at the After end of the Port switch board was next examined and found to be in the Off Position, it was turned two Notches, and a loud ticking noise followed. A booby trap being suspected the necessary avoiding action was taken. The switch board was then examined for any differences in the switch positions, but none were observed.

Word was now passed that a submarine was suspected in the vicinity of "Primrose". I therefore proceeded to the Upper Conning Tower having closed all watertight doors and hatches on the way. Later returning to the Control Room I collected several books paper etc, which I placed in a Brief case which already contained personal effects. Charts were next observed to have considerable markings on them, so instructions were given to have them passed up & placed in the boat. The Conning Tower Hatches were then closed, and I rejoined the remainder of the boarding party. It seemed that "Primrose" was now a little more down by the stern & a signal to this effect was passed. On "Primrose" being secured for towing, I returned to Bulldog with the boarding party.

The following is a statement of my recollection of the Main Engines & Motors.

Main Engines. Very clean design. Totally enclosed, (no pipes or valves being visible. No flywheel visible. Shaft appeared to come Aft through a flywheel casing, which may have been a Hydraulic Coupling as no "Dog Clutch" was visible.

Shaft brake fitted just forward of After Engine Room Bulkhead. As far as I remember the Engine was a 9 Cylinder Engine, and there was a date stamp on the forward End of the Main Starboard Engine of 1940.

Main Switch Board. Cream Vitreous Enamel Flush Type Board (Switch actuating leavers only penetrating the board) with Flush Mounted Meters, Filet & indicating Lamps.

The general layout of Switch board being as follows.

Port Main Switchboard had two circular Rheostat

Handwheels, mounted vertically on the forward end of the board working in parallel & connected at the back of the switchboard as no mechanical connection was visible.

What appeared Two Small Selector switch handles, mounted vertically at about 12" centres, presumably for volt & Ampere meters.

The next Group of fittings Aft of these mentioned were a row of indicator Lamp Windows below which were grouped Volt & Ampere meters.

At the Mid board position was a group of small fittings the Nature of which cannot be remembered, but below which was a meter with what seemed to be Cross Pointers (The Right Hand Pointer indicating the Left-Hand Markings and vice-versa)

On the left of the Mid board position were so far as is remembered several small fitments & at the after end of the board a small Rheostat with some smaller fittings above, perhaps Volt & Ampere meters & indicator Lamp windows. Mounted below the previously mentioned fittings were several insulated bars which presumably carried or operated Main switches.

So far as I can remember they were in the following order.

1. Three Position Switch. (Ahead, stop & astern Position?).
2. Two position Switch. (Battery Switch?).
3. " " " (" ").
4. " " " (" ").

Switches 3 & 4 were locked together by a rod which moved For & Aft through the handles & held in place by a locking screw on the locking rod.

5. Large Switch. (Main Switch).

6. " " . (Charging Switch 1).

The submarine seemed well appointed, and I noticed the floor Plates were of a Polished Material with Rubber Matting fitted on top. A 3" shell had hit the Conning Tower within a few inches of the Starboard Side Light. The shell had exploded but had done very much less damage than I had expected to find. So far as I was able to observe all electric lights were still burning. I did not open the W/T Door in the After Bulkhead as this compartment was known to be dry, and it was considered safer to have second W/T Bulkhead intact in case the Aftermost compartment should flood.

While carrying out investigations, ships in company carried out several attacks which proved very distracting, especially when making or breaking circuits on the switchboards. The Foremost Periscope was raised some four feet & trained slightly abaft the Port beam.

Lieutenant Cmdr. (E). R.N.R.

Engineer Officer.

SECRET.

Subject. Interrogation of Prisoners from U.110.

From. The Commander (D) 3rd Escort Group.

Date. 13th May, 1941.

To. The Captain (D) Greenock.

Submitted:

I talked a good deal with the four officers captured from U.110 and had two hours talk with the 1st Lieutenant, Ober-Leutnant. Hanns Joachim Eichelborn.

2. They had a tremendous admiration for their Captain, Capitan Lemp, and were disturbed about his loss. He had evidently impressed on them that big risks must be taken. It was almost impossible to extract any operational details from them. but I elicited the following facts.

3. They realised that it would have been less risky to have attacked by night. This did not affect their decision. The inference is that they have to wait until other U-boats have been summoned.

4. They saw the strength of my asdic line but were confident they could get in an attack. They had not seen Aubretia.

5. They could not understand how we had detected them as they said they had methods of preventing detection. The inferences that they put great faith in the ruse of getting in a ships wake. (see E.R.A. Mathews report).

6. It is doubtful whether they know much about Asdics.

7. The number of the U-boat is not allowed to be divulged. They were angry that one of the crew had given it away.

8. They were confident that the U-boat had sunk before we could reach it, There was not the least suspicion in their minds that we had boarded it. (They were naturally taken below as soon as they were picked up by Aubretia).

9. They expected that we would have left the convoy before the morning of 9th May, and were surprised that we were still there and wondered if we would still have been with them evening.

10. I had told E.R.A. Mathews what I particularly wanted to find out. He spoke some French and was friends with war correspondent in the crew. I consider that Mathews played his part extremely well and elicited some valuable information. The war correspondent may well be persuaded to talk further.

11. E.R.A. Mathews' report and the report received from "Amazon" are attached.

Commander (D)

Report of E.R.A. James Mathews. P/Mx.56574.

The prisoners were most confident we had no Knowledge submarine was in the vicinity until convoy was attacked and surmised we followed wake of torpedo and guessed position. Were quite indignant at the idea they could be

heard. They said "Seal" was submarine training ship at Kiel. When told "Seal" was faster than any German U-boat since she had a speed of 8 knots submerged, they were quite sure German submarines could travel at least 1-1/2 times this speed. When questioned as to exact speed were reticent to talk and said this was specialty of German Navy. Said they had followed American destroyer for quite a time but would not disclose any definite time but obviously knew convoy had been attacked on previous occasion. Apparently they had seen convoy and saw escort proceeding parallel with them. They submerged and fired, and on coming to the surface were depth charged which caused lights to fail. At this moment crew panicked but had lights on again on reaching the surface with partially blown tanks.

Were most surprised to see destroyers steaming towards them for on last occasion they had steaming parallel with them and destroyers should have passed on. Some report 3 (others 4) submarines were waiting on either side of the convoy and it was dependent in which convoy turned, which submarine fired.

When asked if German Propaganda had told submarines could not be detected immediately behind destroyers. It was obvious such was the case from the talking amongst them as well as an agreement.

REPORT OF ATTACK ON U.110

From. THE CAPTAIN (D) GREENOCK, ALBERT HARBOUR, GREENOCK.
Date. 9th June, 1941. No. 4934/221
To. THE COMMANDER-IN-CHIEF, WESTERN APPROACHES.
(Copies to: The Director A/S Warfare, Admiralty. The Commanding Officer, H.M.S. AUBRETIA, The Commanding Officer, H.M.S. BROADWAY).

The attached reports of attacks on U.110 and another U-boat on 9th May, 1941, from H.M. SHIPS AUBRETIA and BROADWAY, are forwarded in accordance with C.A.F.O. 834/41.

2. The evidence given by the prisoners, and the identification of Johan Wolf indicate that another U-boat was operating close to U.110 and that it may have been this other boat which was attacked and damaged by H.M.S. AUBRETIA at 1206.
3. The shock of depth charges explosions caused the battery switches in H.M.S. AUBRETIA'S Board, Charge-Discharge to fly to the "OFF" position. Steps have been taken to ensure that these contacts are held more firmly when switched "ON".
4. H.M.S. BROADWAY'S action in dropping two depth charges under U.110 may have had the desired effect as no efforts appear to have been made by the Germans to ensure that their boat would sink.
5. H.M.S. AUBRETIA is commended for the effective part she played. Her Asdic recorder traces are examples of good operating.

CAPTAIN

U-BOAT ATTACKS ON CONVOY O.B.318 ON 7TH, 9TH and 10TH MAY, 1941.

From. THE CAPTAIN (D) GREENOCK, ALBERT HARBOUR, GREENOCK.
Date. 9th June, 1941.
To. THE COMMANDER-IN-CHIEF, WESTERN APPROACHES.
(Copies to: The Director of Anti-Submarine Warfare, The Captain (D) Liverpool.
The Captain (D) Londonderry. The Senior Officer, 3rd Escort Group.)

The following report on U-boat attacks on Convoy O.B.318 on the 7th, 9th and 10th May, 1941, is forwarded. All times are Greenwich Mean Time.

Phase 1.

2. At approximately 2100 on Wednesday 7th May, 1941, O.B. 318 consisting of 38 ships in nine columns was in position 61° 29' N, 24° 30' W steering 318° at 8 knots.
3. The sea was calm, sky clear, and visibility good. It was daylight.
4. The Escort were disposed in W.A.C.I. diagram XII (old issue) as follows:

BULLDOG	A.	DIANTHUS	Q.
AMAZON	T.	ROCHESTER	F.
BROADWAY	G.	MARIGOLD	R.
NASTURTIUM	B.	ANGLE	O.
AURICULA	D.	PRIMROSE	E.

DANEMAN was taking up a position between the rear ships of the two outer port columns, having just joined the convoy. H.M.S. RANPURA was in position between the 4th and 5th columns.

5. At 2058/7, H.M.S. BULLDOG obtained an asdic contact at 1000 yards. The range closed rapidly, then contact was lost. H.M.S. BULLDOG altered course to starboard and passed through the convoy between the 8th and 9th columns in an endeavour to regain contact.
 6. At 2115, S.S. EASTERN STAR was torpedoed followed 10 seconds later by S.S. IXION. These were the rear ships of the 4th and 5th columns respectively, and they appeared to have been struck on their starboard sides. White rockets were observed, but it is not clear which ship or ships fired them.
 7. On seeing the explosions, H.M.S. AMAZON, who had moved over to a position in the centre ahead of the convoy, turned to port and increased to 20 knots, passed down between the 3rd and 4th columns of the convoy, gaining asdic contact right ahead at 1700 yards at 2122/7.
 8. At the same time (2122/7) H.M.S. ROCHESTER having searched on the starboard quarter of the convoy, reported sighting a periscope in the direction of H.M.S. AMAZON'S contact.
 9. At 2138 H.M.S. BULLDOG obtained contact and with H.M.S. AMAZON and H.M.S. ROCHESTER, carried out a hunt in which some promising attacks were made.
- Note: Ranpura was a 10,000-ton former liner serving as a merchant cruiser
Note: U-94 made this submerged night attack firing four torpedoes - the 10,300-ton British freighter Ixion and the 5,658-ton Norwegian freighter Eastern Star sank - U-94 escaped with heavy damage.
10. The Commodore made an emergency turn to port at 2117/7.
 11. S.S. EASTERN STAR burned fiercely, but her whole crew were picked up by H.M.T. DANEMAN who proceeded to re-join the convoy at 2230/7. S.S. MAILSEA MANOR rescued survivors from S.S. IXION.
 12. Records from the 7th Group are not available, but it is believed that the remaining escorts stayed with the convoy, with the exception of H.M.S. BROADWAY who carried out a sweep on the port quarter of the convoy before being ordered to re-join by H.M.S. BULLDOG at 2140/7. H.M.S. MARIGOLD picked up survivors presumably from S.S. IXION, and was ordered to re-join the convoy at 0300/8.
 13. The hunt (paragraph 9) continued until about 0015/8 when contact was finally lost. H.M.S. ROCHESTER proceeded to re-join the convoy, whilst H.M.S. BULLDOG and H.M.S. AMAZON carried out an extensive search. At 0930/8 they too proceeded to re-join.
 14. No attacks were made on the convoy on Thursday 8th May, 1941.
 15. At 1800/8 the corvettes of the 7th Group were detached to proceed to their next rendezvous, and on leaving the convoy, they carried out an extensive search astern.

Phase II.

