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A.C.B. 0233/44 (8)

SOUTH-WEST PACIFIC

ANTI-SUBMARINE REPORT

AUGUST, 1944

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SOUTH - WEST PACIFIC
ANTI-SUBMARINE REPORT
OPEN
AUGUST, 1944

ANTI-SUBMARINE
WARFARE DIVISION,
NAVY OFFICE,
MELBOURNE

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S E C R E T

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ANTI-SUBMARINE
WARFARE DIVISION,
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SOUTH - WEST PACIFIC

ANTI-SUBMARINE REPORT

AUGUST, 1944

ANTI-SUBMARINE
WEAPONS DIVISION
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SECTION I

COUNTERMEASURES

1. REVIEW FOR JULY.

Apart from two sightings off New Ireland and two off New Hanover, Japanese submarine activity during the first half of the month was confined to the North West New Guinea area where six sightings were reported probably all on submarines evacuating troops from Biak Island.

On July 14, Commander 7th Fleet estimated that there were no Japanese submarines in the area south of 5° North and between 130° East and 155° East.

There were other sightings later in the month in the area north of Noemfoor Island but these were possibly all on the same submarine engaged in the evacuation of troops.

2. OPPORTUNITIES AND RESULTS.

A statistical summary published in the Admiralty Anti-Submarine Report shows how far during a period of 15 months, advantage was taken of opportunities for killing U-boats.

These tables have been divided so as to show for each quarter of 1943 and the first quarter of 1944 the results obtained by British controlled units in relation to the opportunities presented. These figures only include actual attacks completed by submarines and aircraft and anti-submarine hunts by surface vessels.

They show almost continuous improvement in the percentage of successful attacks by warships. The tailing off of the success by aircraft may be attributable to an improvement in the air warning devices now being installed in U-boats.

JANUARY - MARCH, 1943

	Ships	Shore Based Aircraft	Carrier Borne Aircraft	Combined ship and		Submarine	Total
				Shore Based Aircraft	Carrier Borne Aircraft		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Sunk & Probably Sunk	12	10	-	3	-	2	27
Damaged	23	26	-	-	-	-	49
U-boat Escaped Undamaged	89	110	-	1	-	-	200
Total No. of Attacks	124	146	-	4	-	2	276
Percentage Probably Lethal	9.7	6.9	-	75	-	100	9.8

APRIL - JUNE, 1943

Sunk & Probably Sunk	18	34	1	2	2	4	61
Damaged	12	35	-	-	-	-	47
U-boat Escaped Undamaged	88	212	7	-	1	3	311
Total No. of Attacks	118	281	8	2	3	7	419
Percentage Probably Lethal	15.3	12.1	12.5	100	66.6	57.1	14.6

JULY - SEPTEMBER, 1943

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Sunk & Probably Sunk		13	30	-	-	-	3	46
Damaged		12	19	-	-	-	1	32
U-boat Escaped Undamaged		38	60	-	-	-	6	104
Total No. of Attacks		63	109	-	-	-	10	182
Percentage Probably Lethal		20.6	27.5	-	-	-	30	25.3

OCTOBER - DECEMBER, 1943

Sunk & Probably Sunk	12	18	-	2	-	1	33
Damaged	11	13	-	-	-	1	25
U-boat Escaped Undamaged	47	43	2	-	-	1	93
Total No. of Attacks	70	74	2	2	-	3	151
Percentage Probably Lethal	17.1	24.3	0	100	-	33.3	21.8

JANUARY - MARCH, 1944

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Sunk & Probably Sunk	19	10	3	2	2	1	37
Damaged	8	20	2	1	-	-	31
U-boat Escaped Undamaged	51	52	10	1	3	4	121
Total No. of Attacks	78	82	15	4	5	5	189
Percentage probably Lethal	24.3	12.2	20	50	40	20	19.6

3. OUTSTANDING RESULTS ACHIEVED WITH THE HEDGEHOG.

During the period May 6, 1943 to April 6, 1944 an Escort Group in the Western Approaches carried out 12 Hedgehog attacks on seven U-boats, resulting in four U-boats being destroyed.

This shows what can be achieved over a prolonged period of operation by a Group, the Senior Officer of which believes in the Hedgehog as a precision weapon and encourages his Group to use it.

SECTION IICONVOYS1. ANALYSIS OF CONVOYS - JUNE, JULY, 1944.

AREA	No. of Ships		Tonnage	
	June	July	June	July
Thursday Island - Darwin	12	15	46,696	74,545
New Guinea Area	163	228	1,087,146	1,276,583
Total	175	243	1,133,842	1,351,128

2. SINGLE ESCORTED SHIPS.

AREA	No. of Ships		Tonnage	
	June	July	June	July
New Guinea Area	99	55	666,320	397,498
Arafura Sea	14	4	49,823	11,207
Total	113	59	716,143	408,705

3. INDEPENDENT VESSELS, AUSTRALIA AND NEW GUINEA.

AREA	No. of Ships		Tonnage	
	June	July	June	July
Eastern States - Western States	47	40	304,064	279,098
Melbourne - South Australia	80	96	358,069	420,707
Newcastle - Melbourne	173	181	729,124	751,438
Brisbane - Sydney	130	118	599,069	581,037
Barrier Reef - Brisbane	76	69	282,548	273,495
Coral Sea and New Guinea	439	535	2,693,967	3,379,434
Arafura Sea	2	2	5,078	4,362
Total	947	1041	4,571,919	5,689,571

4. MONTHLY OUTWARD GROSS TONNAGE - JULY, 1944.

PORT	No. of Ships	Tonnage
Langemak	311	1,924,485
Milne Bay	239	1,572,302
Sydney	306	899,493
Humbolt Bay	141	799,429

MONTHLY OUTWARD GROSS TONNAGE - JULY, 1944 (CONTD.)

PORT	No. of Ships	Tonnage
Oro Bay	97	643,676
Melbourne	135	579,771
Fremantle	69	516,443
Newcastle	226	512,980
Morobe	71	505,469
Brisbane	83	403,438
Townsville	72	301,438
Adelaide	43	229,777
Lae	38	221,488
Seeadler	45	196,885
Cairns	56	132,275
Biak	20	119,675
Thursday Island	38	119,393
Port Moresby	25	114,923
Whyalla	26	114,381
Port Kembla	37	113,366
Darwin	11	51,715
Hobart	13	46,731

SECTION III

NARRATIVES1. OPERATION "NEPTUNE" - ANTI-U-BOAT OPERATIONS.

The following preliminary report on anti-U-boat operations in the invasion area up till 21st June was published in the Admiralty Anti-Submarine Report for May.

It had long been appreciated that the U-boat threat was potentially a very serious one. The size of the U-boat fleet is still such that a mass attack in the Channel on "D-day" might, in theory at least, have saturated the defence and so inflicted grave losses on our convoys during the critical first fortnight. In the event, this has not happened, the U-boats having been entirely unsuccessful in such attempts as they have made to get in to attack our shipping in the Channel. Up to "D+16 Day," it seems most improbable that any of the comparatively few casualties caused by enemy action to our shipping in the Channel can be attributed to U-boats. The only successes definitely to their credit so far are two escort vessels, H.M.S. "MOURNE" and H.M.S. "BLACKWOOD". These two ships were torpedoed and sunk, probably by "Gnats," on 15th June. Both U-boats were hunted.

There is no doubt that a considerable exodus of U-boats from the French coast ports began on "D-day" as soon as the enemy woke up to the fact that the operation had really started. By no means all of these, however, appear to have made any attempt to go up the Channel; present estimates are that about ten have actually entered it. It may be that the remainder have been sent to patrol positions to counter possible landing threats in other areas, and a number of sightings and attacks by aircraft off the west coast of France tends to confirm this view. Several "Schnorchel" have been reported by aircraft operating in the channel.

By 6th June ten escort groups, totalling thirty-seven frigates, fourteen destroyers and three sloops, were ready to block the Western Approaches of the Channel. They were supported by three Escort Carriers which were there chiefly to provide fighter

support to escorts operating close inshore. The enemy air threat proved, however, to be so slight that these carriers were withdrawn on 11th June, their escort returning consequently as reinforcements to the Channel Area. As well as this, the Coastal Command plan for A.S.V. flooding of the Channel to the west of the Assault Area, its Western Approaches and the Bay area was put into operation by 19 Group, and intensive flying has been carried out ever since.

At the start of the operation the area to the west and south of the Scilly Isles was covered by six Western Approaches Groups, the remaining four, under the Command of C.-in-C. Plymouth, carrying out "Gamma" patrols in the Western Channel, aimed at intercepting any U-boats attempting to proceed towards the Assault Area. On 12th June two more groups, the 2nd and 5th, were released by C.-in-C., Western Approaches to reinforce those being operated under the Plymouth Command, and finally, on 19th June, the whole force was moved into the Channel, the 11th Group being turned over to C.-in-C., Portsmouth to provide, in conjunction with other destroyers obtained from local resources, close support to the westward of the "Spout" itself.

