

LONG, SLOW YEARS: THE ROYAL CANADIAN NAVY

BETWEEN THE WARS, 1919 – 1939 (contd.)

(contd. from Part 1)..... The Royal Navy and its Dominion equivalents were confident that these measures had effectively neutralized the submarine and there would be no repetition of the losses of the First World War. As Commodore Nelles put it in 1937:

If international law is complied with, submarine attack should not prove serious. If unrestricted warfare is again resorted to, the means of combatting submarines are considered so advanced that by employing a system of convoy and utilizing Air Forces, losses of submarines would be very heavy and might compel the enemy to give up this form of attack.⁵

The U-Boot-Waffe

In Germany their future opponent, Commodore Karl Dönitz, was just as certain he knew how to offset these advantages. A submarine officer in the First World War, Dönitz had been appointed (rather unwillingly) in 1935 to command the newly-created *U-Boot-Waffe* or U-boat arm of the German navy. Although Germany had been forbidden to possess submarines under the terms of the 1919 Versailles Treaty, it had continued the development of this type of warship by constructing examples in shipyards in Finland, Holland, Spain and Turkey owned by German concerns. When Hitler instituted a programme of re-armament, the *Kriegsmarine*, or German navy, laid the keel of the first German-built submarine, *U-1*, and it was commissioned the same year that Dönitz took up his appointment. *U-1* was soon followed by 14 similar craft, and although these were small 250-ton coastal boats, nicknamed “Ducks” or “Canoes” by their crews, they permitted Dönitz to begin training the *U-Boot-Waffe*.

On the basis of his study of submarine operations in 1914-1918, Dönitz believed that the most effective use of submarines was an attack in numbers against a single convoy. Confident that the new boats entering service in the 1930s were superior to their First War predecessors in speed (both above and below surface), acceleration, ability to crash dive and survivability from attack, he devised new tactics for them. His favoured method was a night surface attack. In the dark, a U-boat was difficult to spot; it could use the advantage of its superior surface speed to manoeuvre into the best firing position while at the same time having little to fear from ASDIC, which was ineffective against surface objects. Dönitz was not unduly concerned about aircraft as he believed that a submarine running on the surface in daytime would not be surprised from the sky if its commander maintained a stringent lookout that would sight approaching -aircraft in time for the boat to crash dive.

From 1935 to 1939, Dönitz carried out a series of exercises that developed group attacks against simulated convoys. It became clear that the massing of U-boats against a single convoy required central command and good communications, and in a future war Dönitz planned to exercise tight

control over his submarine captains by means of radio communications between his headquarters on land and U-boats at sea. -Although he was aware that British code breakers had broken German naval cyphers during the First World War, he was not concerned about a repetition of this feat because he believed that Germany possessed the most sophisticated coding device in the world – the Enigma machine. Adopted by all three German services, the Enigma machine, which -resembled a typewriter, used highly sophisticated electronic circuits to convert a message into a complex code that could only be decyphered by a trained operator using another Enigma machine (see pages 166-167). Each machine possessed a number of variable settings which produced an almost limitless variety of cyphers and, as these settings were changed on a daily basis, German signals experts were confident that messages coded and transmitted by Enigma were unbreakable by any known method of decyphering.

Dönitz was convinced that Britain was Germany's most likely future opponent and therefore devoted much time to analysing the strengths and weaknesses of that maritime power. He concluded that, with 300 ocean-going U-boats of his favoured Type VII under central command, he could bring Britain to its knees in less than two years. However, his plans for the expansion of the *U-Boot-Waffe* were frustrated by Hitler, who for much of the 1930s restricted German naval construction, particularly submarine construction, as he wished to remain on good terms with Britain. Another stumbling block was that some senior German naval officers, just as convinced as their British counterparts that the submarine was no longer a credible threat, favoured building surface warships. Still worse, from Dönitz's point of view, not only did the German navy build fewer U-boats than he requested, but it built the wrong types and not the ocean-going Type VII he felt would be the most effective vessel against Britain.

Thus when war broke out in September 1939, far from possessing the 300 ocean-going submarines he regarded as necessary for victory, Dönitz commanded 57 U-boats. Of these, only 22 were ocean-going craft suitable for service in the Atlantic, and only 20 were ready for operations.

