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The
**BRITISH COLUMBIA
HISTORICAL QUARTERLY**

“Any country worthy of a future
should be interested in its past.”

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CANADA'S FIRST SUBMARINES: CC1 AND CC2.

AN EPISODE OF THE NAVAL WAR IN THE PACIFIC, 1914-18.

"About ten o'clock on the morning of the Fourth of June, the destroyer *Wolverine* commanded by Lieut.-Commander Adrian Keyes, the younger brother of the Commodore, took us from Kephalo to Helles. . . . Keyes was full of stories about his experiences in Canada at the very beginning of the war, when he manned a submarine with a crew of local business-men. I wish I could remember the details of the good stories he told us; but they have passed from my recollection irretrievably, and I can only remember the gold watch that was presented to him by his amateur crew. One of those Canadian business-men ought to give us the tale of that submarine's adventures: *Blackwood's Magazine* would be the proper medium. Keyes himself is no longer alive, and the little epic ought not to be lost eternally."

—COMPTON MACKENZIE, *Gallipoli Memories*,
London, 1929, p. 110.

When the British Empire went to war on August 4, 1914, the coast of British Columbia and the shipping in its neighbourhood were almost unprotected against attack by German cruisers, of which two, the *Leipzig* and the *Nürnberg*, were believed to be on the west coast of North America. The *Leipzig* was, in fact, in a Mexican port, and a squadron of German cruisers was known to be in the western Pacific. There were some shore batteries at Esquimalt; but the single warship of any fighting strength stationed on the coast was H.M.C.S. *Rainbow*, a cruiser which was obsolescent, undermanned, and supplied with ineffective ammunition. The only ships of the Royal Navy anywhere near were the sloops *Shearwater* and *Algerine*. From the naval point of view, therefore, the north-eastern Pacific area held out some very unpleasant possibilities.¹

Although vessels able to navigate under water had been thought of and built in the eighteenth century, it was not until near the end of the nineteenth century that a fully practicable

(1) For a full account of the *Rainbow*, the German cruisers, and the general situation in the Pacific, see G. N. Tucker, "The Career of H.M.C.S. 'Rainbow,'" *British Columbia Historical Quarterly*, vii. (1943), pp. 1-30.

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one had been designed. The prototype of the modern submarine was invented by John P. Holland, of Paterson, New Jersey, an Irish patriot who saw in such a vessel, used against the Royal Navy, a means of achieving independence for Ireland. His boats were the first to use a combination of internal-combustion engines for cruising on the surface and electric motors driven by storage-batteries for propulsion when submerged. In the year 1900 the Admiralty ordered the first submarines for the Royal Navy, and these were of the Holland type. By 1907 all the great naval powers, most of whom had bought plans and permission to use them from the Holland Company in the United States, were building their own submarines. Smaller countries, when they wanted them, usually ordered them from the ship-builders of their larger neighbours.²

On July 29, 1914, the Admiralty sent out the "warning telegram," and the precautionary stage of the various defence schemes was ordered. The German Navy too was preparing for the worst:—

On July 29 the ships lay in Kiel Harbour and were engaged in effecting the pre-arranged measures which as a rule precede a regular mobilization, measures which were ordered on account of the increasing tension of the political situation.³

On the same day also, a group of about half a dozen men met at the Union Club in Victoria, B.C. Among them were Captain W. H. Logan, Surveyor to the London Salvage Association, and Mr. J. V. Paterson, President of the Seattle Construction and Drydock Company, who was in the city on business.⁴

War possibilities were under discussion. The acquisition of a Chilean warship was suggested and put aside as impossible. Paterson stated that his company had, at Seattle, two submarines which might be obtained. Of their existence Logan was aware. This was the first intimation, however, that there was chance of their acquirement.

(2) Article on Holland in *Dictionary of American Biography*, ix.; W. L. Clowes (ed.), *The Royal Navy*, London, 1897–1903, vii., p. 61; Bernard Brodie, *Sea Power in the Machine Age*, Princeton, 1941, pp. 288 and 296 n.

(3) Admiral Scheer, *Germany's High Sea Fleet in the World War*, London, etc., 1920, p. 9.

(4) Account of this meeting and the following part of the paragraph are based on *Report of the Commissioner concerning Purchase of Submarines* [Davidson Commission], Ottawa, 1917, pp. 7–25. It is not clear whether Paterson had come to Victoria in order to sell his submarines or whether he was there on other business.

