"THE BATTLE OF THE ATLANTIC IS GETTING HARDER": VICTORY IN MID-OCEAN, DECEMBER 1942 - MAY 1943

…….the Admiralty did acknowledge their contribution in its Monthly Anti-Submarine Report for January 1943 by stating that the Canadians had carried "the brunt of the of the U-boat attack in the North Atlantic for the last six months, that is to say, of about half of the German U-boats operating at sea."[8] *However the Report also warned that "the critical phase of the U‑boat war in the Atlantic cannot be long postponed."*

Winter battle in the Atlantic, January–February 1943

At the beginning of 1943, Allied naval planners compiled the statistics for the preceding year – 5,471,222 tons or 70 per cent of global Allied shipping losses – had been lost in the North Atlantic. Still worse, of the 1,050 naval escorts estimated to be necessary to successfully defend the Atlantic lifeline, only 445 were available and a quarter of those were obsolescent vessels dating back to the First World War.

There was, nevertheless, guarded reason for optimism. Shipbuilding capacity had expanded tremendously in the previous year, meaning that the loss of much of the merchant tonnage would soon be replaced, while hundreds of new escort vessels were being built in Britain and North America. The other encouraging feature was that new weapons and equipment had passed the prototype stage and would soon be reaching the frontline forces. An airborne version of centimetric radar, accurate enough to pick up the periscope of a submerged submarine at a distance, was now being fitted into aircraft. The USN was building escort carriers, small aircraft carriers that could accompany convoys and provide air cover throughout their passage and, until these entered service in large numbers, Britain had converted a half dozen merchantmen into temporary aircraft carriers that could fly off four aircraft. The lengthy argument over the deployment of VLR aircraft having finally been won, these were on the way, as were new weapons such as Squid and Hedgehog. Finally, the designs of three advanced types of escorts – an improved corvette, the Castle Class, and the River and Loch Class frigates – had been approved and they would soon be entering service. Until that time, however, the war in the North Atlantic would have to be waged with the forces, ships and equipment on hand.

But the enemy was also gathering his strength. On 30 January 1943, Dönitz was named the commander-in-chief of the *Kriegsmarine* and from this point until the end of the war, the *U-Boot-Waffe* would have priority in the German naval war effort. By this time, Germany's construction programme was in full flow and in January 1943 Dönitz had enough strength to keep nearly 200 boats at sea and more than 100 in the North Atlantic alone. His crews also received new equipment, including a radar detector which warned them of Allied detection attempts and a new torpedo that could be preset to

Airpower -- The Deciding Factor
A VLR (Very Long Range) Liberator GR V of the RAF's Coastal Command patrols above an Atlantic convoy in 1943. The introduction of aircraft, either long range or carrier-based, into the mid-Atlantic in the spring of 1943 proved to be the decisive factor in winning the battle. Nearly 58% of all Axis submarines destroyed during the war were sunk by aircraft. (Courtesy, National Archives of Canada, PA 107907)

change its course after running a certain distance and was therefore almost certain to score a kill among the crowded columns of large convoys. An even more deadly weapon – an acoustic torpedo that could home in on the noise of a ship's propellers – was in the final stages of development. Perhaps the U-boat service's greatest asset in the next phase of the struggle was that Allied code breakers were still unable to crack the *Kriegsmarine* cyphers introduced in early 1942. Some success had been achieved but it was not consistent, and in the meantime the German *B-dienst* was still able to read much of the Allied signal traffic.

These German assets, however, were not evident during January 1943 when fierce winter gales hampered Dönitz's efforts to concentrate against a major convoy. Only 15 ships were lost in the Atlantic that month and seven of those came from one convoy, TM 1, whose route had been discovered by the *B-dienst* in time for Dönitz to lay an ambush across its path from Trinidad to Gibraltar. Losses continued low in February with 34 ships being sunk but almost all of these were in just two convoys: SC 118 and ONS 166.

Convoy SC 118 of 63 merchantmen was escorted by the British B-1 Group, heavily reinforced to a total of five destroyers, four corvettes and two US coast guard cutters. This was nearly twice the number of warships available for the slow convoys the RCN had escorted in 1942 and, from this strength and the fact that British ships were better equipped than their Canadian counterparts, it was reasonable to expect that SC 118 would suffer fewer losses. This, however, did not turn out to be the case. The convoy left Halifax at the end of January and Dönitz, forewarned of its existence and route, was able to intercept it on 4 February. Over a period of four days, his U-boats sank 11 ships for the loss of two submarines. These losses prompted Horton to formalize an idea that had been suggested before – the use of support groups (what the USN called "hunter killer" groups) that could reinforce the escorts of any heavily threatened convoy – and, by taking vessels from British local escort forces and the RN's Home Fleet, five such support groups were formed. Another important decision made after SC 118 was to increase the allotment of VLR aircraft to close the air gap.