THE ENEMY: GERMAN U-BOATS, 1939 - 1945

In September 1939 the *U-Boot-Waffe*, or submarine service of the German navy, possessed 57 submarines, and during the war that followed, the *Kriegsmarine* commissioned 1,113 more craft, making a total of 1,170 submarines, of which 863 reached operational status. German submarine casualties were catastrophic – 753 U-boats were lost from all causes between 1939 and 1945.

The Type VII: Mainstay of the *U-Boot-Waffe*

The major U-boat and the submarine most often encountered by the RCN was the Type VII in its various forms. The Type VII was based on a First World War submarine, the UB III class, modified by experience gained during the interwar period when Germany clandestinely built submarines in foreign shipyards owned by German firms. The first Type VII boat was commissioned in the *Kriegsmarine* in June 1936 and in all some 704 boats of this class were built in five variants:

Type VII	10 boats built, 1935-1936
Type VII B	24 boats built, 1936-1940

Type VIIC and C/41	660 boats built, 1938-1944
Type VIID	6 boats built, 1940-1942
Type VIIF	4 boats built, 1941-1943

The major variants were the VIIC and C/41. The drawing opposite illustrates *U-91*, a Type VIIC boat as it might have appeared in September 1942 when, under the command of *Oberleutnant zur See* Heinz Walkerling, it sank HMCS *Ottawa*. Note the low silhouette which made the Type VII difficult to spot. In late 1942 and early 1943, the main deck gun was removed from most U-boats and their anti-aircraft armament increased to as many as eight 20mm guns.

The Type VII was a submersible warship rather than a true submarine. Until the advent of the snorkel in 1944, it could only run underwater on its electric motors for short periods before having to surface to recharge the batteries on which they depended for their power. Its powerful diesels gave it a fairly fast surface speed of 17 knots, but as the war progressed, Allied aircraft and escorts rarely let it take advantage of this asset. By late 1943 the Type VII was obsolescent and the last of the class was produced in 1944 although use of the snorkel prolonged its service life until the end of the war.

The Type IX

The Type IX was the other main ocean-going submarine of the *U-Boot-Waffe*. Larger than the Type VII, it was primarily used for independent missions. Between 1937 and 1945, 193 boats of this class were commissioned and the main variants were:

Type IX	8 boats built, 1936-1939
Type IXB	14 boats built, 1937-1940
Type IXC	54 boats built, 1939-1942
Type IXC/40	87 boats built, 1940-1944
Type IXD	30 boats built, 1940-1944

