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COASTAL COMMAND REVIEW

November 1944

Vol. III, No. 11

HEADQUARTERS,
COASTAL COMMAND
ROYAL AIR FORCE

COASTAL COMMAND REVIEW

Vol. III, No. 11—November 1944

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This book is secret. No quotations may be made without the authority of the Chief Intelligence Officer, Headquarters, Coastal Command.

"While this book is, of necessity, issued as secret, and no part of it must be communicated to anyone outside the Services, it is intended for the information of all officers but principally of all members of aircrews, under conditions of security approved by the Commanding Officer. The whole purpose of producing it would be frustrated if it were relegated to the interior of an official safe."

The Air Officer Commanding-in-Chief,
Coastal Command.

The Month's Work—November

The Anti U-Boat Effort

1. During November most of the few sightings and attacks have been in our coastal waters. This indicates that the enemy is stationing his U-Boats in the close-in areas off our coasts, where they remain elusive and occupy a great deal of our flying effort.

2. The 13 sightings during the month resulted in seven U-Boats being attacked. One of these ended in the final destruction of a U-Boat stranded off the Norwegian coast, where it had already been attacked by Fleet Air Arm aircraft working from H.M.S. *Implacable*. One attack was by Tsetse Mosquitos on a surfaced U-Boat at dusk, close in off the south-west Norwegian coast. Bad visibility made it impossible to observe results. Four attacks by day were made on U-Boats fitted with Schnörkel in the North-Western Approaches. These attacks were significant in that on no occasion was any definite object seen. Only whitish, steamy smoke was observed at the head of the longish wake of foamy bubbles. This was confirmed by excellent photographs on three of the occasions. These photographs reveal close misses astern, pointing to the possibility that the U-Boat was proceeding considerably faster than had been expected or allowed for. Where possible, " up track " attacks should be made, to cover possible errors in this respect. The seventh attack was delivered on an object, dimly seen in the Leigh Light, after following up a Grade I Radar contact. No results could be observed.

3. In addition, there were seven unofficial sightings of phenomena which were possibly of U-Boat origin, but which were not definite enough to be described as positive sightings. Five of these were attacked but they left no convincing after-evidence. In view of the extreme elusiveness of all U-Boats at the present time every such possible target should be attacked. Crews should not be disappointed by the apparent lack of satisfying " bits and pieces " afterwards.

4. Special mention must be made of a piece of co-operation which is the aim of present procedure against the modern U-Boat tactics. G/330 (Norwegian) and O/224, on the night of November 24, gained Grade I Radar contacts to the south-east of the Faeroes. These contacts did their familiar disappearing trick when followed up and very poor visibility revealed no wake, swirl, or other tangible trace of a U-Boat. Homing procedure was quickly adopted and the co-operating Support Group was brought to the spot. They soon established asdic contact and a very promising attack and hunt developed, which may have resulted in the destruction of the U-Boat. This demonstrated what is probably the most successful way of dealing with the present and future U-Boat threat.

5. Advantage has been, and is being, taken of the comparatively static state of the U-Boat war to introduce a programme of intensive training against Schnörkel targets. The fact that four undoubted and three possible U-Boats fitted with Schnörkel were sighted visually by day stresses the importance of keen visual look-out in addition to Radar alertness.

6. Photographic reconnaissance intelligence continues to show an increasing build-up of U-Boats in the construction yards and the working up area in the Western Baltic. It would appear that a new offensive is imminent. In many ways this present time is comparable to the period before D-day, in June last. Coastal Command achieved a crashing success then, and it is confidently expected that whenever and however this new offensive develops, it will be tackled with similar resolution.

Anti-Shipping

7. The Dutch and German coasts continued to offer few targets during November and there was no daylight success until the 21st. On that day, two small formations of Beaufighters made R.P. attacks on two " M " class minesweepers and two coasters, the former off Ameland and the latter in the Weser Estuary. All the targets were left on fire.

8. Weather seriously interfered with planning the night offensive against E-Boats and such shipping as still dares to sail between the Ems and the Elbe, but on the night of 2nd/3rd two Beaufighters of No. 236 Squadron damaged a merchant vessel and a minesweeper with R.P., and on the night of 29th/30th, a pilot of No. 254 Squadron claimed a torpedo hit on a 3,000 tons merchant vessel. Other successful attacks were made in this area by two Swordfish and a Wellington, resulting in damage to a merchant vessel, a minesweeper and an E-Boat. A detachment of Albacores and Swordfish, based in Belgium, began operating on the night of 18th/19th. Since that date, whenever weather has permitted, they have flown patrols designed to bottle up the enemy in the Hook and Ijmuiden.

9. Further north, the Halifax Squadrons continued their important patrols in the Skagerrak and the Kattegat. Twenty-eight attacks were made against enemy shipping and in spite of the unfavourable weather, the accuracy of bombing improved.

10. On the night of the 22nd, Halifax Y/502 found and attacked a merchant vessel of almost 4,000 tons, which had already been set on fire by E/502. " Y " made a direct hit on the ship and a big explosion was seen. This ship is known to have sunk.

11. Off the Norwegian coast, five attacks have been made by formations of Beaufighters and Mosquitos. The outstanding operation of the month was on November 8, when 12 R.P. Beaufighters, with an anti-flak escort of 10 cannon Beaufighters of the Dallachy Wing, attacked shipping in Midtgulen Fjord. The success of this attack, which resulted in the sinking of two 3,000 tons merchant vessels and the damaging of a further much smaller vessel and two coasters, was largely due to a Norwegian pilot of No. 333 Squadron, who acted as Outrider and led the Strike Force over the mountains to attack the targets from the landward as they lay in the fjord, surrounded on three sides by sheer cliffs.

12. On November 13, 20 Mosquitos of the Banff Wing, following up an operation by Naval forces off Lister, found and attacked two merchant vessels of 600 tons and a variety of small escorts. An escort vessel and both the merchant vessels were seriously damaged by concentrated cannon fire. On the 14th, another force of 17 Mosquitos from Banff attacked three small ships in Sogne Loch with R.P. and cannon. A 1,000 tons merchant vessel and a 500 tons coaster were claimed as damaged.

13. 106 Group have supported the anti-shipping campaign on the Norwegian coast with excellent photographic reconnaissance. A break in the continuous bad weather will see the Anti-Shipping Squadrons again striking hard at the enemy wherever he may be found.

I.—ANTI U-BOAT

SUMMARY OF ANTI U-BOAT OPERATIONS BY COASTAL COMMAND AIRCRAFT
(Including Iceland, Azores, Gibraltar and U.S. Moroccan Sea Frontier)

NOVEMBER, 1944

Duty and Base or Area.	Total Sorties.	Hours Flown.		U-Boats Sighted.		U-Boats Attacked.		Hours per Sighting.		Number of Sorties.		Sorties with U-Boat Flak.
		Base to Base.	On Patrol.	Day.	Night.	Day.	Night.	Base to Base.	On Patrol.	When U-Boat Sighted.	When U-Boat Attacked.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Convoy Cover.												
United Kingdom	129	1,261	735	— (1)	—	— (1)	—	—	—	— (1)	— (1)	—
Iceland	27	226	167	—	—	—	—	—	—	—	—	—
Gibraltar and Moroccan Sea Frontier	63	460	287	—	—	—	—	—	—	—	—	—
Azores	2	24	11	—	—	—	—	—	—	—	—	—
TOTAL CONVOY EFFORT	221	1,971	1,200	— (1)	—	— (1)	—	—	—	— (1)	— (1)	—
A/U Patrols.												
Northern Transit												
United Kingdom	606	5,999	3,793	1	2 (2)	1	1 (1)	2,000	1,264	8 (2)	3 (1)	—
Iceland	37	371	220	1	—	1	—	371	220	1	1	—
Northern Convoy												
United Kingdom	478	3,201	2,278	3 (2)	—	2 (2)	—	1,067	759	3 (2)	2 (2)	—
Iceland	129	1,173	890	1	—	1	—	1,173	890	1	1	—
Azores	6	77	25	—	—	—	—	—	—	—	—	—
Bay of Biscay and Channel Approaches												
United Kingdom	610	5,149	4,032	— (1)	—	— (1)	—	—	—	— (1)	— (1)	—
Central Convoy												
Gibraltar and Moroccan Sea Frontier	294	1,787	1,355	—	—	—	—	—	—	—	—	—
Azores	9	83	31	—	—	—	—	—	—	—	—	—
TOTAL A/U PATROLS	2,169	17,840	12,624	6 (3)	2 (2)	5 (3)	1 (1)	2,230	1,578	13 (5)	7 (4)	—
ADD CONVOY EFFORT	221	1,971	1,200	— (1)	—	— (1)	—	—	—	— (1)	— (1)	—
TOTAL A/U EFFORT	2,390	19,811	13,824	6 (4)	2 (2)	5 (4)	1 (1)	2,476	1,728	13 (6)	7 (5)	—
				8 + (6) U-Boats Sighted.		6 + (5) U-Boats Attacked.						

Notes.—(1) The bracketed figures represent incidents where the target seen, or attacked, is thought to have been a U-Boat, but this has not been definitely established. The incidents are not included in the main figures for sightings and attacks (*i.e.* the 8 + (6) sightings above represents 8 definite plus 6 possible sightings).

(2) In addition to the above there have been four chance sightings within the area of Coastal Command operations; three of these (two night and one day) were by Coastal aircraft engaged on anti-shipping operations off the Norwegian coast.

Squadron Results—November

				No. of Sorties when U-Boat Sighted.	No. of Sorties when U-Boat Attacked.
162 (R.C.A.F.)	Canso	Reykjavik	.. .. ..	2	2
86	Liberator L.L.	Tain ..	.. .. ..	1	1
110 U.S.N.	Liberator	Dunkeswell	.. .. ..	— (1)	— (1)
224	Liberator L.L.	Milltown	.. .. ..	1 (1)	— (1)
248	Mosquito	Banff ..	.. .. ..	4	2 } 1 U-B.
143	Mosquito	Banff ..	.. .. ..	2	— }
201	Sunderland	Castle Archdale	.. ..	3 (1)	2 (1)
330 (Norwegian)	Sunderland	Sullom Voe	.. .. ..	— (1)	—
423 (R.C.A.F.)	Sunderland	Castle Archdale	.. ..	— (2)	— (2)
				13 (6)	7 (5)

Chance Sightings by Coastal Aircraft on Other Duties

				No. of Sorties when U-Boat Sighted.	No. of Sorties when U-Boat Attacked.
404 (R.C.A.F.)	Beaufighter	Sumburgh	.. .. ..	1	—
489	Beaufighter	Dallachy	.. .. ..	2	—
131 O.T.U.	Catalina	Killadeas	.. .. ..	— (1)	—
				3 (1)	—

Note.—(1) The bracketed figures above represent incidents where the target seen or attacked is thought to have been a U-Boat, but this has not been definitely established.

(2) In addition to the above, two aircraft of 502 Squadron located and attacked a U-Boat beached off the Norwegian coast.

Assessments

(Received up to 4th December, 1944)

Month.	Known Sunk.	Probably Sunk.	Damaged A.	Damaged B.	Slight Damage.	Insufficient Evidence of Damage.	No Damage.	Unassessed.
September	2	2*	1	2	—	2	1	—
October	1*	—	—	1	—	—	1	—
November	—	—	—	—	—	—	—	6 (5)

Note.—* The credit for one September assessment of Probably Sunk is shared with surface craft. The October Known Sunk is shared with Shipborne aircraft of the Fleet Air Arm.

Analysis of U-Boats Sighted by A/U Aircraft during November

Particulars of Incidents.	U-Boats.		Sorties when Aircraft.	
	Sighted.	Attacked.	Sighted.	Attacked.
On 7+(6) occasions 1 U-Boat was sighted by 1 aircraft—5+(5) aircraft attacked.	7 (6)	5 (5)	7 (6)	5 (5)
On 1 occasion 1 U-Boat was sighted by 6 aircraft—2 aircraft attacked with major weapons.	1	1	6	2
TOTAL	8 (6)	6 (5)	13 (6)	7 (5)

Note.—The bracketed figures are referred to in Note (1) above.

RECENT ATTACKS ON U-BOATS

An Unusual Target

In the morning of October 9, **Sunderland U/201** was on patrol when smoke and the wake of a presumed schnörkel were sighted bearing Red 45°, distant eight miles, in position 55° 50′ N., 06° 00′ W., course 150°, and speed estimated from wake at 5–7 knots. The weather was squally with a moderate sea except in squalls when it was rough. The visibility was 20 miles, but less than two miles in squalls. " U " held course for 45 seconds and then turned towards the smoke. At two miles range, " action stations " was sounded and height was reduced to 300 feet. When the aircraft passed over the wake at close range, a distinct bow wave was seen and a large steady volume of whitish-grey smoke came from the apex of the wake. The pilot circled to starboard, lost further height and made a run in to attack from Green 60° releasing from 125 feet, without bombsight, six depth charges set to shallow depth and spaced at 60 feet. After tracking over, the pilot turned hard to starboard in order to avoid a rain squall and to keep contact with the target. The rear gunner saw the entry of two depth charges, one on either side of the wake. In his opinion they lay only 10 feet from the apex of the wake and the smoke. Both the rear gunner and the navigator saw two large plumes in these positions. After this attack the wake continued on a steady course but gradually decreased in volume. The aircraft then flew towards a frigate lying some 12 miles to the south-east. R/T contact was attempted without success, so by visual signalling the frigate was told, " Follow me schnörkel." The signal was acknowledged and the aircraft returned to the area of attack. At three miles range, smoke and a moving wake were again seen and " U " carried out another attack with the last two depth charges. A marine marker was dropped at the same time. Climbing away the aircraft circled to port and no further signs of wake were seen. The frigate was observed approaching at increased speed. R/T contact was made with 27th Escort Group which arrived at 1500 hours. " U " remained searching in the vicinity for another four hours but nothing further was observed.

Comment

1. *This most interesting target seems to have been caused by a U-Boat fitted with Schnörkel. It is, however, disturbing to note that no visual contact was made on the actual Schnörkel. It is possible that the top of the pipe was under the surface during the periods when the aircraft was close enough to obtain a visual sighting but no definite explanation can at present be given.*

2. *Photographs show that in the first attack the depth charges undershot and that the last two depth charges were well astern of the smoke. It is unlikely that the U-Boat was damaged.*

Attacks on a Beached U-Boat

On October 29, **Liberators Y** and **H/311** (Czech) attacked the U-Boat which was beached in position 65° 24′ N., 12° 00′ E., off the northern tip of Fleina Island, Norway. This U-Boat had been attacked and damaged by aircraft from H.M.S. *Implacable* (*see* October *Review*, Plate 1). " Y " sighted the U-Boat first. She was lying aground, bearing Green 20°, distant 4–5 miles. The weather was good, sea calm and visibility 30 miles. The U-Boat's heading was approximately 160°. She was 500-ton type with A.A. gun emplacement abaft the conning tower. Between 0903 and 0940 hours " Y " made seven runs over the target, one of which was photographic. R.P.s were fired in four salvoes of four from Green 90°, angle of dive 15°, at a distance of 400 yards and a height of 300 feet. The first and last salvoes undershot, but all four R.P.s of the second salvo scored direct hits amidships below the conning tower. Three R.P.s of the third salvo were seen to enter the hull at the waterline, the fourth one passing under the U-Boat's bow. " Y " then attacked from Green 60° and released from 50 feet one depth charge set to shallow depth, which overshot by about 150 feet. On the second run three depth charges were released, two of which were seen to straddle the U-Boat's hull. After the attack an oil patch of about 15–20 yards appeared and was seen to spread further. Pieces of wreckage were observed including a bright red object about 10 feet in diameter. It seemed that the U-Boat settled a little lower in the water after the depth charge attack. A number of ships were sighted in the vicinity and an unidentified enemy aircraft was seen flying in a very wide circle round the scene of the attack. Aircraft " H " sighted the U-Boat at 0920 hours and attacked immediately. Between 0921 and 0949 hours six runs were made over the target, two of which were photographic runs. " H " attacked each time from Green 40°. R.P.s were fired in four salvoes of four and in a constant 15° dive. During the first run the R.P. sight became unserviceable but in spite of the defect the captain attacked with the first salvo of four from 300 feet at a distance of 300 yards. The R.P.s were seen to overshoot to port. In the same run four depth charges were released from 50 feet, spaced at 70 feet. Four depth charges straddled the U-Boat abaft the conning tower but only three were seen to explode. As the depth charge which failed to explode fell between the hull and the island, the crew considered that the water was not deep enough to operate the pistol. In the second run the R.P.s were fired from 200 feet at a range of 200 yards. All four hit the hull below the conning tower, ripping off the plating and causing damage at the points of exit. In the third run the R.P.s were fired from 200 feet at a distance of 200 yards, hitting the U-Boat at the waterline abaft the conning tower. Some wreckage was seen after this attack. In the fourth attack all R.P.s overshot, just passing over the top of the deck. Both aircraft were

These photographs show further aspects of the beached U-Boat attacked off Fleina Island, Norway (*see* October issue, Plate 1, and letterpress, opposite).