These measures were not available for Convoy ONS 166, which was escorted by A-3 group in late February. Consisting of two American coastguard

cutters, two British corvettes and four Canadian corvettes (*Chilliwack*, *Dauphin*, *Rosthern* and *Trillium*), A-3 fought a six-day battle against 18 submarines only to lose 14 of 49 merchantmen under its protection. These losses were offset by the destruction of one submarine by ramming but it was clear that MOEF escorts, whatever their nationality, were having problems handling the large numbers of U-boats now operating in the Atlantic. Ironically, British escorts newly assigned to the MOEF were complaining about the weather, short rest periods and lack of numbers – all conditions familiar to the RCN for nearly two years. At the end of February 1943 the situation was such that Horton decided to return the four Canadian C-Groups to the North Atlantic earlier than planned as it was clear that the crisis of the Battle of the Atlantic was fast approaching.

The Northwest Atlantic: Canada's own theatre of war

While the now predominantly British MOEF suffered from the blows of the U-boats, the four Canadian C-Groups experienced a relatively peaceful time. One after another, each group went to Londonderry where, following a long leave for its crews, new equipment was fitted and a period of intensive training, lasting from ten days to two weeks, was undertaken. As a group finished this programme, it was assigned to a Gibraltar convoy which, since these convoys were more heavily escorted and covered by aircraft throughout almost the entire length of their voyage, were far different from their North Atlantic counterparts. While on this duty, the -destroyer *St. Croix* sank her second submarine and the corvette *Prescott* got her first. Added to the three German or Italian submarines sunk by the Canadian corvettes assigned to Operation TORCH, this made a respectable total of five submarines killed by the RCN in southern waters in three months. As the C-Groups were enjoying this respite, however, important decisions were taking place on land and at sea.

The first of these had been prompted by the Casablanca Conference of January 1943 at which Churchill and Roosevelt had plotted long-term strategy against Germany. A successful invasion of the European mainland first required a massive build-up of American forces in Britain, but before that could take place, the security of the trans-Atlantic shipping lanes had to be established. One of the problems in the previous 18 months had been the overlapping commands in the Atlantic, a complicated structure that had led to the ultimate irony that much of the RCN was nominally under American control. Britain wanted the appointment of a super commander-in-chief for this vital theatre and, not unnaturally, the Admiralty was pressing for this to be a British officer. Admiral Ernest King, the commander-in-chief of the USN, would have nothing to do with this proposal but did agree that command matters had to be simplified.

Toward this end, he called a conference in Washington in early March 1943 aimed at thrashing out issues relating to the convoy system. Amazingly enough, given the national aspirations and egos involved, it went fairly smoothly and the result was to give the three

An Unrelenting Enemy -- U-boat Crews in 1945

The crew of **U-190** attends the commissioning ceremony of **U-3021**, a Type XXI boat, at Bremerhaven in January 1945. The U-boat service was the most effective part of the **Kriegsmarine** and represented the most deadly threat to the western Allies. It suffered very heavy casualties -- an estimated 29,000 men of approximately 40,000 who served in U-boats were killed but their morale, although it sometimes faltered, never broke and they were as relentless in 1945 as they had been in 1939. (Courtesy, Werner Hirschmann)

navies in the Atlantic their own distinct spheres of operations. Britain would assume responsibility for the North Atlantic from a point just east of Newfoundland to British waters, including the MOEF. The United States would assume control of all convoys crossing the Atlantic farther south from American ports to the Mediterranean and Britain. Canada, meanwhile, would assume control of the northwestern Atlantic giving the RCN control over operations in its coastal waters from a point just south of Nova Scotia east to the limit of the British mandate. These changes were implemented almost immediately, and on 30 April 1943 Rear-Admiral Leonard Murray was appointed Commander-in-Chief, Canadian Northwest Atlantic, with complete authority over all Allied naval and air forces operating in his area. Murray would be the only Canadian to command a major theatre of war between 1939 and 1945.

Cod for Dinner

Depending on how you look at it, one of the unfortunate or fortunate results of depth charge attacks was that they killed hundreds of fish. Since there is no sense wasting the sea's bounty, these men from the corvette **Sorel** are collecting fresh Atlantic cod for their cook. (Canadian Naval Memorial Trust)

"Pass the mustard."