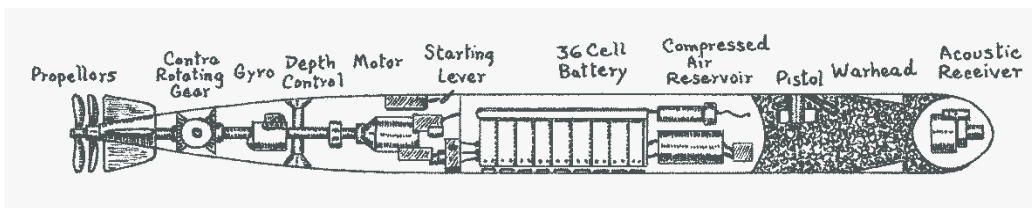
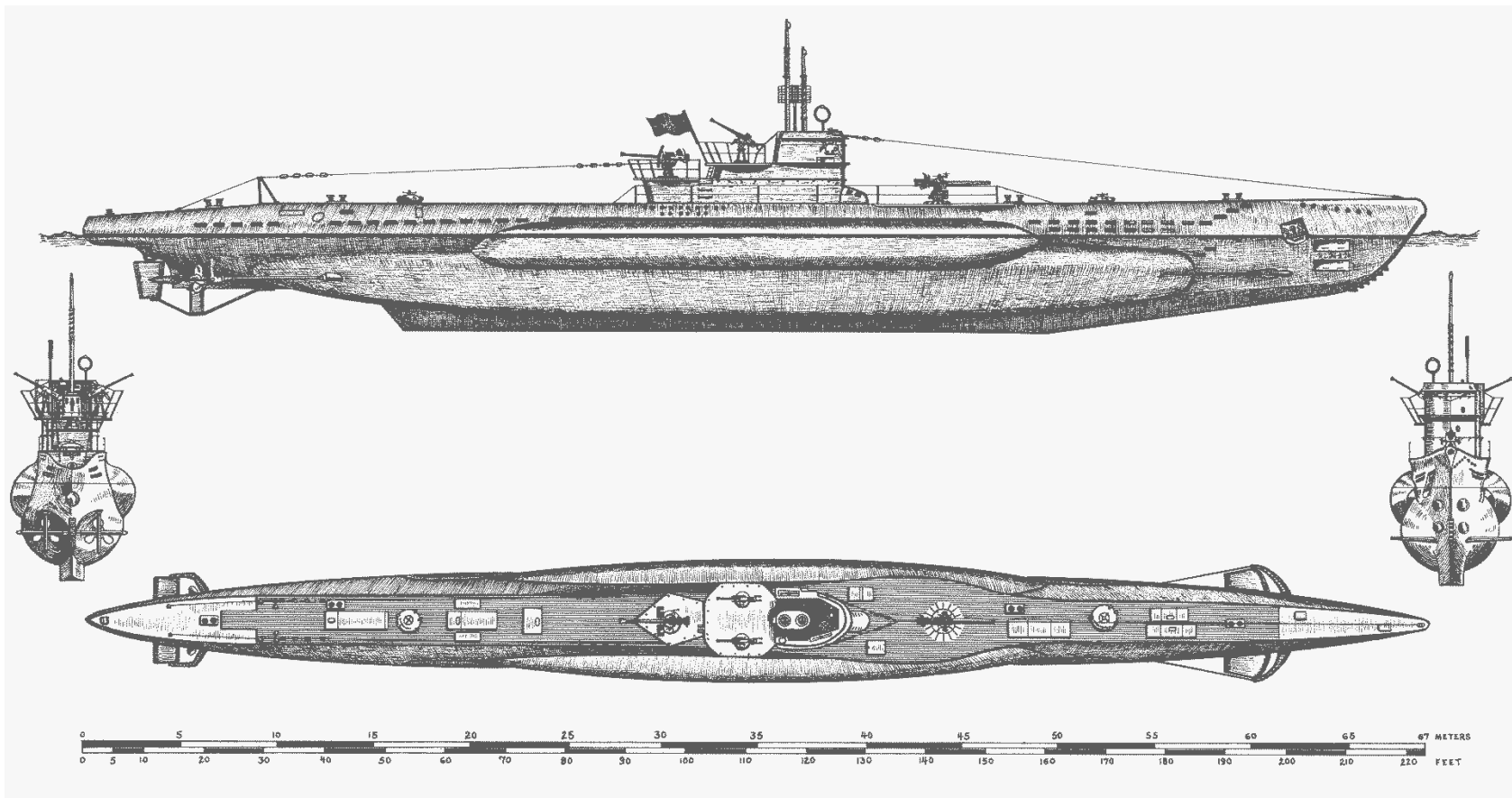
The Type IX did operate in the North Atlantic although its larger size meant it had a slower diving time, which put it at a disadvantage. Type IX boats were effective, however, in long-range patrols to distant waters, including Canadian waters. The technical information for the Type IXC/40, the most numerous variant, was as follows: *Displacement*: 1,120 tons on the surface, 1,232 tons submerged; *Length*: 249 feet; *Beam*: 23 feet; *Speed*: 19 knots on surface, 7.3 knots submerged; *Maximum range*: 13,850 miles on surface at 10 knots; *Torpedoes*: 22; *Armament*: 1 x 105mm main gun, 4 x 20mm AA, 1 x 37mm AA; *Crew*: 48-56 men; *Maximum depth*: 755 feet.

The new generation – Type XXI and Type XXIII U-boats

In 1943 the decision was made to replace the Types VII and IX with a new generation of “electro boats” (so called because they used a larger number of batteries) that represented a technological leap ahead of their predecessors. The ocean-going model was the Type XXI which had much greater submerged speed, range and armament, and a deeper diving depth than the older types, while the coastal class was the Type XXIII. Construction of these new boats commenced in late 1943 and 118 Type XXI and 61 Type XXIII submarines were in commission by May 1945 but very few reached operational status before the end of the war.