The attacks were made by two Liberators from 311 (Czech) Squadron on October 29, and two Halifaxes from 502 Squadron on November 4.

PLATE 2 *Above.* This photograph taken in July, 1944, at sea level, shows the new U-Boat shelter under construction at Laksevaag near Bergen. It can be seen that two of the pens have been roofed over, and that work is in progress on the partition walls of the others (*see also* October issue, Plate 3).

Below. This photograph shows a B.25 (Mitchell) lying on the sea bed 20 ft. below the surface. The aircraft was successfully ditched on June 6 and sank on an even keel. The ditching was near Nassau and as the sunken aircraft was a possible danger to shipping, it has since been blown up.

fired on from the ships and land but were not damaged and they left the scene of attack at 0950 hours.

Comments

A fine feat of flying with excellent R.P. attacks confirmed by photographs. Photographs disclose that "H's" depth charges overshot, the nearest exploding some 150 feet from the U-Boat's stern. The first depth charge dropped by "Y" overshot by about 170 feet, and although the second attack was a straddle, the spacing is about 110 feet, and neither of the straddling depth charges was in lethal range. It is unfortunate that the depth charge attacks were so inaccurate.

On November 4, **Halifaxes D** and **T/502** were briefed to carry out a further attack on the beached U-Boat. In order to avoid Radar detection both aircraft flew below 1,000 feet when within a hundred miles of the Norwegian coast. The weather was clear, 5/10 cumulus cloud and the sea calm. The U-Boat was sighted at 0832 hours. The bows down to the conning tower were projecting sharply out of the water with one of the hydroplanes visible. There was no opposition so the captains decided to attack in their own time. "D" went in first, attacking from south-east on a course of 340°, releasing from 2,500 feet seven 500 lb. M.C. bombs, tail fuse only, ·025 second delay, spaced at 50 feet. After obtaining a Q.F.F. by radio altimeter "T" made its first attack on a course of 150°, releasing from 1,300 feet four 600 lb. A/S bombs, 862 fuse exploding at 35 feet, spaced at 45 feet. A second attack was then made by "T" on course 345°, releasing from 1,300 feet the remaining two 600 lb. A/S bombs, same settings. Mark XIV bombsight was used in all three attacks. "D's" stick ran the whole length of the U-Boat but fell 30 feet to port between the U-Boat and the island. "T" obtained an almost exact straddle on the first run and an overshoot about one length of the visible part on the second. Photographs taken after the attack confirmed that the U-Boat was projecting out of the water at a much smaller angle than before the attacks and the conning tower was no longer visible.

Comments

An excellent performance which has made the salvage of this U-Boat a most difficult task. The results might have been still more definite if "D's" run had been made at about 30° to the U-Boat's heading.

Admiralty Assessment

The U-Boat has been assessed as "known sunk" by Y and H/311, and D and T/502, in conjunction with aircraft from H.M.S. *Implacable*.

A Damaging Attack

In the early hours of the morning of October 30, **Wellington R/407 (R.C.A.F.)** was flying almost due south at a height of 1,200 feet with 10/10 cloud at 2,700 feet, sea was calm and visibility good. Wind was east at about 8 knots. At 0209 hours a contact was obtained bearing Green 80° at a range of five miles. The aircraft is said to have homed immediately and to have used the Leigh Light to illuminate the conning tower of a U-Boat bearing 1° port at three quarters of a mile in position 61° 45′ N., 03° 40′ E. There is, however, a discrepancy in the report which indicates that the aircraft circled before making the attack at 0211 hours. It was seen that the conning tower was painted blue-grey but no other description is possible. R/407 attacked from Green 60° to the U-Boat's course and released from 100 feet six depth charges set to shallow depth, spaced 60 feet, "R" climbed away, turning to port, and a minute and a half after the attack saw another aircraft, believed to be a Liberator, run in and illuminate the target with Leigh Light. The U-Boat was then fully surfaced and firing at the Liberator with three groups of guns, using a large amount of tracer.

Comment

This excellent attack caused damage which brought the U-Boat to the surface to face the attack by A/224 (see below). It is most unfortunate that details of the approach were not fully reported.

Persistent and Gallant Attempts

The U-Boat attacked by R/407 (see above) was contacted by **Liberator A/224** shortly after 0221 hours on October 30, 1944. About this time "A" intercepted a flash report stating that R/407 was preparing to attack a positive U-Boat. The U-Boat was contacted while the Liberator was flying on a course of 270° at 1,500 feet. The target bore Green 50°, distant 15 miles, and was plotted in position 61° 31′ N., 03° 16′ E. "A" turned to home and at 10 miles range another contact which appeared on the screen indicated that an aircraft was passing over the original contact. This was confirmed by the front gunner who saw an aircraft, presumably R/407, using its Leigh Light over the original contact position. When the range had closed to one mile, and the aircraft was on a course of 316° at 200 feet, the front gunner sighted the silhouette of a vessel bearing 5° port. At ¾ mile the Leigh Light was switched on, revealing a fully surfaced U-Boat on course 190° true, speed 12 knots. The U-Boat was a 517-ton type with two bandstands aft of the conning tower. The actual gun positions were not seen but there were thought to be six guns on the bandstands. The conning tower was tall and the U-Boat painted grey. Schnörkel was looked for but not seen. The U-Boat opened fire immediately with orange, green and yellow tracer and the tail gunner replied. At about 0233 hours "A" passed within 50 yards astern and dropped a marine marker. I.F.F. was switched on to stud 4 and the aircraft circled at a range of 4–6 miles. Some fifteen minutes later, "A" manœuvred to approach out of darkness on course 310° at 200 feet. The U-Boat was taking evasive action but was on course of approximately 040° when the Liberator

passed 200 yards astern. Intense flak was experienced and the navigator observed six streams of tracer. The front, beam and tail gunners opened fire in turn and the flak weakened; bullets were seen to ricochet off the conning tower. "A" circled once more and then approached on course of about 330° at 200 feet, and at 0302 hours the aircraft attacked at an angle of Green 90° to the U-Boat's course and released six depth charges from 200 feet, set to shallow depth, spaced at 55 feet. The flight engineer saw all the points of entry and he estimated that the stick fell 55 feet behind the after gun platform abaft the conning tower. Numbers 1 and 2 depth charges falling on the starboard side and number 3 in line with the U-Boat's submerged stern. Numbers 4, 5 and 6 fell on the port side. The flight engineer's view was momentarily obscured by flak so that he only saw the explosions of numbers 4, 5 and 6 depth charges on the port quarter, the nearest being approximately 100 feet from the U-Boat. After the attack the U-Boat continued firing for a few seconds then ceased abruptly. Radar contact was retained for five miles at which distance the operator reported the blip splitting in two. Immediately afterwards contact was lost amongst several aircraft and was not regained. Aircraft "A" left the vicinity of the attack at 0330 hours having reached P.L.E.

Comment

1. The Captain is congratulated on his persistent and gallant attempts to deliver a good attack in the face of such intense flak. The good gunnery by the aircraft's crew is most commendable.

2. After the excellent tracking in conditions of no relative drift as reported by R/224 and A/224 on September 18 and 24, respectively, it is disappointing to see that miss astern trouble reappears when the approach is complicated by relative drift. The tracking difficulty may have been due to the U-Boat's avoiding action, but it is significant that, in each of the three efforts to track over the U-Boat, the error was consistent with a failure to appreciate and allow for the relative drift.

3. As it was not possible to record in the U-Bat the changes of target bearing during the runs in, the effect of the U-Boat's turns cannot be studied in detail. It appears from the U-Bat, however, that, in the first run, the difference between target bearing and relative drift at one mile range was seven degrees. In the past a tracking failure has resulted when the difference between relative drift and target bearing has been less than five degrees at one mile.

Admiralty Assessment

The combined action by A/407 and A/224 has been assessed as "U-Boat probably seriously damaged, had to return to base at once."

Last Patrol of U.971

On June 6, a W/T signal was received in Kristiansand announcing the first landing of the Allies in France. The Commanding Officer of each U-Boat in harbour was handed sealed orders by the F.O.I.C., to be opened on sailing.

Two days later *U 971* sailed under escort to Lindesnes. The Commanding Officer, Oberleutnant zur See Walter Zeplien, opened his sealed orders, which contained instructions to proceed to 57° 00′ N., 04° 30′ E. *U 971's* passage to this position was made on the surface except for one occasion, when she dived following a false G.S.R. contact. She arrived in position at 0600 hours on June 9 and remained at periscope depth because of the low cloud.

On the afternoon of June 10, *U 971* was ordered to the Atlantic, and the next day she proceeded to approximate position 59° 30′ N., 21° 30′ W. On June 13 a four-engined aircraft was sighted in approximate position 61° 30′ N., 01° 00′ E. The aircraft, however, took no action.

At 0500 hours on June 14, when north-east of Stromsoe, mastheads were seen. *U 971* closed at full speed and surfaced, but the target disappeared. Three hours later a vessel was sighted flying the white ensign. The vessel began to steer a zig-zag course. This, and the fact that there was a look-out at the masthead, caused suspicion, and *U 971* submerged. The vessel, however, followed her up. Fearing that aircraft might have been summoned, *U 971* did not attempt to attack, but surfaced and withdrew at full speed.

The next day when the U-Boat, fully surfaced, was in approximate position 61° 00′ N., 04° 00′ W., a four-engined aircraft was sighted. *U 971* opened fire with all her armament and the aircraft turned away.

On June 16, *U 971* was ordered to proceed to the Channel area. On June 20 she was attacked by a **Wellington, L/407 (R.C.A.F.),** and tubes I, III and IV were badly damaged. The next day the U-Boat surfaced and an aircraft approached and machine-gunned her. Immediately afterwards another aircraft attacked. The U-Boat crash dived, but the aircraft dropped four depth charges, the nearest of which fell about 60 ft. distant. These attacks were made by **Sunderland L/228** and **Halifax D/502.** The Sunderland made a second attack, but the depth charges fell wide, and may not have been heard inside the U-Boat.

The Commanding Officer then decided that the aircraft cover was too strong and altered course to 140°. Later, on June 22, a signal was received stating that the most important operational area for *U 971* was off Cherbourg. In view of the urgency of this signal the Commanding Officer decided to proceed towards Cherbourg, using his Schnörkel.

At 0300 hours on June 24, *U 971* bottomed about 5 miles west of the position in which she was finally sunk. At 0430 hours she came to periscope depth and sighted a ship dead ahead at about 13,000 yards range and prepared for a submerged attack. The ship's shadow faded, however, and two destroyers appeared zig-zagging in fairly close formation. *U 971* prepared to fire a torpedo, but visibility was very bad and the destroyers disappeared. Half an hour later the destroyers reappeared, both distant about 2,000 yards, one dead ahead and the other on *U 971's* port bow. The U-Boat fired a torpedo from the stern tube, but this was damaged, and the torpedo ran in the tube. A Gnat from tube II also failed to fire. Both destroyers then disappeared.

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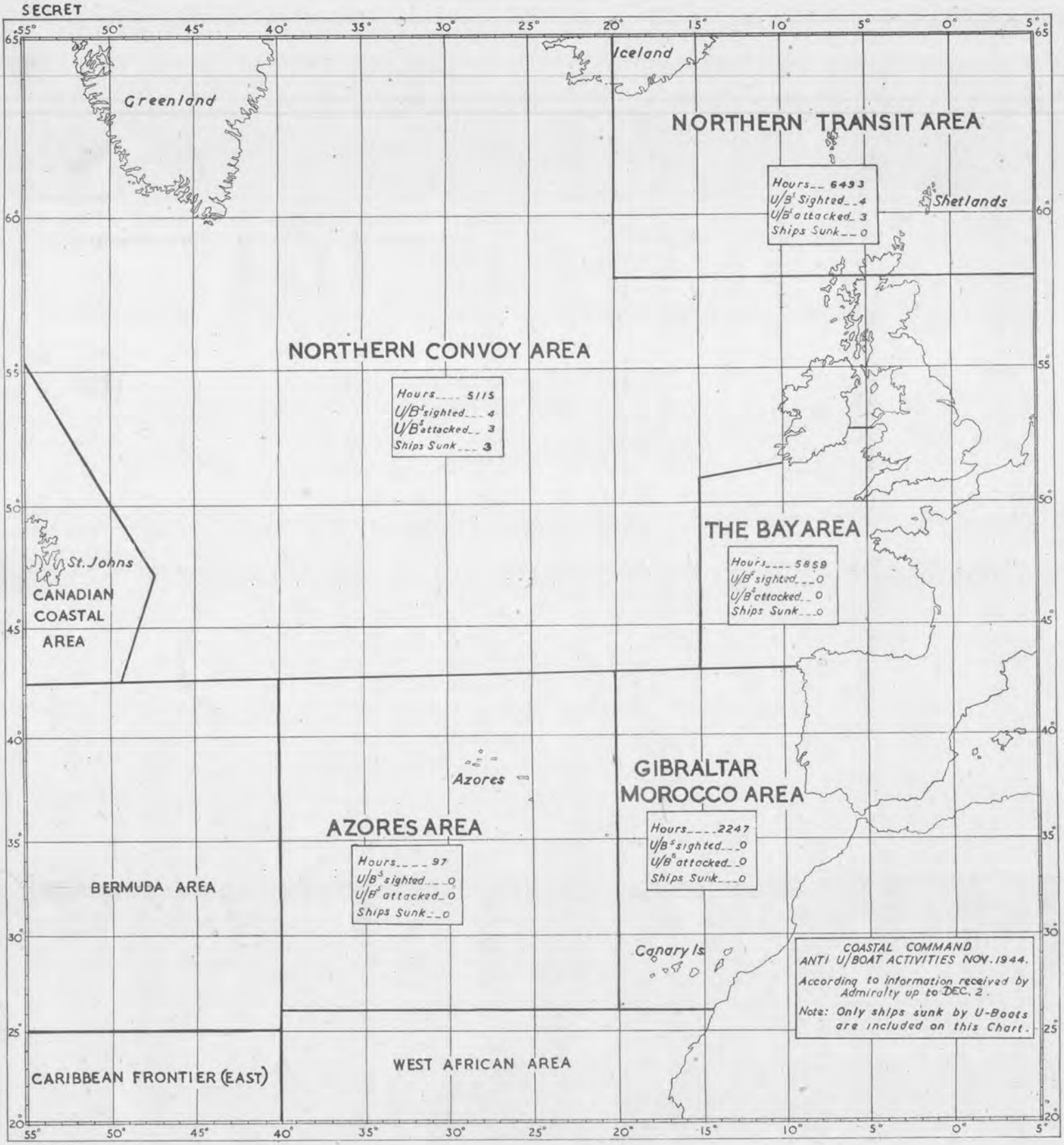

Greenland
Iceland
NORTHERN TRANSIT AREA
Hours__ 6493
U/B's Sighted__4
U/B's attacked_ 3
Ships Sunk__0
Shetlands
NORTHERN CONVOY AREA
Hours____ 5115
U/B's sighted___ 4
U/B's attacked__ 3
Ships Sunk___ 3
St. Johns
CANADIAN COASTAL AREA
THE BAY AREA
Hours____ 5859
U/B's sighted___0
U/B's attacked__ 0
Ships Sunk___0
Azores
AZORES AREA
Hours____ 97
U/B's sighted___0
U/B's attacked_0
Ships Sunk__0
GIBRALTAR MOROCCO AREA
Hours____2247
U/B's sighted___0
U/B's attacked_0
Ships Sunk___0
BERMUDA AREA
Canary Is
CARIBBEAN FRONTIER (EAST)
WEST AFRICAN AREA
COASTAL COMMAND
ANTI U/BOAT ACTIVITIES NOV. 1944.
According to information received by Admiralty up to DEC. 2.
Note: Only ships sunk by U-Boats are included on this Chart.