These dispositions of our Anti-U-boat forces are, of course, independent of, and in addition to, the escorts and aircraft provided for close escort duties with the convoys running to and from France.

So far, this U-boat battle has gone overwhelmingly in our favour. The continuous patrolling by Coastal Command has been particularly successful.

Provisional assessments of the attacks made in the Bay area and the Western Channel and its approaches indicate that two U-boats have definitely been sunk, and that three have probably been accounted for in the Northern transit area and a fourth probably sunk. These U-boats were thought to have been on their way to the Atlantic, and it is not unreasonable to suppose that they were intended for Channel operations. Apart from this, many other air attacks have been made on the U-boats and a number of these will undoubtedly prove to have been damaging when fully assessed.

The activities of the Support Groups, though less spectacular, have played their part in keeping the enemy from his objectives. A U-boat was sunk by a Hedgehog attack by H.M.S. "FAME" on 18th June about 12 miles from the French coast. The group was shelled by enemy shore batteries during the action but completed the hunt behind a smoke screen laid by H.M.S. "HOTSPUR". Two other U-boats may possibly have been sunk by surface escorts, one by H.M.S. "HIND", on convoy escort duty, off Start Point, and

and the other by the Third Escort Group. Other attacks have been made but, in general Asdic conditions have varied a good deal and the number of wrecks in the Channel has further complicated the problem of U-boat detection.

OPERATIONS FOR REMAINDER OF JUNE

There were no further U-boat successes during the last 10 days of the month. About 100 attacks on U-boats developed during the month in the Invasion Area and of these 11 have so far been graded "known sunk" or "probably sunk". Against this the U-boats were probably concerned in the sinking of two frigates but did not sink a single merchant ship in the area.

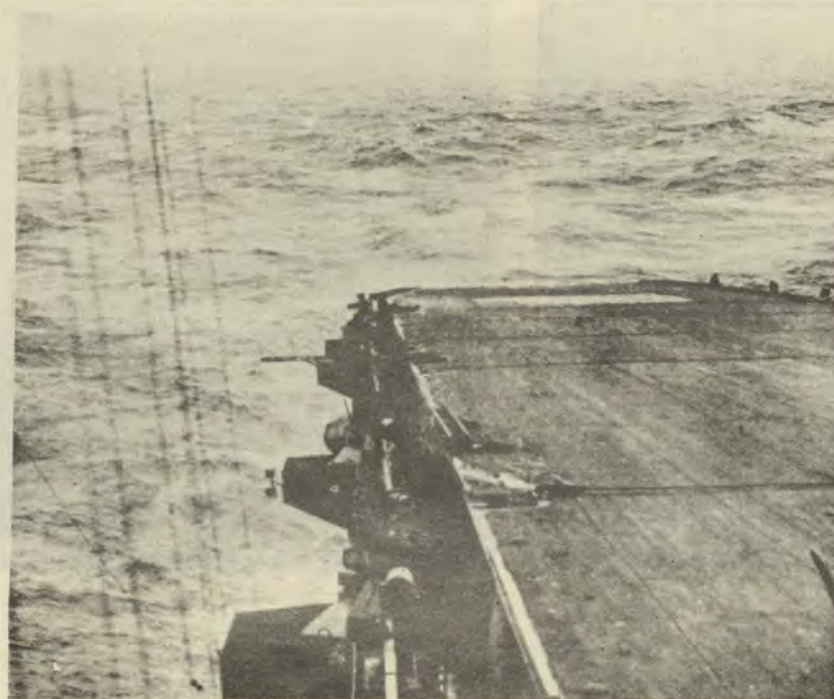
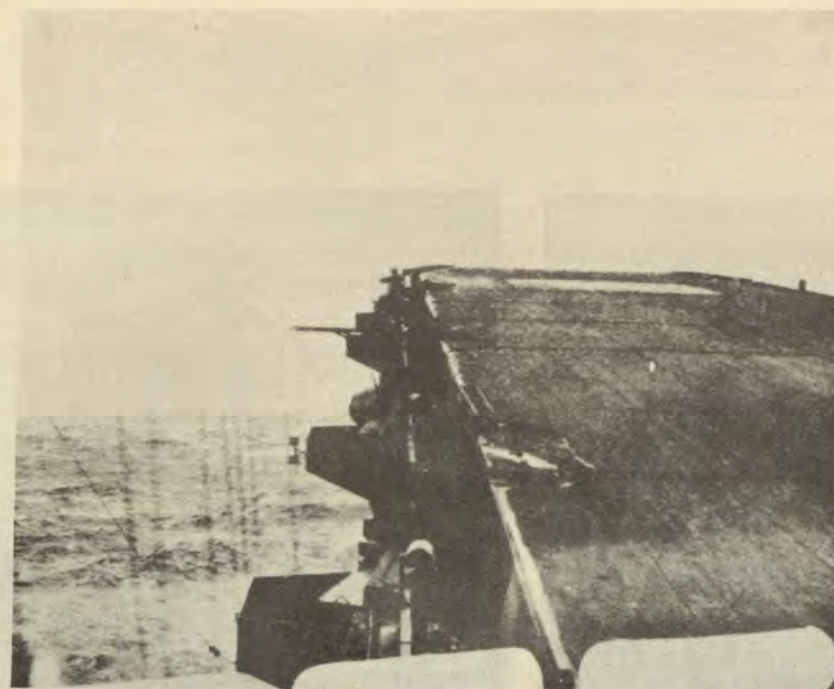
2. FLEET AIR ARM SUCCESSES DURING MAY.

For the third month in succession Fleet Air Arm aircraft achieved the probable destruction of three U-boats during the passage of a North Russian convoy - R.A. 59, which sailed from Kola Inlet on 29th April. The escorting carriers were H.M. Ships "ACTIVITY" and "FENCER".

During the passage of the convoy, their aircraft carried out 62 sorties, totalling 150 hours, and made 15 sightings. On "FENCER" fell nearly the whole burden of protecting the convoy against U-boats. The wind was always astern, snowstorms were frequent, and the sea was at times uncomfortably rough, yet "FENCER" for 72 hours, with only one break towards the end, flew off her anti-submarine patrols and striking forces night and day without mishap. At the end all except one of her 11 Swordfish were serviceable.

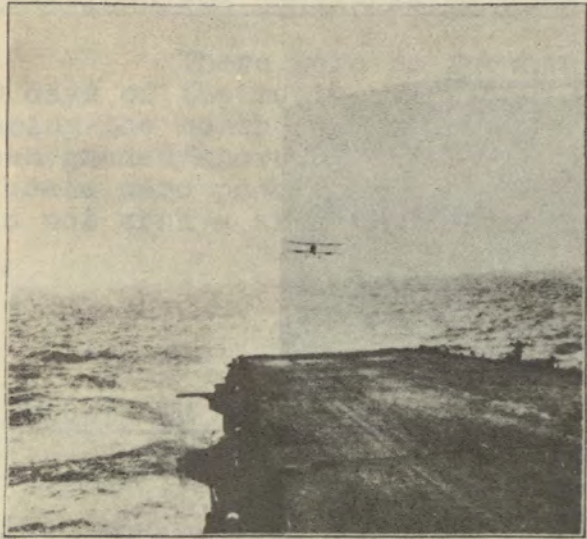
The dense snowstorms which occurred made conditions very difficult. At 1930 on 29th April the carriers entered one which lasted for over two hours; when it was over it took "ACTIVITY" three hours to clear the snow which lay six inches deep on her deck. At about 2000/30 the U-boats attacked and torpedoed one merchantman and the maximum air effort was then called for, it being decided that "FENCER" should carry out all anti-submarine patrols and that "ACTIVITY" should provide stand-by fighters and strikes.

In the event the kills were made by the patrolling aircraft, two within a few hours early on the 1st and one during the



An Escort Carrier Pitching in a High Sea

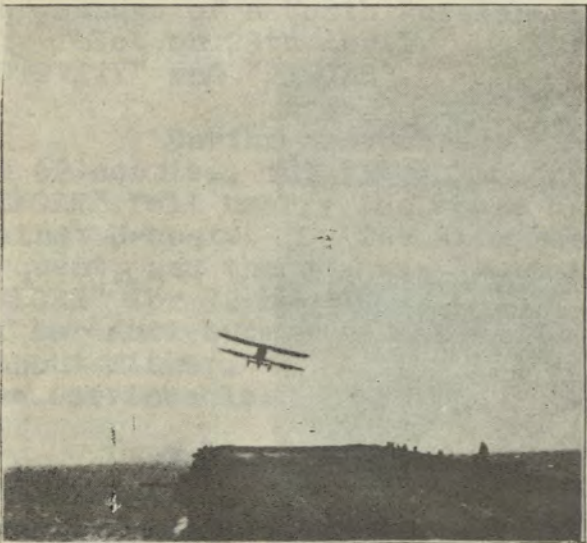
I



II



III



IV



Landing on an Escort Carrier

afternoon of 25/11/44, the 44th Transport Group, Royal Air Force, was transferred to the escort carrier, USS... The aircraft were kept on deck until the carrier was at sea, when they were taken to the flight deck. The aircraft were then taken to the flight deck and were then taken to the flight deck.