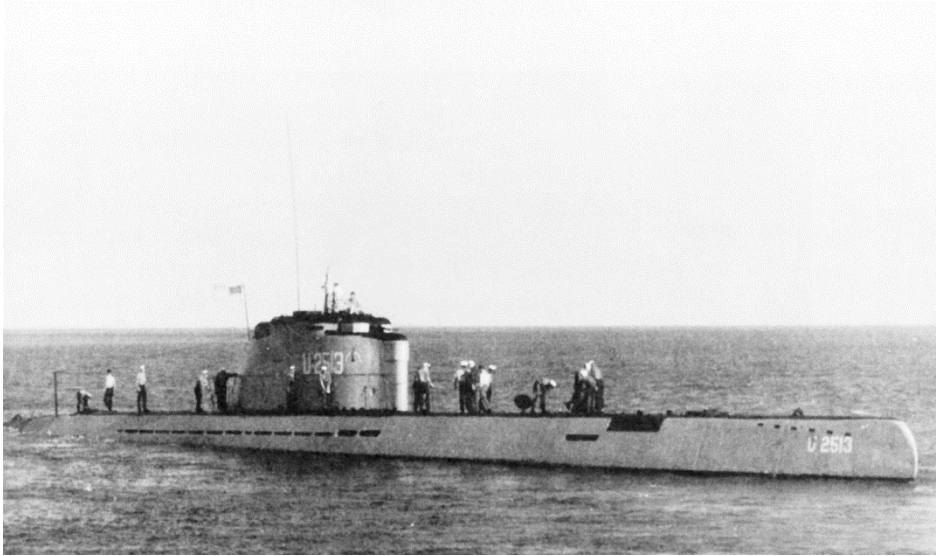
Technical information for the Type XXI was as follows: *Displacement*: 1,621 tons surface, 1,819 tons submerged; *Length*: 249 feet; *Beam*: 26 feet; *Speed*: 17.2 knots submerged, 15.6 knots surface; *Range*: 15,500 miles at 10 knots on surface; *Torpedoes*: 23; *Crew*: 56-60 men; *Maximum depth*: c. 900 feet.

Technical information for the Type XXIII was as follows: *Displacement*: 234 tons surface, 258 tons submerged; *Length*: 112 feet; *Beam*: 10 feet; *Speed*: 9.7 knots surface, 12.5 knots submerged; *Range*: 2600 miles at 8 knots on the surface; *Torpedoes*: 2; *Crew*: 14-18; *Maximum depth*: 591 feet.



Type VII C U-boat, 1942 and the G5 "GNAT" Acoustical Torpedo

The Type VII C, constructed in greater numbers than any other German submarine, was the workhorse of the U-boat fleet during the Battle of the Atlantic although it became increasingly obsolescent. **U-91** is depicted here as she might have appeared in 1942. Later in the war, the deck gun was removed and the AA armament increased. The smaller drawing shows the G5 Acoustical torpedo, which homed in on the propeller noise of target ships, was introduced in 1943 but counter devices almost immediately rendered it much less dangerous. (Drawing by L.B. Jenson, courtesy of the artist)



(left) **Late War Threat -- Type XXI U-boat**

In 1943 the decision was made to replace the U-boat arm's aging fleet of Type VII and Type IX boats with new, more modern, craft including the Type XXI shown here. With the twice the speed, both on the surface and submerged, twice the torpedo armament and twice the range of its predecessors, the Type XXI would have posed a major threat to Allied sea power. Its entry into service was delayed by shortage of materials and Allied bombing. (Courtesy, United States National Archives, NA 80 G70 5562)