The Commanding Officer decided it was hopeless to operate in this area and that he would put into Brest.

The U-Boat surfaced, but almost immediately an aircraft was sighted, and *U 971* dived. No attack developed. An hour and a half later the U-Boat surfaced again and proceeded at full speed towards Brest. At 0750 hours a four-engined aircraft was sighted. No attack developed, and the U-Boat once more submerged. After proceeding for one mile the batteries failed. The Commanding Officer realized that his only hope of escape was to proceed surfaced under cover of darkness into Brest. He ordered his men into their bunks, and all hands were issued with potash cartridges.

At 0830 hours Asdic effect was noted and a series of depth charge attacks began. These continued all day at intervals. At 1547 hours **Liberator O/311 (Czech) Squadron,** in position 49° 00′ N., 05° 40′ W., obtained Radar contact and two R.P. and two depth charge attacks were carried out. A smoke marker was dropped. This attack was observed by H.M.S. *Eskimo*, who, in company with H.M.C.S. *Haida*, swept towards the smoke marker in line abreast, reducing to 7 knots at about 2 miles from it. At 1615 hours, H.M.S. *Eskimo* obtained A/S contact at 700 yards. Though a good echo at first, it faded rapidly and was lost at 500 yards. Range was opened and contact regained, and at 1625 hours the attack was renewed. Subsequently two attacks were made by H.M.C.S. *Haida* and six further attacks by H.M.S. *Eskimo*, the last at 1825 hours.

The first water entry occurred at 1830 hours through the stern glands, and shortly afterwards water came through the vents to diving tank No. 3. During the final attacks by the destroyers *U 971* lay on the bottom.

After the first water entry the Commanding Officer decided that the position was hopeless. The starboard diesel was out of action and the U-Boat could not proceed submerged owing to lack of current and there was only just enough air left to surface. The destruction of all secret gear and papers was ordered and a bottle of beer issued all round, which the men drank standing knee deep in water. The Commanding Officer assembled the men in the control room and told them his intentions. The tanks were then blown and *U 971* surfaced. The order was given to abandon ship. The U-Boat was scuttled by opening the main vents and escape hatches and also with scuttling charges. Fifty-two out of the ship's company of fifty-three were picked up.

The credit for the kill was shared between H.M.S. *Eskimo*, H.M.C.S. *Haida* and O/311.

II.—ANTI-SHIPPING

SUMMARY OF ANTI-SHIPPING OPERATIONS BY COASTAL COMMAND AIRCRAFT NOVEMBER, 1944

Weapons Carried.	Number of Sorties.			Number of Aircraft to Attack.			Target.	
	On Reconnaissance.	On Strike.	Total.	On Reconnaissance.	On Strike.	Total.	M/V.	Naval.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DAY OPERATIONS								
Torpedo	59	4	63	—	4	4	4	—
R.P.	218	49	267	31	15	46	19	27
Bomb	54	—	54	6	—	6	—	6
Depth Charge	4	—	4	—	—	—	—	—
Tsetse	20	4	24	2	—	2	—	2
Cannon and M.G. only	189 (3)	48	237 (3)	53 (3)	5	58 (3)	8	50 (3)
TOTAL—DAY	544 (3)	105	649 (3)	92 (3)	24	116 (3)	31	85 (3)
NIGHT OPERATIONS								
Torpedo	57	—	57	13	—	13	9	4
R.P.	52	—	52	13	—	13	8	5
Bomb	251	7	258	60	—	60	36	24
Depth Charge	—	—	—	—	—	—	—	—
Tsetse	—	—	—	—	—	—	—	—
Cannon and M.G. only	10	—	10	—	—	—	—	—
TOTAL—NIGHT	370	7	377	86	—	86	53	33
ALL OPERATIONS								
Torpedo	116	4	120	13	4	17	13	4
R.P.	270	49	319	44	15	59	27	32
Bomb	305	7	312	66	—	66	36	30
Depth Charge	4	—	4	—	—	—	—	—
Tsetse	20	4	24	2	—	2	—	2
Cannon and M.G. only	199	48	247	53 (3)	5	58 (3)	8	50 (3)
GRAND TOTAL	914 (3)	112	1,026 (3)	178 (3)	24	202 (3)	84	118 (3)

Note.—The figures in brackets which are *not* included in the totals, represent attacks on shipping by aircraft on duties other than Anti-Shipping.

FINAL ASSESSMENTS FOR OCTOBER 1944

Day :—

Torpedo

2 M/V.s (totalling 3,069 tons) sunk.

R.P. and Cannon

1 Tanker (1,200 tons) sunk.
2 T.T.A.s sunk.
2 M/V.s (totalling 4,422 tons) seriously damaged.
1 Ex Dutch Gun Boat seriously damaged.
1 Armed Coaster seriously damaged.
2 M/V.s (totalling 5,000 tons) damaged.
1 Armed Coaster damaged.

Tsetse and Cannon

1 M/V (1,940 tons) seriously damaged
1 T.T.A. seriously damaged.
2 M/V.s (totalling 1,000 tons) damaged.
1 Ex Norge Torpedo Boat damaged.
3 Tugs damaged.
1 Ocean-going Barge (300 tons) damaged.
1 T.T.A. damaged.

Night :—

R.P.

1 Minesweeper damaged.

Bombs

1 E-Boat seriously damaged.
1 Minesweeper damaged.
1 Tanker (2,247 tons) damaged.

RESULTS CLAIMED FOR NOVEMBER
(Subject to Assessment)

Day :—

R.P.

2 M/V.s (totalling 5,816 tons) sunk.
1 M/V (1,000 tons) damaged.
2 Minesweepers damaged.
3 Coasters damaged.

R.P. and Cannon

2 M/V.s (totalling 6,540 tons) damaged.
1 T.T.A. damaged.
1 T.L.C. damaged.
1 E/V damaged.

Cannon

1 M/V (1,000 tons) seriously damaged.
1 E/V seriously damaged.
2 M/V.s damaged.
3 Coasters damaged.
1 T.T.A. damaged.

Night :—.

Torpedo

1 M/V (3,000 tons) seriously damaged.

R.P.

1 M/V damaged.
1 " M " Minesweeper damaged.

Bombs

1 M/V (3,703 tons) sunk.
1 E-Boat seriously damaged.
3 M/V.s damaged.
1 Minesweeper damaged.

Shipping Strikes in November

On November 4, 15 **Mosquitos** of the **Banff Wing,** on a reconnaissance in force off the Norwegian coast, sighted two trawler-type auxiliaries off Kinn. Attacks were made using cannon and machine guns only, and one of the vessels was left smoking heavily. Considerable flak was experienced from ships and shore. One of our aircraft failed to return.

A very successful attack against enemy ships in Midtgulen was made by 22 **Beaufighters** of the **Dallachy Wing** on November 8. **Mosquito P/333,** which was acting as outrider to the main force, sighted two 3,000 ton merchant ships and three coasters inside Midtgulen. The pilot led the Beaufighter formation over the mountains to the position of the target, and remained in the vicinity while an attack was made. Twelve aircraft attacked the two merchant vessels with 25 lb. R.P. and cannons, scoring thirty hits on one vessel and four on the other; the coasters were all attacked with cannon by the rest of the Beaufighters and all three of them were damaged. Both merchant ships were set on fire, and it has been established that they subsequently sank as a result of the damage during this operation. Although five of our aircraft were damaged, they all returned safely to base.

On November 13, a mixed force of 14 **Mosquitos** from Banff and 6 **Beaufighters** from Dallachy made a cannon attack on a number of small ships off Egero. The target consisted of two merchant vessels of 6–800 tons each, two tugs and three escort type vessels. During the attack an explosion, followed by fire, occurred on one merchant vessel, while the other and two escorts were seen to be smoking heavily. Both tugs were set on fire and the third escort vessel was last seen in flames and sinking. From this operation all our aircraft returned safely.

Seventeen **Mosquitos** of the **Banff Wing** sighted two small coasters and a power-driven barge in Sogne Loch on November 14. Attacks were made, using bombs, R.P., 6 pounder and 20 mm. cannon. No hits were seen with bombs, but both coasters were hit with R.P. and cannon, and left burning fiercely; an explosion was observed on one of them. R.P. and cannon strikes on the barge produced no visible results. The Mosquitos suffered neither damage nor casualties.

On the night of November 18/19, **Swordfish Q/819** was on anti-shipping patrol off the Dutch coast. The pilot sighted four small merchant ships of about 500 tons each some four miles from the Hook of Holland. He immediately attacked with 250 lb. bombs and scored at least one direct hit, which was followed by a shower of burning debris.

On November 21, three R.P. **Beaufighters** and three cannon **Beaufighters** of the **North Coates Wing** sighted two " M " class minesweepers off Ameland. All six aircraft attacked and scored

ten R.P. hits as well as numerous cannon strikes on both ships. The minesweepers caught fire and were left enveloped in flames and smoke. One Beaufighter failed to return from this operation.

Shortly after the foregoing attack a formation of twelve R.P. **Beaufighters** of **236 Squadron** found two gun-boat auxiliaries off the Weser Estuary. The aircraft attacked and scored ten R.P. hits on one boat and four on the other; numerous cannon strikes were also made on both vessels. Photographs taken during the operation show the two gun-boats well on fire and smoking heavily. The Beaufighters all returned and none of them was damaged.

During the early hours of darkness on November 22, **Halifax E/502,** while on patrol in the Skagerrak, homed on to a radar contact and, dropping flares, illuminated a merchant vessel of over 3,000 tons. The aircraft attacked with 500 lb. bombs and scored a direct hit. A dull red glow was seen on the ship; this developed into smoke and flames which rose to a height of 500 feet.

About two hours after the above attack **Halifax Y/502,** also on anti-shipping patrol in the Skagerrak, sighted the same vessel still on fire. An attack was made with 500 lb. bombs, one of which fell on the forward part of the ship, and started a fresh, large fire. Smoke billowed up to 1,000 feet, and the flames could still be seen from a distance of over forty miles. Information has since been received that the ship, a merchantman of 3,703 tons, had sunk as a result of these two attacks.

During the early evening of November 24, **Halifax C/502,** after homing on to a radar contact in the Skagerrak, sighted three merchant vessels. The ships opened fire, but the aircraft took evasive action and then attacked the largest ship, a merchant vessel of 3,000 tons. Two direct hits were scored with 500-lb. M/C bombs and, in the light of flares, smoke was seen issuing from several parts of the ship.

During the night of November 25/26, **Beaufighter O/236,** on patrol about ten miles north of Borkum, sighted a small vessel on fire amidships. "O" attacked with eight 25-lb. R.P.s and observed several hits. The fire increased and the ship was left blazing furiously and down by the stern.

On November 26, **Beaufighter Y/254,** while on Air Sea Rescue patrol off the Frisian Islands, sighted two vessels beached near Rottumeroog; they were a trawler-type auxiliary and a tank-landing craft. The pilot decided to attack with his cannon and machine gun and scored many hits on both vessels. A big explosion was seen on the bridge of the auxiliary and, after the smoke had cleared away, wreckage was seen on the sand. Results of the strikes on the tank-landing craft were not observed, but light flak and rifle fire were experienced from this vessel. "Y" was not damaged. The next day 13 **Beaufighters** of the **North Coates Wing** attacked the two beached vessels. 25-lb R.P.s and cannon were used and numerous strikes were obtained. Fires were seen burning on the two ships. No flak was encountered during the attack. Photographs show that both vessels are well aground and not likely to be of any further use to the enemy during the present war.

On the same day as the above operation **Beaufighters** of the **Dallachy Wing** struck at enemy shipping in Norwegian waters. Ten aircraft, of which four carried torpedoes and 6 R.P., entered Sula Fjord and sighted one merchant vessel of about 5,000 tons, another of 3,500 tons and four escort vessels. Results of the torpedo attacks were not observed, but many R.P. hits were seen on the 3,500-ton merchant ship and on one of the escorts. The escort vessel was left well on fire and low in the water. Three of the Beaufighters were damaged, but all returned safely to base. Reports, subsequently received, indicate that the large vessel was the *Fidelitas*, a ship of 5,740 tons. She did, in fact, receive a torpedo hit and sank as a result.

III.—OTHER OPERATIONAL FLYING

Air/Sea Rescue

During the month of November, 33 members of aircrews were rescued by the Air/Sea Rescue Service. Outstanding incidents were :—

On November 3, a **P.47** on spotter service, controlled by Saffron Walden, sighted nine survivors from an American Fortress in position 52° 38′ N., 02° 31′ E. A high-speed launch was homed to them and the entire crew rescued.

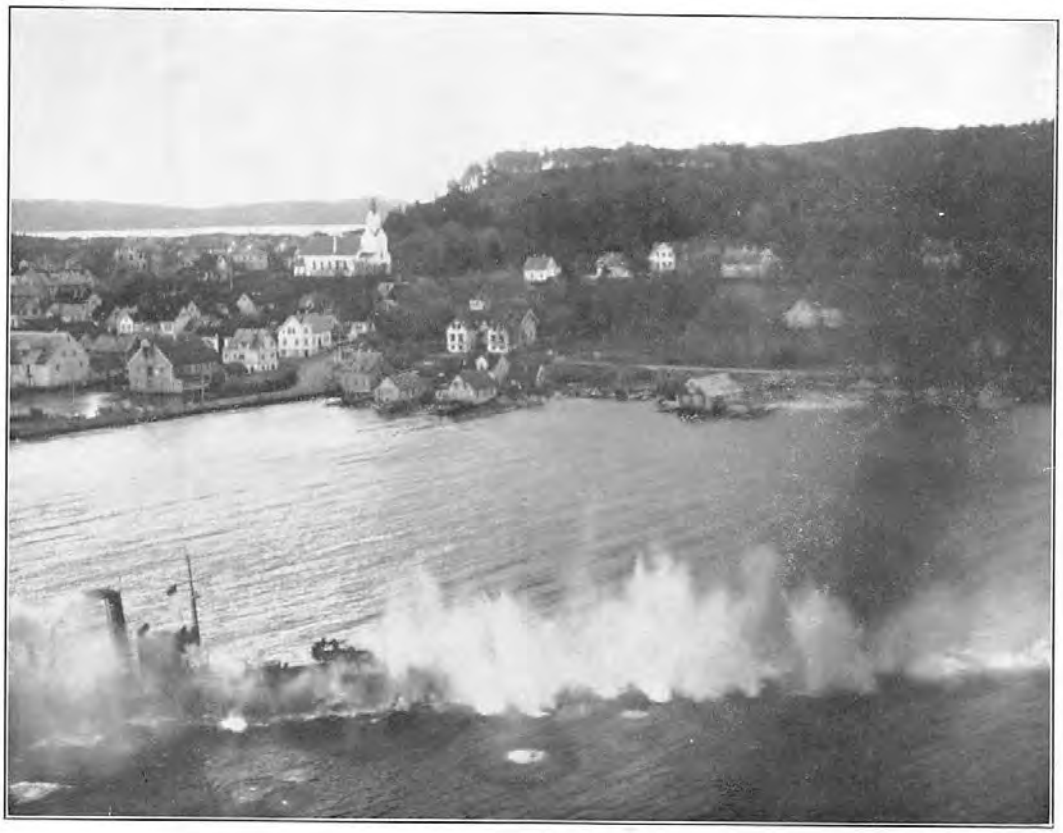
On November 22, **Halifax F/518** which was on an air test, ditched six miles south of Tiree. An Air/Sea Rescue Warwick was scrambled from Tiree and located the crew in their dinghy. A naval vessel, which was in the vicinity, was diverted to the position and the entire crew of nine was rescued.