The aircraft were then taken to the flight deck and were then taken to the flight deck. The aircraft were then taken to the flight deck and were then taken to the flight deck. The aircraft were then taken to the flight deck and were then taken to the flight deck.



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Landing on an Escort Carrier

afternoon of the following day. The U-boats destroyed on the 1st both kept on the surface for some time after being sighted, but the shadowing aircraft were each keeping so keen a lookout that they were able to close and effectively drop their depth-charges ahead of the swirl. The second aircraft saw the U-boat dive simultaneously with sighting the strike approaching from "ACTIVITY".

The U-boat which was sunk on the following day was attacked immediately on being sighted. Three depth-charges straddled abaft the conning-tower and the U-boat gradually slowed down and began to sink by the stern. It went down until 20 ft. of its bows were standing clear of the water and when, after 45 seconds, this disappeared, air bubbles rose to the surface for about a minute.

By this time the snowstorms had ceased but the sea had got up and the illustrations show the difficulty the planes must have experienced when returning to the carriers.

3. GERMAN U-BOAT SUNK AFTER 75 HOUR HUNT.

At about 0408 on 14th May, 1944, U.S.S. "BIBB", patrolling 4,000 yards ahead of convoy GUS-39 off Oran, picked up an Asdic contact at 800 yards and carried out a counter attack. A quarter of an hour later, a German U-boat ("U-616") surfaced alongside ship number 101 in the convoy but gunfire compelled it to submerge again. A few minutes later two ships, numbers 84 and 102, were torpedoed forward. Neither sank and both made port under their own power.

U.S.S. "VANCE", "HILARY P. JONES", "BOSTWICK" and "BRONSTEIN" commenced a search for the U-boat but were sidetracked by what appears to have been a dummy periscope. During the forenoon a box search was carried out followed by a diagonal sweep. At 1224 U.S.S. "ELLYSON", "RODMAN", "HAMBLETON" and "EMMONS" arrived to relieve the convoy escorts.

At 1235 "VANCE" obtained an Asdic contact on the dummy periscope and fired a Hedgehog pattern. It is thought that the contact was obtained on some underwater object attached to the dummy periscope. U.S.S. "GLEAVES", "NIELDS" and "MACOMB" now joined the search and a box search was continued until about 0148 on 15th May when a Coastal Command aircraft attacked "U-616" with depth bombs. The U-boat immediately dived and the destroyers hastened to the scene, Ellyson obtaining contact soon after arriving. After a shallow attack Ellyson lost contact but a strong smell of diesel fuel was still noticeable in the area next morning.

During the night of 15/16th May, "U-616" made two attempts to surface but was forced down by aircraft almost immediately on each occasion.

At about 2220 on the third night of the hunt, "U-616" again attempted to surface but was once more detected by aircraft. While the destroyers were proceeding at speed to the position, the U-boat released four radar decoy balloons which were reported to be quite effective.

About midnight, the submarine was surprised on the surface when "MACOMB" illuminated and engaged it with gunfire at a range of 2,400 yards. The U-boat replied with machine guns but submerged when "MACOMB" fired six rounds of 5-inch. Several attacks were now made but contact was lost after an attack which commenced at 0233 and a box search was begun.

Contact was regained by "HAMBLETON" at daylight (about 0715) and two attacks were carried out. "ELLYSON" then came in to conduct a creeping attack but contact was lost before the charges could be dropped.

The predicament of "U-616" was now growing desperate. Testimony from prisoners of war indicates that during the past three days "U-616" had been on the surface only for an estimated three hours. The depth charging had caused progressive damage and batteries were exhausted. The Commanding Officer considered the situation hopeless and made the decision to scuttle and abandon ship. "U-616" surfaced at 0808 on 17th May and was sunk by combined gunfire from destroyers in the vicinity. Fifty-three survivors were recovered.

DETAILS OF "U-616"

"U-616", a type VII C boat (517 tons), began her series of nine patrols on 6th February, 1943. The Commanding Officer, 26 years old, was regarded as one of the three most competent Captains in the Mediterranean area where he operated for about one year of the U-boat's history.

The final patrol of "U-616" began on 3rd May after two false starts which forced her return to Toulon for minor adjustments. She usually proceeded at cruising speed on the surface for about four hours of every 24, survivors said.

"U-616" was armed with one quadruple mount 20 mm. gun and two twin mount 20 mm. guns. She was fitted with four bow and one stern tubes and carried 12 torpedoes on her last patrol. She was not equipped with radar, Schnorchel, or Radar decoy spar buoys, but was said to be fitted with Naxos German Search Receiver, radar decoy balloons and multi-unit hydrophones.

4. U.S.-BRITISH-FRENCH SHIPS SINK U-371 OFF ALGERIA.

During the night of 2nd/3rd May, "U-371" was patrolling off Bougie and received information of an approaching west-bound convoy. When about to surface to charge batteries, she heard the convoy overhead and decided to allow it to pass with the intention of overtaking it later.

At about 0025 on 3rd May, U.S.S. "MENGENS" was patrolling at 12 knots 3,000 yards astern of the convoy and obtained radar contact about 12,000 yards astern. At 0045 "MENGENS" was directed to investigate the contact. She increased speed, headed for the contact, using zig-zag approach, and streamed her F.X.R. gear. "U-371" reversed course at about 0059, the Commanding Officer realizing that the U-boat had probably been picked up by radar. When the range had decreased to about 3,100 yards, "U-371" submerged at 0112 and fired an acoustic torpedo which struck "MENGENS" aft. "MENGENS" was doing 15 knots at the time and had two sets of F.X.R. gear streamed, one on each quarter. The American gear is not fitted with paravanes and only one set should be towed at a time. It is probable that the two sets became fouled during radical manoeuvres while approaching the U-boat.

After firing the torpedo, "U-371" dived to 650 feet. U.S.S. "PRIDE" and "JOSEPH E. CAMPBELL" were detached to assist "MENGENS" and carried out a series of attacks including creeping attacks until 0832 when the U-boat was so close inshore that the echo was merging with bottom reverberations. Survivors stated that, as the attack developed, the submarine starboard propeller shaft was thrown out of line and the armature on the starboard motor ran excessively hot. "U-371" proceeded on one motor until an attack developed and then turned sharply to port or starboard with both motors running. After the final attack the U-boat bottomed at 650 feet.

During the forenoon of 3rd May, H.M.S. "BLANKNEY", U.S.S. "SUSTAIN" and the French ships "ALYCON" and "SENEGALAIS" joined the hunt and further attacks were carried out during the afternoon.

At about 0300 on 4th May, the air in the submarine was so bad that it was decided the sole chance of escape lay in surfacing while still dark and getting away on diesels at high speed. The stern torpedo tube was loaded with a T-5 and the U-boat surfaced at about 0315 with batteries almost exhausted, heading for open water.

The Commanding Officer of "U-371" soon realized that escape was impossible through the ring of hunting ships. "SENEGALAIS" illuminated the U-boat with starshell and opened fire with the



Stern View of U.S.S. "MENGES" torpedoed by "U-371"

main battery. The U-boat captain then gave the order to abandon ship. Some of the crew were already in the water when "U-371" fired her remaining acoustic torpedo which hit "SENEGALAIS" aft. "BLANKNEY" and "SUSTAIN", not realizing that the U-boat had been abandoned, continued attacking with depth charges until survivors were sighted in the water. A total of 49 survivors were taken.

Details of "U-371"

The "U-371", at the time of her sinking, was commanded by one of the most successful submarine captains in the Mediterranean. Only 25 years old, he was credited with about 70,000 tons of shipping, although it is believed that he actually accounted for only half that figure. He had previously commanded "U-410" for five patrols, but transferred practically his entire crew to the veteran Mediterranean boat, "U-371", when "U-410" was seriously damaged in an air raid on Toulon early in March, 1944.

"U-371" is believed to have been commissioned in the spring of 1941 and was one of the earliest U-boats in the Mediterranean, said to have made about 17 patrols during her career. She carried one 37 mm. gun and two twin mount 20 mm. guns. She had four bow and one stern tubes, and carried 12 torpedoes on her last patrol. She was fitted with GSR Naxos, and probably with Wanz and Borkum. She carried Thetis anti-radar buoys, but they were said not to have been used on the final patrol. She also carried R.D.B. (Radar Decoy Balloons). Schnorchel and radar were not fitted.