Last days of peace, 1938-1939

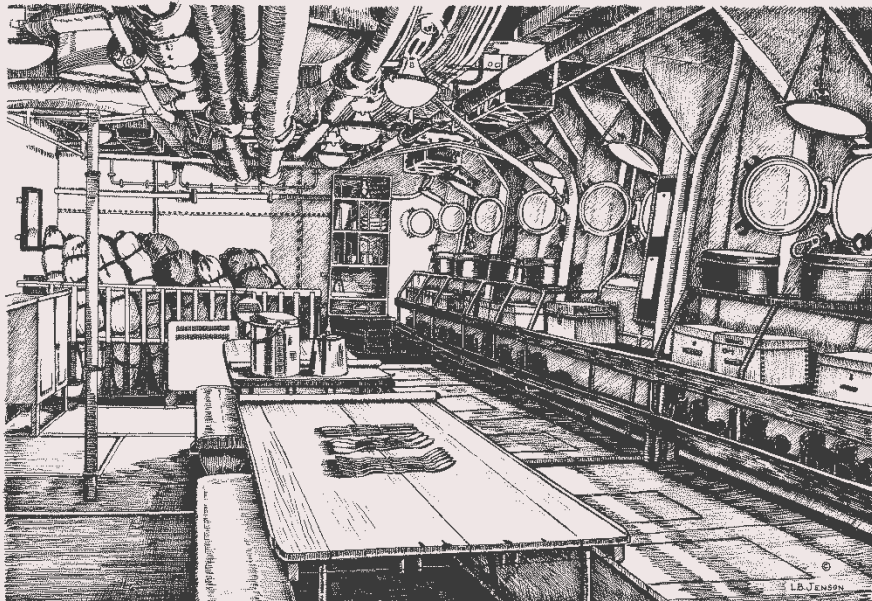
The possibility of war, which had gradually increased throughout the 1930s, became imminent in 1938 when Hitler demanded that Czechoslovakia relinquish the Sudetenland, the portion of that small nation populated by German-speaking citizens. The Czechs were prepared to fight but Britain and France gave Hitler the Sudetenland in return for an empty promise that it represented his last territorial demand in Europe. In the spring of 1939, while the western democracies stood by and did nothing, Hitler overran the remainder of Czechoslovakia and, more ominously, -began to make noises about reclaiming former German territory in Poland. By now, British and French leaders were reluctantly convinced war was inevitable and concluded treaties with Poland to come to her aid, should Germany invade. Hitler, disbelieving their resolve, continued to make -demands and in the summer of 1939 another international crisis was being measured in the black ink of newspaper headlines.

At the Admiralty, active planning and preparation for war had, by the summer of 1939, been under way for more than a year. For Britain as an island nation, the Royal Navy represented the first and most vital line of defence, and in the event of war it had to be ready to dominate the waters around the British Isles. The Admiralty had accurate information about the size and composition of the German submarine fleet, which, given its weak strength, they did not regard as a serious threat. On the outbreak of hostilities, the RN planned to impose the convoy system throughout the British Commonwealth and to monitor German naval movements at an Operational Intelligence Centre in its London headquarters which tracked German surface and submarine units.

Although it largely discounted the submarine threat, the RN did recognize the necessity of having numbers of specialized anti-submarine warships. In the late 1930s, the standard British ASW vessel was the sloop, a miniature destroyer equipped with ASDIC, guns and depth charges. Sloops were very effective but their construction was almost as costly and as lengthy as that of a destroyer and the Admiralty believed that in the event of war there

would be a tremendous demand for coastal escorts as there had been during the First World War. They therefore looked for a simpler and less costly alternative to the sloop and found it in a design by William Reed, a marine architect in a British shipyard that specialized in constructing whaling vessels. Whalers had to be seaworthy and highly manoeuvrable (qualities also needed by submarine chasers) but, being civilian vessels, also had to be cheap to construct and simple to maintain. In 1938, the Royal Navy asked Reed to design a whaling-type coastal escort and the result was the corvette.

The corvette was small (about 200 feet in length and 33 feet in beam, with about 1,000 tons displacement), but it was highly manoeuvrable and very seaworthy. Reed's design called for the use of simple piston-drive steam engines in preference to the steam turbine engines used in most warships and it was this feature that made the corvette practicable for construction in shipyards unskilled in naval construction and suitable for operation by relatively inexperienced personnel. The penalty for simplicity, however, was slow speed – about 16 knots and that only for short periods – which was insufficient to overtake either of the two major U-boat types, the Type VII and Type IX, on the surface. As the corvette was not intended to engage enemy surface ships, its gun armament was minimal – a 4-inch main gun, an anti-aircraft gun and a couple of machine guns – and its main weapons were its depth charges. The utility of such a sturdy but simple little warship was obvious and plans were made to construct corvettes for the RN in the event of war.