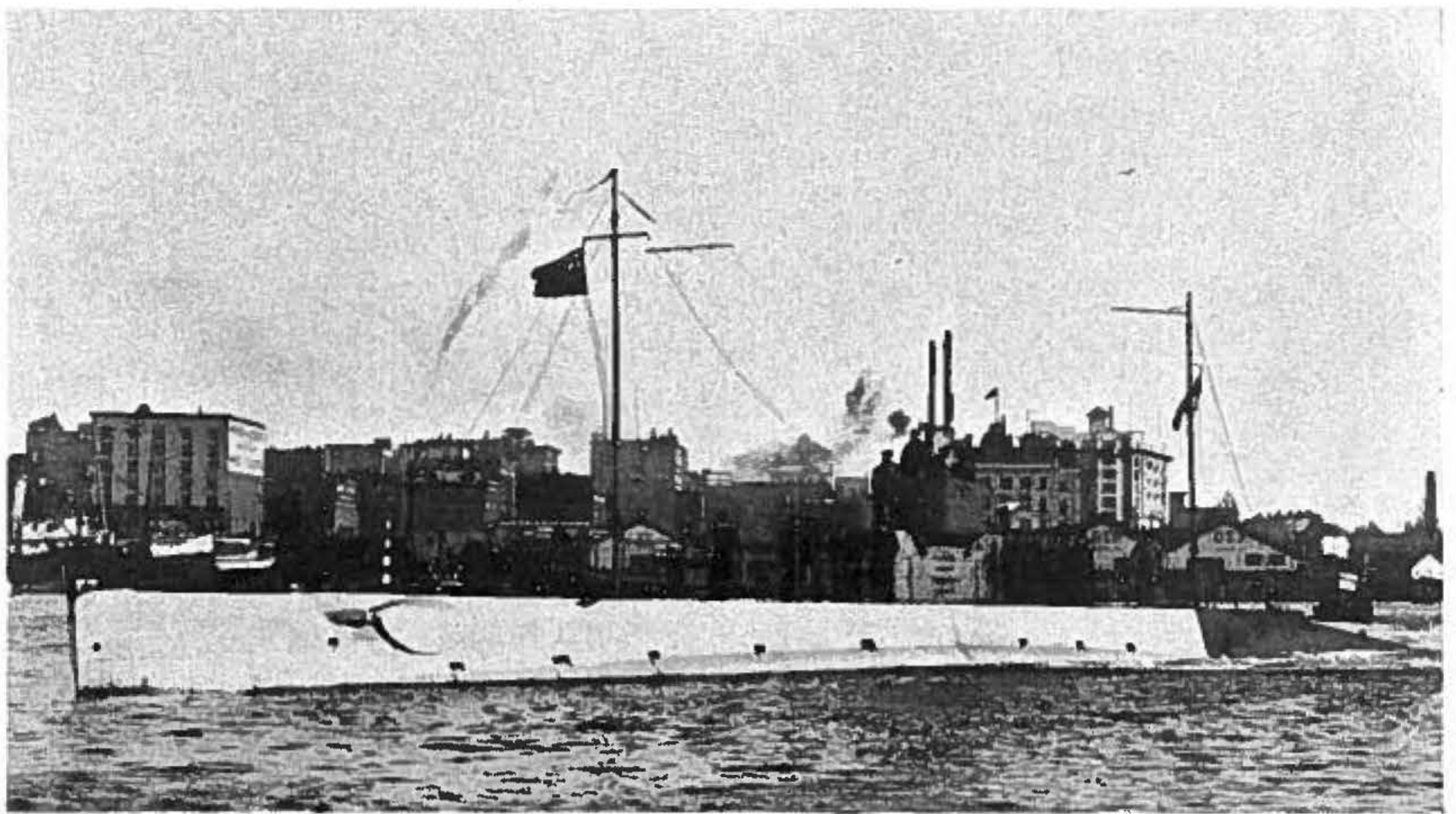
These submarines had been ordered by the Chilean Government in 1911 from the Electric Boat Company of New Jersey, holders of the Holland patents, who had arranged for Paterson's company to build them. The Chilean Government had agreed to pay \$818,000 for the pair, and had actually paid \$714,000; but the payments were slightly in arrears. Chilean naval experts had recommended that the boats should not be accepted, on the ground that they were overweight and that their sea endurance was consequently not up to specification. The builders were willing and anxious to sell the submarines to some one else, because their relations with the Chileans were strained, and also because in this way they would probably obtain a much higher price.

During the first two days of August the international situation was rapidly deteriorating. The Premier of British Columbia, Sir Richard McBride, took the matter of the submarines in charge, and conferences of leading men were held at McBride's office, at the Dockyard, and elsewhere. The Honourable Martin Burrell, Dominion Minister of Agriculture and member for Yale-Cariboo, happened to be taking a holiday on the Pacific Coast at the time, and McBride obtained his advice and personal support; but Burrell would not commit the Federal Government. So exigent did the situation become, that a summons was issued to meet at the Naval Yards on Monday morning the 3rd of August at 3 o'clock. Later in the day other meetings took place. Logan got into telephonic communication with Paterson, and asked for a definite price. The answer was \$575,000 each. Logan expressed surprise at the figure, and handed the receiver to Mr. Burrell, who found it confirmed. To an attempt at bargaining Paterson answered brusquely: "This is no time to indulge in talk of that kind and that I would not listen to it, and that if they did not care to get the boats they did not need to take them." On the next day Logan, at Seattle, again brought up the question of price. Paterson replied that the price was not open to discussion at all. The price included the cost of delivering the vessels at the border of Canadian territorial waters. Naval opinion supported the belief that the purchase ought to be made, and Sir Richard McBride assumed the responsibility of completing arrangements.⁵

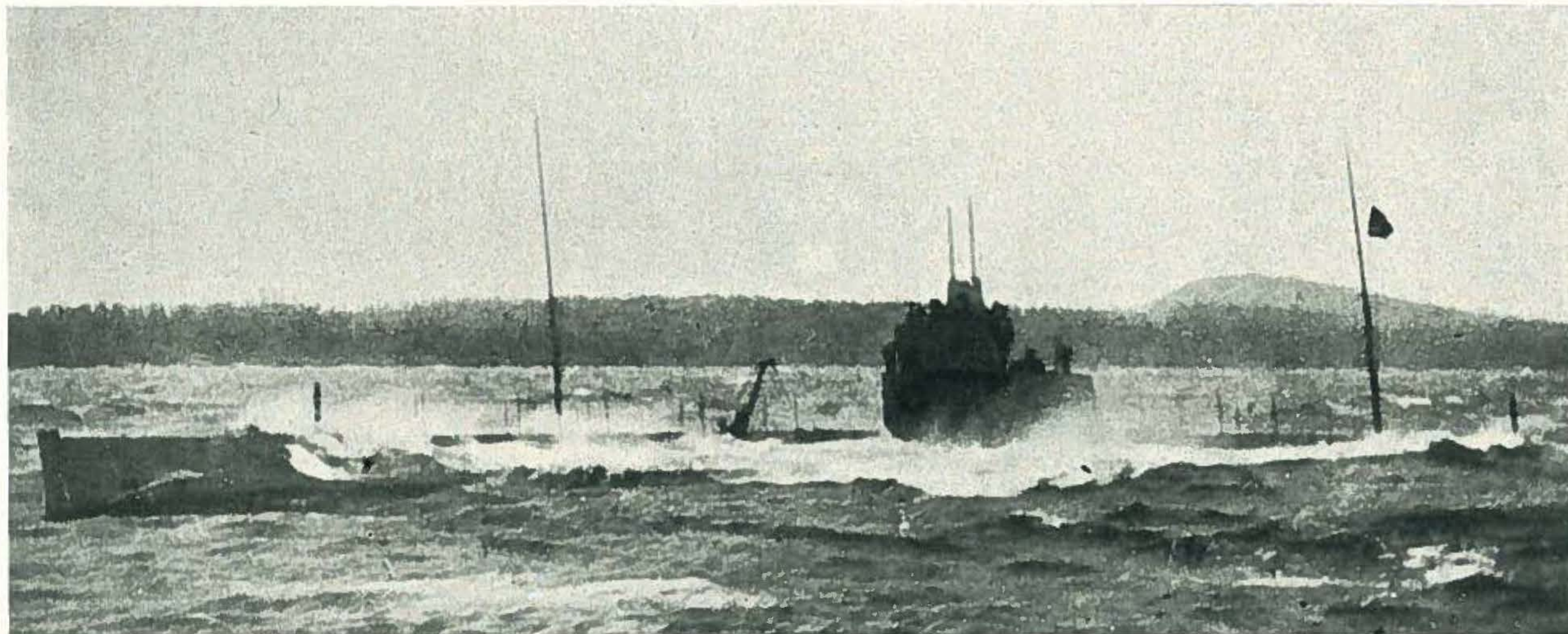
On August 3 the Commander-in-Charge at Esquimalt telegraphed to Naval Service Headquarters in Ottawa:—

Two submarines actually completed for Chilean Government Seattle, estimated cost £115,000 each. Could probably purchase. Ready for action

(5) *Ibid.*, p. 11. The *Report*, the whole of which should have been rewritten before publication, is responsible for the strange mixture of *recta* and *obliqua* in Paterson's quoted reply.