(The narratives of the sinkings of "U-616" and "U-371" were condensed from the reports of the actions in the United States Anti-Submarine Bulletin).

5. FLEET AIR ARM "KILL" IN NORTH RUSSIAN CONVOY.

H.M. Ships "ACTIVITY" and "TRACKER" were with convoy J.W. 58 from the 27th March to 4th April and with the westbound R.A. 58 from the 7th to the 15th. The homeward passage was much the quieter. "ACTIVITY" carried seven Wildcat fighters and three Swordfish II, fitted with A.S.V.X., while "TRACKER" had a full complement of American-built aircraft, carrying 12 Avengers and seven Wildcats. The day before the eastbound convoy arrived at Vaegna Bay the aircraft, adopting methods which have been used with such success by aircraft from C.V.E's of the United States Navy, carried out a model attack which resulted in the destruction of a U-boat.



Photograph taken during successful attack on 3rd April, 1944.

At 0315 on the 3rd April, "ACTIVITY" flew off a Swordfish armed with R.Ps. (Rocket Projectiles), having instructed "TRACKER" to keep a strike at immediate readiness from 0400. At 0435 the Swordfish sighted and reported a suspicious object which disappeared without leaving a swirl and, having dropped a marker, carried out baiting tactics for half an hour. Nothing was seen and the aircraft continued its patrol until 0500. Just before starting back for the carrier, the Swordfish returned to the marker and was rewarded by sighting a U-boat in the act of surfacing about six miles on its starboard beam. This was reported and, while the Swordfish was closing, a strike, consisting of one Avenger and one Wildcat, was flown off from "TRACKER" and homed on to it. At 0543 the combined strike was delivered. The Wildcat, firing 1,300 rounds, silenced the enemy's guns, the Swordfish attacked with R.P., followed by the Avenger, which dropped four depth-charges. Exploding close to the U-boat's conning-tower, they apparently caused it to blow up.

6. AIRSHIPS OPERATING IN STRAITS OF GIBRALTAR.

To enable a more intensive M.A.D. patrol of the Straits of Gibraltar to be maintained, six K-type airships have been transferred from the United States to Port Lyautey.

It was decided to ferry the airships to North Africa in pairs. The K-130 and K-123 made the first crossing and, in so doing, became the first non-rigid airships in aviation history to have made a trans-oceanic flight. The ships were fitted out at Lakehurst, U.S.A. and on 27th May began the trans-Atlantic flight to Port Lyautey via South Weymouth, Massachusetts, Argentina and Lagens, Azores.

This is the first time that blimps have operated in the European theatre of war.

SECTION IV

INTELLIGENCE

1. JAPANESE ANTI-SUBMARINE EQUIPMENT.

Since the publication of the July issue of this Report further information on the efficiency of Japanese Anti-Submarine equipment has appeared in "Know Your Enemy" an Addendum to Cinc-Pac-CinCPOA "Weekly Intelligence".

TYPE 93 HYDROPHONE

An official Japanese document dated 6th June, 1944, which was captured at Saipan, gives details of the performance of this set against submerged submarines:-

Reliable range (yards)	1100	1200	550	1100	550
Speed of submerged submarine (Knots)	3	5	3	5	5
Speed of listening vessel (Knots)	0	0	6	6	8

The average bearing error is 5 degrees and the maximum range is about twice the reliable range. The best results are obtained on relative bearings between 60° and 100° and the worst directly ahead and directly astern.

SUSPENDED TYPE KE HYDROPHONE

This is the latest form of ship-borne listening gear and is designed mainly for small ships but is also used in submarines. It consists of three microphone detectors which are suspended beneath the ship to a depth of between 26 and 40 feet. The document captured at Saipan gives the performance of this hydrophone as follows:-

Average error in bearing	10 degrees
Reliable listening range	1100-1650 yards
Maximum listening range	1650-3300 yards
Speed of submarine (submerged)	3-5 knots

The listening ship was drifting with engines stopped.

HYDROPHONES IN LARGE COMBAT SHIPS

In 1940 a model B experimental hydrophone was installed in the Japanese battleship "HIYEI" (subsequently sunk in November 1942 off Guadalcanal). An official Japanese document dated February, 1943 give the following performance for the set.

(a) Against submarines:-

Speed of Ship	Name of Submarine	Speed of Submarine	Maximum Range (Estimated)	Reliable Range (Estimated)
At anchor	I.63	3 Knots (Submerged)	8,800 yds.	4,400 yds.
At anchor	I.64	3 Knots (Submerged)	4,400 yds.	2,200 yds.
12 knots	Unknown	Unknown (Submerged)	4,400 yds.	2,200 yds.
16 knots	Unknown	3 Knots (Submerged)	5,500 yds.	3,300 yds.
At anchor	I.57	12 Knots (Submerged)	12,700 yds.	7,700 yds.

The document states "in general the maximum distance at which submerged submarines are heard is 4,400 yards and the reliable distance is 2,750 yards"

(b) Against torpedoes:-

With "HIYEI" steaming at 16 knots torpedoes were picked up at a maximum range of 11,000 yards and a reliable range of 6,600 yards.

ECHO RANGING GEAR

The echo ranger currently in use by the Japanese is Type 93. Types 1, 2 and 3 have frequencies of 29, 25 and 17.5 kilocycles respectively and are installed in surface ships and Type 4 (17.5 Kilocycles) is installed in submarines.

The following characteristics and features were taken from a Japanese manual on Type 93 Model 1 Echo-ranging gear dated May 1941:-

Power supply: 100 Volts (Direct Current)

Operating Frequency: 17.5 Kilocycles

Power output to projector: 250 Watts

Driver oscillation: Single vacuum tube (Japanese Electric Type 212D).

Receiver: Two tuned RF stages, one mixer, one converting oscillator, two stages of audio and narrow band 1,000 cycle filter which may be employed if desired.

Projector: Quartz-steel single layer, sandwich Langevin type.

Quartz element: 0.2 inch thick; 12.2 inches diameter

Steel plates: 12.2 inches diameter; 2.64 inches and 3.03 inches thick.

Dispersion angle claimed: 20 degrees

Range scale indicator: Driven by a synchronous motor, tuning fork controlled; two scales, 3,000 and 6000 metres.

Features:

(i) "Target range is obtained by noting the position of the traversing range scale needle when the echo is heard."

(ii) "Ranges are furnished to the bridge by means of a synchro-system, the transmitter end being operated manually by sound room personnel."

(iii) "A change of course synchro-system, the transmitter of which is operated manually on the bridge, furnishes the degree of course change to the sound room by means of a second pointer on the main bearing indicator."

(iv) "Hydraulic control system with uni-control wheel for lowering, hoisting and training."

(v) "Pulse length easily controlled by knob on range indicator."

This document confirms that Japanese echo ranging gear cannot range below 300 metres - "the shortest detecting range with own speed at 6 knots is 300 metres". This is quite possibly due to the fact that the ranging instrument used is similar to the British Instrument A/S 5 rather than a Recorder.

JAPANESE LOOP INDICATORS.

Loop indicators which have been installed fairly extensively by the Japanese are very similar to the type used by the Allies. American opinion is that Japanese loops are nearly as good as the American type but that they have somewhat lower sensitivity and inferior monitoring devices.

2. JAPANESE DEPTH CHARGES.

Further details are now available of the Type 95 Depth Charge (See July issue of this Report) and also of the Type 2 and the Yokosuka type. The information was contained in the Japanese document captured at Saipan.

TYPE	TYPE 95		DEPTH CHARGE		TYPE 2		YOKOSUKA TYPE DEPTH CHARGE (Towed Type)
	Rev.1	Rev.2	MODEL 1		Rev.1	Rev.2	
			Rev.1	Rev.2			
Type and quantity of explosives (pounds)	Type 97,98 (cast) 330 lb	Type 1 220 lb.	Type 97,98 330 lb.	Type 1 220 lb.	Type 97,98 330 lb.	Type 1 220 lb.	Type 88 56 lb.
Set Depth (feet)	Exploding depths 66, 100, 200 parachute use 100		66, 100, 200 300		66, 100, 200 300, 400, 500		Maximum 150
Damage Radius (ft.)	Roughly 50 ft. to 66 ft.						Maximum towing speed 24 knots
Counter-mining distance (feet)	Roughly 130 ft.				Roughly 33 ft.		Towrope 0.28 inches in diameter 660 feet in length

Standard sinking speed.

- (i) Amount of explosives, 330 lb. - 9 feet per second.
- (ii) Amount of explosives, 220 lb. - 6.25 per second.
- (iii) When parachute is used the above rates of sinking are reduced by one half.
- (iv) Error is up to 3 seconds in firing time.

Minimum safe distance from the explosion for launching vessel is 330 feet.

Proper depth settings.

- (i) When enemy periscope is sighted and continues exposed - 100 feet.
- (ii) When submarine submerges after periscope has been sighted 300 feet.
- (iii) When detected by echo-ranging - 200-300 feet depending on conditions at the time.
- (iv) When a "stopped" condition of the submarine is indicated - 400-500 feet.