Corvette sailors enjoying a meal, obviously in calm weather. Note the wide variety of clothing -- at sea escort sailors were usually permitted to wear whatever they wanted and hockey sweaters were big favourites. A civilian who crossed the North Atlantic on a corvette in 1943 described the food as "solid and heavy." It had to be, considering the nature of the work these happy munchers did. (Canadian Naval Memorial Trust)

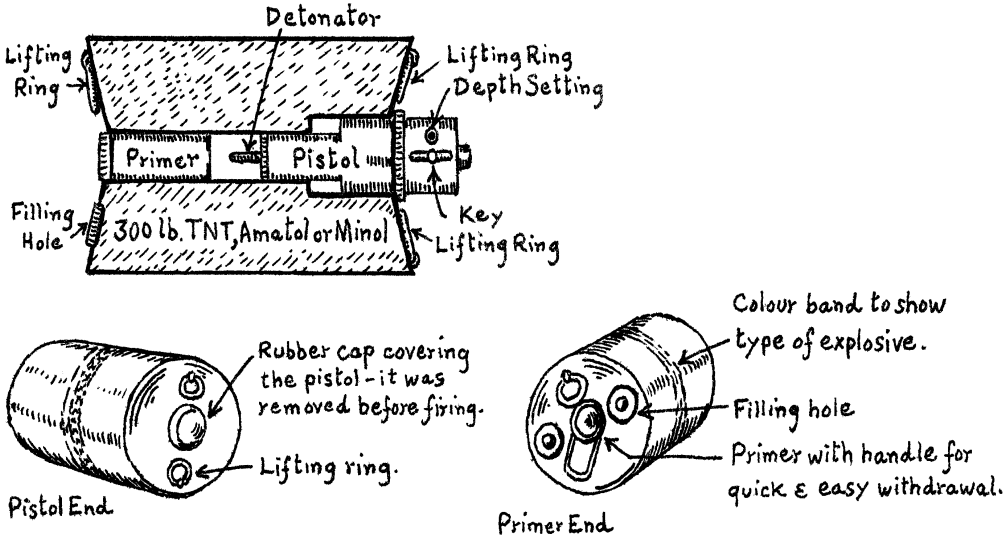
ANTI-SUBMARINE WEAPONS

During the Second World War, Canadian escort vessels deployed three major types of weapons against submerged targets: depth charges, Hedgehog and Squid.

Depth charges

These were basically steel drums packed with explosives that detonated at a pre-set depth by means of a hydrostatic pistol, and they were dropped off the stern or fired off the sides of an escort vessel as it passed over a submerged enemy. The standard MK VII charge, used by the RCN throughout the war, contained 300 lbs. of Amatol, Minol or TNT and there were two major types: heavy charges sank at a rate of 16 feet per second while light charges descended at 10 feet per second. To make a depth charge "heavy" or "light," weights were added or removed from the MK VII weapon. In 1939 depth charges had a maximum setting of 150 feet depth but this was constantly increased until by 1943 they could be set for depths in excess of 700 feet. Despite their large explosive load, individual depth charges were not that lethal to a U-boat as their destructive radius was only about 7 yards. As a result, they were usually dropped in numbers, in "barrages," but even so it was calculated that depth charges would only destroy a submarine about 6 per cent of the times they were used.