17. By noon Friday 9th May 1941, the convoy was in position 610 35' N, 320 30' W steering 220 at 8 knots. The visibility was good. Wind W.S.W. force 4, Sea 3, Swell 2.
 18. The Escorts were disposed in accordance with a 3rd Group Escort diagram as follows:
 - (i) In line abreast from left to right, H.M.S. SHIPS AMAZON, HOLLYHOCK, BULLDOG, NIGELLA, BROADWAY, 300 yards ahead of convoy and 200 yards apart.
 - (ii) H.M.T. DANEMAN and H.M.S. AUBRETIA 1500 yards on the port and starboard beam of the convoy, respectively.
 - (iii) H.M.T. ST. APOLLO 1500 yards in rear of the convoy.
 - (iv) H.M.T. ANGLE had been detached shortly before noon.
 19. At about 1201/0 S.S. ESMOND (No. 91) and S.S. BENGORE HEAD (No. 71) were torpedoed within a matter of seconds.
 20. The convoy made an emergency turn of 0400 to port, and this was followed by a further turn of 200 to port before 1230/9.
 21. H.M.S. had detected the hydrophone effect of torpedoes with her asdic and made an R/T report to the effect that the attack was from the starboard side. At the same time, this ship altered course to starboard and a contact was obtained bearing 3350 1000 yards but was lost during the turn.
 22. H.M.S. BROADWAY, who had turned to port towards the torpedoed ships, counter-attacked a contact with one charge at 1203/9.
 23. At 1204/9 H.M.S. AUBRETIA sighted a periscope bearing 0000 800 yards moving from port to starboard. A counter-attack was carried out with a 10-charge pattern at 1206/9. Contact was not regained astern. H.M.S. BULLDOG came across to join AUBRETIA and H.M.S. BROADWAY in the hunt.
- Note: U-110 fired three torpedoes (the fourth was a misfire) and sank the 4,976-ton British freighter Esmond and the 2,609-ton British freighter Bengore Head in this attack

- 24.** At 1215/9 H.M.S. AUBRETIA obtained contact bearing 2360 1800 yards, and a 10-charge pattern was fired at 1223/9. The depth charges put H.M.S. AUBRETIA'S asdic temporarily out of action, and she closed the boats of S.S. ESMOND to pick up survivors.
- 25.** H.M.S. BULLDOG and H.M.S. BROADWAY remained in contact after H.M.S. AUBRETIA'S last attack, and at about 1237/9, U-110 broke surface. H.M.S. BROADWAY shaped course to ram, but fired two depth charges beneath the U-boat instead, set at 100 feet, in an endeavour to make the crew abandon ship before scuttling her. In this encounter the U-boat's hydroplanes struck H.M.S. BROADWAY on the port side causing damage to oil fuel tanks and the port propeller. After a short gun action the U-boat's crew abandoned ship, and were picked up at 1430/9 by H.M.S. AUBRETIA who had returned from S.S. ESMOND.
- 26.** H.M.S. BULLDOG proceed with "operation PRIMROSE" (which has been the subject of a separate report) whilst H.M.S. BROADWAY and H.M.S. AUBRETIA patrolled the area.
- 27.** When the convoy was attacked at 1201/9 H.M.S. AMAZON moved across to take up a position 5 cables ahead of the Commodore, having been ordered by H.M.S. BULLDOG to take charge ahead. On learning the H.M.S. NIGELLA'S asdic was out of action (subject of a separate report) H.M.S. AMAZON stationed H.M.S. HOLLYHOCK ahead with H.M.S. NIGELLA to port, whilst H.M.S. AMAZON proceeded to sweep down the outside of the convoy's starboard column.
- 28.** At 1228/9 S.S. EMPIRE CLOUD (position 92) followed by a few seconds later by S.S. GREGALIA (position 72) were torpedoed. H.M.S. AMAZON was at this time 2100 6 cables from S.S. EMPIRE CLOUD, and after dropping one depth charge, gained firm contact at a range of 500 yards. A counter-attack was carried out at once, and a hunt commenced.
- 29.** At 1230/9 H.M.S. NIGELLA and H.M.T. ST. APOLLO who had picked up survivors from S.S. BERGORE HEAD were coming across to assist H.M.S. AMAZON who was short of depth charges. This hunt proceeded with promising results, but no definite evidence of destruction was obtained. Between attacks H.M.S. NIGELLA rescued survivors from S.S. EMPIRE CLOUD.
- 30.** H.M.S. HOLLYHOCK and H.M.T. DANEMAN remained with the convoy throughout, taking up positions (b) and (c) in W.A.C.I. (old issue) diagram No. 2, and proceeded without incident for the remainder of the day.
- 31.** At about 1435/9 H.M.S. BROADWAY (see paragraph 26) obtained a contact which was hunted and attacked in company with H.M.S. AUBRETIA until 1550/9 when contact was finally lost. These two ships then proceeded to screen and assist H.M.S. BULLDOG.
- 32.** In 1755/9 H.M. SHIPS AMAZON, NIGELLA and ST. APOLLO had lost contact (see paragraph 29). H.M.S. AMAZON proceeded to sweep back towards S.S. EMPIRE CLOUD, leaving the other two ships to search. H.M.S. AMAZON returned at 1830/9 when H.M.S. NIGELLA and H.M.T. ST. APOLLO transferred some of their survivors to her.
- 33.** Soon after 1900/9 H.M.S. AUBRETIA, who had been told by H.M.S. BULLDOG to re-join, closed H.M.S. AMAZON and transferred 32 prisoners and 27 survivors. H.M.S. NIGELLA and H.M.S. AUBERTIA then proceeded to re-join the convoy.
- 34.** H.M.T. ST. APOLLO patrolled between S.S. EMPIRE CLOUD and the position of the last U-boat contact (see paragraph 32) until necessary to meet a homebound convoy.
Note: U-201 torpedoed and sank the 5,802-ton-ton British freighter Gregalia and torpedoed the 5,969-ton British freighter Empire Cloud which was abandoned but later salvaged - the boat escaped.
- Phase III.**
- 35.** On the night of May 9/10th, 1941, the only escorts with the convoy were H.M.T. DANEMAN and H.M.S. HOLLYHOCK on the port and starboard bows, respectively.
- 36.** A moderate westerly breeze was blowing, sea slight, low swell, cloudy but with clear visibility.
- 37.** At 0220/10, the convoy course was altered to 2200.
- 38.** At 0246/10 an explosion was heard in the rear of the convoy. No rockets were seen. This was S.S. AELYBRYN (position not known) who had been struck by a torpedo well aft on the starboard side.
- 39.** H.M.S. HOLLYHOCK intercepted a W/T report soon after this incident purporting to come from S.S. HERCULES. It is presumed that this ship was reporting the attack on the S.S. AELYBRYN.
- 40.** H.M.S. HOLLYHOCK carried out a search on the quarters and in the rear of the convoy without result, ordering H.M.T. DANEMAN to pick up survivors. In the morning H.M.S. HOLLYHOCK closed and stood by S.S. AELYBRYN and after boarding the wreck to examine the damage and obtain food for her survivors, H.M.T.

DANEMAN proceeded to Iceland. S.S. AELYBRYN had some survivors from S.S. GREGALIA (paragraph 28) on board when torpedoed.

41. As soon as this attack developed, the convoy scattered by order of the Commodore.

REMARKS - 1st ATTACK

42. It is noted that a U-boat made a first sighting report of a convoy, probably O.B.318 at 1537 on Wednesday 7th May, 1941. The convoy was steering 2900 and it is suggested that a more drastic alteration of course should have been made to evade.

43. A large number of non-sub contacts had been encountered prior to this attack. It seems probable that the attack was made from the rear or quarter, and that H.M.S. BULLDOG'S contact at 2058/7 (paragraph 5) was not the U-boat which attacked the convoy.

44. Paragraph 15. It was later learned that while this search was in progress, U.110 was actually shadowing the convoy from 15 miles on the starboard bow.

2nd ATTACK

45. It is evident that at least three U-boats had concentrated on the convoy by noon on Friday 9th May, 1941, and it is most satisfactory that at least one of those was destroyed by the Escorts. It is notable that in spite of the fact that this was a daylight attack, the U-boat pressed their attacks well home, and appeared to be capable of using very high submerged speed.

46. U.110 had taken up a position astern of H.M.S. BROADWAY half an hour before the attack on the convoy commenced, and conformed with H.M.S. BROADWAY's zig-zags so as to keep in her wake. The importance of stern lookouts is again emphasised.

Note: U-556 fired two torpedoes at two ships damaging the 4,986-ton British freighter Aelybryn which managed to reach Reykjavik - after the convoy dispersed the boat sank the 4,861-ton British freighter Empire Caribou and the 5,086-ton Belgian freighter Gand.

47. U.110 was in S.S/T communication with another U-Boat until H.M.S. AUBRETIA'S attack at 1206/9 when, as prisoner stated, this other U-boat "went dead".

48. It is considered that H.M.S. AUBRETIA'S attacks at 1206/9 and 1223/9 were made on two separate U-Boats, the second of which (U.110) had torpedoed the S.S. ESMOND and S.S. BERGORE HEAD.

49. Later evidence showed that the enemy had not expected to find the escort with the convoy as far as 320 West.

50. In this and the first attack on the convoy, R/T communication between Escorts was most satisfactory, and greatly assisted the Senior Officer 3rd Escort Group to conduct and keep in touch with operations.

3RD ATTACK

51. This attack was presumably made by a U-Boat which had been shadowing the convoy since the afternoon of Friday 9th May, 1941. There is little information available concerning the method of attack, but it seems likely that S.S. AELYBRYN was in the rear of the convoy, and possibly a straggler. No other ships are known to have been torpedoed.

CAPTAIN

Western Approaches.

Date: 18th June, 1941.

No. W.A.1189/0607/41.

Subject.

OPERATION PRIMROSE.

Enclosures.

1. Captain (D), Greenock's No.4949/221. of 9th June, 1941

THE SECRETARY OF THE ADMIRALTY. (Copy to: Captain (D), Greenock.) Forwarded for the information of their Lordships.

2. The Commanding Officers, Officer and Ships Companies of "BROADWAY" and "AUBRETIA" are congratulated on the detection and subsequent hunting of U.110 which led to her capture.

3. The Commanding Officer, Officers and Ships Company of "BULLDOG" are congratulated on capturing the U-boat and taking her in tow. Their achievement was in no way lessened by the subsequent foundering of U.110.

4. With reference to paragraph 2 of Captain (D), Greenock's No.4934/221 of 6th June, 1941 it is possible that the interrogation of prisoners may throw more light on the identity of Johan Wolf and consequently on whether or not a second U-boat was present and at least damaged.
5. Paragraph 43 of Captain (D), Greenock's No. 4989/221 is concurred in.
6. There is insufficient evidence to show what was hunted by "BROADWAY" and "AUBRETIA" at about 1450. If it was a U-Boat the result of the hunt is uncertain.
7. With reference to paragraph 11. of "BULLDOG's" letter X/51 of 15th May, it is recommended that the Master of S.S. "MAILSEA MANOR" should be commended for his action.
8. "BULLDOG's" paragraph 15 is considered too sweeping. Although it is generally impossible to prove that evasive action by a convoy has successfully shaken off a shadowing U-boat, it appears probable that on occasions it has in fact done so.
9. Recommendations for awards are being forwarded separately (vide W.A.1188/340/55 of 18th June, 1941.

**ADMIRAL
COMMANDER-IN-CHIEF.**

"U 110"

This book is invariably to be kept locked up when not in use and is not to be taken outside the ship or establishment for which it issued without the express permission of the Commanding Officer.

C.B. 4051 (23)

Interrogation of Survivors May, 1941

SECRET

This book is the property of His Majesty's Government.

It is intended for the use of the recipients only, and for communication to such Officers under them (not below the rank of Commissioned Officer) who may require to be acquainted with its contents in the course of their duties. The Officers exercising this power will be held responsible that such information is imparted with due care and caution.

**NAVAL INTELLIGENCE DIVISION,
ADMIRALTY, S.W.1.**

N.I.D. 08409/43.

The following report is compiled from information derived from prisoners of war. The statements made cannot always be verified; they should therefore not be accepted as facts unless they are definitely stated to be confirmed by information from other sources.

(The Index of the book has been left out of this report)

REPORT OF INTERROGATION OF SURVIVORS OF "U 110," SUNK AT 1225 ON FRIDAY, 9TH MAY, 1941, IN POSITION 60° N., AND 14° W.

I. INTRODUCTORY REMARKS.

The sinking of "U 110" on 9th May, 1941, was a further blow not only to the strength of the U-Boat branch of the German Navy, but also to the morale of U-Boat crews, as "U 110" was only on her second cruise, had achieved very meagre results, and her Captain, Kapitänleutnant (Lieutenant-Commander) Fritz-Julius Lemp, was one of the few remaining officers "of the old gang" who were in command of U-Boats at the beginning of the war.

Prisoners admitted that the German Navy has great and increasing respect for the British new "U-Boat detecting instrument" and remarks were repeatedly made to the effect that "a U-Boat located by that instrument was doomed beyond hope of escape. The opinion was openly expressed that German naval circles realise that U-Boats will not achieve a decisive victory or bring about an adequate blockade of Great Britain; the "Luftwaffe" it was urged, must sink more and more of Britain's ships.

II. Remarks on the Crew of "U 110"

The complement of "U 110" consisted of four officers, fifteen Petty Officers, twenty-seven ratings, totalling forty-six; a war correspondent with rank of a temporary Sub-Lieutenant was also carried.

When the U-Boat was sunk the Captain, three Petty Officers and eleven ratings lost their lives.

The Captain, Kapitänleutnant (Lieutenant-Commander) Fritz-Julius Lemp, was an officer of considerable experience and ability and enjoyed a certain prestige among U-Boat captains. He was born on 9th February, 1913, in Tsingtao, in the then German colony of Kiao-Chow, his father being an Army Officer. He entered the Navy on 1st April, 1931, and was appointed to his first command in 1938. His war career in command of "U 30" and "U 110" is traced later in this report.

He was awarded the Knight Insignia of the Iron Cross on 22nd August, 1940. Prisoners estimated his total sinking at about 140,000 tons of shipping; this figure is greatly in excess of fact. He was apparently much respected and liked by his crew, who described him as having been an even-tempered man of unshakable calm and great determination.

The First Lieutenant, Oberleutnant zur See (Lieutenant) Dietrich Loewe, was extremely unpopular with the crew who thought him brainless and inefficient; they looked on him as a "Jonah," as the torpedo boat "Lux" in which he was then serving, was lost early in the war, and the destroyer in which Loewe served at Narvik was also sunk. He belonged to a family of landed gentry in Mecklenburg and was a cousin of Lemp. Loewe was an ardent Nazi and could tolerate no criticism of the Nazi regime. He was also narrow-minded, callous, brutal and a bully. His lack of naval experience was explained by the statement that he had been on sick leave for several months, as he suffered from fainting fits. Loewe's father is a retired naval officer, and his brother is Kapitänleutnant (Lieutenant-Commander) Axel-Olaf Loewe, who has some appointment ashore.