Ready for Captain's Rounds

The seaman's messdeck of a destroyer as it would have been at its best -- ready for the captain's rounds or inspection. When not on duty, sailors slept, ate and rested in this crowded space where there was a place for everything and everything was in its place. Hammocks have been rolled and put in the storage area in the corner and the mess deck is as spotless as the men could make it. Eating utensils are either stowed on the shelf unit by the forward bulkhead or neatly arranged on the mess table. The scuttles are open for ventilation and, beneath them are the men's hat boxes, their small wooden "ditty" boxes and their freshly shined boots. Their duffel bags were stored beneath the locker benches along the bulkhead and were accessed by the hatches on the seats. (Drawing by L.B. Jenson)

In Canada Commodore Nelles and his staff at Naval Service Headquarters (NSHQ) in Ottawa also discounted submarines – their minds were fixed firmly on the danger of surface raiders. Destroyers, with their high speed and gun and torpedo armament, were regarded as the best defence against fast, powerful German surface ships and this was reflected in the Canadian government's plan for the expansion of the RCN announced in May 1939. It called for the acquisition of 18 destroyers, 16 minesweepers and 8 motor torpedo boats but only 8 ASW vessels – type unspecified. The Liberal government, however, did not allocate the funds to carry out this plan and in any case it was overtaken by events.

It was standard practice for the Admiralty to station a British officer at NSHQ to improve liaison with the RN, and in the summer of 1939 the -officer in that post was Commander Eric Brand, RN. He proved not only helpful in his liaison duties and the naval control of shipping but also useful in August 1939 when the time came for the NSHQ staff to draft war plans. On the 21st of that month, planning moved from the theoretical to the actual when the British government warned Ottawa that it was mobilizing because German troop movements toward Poland indicated war was imminent.

The RCN goes to war

In response, the government authorized the heads of the three Canadian armed services to mobilize in conjunction with Britain despite previous public statements that, unlike 1914, Canada would not necessarily go to war if Britain went to war. The next day, when Britain instituted naval -control of merchant shipping, Ottawa followed suit and on 1 September, when word came that German troops had invaded Poland, NSHQ placed the Canadian navy on active service by sending a signal to all captains to “Ship warheads and be in all respects ready for action. Do not start an engagement until ordered ... but be prepared to defend yourselves in case of attack.”⁶ On the morning of that day, as one RCN officer remembered, HMC Ships *Fraser* and *St. Laurent*, then at Vancouver, received orders to sail immediately for Halifax. He recalled that “a scene of considerable activity” ensued as smoke “poured from the funnels, awnings were furled, boats hoisted and booms and gangways were secured for sea.”⁷ Less than three hours after receiving their orders, both destroyers were steaming out of Vancouver bound for the Panama Canal and ultimately Halifax. At noon, the two vessels received a signal from NSHQ to “prepare for war” and at 1715 hours they received a second signal informing them that the RCN had been placed “on active service” and the RCNR and RCNVR were “being called up as necessary.”⁸

Two days later, on 3 September 1939, after Hitler failed to respond to British and French demands to withdraw his troops from Poland, those nations declared war on Germany. Canada’s declaration came a week later on 10 September, following an emergency debate in the House of Commons, but during that week the RCN was fully mobilized.

It was a tiny service consisting of just 415 officers and 2,476 sailors in its three components – the RCN, RCNR and RCNVR – but it was as well prepared as it could be, given the fact that it had suffered from government indifference and inadequate funding throughout most of its short history. Its striking edge was the six modern destroyers (His Majesty’s Canadian Ships *Fraser*, *Ottawa*, *Restigouche*, *Saguenay*, *Skeena* and *St. Laurent*), which were backed up by four modern minesweepers (HMC Ships *Comox*, *Fundy*, *Gaspé* and *Nootka*), and three small auxiliary vessels (HMC Ships *Skidegate*, *Gate Vessel No. 1* and *Venture*). At the outbreak of the Second World War, the Royal Canadian Navy could be characterized as a small but professional service. That professionalism would be sorely needed in the coming years as it experienced unprecedented expansion in times of -almost continuous trial.

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