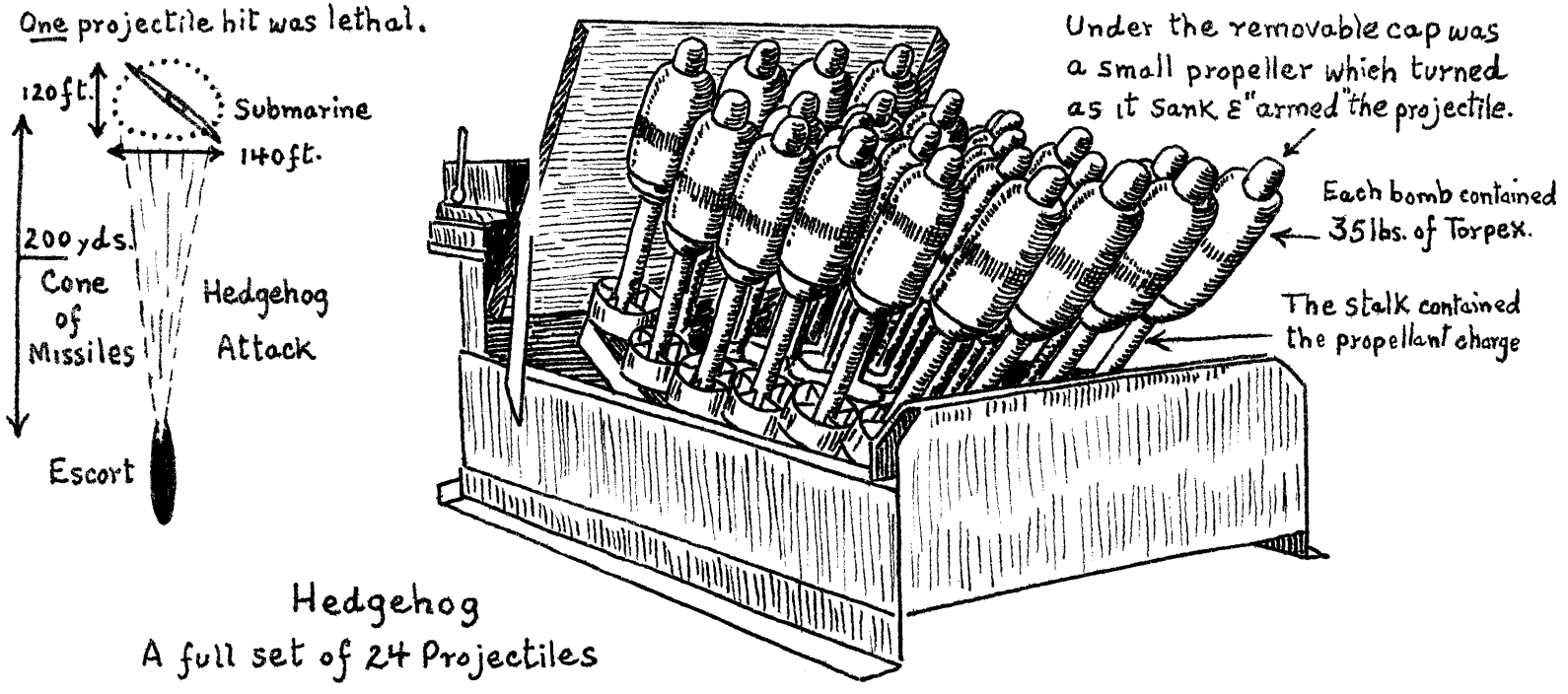
There were other problems with depth charges. They had to be dropped while the -attacking ship was over the target and this often resulted in the surface vessel losing ASDIC contact due to the noise of its propellers passing over the target, or the explosion of the charges. In addition, they had to be launched at fairly high speed, otherwise the attacking vessel would not clear the area in time and might suffer damage from the explosion – and unfortunately ASDIC did not perform well at high speeds. The drawings on the opposite page illustrate the difficulty with depth charges. In A, a frigate has acquired a U-boat using ASDIC pulses generated by the dome on the bottom of its hull, but when it closes in to attack, as shown in B, the turbulence from its own propellers and the explosion of the depth charge makes maintaining ASDIC contact difficult. By trial and error, it was worked out that two ships were needed to make the best use of depth charges – one holding the target in ASDIC contact and directing the second ship which made the actual attack. Although ASDIC contact was still broken at the -moment of the attack, it was more easily re-acquired by this method. Later in the war, improved ASDIC sets were introduced which permitted escort vessels to maintain contact with their targets during an attack.