The Junior Officer, Leutnant zur See (Sub-Lieutenant) Ulrich Wehrhöfer, was also considered extremely unreliable, and the Chief Petty Officers did not trust him to carry out properly any important observation or calculation. Although a native of Danzig, he prided himself on being a German and adopted a reasonable tone when discussing National Socialism. He gave the impression of possessing moderate intelligence, but of lacking general knowledge.

The Engineer Officer, Oberleutnant (Ing.) (Engineer-Lieutenant) Hans Joachim Eichelborn, was quite a pleasant type and was considered by the crew of "U 110" to be an excellent engineer; it was stated that he would have shortly become the Engineer Officer of a U-Boat Flotilla. He is the son of a country schoolmaster in a small town near Berlin, and is married. He spoke some English and showed no animosity towards Great Britain. He expressed great admiration for Hitler and professed to be convinced of an ultimate German victory, although he was by no means a fanatical Nazi. He was reasonably well educated and a man of some sensibility.

The War Correspondent, Leutnant zur See (Sonderführer) (Temporary Sub-Lieutenant) Helmuth Ecke, is mentioned in greater detail later in this report under the heading "Propaganda Kompanie." Although he had never been in a U-Boat before Ecke professed not to have been irked by the confined conditions on board; as he did not want to be regarded purely as a passenger, he took his turn on watch as conning tower look-out. He said that he took between 200 and 300 photographs of life in the U-Boat.

During the sinking of "U 110" the First Lieutenant, pointing out the terrified faces of the panic-stricken crew, remarked to Ecke that there he might observe something worth writing about in his propaganda articles. While Ecke, like all the other survivors, repeatedly expressed his gratitude for the very generous treatment accorded him in the British destroyer, he was furiously indignant at being taken to Brixton Prison on arrival in London; he bitterly resented being clothed in prison garments, and the attitude of mind engendered by this indignity had to be counteracted before any information could be extracted from him.

He remained so bitterly resentful, however, at this "example of the way in which the English treat their prisoners of war" that he intends featuring the incident in a book which he hopes to write for publication after the war. The Petty Officers were nearly all men of considerable experience who had served under Lemp on most of the cruises of "U 30"; he seems to have been unusually successful in retaining his experienced men.

Many of the ratings had been drafted without option and were very raw and ill-trained, and some were on their first cruise when "U 110" was sunk; they did not stand up to an emergency and became panic-stricken at the first

sign of action. One man had undergone an operation for rupture some six weeks before the last cruise, but was nevertheless obliged to take his place on board.

A second rating was reputed to have communistic leanings, but was nevertheless included in the crew. An even more astonishing fact was the inclusion of a man who had been in a concentration camp and had suffered appalling cruelty at the hands of the Nazis; this man was entrusted with important and responsible duties, although he must have been classed by the German Naval authorities as an "irreconcilable" in view of his and his family's sufferings. While he was somewhat taciturn on the subject of his past, other members of the crew discussed the conditions in concentration camps. This man had been a merchant service officer and was carried for navigational duties; he was graded as a Petty Officer and would have automatically become a temporary commissioned officer after eighteen months of service. He gave the impression of being a good type of German and was a man of considerable experience gained in many parts of the world.

While the morale of the officers and petty officers was high, there were some signs of the abandonment of the unshakable conviction of Germany's ultimate victory; these doubts have not been noted before to any extent among U-Boat prisoners. Frequent references to the "infallibility" of the British new "U-Boat detecting instrument" were made, and some senior petty officers admitted that during their later cruises they had on each occasion vowed never to go to sea in a U-Boat again.

III. EARLY HISTORY OF "U 110"

"U 110" is known to have been built by the Deschimag Yard, Bremen, and was presumably laid down towards the end of 1939, or early 1940, as the first members of her complement were drafted towards the end of September, 1940, to stand by the U-Boat during the final stages of construction. Her job number was W973. She was commissioned in Bremen on 21st October, 1940, and attached to the 2nd U-Boat Flotilla. She is one of the series "U 103" to "U 111," all of which are 750-ton boats built at this yard.

During this period, the crew was housed in huts North of the Kahhafen, about fifteen minutes' walk from the building yard, according to prisoners, who added that U-Boats were built in the E-hafen and F-hafen. The Officers who had served in "U 30" were appointed to "U 110," namely Kapitänleutnant (Lieutenant-Commander) Lemp, Oberleutnant zur See (Lieutenant) Greger, Oberleutnant zur See Loewe, and Leutnant zur See (Sub-Lieutenant) Wehrhöfer.

The U-Boat was completed and proceeded to Kiel in November, 1940. Her acceptance trials were carried out on 7th November, 1940, and on 22nd November further trials were commenced, beginning with trimming tests. These trials were carried out as usual in the Baltic, and, after remaining in Kiel for about two weeks, "U 110" spent some weeks at Danzig, leaving again about 10th January, 1941. It was stated the torpedo firing practice was done in order to test the torpedo tubes only, and the torpedoes were not aimed at specific targets.

No practice attacks on convoys were made by "U 110," nor were attacks in co-operation with other U-Boats practised, but the crew was transferred to three or four other U-Boats to carry out these exercises, as "U 110's" periscope became defective and required readjustment; defects in the Diesels and electric motors also developed. The last week of January was spent in Pillau. Later on "U 110" proceeded to Warnemünde, leaving at the end of February. She was said to have been considerably delayed by ice conditions, and a new ice-breaker proved somewhat inefficient. The U-Boat returned to Kiel about 4th March, 1941.

IV. FIRST CRUISE OF "U 110"

"U 110" left Kiel on her first war cruise on 9th March, 1941, carrying a complement of four officers and 43 men. Prisoners stated that she carried 14 torpedoes, of which six were in her tubes, two reserves above and four below the floor plates in the forward compartment, and two above the floor plates in the after compartment.

She proceeded through the Kiel Canal, but appears to have been delayed at Brünsbüttel by fog. Here the U-Boat's "ice protector" (Eisschutz) was removed. It had been arranged to do this work at Cuxhaven, but Lemp particularly wished to have it done at Brünsbüttel. "U 110" did not proceed until 11th March, 1941, on which date she made two short routine dives from 1625 to 1632, and from 1634 to 1653, German time.

On the following day, 12th March, the U-Boat crash dived three times, from 0654 to 0734, from 1335 to 1355, and from 1430 to 2005, German time, presumably as a result of aircraft having been reported. "U 110" was found to be too heavy forward, and touched bottom. The Quartermaster stated that "U 110" proceeded along the Norwegian coast, about 40 miles from land, until she reached a position off Bergen, after which she passed

through the Fair Isle Channel in the early morning of 13th March. One member of the crew noted in his diary that he had seen land when passing the Shetlands.

Prisoners claimed to have seen a convoy on 14th March in an area about 120 to 150 miles South of Iceland, where U-Boats were said to be forbidden to attack.

The convoy was reported to the Vice-Admiral U-Boats, and "U 110" followed it and maintained contact. Other U-Boats, including "U 99," Kapitänleutnant (Lieutenant-Commander) Kretschmer, and "U 100," Kapitänleutnant Schepke, were orders to proceed to intercept and attack this convoy later.

(N.I.D. Note. As mentioned in C.B. 4051 (20), page 20, "U 110" was stated by prisoners captured at an earlier date to have sighted a convoy and to have followed it for some days, transmitting reports at intervals to the Vice-Admiral U-Boats. The convoy appears to have been HX 112.)

The 14th and 15th March were otherwise uneventful, and the U-Boat proceeded mainly on the surface as usual, carrying out only one or two very short trial dives, and was said to have continued to shadow the convoy. It was claimed that "U 110" sank in this convoy one tanker for certain, and possibly a second tanker on the night of 15/16th March, 1941. The ship sunk was described as a 16,000-ton tanker, which burned fiercely for some time, after having been hit by a torpedo from a range of 600 metres (656 yards).

A reliable prisoner stated that "U 110" fired three bow torpedoes during the attack on these two tankers; and other prisoners added that at least one stern torpedo was fired as well.

(N.I.D. Note. The tanker "Erodona," 6,207 tons in convoy HX 112, was attacked by a U-Boat at 2215 B.S.T. on 15th March, 1941, in position 61° 20' N. and 17° W. Survivors stated that the U-Boat turned her stern towards the tanker, and fired a torpedo from her stern tubes which caused the "Erodona" to burst into flames immediately. At daybreak, the ship was still burning, but was subsequently towed to Iceland in a parlous condition.)

Prisoners said that after these attacks, "U 110" was attacked by destroyers which dropped about 24 depth charges without damaging the U-Boat, which had dived to 100 metres (328 feet).

(N.I.D. Note. Twelve depth charges were dropped by H.M.S. "Volunteer" and H.M.S. "Vanoc" following the torpedoing of "Erodona," but neither ship obtained good asdic contact.)

They described the ships of the convoy passing over them, and claimed that they then surfaced and fired a torpedo at an 8,000-ton tanker which they believe to have sunk.

On 16 March, 1941, "U 110" crash dived at 0031, and surfaced at 0140. Later she dived again from 0900 to 1123, from 1640 to 1720, from 2007 to 2014, and from 2210 to 2245. An entry in a rating's diary alludes to an attack in co-operation with "Schepke, Kretschmer and Paullsen." The attack referred to is the attack on convoy HX 112 on the night of 16/17th March, 1941, when "U 99," Kretschmer and "U 100," Schepke, were sunk after a number of ships in convoy had been torpedoed.

(N.I.D. Note. Oberleutnant zur See (Lieutenant) Ottokar Paullsen is known to command "U 557.")

But other prisoners, although they knew of the attack and admitted having been in the vicinity and having heard the detonations of depth charges dropped by the British destroyers, stated that "U 110" did not take part in that attack.

On 17th March, 1941, "U 110" dived on three occasions for a short time. Prisoners stated that "U 110" wanted to attack the convoy on the next night, 17th/18th March, but failed to maintain contact, and so lost the convoy.

On 18th March she also dived once, from 1015 to 1045. The diarist made an entry to the effect that Kretschmer was missing. The 19th, 20th and 21st March were also uneventful days. "U 110" remaining on the surface except for a few dives of short duration.

On 22nd March she was stated to have sighted a small steamer and to have followed her all day, but was prevented by the presence of aircraft and destroyers from attacking. The U-Boat crash dived on three occasions, and prisoners stated that at night when in the most western part of their operation area, they attacked by gunfire this ship and also another small British ship, proceeding independently.

Prisoners said that, after one shot, there was an explosion in the gun, owing to a defect in the shell, and the gun was damaged; shell splinters also slightly damaged the deck. The Germans wanted to fire a second shell, but the

whole gun was described as having become twisted. It was added that the attacked ships were armed and escaped.

(N.I.D. Note. The Norwegian s.s. "Siremalm," 2,468 tons, was attacked by a U-Boat at 0230 G.M.T. on 23 March, 1941, in position 60° 35' N. and 28° 25' W., but escaped.)

"U 110" was rendered unfit to crash dive by some damage to her periscope, it was also established that her gun became defective, and remained out of action for the rest of the cruise.

On 24th March "U 110" was mentioned in a diary as having started on her homeward cruise to Lorient.

Presumably, the periscope defect was repaired, as the U-Boat was able to crash dive from 1328 to 1342.

The following days were uneventful, "U 110" proceeding on the surface all the time except for short spells submerged or at periscope depth. She was stated to have maintained the uneconomical speed of 16 knots on the surface. The alarm was sounded once on 28th March, due to aircraft being reported. Prisoners stated that "U 110" was never attacked by aircraft.

On Saturday, 29th March, 1941, "U 110" arrived at Lorient; the cylinder heads of the Diesels had cracked, according to prisoners. On her arrival "U 110" was said to have had nine or ten torpedoes remaining on board. Vice-Admiral Dönitz inspected the crew on the following day and awarded two Iron Crosses, First Class. Some of the crew went on leave, and the others were housed in the "von Dresky" and "Fröhlich" wings of the Saltzwedel Barracks, formerly the Harbour Barracks.

"U 110" spent six or seven days in dry dock, according to prisoners, who added that no other U-Boat was in the same dry dock at the time. Oberleutnant zur See (Lieutenant) Greger was replaced by Oberleutnant zur See Loewe. It was stated that "U 110" was intended to have gone on a cruise towards the south as far as the equator, but that this plan was countermanded about 12th April, 1941, and it was arranged that her area of operations should be in the North Atlantic.

V. LAST CRUISE OF "U 110"

"U 110" left Lorient on her last cruise at 1932 on 15th April, with 15 torpedoes on board; she was accompanied by a patrol vessel for about half an hour, and later carried out a test dive of three quarters of an hour's duration. A war correspondent was on board in addition to the complement of four officers and 42 men.

On the following day, 16th April, 1941, the U-Boat proceeded on a course of 235° for six hours, which was altered to 280° and again at 2200 to 320°; she crash dived five times.

On 17th April there was nothing to report; only a test dive was carried out and at 2200 course was altered to 300° which was maintained throughout the 18th of April on which day "U 110" crash dived once. On 20th April she was believed to have been west of Ireland.

The following period until 26th April was uneventful, the U-Boat proceeding on the surface nearly all the time and altering course many times; she submerged on several occasions to listen on her hydrophones.

On 26th April, a steamer was sighted. At 0130 on 27th April "U 110" sank from a range of 300 metres (328 yards) the French "André Moyrand," a 2,500-ton ship sailing alone under the orders of the Vichy Government; one torpedo from a bow tube was fired. It was stated that a Russian survivor was rescued, given a bottle of spirits and placed in a lifeboat. Prisoners believed this ship to have a cargo of iron ore.