One of the submarines in Victoria Harbour.



CC1 in a good seaway.

Photograph from the collection of Lieut.-Commander J. V. Argyll, R.C.N.V.R.

Diesel engines were started and the submarines worked up to full speed. During this cruise, or earlier, one of them must have scraped her plates on some obstruction; but this fact was not known to their new owners until later.¹²

Meanwhile the Canadian authorities had been arranging to receive the two vessels. An officer who had had several years' experience with submarines was fortunately available in the person of Lieutenant-Commander Bertram Jones, R.N. On the retired list and living on the west coast, he had reported at the Dockyard in Esquimalt when war seemed imminent, and his services had been accepted. Jones was ordered to go out with the *Salvor* to meet the submarines at the rendezvous. He carried written instructions to inspect them as carefully as conditions permitted, spending at least an hour in each boat. If they appeared to be fully satisfactory the submarines were to be paid for, and he was then to bring them to Esquimalt. Jones carried with him a cheque for \$1,150,000, drawn by the Province of British Columbia on the Canadian Bank of Commerce and endorsed by McBride. Accompanied by Lieutenant R. H. Wood, Chief Engineer at Esquimalt, Jones met the submarines at the appointed place, where they drew alongside the *Salvor*. About four hours were spent in inspecting the boats, the huge cheque was then given to the impatient Paterson, British colours were hoisted, and no time was lost in making for Esquimalt, which they reached safely on the morning of August 5.

On the heels of the various declarations of war President Wilson signed a series of identical Neutrality Proclamations. These forbade, within the jurisdiction of the United States, a number of acts likely to benefit one of the belligerents at the expense of the other. The acts which were specified included:—

Fitting out and arming, or attempting to fit out and arm, or procuring to be fitted out and armed, or knowingly being concerned in the furnishing, fitting out, or arming of any ship or vessel with intent that such ship or vessel shall be employed in the service of either of the said belligerents.

This, the most nearly relevant section, would hardly have made an offence of an intention to take the two submarines out of American and into Canadian waters. As the two boats had not

(12) The story of how the submarines were acquired, except where otherwise indicated, is based on the evidence given before the Davidson Commission, and the ensuing report.

been cleared out of Seattle, however, their seizure could no doubt have been based on that fact, and it is easy to see why the United States authorities should have wished to bar any possibility of a couple of miniature *Alabamas* running loose in the Pacific. Whatever the legal position may have been, the President's Proclamation covering the hostilities between Germany and Great Britain was signed on August 5, and the following day, at 8 a.m., the United States cruiser *Milwaukee* sailed from Bremerton Navy Yard in order to intercept the two submarines, if they were still in American territorial waters, and "prevent violation of Neutrality." The *Milwaukee* searched Port Townsend harbour, and having steamed for some distance towards New Dungeness without finding the submarines, she returned to Bremerton.¹³

The unheralded arrival of the submarines caused much excitement. Many of the people in Esquimalt concluded that the enemy was upon them. The examination vessel on duty outside ran hastily into the harbour, with the lanyard of her siren tied to the rail and the siren sounding an uninterrupted alarm. The shore batteries, which were manned by the Army and which had not, apparently, been warned, telephoned to the Dockyard before opening fire, in order to find out whether or not any submarines were expected. In the end, the causes of the excitement entered the harbour unmolested, and tied up at the Dockyard. The Esquimalt base was ill-prepared to receive the newcomers, and wired at once to Ottawa:—

Require all gear in connection with 18" submerged tubes firing torpedoes; including gyroscopes spare tools and torp. manuals, torp. artificers, torp. ratings. We have nothing.¹⁴

They also asked for any submarine officers and men who might be available.

The Admiralty's reply to the request from Ottawa for advice favoured the purchase, provided that Canada could man the boats.¹⁵ This opinion was given principally on the advice of

(13) Material from the *Milwaukee's* Cruising Report and Log was kindly furnished by the Officer in Charge of Naval Records and Library, Navy Department, Washington, D.C.

(14) Dockyard to Hdq., August 5, 1914. N.S.R. 46-1-48(1).

(15) Admiralty to Naval Hdq., Ottawa, August 5, 1914. N.S.R. 1062-1-2(1). *Sess. Paper No. 158*, p. 5.

Sir Philip Watts, who had been for many years Director of Naval Construction at the Admiralty. He was naval adviser to the Chilean Government, and he knew all that could be known about the two submarines by anyone who had not actually seen them. He thought that they were well worth buying, and his opinion was supported by the Commodore of the British submarine service. The Canadian Government had thus been advised to buy the boats by the best-informed authority accessible to it.

As soon as he had made up his mind to buy the submarines with Provincial funds, Sir Richard McBride had sent the following telegram to Sir Robert Borden:—

After consultation with Burrell and Naval Officers have advanced to-night one million and fifty thousand dollars . . . for purchase two modern submarines lying Seattle harbour and built for Chile. All arrangements complete for their arrival Esquimalt to-morrow morning unless untoward incident occurs. Congratulate Canada if this operation successful on acquisition of such useful adjunct defence of country.

Borden replied:—

Yesterday morning we communicated with Admiralty as to advisability of securing two submarines mentioned, and as to feasibility of manning them, as without crew they would be useless. They advise purchase provided crews could be secured. As this has been accomplished we appreciate most warmly your action which will greatly tend to increase security on the Pacific coast, and send hearty thanks. Please advise us of their arrival.¹⁶

The naval signals which bracketed the actual buying of the submarines were very terse. On August 5 Naval Headquarters sent a signal to Esquimalt: "Prepare to purchase submarines. Telegraph price." The reply was: "Have purchased submarines."¹⁷ British Columbia thus became the only Province that has ever, since Confederation, owned any warships. On August 7 the Dominion Government assumed responsibility for the purchase, and the boats were placed at the disposal of the Admiralty by Order in Council on the same day.¹⁸

Their prospective Chilean owners had named the vessels *Iquique* and *Antofagasta*. The Senior Naval Officer at Esquimalt, subject to the approval of Headquarters, called the new

(16) McBride to Borden, August 4, 1914; Borden to McBride, August 5, 1914. *Sess. Paper No. 158*, pp. 4, 5.