Hedgehog and Squid

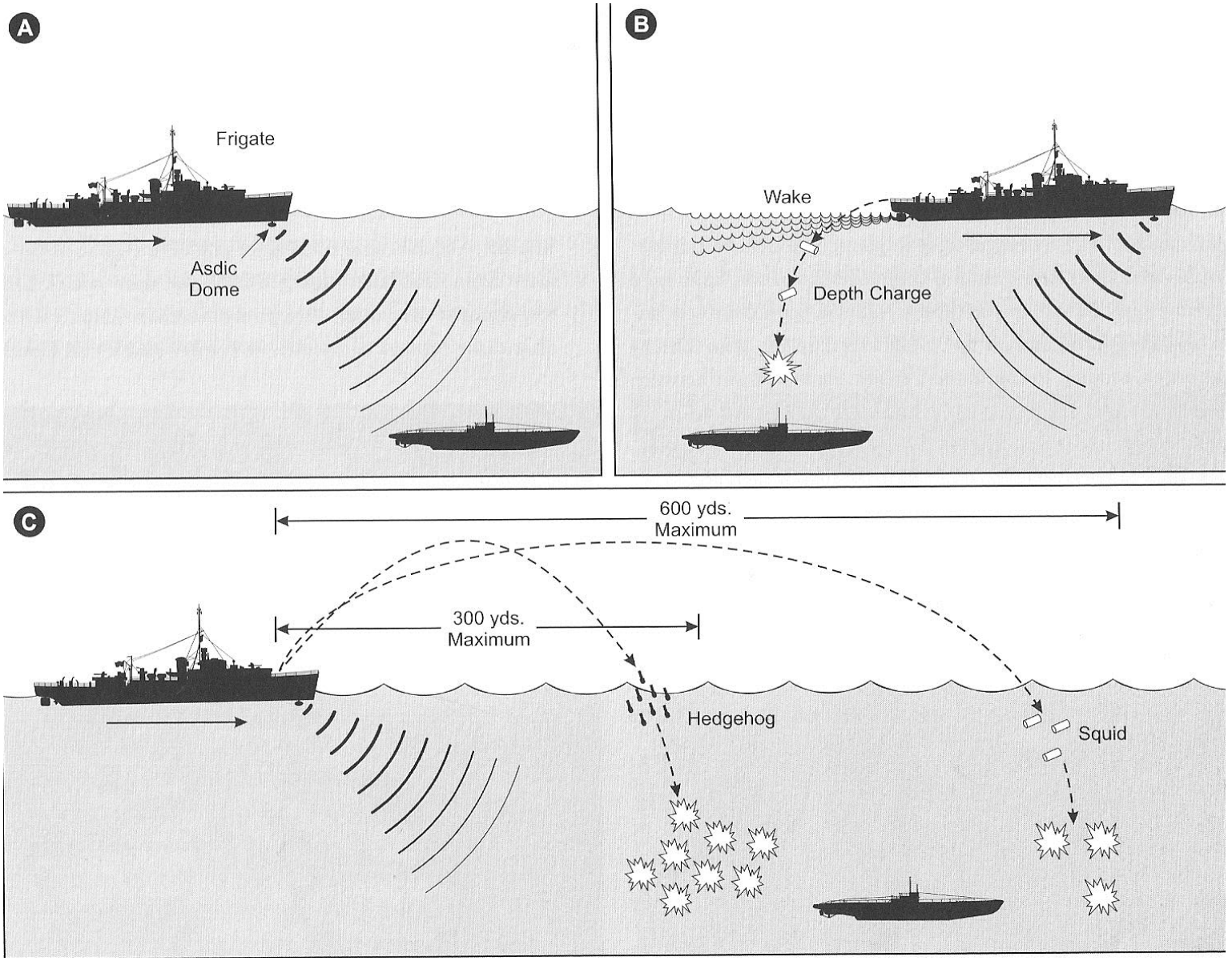
The weakness of depth charges – that they often caused loss of ASDIC contact when used – led to the development of Hedgehog and Squid. Both were "ahead throwing" weapons, which meant, as shown in Drawing C opposite, that an attacking warship which had a good contact could fire them up to 1,000 yards ahead of its position and they would detonate before the ship passed over the target, -allowing the attacker to either maintain or quickly re-acquire ASDIC contact.

First conceived in 1940, Hedgehog did not come into widespread operational service until mid-1943. Hedgehog was basically a spigot mortar capable of firing up to 24 projectiles, each containing 35 lbs. of Torpex explosive, 200-300 yards ahead of the attacking ship. These projectiles landed in an oval pattern about 120 by 140 feet and then descended onto the target but did not explode unless they actually struck, with the result that there were fewer explosions to interfere with ASDIC contact. Hedgehog projectiles were good to a depth of about 1,300 feet, which made them effective against the deep-diving U-boats of the later war years. Hedgehog did have one disadvantage – it could only be fired directly ahead of the attacking ship, which had to be pointing in the direction of the target. Nonetheless, it was much superior to the depth charge. By 1944 almost all Canadian warships were equipped with Hedgehog and the weapon was often connected with improved types of ASDIC that could provide targeting information.



Hedgehog
A full set of 24 Projectiles

Introduced in September 1943, Squid consisted of a three-barrelled mortar that could fire three projectiles at the same time out to a range of about 600 yards. Each projectile contained 200 lbs. of explosive and detonated at the desired depth by means of a hydrostatic pistol. One of the great advantages of Squid was that its mounting permitted it to be traversed to fire in directions other than straight ahead. This weapon was particularly effective when mated with the Type 147B ASDIC with the Q attachment, which entered service in October 1943 and permitted contact to be kept with a deeply-submerged U-boat and the target's depth to be accurately ascertained. Once this was done, the Squid projectiles were automatically set for the proper depth. In the RCN, only the Loch Class frigates were armed with Squid.