As in previous months protective patrols were flown by both British and American Air/Sea Rescue Squadrons and in some cases damaged aircraft belonging to the U.S.A.A.F. and aircraft of the Coastal Command strike wings were escorted back to base.

On November 8 the Dallachy Wing attacked shipping in Midgulen on the Norwegian coast. The above photograph shows the ships lying at anchor (*see* letterpress, p. 9).

A heavy R.P. attack on two German ships, *Helga Ferdinand*, 2,566 tons, and *Aquila*, 3,530 tons, both of which were sunk. A smaller vessel, the *Frannes*, 307 tons, was damaged further down the fjord.

PLATE 4



Fifteen Mosquitos from 235 and 248 Squadrons attacked shipping in Floro Harbour on November 4. These photographs show cannon attacks on a trawler type auxiliary under way. At the same time attacks were made on small vessels moored near the jetty.

Photographic Reconnaissance

The most useful photograph taken during the month was the excellent view of the bottom of the "unsinkable" Battleship "Tirpitz," hit by 12,000-pounders dropped from Bomber Command Lancasters at Tromso early on November 12. The reconnaissance photographs taken a few hours after the attack were not sharp but showed without doubt the "Tirpitz" completely capsized (see *plate 6*).

Damage assessment sorties for 8th A.F. targets, as well as those of Bomber Command, have provided quite a large percentage of the month's work; of these targets, perhaps the Viaduct over the Dortmund–Ems Canal at Ladbergen was the most impressive. This viaduct is in fact quite beyond repair.

Apart from the subjects already mentioned routine cover of ports and airfields in Germany, Norway, Holland and West France has been continued, together with several sorties of German Railways and a number of area photographs for research and planning purposes.

The following reports were written by members of the air crews concerned

541 Squadron, Mustang III

I was airborne base at 1140 hours to photograph the Dortmund–Ems Aqueducts which had been attacked by Bomber Command some nights previously. Since attempts to obtain the necessary damage assessment photographs high level had been unsuccessful owing to a prolonged spell of bad weather, it was necessary for me to attempt to obtain photographs low level, or, if this was impossible, to obtain a visual of the condition of the aqueducts.

From base I flew at 2,000 feet crossing out Orfordness and in to enemy coast at Ijmuiden still at 2,000 feet and just below 8/10 cu. Visibility on the Dutch coast was bad and I had to fly through several sleet showers. As I approached the German frontier the weather below the medium cloud cleared, giving me good visibility with sun patches through the cloud breaks.

A few minutes before reaching the target I pinpointed myself over Rheine aerodrome and decided to fly over it and photograph it. I was then at 4,000 feet, and experienced considerable accurate light flak from the vicinity of the aerodrome.

I reached the target 80 minutes after take off and saw the target area pitted with hundreds of bomb craters. Dozens of barges could be seen sunk on the bed of the canal which was completely drained. The surrounding countryside was flooded as a result of the breach of the canal walls.

I made two runs over the canal in the vicinity of Gravenhorst at 5,000 feet and then was compelled by low cloud to come down to 3,000 feet to photograph the double aqueduct at Ladbergen. Here I encountered some light flak but it was not at all accurate.

From the target area to the Dutch coast I experienced flak from various isolated villages in Germany. I was still at between 3,000 and 5,000 feet but there was now no cloud cover at all. I landed at Bradwell without further incident at 1510 hours.

540 Squadron, Mosquito

We were briefed for a sortie requiring damage assessment photographs of the German Battleship *Tirpitz*, and were airborne from Dyce at 0655 hours on November 12. We landed at Sumburgh at 0740 hours to refuel and were airborne again at 0835 hours and set course for Andenes.

On our climb to altitude we found that the port fuel tank was leaking, which made us somewhat anxious, but it was later found that we had only lost 10 gallons. We flew at 27,000 feet until we were 40 miles south of the Lofotens when height was reduced to 24,000 feet so as to fly below cirrus. We reduced height again to 20,000 feet to photograph Andenes at 1137 hours.

From there we set course for Tromso, our target area. Weather conditions were fine, with no high or medium cloud, but some low cloud on the mountains around the fjord. As we approached the target from the south-west great activity was noticed around the briefed position of the *Tirpitz*. We dropped to 17,000 feet and as we came close we could see a large patch of oil around the position, and in the centre the *Tirpitz* was lying keel upwards. To the east were about seven vessels, including the two escorting flak-ships.

A photographic run was made over the target and on completion flak appeared behind and below us, but it soon became more accurate.

At 1154 hours we set course for Narvik, photographing Elvenes aerodrome on the way. We made runs over Narvik, Bogen Fjord and Ramesund Fjord from 17,000 feet and then set course for the southern tip of the Lofotens at 1225 hours. At 1232 hours about 25 bursts of accurate flak came up when we were three miles north-west of Kirsnes, a seemingly innocent promontory some 50 miles west of Narvik.

At 1249 hours we set course for Sumburgh with the port engine very rough at more than 2,150 revs. At 1355 hours a "GEE" fix was obtained showing our position to be 80 miles to starboard of our track. Some doubt was experienced as to the accuracy of this, so course was maintained. At 1500 hours signals became stronger, giving us a position approximately 120 miles north-north-west of the Shetlands, so we altered course to south and obtained V.H.F. contact with Sumburgh at 1505 hours. We then received a message to land at Sumburgh but after an argument obtained permission to proceed to Dyce. We broke cloud in the Moray Firth at 1555 hours, and when 30 miles north of Fraserburgh the port engine started jumping about, but by throttling back we maintained an I.A.S. of 210 and we crossed in at Fraserburgh. Over base at 1623 hours the port engine had to be throttled right back and we landed rather abruptly at 1625 hours having been airborne 7 hours 50 minutes.

IV.—SPECIALIST AND GENERAL ARTICLES

THE OPERATIONS OF COASTAL COMMAND

(A lecture given before the Royal United Services Institute, November 8, 1944, by Air Vice-Marshal A B. Ellwood, C.B., D.S.C., Senior Air Staff Officer, Coastal Command.)

To describe the operations of Coastal Command in any detail in a short lecture is a formidable task, and I must be content only to give a broad outline of what the commitments of the Command are and how we have set about fulfilling them. I shall not attempt to tell the whole story of our operations since the beginning of the war, but will recount certain events and phases of particular importance to the expansion of the Command and to the development of its policy and technique.

Before going on to describe the several functions of the Command I should, I think, say something about the way in which it is organized and how its operations are directed.

As the branch of the Royal Air Force specially created and trained to take part in maritime warfare, Coastal Command works under the operational control of the Admiralty.

Broadly speaking, this means that the Admiralty lays down the policy for the conduct of the war at sea, and states the priorities in regard to the various types of operation and to the areas in which they are to take place, as dictated by the war situation at the time.

The Air Officer Commanding-in-Chief, Coastal Command is responsible for so deploying and operating the force at his disposal to meet the Admiralty's needs.

The area for which he is responsible is very large and its limits are set only by the operational radius of action of aircraft from their bases. These limits have, from time to time since the outbreak of war, been extended considerably both by increases in aircraft ranges and by the establishment of new bases, until at the present time the Command embodies four operational Groups in Great Britain and N. Ireland (two on the West and two on the East); one operational Group in the Azores; an Air Headquarters in Iceland; and an Air Headquarters at Gibraltar. The operational radius of action of the longest ranged aircraft averages some eight or nine hundred nautical miles. The potential operational area of Coastal Command now embraces the whole of the North Sea and a considerable portion of the Arctic Ocean, about half of the North Atlantic, and a small part of the Mediterranean.

The exercise of operational control by the Admiralty naturally calls for the closest co-operation and collaboration between the respective Staffs of the Admiralty and Coastal Command, and this co-operation is preserved at the lower levels by establishing Group or Air Headquarters in the same place as the Headquarters of geographically selected Naval Shore Commands. The resultant organization is known as Area Combined Headquarters, where the local Naval and Air Commanders work side by side and maintain a combined operations room, staffed by Naval and Air Force Officers.

The principle of operational control by the Navy does not, however, extend to the Area Combined Headquarters, the Air Force element of which operates solely under the control of the A.O.C.-in-C.

There is one exception to this organization, namely in the Azores, where there is no A.C.H.Q. and where the A.O.C. of the Group also holds the position of Senior British Officer.

The Functions of Coastal Command

I have no time to describe the organization of the Command in greater detail and must now pass on to speak of its operational functions.

These may be summarized as follows:—

(i) *Fleet Reconnaissance.*

(ii) *Anti-U-Boat Operations.*

(iii) *Anti-Shipping Operations.*

(iv) *Strategical Photographic Reconnaissance.*

(v) *Meteorological Reconnaissance.*

(vi) *Air/Sea Rescue Operations.*

This list alone will show that the Command has a wide charter.

Moreover, its operations are not solely confined to the requirements of the war at sea. Strategical photographic reconnaissance is undertaken to serve all military needs in the widest sense of the word "military," and is an essential requirement of all three Services.

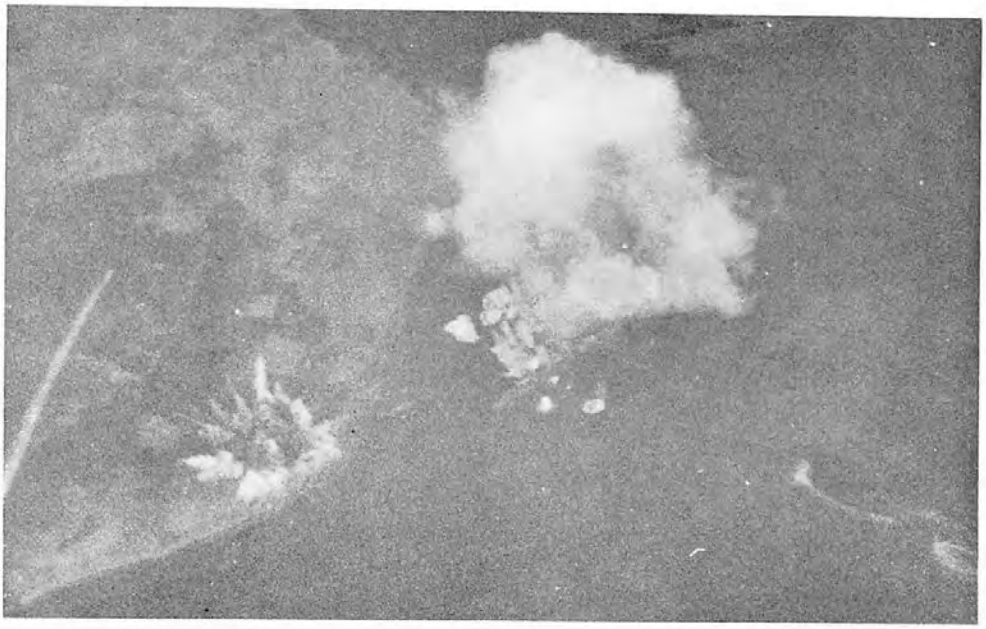
The Meteorological Squadrons of Coastal Command are now the main source of long range Meteorological Intelligence, which plays such an important part in the planning of all air operations and to a lesser extent in that of sea and land operations.

Air/Sea Rescue Squadrons operate on behalf of all air formations whose aircraft are required to fly over the sea.

The principal functions of the Command are, however, the first three on the list, namely, Fleet

On November 21 Beaufighters of 236 Squadron attacked two armed coasters lying at anchor in the Weser Estuary. These vessels are frequently used to provide A.A. protection to convoys. Both were left on fire after hits had been scored with R.P. and cannon (*see* letterpress, p. 10).

PLATE 6



The end of the German Battleship *Tirpitz* is of outstanding interest to Coastal Command. For a considerable time she has been the target for very long Photographic Reconnaissance Flights, and was also a potential target for Strike Squadrons on the East Coast. These photographs, taken by cameramen of the R.A.F. Film Unit, show incidents in the Bomber Command attack which finally destroyed the ship.

Reconnaissance, Anti-U-Boat Operations and Anti-Shipping Operations, and it is of these three that I wish to speak today.

Anti-U-Boat Operations

I shall deal first with Anti-U-Boat operations, because this is the activity which absorbs the greatest part of the Command's resources.

The object of Anti-U-Boat operations is, strategically, a defensive one, since it is concerned with the protection of our shipping.

The methods we employ to achieve it are both defensive and offensive in character. The defensive method is the close protection of convoys; the offensive method is the hunting of U-Boats in areas unrelated to convoy routes, but through which U-Boats must pass between their bases and the areas where they operate.

At the beginning of the war we had no very clear conception of the distinction between these two methods or of the potentialities of either. We were ill-equipped with aircraft with sufficient range to do more than provide close escort to coastal convoys. The bomb load of the standard type, the Anson, was 2 × 100 lb. anti-submarine bombs, which, on the few occasions when an attack was made, proved virtually useless.

The Germans, who had some 70 U-Boats operational in September, 1939, used them principally close to our coasts. The capture of the Biscay ports, however, greatly eased the problem of their rapidly expanding U-Boat fleet, which could then be ideally disposed to operate against our Atlantic convoys.

By the end of 1940 the U-Boats were operating rather further away from our coasts and scoring considerable successes against our convoys in areas where their routes converged a hundred miles out into the Atlantic.

All this time we persisted in the purely defensive policy of escorting every convoy for which we could make aircraft available. As a result the U-Boats were free to sail to their appointed patrol areas without hindrance. The air had made little or no contribution to the defeat of the U-Boat.

In February, 1941, Coastal Command increased its sphere of operations by adding to the existing groups at Chatham, Rosyth, and Plymouth, a further group, to operate with the newly formed Naval Command in the Western Approaches, with Area Combined Headquarters at Liverpool. In August of the previous year, we had established squadrons in Iceland.

By May, 1941, Coastal Command had made two notable advances, first in respect of types and ranges of aircraft and, secondly, in weapons. The order of battle now included such aircraft as the Sunderland, the Hudson, the Whitley, and the Wellington, and the first airborne depth charge made its appearance.

In the meantime the technique of offensive air action against the U-Boat had been carefully studied. There were two principal areas through which U-Boats had to pass, namely, the Bay of Biscay and the Northern Waters between Iceland and the Shetlands. The problem was to find and attack them during their passage through these areas and thus to prevent them from reaching their patrol areas—or at worst to harass and delay them.