Later in the day a short test dive was carried out; another ship was sighted but not attacked. Two steamers reported on 28th April were described as having been too far away to be worth pursuing, although "U 110" made a short-lived attempt to do so.

A report was received on 5th May, 1941, from Vice-Admiral U-Boats that a convoy of about 50 ships escorted by 15 destroyers was being formed near the Hebrides. It is possible that the convoy referred to was O.B.318, consisting of 37 ships and 10 escort vessels on 5th May, increased to 13 escort vessels on 8th May, 1941.

A reliable statement was obtained to the effect that "U 110" had completed 1,000 miles at 2030 on 6th May, 1941. Prisoners believed that the convoy had been sighted in the first place by aircraft and reported to the Vice-Admiral Commanding U-Boats who ordered "U 110" and other U-Boats to intercept and attack the convoy. At 2400 on this date course was altered to 270°.

On 8th May aircraft were reported at 0645 and 0830, "U 110" being forced to dive. She surfaced at 0900, but seven minutes later dived again on sighting a destroyer, and remained submerged for an hour. In 1815 on the same evening smoke was seen ahead on the port bow.

Prisoners state that, in spite of bad weather, "U 110" closed the convoy during the night 8th/9th May, but was prevented from surfacing in the bright moonlight by the strong destroyer escort, and did not dare to attack even from periscope depth. She therefore maintained contact with the convoy during the morning of 9th May. Prisoners did not know whether this convoy was the same one which had been reported as forming up near the Hebrides some days earlier, but they thought that it most probably was the same.

During the forenoon of 9th May, 1941, "U 110" was stated to have been joined by "U 201," Oberleutnant zur See (Lieutenant) Schnee, and the Captains conferred as to their course of action before proceeding independently. Schnee considered that the attack on the convoy should not be postponed longer than necessary, and it was agreed that "U 110" should attack first and that "U 201" should attack half an hour later.

Ecke, the war correspondent, said that he "shot" a film, on a miniature film camera, of the meeting of the two U-Boat commanders and of the second U-Boat proceeding away and submerging. This film, together with his photographs and cameras, he believes went down with the U-Boat. He said that the films would have been an excellent feature for the British news cinemas.

Prisoners believed that a third U-Boat was in the immediate vicinity and that this may have been either "U 96," Kapitänleutnant (Lieutenant-Commander) Lehmann-Willenbrock, or "U 553," Kapitänleutnant Thurmman. A reliable and knowledgeable prisoner expressed the opinion that there were eight U-Boats operating in the North Atlantic at this time, while a Chief Petty Officer also estimated that the total number of U-Boats operating was eight, all in the North Atlantic.

The Quartermaster urged Lemp to postpone the attack, as he felt sure that the escort were about to leave the convoy which would therefore become an easy prey. Although Lemp would have preferred to wait until nightfall, it was realised that "U 110" was already very far to the west, in fact further west than, in the opinion of prisoners, a U-Boat attack had ever been made. "U 110" was said to have had three electric and one air torpedo in her bow tubes at this juncture, and to have replaced the air torpedo by a fourth electric torpedo.

Prisoners stated that "U 110" dived at 1237, German time, and at 1239 fired three electric torpedoes with intervals of 30 seconds; the Germans believed that three ships of 5,000 to 7,000 tons were hit and sunk; they claimed to have heard three explosions.

(N.I.D. Note. "Esmond," 4,976 tons, and S.S. "Bengore Head," 2,609 tons, in Convoy O.B.318, were torpedoed and sunk at 1410 N.S.T. on 9th May, 1941, in position 60° 28' N. and 32° 40' W.)

The order was given to fire the fourth bow torpedo, with the object of sinking a ship believed to have been a whale factory, of 15,000 tons; the order was passed on by the Engineer Officer and the tube was flooded, but for some reason there was a misfire which resulted in an argument between the First Lieutenant and the Engineer Officer.

"U 110" carried out her attack from periscope depth and, according to prisoners, did not dive immediately, but waited to observe the results. Several men stated that the U-Boat intended to attack a large ship and at this juncture was almost in position to do so. But she was forced to crash dive when she saw a destroyer coming straight at her. The survivors of "U 110" claim that they had sunk on this last cruise four ships totalling 17,500 tons. Their actual sinking were three ships amounting to 10,085 tons.

VI. SINKING OF "U 110"

The Quartermaster stated that the attacking destroyer passed immediately over the crash diving "U 110" at 1223 G.M.T., and dropped a pattern of depth charges which caused great damage inside the U-Boat; he said that the depth gauge was smashed, but that a spare depth gauge operated by oil pressure in the after compartment showed a depth of 84 metres (275.6 ft.) soon after the first depth charges exploded. But this instrument was described as unreliable, and this statement should be accepted with reserve.

Conflicting statements were made as to the number of depth charge attacks, but most prisoners stated that three patterns were dropped and that 18 explosions were heard. The Germans believed that the British now have a new and accurate system of dropping depth charges; the last pattern was described as having been particularly well

aimed. The effect of these attacks was to wreck completely the interior of "U 110"; the hydroplanes were put out of action at an early stage, as was the rudder soon afterwards; the rudder indicator was smashed, also the compasses. Oil from a damaged fuel tank penetrated into the U-Boat near the galley. There was a certain degree of panic among the crew, most of whom rushed forward as the U-Boat went down somewhat by the stern. Some men complained of having experienced difficulty in breathing. The U-Boat's depth was now shown by the inaccurate spare manometer to have been about 95 metres (311 ft.).

The Captain hoped to escape on the electric motors, but these had also been put out of action. One battery had been damaged, and gas was produced. Realising the impossibility of escape he ordered tanks to be blown, with the intention of surfacing. But the wheel-like control of the blowing system was found to have been broken off and to be lying on the floor plates. The Germans considered that the depth charges must have exploded very close to "U 110" to have done such damage; they added that the explosions were above them. For a few moments consternation reigned among the crew; but an unexpected rocking movement told them that the U-Boat had come to the surface in some unexplained way. One suggestion was that the suction of water upwards, resulting from the explosion of the depth charges, may have drawn the U-Boat upwards.

A Chief mechanic thought that the explosion of the depth charges which had smashed the control of the blowing system, had at the same time turned on the air supply which had then automatically blown all tanks. The conning tower hatch was opened quickly, and all hands were ordered to abandon ship as quickly as possible. The Captain stood on the bridge and hustled the men overboard into the water. He was subsequently seen swimming in the sea and enquired of the First Lieutenant and the Engineer Officer as to how the Junior Officer was, as he knew that the latter had only recently recovered from a long illness.

Prisoners thought that an external fuel tank must have become damaged, as there was a large quantity of oil on the sea. They added that the British opened fire on the U-Boat and that some men were killed and others injured while abandoning ship or swimming.

Ecke, the war correspondent, said that at the time of the attack on the convoy he was ordered out of the Control Room. The next thing he heard was the tremendous explosion of a depth charge, which he described as far louder and more terrifying than anything he had ever heard on the Western Front, the explosion of Stuka aeroplane bombs included. He staggered to the Control Room where Lemp immediately ordered him over the side. The next thing he remembered was swimming in the sea. He had on leather breeches and boots, and he was not able to inflate his rubber life-belt. He is a good swimmer and said that he managed to keep afloat although he swallowed a great quantity of water and oil. While in the water he claimed that he was shot at. He did not expect to be rescued, but he was finally picked up by a "submarine chaser." Lemp, he believed, intended to commit suicide by going down with the U-Boat, but the U-Boat did not sink. It is possible that he threw himself over the side and deliberately allowed himself to be carried away.

The Engineer Officer, who had given his escape apparatus to the Chief Mechanic whose own had become damaged, had been washed overboard and was among those rescued by the British. The W/T Petty Officer stated that it was impossible to send a signal to their base reporting their last claims or the sinking of their U-Boat. The Germans stated that when they last saw their U-Boat her stern was under water with the conning tower and bows projecting. Four officers, including the war correspondent, and 28 men were rescued, but the Captain and 14 men lost their lives.

(N.I.D. Note. "U 201" is believed to have carried out her part of the plan of attack, as arranged, as "Empire Cloud," 5,969 tons and "Gegalia," 5,802 tons, were torpedoed at about 1438 on 9th May, 1941, 36 minutes after "U 110" had attacked the convoy. The former of these ships was, however, not sunk, but was later towed to port.)

VII. DETAILS OF "U 110"

(i) General Remarks

"U 110" was stated to have a displacement of 750 tons, and to have had a double hull; apart from that she was said to have been very like the earlier large type of U-Boat and had few, if any, improvements. She was painted grey.

Fuel capacity, 168 cubic metres.

note. In normal weather fuel consumption is on average about 20 to 25 per cent. more based on trials carried out in the Baltic, but since weather and sea conditions in the Atlantic, even in fair weather, differ from those in the

Baltic, it will be found in practice that there is a considerable difference in the radius of action of these U-Boats.)
Cruising speed: Both Diesels - 12 knots. One Diesel - 9 knots.

None of the U-Boats sunk from which prisoners have been captured have been fitted with R.D/F apparatus and it seems improbable that any U-Boats carry it.

Seaworthiness

The crew of "U 110" were enthusiastic about the seaworthiness of their U-Boat, and claimed that she remained on the surface and behaved well even in seas 8 and 9. They added that the conning-tower hatch remained open during bad weather and not, as was suggested, half-closed.

Stowage of Torpedoes

Prisoners stated that in addition to the six torpedoes in her tubes, "U 110" carried on each cruise eight spare torpedoes, of which two were stowed above and four below the floor plates in the forward compartment, and two above the floor plates in the stern compartment; it was added that the tapering of the hull towards the stern precluded the stowage of spare torpedoes under the floor plates in the stern compartment.

Prisoners stated that the practice of carrying spare torpedoes in containers on the upper deck had been greatly criticised and that the decision was now left to the Captains themselves as to how many, if any, spare torpedoes should be carried in this way. Lemp was said to have thought the scheme impracticable and "U 110" had therefore had these containers removed before the U-Boat's first cruise. "U 110" had formerly had eight or ten of these upper deck watertight torpedo containers. It was added that the space occupied by torpedo containers had been covered by metal plating, but after the removal of these, were covered over with wood. It was denied that the space was now utilised for any other purposes. As the transfer of torpedoes from the upper deck containers to the interior of the U-Boat could only be done in calm weather, and in any case was a slow business, prisoners believed that most, if not all, the 750-ton type U-Boats would probably have these containers removed.

Diving Depth

Prisoners stated that "U 110" had never dived deeper than about 60 metres (196.8 ft.), apart from the depth attained in the action when she was sunk, and then there was considerable doubt as to the actual depth reached.

Guns

Prisoners stated that "U 110" carried three guns, namely one 10.5 cm. (4.1 in.) forward, one 3.7 cm. (1.45 in.) aft, and one 2 cm. on the bridge.

Charging of Batteries

Prisoners expressed the opinion that not much noise was produced while batteries were being charged, as the exhaust was above the water line.

Hydrophones

The W/T personnel had a high opinion of "U 110's" hydrophones, of which several were said to have been fitted in the bow of the U-Boat on both sides.

Detector Gear

Detector gear (S-Gerät) was not carried, according to prisoners. Periphone - It was also denied that a periphone was fitted.

Ice Protector ("Eisschutz")

The fitting to protect the bow of "U 110" against damage by ice, was described as a metal protection extending aft from the bow for about 15 ft. and covering the mouths of the bow torpedo tubes. This fitting was held together across the top by rods; the space between the hull of the U-Boat and the ice-protector was said to have been filled in with wood.

Mines - It was emphatically denied that any mines were carried.

Badge - As it was impossible to take his dog to sea in his earlier command, "U 30," Lemp had a caricature of this terrier painted on the side of the conning tower. When he was appointed to command "U 110" he again adopted this badge.

VIII. U-BOAT FLOTILLAS

It is known that there are three active service flotillas. These are the 1st, 2nd and 7th Flotillas. In addition, there are six flotillas stationed in the Baltic consisting of U-Boats used for training and tactical exercises. These are numbered 3,21,22,24,25 and 27.

(i) 1st U-Boat Flotilla

About 1st March, 1941, the 1st U-Boat Flotilla consisted of 11 U-Boats which number may now have been increased by a further five. The Commanding Officer of the Flotilla is Kapitänleutnant (Lieutenant-Commander) Hans Cohausz. This flotilla had been operating from Lorient, but it is believed that it was intended to be based on another French port; Brest was suggested in this connection.

(ii) 2nd U-Boat Flotilla

About 1st March, 1941, the 2nd U-Boat Flotilla consisted of 21 U-Boats of the 740- to 750-ton type, and included "U 110." The Commanding Officer of the flotilla is Korvettenkapitän (Commander) Heinz Fischer. This flotilla is also based on Lorient and is believed to be intended to remain there.

(iii) 7th U-Boat Flotilla

About 1st March, 1941, the 7th U-Boat Flotilla, commanded by Kapitänleutnant (Lieutenant-Commander) Herbert Sohler, consisted of twenty-six 500-ton U-Boats. Although this flotilla has been based on Lorient for many months, it has been suggested that it may later be based on St. Nazaire.

(iv) 3rd U-Boat Flotilla

It is believed that the 3rd U-Boat Flotilla is based on Stettin, in the Baltic.

(v) 21st U-Boat Flotilla

The 21st U-Boat Flotilla was stated by prisoners to be based on Pillau and to consist of training U-Boats belonging to the 1st U-Boat Training Division ("U-Lehr-division").