The setting should be too deep rather than too shallow.

3. JAPANESE RADAR.

The following extract is taken from Headquarters, Allied Air Forces, S.W.P.A. Intelligence Summary.

"The prisoner said that the Jap Fleet "has not made very rapid strides in the development of fire-control radar". He claimed that all ships of the First Mobile Fleet now have radar. He added that one important bottleneck was a shortage of equipment.

"Comment: Although the extent to which various types of radar have been installed on enemy ships is not known, there is little doubt that all Japanese combatant ships, destroyers and larger, are equipped with some form of radar. Many if not all of Japan's submarines are similarly equipped. Many anti-sub vessels are also believed to carry some form of radar. Captured

documents indicate that the installation on surface ships of early-warning radar (to detect approaching aircraft) is probably widespread.

"At the Battle of Kula Gulf (12th July, 1943), Japan's Desdiv 16 was without radar protection and only one destroyer of the division was equipped with an intercept receiver. The most important lesson learned by the Japanese in that action off Kolombangara was that radar was essential in any fleet engagement.

"Since that time the enemy has worked feverishly in equipping his ships with radar. It is probable that Japan learned much by the exchange of technical equipment with Germany.

"The prisoner's statement on the shortage of radar equipment is heartening, and is probably paralleled by the difficulty experienced in training personnel to operate and maintain such equipment."

4. TACTICS OF JAPANESE U-BOATS.

A recent East Indies Station A/S Report published the following comment on Japanese tactics when attacking convoys.

"Japanese U-boats have, of late, adopted more aggressive tactics in attacking convoys from close range in daylight, when heretofore they were content to fire at long range. Detection of the U-boat prior to torpedoes being fired should now be more probable, and certainly the destruction of the U-boat after attack should be more certain.

"The tactics adopted by the Japanese appear to be becoming more modelled on those of the Germans, and similar counter-action should be carried out.

"Although the tactics adopted by the Japanese U-boat after the attack may vary, as a guide one of the three following courses of action may be expected after a submerged attack:-

- (a) A retirement at comparatively high speed on a course reciprocal to that of the convoy.
- (b) A retirement across the stern of the convoy to the disengaged side.
- (c) Close the wreck and endeavour to obtain shelter behind the disturbances in the vicinity.

"The need for immediate action after a torpedoing cannot be overstressed."

5. GERMAN METHODS OF EVASION WHEN HUNTED.

The following is an extract translated from the German U-boat Command's Handbook for U-boat Captains, 1942 edition.

The objects of the enemy anti-submarine defence and anti-submarine hunt are the destruction of the submarine when discovered, either by the immediate use of underwater weapons or by obliging the submarine to remain submerged up to the extreme limit of endurance, then destroying her as she surfaces. The procedure of the submarine during an underwater hunt by the enemy must be understood in the main to consist in being active and attempting to escape from the enemy hunt by exploiting every opportunity, instead of remaining passively on the bottom. To be active gives, in all circumstances, the best likelihood of evading the hunt. Procedure when hunted with echo-ranging sets is:-

(a) To keep constantly a fine inclination so as to offer the least practicable surface to the action of the echo-ranging set.

(b) To dive to considerable depth and at the same time, by constantly measuring the density and temperature, to determine the best layer, which can be recognized by the weakening of the pulses of the echo-ranging set. The weaker the pulses heard in the submarine's hydrophones, the smaller and more indistinct the echo returning to the enemy echo-ranging set.

Endeavour:-

(a) To make a large turn with little rudder (infrequent zig-zagging), then to move off on a straight course to gain distance from the hunt.

(b) To increase speed if the hunt speeds up (or during depth-charging), and to stop or proceed at silent speed if the hunt stops. Avoid a high and steady speed, since the loud noise of the propellers in the water like all the other noises can also be picked up by the echo-ranging set.

(c) To open distance in the enemy's wake, if possible, on account of the interference caused in the enemy echo-ranging set.

(d) In narrow waters and close to the coast (straits, bays,

etc.) it is advisable to proceed close under the coast so as to produce between the enemy hunters and the coast distortion of the echo and its dispersion into several echoes.

(e) At distances less than 300 metres from the enemy, search with echo-ranging sets gives no results, because depending on the shortness of the range, absolutely no data, or only inaccurate data, can be obtained. (This is the same trouble as the Japanese experience - see page 21).

6. INFORMATION ON GERMAN TORPEDOES.

"Curly" Torpedoes

The Germans are developing torpedoes using mechanism which causes them to describe some to-and-fro course. They may be either air torpedoes ("Curly" Type I) or electric ("Curly" Type II).

Definite knowledge of the "Curly" Type I torpedo has been obtained. It can be fired with normal gyro angling and, after running straight to any set range, will begin to execute either long or short legs, according to the setting. The first leg is half length in the original direction, so that the centre of the "Curly" pattern is at the set range. The turns are always 180° and in alternate directions. It is, therefore, better suited for shots from roughly the beam of the convoy than from ahead.

The track dimensions are:-

Straight run.....Any multiple of 110 yards up to the full range of the torpedo.

Turns.....The diameter of all 180° turns and, therefore, the distance apart of the legs is 350 yards.

Long Legs.....1,640 yards

Short Legs..... 900 yards

Number of Legs.....On the long setting the torpedo will, if its range allows, describe four complete "there-and-backs" and six on the shore setting.

Mean Speed of advance>About 5 knots on the long legs setting and 7 on the short, always at right angles to its original straight run.

Possible improvements in "Curly" torpedoes

It is believed that the enemy has produced an improved "Curly" which goes by the name of "Lut", an abbreviation of a German phrase which means roughly "torpedo which is independent of target's inclination."

The improvements are believed to be that the line of advance when "curlying" can be pre-set to any angle from its straight run and that the mean speed of advance along its "curlying" direction can be pre-set at will from 5 to 19 knots.

A torpedo with the improved "Curly" gear would be valuable for browning a convoy from any direction and would also be useful against independent ships. Fired against single ships from right ahead or astern and with "Curly" advance set just in excess of the target's speed, it should have a high chance of success, unless the target zigzags during the torpedo's approach.

Torpedo Outfit of German U-boats

The outfit of a typical 500-ton U-boat about December 1943 was four "Gnats" and eight other electric torpedoes, most of which would be "Curlies". A few air torpedoes might be substituted, especially on patrols to distant areas.

This armament would allow her to fire a salvo of three electric "Curlies" at ships in convoy, or to fire a "Gnat" at any ship. With "air Curlies", she might brown a convoy from ranges up to about 10,000 yards.

The following trends of U-boat torpedo development are apparent. There is a greater use of "Gnats" and of magnetic pistols; electric torpedoes now have a longer range and torpedoes are now fired from greater depths. The present limit is about 100 feet but both "Gnat" and "Curly" torpedoes would be effective weapons from greater depths if discharge gear permitted.

7. JAPANESE HA TYPE SUBMARINES.

The Eastern Fleet Intelligence Summary publishes specifications of a small Japanese submarine the possible existence of which was mentioned in A.C.B. 0233/44 (5).

The HA appears to be a miniature submarine of normal

type and differs from the original midget both in appearance and equipment. Production started in August, 1941 and one submarine is said to have been produced every six or eight months. The speed is not known but there is evidence that its underwater speed may be very high.

Specifications

Length 98 feet

Beam 8 feet

Draft 8 feet

Propelling Machinery: Probably two diesels and two battery driven electric motors. H.P. unknown. Source states that the batteries can be charged while steaming on diesels.

Torpedo Armament: Four torpedo tubes, thought to be 14 inch, two each side of bow.

A/A Armament: Source states that a 12 mm. A/A M/G is mounted forward of the conning-tower.

General Equipment: The radio antenna is stated to be recessed into the sides of the conning-tower. Radar is not fitted and there is no evidence of degaussing equipment.

Complement: It is reported that the ship's company consists of between 30 and 60 officers and ratings, but this number would appear excessive.



Japanese HA Type Submarine

8. NEW TYPES OF GERMAN U-BOAT.

Air reconnaissance shows that during the last three months the Germans have gone ahead with the serial production of two new types of U-boat, one ocean-going, the other probably short range.

Ocean-going 245-foot Prefabricated Type (Type XXI)

This U-boat can be assembled in about six weeks on the slips from sections prefabricated elsewhere, and has very fine lines. Details, subject to correction, are as follows: propulsion by diesels surfaced and by electric motors with improved batteries submerged; Schnorchel may be fitted; speeds in the region of 20 knots surfaced, 15 knots submerged; little evidence of exceptional diving depth; six bow torpedo tubes.

About a dozen have been laid down, of which some may be launched. The working up programme is unknown, but this U-boat is unlikely to be ready for operational service before October, 1944.