The two chief factors which influenced the planning of such operations were, first, that the average rate of progress of a submerged U-Boat was 2–3 knots, and, secondly, that at that time it was compelled to come to the surface for several hours in every 24 in order to recharge its batteries and ventilate. If, therefore, the area through which a U-Boat could pass at submerged speed in 24 hours could be kept under constant observation by aircraft, sightings of surfaced U-Boats at some time during that period were, in theory at least, a certainty.

Unfortunately, however, there were several practical factors which entered into the problem.

In the first place there are limits to the ranges at which a U-Boat can be detected visually from an aircraft, even in the clearest weather, and in bad weather these ranges are considerably reduced. The tracks of individual patrolling aircraft had, therefore, to be close enough to each other to ensure that there was no gap between the visual ranges of adjacent aircraft.

Secondly, no spot in the whole patrol area could be left unobserved for a period longer than the minimum required by the U-Boat for surfacing and recharging its batteries, if we were to make sure of catching him in this position.

Thirdly, at night except in bright moonlight, the chances of sighting a U-Boat were negligible, since at that time there was no reliable means of illumination in service.

A very simple calculation will show that, even in the best conditions of light, the efficient search of the required area involved the use of a large number of aircraft, and that the task was severely complicated by bad visibility and darkness.

We had in May, 1941, insufficient aircraft, and the weather was no better than what we have been accustomed to in this part of the world all our lives.

Nevertheless, we felt justified in embarking on an offensive policy and, accordingly, the number of aircraft employed on convoy escort was reduced to the minimum consistent with safety, and all remaining aircraft were turned on to patrols in the two main transit areas and to offensive sweeps along the convoy lanes and in other areas where U-Boats were believed to be operating.

In spite of the limitations in numbers of aircraft, the new policy immediately produced results. There were many sightings and attacks by aircraft, and, although kills were still very rare, U-Boat captains found themselves compelled to submerge in areas where they had formerly moved freely on the surface. This slowed up their rate of progress, shortened their time on patrol, and materially reduced the potential threat to our shipping.

It was not long before the U-Boats were driven 300 miles and more from our coasts, where they could operate beyond the range of our aircraft. This distance gradually increased till, eventually, only very few of our ships were sunk within 450–600 miles of our bases.

Developments through Scientific Research

In the meantime, considerable advances had been made in the development of scientific research in Anti-U-Boat warfare. Radio location, which had proved so successful in the Battle of Britain, made its appearance in the form of airborne equipment, designed to detect the presence of vessels on the surface of the sea in the same way as it had made possible the detection of aircraft. This greatly increased the power of aircraft to locate U-Boats, especially in bad weather and at night.

It was during this period that the first real indication of the fear of aircraft amongst U-Boat crews became apparent. In the Bay it led to the practice of running submerged by day and surfacing only by night. As much as three or four extra days spent on passage were lost in the patrol areas. Morale suffered. Every moment spent on the surface was fraught with anxiety.

The U-Boats drew further and further away from our coasts and confined their attention to areas which our aircraft could not reach.

At the end of 1941, after the entry of America into the war, the U-Boats found a lucrative hunting ground in the Caribbean and on the American Atlantic sea board. This phase, before the Americans got into their stride, lasted into the summer of 1942, and did much to restore the morale of the U-Boat crews. Coastal Command maintained its pressure in the Bay and the Northern Transit Area, but with the prospect of so rich a prize in the patrol area, the enemy was content to waste time in transit, and our sightings fell off.

Then in May, 1942, there was another dramatic development. The problem of illumination at night was solved by the introduction of an airborne searchlight. This produced an element of strategical and tactical surprise which had far-reaching effects. U-Boats found themselves unable to detect the presence of aircraft until they were illuminated. They had no time to dive before an attack developed and, at that time, carried no anti-aircraft defensive armament. The policy of surfacing by night became so dangerous that it was completely reversed in favour of submerging by night and surfacing by day. This resulted in a marked overall increase in sightings by aircraft.

Concurrently, with the introduction of the searchlight, a very marked improvement in the lethality of the depth charge was achieved, which further added to the difficulties and dangers of U-Boat operations.

Our forces in aircraft were gradually mounting and included the first squadrons of Liberators with their much greater ranges. The influence of air power was at last beginning to make itself felt.

A good example of this was furnished by a large scale attack by a pack of U-Boats on a homeward bound convoy in the middle of June, 1942, when, after the sinking of five ships, an air escort was provided six hundred miles from Land's End. This escort attacked five U-Boats and the attack on the convoy petered out.

All this time Coastal Command's offensive in the Bay of Biscay had been slowly mounting, and so also had its sightings, attacks and sinkings, which reached a figure nearly three times as high as that which a year before had forced the U-Boats to remain submerged almost all day.

The year culminated in the successful transportation of the Allied Expeditionary Force to N. Africa. During this operation there were some 150 U-Boat sightings by Coastal Command aircraft—yet the interference caused to the N.African landings was negligible.

The Successes in 1943

The story so far shows the slow but steady advance towards mastery of the U-Boat menace running in direct parallel with the increase in numbers of aircraft, the improvement in airborne weapons and equipment, and the development of air tactics.

We come now to the year 1943, which proved so disastrous to the U-Boat.

At the beginning of the year we had reached the stage where Allied shipping could sail relatively unmolested so long as an aircraft was present to protect it. We had, too, had ample proof that a vigorous offensive in the Transit Areas was capable of producing concrete results in the shape of U-Boat sinkings and more indirect, but no less damaging, effects on the morale and efficiency of the U-Boat crews. Events had in fact shown that the operations of aircraft were the key to success. We had already effectively given the lie to Admiral Doenitz's boast that " the aircraft can no more eliminate the U-Boat than a crow can fight a mole."

But we still had a long way to go. Shortage of aircraft still severely restricted the scope of offensive operations. The lack of aircraft of very long range still left a fatal gap of some six hundred miles in the middle of the Atlantic, where the U-Boat packs continued to take heavy toll of Allied shipping. The rate of building of merchant ships was increasing apace, but had not yet made good the unfavourable balance between losses and new production.

The position was critical, both for ourselves and for the enemy. For us the U-Boat menace in the Atlantic bade fair to strangle our offensive strategy in Europe. For him, the chances of success held out his one hope of winning the war, or at least of avoiding decisive defeat.

In January, 1943, the Combined Chiefs of Staff at the Casablanca Conference, laid down that in the coming year the defeat of the U-Boat should be the first charge on our combined resources.

Even so, however, there were many other pressing demands on our own and the American aircraft industries, in order to furnish the Allied strategic bomber forces with the necessary aircraft and equipment to mount the great air offensive against Germany. They too needed every long range aircraft they could lay hands on, to enable them to penetrate ever deeper into the enemy's country. Accordingly, the priority in the supply of very long range aircraft between Coastal Command and Bomber Command required delicate adjustment.

The battle against the U-Boat in 1943 falls into three phases. During the first phase, from January to the middle of May, mass attacks by packs of U-Boats were still in full swing and losses in the Gap continued to be heavy.

In the meantime, however, it had been found possible, by adding extra tanks to the Liberator, to provide Coastal Command with a number of very long range aircraft, and in March the whole system of convoy escort was reorganized. Very long range aircraft were established in Iceland, and were later supplemented by aircraft of the R.C.A.F. and U.S.A.A.F. based in Newfoundland. This made possible a shuttle service between the U.K., Iceland, and Newfoundland. The gap was closed. This was followed later by the introduction of the auxiliary carriers, manned by the Fleet Air Arm, which helped to seal it yet more securely. In the Bay the Wellingtons, equipped with the searchlight and improved Radar, had marked success, so much so that the U-Boats again virtually abandoned the practice of surfacing by night.

The outstanding event in the operations of Coastal Command during this phase took place on May 19–21, when a convoy was surrounded by a huge pack of U-Boats. In this action Coastal Command aircraft provided continuous escort and made many attacks and many more sightings. The convoy came through without the loss of a single ship.

The second phase, from May till the beginning of August, opened with spectacular success in the Bay offensive. The enemy had by now armed the U-Boat with A.A. defences and adopted a policy of staying on the surface and fighting it out with the attacking aircraft. This proved very expensive for him and his losses were heavy.

After a short lull when sightings were scarce, the enemy attempted the passage of the Bay in small packs sailing on the surface and providing mutual support to one another. These tactics continued throughout July and again involved him in heavy losses, culminating in the sinking of a whole group of three, two by aircraft and one by a hunting group of surface craft—the first which had been made available to co-operate with the Coastal Command Bay patrols.

August opened with the sinking of one U-Boat a day, and after about a week the enemy had had enough.

Offensive Policy

This second phase of the 1943 campaign may be regarded as the turning point in the anti-U-Boat war. In these three months or so the enemy had lost U-Boats at the rate of some 30 per month, and the number of U-Boats at sea in the Atlantic had been reduced by nearly 50 per cent.

These outstanding results had also amply proved the soundness of the offensive policy. Increases in the forces at our disposal had enabled us to turn theory into practice, and we were well repaid for the many hours of scientific research and analysis which had, for so many months, been applied to the problem.

The third phase, which virtually lasted right up to the opening of the Allied invasion of Europe in June of this year, opened with a complete change of tactics on the part of the enemy.

Both in the Bay and in the Northern Transit Area he almost entirely abandoned surfacing by day and adopted the ultra cautious tactics of surfacing for the shortest possible periods during the night. His U-Boats did us no harm, but gave us very little opportunity to kill them.

In the Bay the Luftwaffe took a hand in the battle by increasing the enemy's fighter patrols against our anti-U-Boat aircraft and by attacking the surface hunting groups with glider bombs. These measures, coupled with the adoption by the U-Boats of a route close to the Spanish Coast, increased our difficulties but did not lead to any measurable success for the enemy.

There were two bursts of activity in October, 1943, when some slight success was achieved with a new weapon against two convoys by the same pack. But on each occasion it was roughly handled by aircraft and surface escorts and suffered heavy losses.

Meanwhile we had, on October 8, increased our hold on the Atlantic by the establishment of squadrons in the Azores, which improved our power to cover not only the Atlantic convoys but also those sailing to Gibraltar.

The Influence of Air Power

The year 1943 demonstrated to the world better than any other period the importance of air power in the protection of seaborne trade, although its importance had, of course, been fully appreciated by responsible Naval and Air authorities on both sides of the Atlantic long before. We are greatly indebted to our American Allies for the splendid help they gave us in the transfer of squadrons of the U.S.A.A.F. and the U.S. Navy to the control of Coastal Command, and for their invaluable assistance in the research and development of new weapons and equipment. I should mention, too, the outstanding successes achieved by the American Escort Carriers, which, operating independently of Coastal Command, made a spectacular contribution to the success of the anti-U-Boat campaign as a whole.

Another most important landmark in the year 1943 was the development of the technique of co-operation between aircraft and surface escort or hunting groups. By dint of exhaustive study and training, the direction of surface craft by aircraft to the spot where an air sighting has been made has reached a high degree of efficiency, and the resultant co-operation has, from time to time, been highly successful.

It is still difficult to detect submerged U-Boats from the air, and as long as this situation holds the combination of air and surface craft will always be the best method of killing the U-Boat.

The Invasion of Europe

The lessons learnt in 1943 proved of inestimable value when the time came for the planning of Anti-U-Boat operations in support of the Allied invasion of Europe.

Here was a situation which, on the face of it, appeared to present the U-Boat with a golden opportunity to interfere with an undertaking which was not only the greatest the Western Allies had ever attempted, but which, if successful, was the most likely to spell the doom of Germany.

But it also presented Coastal Command with the opportunity to apply its offensive policy under ideal conditions. The entrances to the English and Bristol Channels provided us with an area sufficiently small to impose, for the first time, a real barrier to the passage of U-Boats with the forces at our disposal.

The time is not ripe to tell the full story of this most recent and successful battle against the U-Boat, but I can say that the threat developed just as was expected.

The marked lack of aggressive tactics on the part of the U-Boats in the months immediately preceding D-day was rightly interpreted by those responsible for planning our counter-measures, as an earnest of the enemy's determination to conserve his forces for a supreme effort when the invasion fleets left British shores for their long-awaited adventure.

The enemy concentrated his U-Boats in the Bay ports in preparation for the great day, and when it came he sent them out in strength.

He also operated his U-Boats in large numbers off the Norwegian coast, chiefly, we believe, as a precaution against an attempted invasion of Norway, and was very roughly handled by Coastal Command aircraft for his pains.

The story of his complete failure to achieve results has yet to be told but, when it is, the people of the United Nations will know how much they owe to the unremitting watchfulness and steadfast gallantry of the aircrews of Coastal Command.

The U-Boat situation has now radically changed. The enemy has lost the use of the Biscay ports and will be compelled from now on to operate his U-Boats from Norwegian bases.

This severely complicates his problem. But he is a stubborn and resourceful enemy and has by no means given up the struggle. You will have read of the extendable air intake which he has now fitted to his U-Boats and which enables them to recharge their batteries and ventilate without surfacing. This and certain other improvements, which we believe to be under development, have given the U-Boat a new lease of life.

The U-Boat war, contrary to the belief of many people, is still very much alive. So also are the Royal Navy and Coastal Command. We await events.

Anti-Shipping Operations

I will now pass on to the third of the functions on my list, namely, Anti-Shipping Operations.

A historical review of Anti-Shipping operations during the present war, such as I have given in the case of anti-U-Boat operations, would not, I think, be appropriate, because in the sphere of Anti-Shipping operations there has not been a continuous battle between Coastal Command and a specific enemy, in the sense that there has against the U-Boat.

I think it will be more interesting if I speak of the problem as it has presented itself in recent months and as it exists today. I will mention also some of the special problems which confronted us during the invasion period.

The principal striking forces of Coastal Command in its war against enemy shipping are the Beaufighter and Mosquito Wings, and the two main weapons with which they are armed are the torpedo and the rocket projectile.

Of these the torpedo has so far proved itself to be the more lethal weapon, but it suffers from certain limitations. It cannot be used in shallow water, and its effectiveness in rough seas is a doubtful quantity. For use in restricted waters, such as the Norwegian fjords, it is generally unsuitable owing to the difficulty of finding enough room for the aircraft to manœuvre, even if there is in fact a large enough area of deep water for the torpedo to run.

The two areas within range of Coastal Command Anti-Shipping forces, in which targets are most likely to present themselves, are along the Dutch and Norwegian coasts, where shipping usually sails close inshore. Along both of these coasts there are many stretches of shallow shoal water, while the Norwegian coast is also especially remarkable for the narrow shipping lanes which run between the many islands and the mainland.

Stretches of open deep water in either area are few, and the chances of delivering a successful torpedo attack are proportionately limited.

The rocket projectile, on the other hand, though less damaging than the torpedo, is not subject to the same restrictions. It is not affected either by the depth of water or by the state of the sea, and being launched in a dive from a greater height gives the aircraft more freedom of manœuvre. It is therefore a very valuable weapon for use in conditions unsuitable for the torpedo.

Although I propose to confine my remarks chiefly to modern methods of anti-shipping attack, I must make a brief reference to the early operations by both Bomber and Coastal Command aircraft, because they taught us two useful lessons. These operations took the form principally of low level attack. They were carried out by small formations and at first had a considerable measure of success.

As a result the enemy began to escort his convoys with big forces of craft, specially equipped with strong A.A. armament and given the primary role of engaging attacking aircraft. Low level attacks became very costly and for a time had to be abandoned.

We learnt, however, that one of the essential components of a "Strike Force" as we call it, was a powerful screen of aircraft specifically detailed for anti-flak duties.

These aircraft were given the task of smothering the flak ships with cannon fire and killing the gun crews, or at least keeping their heads down, while the striking force went in to attack the main targets.

We also learnt the unwisdom of attacking in small numbers. The bigger the force the more complicated is the problem of the A.A. gunner who, amidst a hail of bullets, is hard put to it to pick his target.