(17) N.S.R. 1062-1-2(1). *Sess. Paper No. 158*, p. 5.

(18) *P.C. 2072* of August 7, 1914.

arrivals *Paterson* and *McBride* after their builder and buyer. His action, however, was not approved, an Australian precedent being followed instead. Some time previously the Royal Australian Navy had acquired two submarines of the Royal Navy's E class, and had named them *AE 1* and *AE 2*. The Canadian submarines approximated to the Admiralty's C class boats, so the *Iquique* became *CC 1* and the *Antofagasta* *CC 2*. Yet President Paterson did not go entirely unrewarded, for the Electric Boat Company let him keep \$40,000 by way of commission.¹⁹

These were small submarines of a type well adapted to operating in coast waters. The approaches to Victoria and Vancouver through the Strait of Juan de Fuca and the islands within were admirably suited to defence by means of submarines, because a ship entering those narrow waters would have to follow more or less predictable courses. Also the knowledge that submarines were present might weigh heavily with the commander of a raider so far from any friendly base that a serious injury would make her return home impossible. It was with this in mind that the Secretary of State for the Colonies, when he accepted the submarines for operational purposes on behalf of the Admiralty, transmitted the following suggestion:—

The fact of their being on the coast cannot be too widely advertised but their actual position should be concealed. Plausible reports should be issued from time to time of their presence at different ports.²⁰

Nor was the knowledge that two submarines were stationed on the coast valuable only with respect to its probable effect on the enemy. During those earliest days of the war there was much uneasiness among the seaboard population. The banks in Victoria and Vancouver, for example, were transferring their cash and securities to inland or neutral cities. Blasting in connection with work on sewers in Victoria was stopped, because of nervousness among the people. Several million dollars' worth of insurance against bombardment seems to have been bought, and one family went so far as to prepare a vault in the cemetery for occupancy in case of attack. There was no panic, yet it was

(19) The Electric Boat Company's representative had quoted to Paterson the price of \$555,000 for each of the submarines. Paterson hoisted the amount to \$575,000, and pocketed the difference.

(20) Sec. of State for Colonies [Harcourt] to Governor-General, August 9, 1914. Copy in N.S.R. 1062-1-2(1).

very desirable that the coast should not only be but also seem to be adequately protected. The local press almost from the start struck a note of confidence, and the submarines gave it something tangible to work with. Thus the *Victoria Daily Times* was only enlarging a salutary fact when on August 5, after announcing their arrival, it added:—

The Iquique and Antofagasta are modern submarines of high speed and wide radius of activity. They could cope with a hostile fleet of considerable proportions.²¹

The following day the *Colonist*, of the same city, alluded to the arrival of the submarines in an editorial:—

These vessels are a highly important addition to the defences of the Coast, and fortunately one of the best experts in submarine navigation is on hand to take charge of them. . . .

The southwestern part of the British Columbia Coast is now very well provided for in the matter of defence. In deference to the wishes of Ottawa we shall not enter into any details as to the nature of these preparations, but we can assure the citizens that nothing has been left undone that ought to be done or that can be done with the available facilities, and that these are quite sufficient for defence against any probable enemy.²²

During the first few days of the war the naval arrangements at Esquimalt call to mind those on board H.M.S. *Pinafore*. The Senior Naval Officer, who had been overloaded with work, had a nervous breakdown, and his actions showed that he roundly suspected the enemy of roaming at large in the streets of the town. Accordingly there was a hiatus which was filled for the time being, adequately if unofficially, by the Provincial Premier. The position of Senior Naval Officer was then assumed by Lieutenant Bertram Jones, pending the arrival from Ottawa of Admiral W. O. Storey, who took over the duties on October 20. Preparations were begun to man the submarines and get them to sea, and much of the credit for this achievement belongs to the late Lieutenant Adrian Keyes, R.N. (Retired). An experienced submarine officer of great ability, he was working in Toronto for the Canadian Northern Railway when the war came. Admiral Kingsmill,²³ at his wits' end to find a submarine officer at a moment's notice, heard of Keyes and asked him to

(21) *Victoria Daily Times*, Victoria, B.C., August 5, 1914.

(22) *Victoria Daily Colonist*, Victoria, B.C., August 6, 1914.

(23) Director of the Naval Service. Keyes was a brother of the present Admiral of the Fleet, Lord Keyes.

report in Ottawa. After an interview, Keyes was sent forthwith to Esquimalt to take charge of the submarines. His resources consisted of a badly equipped dockyard, two strange boats, and about a hundred volunteers. These last Keyes lined up, asking any man who might not wish to serve in a submarine to step out of the ranks, whereupon not a man moved. From this group the crews were chosen, and the work of learning to handle the boats began.²⁴

No torpedoes for the submarines had been supplied at Seattle, and none of the required 18-inch calibre were available at Esquimalt as the *Rainbow's* were 14-inch ones. The *Niobe*, which was at Halifax, used 18-inch torpedoes, however, and a supply of these was sent to Vancouver as quickly as possible. One of them went bumping across the continent with its compressed-air chamber filled; but all arrived safely.

Less than two weeks after the boats had reached Esquimalt long strides had been taken towards making them fit for active operations. Keyes himself commanded *CC 1*, and with him were Lieutenant (now Lieutenant-Commander) Wilfrid T. Walker, R.N. (Retired), and Midshipman Maitland Dougall, a graduate of the Royal Naval College of Canada, who was later to see much submarine service and to lose his life on the other side of the Atlantic. The crew consisted of three former naval ratings and thirteen volunteers who had been enrolled locally. *CC 1* had on board five of *Niobe's* torpedoes and was fitted with wireless. She was reported ready for active service. *CC 2* had a full complement in training under the command of Lieutenant Bertram Jones. His first officer was Lieutenant (now Captain) B. L. Johnson, R.N.R.²⁵ The crew was composed of six active or former naval ratings and ten local volunteers. The *CC 2* had three torpedoes and was expected to be ready for service

(24) Most of the information contained in this paragraph was supplied by Captain B. L. Johnson, D.S.O., R.C.N.R.