A
Frigate
Asdic
Dome
B
Wake
Depth Charge
C
600 yds.
Maximum
300 yds.
Maximum
Hedgehog
Squid

"Ship disintegrated completely in flames:" The scales begin to tip, March–April 1943

While these decisions were being made, the battle moved to its climax. During March 1943, the Allies suffered the worst shipping losses, 108 vessels of 627,377 tons, since the previous November with one convoy alone, SC 121, losing 13 ships to a mass attack by 17 U-boats. The heaviest actions occurred when 38 U-boats, the largest concentration Dönitz had yet achieved, attacked Convoy SC 122 at the very time it was being overtaken by a fast convoy, HX 228. The battle began on 16 March and lasted four desperate days. By the time it was over, despite the appearance of VLR aircraft for the first time in the mid-Atlantic area, 21 merchantmen had been lost, with another 10 heavily damaged, for the loss of one U-boat. The fury of these March battles is captured in the report of *Kapitänleutnant* Hans Trojer of *U-121*, describing his attack on Convoy HX 228:

> *In a snow squall came up at right angles to course of the enemy, surfaced as soon as latter emerged from the snow squall …… fired two torpedoes at two large, overlapping merchant ships. First torpedo hit. Ship disintegrated completely in flames and a vast cloud of smoke. Hundreds of steel plates flew like sheets of paper through the air. A great deal of ammunition exploded.*
>
> *Shortly afterwards scored another hit on a freighter, which also exploded. From bows to bridge the ship was under water. Heavy debris crashed against my periscope, which now became difficult to turn. ……*
>
> *Then I myself heard the noise of the destroyer's propellers where I stood in the conning tower and at once gave the order: "Dive! – full ahead! Both!" Depth charges, two patterns of four, were already falling, and pretty close to us. The conning tower hatch started to leak, and a mass of water came down into the boat. The boat plunged and jumped, but she gained depth steadily.*[9]

By the end of the third week in March, Dönitz's commanders had sunk 87 merchant ships totalling more than half a million tons and the U-boats seemed on the verge of cutting off Britain's lifeline.

It was at this moment that the battle turned in the Allies' favour. The code breakers at Bletchley Park were now able to read more of the *Kriegsmarine*'s improved cyphers at shorter intervals and convoys could be routed away from enemy concentrations, or at least be warned about them. More important was the appearance of the first escort carrier, USS *Bogue*, in the mid-Atlantic and *Bogue* was followed by two British counterparts. For the first time, some convoys had continuous air cover throughout their passage and aircraft flying from them could be sent to check out radar and HF/DF contacts at a distance, sparing the escorts and forcing the U-boats to submerge far from their targets, which made it difficult for them to make contact with their slow underwater speed. Although Dönitz had 120 U-boats available for service in the North Atlantic in April 1943, the escort carriers tipped the balance and, during the first week of that month, the *Bogue* beat off a concentrated attack by 40 submarines against convoy HX 230 with the loss of only one merchantman. In three convoy battles later in the month, three submarines were sunk for the loss of only four merchantmen, a bad rate of exchange for Dönitz. Not surprisingly, the statistics for April showed a marked improvement – the Allies lost 56 ships totalling 327,943 tons but sank 15 U-boats, about 10 per cent of Dönitz's operational strength.

Warm clothing was usually necessary
A view of the signal bridge of the corvette, HMCS **Sorel**, during work ups at Pictou, Nova Scotia, in the summer of 1943. Even in summertime, sea duty could be cold and warm clothing was a necessity but the neatness and uniformity of the dress indicate that this ship has not yet seen active service. (Canadian Naval Memorial Trust)

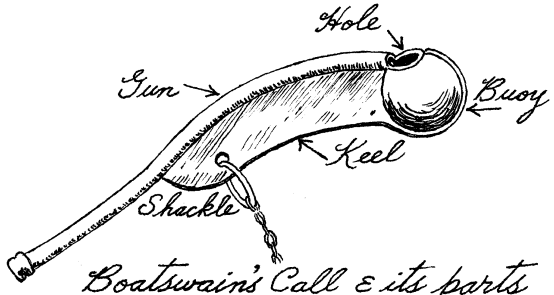
"As if a steel gauntlet had relaxed its grip:" Victory, May 1943