The modern strike force, then, consists of anything up to 50 or more aircraft, of which the anti-flak portion will be in the majority. The striking portion may be armed with torpedo or rocket projectile, according to circumstances, and the anti-flak portion now usually operates with both cannon and rocket.

Another element of the force, for which we have to turn to Fighter Command, is the top cover of fighter aircraft to give protection against enemy fighters. Sometimes, in conditions which provide adequate cloud cover, the fighter element can be dispensed with. But in clear weather where enemy fighter opposition is to be expected it is an essential adjunct to the force.

A full-scale anti-shipping operation, therefore, now comprises upwards of 70 aircraft, the majority of which are operating at high speed from a few hundred feet above the sea down to sea level. The handling of such a force calls, as you can imagine, for a high standard of leadership on the part of the Wing Leader and great skill on the part of every pilot. Intensive training alone can produce the desired results.

The strike is normally controlled by the leader of the anti-flak element. He leads his force in to the attack of the flak ships immediately ahead of the main striking force, whose object is to complete the attack on the principal targets while the flak ships are still being engaged by the anti-flak aircraft.

A Typical Operation

It will perhaps be interesting if at this point I describe one such operation which took place on June 15 of this year.

The attack occurred off the Frisian Islands against a convoy reported earlier by a reconnaissance aircraft.

The convoy consisted of an 8,000-ton merchant ship, a naval auxiliary of 3,800 tons, and no less than 17 escort vessels. It was sighted in deep open water and consequently the torpedo was chosen as the main striking weapon.

A force of 42 Beaufighters, consisting of torpedo aircraft and an anti-flak screen of 32, some armed with cannon only and some with cannon and rocket, was despatched to the attack. Ten Mustangs provided fighter escort.

The target was sighted off Schiermonnikoog at about 5.50 a.m. As the Wing flew along the coast it was subjected to heavy fire from shore batteries, and this destroyed any chance of taking the convoy by surprise.

The attack was pressed home in the face of intense heavy and light flak from the escort vessels. But this was soon silenced by the anti-flak aircraft, which were in sufficient strength to engage all but two of the escorts. The striking force followed hot on their heels, unhindered by the escort ships, and dropped its torpedoes. Two hits were scored on the big merchant ship, two more on the naval auxiliary, and one on an " M " class minesweeper.

Before leaving the scene the Wing had the satisfaction of seeing the merchant ship down by the stern, listing and apparently sinking, and the naval auxiliary also listing and sinking. A minesweeper was seen to blow up. In addition, at least five more of the escort vessels were left in flames.

The Admiralty Assessment Committee, a Committee set up to consider claims for enemy shipping losses, has since assessed the merchant ship, the naval auxiliary and the minesweeper as sunk and four more minesweepers as damaged.

All our aircraft returned safely to base.

The story of this operation, I think, illustrates the effectiveness of the tactics which I have described, and in particular emphasizes the value of a strong anti-flak screen and the advantage of operating in big numbers.

Planning Shipping Strikes

The planning of anti-shipping operations presents a considerable problem. Most of the more fruitful areas lie some 200 miles from our coasts, and the acquisition of timely information about the movements of shipping is a matter of great difficulty. Extensive use is made of reconnaissance aircraft, but it frequently happens that the information they supply is received too late to get the strike force to the scene of action before the shipping has made a bolt for harbour or has been able to seek the shelter of restricted waters.

Consequently, it is often necessary to keep strike forces standing by on the ground for long periods, ready to take the air at very short notice. This is irksome work for the crews, but one of the penalties of belonging to a " fire brigade " force.

Often in the absence of information the force just has to go out looking for trouble.

I need hardly stress the importance of speed and accuracy in the reporting of the enemy's position by reconnaissance aircraft. The launching of a strike force is a matter of careful timing, and an inaccurate or tardy position report can very easily render a strike abortive.

In spite of all difficulties the Coastal Command strike wings have, however, had a large number of spectacular successes and are undoubtedly looked upon with the greatest respect by the enemy, who is now sailing his convoys principally at night.

Anti-shipping operations at night are difficult, and the handling of big formations, such as I have described, is not a practical proposition. Bombing by the aid of flares is, however, developing rapidly, as is also the illumination of targets by flare-dropping Wellingtons, to enable small forces of Beaufighters to attack with torpedoes.

In this brief review of Coastal Command's anti-shipping activities I have spoken only of the attack of merchant convoys. I have not mentioned that of major naval units. This is, of course, one of our primary commitments and is ever present in our minds, though unfortunately the opportunities to attack such targets are few and far between. As regards weapons, the torpedo is at present the only one in our armoury likely to be effective

against heavily armoured ships, and the speed at which such ships travel makes the aiming of the torpedoes a more difficult operation. Apart from this the tactics and technique are the same for each type of target. Both are heavily escorted by flak ships, and both demand the employment of a large strike force embodying the same preponderance of anti-flak aircraft.

During the invasion period the problem before us was somewhat different. We temporarily abandoned the attack of coastal convoys and concentrated our efforts against the enemy naval forces considered most likely to interfere with the safe passage of our invasion convoys.

By day our operations mostly took the form of strikes by cannon-firing Mosquitos and Beaufighters using cannon and rocket. These achieved considerable success in sinking and damaging ships of the destroyer, torpedo-boat class and culminated in the sinking of two destroyers in one attack in the mouth of the Gironde.

Most of the anti-shipping activity, however, took place at night when the principal target was the E-Boat. For this the bomb was found to be the most effective weapon, so fused as to burst with the maximum spread of fragmentation and thus to counteract the great difficulty of aiming accurately at a small target in the dark. The E-Boats were constantly harried by Coastal Command Beaufighters and squadrons of the Fleet Air Arm, and, although it has been difficult to assess the concrete results of the operations, there is no doubt that they played a great part in virtually nullifying the activities of a force which was regarded as a very serious potential threat to the safety of our invasion convoys.

Long Range Fighter Operations

I would like at this point to mention another important function of the Beaufighters and Mosquitos of Coastal Command, namely, their use as long range fighters.

From time to time it has been necessary to employ these aircraft to protect our anti U-Boat patrols in the Bay of Biscay, and they have done much execution amongst Ju.88s sent to protect the U-Boats on passage through the area.

Long range fighters have also often been required to give protection to the Fleet or to small naval units when operating within range of enemy bomber forces.

Fleet Reconnaissance

This brings me to speak of the function of the Command, which I have referred to as Fleet Reconnaissance. Fleet reconnaissance implies tactical reconnaissance and the shadowing of enemy surface forces, and also the provision of anti U-Boat escort to the Fleet. The latter is, of course, no longer purely a matter of reconnaissance, but involves the attack of U-Boats as well as their detection. It is, in fact, a similar problem to the anti U-Boat escort to trade convoys.

The most outstanding example of successfu reconnaissance on behalf of the Fleet was the search for the *Bismarck* in 1941, when, after a series of sightings and lost contacts by many Coastal Command aircraft in bad weather, a Catalina finally sighted, reported, and shadowed the ship, and enabled our own surface forces to close and sink her.

Dependent upon the area of the operations and its distance from our bases, any aircraft of Coastal Command may be called upon to carry out fleet reconnaissance and all crews have to be trained in the technique and in the art of ship recognition.

For instance, the search for an enemy force in mid-Atlantic would call for the use of long range aircraft of the type principally employed on anti U-Boat operations. The search for enemy units moving along the Norwegian Coast, where there is risk of interception by fighters, has to be undertaken by Mosquitos or Beaufighters. As in reconnaissance on behalf of air anti-shipping operations, the need for accurate navigation and reporting of position is of great importance and makes high demands upon the aircrews, especially in the smaller aircraft where facilities for accurate navigation are severely limited.

Another form of direct co-operation with Naval forces, for which we have always to be prepared, is the support of the Fleet by air striking forces in a fleet action within range of our shores. An air launched torpedo attack on enemy major units may, if it fails to sink them, so reduce their speed as to enable our own fleet to make contact with them. We have not been able to put this into practice so far, but it is a technique which may some day pay a useful dividend in the Far East.

Miscellaneous Activities

I should also mention certain miscellaneous duties of the Command, which include many notable flights by Flying Boats to discover ice conditions in Arctic regions; flights to Spitzbergen and to Russia; flights at extreme ranges to supplement the work of the Meteorological and Air/Sea Rescue Squadrons in areas outside their radius of action; and a host of other special operations of similar nature.

No lecture on the operations of Coastal Command would be complete without the mention of two factors, namely, the need for flexibility, and the weather.

Flexibility

As regards flexibility, you will have noticed that I have spoken of the development, from time to time, of intensive operations in widely separated areas, ranging from the Norwegian Coast, through the Arctic and Atlantic Oceans, and down to the Mediterranean area. To keep abreast of events and to ensure the proper concentration of effort at the right time and place, Coastal Command has always to be prepared to move its squadrons at short notice. For example, the whole set-up of the Command has undergone three major changes since the spring of this year, and there may be more to come.

All this has to be done with the minimum of interruption to operations and involves a highly complicated administrative problem and continuous advanced planning. If to this we add an unending procession of new developments in equipment and the time to be devoted to training in its

use, it will be seen that the Command has a major problem in maintaining the steady operational effort which alone can produce the desired results.

The Weather

The other factor, the weather, also has a far-reaching influence on the maintenance of operational effort. The continuity of the offensive anti U-Boat search of an area, which I described earlier, is entirely dependent on weather conditions, which may sometimes keep aircraft grounded at their bases, and sometimes present almost impossible conditions in the operational area.

Fortunately, however, there are mitigating circumstances. Distances between bases and the operational area are usually so great, and the patrols of such long duration, that a bad weather front may often have time to pass through the base area between take-off and landing, while in the operational area conditions may be suitable for the task in hand.

Again the operations of Coastal Command aircraft may often be possible in weather conditions which would completely rule out a bomber operation. In fact, on occasions such weather may provide just the conditions we want, as, for example, the low thick cloud which provides such valuable cover for anti-shipping strike forces when unprotected by fighter aircraft.

But the most cogent factor of all is the skill of the aircrews in bad weather flying and their willingness and, indeed, determination to operate in the most appalling conditions, if it is humanly possible to do so, so that the job gets done.

The result is that Coastal Command operations go on round the clock, day after day, and have done all through the war almost without intermission. Even if the weather does temporarily defeat us in one area, it is almost bound to be good enough in another. There is always something doing—night and day.

The Work of Air and Ground Crews

And here I would like to digress for one moment to speak of the courage and devotion of aircrews in the execution of their several tasks. To press home an attack on a well-defended U-Boat in a big cumbersome aircraft, flying straight and level at fifty feet above the sea, sometimes in pitch darkness, is a highly hazardous undertaking, as is also the attack of a heavily defended convoy of surface ships. Many gallant men have been lost and many an aircraft has returned in a condition barely fit to keep it in the air at all. Yet the air crews have never flinched. Be the target U-Boat or surface craft, they have continued to press home their attacks and in the event have proved their superiority.

They have been splendidly backed by the maintenance personnel on the ground, on whom we have made the heaviest demands, especially in recent months when the tempo of our operations has increased in common with those of all branches of our fighting forces. The problem of maintaining the required standard of serviceability of aircraft, especially in these lean days of shortage of man-power, is a formidable one and calls for much careful staff planning; but without the backbone of unremitting work by the maintenance crews, the planning would come to nought.

Conclusion

That is all I have time to say about the various operations of Coastal Command. I feel that I have touched only the fringe of the subject.

I have made only the barest passing reference to the activities of the Photographic Reconnaissance Group which, though it receives its operational orders direct from the Air Ministry, is part of Coastal Command, which is entirely responsible for its administration and training.

I have accorded the same treatment to the Air/Sea Rescue commitment, which we share with Fighter Command, and to the Meteorological Squadrons.

I have said nothing about the contribution of Bomber Command to the conduct of the war at sea in its many attacks on ships in harbour, on U-Boat building yards and operating bases, and on other related industries inside Germany; or about its extensive sea-mining operations which have proved such a damaging and effective hindrance to the enemy's movements at sea.

I have made no mention of Fighter Command's long acceptance of the responsibility for attacking shipping in the English Channel or of the assistance they have given in providing reconnaissance in this area.

I have said nothing about the endless battle of wits between ourselves and the enemy which has been so particularly noticeable in the realm of science; of the race between measure and counter-measure in the development of Radar devices; of the magnificent help we have received from the scientists of the Operational Research Sections of Coastal Command and the Admiralty in the analysis of every form of activity with which we are concerned.

Each one of these subjects would provide ample material for a lecture in itself.

I have thought it best to confine my remarks to those activities of Coastal Command which are directly concerned with the war at sea, because it is in this way that I have felt best able to illustrate the influence that air power now exerts over this vital sphere of the nation's war effort.

I have purposely avoided filling my lecture with figures and statistics, but these few are, I think, both interesting and significant.

Security requirements preclude me disclosing the numbers of U-Boats sunk and damaged by Coastal Command aircraft, but I can assure you that they amount to an impressive total.

In its anti-shipping role, the Command has, since March, 1941, sunk 105 ships, totalling 350,000 tons and has damaged some 260, totalling 830,000 tons.

All these were ships of over 500 tons, and so the figures do not include successes against such vessels as E- and R-Boats.

I think these figures are striking enough to show that Coastal Command is now an integral and essential element of the forces directly deployed in the conduct of the war at sea, and further that air power is now an integral factor in the control of sea communications.

And so we go forward in proud and equal partnership with the Royal Navy in the execution of this great task.

Aircraft Dinghy Drift Rate Curves

(These drift rates cancel diagrams given in Vol. III, No. 3, pp. 24–25.)

The curves show the drift rates—the dotted lines being assumed rates—with and without the standard drogues of fully inflated J, H, M, L and K dinghies in wind velocities corrected to 33 feet—the standard meteorological forecast height.

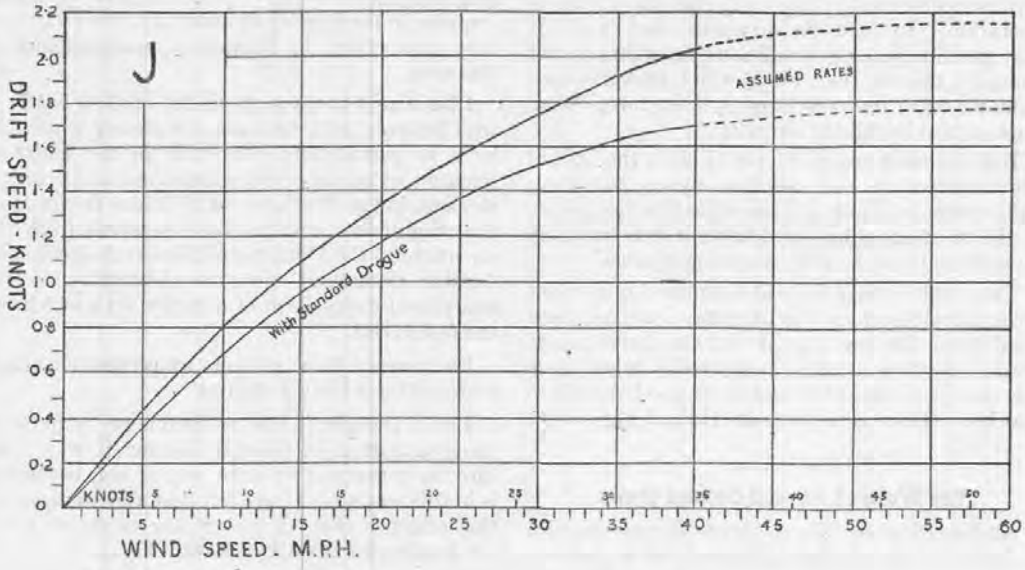
The curves are the mean of a great number of recordings taken in varying weather conditions with the normal crew in each dinghy. They are considered accurate within 10 per cent.