(25) This officer was later to command H.M. submarine *H 8*, which he took from Montreal across to Great Britain and afterwards commanded in the North Sea. On one occasion, while running submerged, the *H 8* struck a mine which blew off a portion of the bow. Lieutenant Johnson brought her safely back to Harwich, was promoted to Lieutenant-Commander, and awarded the D.S.O. a year and a half later for continued good service in H.M. submarines. For a description of this extraordinary incident see William Guy Carr, *By Guess and By God*, New York, 1930, pp. 280-282.

before the end of the month.²⁶ The two submarines were almost identical. Their surface displacement was 313 tons, and their submerged displacement 421 tons. They measured 15 feet across the beam and were 144 and 152 feet long respectively. *CC 1* had five torpedo tubes and could stow five torpedoes; *CC 2* had three tubes and could carry six torpedoes. One of the tubes in each submarine was mounted in the stern. The designed speed of these boats was 13 knots on the surface and slightly over 10 knots submerged; on November 2, 1914, however, in a surface trial over a measured mile, *CC 1* achieved a speed of 15.1 knots. Neither of the submarines possessed any gun armament.

On September 8, H.M.S. *Shearwater*, one of the two Royal Navy's sloops which were stationed on the coast, was commissioned as tender to the submarines, having been lent by the Admiralty for that purpose. Workshops and other conveniences were installed in the *Shearwater*, so that the endurance of the submarines would be greatly increased by cruising in company with her. The *Shearwater's* former crew had been sent east to join the *Niobe*, and the officers and men of *CC 1* and *CC 2* lived in the sloop when in port. She also accompanied her charges wherever they went, and acted as a target for their practice torpedoes. A submarine is at once the least comfortable and the most dangerous of all naval craft which spend any prolonged periods of time at sea. The discomfort arises principally from the lack of space on board. On the surface, submarines have only a small margin of buoyancy, and when submerged they are exposed to a whole series of hazards which surface vessels never know. Experienced "submariners" testify that the life is made much more eligible than it would otherwise be by a characteristic informality and an unusually strong feeling of comradeship.²⁷ The crews of these two Canadian submarines had given themselves to an exigent apprenticeship which was more irksome if less perilous because, except during the first few weeks of the war, there was no likelihood of their seeing the enemy. These

(26) Telegraphic report, August 17, 1914. N.S.R. 46-1-48(1).

(27) E.g., "In a U-Boat there was scarcely any visible difference of rank: no clicking of heels. The life itself bound us to a common fate: a common life or death." (Ernst Hashagen, *U-Boats Westward!*, London and New York, 1931, p. 131.)

crews were largely composed of landsmen, most of whom probably had never seen a submarine before, and the way in which they carried out a task which was the more dangerous because of their inexperience was, as Sir Richard McBride put it, "most creditable to the naval volunteers of British Columbia."

An exceedingly unpleasant experience early befell the complement of *CC 1*. During her first cruise, with an expert from the Seattle yard still on board, somebody accidentally pushed against the handle controlling the horizontal rudders. The tremendous down helm which the boat received resulted in a steep and sudden dive. The Seattle man instantly called for full speed ahead while Lieutenant Keyes ordered full speed astern. Fortunately it was Keyes' command which was obeyed, and the submarine righted herself.²⁸

The following descriptions are taken from a personal account supplied by a former R.N.C.V. Reservist who was selected at the beginning for one of the crews:—

A few days after the commencement of the fateful 4th of August, 1914 . . . I was "peeling spuds" as "cook of the Mess" for the day, when I happened to glance casually seaward from outside the old barrack room of the present Dockyard and observed two low lying craft proceeding towards the entrance of Esquimalt Harbour. . . . Little did I realize . . . that these boats in about a week's time were to be my home for over three years. . . . It was an extreme transformation from an office to a submarine complete with electric motors, pumps, pipe lines, high pressure lines and air bottles, but with the tolerance of those splendid men of the Royal Navy, who willingly assisted me in my new duties, I spent three of the happiest years of my life on these two boats. . . . in a few months the work of each branch of the boat i.e. engineers, stokers, seamen, electricians and torpedo men, was splendidly coordinated and resulted in most efficient operations. . . .

After Coronel was avenged . . . there was no menace to the B.C. coast and for two years the peacetime routine of the Royal Navy for submarines was observed, which was approximately two weeks sea time per month and two weeks harbour routine which included the care and maintenance of the engines, torpedoes, motors and so on.

During these years with diving and torpedo running, the boats reached a high state of efficiency and had the opportunity of showing the White Ensign in many parts of British Columbia where it had not been previously seen and possibly in many places where it has been impracticable to show it since. . . . Many interesting practice torpedo attacks were made, one

(28) Information supplied by Captain B. L. Johnson.

being an attack on H.M.S. "Orbita,"²⁹ an auxiliary cruiser which "CC 1" attacked scoring a direct hit with a collision head. This attack was the result of a wager made in the wardrooms the previous night between the Captain of the "Orbita" and our Commanding Officer. The submarines, in accordance with plan, proceeded to sea early in the morning to attack "Orbita," although it must be admitted "Orbita" had little chance to see our periscope as the sea was very choppy that particular morning. . . .

Leave was practically unobtainable in the months which succeeded the opening of the war and one afternoon both boats happened to be in Harbour, having returned from patrol that morning. The crew desired leave and after a "council of war" it was decided that we would have a wedding, to which the Officers could hardly refuse to grant leave for the afternoon and evening. This was consequently applied for in the service manner to attend the wedding of a petty officer whose name I will not record. This was readily granted and one of our officers even kindly thought that a wedding present would not be inappropriate and proceeded accordingly. As many men from both boats as could be spared went ashore and the first problem was to procure a bride and bridesmaids. This was not a difficult matter in Victoria and a most glorious party resulted. This took the form of a dinner party in the famous Westholm Grill, attended of course, by the bride and her maids. It was felt that the suspicions of the officers might be aroused and this actually proved to be the case, as several of the officers attended the Westholm Grill and witnessed the wedding supper and they were then apparently satisfied, or at least they could not deny the existence of the wedding. Leave expired at 1 a.m. and our Commanding Officer, being still somewhat suspicious, to use his own words, decided "to give the beggars a wedding breakfast" and took both boats to sea at 4 a.m. in very heavy weather.