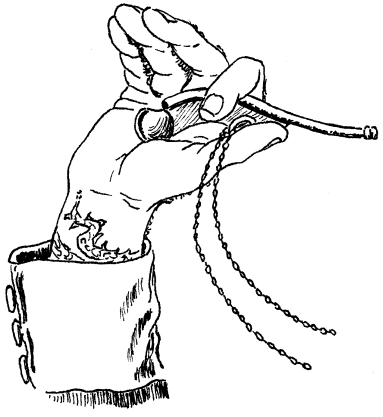
In the end, the crisis point of this seemingly unending struggle was the battle for ONS 5, which departed Britain in the last week of April with 42 merchantmen escorted by eight British warships. The convoy was sighted by a German patrol line and Dönitz attempted to bring no less than 41 submarines, about a third of his strength in the North Atlantic, against it. The shadowers briefly lost contact when the convoy encountered bad weather in the first few days of May, but on 4 May 11 U-boats attacked ONS 5, which itself had been somewhat scattered by gales. During that day two RCAF flying boats from Newfoundland arrived and, while searching ahead of the convoy, managed to sink *U-630*. That night, the Germans closed in and sank five merchantmen, but with dawn on 5 May came a VLR aircraft from Iceland operating at extreme range. It managed to stay with ONS 5 for much of the day although four more ships were lost in return for one enemy submarine.

During the night of 5 May, the convoy was subjected to two dozen separate attacks but the escort, now down to six ships because of the need to detach vessels to refuel, fought back hard and sank four U-boats, one of the kills being made by the destroyer HMS *Vidette*, which was equipped with Hedgehog. Continuous RCAF air patrols arrived on 6 May, as did an RCN group from the WLEF, and Dönitz was forced to call off the attack. The U-boats had sunk 12 ships but had lost 7 of their own (including 3 by aircraft) with 5 boats being badly damaged – more bad news for Dönitz.

The German commander, however, was not a man to be beaten easily. Although Allied code breakers could read enough of the *Kriegsmarine*'s

Enigma messages to divert convoys away from known submarine concentrations, the *B-dienst* was still reading enough Allied code for Dönitz to re-deploy his packs against Convoys HX-237 and SC 129 in the second week of May. Both convoys enjoyed almost continuous air cover from escort carriers and VLR aircraft. Convoy HX 237 traded 3 merchantmen for 3 U-boats while SC 129 lost 2 ships in return for two submarines. To Dönitz, these losses represented "unbearable heights" because they equalled one submarine for 10,000 tons of merchant shipping – in 1942 the ratio had been one U-boat for 100,000 tons.[10]





Bosun's call

The traditional method of communicating orders in a British or Dominion warship was by means of the "bosun's call" or "bosun's whistle", a small whistle held in the palm of the hand by which means the frequency of the sound was modulated by opening and closing the fist. Normally, the call was followed by a spoken instruction but for some of the most Important calls ("Pipe down" and "Hands to dinner") were not. When a flag officer or captain came aboard or went ashore, he was "piped" by a single, long note. (Drawing by L.B.Jenson, courtesy of the artist).

Even so, it took two more defeats before he gave up the struggle. Convoy SC 130, proceeding under the protection of continuous air cover, crossed the Atlantic without losing a single ship despite being attacked by 33 submarines – the German losses were five U-boats. By this time, U-boat commanders were understandably getting somewhat twitchy and, faced with many instances where submarines failed to make contact or, having made contact, lost it in good weather, Dönitz's staff recognized that the U-boat commanders were exhibiting a particular "concern for vulnerability to air attack."[11]

On 22 May, just before he ordered an attack on Convoy HX 229, Dönitz therefore sent a stern signal to all his commanders in the North Atlantic:

If there is anyone who thinks that combating convoys is no longer possible, he is a weakling and no true U-boat captain. The battle of the Atlantic is getting harder but it is the determining element in the waging of the war.[12]

Dönitz then concentrated 22 submarines against HX 229, which was -accompanied by two escort carriers, USS *Bogue* and HMS *Archer*, throughout its voyage – their aircraft sank two U-boats but the convoy did not lose a ship. A similar phenomenon took place with the next large convoy, SC 130, which crossed the Atlantic without loss under the protection of VLR aircraft, which sank two submarines.

Having lost 33 submarines and nearly 1,500 of his highly-trained personnel (including his own son) in just over three weeks, Dönitz finally -admitted defeat on 24 May 1943.