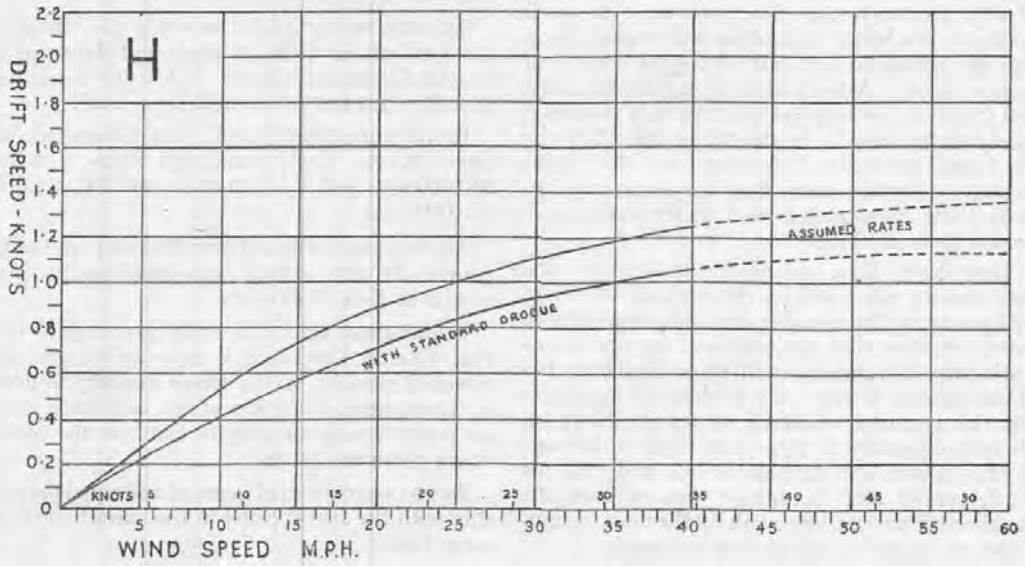
The drift rates of the J and H do not vary appreciably if fewer men are aboard, the H, for instance, drifting at the same rates when manned by five or two. However, the M with two men or one man, and the L with one man, drift slightly slower than their curve rates.

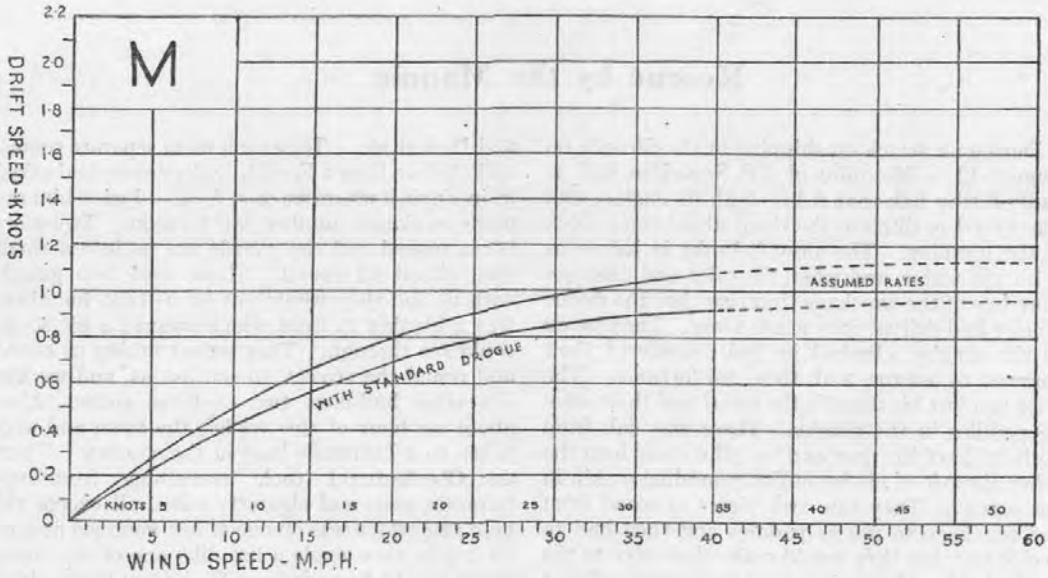
In open waters, given a moderate or heavy swell, drift rates should be reduced by 10 per cent. in wind velocities below 20 m.p.h. In the same conditions, in higher wind velocities, it is considered that the increase of speed produced by the scend of the crests discounts the reduction of speed in the troughs.

Deflation reduces drift rates, the percentage of reduction varying from 10 per cent., when the dinghies are slightly deflated, to 30 per cent. when they are considerably deflated.

These drifts are worked out for standard numbers of occupants in each type of dinghy. These are K one, L two, M three, H five and J six passengers.



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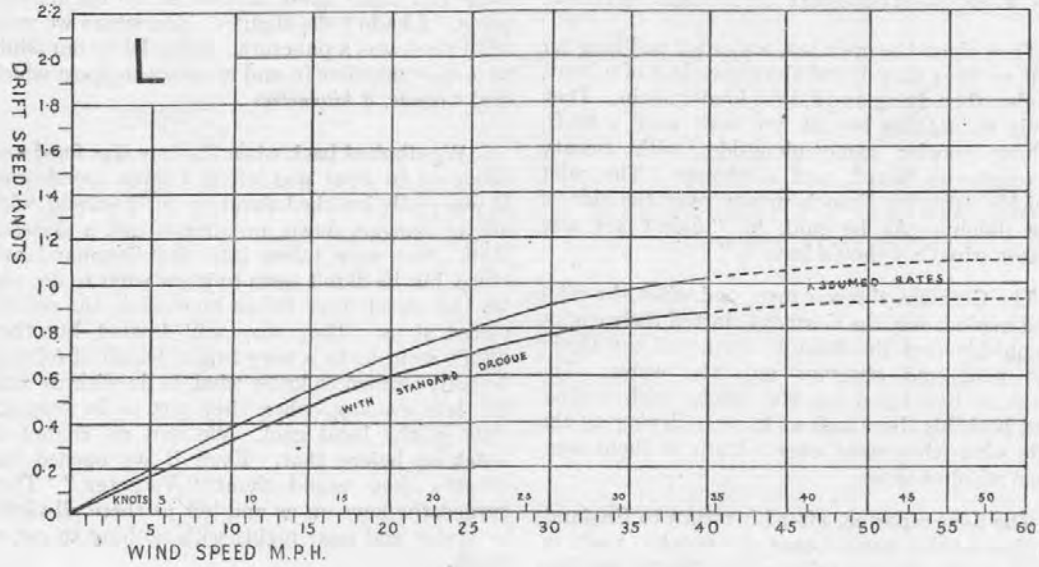
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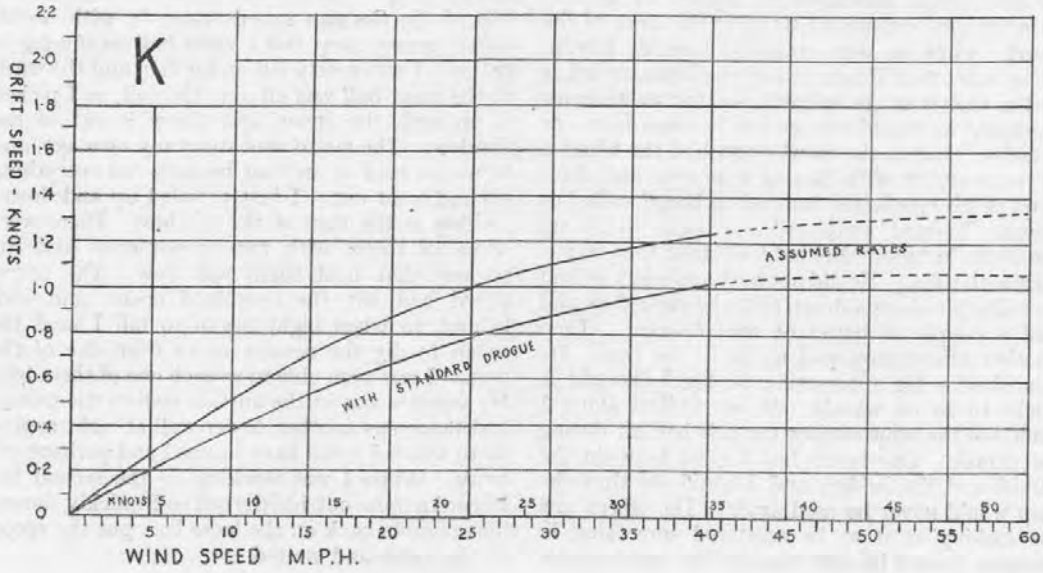

K
DRIFT SPEED - KNOTS
WITH STANDARD DROGUE
ASSUMED RATES
KNOTS
WIND SPEED M.P.H.

Rescue by the Maquis

During an attack on shipping in the Gironde on August 12, a Mosquito of 235 Squadron was so badly hit by flak that it lost both its engines and was forced to ditch in the river, about ten o'clock in the morning. The aircraft broke in halves as it hit the water, and when the pilot and observer were free of the wreckage they saw that the rescue dinghy had drifted fifty yards away. They swam to the dinghy, climbed in and considered their chances of escape and their misfortunes. The pilot had lost his shoes in the water and there were no paddles in the dinghy. There was flak from both banks of the river and the pilot could hear the other aircraft of his formation pounding a ship in the estuary. They tore two pieces of wood from the wreckage to use as paddles and then had to decide whether they would make their way to the south bank, where the wooded country offered shelter and possible escape, or paddle to the open sea, where one of our escort vessels might find them.

They chose the open sea, and after paddling for half an hour they heard the chug-chug of a boat, louder, then dying away, then louder again. They could do nothing but sit and wait until a 60-ft. fishing trawler came alongside, with twenty Germans on board, and a cannon. The pilot quickly sank his French money over the side of the dinghy. As he said, he "didn't see any reason why they should have it."

The Germans threw a rope, and when the pilot had made it fast the Germans started their engine so quickly that the dinghy overturned and threw the pilot and observer into the water. The observer had baled out the dinghy with a shoe, and both his shoes and socks were drying on the side when they went over. Both of them were then without shoes.

The pilot reported, after his return to England, "They hauled us on board the trawler, made us hold our hands up, took our Mae Wests and then our identity cards. When the aircraft crashed, I had bruised two of my finger nails. One of the German sailors bandaged my fingers for me and then we were ordered to stand at the stern of the trawler while we were steaming towards Royan. As we came near Royan two of the Germans led us to the shelter of the fo'castle so that as we came alongside we would not see any damage from our attacks. Just as the trawler touched the wharf a German officer, with blazing blue eyes and three stars on his epaulettes, jumped on board, called us 'Swine, bastard, gangster,' and began to thump me in the kidneys. Behind him stood four or five men with rifles. He did not hurt and when he had pounded me about a dozen times he packed up and had a couple of bangs at my observer. Then another officer motioned us on to the pier. He flourished a big automatic; so big I thought it ought to be on wheels. As we walked along I could see the minesweeper my pals had hit during the attack. One bomb had landed between the funnel and the bridge, and I could see that the ship would never be used again. The officer saw me looking at it so he muttered something in German, waved his gun towards the minesweeper and then at me. They took us to separate rooms, and after an hour a French civilian came and asked us in English where we were from. I gave him my name, rank and number, but no more. Two more hours passed and the guards put us into a small van, closed all round. There were two guards with us and they would not let us talk, but there was a blanket in front which swayed a bit so we could see through. They were running us round and round the streets, to confuse us, and we saw the same buildings two or three times. After about an hour of this we left the town and were taken to a Luftwaffe base in the country. There an Oberleutnant took everything from us; fountain pens and cigarette cases, all except the gold ring which was on one of my wounded fingers. Of course they made a list, like one of our stores chaps would have done. Then they let us sit in the sun to dry our clothes. In the afternoon the same van came again, and we set off for another place. I hadn't the slightest idea where we were until there was a puncture. They let us out while they were mending it, and we saw a signpost which said *Cognac, 8 kilometres.*

"We climbed back when the tyre was fixed and drove on to what was left of Cognac aerodrome. It was really knocked about by our bombing, with all the hangars down, no aircraft and a skeleton staff. We were taken into the Commandant's office, but he didn't seem to know what to do, and we just stood there for an hour while the officers stared at us. They were well dressed, but they didn't seem to be a very bright bunch of fellows. Nobody seemed to know what to do with us until the late evening, when they put us in separate cells in the local gaol. We had no chance of speaking before that. Even if we opened our mouths they would shout "Verboten." They turned the keys on us and left us there all night, next day and next night, with nothing to eat or drink.

"It was Saturday night, August 12, when they locked us up. On Monday afternoon, August 14, one of the German guards came in with bread, coffee, greasy soup and a meat ball swimming in gravy. I was pretty fed up by then and the smell of the meat ball was all over the cell, so I picked it up with the spoon and threw it out of the window. The guard was about my own age, and he was so mad at me that he gathered everything up and went out. I just prowled up and down, looking at the bars of the window. There were seven of them, with two cross-pieces, and the cement that held them was new. The angry guard had left the combined spoon and fork behind, so when night began to fall I used the spoon to dig the cement away from one of the bars. I was soon able to wrench one of them free. My window was in the outside wall of the prison, and there was another, lower wall at right angles, on to which I could have jumped and perhaps got away. While I was working on the second bar I heard a noise outside the cell so I quickly shoved the concrete back on the loose bar, put the spoon on the table and waited.

" The guard came in and led me out of the cell before I could finish my work on the window. If I had been able to remove the two bars I could have forced the others back. I joined my observer in the passage and they let us talk, for the first time. I asked him what he had been doing by himself. He said, ' Nothing,' but he grumbled because the mosquitoes had bitten him. He had been bitten all night. I'd put my battle dress top over my head to keep them away, but he had used his for a pillow. We were taken to three trucks, and a car in which two officers and two girls were sitting. There was a good deal of chattering, and I realised that they were talking about the Maquis and that they were frightened. We were pushed into one of the trucks and the procession set off for Bordeaux. We had one adventure on the way when we stopped for a puncture. A French chap on a push bicycle overtook us and as he passed the convoy he bowed politely and said, ' Bon Jour, Bon Jour ' ; but directly he had passed he jumped off his bicycle, whipped out a revolver and fired at the Germans in the front truck. Then he jumped on his bicycle again and made off, with the officers in the car following him. I do not know what happened, but one of the guards came to us afterwards, pointed in the direction of the cyclist, then to his stomach, and said, ' Kaput.'

" There was an Alert when we were outside Bordeaux, but we drove on to the Luftwaffe Headquarters. We were still walking without shoes and the officer there made signs to us, apparently asking us what size we took. I said eight and he said *acht*, and then we were marched to the Bordeaux gaol, where we were put into a cell with three other prisoners. One was a German seaman who spoke English. I don't know what he was in gaol for. He told us that we would soon be in a prisoner-of-war camp, but thank goodness he was wrong. The cell was seven feet square, and when I climbed on to my observer's shoulders I could see that we were four storey up and that there were six feet of solid concrete above us, without any foothold. There was no chance of escape, but every now and then a guard came in and tapped the bars with a piece of metal. Perhaps they had found out about the bar I had moved in the last cell and they were taking no chances.

" They let us out for half an hour to wash, and we met some of the other prisoners. There were ten Americans, a Canadian and an Englishman, who had been in France since last December. We were careful what we said.