For nearly three years the submarines remained on the west coast, based on Esquimalt and engaged in cruising and training. The Admiralty then sent them around to Halifax on their way to Europe, and they left Esquimalt for the last time on June 21, 1917, accompanied by the *Shearwater*. During this cruise engine-trouble was almost chronic, and twelve days were spent at Balboa for overhaul and repairs, after which, on August 12, the sloop and the two submarines obtained the distinction of being the first warships flying the White Ensign ever to pass through the Panama Canal. The United States naval authorities signalized this event by giving the little flotilla a welcome at Balboa and Colón. The British Minister to Panama and the Vice-Consul at Colón accompanied them through the canal. The

(29) A new liner of 15,486 tons gross, owned by the Pacific Steam Navigation Co. In 1939 she was still in service, running between Great Britain and South America.

personal account which follows³⁰ testifies to the fact that this was no ordinary cruise.

Leaving Esquimalt harbour quietly on the morning of June 21st, the three vessels started on their long voyage. Two days later bad weather set in and the submarines were battened down with the decks just awash. The temperature in the engine rooms of these subs in the Tropics reached as high as 140 degrees and considerably added to the discomfort of the crews as we were unfortunate in having much bad weather which necessitated the boats steaming battened down.

In order to keep the engines from racing it was necessary for the CC 2 to keep charging the storage batteries. Then the submarine would use her motors until the batteries were run down. The only ventilation obtainable was through the operation of the engines. They would be run for ten minutes drawing fresh air into the craft, and in twenty minutes time they would be again started and would draw in a fresh supply.

It was not often possible to keep both engines running at once. While one engine was propelling the submarine, the engine crew would be working feverishly on the other. When the running engine showed signs of weakening and then quit entirely the idle engine would be started while the disabled one was fixed.

Then came another horror. During a heavy gale off Cape Blanco on the Oregon coast, and again off Salina Cruz, Mexico, the storage batteries, through weak construction, were short-circuited time and again and caught fire, giving out chlorine gas that laid low the greater portion of CC 2's personnel. For one night the craft was navigated by the coxswain, while only one or two others were fit for duty, the others lying around in an unconscious state. Sardine sandwiches were the only sustaining power given the men for their all-night vigil. Sometimes they wondered if the game wasn't up for them. That was one of the worst experiences of the whole trip.

On October 14th, 1917, the *Shearwater* and the submarines made Halifax, and the latter were promptly ordered to refuel and proceed across the Atlantic to the Mediterranean. This was impossible, and the order was later cancelled.

The CC 1 and CC 2 were badly strained and their engines were down and out. A pile of cracked piston heads, and other parts discarded, bore testimony to the difficulties of the long trip. The CC 2 made 7,000³¹ miles with her own engines, a wonderful tribute to the men who coaxed and enticed the machinery to endure the strain which it was never designed to bear. The engine room staff was repeatedly complimented by the *Shear-*

(30) Account by a crew member, printed in *Harbour and Shipping* (Vancouver), April, 1921, p. 745.

(31) "CC 2 has been the more reliable of the two boats and her engines have run 5000 miles out of the whole distance of 7300." Letter of Proceedings by the *Shearwater's* Commanding Officer, October 17, 1917. N.S.R. 45-2-12(1).

water's commander on the fine performance and on arrival at Halifax the little flotilla received a highly congratulatory message from Sir W. Browning, then Commander-in-Chief of the North America and West Indies station.

As it was evident after their arrival in Halifax that the submarines were unfit to cross the Atlantic without new engines, the Admiralty cabled:—

Consider submarines should be repaired and should remain at Halifax where they may be useful if enemy submarines cross Atlantic.³²

The two boats remained at Halifax until the close of the war. They were laid up for repairs during the summer and early fall of 1918, and it was during this time that German submarines appeared in those waters. In 1920 *CC 1* and *CC 2* were sold out of the service.

The purchase of these two submarines in 1914 had been made in very unusual and difficult circumstances, and Sir Richard McBride seems to have realized from the first that he was taking his political life in his hands. If the boats were to be obtained at all, steps had to be taken swiftly, secretly, and illegally. McBride's action bears a striking resemblance to that which had been taken by Disraeli in 1875 when he bought the shares in the Suez Canal for the British Government. Unlike Disraeli, however, McBride broke the law in that he caused Provincial money to be spent without the authority of his Legislature. These lapses from orthodoxy had been inevitable; but the transaction was made to appear even more questionable by two incidents which happened to occur in connection with it. In the telegram quoted above which McBride sent to Borden on August 4, due to a clerical error made in Ottawa the amount paid for the submarines was stated to have been \$1,050,000, which was \$100,000 less than the amount that had actually been asked for and paid. Furthermore, as soon as the submarines had been delivered in Esquimalt, Paterson had taken his cheque for \$1,150,000 to the Canadian Bank of Commerce in Victoria, the bank that had issued the cheque, and had there converted it into three drafts, two on New York and one on Seattle. The manager of the bank seems to have considered this to be an odd proceeding. He evidently expected a simple transfer of credit to a single account somewhere, and he probably wondered why

(32) Admiralty to Hdq., October 28, 1917. N.S.R. 45-2-12(1).

Paterson was in such haste to get his money out of the country.³³ Altogether it is not to be wondered at that the transaction gave rise to criticism. By the end of the year scandals were beginning to be suspected in connection with many acquisitions of war materials, and the purchasing of the submarines, when viewed from the outside, had a sinister appearance.

On February 11, 1915, the Honourable William Pugsley, who had been Laurier's Minister of Public Works, moved in the Dominion House of Commons that a copy of all the official correspondence and reports relating to the submarines and their purchase should be laid before the House. Pugsley asserted that the submarines were out of date and not built according to specifications, that Chile had not wanted them, that the price paid had been too high, and that the Government had been too secretive. He also asked whether anyone had got a commission out of the deal. In the course of his speech he referred to McBride as "the sixteenth member of this Government, though he is not yet sworn in." Pugsley also said:—

. . . it looks to me as if this Government was hesitating about purchasing the submarines and Sir Richard McBride took it upon himself to force the hand of the Government by purchasing them himself on behalf of the British Columbian Government. . . . I myself am very much in favour of adding submarines to the Canadian navy. . . . My only regret is that there should be any question as to the suitability of these submarines for the purpose for which they were bought.

Later in the debate Pugsley expressed the opinion that McBride would probably have known what to do with a quarter of a million dollars. The suggestion was, not that McBride had put money into his own pocket, but that he might have used it for party purposes.