(vi) 22nd U-Boat Flotilla

The 22nd U-Boat Flotilla was stated to be based on Gotenhafen (Gdynia) and also to consist of training U-Boats belonging to the 2nd U-Boat Training Division.

IX. OTHER U-BOATS

(i) "U 28," "U 29" - It was confirmed that "U 28" and "U 29" were now being used for training and are attached to the 24th U-Boat Flotilla.

(ii) "U 30" - "U 30" was laid down at the Deutsche Schiff und Maschinenbau A.G. ("Deschimag") Building Yard at Bremen, in October, 1935, on the same day as "U 28" and "U 29." All the three U-Boats were of 500 tons. "U 30" was launched on 4th August, 1936, and completed on 8th October of the same year. "U 30" was then allocated to the 2nd U-Boat Flotilla "Saltzwedel." Her home port was Wilhelmshaven; her complement 35 officers and men.

The German Navy List of 1936 gives "U 30's: first Commanding Officer as Kapitänleutnant (Lieutenant-Commander) Cohausz, with Oberleutnant zur See (Lieutenant) Behrens as First Lieutenant and Oberleutnant (Ing.) (Engineer Lieutenant) Winkler as First Engineer. The German Navy List of 1937 gives Kapitänleutnant Cohausz as Commanding Officer, Oberleutnant zur See Mugler as First Lieutenant and Oberleutnant (Ing.)

Burckhardt (Herbert Alfred) as First Engineer. The exact date when Kapitänleutnant Lemp joined "U 30," as Commanding Officer, has not been definitely established, but evidence acquired from captured documents makes it clear that Kapitänleutnant Lemp was drafted to "U 30" before the outbreak of war, and that he was in command on "U 30's" first war cruise.

The German Navy Lists of 1936 and 1937 show Kapitänleutnant Lemp as serving in "U 28," 2nd U-Boat Flotilla "Saltzwedel," first as Leutnant zur See (Sub-Lieutenant) and later (1st January, 1937) as Oberleutnant zur See, under Kapitänleutnant Ambrosius. The German Navy List of 1938, however, gives Lemp as "Commanding in 2nd U-Boat Flotilla 'Saltzwedel'."

According to Petty Officer Adolf Schmidt, a prisoner of war from "U 30" captured at Reykjavik on the occupation of Iceland by British forces, "U 30" took part in a cruise to Spanish waters in 1938 and spent eight days at Cadiz. It is known that "U 30" made three trips to Spanish waters, viz., from 19th August to 2nd November, 1937, from 30th July to 16th August, 1938, and from 5th September to 22nd October, 1938. Schmidt also states that "U 30" was badly rammed before the war by "U 35" both ships being damaged, "U 30" having her conning tower torn away and all her upper deck casing ripped off. "U 30" added Schmidt, was in dock at the time of the manoeuvres held before the war, and attended by Grand Admiral Raeder.

THE FIRST WAR CRUISE OF "U 30"

Notes entered in a pocket calendar by Kapitänleutnant Fritz-Julius Lemp, the Commanding Officer, show that "U 30's" first war cruise to the Western Approaches began on 22nd August, 1939, 12 days before the outbreak of war, when the U-Boat left Wilhelmshaven at 0400. The officers were Kapitänleutnant (Lieutenant-Commander) Lemp, Oberleutnant (Ing.) (Engineer Lieutenant) Eichelborn, First Engineer, and Oberleutnant zur See (Lieutenant) Peter

Hinsch, First Lieutenant. According to Lemp's pocket calendar, "U 30" was out in the North Sea on 25th August, 1939, was "awaiting position" on Monday, 28th August, and reached the Atlantic on 29th August.

Five days later, on Sunday, 3rd September, England and France declared war on Germany and Lemp duly noted the fact in his calendar. Apparently nothing occurred during the following week which Lemp thought worthy of notice, for there is no further entry in his calendar until Sunday, 10th September, when he records that he met "U 48." The following day, Monday, 11th September, the calendar shows that "U 30" sighted S.S. "Blairlogie" (4,425 G.R.T.) at 0330 and, after chasing her for 2-1/2 hours, finally sank her by torpedo at 0600.

On Thursday, 14th September, "U 30" contacted the S.S. "Fanad Head," signalled her to heave to, and ordered the crew into the boats. According to Petty Officer Adolf Schmidt (during his later interrogation) he and a rating named Ohse were put aboard the S.S. Fanad Head" to sink her by means of an explosive charge. While carrying out this task they were attacked by machine-gun fire by two British Skua aircraft from H.M.S. "Ark Royal." One of the aircraft was claimed to have been brought down by gunfire from "U 30" and her pilot was seen to be struggling in the water. Schmidt sent Ohse to the rescue and the pilot was saved. The second Skua was then brought down by the U-Boat's gunfire and Schmidt, although wounded in the hand and forearm, succeeded in rescuing this pilot.

(Note. In point of fact these two Skuas crashed because their bombs, dropped from too low an altitude, damaged them.)

During the attack on "U 30" several of her crew were injured by splinters from an aircraft bomb. Schmidt, Ohse, and the two British airmen, one of whom, according to a prisoner ex "U 110," was badly burned, were taken on board the U-Boat. The following day Schmidt's head, and arm grew worse and, as he became delirious, "U 30" spent 17th and 18th September proceeding to Reykjavik where Schmidt was put ashore on 19th September. Schmidt was immediately interned, and later taken prisoner by British troops. Both he and Ohse were awarded the Iron Cross, 2nd Class.

After the Reykjavik incident Lemp turned for home. "U 30" took eight days to complete her passage and arrived back in Wilhelmshaven on Tuesday, 27th September, taking her two British airmen prisoners with her. On the day of her return Lemp was awarded the Iron Cross, 2nd Class, and the next day he was received by Hitler.

Prisoners of War Oberbootsmannsmaat Herman Fox ex "U 110," who was serving in "U 30" during this first war cruise, declares that "U 30" sank four ships in all during this undertaking, including s.s. "Blairlogie" and S.S. "Fanad Head," but no claims, apart from the two ships names, have been entered in Kapitänleutnant Lemp's calendar.

Between 18th and 30th October Lemp, according to his calendar, was on leave in Berlin. He gave his address: Berlin-Wilmersdorf, Ballenstedteich 146, c/o Dr. Stanek. At, or about, this time other members of the crew of "U 30" were granted periods of leave varying from 2 to 18 days. The return of Lemp to duty on 30th October appears to mark the beginning of a period of repairs and trials for "U 30."

On 4th and 5th November Lemp entered "Hamburg" in his calendar, while on 15th November he entered "Bremen." Trials apparently began on 21st November and lasted to 2nd December. Entries in Lemp's calendar are: "21-11-39: Stationary trials."

"28-11-39: Trimming trials."

"29-11-39: First trial."

"30-11-39: Docked."

" 2-12-39: Second trial."

On Sunday, 3rd December, "U 30" according to the calendar, embarked torpedoes.

SECOND WAR CRUISE OF "U 30"

"U 30's" second war cruise did not start until 9th December, over ten weeks after her return to port. This second cruise appears scarcely to have been more than a further trial, for it lasted a mere four days. The officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Hinsch.

"U 30" returned to port on 13th December, 1939.

THIRD WAR CRUISE OF "U 30"

"U 30's" third war cruise started on 23rd December, 1939.

Officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Hinsch and Leutnant zur See Wehrhöfer. The first entry for this cruise in Lemp's calendar is for 25th December on which date he writes that he attacked a tanker and missed. He adds the word "Aircraft."

His next entry is on 26th December, when he states that "U 30" was in the Fair Isle Channel.

On 27th December Lemp claims in his calendar that he sank a British patrol vessel by gunfire.

Oberleutnant (Ing.) Eichelborn, prisoner of war ex "U 110," in a note to a calendar which he began on 1st January, 1940, states that on 28th December, 1939, at 0330, "U 30" sank the British patrol vessel "Lochiel" (378 tons) by gunfire.

(N.I.D. Note. This Officer was mistaken as to the identity of the ship sunk. The British patrol vessel "Barbars Robertson" was sunk in this vicinity on the date in question).

On 28th December Lemp wrote in his calendar that he had torpedoed H.M.S. "Barham." but the entry has been scratched out in ink: Oberleutnant zur See Eichelborn, writing in his calendar, is again more explicit and, regarding this attack he states: "On 28th December, at 1545, torpedoed the battleship 'Barham' off the west coast of Scotland." It was not, however, until 30th December that Lemp radioed the German Admiralty that he had torpedoed a battleship of the "Queen Elizabeth" class.

Maschinenobergefreiter (Stoker, 1st Class) Coenenm, prisoner of war ex "U 110," stated during interrogation that he had heard that "U 30" fired four torpedoes at H.M.S. "Barham" when at a great distance. Coenen did not join "U 30" until May, 1940, but there is support for his statement in a signal from N.A., Copenhagen, dated 3rd March, 1940, which runs: " 'Barham' torpedoed by Lemp in a 500-ton U-Boat. Four were fired at 6,000 yards." (On 29th February, 1940, the Admiralty Press Division announced: "Lemp claims to have torpedoed H.M.S. 'Barham'.") There is ample material from which to deduce the subsequent activities of "U 30" during this cruise, as from the first day of the New Year, 1940, two further members of the crew began to keep diaries.

Oberleutnant zur See Eichelborn begins the story by writing that he celebrated the entry of the New Year sitting in the control room. Leutnant zur See Wehrhöfer adds the information that "U 30's" position on this day was "south-west of Ireland." He writes: "Channel" for 2nd January, and "St. George's Channel" for 4th January.

On 6th January, Wehrhöfer has entered: "Objective carried out," while Eichelborn has written: "On the bottom" for this date, and for the two following days. The nature of the "objective" mentioned by Wehrhöfer has been disclosed by Oberbootsmannsmaat Hermann Fox, a prisoner of war from "U 110," who stated when interrogated, that during this cruise, in which he participated, "U 30" laid mines in the St. George's Channel. This mine-laying operation did not, however, pass off peaceably for the U-Boat. Wehrhöfer has written: "Proceeded out of Channel" for 8th January; and "Western exit of Channel" for 9th January, but for this date Eichelborn has written, obviously in some agitation of mind: "1050: Alarm! A whole crowd. Attacked by depth charges until 2147. We all turned pale; Nothing was broken but we are being hunted. Damage to diving gear."

(N.I.D. Note. H.M.S. "Vesper" carried out attacks at 0010 and 0330 on 9th January, 1940, 45 miles W.S.W. of Land's End. These attacks were assessed: "Probably U-Boat present, but no evidence of damage." There is no other record of any attack which could refer to this incident. The times of the attacks as noted by the German officer do not agree with "Vesper's" report.)

On the following day, Wednesday, 10th January, 1940, "U 30," according to Eichelborn, was proceeding submerged, on a course which Wehrhöfer describes as north. The next two days "U 30," according to Eichelborn, was able to proceed on the surface, but she submerged again on Saturday, 13th January. The next day Eichelborn wrote: "Alarm dive (aircraft) in the night!; Skagerrak storm." Writing of the remainder of this cruise Eichelborn states that on Monday, 15th January, they submerged again and lay on the bottom while aircraft bombs were heard in the distance. They again submerged and lay on the bottom on the following day, but Eichelborn had had time to notice that the weather had improved although "it is horribly cold." He added: "It is noticeable that we are proceeding homewards."

On Wednesday, 17th January, 1940, this third cruise of "U 30" ended. Eichelborn writes of this day: "Lovely winter weather, cold; North Sea like a millpond. 'Schlesien' is waiting for us by the light-vessel to act as ice-breaker. Entered harbour at about 1700."

The day after her return to port further decorations were given to the members of "U 30's" crew. The unknown diarist of "U 110" writes that on this day, 18th January, he received both the Iron Cross, Second Class, and the U-Boat Badge.

Others of his entries are: "Saturday, 20th January, 0800: In dockyard hands." "Monday, 22nd January: Docking postponed until Wednesday. B.B.C. gathering." "Wednesday, 24th January: Docked."

On 31st January, while "U 30" was still at Wilhelmshaven, a rating was transferred from "U 30" to the Bremen U-Boat "Baubelehrung," that is, to stand by the construction of a U-Boat. On 27th February Wehrhöfer writes: "At base."

FOURTH WAR CRUISE OF "U 30"

"U 30's" fourth war cruise began on 3rd March, 1940, and lasted until 30th March. The officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Greger. According to a survivor from "U 110," Greger had been appointed to "U 30" to replace Oberleutnant zur See Hinsch, who had been transferred to a Commanding Officer's course. Few details are known of this cruise of "U 30" apart from the fact that on 10th March, a week after she had sailed, "U 30" was mentioned in preliminary orders concerning operations in Norway, allocating her to the 2nd U-Boat Group together with "U 34." These orders were subsequently cancelled.

A survivor from "U 110," who was serving in "U 30" during this cruise, has stated that during March, 1940, "U 30" penetrated Norwegian fjords while submerged and, rising to periscope depth, obtained data regarding defences and the number and disposition of warships and merchant vessels. This undertaking, so it was stated, was a prelude to the Norwegian invasion operations which began on 3rd April. "U 30" returned to her base at Wilhelmshaven on 30th March.

FIFTH WAR CRUISE OF "U 30"

"U 30" began her fifth war cruise on 3rd April, 1940, taking part in the Norwegian operations. Her officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Greger. Details concerning this cruise are also scarce. She was operating in an area in co-operation with "U 34" and very little seems to have been achieved. "U 30" returned to her based-on 5th May, having been at sea one month.