Short Range 100-foot Type

Details are scanty and uncertain. Evidence, still not conclusive, indicates that it has diesel propulsion surfaced and electric submerged; low endurance; Schnorchel may be fitted; speeds may be in the region of about 12 knots surfaced, 12-13 knots submerged; two bow torpedo tubes.

About a dozen have been seen building, of which some may have been launched. Others, though probably not large in numbers, may exist. The working up programme is not known, a few may be ready to operate shortly, but the type is not likely to be ready for operational service before October, 1944.

There is no further evidence of the production of the Type VII C 42 (Deep Diver) mentioned in A.C.B. 0233/44 (5). Although deep-diving U-boats cannot yet be discounted, there is no sign of their coming into operation.

9. JAPANESE FLEET DISPOSITION DURING MARIANAS ACTION.

The following has been extracted from Air Operations

Memorandum No. 38, Commander Air Force, Pacific Fleet.

"A completely detailed plot of the composition and disposition of the enemy task force which was attacked by our carrier-based airplanes during the late afternoon of June 20 is not yet available, but early reports permit a preliminary reconstruction of the formation of the Japanese fleet which suffered such heavy damage from our bombs and torpedoes.

"When first sighted by our carrier planes from a distance of 20 miles, the Japanese ships were on a course of 027° and arranged in at least three separate units. To the south were tankers, apparently screened by a small group of destroyers. Twenty miles N.W. of the oilers was the main group of Japanese ships. Owing to its numerical size and the large area which it covered, there are discrepancies in the reports of the composition of this unit. It appeared, however, to consist of at least three carriers, several cruisers, possibly two or three battleships and eight to ten destroyers. Some of the reports indicate that this large group was divided into three sub-groups which consisted of a carrier in the center surrounded by its screen. The third large group was approximately 10 miles N.E. of the second group and is thought to have consisted of a carrier, possibly a light carrier, plus attendant cruisers and destroyers. Between the second and third groups was a large cumulus cloud under which one carrier air group reported seeing three of the five battleships operating independently without a destroyer screen.

"Unco-ordinated manoeuvres were adopted by the enemy in a vain attempt to avoid damage. One squadron reports as follows. 'As our planes approached, the Japanese fleet started changing positions in a disorderly way. There was no co-ordination of evasive tactics. Some ships were cruising at full speed, others just steaming along. Some were turning in tight circles, others were on a straight course.' It would appear that Japanese doctrine allows each unit commander an almost unrestricted license to manoeuvre individually. Such lack of restraint allows ships to become scattered, reduces mutual anti-aircraft fire support, adds the risk of collision to the dangers of our bombs and torpedoes, and multiplies the difficulties of reforming after the attack ends. No one can accuse the Japanese of poor seamanship or lack of fighting ability, but his fleet doctrine for manoeuvres to avoid torpedo or bombing attacks seems inferior."

10. WHAT A U-BOAT ACE THINKS OF HITLER.

Lieutenant Commander Lueth, the first naval holder of the

Oak Leaves with Swords and Diamonds, recently broadcast an account of his visit to Hitler's headquarters. "I received the news of the award of the Oak Leaves with Swords and Diamonds while at sea. My first thought was: "Now I can go to see the Fuehrer. He will shake hands with me and I may look into his eyes". The crew envied me that experience. Weeks and months passed before our cruise was over and I was able to get to Headquarters. When I was received by the Fuehrer, we were four naval men, standing at his door waiting to be called. We rehearsed how we intended to report and how we would hold our caps, and other such details. Then the door opened suddenly and the Fuehrer advanced with hands outstretched. This, the greatest moment in my life, how it was filled with human warmth. The Fuehrer grasped my hands with both his, looked at me long and intently and then thanked me for my fight for the nation's future. I thought, "You can't take him in; he sees right through you." My hand was in his hands and I felt that in his hands one is safe.

"At Headquarters we learned from talks with the Fuehrer's collaborators of the calmness with which he accepted the harshness of fate and of the clarity with which he made decisions. In his presence, talking to him of U-boat life, of war, and so on, one felt that Hitler knows everything, that he knows all difficulties but is master of the situation. It is not necessary for us to worry about great matters of war and politics, we had much better do our duty serenely and with consistency. That is how we can help him best. When we talked of my special sphere, the U-boat, I had to pull myself together and not play the fool for these matters are well known to the Fuehrer. When we spoke of new devices or new possibilities, he took a piece of paper and explained his thoughts by means of a drawing. We could talk about anything with him, he was interested in everything and the conversation was so lively that I had to ask myself: "Is it really I? I, talking to the Fuehrer, and everything so simple and natural?"

SECTION V.

MISCELLANEOUS1. GERMAN AND JAPANESE SUBMARINE LOSSES.

During the month of June, 26 Germans and four Japanese submarines were sunk or probably sunk while the number of merchant ships sunk by U-boats was only seven, totalling 32,000 tons. This figure for U-boat successes against merchant shipping is the second smallest for the war, the smallest being 24,000 tons in May, 1944. In only three other months (March, April and May, 1940) was the figure less than 50,000 tons.

Of the 30 submarines sunk or probably sunk, 11 were accounted for in the Invasion Area, 14 in other parts of the Atlantic, two in the Mediterranean and 3 in the Pacific. A Japanese U-boat is included in the 14 Atlantic successes. This U-boat was sunk 800 miles west of the Cape Verde Islands by aircraft from an American escort carrier on June 24th.

Preliminary reports for July indicate that 12 U-boats were sunk or probably sunk, six by warships, five by shore based aircraft and one by carrier-based aircraft.

2. THE WAR AGAINST U-BOATS.

The table on the next page, modified from a diagram published in the Admiralty Anti-Submarine Report, shows some of the ups and downs in Anti-Submarine warfare up to the end of June, 1944, together with some of the reasons for the fluctuations. Merchant shipping losses shown are those attributed to submarines and submarine "Kills" include German, Italian and Japanese U-boats known sunk or probably sunk.

	Shipping Losses	U-boats Sunk	Shipping Losses for each U-boat Sunk (Tons)	Remarks
<u>1939</u>				
4th Quarter	418	9	46,400	Convoy system fully in force (October).
<u>1940</u>				
1st Quarter	291	7	41,600	U-boats withdrawn for Norwegian campaign
2nd Quarter	341	18	18,900	Ships diverted for defence against invasion (May). Success of U-boat Aces. Italian entry into war (June).
3rd Quarter	759	10	75,900	Biscay ports in use by U-boats. Night attacks on Convoys by surfaced U-boats.
4th Quarter	681	14	48,600	Larger depth charge patterns introduced. U-boats attacking as far as 20° West.
<u>1941</u>				
1st Quarter	487	12	40,600	Use of radar in escorts and aircraft. U-boats concentrate on independent shipping (January). First radar success (March). Concentrated night attacks on convoys by groups of U-boats (March).
2nd Quarter	862	9	95,800	U-boats attacking west of 40° W. First daylight attack on a convoy by Wolfpack (April). Escorts and aircraft based on Iceland. (Contd.)