The Minister of Marine and Fisheries,³⁴ to whose Department the Naval Service was at that time attached, replied for the Government. He argued that there was no reason to consider the submarines defective; that the naval experts, including those at the Admiralty, had recommended that the boats should be bought; that it had been exceedingly desirable to have two submarines stationed at Esquimalt; and that there had been

(33) The evidence given before the Davidson Commission is extremely detailed regarding the whole transaction.

(34) Hon. J. D. Hazen.

no time to lose. He promised to produce all the relevant documents at an early date, excepting any that might give useful information to the enemy. Sir Robert Borden supported his Minister, emphasizing the danger that had seemed to threaten the west coast and the duty of the Government to furnish all possible protection. He added:—

If Sir Richard McBride had not taken the action which he did the submarines could not have been purchased by Canada and the security they have afforded to the Pacific coast would not have been available.³⁵

McBride also defended what he had done, in a long speech delivered on February 24, in the Provincial Legislature.³⁶ The same day he telegraphed to Borden asking for a strict investigation. The Prime Minister replied that he did not think Pugsley worth that much attention, and McBride agreed to let the matter rest for the time being. On June 2, 1915, the Dominion Government authorized Sir Charles Davidson, under Royal Commission, to inquire into war purchases, and during the same month McBride went to Ottawa and asked once more for an investigation. The buying of the submarines was included in the terms of reference of the Davidson Commission, which took evidence on that subject in Victoria, Vancouver, Ottawa, Montreal, and New York. The Commission reported that the submarines could not, in the circumstances, have been obtained for less, and that alternative purchasers were available to whom Paterson or the Electric Boat Company would have sold them had McBride not met the quoted price. The report also completely exonerated McBride and all others whose names had been unfavourably mentioned in connection with the purchase, stating that "this . . . enterprise was, throughout, of blameless character."³⁷ Both of these verdicts seem to be worthy of acceptance. The sequence of political events which has been described—the unorthodox transaction in emergency; the criticism and demand for information, by the opposition; the publishing of the relevant documents; and the Commission's investigation, followed by a published report and minutes of

(35) The debate on the submarines is in *House of Commons Debates*, CXIX., pp. 94–116. *Sess. Paper No. 158, 1915*, carried out the Minister's promise.

(36) Reported in *Colonist*, Victoria, February 25, 1915.

(37) *Report*, p. 25.

evidence—furnishes a good instance of parliamentary institutions functioning at the top of their form in time of war.

The assertion that the boats were of an unsuitable type was invalid. Their design was not perfect; but it should be remembered that practical submarines were a comparatively recent invention, and that contemporary boats of virtually the same design gave an excellent account of themselves in European waters. The question of workmanship is more difficult; yet on this point, too, it is possible to reach a fairly certain conclusion. The Kingston valve leading from the main ballast-tank of each submarine seemed from the first to be obstructed, and on examination a piece of 2-inch plank was discovered in one of the tanks and a pair of overalls in the other. Both submarines were docked for overhaul in the spring of 1915, and the Chief Engineer at Esquimalt reported on their condition. Of *CC 1* he said among other things that: "The general state of the valves conveyed the impression of gross carelessness in the original workmanship;" and of *CC 2*: "The defects mentioned indicate a lack of detailed inspection during the Construction of the boats." Of both submarines he stated that: "The workmanship put into the vessels does not approach the Admiralty standard of construction." *CC 1* was docked again in December, 1915, and on this occasion about seventeen hundred of her hull rivets had to be renewed.³⁸

The Davidson Commission, on the other hand, basing its judgment mainly on evidence given by a number of naval officers who were in a good position to know the facts, praised the construction of the boats.³⁹ The overalls and plank in the tanks did not necessarily indicate inferior workmanship, and the deterioration of the rivets referred to above has been credibly attributed to electrolytic action resulting from contact between the steel hulls of the submarines and the copper sheathing of the *Shearwater*. Among those who served in the boats, whose special knowledge carries weight and whose opinions have been available, the prevailing judgment is that the submarines were well constructed, and this verdict it is probably safe to accept.

(38) Reports by the Chief Engineer, Esquimalt, various dates, in N.S.R. 45-2-8(1).

(39) *Report*, pp. 15-20.

The main propelling machinery consisted of two direct, reversible, six-cylinder, two-cycle Diesel engines, of 300 b.h.p. each at 500 r.p.m. The engines operated under blast injection, with a two-stage air-compressor driven directly from the main crank-shaft at the forward end of the engines. Blast air was supplied at 1,000 lb. pressure per square inch at the compressor, and restricted to 900 lb. at the fuel-nozzles. Circulating water, lubricating oil, and primary fuel pumps were connected to a single cross-head and driven by a small auxiliary crank-shaft, also geared to the main crank-shaft at the forward end. A single cam-shaft operated the fuel-injection valves, scavenger valves, and air-starting valves, and was mounted on top of the cylinders and fitted with a reversible clutch. Lubrication was on the closed pressure system, and the oil, after passing the main bearings and the bottom and top ends of the connecting-rods, passed into the piston-heads in order to cool them, and then returned to the crank-case. These engines had been designed at a time when the Diesel was in its infancy, and trouble with them was almost chronic. Cracked piston-heads, broken auxiliary crank-shafts, and trouble with the compressor and the inter-coolers, were extremely frequent experiences, and only the untiring efforts of the engine-room staff kept the engines running.⁴⁰

The German cruiser *Leipzig* had been in Magdalena Bay, Mexico, when she received the news that Great Britain had declared war on Germany, and from August 5 to September 9 she operated off the west coast of North America between Mazatlan and Cape Mendocino.⁴¹ She learned for the first time that the naval force at the Admiralty's disposal on the west coast included "two submarines bought from Chile," during a press broadcast from San Diego on the night of August 6-7, while on her way to San Francisco.⁴² The German Official His-

(40) "At the beginning of the World War [the United States Navy possessed] . . . about fifty serviceable submarines, of small size and indifferent engine efficiency." [Dudley W. Knox, *A History of the United States Navy*, New York, 1936, p. 385.]

(41) See the article cited in footnote No. 1 above.

(42) Several weeks later S.M.S. *Nürnberg* informed Admiral von Spee from Honolulu that the enemy ships on the Canadian coast consisted of three cruisers [correct] and two auxiliary cruisers [Hilfskreuzer]. It seems much more likely that the last three words were an inaccurate description of the *Algerine* and *Shearwater* than that they referred to the submarines.

tory⁴³ does not represent the *Leipzig's* captain as having known that *CC 1* and *CC 2* would for some time be unprepared for serious operations. Nor does it credit the Canadian submarines with having influenced the *Leipzig's* movements in any way. Submarines were an untried weapon at that time, and many naval officers, of whom the *Leipzig's* captain may possibly have been one, had a low opinion of their capabilities. A more likely explanation, however, is that the Germans probably weighed the two submarines very lightly in their calculations because they had no intention of entering the Strait of Juan de Fuca or its approaches.