SIXTH WAR CRUISE OF "U 30"

Evidence shows that "U 30" began her sixth war cruise on 8th June and completed it on 7th July, 1940. Officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Greger.

On this cruise "U 30" left her base at Wilhelmshaven and made her way to Lorient, passing through the Fair Isle Channel, as on all her cruises to the Atlantic. A survivor from "U 110," who was sailing in "U 30" for the first time, stated, when interrogated, that during this period "U 30" operated between the North Channel, west of Ireland, and south to the neighbourhood of St. George's Channel. The actions which this rating recalls, however, took place further to the south. He states that on one occasion during this cruise, when south of Ireland, and abreast of North France, "U 30" attacked two fast small ships in convoy whose speed he estimated at between 16 and 18 knots. After this venture "U 30" remained submerged for half a day.

(N.I.D. Note. No report has been received which could be connected with this claim.)

"U 30," so it was stated, also sank the Norwegian ship S.S. "Randsfjord."

(N.I.D. Note. S.S. "Randsfjord" was sunk at 0100 on 22nd March, 1940, in approximate position 50° 45' N and 7° 45' W.). This survivor stated that the final success of "U 30" on this cruise was the sinking of a wheat ship estimated as of 4,700 G.R.T. on 6th July, or the night of 5th/6th July. This occurred off the entrance of the South Channel.)

(N.I.D. Note. Estonian S.S. "Vapper," 4,443 tons, sunk at 1005 on 6th July, 1940, in position 49° 30' N and 9° 15' W., was presumably the ship referred to, as no other ship was sunk about this date in this area.)

"U 30" took 11 torpedoes on all her cruises and on this occasion all of them were expended. "U 30" reached the base at Lorient on 7th July, 1940.

SEVENTH WAR CRUISE OF "U 30"

"U 30" sailed on her seventh war cruise on 13th July, 1940, and returned to port 11 days later, on 34th July. The officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Greger.

This cruise began and ended at Lorient. Eleven torpedoes were again embarked, according to one prisoner's statement, but only one was fired. The target was a British ship of about 3,700 G.R.T. This ship was first attacked by gunfire, but as she did not sink, Lemp presumed that there were empty barrels on board, and finally ordered her to be sunk by torpedo. It was believed that the crew of the British ship were picked up by a Portuguese trawler and landed at Lodiz (?) - (possibly Leixoes) - in Portugal.

(N.I.D. Note. No report has been received which could be connected with this claim.)

After this attack, an engine room defect appears to have developed and, according to an engine room rating, "U 30" was able only to proceed on one Diesel. This defect presumably decided Lemp to curtail the cruise and return to Lorient after only 11 days at sea.

EIGHTH AND LAST WAR CRUISE OF "U 30"

"U 30" began her eighth and last war cruise on 5th August, 1940, and completed it on 28th August. The officers were: Kapitänleutnant Lemp; Oberleutnant (Ing.) Eichelborn; Oberleutnant zur See Greger, Leutnant zur See Wehrhöfer.

On this cruise "U 30" sailed from Lorient and returned to Germany by way of the Fair Isle Channel. According to a survivor from "U 110," "U 30" was joined on this cruise by "U.A.," which had come from the South of Spain. When in a position approximately 200-300 miles west of the Hebrides, and south of Iceland, the two U-Boats were said to have sighted a British convoy en route to Canada. The two U-Boats proceeded to attack and each, according to a prisoner's statement, sank two ships. "U 30" was apparently detected, and suffered a depth charge attack, but managed to escape. "U.A." on the following day was said to have sunk one Hungarian steamer which had previously been attacked by "U 30" on, or about 21st August.

It was stated that "U.A." also had an engine room defect. Approaching Germany, "U 30" stopped at Heligoland for one night. On leaving she was rejoined by "U.A." and both sailed together for Wilhelmshaven. Later, "U 30" proceeded to Stettin where she went into dock.

On this last cruise "U 30" again had 11 torpedoes on board, but only eight were expended.

Whether or not this prisoner's account of the last cruise of "U 30" is complete, German propagandists decided to make considerable capital out of it. On 21st August, 1940, while "U 30" was still at sea, it was announced that Lemp had sunk 46,500 G.R.T., made up of nine British ships, and that Hitler had conferred upon him the Knight Insignia of the Iron Cross on the recommendation of Admiral Dönitz. The following day, 22nd August, the German radio announced that either Lemp or Liebe had sunk 56,000 G.R.T. during a cruise, whereupon they had received the Knight Insignia of the Iron Cross. In fact, both U-Boat Commanders received the Knight Insignia on the same day, 21st August.

The newspaper Westdeutsche Beobachter of 22nd August, writing in praise of Lemp, stated that he had sunk 50,000 G.R.T., and that in addition he had carried out mine-laying operations near the English coast. When Lemp finally arrived in Wilhelmshaven on 28th August he found that, for a brief space, he was to be the hero of the hour. He was entertained by Admiral Dönitz., who on 2nd October, accompanied Lemp, his crew, and Korvettenkapitän (Commander) Hartmann to the Kreischeim, Ruttelerfeld, near Neuenburg, where they were guests of the Party District Leader of Wilhelmsburg.

At this time, the newspaper Hamburger Fremdenblatt published a picture of Lemp in his U-Boat, clearly showing on the conning tower the painted device of the front view of a terrier puppy upon a dark circular background.

An engine room rating stated that it was first intended, after a complete overhaul, that "U 30" should continue her war cruises, but finally it was decided to use her as a school boat for the "Saltzwedel" Flotilla in the Baltic, probably based on Pillau. The last known details of "U 30" are contained in further entries in the diary of Oberleutnant (Ing.) Eichelborn, who writes that, after an air raid alarm between 2045 and 0415 on 7th October, "U 30" came out of dock on Saturday, 12th October, and carried out trials on Friday, 18th October. There were further trials on Tuesday, 22nd October, when the wireless apparatus was tested. There were trimming trials at 1000 on Monday, 28th October, and more trials on Tuesday, 29th October, when the U-Boat got under way at 0700.

The next entry in the diary is on 2nd November when Oberleutnant (Ing.) Eichelborn writes: "Left harbour," There is then a further gap until 7th December, when there is a final entry: "Proceeded to Danzig."

The following details of "U 30's" history have been received, but it has not been possible to ascribe the incidents to any specific cruise. According to prisoners "U 30," on one occasion, picked up 13 Swedish sailors in the North Sea near the Shetland Islands. The Swedish ship is alleged to have run on a floating mine, forcing them to take to the boats. On another occasion "U 30" intercepted a wireless distress signal from a Do. 18 aeroplane which had made a forced landing. "U 30" was able to reach the position and pick up the crew.

It was stated that "U 30" frequently rescued survivors from the sea, provided them with cigarettes and spirits, and then transferred them to near-by lifeboats.

(iii) "U 37"

It was confirmed that "U 37," formerly commanded by Korvettenkapitän (Commander) Hartmann, then by Kapitänleutnant (Lieutenant-Commander) Oehr, and latterly by Oberleutnant zur See (Lieutenant) Clausen, was about to be transferred from the 2nd Flotilla to the 24th U-Boat Flotilla, a training flotilla. She was stated, however, to have been at Lorient at the end of March, 1941, but to have left before 15th April, 1941. According to the claims of the German High Command the achievements of this U-Boat consist of sinking's amounting to over 100,000 tons of shipping while under the command of Hartmann, and 105,072 tons under Oehr. No official claims have been made on behalf of Clausen.

(iv) "U 38"

"U 38" was last heard of as having been relegated to a training flotilla in August, 1940, having presumably sunk about 100,000 tons of shipping, as her Captain, Kapitänleutnant Heinrich Liebe was awarded the Knight Insignia of the Iron Cross on 21st August, 1940. This U-Boat has, however, been allocated to the 2nd U-Boat Flotilla, and is known still to be commanded by Liebe. That she has carried out another war cruise is indicated by the German High Command claim of 31st May, 1941, to the effect that Liebe had sunk another 44,000 tons of shipping.

(v) "U 43"

"U 43" is known to belong to the 2nd U-Boat Flotilla and to be commanded by Kapitänleutnant (Lieutenant-Commander) Lüth, who formerly commanded a small U-Boat in which he claimed to have sunk 12-armed merchant ships totalling 87,236 tons and also a submarine; for these successes he was awarded the Knight Insignia of the Iron Cross on 28th October, 1940. Prisoners stated that "U 43" was at Lorient at the end of March, 1941, but had left that base before 15th April, 1941.

(vi) "U 46"

"U 46" Oberleutnant zur See (Lieutenant) Engelbert Endrass, has apparently been active again, as the German High Command communiqué of 4th April, 1941, stated this officer's U-Boat was one of those which had particularly distinguished in the achievement of the recent successes against British merchant shipping in the North Atlantic. The successes quoted were the alleged sinking of 88,616 tons of shipping, of which ten ships totalling 58,000 tons were torpedoed and sunk in a strongly protected convoy bound for Great Britain; it was also claimed that another of 12,000 tons was severely damaged.

On 14th May, 1941, Endrass gave a broadcast interview in which he stated that he had sunk on his latest cruise 31,500 tons of shipping, which included two tankers and one munitions ship; he professed to have been co-operating with other U-Boats. The broadcast added that Endrass' grand total of sinking's had reached 190,000 tons, comprising 29 ships.

(vii) "U 48"

Kapitänleutnant (Lieutenant-Commander) Herbert Schultze, known as "Vati," is known to be again in command of "U 48," after a prolonged absence due to illness, during which the U-Boat was commanded by other officers. On 2nd April, 1941, the German High Command claimed that Schultze had sunk five merchant ships, mostly in convoys, totalling 35,300 tons in the North Atlantic, and had torpedoed another bug merchant ship, whose loss could be assumed. This ship was described in a broadcast from Zeesen as having had a displacement of 6,000 tons.

On 17th April, 1941, Schultze broadcast an interview in which he claimed to have attacked and shelled a 10,000-ton British ship proceeding to Great Britain with a cargo of munitions.

On 18th April, 1941, Breslau broadcast an alleged interview with survivors of the British ship, said to have been landed at the Cape Verde Islands; this broadcast claimed that British survivors had described the U-Boat as having attacked on the surface and the German shells as having exploded the cargo of ammunition. A broadcast from Rome gave Schultze's total sinking up to 22nd April, 1941, as 16 ships amounting to 114,500 tons.

(viii) "U 52"

Survivors from "U 110" stated that Kapitänleutnant (Lieutenant-Commander) Salman was in command of "U 52," but that this officer had been or was expected to be given a new U-Boat, when "U 52" would be relegated to the training flotilla.

The only official claim made on behalf of Salman was on 14th August, 1940, when he was stated to have sunk 41,611 tons of shipping, including a British auxiliary cruiser of 11,400 tons. Survivors of "U 110" believed that Salman's total was now about 98,000 tons, of which 18,000 tons were attributed to his last cruise. A prisoner asserted that while "U 110" was on her last cruise, 15th April to 9th May, 1941, she intercepted a message from "U 52" reporting the sinking of 18,000 tons; this man added that "U 52" had been on her way to Germany to become a training U-Boat, after seeing much active service since the outbreak of the war.

(ix) "U 67"

Kapitänleutnant (Lieutenant-Commander) Heinrich Bleichrodt is known to be in command of "U 67" of the 2nd U-Boat Flotilla. According to the German High Command claim of 21st September, 1940, this officer sank nine ships totalling 51,862 tons; a further announcement of 18th October, 1940, stated that he had sunk 42,000 tons of shipping on what seems to have been his next cruise; this brought his grand total of shipping sunk to 93,862 tons. On 21st October, 1940, official sources increased the tonnage sunk on his latest cruise to 53,000 tons.

On 28th October, 1940, Bleichrodt was awarded the Knight Insignia of the Iron Cross and the German High Command stated that he had sunk on two cruises 15 steamers and two tankers totalling 105,396 tons, mainly in convoys, and also the British gunboat "Dundee."

(N.I.D. Note. H.M.S. "Dundee" was sunk at 0020 on 15th September, 1940, in position 56° 50' N. and 15° 04' W.) Prisoners stated that "U 67" was on a cruise during May, 1941.

(x) "U 93"

The award of the Knight Insignia of the Iron Cross to Kapitänleutnant (Lieutenant-Commander) Korth, announced on 3rd June, 1941, indicates that this officer is credited with having sunk about 100,000 tons or more of shipping. He is known to be in command of "U 93."

(xi) "U 94"

It was confirmed that "U 94" was commanded by Kapitänleutnant (Lieutenant-Commander) Herbert Kuppisch. On 9th May, 1941, the Germans officially claimed that Kuppisch had recently sunk four merchant ships totalling 20,000 tons, in a strongly protected convoy in the North Atlantic.

On 25th May, 1941, he was awarded the Knight Insignia of the Iron Cross and the German radio broadcast that altogether he had sunk a destroyer and 17-armed merchant ships totalling 90,260 tons and had also carried out mining operations close to the British coast. Mining operations would have been undertaken in a smaller U-Boat at an earlier date.

(xii) "U 96"

On 20th May, 1941, the German High Command claimed that Lehmann-Willenbrock's U-Boat had sunk in convoys British tankers totalling 33,000 tons. This officer is known to command "U 96."

(xiii) "U 98"

Prisoners claimed to have seen "U 98," Kapitänleutnant (Lieutenant-Commander) Gysae, together with two or three other 500-ton U-Boats at Lorient early in April, 1941.

(xiv) "U 101"

Kapitänleutnant (Lieutenant-Commander) Mengersen is known to be in command of "U 101."