That day he recorded that the situation "now forces a temporary shifting of operations to areas less endangered by aircraft" and pulled his submarines out of the mid-ocean area to redeploy them against the Britain-Gibraltar convoy route.[13] The German commander, however, had not entirely given up on the North Atlantic as he knew it was the crucial operational area and he anticipated that, once the equipment of his vessels had been upgraded, the battle "will be completely resumed once more."[14]

To the amazed victors, however, the North Atlantic was suddenly free of the enemy – "as if a steel gauntlet had relaxed its grip on the Allied throat."[15]

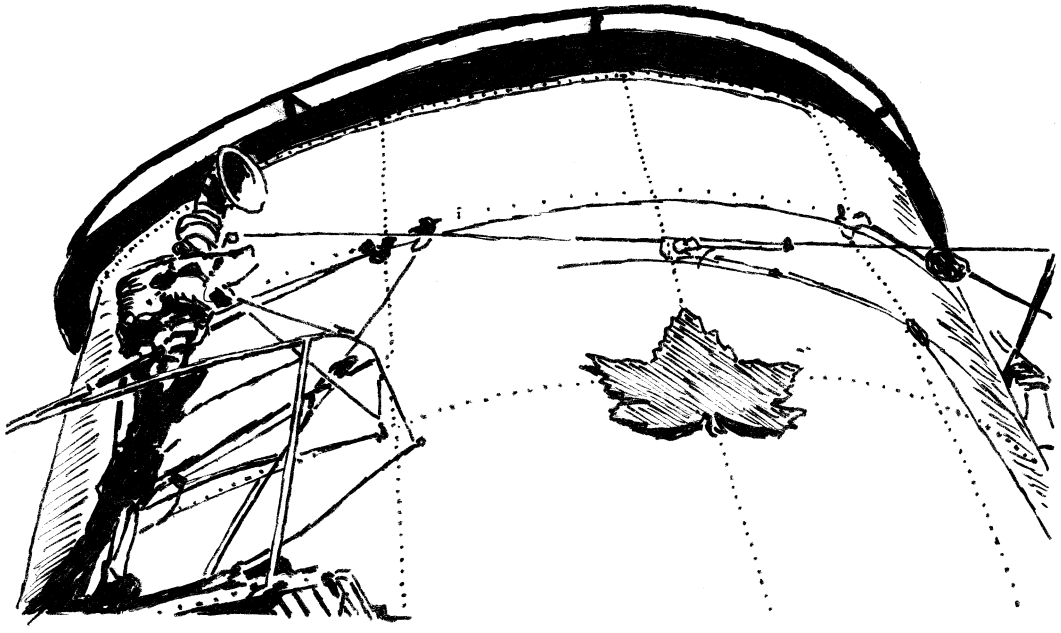
Wren Signallers, Signal Hill, St. John's, Newfoundland.
Despite doubts on the part of conservative senior officers, the creation of the Women's Royal Canadian Naval Service in 1942 proved to be an instant success and they quickly became an indispensable part of the Canadian naval effort. (Courtesy, National Archives of Canada, ***)

Hollow victory for the Royal Canadian Navy

The C-Groups returned to the Atlantic in mid-May just in time to play a small part in the final battles. C-2 Group, consisting of two British warships and four Canadian corvettes, *Chambly*, *Drumheller*, *Morden* and *Primrose*, were part of the escort for HX 237, which beat off continuous attacks with the help of the escort carrier HMS *Biter* and VLR aircraft. In the fight to get this convoy through, *Drumheller* shared in the destruction of *U-456* with the British destroyer *Lagan* and an RCAF aircraft. A few days later, C-1 Group, consisting of a British destroyer and six Canadian warships (the destroyer *Skeena* and the corvettes *Bittersweet*, *Eyebright*, *La Malbaie*, *Mayflower* and *Pictou*), took Convoy HX 238 unharmed across the Atlantic with assistance from the escort carrier USS *Bogue*.

That was the extent of the Canadian navy's participation in the climactic battles of the spring of 1943. The struggle had largely been borne and won by the RN, with assistance from the USN and the Allied air forces, and it had been won by good training, signal intelligence, air power and modern equipment – all assets conspicuously lacking in previous years when the RCN had struggled valiantly to guard the Atlantic sea lanes. While Canadian escort sailors applauded their British comrades, there was a growing resentment that, condemned by the deficiencies of their ships and equipment, they

would forever remain the Cinderella of the Allied navies.



The Maple Leaf Forever
In the latter years of the war, Canadian warships began to display a green Maple Leaf badge on their funnels as a sign of their nationality. Although the RCN started the war almost as a subdivision of the Royal Navy, by its end it had become a national Canadian service and the third largest Allied navy. (Drawing by L.B. Jenson, courtesy of the artist).