" The guards seemed very restless and anxious. I suppose they were worrying whether they would be able to escape. We had hardly settled down when we were moved into a small cell on the top floor, with just enough room for both of us to lie down. We were there all one day, with bread and coffee in the morning, soup for dinner and more bread at night. We were allowed out for an hour then for some exercise and to talk with the other prisoners. Everybody was very cheerful, and we laughed when some of the Americans told us how they had pinched a fire engine in the north of France and travelled many miles in trying to escape. They had been shot down on a bombing raid. Others had pinched bicycles, but the Germans had got them before they travelled very far. Some had dared to get on trams although they could not speak a word of French or German.

" On Wednesday, the 16th, a Lancaster crew joined us, after being shot down during an evening raid on Bordeaux. There were so many of us then that the Germans had to put us into the prison chapel, where we were quite gay, talking our heads off, but being careful what we said. Next day when my observer was looking through the bars of one of the Chapel windows he saw two chaps from our station. We had to laugh, they looked so dejected, but they were brought into the chapel with us and we had a talk.

" The officer had not forgotten about our size *acht* shoes, and on the Wednesday morning they were brought in to us. It was just like home ; forms to sign in triplicate, bags of paper to sign.

" The chapel was used as a gaol for Germans also : Luftwaffe officers and Naval officers who had refused to go to sea. One of them spoke English. They talked of flying bombs, and said, ' London kaput ; Plymouth kaput.' But I said ' Flying bombs kaput,' and told them that our Spitfires were shooting them down before they could reach London. They would not believe me.

" Next day there was absolute panic. I could hear them saying ' Maquis ' every now and then as they packed boxes and suit cases. They were obviously frightened, and that afternoon the German prisoners were taken away and we were left alone.

" Then the Luftwaffe and the army fought about us. We had been the prisoners of the army up till then and the Luftwaffe claimed that we belonged to them. There were twenty-two of us left. Two of the Americans had already escaped two miles into Spain, but the Spaniards caught them and sent them back. Six other Americans had got to Bordeaux, where they met a Frenchman who hid them and promised to get them over the border. He let them hide for five days and then handed them over to the Gestapo.

" The Luftwaffe won us and took us away to Merignac aerodrome, which was the headquarters of the French Air Force. It was from here that the Germans controlled all the Ju.88's, Dornier 217's and Heinkel 177's with which we had been dealing in the Bay. But that was over. The headquarters had been well and truly plastered by the U.S. bombers and we were put in the only serviceable building. The Luftwaffe seemed quite friendly and they treated us well. We couldn't understand it. I suppose they knew their number was up, with our armies moving over the land, the Maquis advancing, so they thought it just as well to be kind. They took us to the hospital to sleep, and there we waited for three days while they demolished the runways and cookhouses, setting fire to everything before we moved on. We had one little trick that annoyed them. On the wall of the room there was a photograph of Hitler and one of Goering. When the guard came in he always found us standing in front of the photographs, staring at them without saying a word. They did not like that so one of them came in and took the photographs away.

" Then we moved again, at night, and 22 of us were packed into an open truck. A convoy of three thousand men moved out of that aerodrome in the most terrible trucks I have ever seen. Some had no tyres and travelled on the wheel rims ; all of them used charcoal because they had no petrol. The rain fell on us in that open truck, all night and next morning, and when daylight came we supposed we were being taken to Germany. But they were still quite kind and they gave us the same rations as their own men. All the time we knew the Maquis were coming nearer and nearer and we passed truck after truck blown off the road. Sometimes there were explosions. Then we arrived outside Chateau Neuf, but there was something wrong. Nobody told us what it was, but we stayed alongside the road for four days, beside a farm. The trucks were all cleverly camouflaged, with sods of earth piled against the wheels to make a grass bank. You couldn't see those trucks at twenty yards. Nine Spitfires flew over us on the second day, but they did not see us and nobody fired at them. But we were proud to see them. The Germans were a poor lot. They went into the woods and hid, and they put us in a barn when the Spitfires flew over. I wasn't impressed by what I saw of those Germans at all. There was one, a tall chap of about twenty-four. His name was Joseph Ludwig, and he came from Munich. When darkness was falling he would come to us, put his finger to his lips and whisper, " No Hitler."

" One of the others said he wanted to see England and learn to speak more English, so we told him, You'll learn plenty of English in one of our prisoner-of-war camps ; we have special classes for chaps like you. We laughed at that, but he didn't.

" Whenever the truck stopped on the way and we got out, the little man would hand one of us his rifle while he jumped out after us. When he was off duty he would come to us and drowse off to sleep with his rifle and bayonet at his side. We could have slit his throat, but it would have been foolish. The guard who gave us his rifle to hold was named Otto, and he was the only one not from bombed cities. They used the ones from the bombed places to guard us, hoping they would not be too kind, I suppose. The ones who weren't on guard got very drunk and they sang *Lilli Marlene* all the time.

" Then came the day when five of them took out a map and began jabbering very quickly. They told us of the landing of our troops in the south of France and what parts of the country we had taken. But they weren't bitter. At least, those who came near us weren't. Those who were bitter had to stay away at a distance, glowering at us and howling at us in German. I don't know what they said, but I don't suppose it was very nice.

" Some of them would come to us at dusk and talk, and they admitted that they had very little chance of getting back to Germany.

" Just about this time the rain and hardships got the better of some of the boys, and they had stomach trouble, dysentry and rashes. There was no medical officer with all the 3,000 Germans, so our four officers demanded medical attention for the prisoners. Having those officers with us pulled some weight with the C.O., and fourteen of the boys were sent to the civilian hospital in Angouleme.

" Then the Maquis attacked the camp. It was dusk and there was great shouting and yelling going on. There were bursts of gun fire all along the woods. We were put back in the barn and the door was locked. There was machine gun fire near the barn for a few minutes and we ducked down. We saw Otto through a chink, raising his rifle, then, thinking better of it, he just lowered it again and disappeared. We could hear the gun-fire and the grenades, but none came our way. The attack went on for about an hour, and next day we heard a rumour that the Germans were fighting their way out and that they intended leaving the sick ones behind. Of course, the rest of us went sick immediately. So they sent us off to the civilian hospital so that we were all together again.

" We hadn't been in that French hospital five minutes when the whole town knew. They came with flowers and wine and champagne, and they even smuggled a radio into our room, so that we heard an American dance band, then the English news. We heard that our soldiers had taken Rheims and that they were almost at Lyons. So we brought out a map and saw what a hole the Germans were in. There were 20,000 of them in that part of the country, and the gap through which they could escape was getting smaller all the time. Their chances were pretty hopeless.

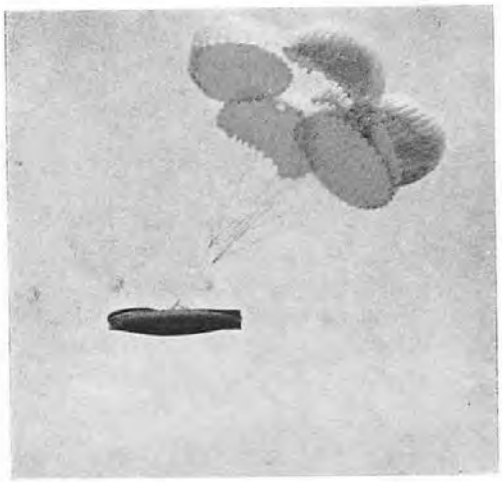
" We were in that hospital for two days and everybody in the town seemed to come to visit us.

" On the evening of August 31 we heard firing in the streets. The Maquis had arrived at Angouleme, and at three o'clock in the morning a Maquis officer came to our beds and said, ' You are free.'

" They made us get up and dress. ' This is no time to stay in bed,' they said, so we had to get up at three in the morning and join in the parade through the streets.

" On the evening of September 2 we met an American captain and a Canadian officer who had been dropped by parachute to help the Maquis. They told us to be at the hospital at seven o'clock that evening, and said, ' You're leaving by air for England.' That night we went to a small landing strip outside the town, and there were two Dakotas from England, full of supplies for the Maquis. We took off in the dark and landed in England on September 3, at five o'clock in the morning. It was the fifth anniversary of the war.

" There was only one sad bit after that. My observer had got a bottle of brandy in France and he had nursed it all the way, like a baby in his arms. After we arrived in London we went to the R.A.F. stores, and as we walked in he dropped the bottle of brandy on the road and broke it. I shall never forget the expression on his face."



Five photographs illustrating the dropping of an airborne lifeboat.

Above. The parachutes begin to open.

Parachutes opened completely and the boat has assumed correct bows down attitude. The fore and aft inflation chambers beginning to inflate.

Inflation chambers fully inflated and the boat ready to hit the water.

The boat striking the water, bows first, with the parachutes collapsing and releasing.

The airborne lifeboat under way, with mainsail set.

Above. The remains of the *Seetier* class destroyer on the Ile de Batz (*see* letterpress, p. 25).

Below. An exit hole 18 in. by 12 in. made by a solid-headed R.P. in the side of an "M" class minesweeper, 5 ft. below the water line. The minesweeper had been attacked by aircraft from 236 Squadron and 404 (R.C.A.F.) Squadrons on August 8.

Above. Result of attacks by 248 and 235 Squadrons on an "M" class minesweeper on August 25. A hit had been made with a 500-lb. M.C. bomb.

Below. Two R.P. hits in the side plating of a minesweeper. On the right can be seen damage caused by H.E. 20-mm. cannon shells. These attacks were made by 236 Squadron and 404 (R.C.A.F.) Squadron on August 8.

Inquest on Sunken Ships in French Ports

Towards the end of October, two members of the staff of Headquarters, Coastal Command, accompanied by a Naval Construction expert, spent a fortnight in France, examining vessels damaged or sunk by air attack. Of the many ships sunk few were easy to examine. It was necessary that they should be lying in fairly shallow water protected from heavy seas, with a reasonable tide so that when it was low most of the ship would be exposed. In places like Le Havre and Brest the general bombing was so terrific that it was difficult to decide exactly what hit what. There was a small party in St. Malo examining the ground bombing so it was decided to use their headquarters. The nearest available aerodrome was at Granville, about 50 miles away. When the party got there they found that the only normal attribute the aerodrome possessed was a windsock. It also possessed several abnormal additions in the shape of cows and sheep. After trying to remove the cows by beating them up and then finding out that they were tethered, a safe landing was made in a stiff cross-wind. The party arrived in St. Malo in a jeep which was borrowed, with driver, from the local American unit.

St. Malo itself has not been greatly damaged by bombing although the old town was completely burned out just before the final surrender. The Germans demolished the dock gates enough to put the port out of action for traffic of any size. A large number of vessels were scuttled there, some very ingeniously. Ships in St. Malo included the *Minotaur*, originally a passenger tender in Le Havre. Almost all her bows were blown off by a torpedo, yet she had got into St. Malo and was afterwards moved out and beached the other side of the river. Another ship of the same type, *La France*, had been used as a troopship between St. Malo and the Channel Islands. Towards the end of June she was putting out of harbour when she was attacked by a Typhoon which fired solid-headed rockets. The angle of dive was very steep (35°) and although the whole salvo hit above water on the entry side, they went through the ship and made probably six underwater holes on the exit side. All the traceable rockets went right through the ship. She immediately put back to her berth and sank within 20 minutes. The troops had apparently abandoned most of their equipment in the rush.

Although it was quite clear on examination that *La France* had been sunk by rockets, it was surprising how few of the people who actually saw the attack realized what weapon had been used. The usual description was "little torpedoes" although the harbour master seemed to believe that she had been hit by a bomb. It was fortunate that *La France* was the first ship to be examined. The method of attack on her was obvious but the accounts given by the natives were rather vague. This was a warning and when further vessels were examined by the party, without knowing the true facts, they guarded themselves from being misled by local theories. In some cases a very detailed story would be told, and when the narrators were questioned, their version would be proved wrong in relation to the known facts.

Two long trips were made from St. Malo, one along the Brest peninsula, the other south of Nantes. The first led to the Ile de Batz on which was a beached Seetier class destroyer. The word "was" is used wisely. The ship now resembles a scrap-iron yard (*see* plate 8). She had been more or less intact until the heavy sea broke her up about a month before the party arrived. The visit was therefore of little value except that it was possible to learn a few details of the construction. The visit was enlivened by small boys playing on the reef. Their great joy was to light the cordite in the shell cases which, if correctly placed, shot into the air like rockets, to the danger of all around. The members of the party were surprised by being spoken to in English, by all and sundry. Many of these natives made regular journeys to England during the summers before the war to sell their onions. Further along the coast, at Abervrach, was an "M" class minesweeper attacked by Typhoons after a naval action in February. She was fairly badly damaged but it was impossible to say whether by bombs or scuttling charges. The locals supplied the second theory. Then a day was spent in the ruined city of Brest, examining the damage to U-Boat pens. Apart from a few holes in the roof the pens are intact, although they are full of debris, motor lorries, tyres, shells, timber and small ships.

The interesting trip from Coastal's point of view was to Fromentine. This meant carefully skirting the German positions in St. Nazaire and Lorient, crossing the Loire by the only available bridge, and hoping for the best in the country to the south, now controlled by the Free French. As it happened, only the best was good enough. The staff of the hotel in Challons were very hospitable and sorry to see the English party leave. They were the first allies these Frenchmen had seen.

The ships examined were four "M" class minesweepers sunk with R.P. by **404 (R.C.A.F.) and 236 Squadrons** on August 8. The locals were highly delighted. It was "tres bon travail" on all sides. It seems that the ships had just come in on the morning of the 8th, to evade an Allied naval force. They intended leaving again in the evening, but at 6 p.m., the Beaufighters arrived and sank the lot. All was over inside 15 minutes —the Germans losing 100 men. Again on August 25, the two ships which were on the bottom but still upright, were attacked by **248 and 235 Squadrons** with bombs, 6-pounder and 20-mm. One of the ships was hit by four bombs and the other by three six-pounder shells. The latter had been so peppered about the bridge with small armament that she required considerable repairs. The wireless had been completely wrecked. The attack on the bridge was remarkably concentrated but the bow and stern were barely hit at all. As the surrounds to the gun positions were made of wood there was no protection for the gunners.

The ship which had been bombed was in a very bad state. Her bow was blown off and she had a big hole amidships, with only about four feet of deck left on the starboard side. Only four rocket hits could be seen, all dry. Again, those that

could be traced had gone right through the ship. There were not many underwater hits on the other two ships, which were capsized. Only the exit holes could be seen, but they were very big ; up to 18 inches by 12 inches. One ship showed only one underwater exit hole and the other two. The party collected the flotilla insignia, a swordfish, from one of the ships. The French also gave them a small silken pennant.

Next day the party drove 170 miles back to St. Malo and the day after, 240 miles to Paris in the pouring rain. Most of this was along the famous " Red Ball Route " by which all American supplies used to pass from Cherbourg to the front. Then by air to England.

Sharks : A Letter to the Editor

A Commander in the Royal Navy writes :—

I read the article on sharks in the *Coastal Command Review*, Vol. 3, No. 8, with lively interest and would like to add my own experience of a shark kill in the Red Sea. This was in 1926 when I was serving in H.M.S. *Cornflower*. While at anchor off Jeddah we had a line over the stern, to tempt two twelve-foot sharks which cautiously investigated the bait.

After the usual delay one of them took the bait, so we hauled him in near the starboard gangway and finished him off with a service rifle.

There was a good deal of blood in the water, beside the starboard gangway, where two Somali seamen were sitting in a skiff.

The second shark, which had been cruising on the starboard quarter, altered course 70° to port and approached the starboard gangway. The Somali sailors took a poor view of this but before they could shove off, the shark turned on its side, seized the rudder of the skiff in its jaws, shaking it and unshipping it. It then let go and sheered off. So did the skiff.

The blood in the water had apparently roused the shark's temper. It returned to the attack and grasped the iron stay supporting the bottom platform of the gangway, under water.

We ended his life by shooting him from the quarter deck.

(C54119) 1,500 12/44