The German High Command communiqué of 3rd December, 1940, claimed that on 2nd December, 1940, U-Boats had attacked and dispersed with particular success a large convoy destined for Great Britain, and despite immediate and violent defence by the escorting cruisers and destroyers, had sunk 15 merchant ships totalling over 110,000 tons, also the auxiliary cruiser H.M.S. "Caledonia" of 17,000 tons. Mengersen was said to have played the leading part by sinking five of the above ships with a total tonnage of 41,000 tons.

(xv) "U 103"

It was established that Kapitänleutnant (Lieutenant-Commander) Viktor Schütze is in command of "U 103" and not of "U 104," as stated by a surviving officer of "U 76." The exploits mentioned in C.B. 4051 (21) under the heading "U 104" therefore refer to "U 103."

The German High Command communiqué of 27th May, 1941, claimed that Schütze's U-Boat had specially distinguished itself by sinking 11 ships totalling 56,200 tons on the occasion when U-Boats sank 14 heavily laden merchant ships totalling 77,600 tons off the west coast of Africa.

"U 103" is described as being a "Directing Boat" (Führungsboot) and together with "U 68" and "U 704" is fitted with an extra-large freshwater tank.

(xvi) "U 105"

The German High Command communiqué of 17th May, 1941, claimed that Kapitänleutnant (Lieutenant-Commander) Georg Schewe's U-Boat had sunk five British merchant ships totalling 33,000 tons. The German press of the same date corrected this figure to 33,612 tons. It is known that Schewe commands "U 105." A German broadcast of 25th May, 1941, claimed that Schewe had so far sunk 14-armed merchant ships totalling 96,112 tons and had "carried out successfully some special operations." On the same date he was awarded the Knight Insignia of the Iron Cross.

(xvii) "U 106"

It was established that "U 106" is commanded by Kapitänleutnant (Lieutenant-Commander) Jurgen Oesten. The German High Command communiqué of 22nd March, 1941, stated that the U-Boats commanded by Oesten and Schewe had particularly distinguished themselves in the attack on a British convoy off the west coast of Africa, when U-Boats had sunk eleven ships totalling 77,000 tons by shadowing a convoy for several days and making repeated attacks.

N.I.D. Note. Two convoys, S.L.67 and S.L.68 were involved, and 11 ships were sunk with a loss of 64,883 tons. On 2nd April, 1941, Oesten was awarded the Knight Insignia of the Iron Cross, the German broadcast stating his total sinking amounted to 92,000 tons of shipping.

(xviii) "U 107"

It was established that Kapitänleutnant (Lieutenant-Commander) Hessler is in command of "U 107," and not Kapitänleutnant Scholtz, as stated by survivors of "U 76" (C.B. 4051 (21)).

According to the German High Command communiqué of 1st May, 1941, Hessler reported the sinking of a 7,000-ton steamer which brought his U-Boat's total up to 42,650 tons during that cruise.

(xix) "U 108"

Kapitänleutnant (Lieutenant-Commander) Scholtz, whom earlier prisoners thought to be in command on "U 107," is now known to command "U 108." Scholtz broadcast on 9th May, 1941, his experiences on his first cruise. He stated that his U-Boat and his crew were both new, and they proceeded to the Atlantic where they cruised for eight days before being able to fire a torpedo; then they sighted a column of smoke, manoeuvred into position, and attacked at night; as their victim did not sink at once, the U-Boat surfaced and shelled the heavily laden ship, which had been bound for England, until she sank. Scholtz claimed to have subsequently sunk further merchant ships on that cruise.

(xx) "U 123"

Kapitänleutnant (Lieutenant-Commander) Moehle is known to command "U 123." This officer was credited by the German High Command on 19th October, 1940, with having sunk seven ships totalling 44,050 tons when German official sources claimed the sinking within a few days of 31 merchant ships amounting to 173,650 tons, of which 26 ships were stated to have been in convoy. It was not confirmed that the successes claimed above on behalf of Moehle were achieved in "U 123."

The sinking of four further merchant ships totalling 33,100 tons was attributed to Moehle by the German High Command on 24th February, 1941, and it was added that this officer had then sunk 19 merchant ships amounting to 111,943 tons. Breslau broadcast an announcement on 28th February, 1941, to the effect that Moehle had been awarded the Knight Insignia of the Iron Cross.

Survivors of "U 110" claimed to have seen "U 123" and Moehle at Lorient early in April, 1941; they added that she left before 15th April, 1941.

(xxi) "U 124"

The Captain of "U 124" was known to be Kapitänleutnant (Lieutenant-Commander) Wilhelm Schulz (see C.B. 4051 (20)).

He was awarded the Knight Insignia of the Iron Cross on 7th April, 1941, having sunk, according to German claims, 16-armed merchant vessels totalling over 100,000 tons. The statement added that this officer had always been eager to attack with his U-Boat and had achieved that excellent result by determinedly making use of all possibilities of attack.

(xxii) "U 201"

"U 201," Oberleutnant zur See (Lieutenant) Adalbert Schnee, as mentioned earlier in this report, surfaced close to "U 110" on the forenoon of 9th May, 1941, and a conference was held by the two captains. It was arranged, according to prisoners, that "U 210" should attack half an hour after "U 110."

"U 110" attacked convoy O.B. 318 on 9th May, 1941, at 1400 B.S.T. and at 1436 S.S. "Empire Cloud" and S.S. "Gegalia" were torpedoed; the former ship subsequently towed to port. "U 201" was stated by prisoners to be a new 500-ton U-Boat on her first cruise. Schnee is known to enjoy a reputation in U-Boat circles as an efficient and valuable officer.

(xxiii) "U 556"

It was established that "U 556" is commanded by Kapitänleutnant (Lieutenant-Commander) Herbert Wohlfarth who is stated by the German High Command on 25th May, 1941, to have sunk 18 merchant ships totalling 75,477 tons while commanding a small U-Boat at an earlier date. The communiqué added that this officer had sunk a further four merchant ships amounting to 18,500 tons in his present U-Boat, and that his grand total of 93,977 tons of shipping sunk comprised 22 ships, including an escort vessel. He was awarded the Knight Insignia of the Iron Cross. This U-Boat was sunk on 27th June, 1941.

(xxiv) "U.A."

Prisoners stated that they saw "U.A." at Lorient on a date during the time "U 110" was there, from 29th March to 15th April, 1941. A Chief Petty Officer said that this large U-Boat was operating in the South Atlantic and could remain at sea for three months; these statements were not confirmed. "U.A." is attached to the 2nd U-Boat Flotilla, based on Lorient. She is under the command of Korvettenkapitän (Commander) Eckermann, formerly commanding the Lohs U-Boat Flotilla.

(xxv) "U.B."

Prisoners stated that the captured submarine H.M.S. "Seal" is in service in the German Navy under the name "U.B."

(xxvi) Italian U-Boats

The survivors of "U 110," like prisoners captured at earlier dates, referred to their Italian allies in terms of the utmost contempt, especial scorn being reserved for Italian U-Boat crews. One man indignantly described the Italian U-Boats as usually sinking an intercepted vessel by gunfire after rescuing as many of the crew as possible. After hastily returning to port the Italians then triumphantly exhibited the unfortunate prisoners and spent weeks celebrating their achievement. Prisoners estimated the total sinking's of the whole U-Boat branch of the Italian Navy as 300,000 tons.

X. U-BOAT LOSSES

(i) "U 44" - Buildings in Lorient occupied by U-Boat personnel have been named after U-Boat Captains lost during this war. The naming of one of these buildings after Kapitänleutnant (Lieutenant-Commander) Ludwig Mathes indicated that he has been lost. Survivors of "U 110" stated that this officer was lost when "U 44" was sunk. The suggestion that this U-Boat had been sunk in March or April, 1940.

(ii) "U 47" - The German High Command communiqué of 23rd May, 1941, announced that the U-Boat commanded by Korvettenkapitän (Commander) Gunther Prien had not returned from her last undertaking and must be considered lost. Prisoners stated that rumours of the loss of Prien had been current at Lorient for some time, but that no details were known. According to a theory held by the German Naval authorities based on unconfirmed reports of a steamer which had reached a Canadian port, this ship was alleged to have seen a U-Boat surfacing only four metres from her bow and to have rammed this U-Boat which then sank immediately.

The Vice-Admiral U-Boats was said to have thought that the U-Boat was possibly Prien's. It is thought probable, however, that "U 47" was in point of fact sunk by H.M.S. "Wolverine" on the 8th of March, 1941.

(iii) "U 57" - Further statements were made regarding the sinking of "U 57," reported in C.B. 4051 (21).

According to survivors of "U 110" this seems to have occurred in Kiel Bay near the entrance to the south of the Kiel Canal.

(iv) "U 104" - A Petty Officer of "U 110" stated that "U 104" had been sunk. Another Petty Officer said that Kapitänleutnant Jüst had been lost on a 750-ton U-Boat, which he believed was "U 104." This tends to confirm the loss of "U 104," which must, therefore, have occurred between the end of October, 1940, and the end of January, 1941. Jüst is known to have been in Kiel at the end of October and was overdue on 29th January, 1941. It thus seems that the U-Boat sunk by H.M.S. "Rhododendron" on 21st November, 1940, was "U 104" and not "U 59."

(v) "U 551" - Prisoners stated that they saw "U 551" in the Baltic about New Year, 1941. It was established that she was commanded by Kapitänleutnant (Lieutenant-Commander) Robert Schrott and had recently been lost; a survivor of "U 110" claimed to have had a friend on board. The Germans knew only of the actual fact but no details of this loss, except that there were no survivors. "U 551" was carrying out a cruise during March and was due to return in April. It is probable that she was the U-Boat sunk by H.M. Trawler "Visenda" on 23rd March, 1941.

XI. U-BOAT BASES

(i) Kiel - German Air Force prisoners interrogated recently stated that major damage had been caused at the Germania Yard by British air raids; the pattern shop there was said to have been completely wrecked. U-Boat prisoners confirmed statements that the town itself had also suffered considerable damage.

(ii) Wilhelmshaven - Great damage was admitted to have been wrought by British air raids to the whole of the naval dockyards; provision and equipment sections were said to have suffered greatly, and large quantities of

clothing material have been destroyed. It was added that five thousand men were out of work after the air raids in January, 1941.

(iii) Pillau - It was stated that the U-Boat School at Pillau consisted of two sections, one for training upper deck personnel and one for technical personnel.

(iv) Emden - Prisoners expressed surprise at the frequent bombing of Emden, as "there were never any U-Boats there." They denied that this place was used as a U-Boat base.

(v) Lorient - It was stated that no U-Boat shelters have been constructed at Lorient although much building of various kinds was being done. Prisoners stated that U-Boats never trimmed down during air raids.

Photographs taken from prisoners showed U-Boats camouflaged by net coverings. It was added that no U-Boat had yet been hit during British air raids at Lorient, but some bombs dropped on 10th April, 1941, were described as near misses; on this occasion between ten and fifteen dud bombs were said to have fallen in the town.

At Lorient the various buildings housing U-Boat personnel have been re-named after famous U-Boat Captains of the Great War, and the wings of these barracks have been named after U-Boat Captains lost in this war, thus the Harbour Barracks, now known as the Saltzwedel Barracks, are divided into three wings, namely the North Wing, or "Haus Habekost," the East Wing, or "Haus von Dresky" and the South Wing, or "Haus Fröhlich." These barracks, formerly known as the Arsenal, were shown as Nos. 7 and 8 on the map of Lorient published in C.B. 4051 (15), opposite page 27. The former School of Music requisitioned to accommodate U-Boat ratings is now known as the "Hundius" Barracks and the three wings are the "Haus Beduhn," the "Haus Barten" and the "Haus Mugler." Buildings at the Autobus Station, near the Railway Station, are the "Haus Mathes" and the "Haus Loeff." One of these is a large yellow house. The U-Boat staff has been accommodated in an establishment known as the "Haus Jürst." The former Railway Home at Quiberon has become the "U-Boat Holiday Home Quiberon."

The officers are quartered either in the Hotel Beau Séjour, Hotel Central, "Haus Mathes," or in the Officers' Home. Senior Petty Officers are accommodated in "Haus Loeff" or in "Haus Jürst." Petty Officers and men are quartered in the Saltzwedel Barracks. The Officer of the patrol and Petty Officer live in block "von Dresky" in the Saltzwedel Barracks.

A "holiday home" at Quiberon, possibly that mentioned above, was said to have been destroyed in a British air attack a day before a returning U-Boat's crew was due to arrive for a rest; this statement was not confirmed. Another "holiday home" is known to have been instituted at Carnac. The behaviour in Lorient and other French towns of U-Boat crews and of the flying personnel of the German Air Force was said to be good, but that the German Army was strongly criticised; the soldiers, anti-aircraft gunners, etc., were described as being a drunken lot.

Several prisoners claimed that they had been the first U-Boat crew to reach Lorient; as these men formerly served in "U 30," this indicated that the first U-Boat to put into Lorient was "U 30" on 7th July, 1940. On one occasion, during an air raid, some Petty Officers quartered near the Railway Station went out into the street and were fired on from a nearby house.

XII. GENERAL REMARKS ON U-BOATS

(i) U-Boat Attacks on Destroyers - The Chief Quartermaster of "U 110" stated that a U-Boat would only attack a destroyer while the latter was heading for the U-Boat, provided that the destroyer had not yet sighted the U-Boat. If, however, the destroyer had sighted the U-Boat, then the latter would at once crash dive to a considerable depth.