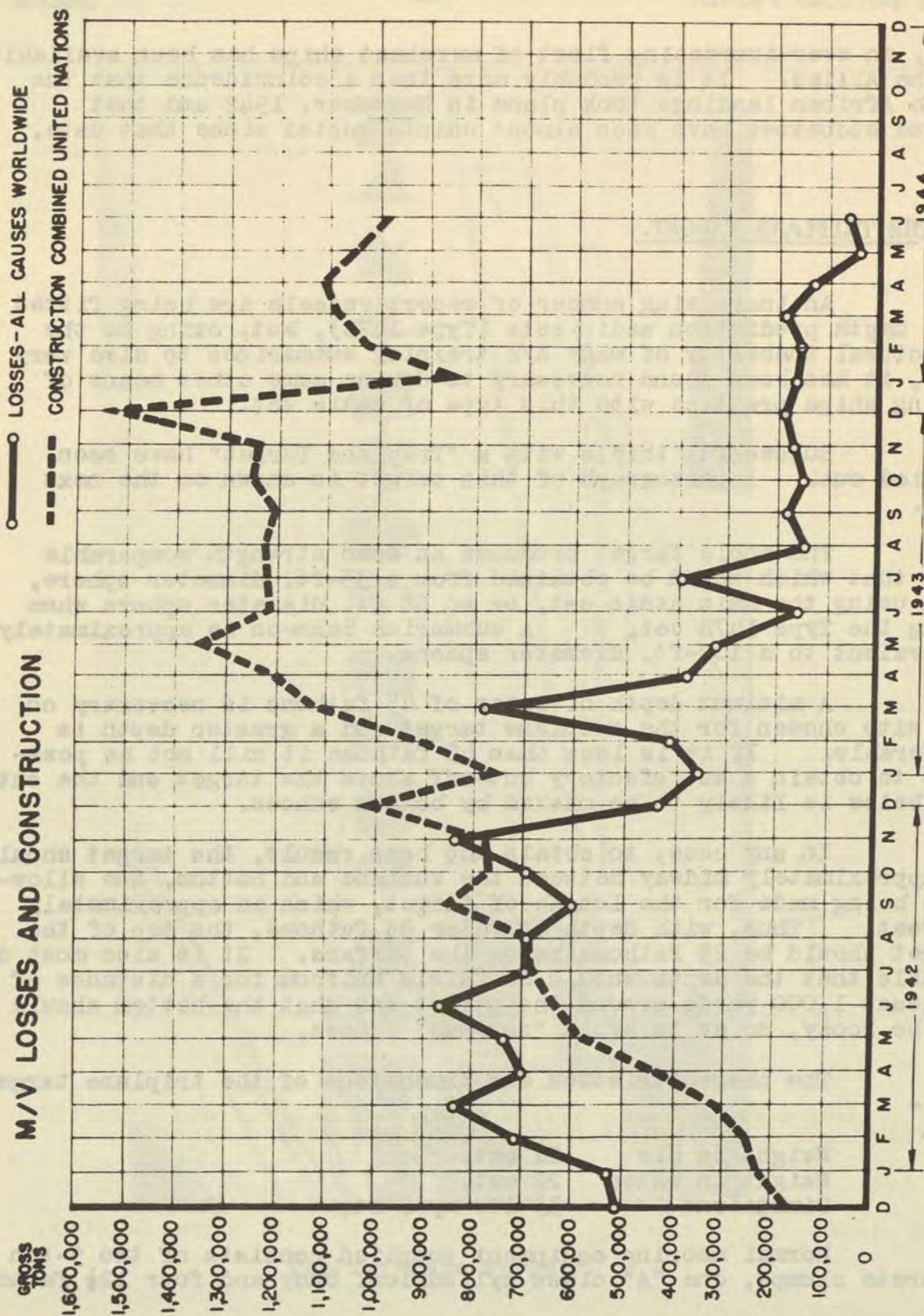
				U-boats in Freetown area and Mid-Atlantic (May). Adoption of Trans-Atlantic Escort (June).
3rd Quarter	377	14	26,900	Greater accuracy of attacks on U-boats. First use of H/F D/F. Evasive routing. Heavy attacks on Convoys (September). Snowflake introduced.
4th Quarter	319	24	13,300	U-boats in Mediterranean. U.S. Entry into war. Hedgehog first used (December). First Auxiliary Carrier success ("AUDACITY").
<u>1942</u>				
1st Quarter	1308	19	68,600	Heavy attacks on American Eastern Seaboard. Mark X depth charge introduced. First confirmed sighting as result of H/F D/F.
2nd Quarter	1727	18	95,900	Independent shipping attacked in Caribbean Sea and Gulf of Mexico. Japanese U-boats in Mozambique Channel. "Torpex" depth charges first used by aircraft. Searchlight Wellingtons in Bay of Biscay. Germans introduce S.B.T. First sinkings off Eastern Australia by Japanese U-boats.
3rd Quarter	1479	42	35,200	Profitable use of Radar and H/F D/F. U.S. Coastal convoys becoming effective. Introduction of Support Groups. Daylight attacks on convoys. Germans using Search Receivers to pick up A.S.V. transmissions.

4th Quarter	1652	42	39,300	"Soft Spot" in Capetown area. Heavy U-boat losses in North African Landings. First Hedgehog success (November). Minol depth charges introduced. Losses halved in December by good escort and air co-operation.
<u>1943</u>				
1st Quarter	1168	38	30,700	(Total Allied construction passes total losses by U-boat). Rough weather makes January best month since December, 1941. Use of V.L.R. aircraft. Increased air offensive in Bay of Biscay. Heavy attacks on North Atlantic convoys (March).
2nd Quarter	696	81	8,600	Support Groups operating with convoys. Record number of attacks by Coastal Command aircraft. Success of escort carriers. Introduction of rocket projectile in aircraft. First success of "Creeping" attack. Combined surface and air offensive in Bay of Biscay. U-boats leaving North Atlantic (June).
3rd Quarter	443	81	5,500	Success of Bay of Biscay offensive. Shipping losses in South Atlantic (July) U.S. escort carriers success -es with U.S. Gibraltar convoys. More U-boats than merchant ships sunk (August) U-boats return to North Atlantic and use acoustic torpedoes (September).
4th Quarter	238	49	4,900	"Foxers" in operational use. First success with Type 147 (Contd.)

				<p>asdic set. (October). First "kill" by Azores based aircraft (November). Increased numbers of searchlight aircraft (November). Increased numbers of searchlight aircraft available. U-boats adopt policy of maximum submergence by day. U-boat operating areas extended (December).</p>
1944				
1st Quarter	323	52	6,200	<p>"Squid" first used (January). First "kill" with "Q" attachment in ship and with M.A.D. equipment in aircraft. (February). "Creeping" attack successes. High proportion of shipping losses in Indian Ocean. (January and February).</p>
2nd Quarter	92	69	1,300	<p>Only four ships lost in May compared with a loss of 26 submarines. First U-boat "kill" in English Channel since 1939 (May). Complete failure of U-boats to disrupt Allied invasion in June. Merchant shipping losses caused by U-boats smaller in May and June than in any other month of the war.</p>

3. MERCHANT SHIPPING LOSSES AND NEW CONSTRUCTION.

The graph on the next page, extracted from the United States Anti-Submarine Bulletin, shows that, since October,



1942, an ever-increasing fleet of merchant ships has been available to the Allies. It is probably more than a coincidence that the North African landings took place in November, 1942 and that Allied successes have been almost uninterrupted since that date.

4. THE TRIPLANE TARGET.

An increasing number of escort vessels are being fitted with depth prediction asdic sets (Type 147B), but, owing to the structural inability of many A/S training submarines to dive very deep, it has been found necessary to devise some other means of giving ships practice with this type of asdic set.

Successful trials with a "Triplane Target" have been carried out. A photograph of this target is shown on the next page.

The whole target produces an echo strength comparable with that which would be obtained from a 35-ft. diameter sphere, when using the main asdic set, or an 88 ft. diameter sphere when using the Type 147B set. A submarine beam-on is approximately equivalent to a 100-ft. diameter sphere.

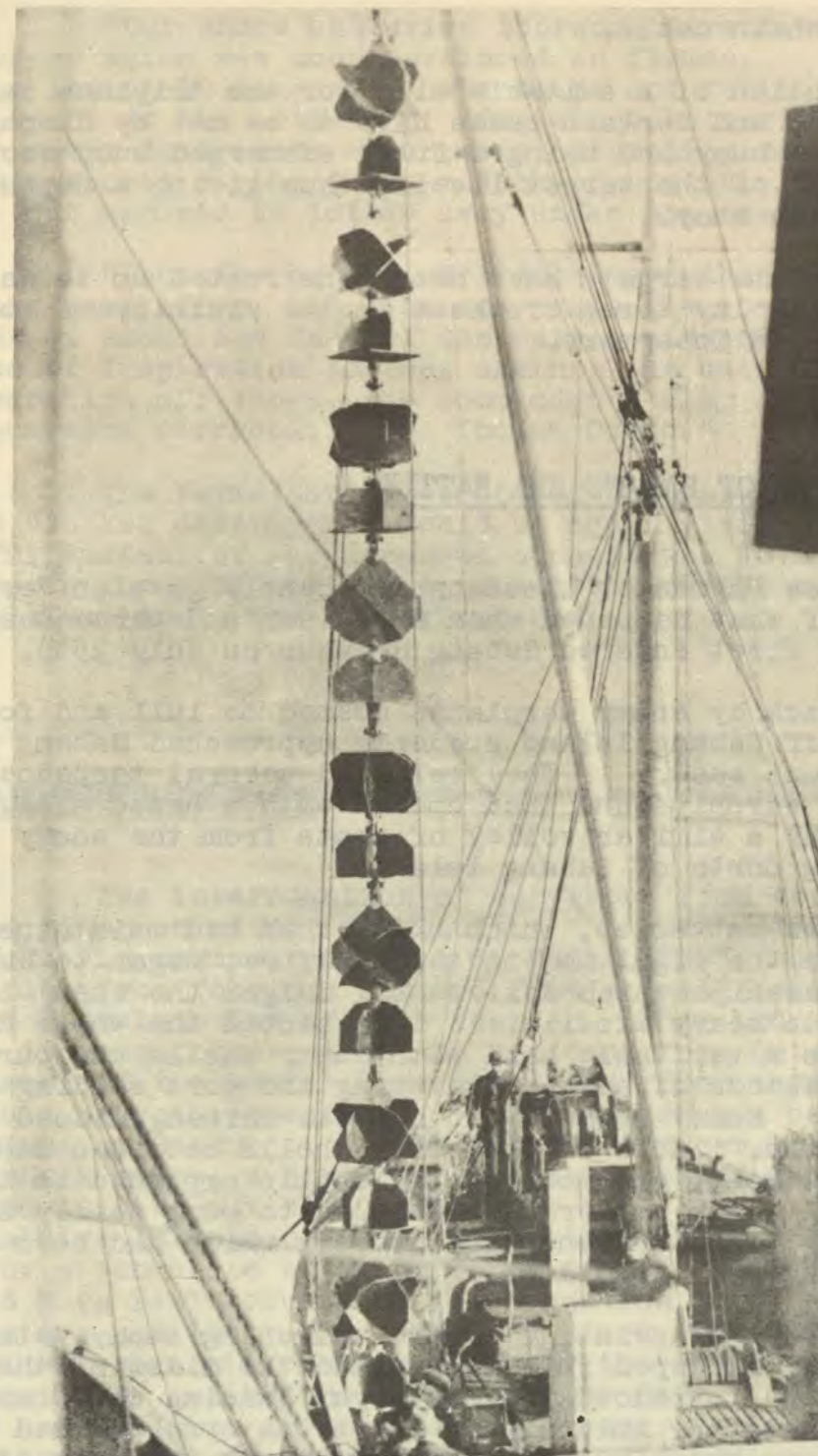
A minimum depth of water of 45 fathoms is necessary on the site chosen for the triplane target and a greater depth is preferable. If it is less than 45 fathoms it will not be possible to obtain a satisfactory cut-off above the target and the cut-off below is likely to be masked by bottom echoes.