In the light either of the supposed or of the actual situation in the Pacific on August 3, 1914, it was highly desirable to buy the two submarines. Numerous and powerful enemies, whose intentions were known only to themselves, were at large in that ocean, while the base at Esquimalt was destitute of warships. There was much anxiety on the coast at that time: the presence of the submarines helped to restore confidence and set the *Rainbow* free for other work. If at any time the boats should no longer be needed in those waters, they would be available for use elsewhere. In the actual event, after their transfer to the east coast they added something to the defensive strength of Halifax; and had they possessed more dependable and longer-lived engines, one of them might possibly have sunk or disabled one of the Kaiser's finest warships. Even had their mechanical shortcomings been known in advance they would still have been worth buying, as one of them at least could always get to sea, there was nothing wrong with their diving and torpedo mechanisms, and beggars cannot be choosers. They were worth a war-time price too, for when shooting is about to begin, ships that can fight are more precious than gold to those who lack them. At such a time, moreover, warships are much more difficult to obtain than gold is, and it was only a most unusual combination of circumstances that had made possible the purchase of these particular vessels.

The great masters of naval strategy from Drake to Mahan have practised or preached concentration of force, and offensive

(43) *Der Krieg zur See, 1914-1918: Der Kreuzerkrieg in den ausländischen Gewässern* [by Vice-Admiral E. Raeder] I., Berlin, 1922, Chap. V.

action whenever practicable. Landsmen, on the other hand, often think of naval war as being chiefly a matter of passively defending coasts and ports. During the Napoleonic wars Lord St. Vincent, First Lord of the Admiralty and one of the greatest of all British naval strategists, was loudly criticized for keeping the fleet concentrated and out of sight of land when invasion seemed to threaten.

As the panic grew, frenzied demands came from all parts of the kingdom for ships to be stationed on the nearest parts of the coast, and an insistence on the manning of flat boats, brigs, and other small craft to repel a landing.⁴⁴

In the United States, at the beginning of the Spanish-American War,

the seaboard people were swept off their feet by fear of invasion or bombardment. . . . Senators rushed to the Secretary of the Navy pleading that a naval vessel, any kind of ship, be sent to the leading ports of their states to reassure the population.⁴⁵

The phenomenon is not peculiar to English-speaking countries, nor does it occur only in time of war. "Throughout my whole career," wrote Grand-Admiral Tirpitz at the end of it, "I have always had to oppose two ideas, especially beloved of the lay mind—the idea of a special coastal defence, . . ." ⁴⁶ The fundamental objection of the experts to a shallow-water policy is that it violates the principle of concentration of force and destroys any prospect of offensive action. To place a warship or a small squadron like a goal-keeper outside each port, will weaken the main fleet to the point of ineffectiveness and may expose the isolated ships to being destroyed in detail by superior forces of the enemy. This policy is therefore one of passive defence. The most eminent of the prophets of concentration and the offensive as sound principles of naval strategy has declared that:—

When war has been accepted as necessary, success means nothing short of victory; and victory must be sought by offensive measures, and by them only can be insured.⁴⁷

(44) O. A. Sherrard, *A Life of Lord St. Vincent*, London, 1933, p. 207.

(45) George T. Davis, *A Navy Second to None*, New York, 1940, p. 81.

(46) Grand-Admiral von Tirpitz, *My Memoirs*, London, n.d. [1919], I., p. 92.

(47) A. T. Mahan, *Retrospect and Prospect*, Boston, 1903, p. 152. Mahan's insistence on offensive measures as the only certain means to

He also writes:—

A raid? Well, a raid, above all a maritime raid, is only a raid; a black eye, if you will, but not a bullet in the heart, nor yet a broken leg.⁴⁸

Lord Fisher has put the naval point of view on this subject into two pithy sentences, written in his tempestuous style:—

General principle: The Admiralty should *never* engage itself to lock up a single vessel even—not even a torpedo-boat, or submarine—anywhere *on any consideration whatever. The whole principle of Sea fighting is to be free to go anywhere with every d - - d thing the Navy possesses.*⁴⁹

This plebiscite of the giants has been held only in order to show that a blessing pronounced upon the action of the Provincial and Dominion governments in acquiring the two submarines should not be construed too widely.

Purchasing the submarines, and stationing them at Esquimalt, were acts thoroughly justified in the circumstances of place and time. The 500-mile front which British Columbia presented to the ocean was exceedingly easy to protect against a naval attack. By fortifying its northern entrance, the Strait of Georgia could be quickly and easily converted into an inlet from the strategic point of view. Inside the Strait of Juan de Fuca, which would then form its single, narrow entrance, lay all but one of the important ports. The exception, Prince Rupert, was not a vital spot except in the virtually impossible event of an attempted invasion, and lent itself admirably to local defence by means of shore batteries. The remainder of the exposed coast, including the seaward side of Vancouver Island, was practically uninhabited except for a few very small towns and an occasional village. Through the Strait of Juan de Fuca came and went almost all the merchant ships which plied overseas, and into it or its approaches any enemy ship hoping to cause serious physical damage would have to come. The coastwise trade route up to a point nearly 200 miles north of Vancouver was covered by the rampart of Vancouver Island. The presence of the submarines in or near the Strait of Juan de Fuca, therefore, achieved far more than merely local pro-

victory is too extreme to win unreserved acceptance among the expert; but there is general agreement that naval forces should act offensively whenever practicable.

(48) *Ibid.*, p. 175.

(49) Lord Fisher, *Memories*, London, 1919, p. 197.

tection for Esquimalt and Victoria. Placing them there was, in fact, applying the principle of concentration for defence to the abnormal coast of British Columbia.

Had it been possible to obtain and man, in place of the submarines, one or more cruisers as good as the *Leipzig* or better, they would have been even more effective than the submarines were, for pure defence. They would also have been able to go wherever the enemy might be, and so to make a positive rather than a purely passive contribution toward winning the war. Such ships could have caught the *Leipzig* off the coast of Mexico, or driven her at once from North American waters. They could then have formed an important addition to the allied naval forces in the Pacific or elsewhere. The supreme merit of the two submarines was, however, that they were available.

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