(ii) Diving Depth of U-Boats - It was again stated that the building yards guaranteed a diving depth of 100 metres (328 ft.) with a 50 per cent. safety margin, so that a depth of 150 metres (492 ft.) was in still safe.

(iii) Camouflaging of U-Boats - Whilst "U 110" was carrying out exercises in the Baltic her conning tower was slightly camouflaged by a band across the conning tower and something representing a bow wave. This camouflage was so ineffective that the crew of the "Schleswig-Holstein" thought it was but a distinguishing sign indicating that the C.O. of "U 110" had the Knight Insignia of the Iron Cross. This camouflage was removed at Pillau and was not replaced. Schepke's U-Boat, "U 100," was painted light battleship grey and had as camouflage irregular patches of a darker grey blue. A few other U-Boats have dark oblique stripes apparently made with a "blower," but camouflage was generally considered ineffective. There is no general order in regard to camouflage and the matter is left entirely in the hands of the U-Boat commander.

(iv) Cruises to Equatorial Waters - It was stated that U-Boats proceeding as far south as the equator could remain at sea for twelve weeks and were refuelled by a supply ship; it was emphatically denied that they ever put into neutral harbours or even isolated inlets.

(v) Reliability of German Air Force Reports on Convoys - The Chief Quartermaster of "U 110" declared that German Air Force reports on convoys were usually unreliable and on many occasions had proved quite incorrect;

he insisted, however, that reports sent by U-Boats regarding the position, speed and course of convoys, were very reliable.

(vi) Training U-Boats - An experienced Chief Petty Officer stated that at least 30 U-Boats were being used for training purposes, but that this number was inadequate.

(vii) Vitamin Tablets for U-Boat Personnel - A Petty Officer admitted that tablets containing vitamins are issued to U-Boat crews; he believed that such tablets had a steadying effect on the men's nerves.

(viii) Gestapo in U-Boats - The suggestion that any member of the crew of a U-Boat was responsible for reports to the Gestapo was strenuously denied; the officers were indignant at the suggestion that a German naval officer would tolerate any system of secret surveillance.

(ix) Leave for U-Boat Personnel - It was stated that U-Boat personnel get three times as much leave as other naval men.

XIII. PROPAGANDA COMPANY

A survivor of "U 110" was a war correspondent of the "P.K." (Propaganda Kompanie). This man, Helmut Ecke, aged 23, was born in Berlin and has lived there all his life with his parents. He is unmarried. At the age of 18 he joined the popular Berlin morning newspaper "B.Z. am Mittag," published by the Deutscher Verlag (formerly Ullstein Verlag), as probationary reporter. He appears to have worked well for, three years ago, when he was still 20, he was offered the post of Assistant to the Correspondent of the "B.Z. am Mittag" in London. This post carried with it a salary of 600 Marks a month, a substantial sum for a German journalist. Ecke was, however, unable to accept the position, as he had first to complete his compulsory service with the Labour Corps, and with the Armed Forces.

In 1938 Ecke finished his term with the Labour Corps and joined the Army. He was allocated to a Panzer Regiment. In March, 1939, he took part in the occupation of Czechoslovakia by German troops, as a motor-cyclist attached to a Panzer Company. He says he lost his way in Bohemia, and was actually the first German soldier to enter Prague. Ecke remained with the German Army throughout the summer of 1939 and shortly before the outbreak of war he was drafted to the Polish frontier.

He took part in the Polish campaign, still as a motor-cyclist, and rode with the German columns from the Western frontier to the East, where they came in contact with advancing Russians, whereupon they withdrew. His company then returned to Germany, and was not in action again until the following May, when they were in the vanguard of the German advance across France. The drive of his particular unit ended at Saint Florentin where they were able to capture a large tank farm intact. According to Ecke the French had only attempted to destroy one tank by firing machine-gun bullets into it and, as the tank had not caught fire, they were able to plug the leaks.

Ecke remained with the German Army of Occupation in France until last winter when he was transferred to the "Propaganda Kompanie" by reason of his previous experience as a journalist. He reported to Army headquarters (O.K.W.) in Paris and, at his own request, was transferred to the Naval branch of the P.K. He was sent to Boulogne in February and spent six weeks in a German Patrol Vessel, an experience which he described as "intensely boring, as we saw no action of any kind." Although he had been given honorary rank as Leutnant zur See (Sub-Lieutenant) Ecke was still wearing his Lance Corporal's uniform. During this period Ecke wrote four articles for his paper describing the life of the crew. He submitted these articles to the Headquarters Censorship when he returned to port, but he does not know if they were ever published.

Returning to Paris Ecke volunteered to go on a war cruise in a U-Boat, although he had never seen a U-Boat before in his life, and he was accordingly sent to Lorient, where he remained until "U 110" sailed on 15th April, 1941. Ecke stated that the "Propaganda Kompanie" number between two and three thousand men, but of these not more than three hundred are engaged in the "front line" as reporters and camera men. The remainder are technical assistants, laboratory attendants, stenographers, telephonists and sub-editors.

Casualties among the "front line" P.K. men have been far higher than in any other unit of the German Armed Forces. Figures published in the German Press in February, 1940, before the start of the Western Offensive, give the number of killed as 28 out of an estimated 100. Since this time, according to Ecke, the strength of the "front line" men has been trebled. Ecke sets the casualties of his Panzer Kompanie during the drive against France at not more than 10 per cent. "although we were in the thick of the fighting."

The chief of the Naval Branch of the Propaganda Kompanie of Korvettenkapitän (Commander) Hinsch, a retired officer who served in the last war. Under Hinsch as Chief of the P.K. men attached to U-Boats, is journalist named Frank. Frank has accompanied both Prien and Kretschmer on war cruises and has been awarded the Iron Cross, 2nd Class, and the U-Boat badge, although not participating as an active member of the crew. Frank no longer goes on war cruises. His headquarters are at Kiel. He has written at least three books on U-Boats in action.

Chief of the P.K. men attached to the Lorient U-Boat base is Herbert Kuehn. Kuehn accompanied Kapitänleutnant (Lieutenant-Commander) Schonder on war cruises in a small U-Boat last autumn. He has ceased going to sea. Of 14 P.K. men at Lorient only three, including Ecke, were allowed to go to sea.

P.K. men attached to the Navy are given honorary rank as Leutnant zur See. They have no distinctive badge on their uniform. They need not necessarily have any sea experience, or any special qualifications. P.K. men attached to the Army must have completed their two years compulsory military service. They wear an armband on their left sleeves bearing the words "Propaganda Kompanie." They are granted no special rank and there are P.K. men in all ranks from lance-corporal to major.

P.K. men attached to the Air Force are given special training as machine gunners. Ecke does not know if the Air Force P.K. men have any distinctive markings on their uniform. P.K. men are only subject to full military discipline when they are on active service. When their particular assignment was finished they either return to special bases, or go on leave until they are required again.

Ecke said that at the P.K. base at Lorient eight of the 14 men there were quartered in a villa at Larmon Plage and the remaining six in a nearby hotel. Their needs were attended to by four French girls who "mothered" them most efficiently. The six senior men, including Ecke, each had a car and driver of his own. (This would intimate that there is no drastic shortage of petrol.) Ecke, though still wearing his lance-corporal's uniform, had as his driver Corporal Baron von der Heydt.

P.K. reports, films and photographs are censored by a special Army Headquarters (O.K.W.) office, but only information of use to the enemy is deleted. There appears to be no supreme military head of the Propaganda Kompanie, and this office had been assumed by Dr. Goebbels, although he has not been nominated to it.

XIV. CONDITIONS IN CONCENTRATION CAMPS

Although many prisoners of war have denied almost all knowledge of conditions inside concentration camps, a certain amount of information has been divulged by various men when no witnesses were present. Only the most reliable statements have been noted. Among the crimes for which persons are frequently sent to concentration camps, often without any trial or hearing whatsoever, are high treason (Hochverrat), treason to their country (Landesverrat), and merely "resistance" (Widerstand). One man was thrown into a camp, without a trial, for many months. From time to time he was cross-examined and on each occasion was flogged with whips made of ox-hide thongs.

The camp was a derelict factory in Northern Germany; each man had a palliasse and only one blanket, although there was no heating. There was one small wash-room and one lavatory for about 100 men. About 20 of these were Communists and there were also some Jews. There were many more guards than prisoners. The food consisted of coffee and dry bread for breakfast, a kind of meatless pea-soup for lunch and coffee and dry bread for supper. Visits from relatives were permitted for five minutes every 21 days, but S.S. men were always present, and the prisoner was separated from his visitor by a space of about 15 ft.

Unspeakable cruelties were practised, such as forcing the prisoner to lie down on a floor covered with broken glass; any attempt to push aside the glass was discouraged by flogging with riding whips.

Party officials in one town, after a night of revelry, used to take their wives and friends out to the local concentration camp at four o'clock in the morning; they would sit at tables in the exercise hall and order drinks. The prisoners, awakened by revolver shots at the ceiling of their sleeping quarters, which brought down lumps of plaster on their heads, would then be driven into the exercise hall by guards armed with whips and revolvers and forced to drill in front of the drunken crowd.

In the Oranienburg Concentration Camp, 1,200 Social Democrats and Communists were made to lie flat on their backs side by side and then S.S. men in field boots and full equipment goose-stepped over the prostrate bodies. In another camp air raid drill would be practised in the middle of the night; large numbers of naked, terrified prisoners, half-mad with terror would try to rush through a small doorway and get stuck. At every corner they had to pass there were S.S. men who lashed them with whips; finally about 80 prisoners were driven into a small cellar where they were locked up until they almost suffocated. Instances were cited of men being bayoneted in the legs because they could not run fast enough.

Many hundreds of internees were shot out of hand. Others, when subsequently examined by doctors had to have lumps of decomposed flesh cut out, specially prepared chicken skin had to be grafted to heal these grievous injuries. The men in charge of many concentration camps were persons of criminal tendencies and pathological sadists; they used their power to amass huge fortunes. One simple method of enriching themselves was to arrest

any man believed to be well-to-do, and then extort money from the relatives by promising to set the prisoner free. Such cruelty and blackmail were practised that even German public opinion sometimes became sufficiently outraged to oblige higher authorities to take note of the more notorious camps and the men running them. Sometimes there would be a "clean-up," many prisoners proved innocent would be liberated, while the men in charge of the camps would be sentenced to long periods of imprisonment. But as soon as the scandal had blown over, these men would be liberated and be given good appointments, such as Chief Magistrates, by the Nazi Party in another part of Germany. One of the worst concentration camps was said to be on the Teufelsmoor on the Dutch frontier. Relatives of interned men were sometimes told to come and fetch their relations home, and on arrival were handed an urn containing the prisoner's ashes.

Liberated prisoners sometimes returned home to find their relatives hair had turned white from worry, and sometimes that their relatives had become insane and had been placed in asylums.

APPENDIX I

Translation of a Diary written by the Chief Quartermaster of "U 110" after his capture

8th May, 1941 - At 1810. Vessel reported with high upper works. As it is difficult to make out what she is we assume that she is a battleship, but this proves later to be wrong. We follow astern of her and keep in touch. The wind is increasing, and the sea becomes heavier. After an hour we have made out her course and speed, 270°, 7 knots. Nothing is to be seen of the convoy, only destroyers. We seem to be north of the convoy and somewhat ahead of it. We proceed at slow speed until the destroyer comes in sight, then increase to 3/5 speed and keep away. Visibility is poor.

9th May, 1941 - At 0000 on the 9th of May, 1941, we proceed on an opposite course 90°, as we have seen nothing more of the convoy since 2200. Nothing is to be seen; the convoy has disappeared. There are two possibilities. Either the convoy has altered course to the North or to the South, it is extremely improbable that she has gone northwards, so we decide to proceed to the south.

At 0100 our course is 200° and we are proceeding at 4/5 speed.

At 0200 we alter course to 180°. In the meantime it has become dark, but there is some moonlight, and visibility seems to be improving.

At 0300 there is nothing to be seen, we submerge and listen on our listening apparatus. The convoy can be heard 40° to port at a distance of about three miles. We surface in order to follow her. Tanks are blown but the bow wave of a destroyer can clearly be seen in the moonlight, so we submerge again. There is great tension, and we wonder if we have been sighted. But she turns away and we blow tanks again. Then we continue to keep in touch. But in spite of every endeavour we only sight destroyers. At last, at 0430, we have crept up so close that we can recognise the merchant vessels, about 40 or 50 of them.

After a short discussion an attack for this night is abandoned. A surface attack cannot be carried out on account of the strong escort and for an attack submerged the light is too bad. We prefer to wait until the following night, hoping that the convoy may then be without any escort. The course of the convoy is 240°, speed 8 knots. We continue to keep in touch. At 0900 I turn in. At 1230 I am awakened. The order comes "Action Stations," so the game is beginning. The morale among the trained ratings is not too good. They are convinced that we shall be caught. At 1237 we submerge, and we intend to creep inside the convoy.



At 1312 the first depth charges explode, but they cause no damage, nevertheless there is a feeling of depression in the boat. From our listening apparatus we establish the fact that we are being hunted by three destroyers. And then at 1325, comes the end. We are enveloped in a whole series of accurately placed depth charges. The boat is terribly shaken, and it seems as though all the instruments are out of action. Chlorine gas is escaping and then the Captain gives the order to blow the tanks. But the blower has been smashed, the batteries are out of action and there seems scarcely any possibility of reaching the surface. A very bitter end. We are slowly sinking and then suddenly the boat begins to roll. For some inexplicable reason the boat reaches the surface, the Captain opens the conning tower hatch and gives the order "Abandon Ship."

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