In any case, to obtain the best result, the target should be approximately midway between the surface and bottom, due allowance being made for the length of target, which is approximately 30 feet. Thus, with depth of water 55 fathoms, the top of the target should be 25 fathoms below the surface. It is also most desirable that the depth should be fairly uniform for a distance of at least 1,000 yards around the target and that the bottom should not be rocky, so as to avoid "non-sub" echoes.

The characteristics and dimensions of the triplane target are:-

Weight in air	24 cwt.
Weight in water	22 cwt.
Dimensions	33 ft. by 2 ft.

Normal mooring equipment supplied consists of two 5-ton concrete clumps, one "A" class cylindrical buoy and four 12½ fathom



The Triplane Target

lengths of 1½-in. chain cable.

The selection of a suitable site for the triplane target may prove difficult, and certain cases have to be met by dispensing with the surface buoy and using a fully submerged buoy secured close to the top end of the target itself, thus giving a depth of clear water above the buoy.

Four triplane targets have been constructed up to date, and it is intended to lay three of these in the vicinity of Londonderry, Campbelltown and Tobermory.

5. EYEWITNESS ACCOUNT OF SABANG SEA BATTLE.

A Japanese Paymaster Lieutenant recently gave an "eyewitness account" of what happened when a cruiser and three destroyers of the Eastern Fleet entered Sabang Harbour on July 25th.

"The attack by enemy warplanes seemed to lull and four enemy destroyers off Sabang Island suddenly approached Sabang port cutting through rough seas. They released several torpedoes against one of our warships and then opened with a broad side. This was followed by a similar volley of shots from the enemy cruisers patrolling north of Sabang Island.

"Our shore batteries, which until then had maintained silence waiting for the right moment to open fire, began to bark, while one of our warships which dexterously dodged the enemy torpedoes, shot out its heavy missile. In a second the whole harbour was turned into a veritable hell with enemy shells and ours crisscrossing and clouds of smoke enveloping the port sending up spouts of water. Enemy machine-gun bullets whined, hissed and passed over our heads. None of the enemy shells scored a direct hit on our gun positions, and most of the shells exploded in the far away jungles. Our batteries continued to pump deadly shells against the enemy. Then the enemy destroyers which had been stubbornly attacking us, eased down.

"Quick to take advantage of the weakening enemy attack, one of our torpedo boats sped full force into the midst of the enemy battle line and torpedoed the destroyer leading the enemy's naval attack, striking her amidships. This was synchronized with a direct hit from our shore batteries which struck the rear of the same destroyer which was sunk instantaneously. Our fierce firing continued. The enemy battle formation was broken up. Beaten soundly, the enemy tried to scoot out, but our land batteries caught them nicely.

"Our shore batteries scored a direct hit on another destroyer which was soon enveloped in flames. The ship immediately listed 30 degrees to starboard and following heavy detonations, went to the bottom. Our shore batteries shelled the two other enemy destroyers which were attempting to escape. A direct hit was scored on the quarter deck of one ship which was set on fire, but managed to totter away under the cover of a smoke screen.

"Thus the battle of little more than one hour, despite intense enemy fire, had done away with the enemy fleet. When the clouds of smoke and dust of the battle cleared away, it was a source of inspiration to see, against the battlefield, flying over our warships off shore, the commander's flag fluttering over the headquarters overlooking the Indian Ocean."

The Paymaster's account of the salvage operations on these "sunken destroyers" would be equally well worth reading. The full extent of the Japanese success was to inflict sufficient damage on three of the ships (six hits in all) causing two fatal casualties (one a War Photographer).

6. MAHRATHI MADE EASY.

The interrogation of survivors from torpedoed ships can at times be rather difficult. Lieutenant Commander Carter, R.A.N.R., in command of H.M.A.S. "GERALDTON", had to elicit information from four men rescued from a small boat in 04 53 N - 76 26 E on 14th May of this year. They had no common language: later it became known that the men came from Cutch in the extreme northwest of the Bombay Presidency and, from their names, were probably Mahrathi-speakers. Their dhow had been owned by a Mussulman of Colombo. The patient officer, with the help of some chalk signs, a Hindustani phrase-book, a watch and a compass, managed to find out that their dhow had cleared from Colombo for the Maldive Islands on 27th April, that she had been sunk by gunfire by a submarine at about 1530Z on 9th or 10th May in 05 33 N - 74 48 E (a real triumph of interrogation this last item, as these navigators use their own names for stars for fixing a position), that there were six other members of the crew adrift on a raft, and that they had had no food for four days. All this was found to be correct when an interpreter became available, and a few additional items of information were obtained.

SECTION VI

MATERIEL1. C.A.F.Os. ON ANTI-SUBMARINE SUBJECTS.

C.A.F.O. 1944	Subject	Brief Description
786	Types 124/V, 128, 144 series, 132/V and 136	Lubrication of Directing Gear (A.S. and A.S.)
787	Bearing Recorders	Replacement of Pattern A.2097 by Pattern A.2247
833	Hedgehog	"Safe and Ready" Switch
841	Types 135, 135B	Valves for Pattern A.964 Amplifier.
843	"Q" Attachment to Type 144 Series Sets	Twisting of H.T. Cables - Cause and Remedy.
892	Types 134/A	Introduction of Oscillator. Pattern A.2541.
895	Hydrophone Equipment Type 715 Series	Introduction for Small Craft
934	Type 147B	Introduction of Spare Securing Plates
936	Board Control Pattern A 175	Conversion to Pattern A.175B
937	Recorders Patterns A.1793, A.1895, A.2334	Defect in Paper Drive Roller - Cause and Remedy
938	"Q" Domes, Pattern A. 404	Damage to Pintle
976	Depth Charge Communications	Revised Policy (A.S and A.S.)

C.A.F.O. 1944	Subject	Brief Description
977	Depth Charge Action Drills	
980	"Foxyer" Telephone Communications	A. and A.
990	Type 134 A, B, C, D	Suppression of Interference
993	"Q" Attachment with 144 Series	Lead of "Q" Cable
1015	Attacks with Ahead Thrown Weapons	Common Faults and their Cures
1020	Ahead Thrown Weapons	Danger to Aircraft
1043	Foxyer Equipments	Ship Fitting Arrangements (A.S and A.S.)
1056	Bearing Recorder A/S 407	New Control Drill
1057	Bearing Recorder A/S 407	Modifications
1058	Choice of Weapons to be Used Against U-boats	Effect of Depth
1109	Depth Charges	Use in Shallow Water
1130	Types 144/145XB and later sets	Allowance of Paper Rolls
1133	Listening Equipments Types 140A and 712A	Amplifiers Patterns A.102, A.102B A.1954 and A.1982
1134	Depth Indicator A/S 403	Marking of Reference Letters of Depth Charge Patterns
1204	Foxyer Mark III	Report
1236	Types 135, 135B	Directing Gear-Introduction of Strengthened Reflection.

SECTION IV

C.A.F.O. 1944	Subject	Brief Description
1238	Asdic Domes	Fitting by Divers
1288	Asdic Sets with "Q" Attachment	Modification to Steady Bearing
1290	Transmitting Panels Patterns 1146, 5810A and A.507	Earthing of Lead between Condensor and S/R Key

Attention is also drawn to the following orders:

849, 896, 935, 979, 992, 1059 1110, 1111, 1128
1129, 1185, 1230, 1239, 1278

