Run Silent, Run Cheap: Deciding on the *Oberon*-class Submarines, 1960–68

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During the looming crisis of the early Cold War, the Supreme Allied Commander Atlantic of the North Atlantic Treaty Organization wanted Canada to procure a subsurface capability of equal quality, if not quantity, to that of other Allied nations. Even though Canada played with acquiring nuclear submarine technologies and several new conventionally powered hunter-killer submarines, politicians were more interested in cutting costs and using as few funds as possible to cover as many roles as possible. Canada opted to purchase three operational submarines to help fill anti-submarine warfare roles, but the Oberon*-class boats that were ultimately chosen by the end of the 1960s were entirely obsolete and were by that time the only choice available to Canada's politicians: Canada's dithering had cost its navy its best options for subsurface capabilities. This paper recounts in detail the depths to which federal dithering on the submarine issue of the 1960s sank, a process that in turn nearly scuttled Canada's submarine program.*

Lors de la crise imminente du début de la Guerre froide, le Commandant suprême allié de l'Atlantique de l'Organisation du Traité de l'Atlantique Nord souhaitait que le Canada se dote d'une capacité sous-marine égale, sur le plan de la qualité, sinon de la quantité, à celle des autres pays alliés.

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Même si le Canada envisageait d'acquérir des technologies de sous-marins nucléaires, et même plusieurs nouveaux sous-marins d'attaque à propulsion classique, les politiciens étaient davantage soucieux de réduire les coûts et de dépenser le moins possible pour couvrir le plus grand nombre de missions possible. Le Canada a choisi d'acheter trois sous-marins opérationnels pour contribuer à la lutte anti-sous-marine, mais les sous-marins de classe Oberon *qui ont finalement été retenus à la fin des années 1960 étaient complètement désuets et constituaient alors le seul choix qui s'offrait à la classe politique canadienne : les hésitations du Canada avaient privé sa marine de ses meilleures options en matière de capacités sous-marines. Le présent article raconte en détail jusqu'où sont allées les tergiversations fédérales sur la question des sous-marins dans les années 1960, un processus qui a failli à son tour faire échouer le programme de sous-marins du Canada.*

In the latter decades of the Cold War, Canada held an obligation to contribute to the defence of itself and its allies through an effective and efficient dedication and application of its limited human and material resources.[1] Canada lacked a strategic doctrine even in the late 1980s and into the 1990s, but commentators asserted that the application of available matériel in navies limited by austere budgets would make it possible for authorities to create a doctrine and develop war-fighting platforms, such as submarines, in time to deter enemy aggression.[2] However, the decades of neglect of the Royal Canadian Navy (RCN), and its submarine fleet in particular, required a long-term solution, one based on "coherent and consistent political leadership" that was supportive of "a steady,

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1 Canada, Department of National Defence, *White Paper on Defence* (Queen's Printer for Ottawa, 1964), 12, https://publications.gc.ca/collections/collection_2012/dn-nd/D3-6-1964-eng.pdf.

2 George E. Lindsey, in Peter Haydon, "To Be or Not To Be Nuclear; That is the Question! A Brief Political History of Canadian Submarine Programs, 1983–1998," paper presented at the conference on "The Canadian Navy in the Post Cold War Era: New Roles, New Requirements and New Thinking," University of Calgary, 2–4 March 2001, revised 22 January 2008. Even taken out of temporal context, we can see this truism in action in the Harper and the succeeding Justin Trudeau governments' difficulties maintaining sufficient defence spending, with particular emphasis on the F-35 versus Super Hornet debacle.

predictable and honest funding program."[3] In failing to do this, Cold War and post-Cold War civilian leadership has undermined Canadian security.

The history of the Canadian submarine service is confused, often spotty, and generally makes as little sense as the deliberative processes that continue to guide Canadian military capital expenditures since the establishment of the service in August 1914. This essay seeks to position the Canadian acquisition of the operational *Oberon*-class submarines in its historical and policy context between 1960 and 1968. In order to do so, this essay examines events in the Canadian Submarine Acquisition Project (CSAP) and decisions of the Cabinet Defence Committee (CDC) between 1960 and 1986 and argues that in the *Oberon*s, the RCN got the navy the *government* wanted it to have: it was an acquisition that was the result of multiple compromises as to kind, capabilities, and numbers.[4] The *Oberon*s were chosen by default. The American *Barbel* class had been removed from consideration with prejudice. The British A-class submarines were entirely obsolete. Nuclear submarine technologies (SSNs) were not an option to Canadian politicians because of their direct and associated costs. The only class of submarine still on the market which remotely met Canadian political needs was the British *Oberon* class. Politics had set the declining course of Canadian submarine procurement through deferment. This pattern continues today.[5]

Secondary literature on this topic was written with sparse reference to primary documents or archival research. While this author has identified additional relevant primary sources at Library and Archives Canada (LAC) and at the National Defence Headquarters, Directorate of History and Heritage (NDHQ-DHH), most government documents remain classified.[6] Furthermore, many published and unpublished resources are heavily reliant upon the memories of "those who were there" and any notes they may have kept. This

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[3] Canada, Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada* (Supply and Services Canada, 1987), 47, http://publications.gc.ca/collections/collection_2012/dn-nd/D2-73-1987-eng.pdf.

[4] Captain (N, ret'd) Norman Jolin, email message to author, 12 August 2019. "The Commander of the Navy needs to articulate the operational requirement so to be able to meet his commitments for Canadian naval forces against their assigned mission. This means that equipment must be upgraded and replaced over time, as maintenance of older systems become extremely problematic and capabilities must be upgraded to address current and future threats."

[5] This paper is developed from a chapter of the author's master's thesis entitled, "A Fleet of its Compromises: The Canadian Navy's Cold War Submarine Posture," Royal Military College of Canada, 2018, https://espace.rmc.ca/jspui/bitstream/11264/1527/1/ADOMEIT_A%20Fleet%20of%20its%20Compromises.pdf.

[6] The author is continuing to work on acquiring these documents, particularly those produced during the Diefenbaker government, through access to information requests.

amounts to unverifiable oral history. Secondary sources on the acquisition of the *Oberon* class of submarine by the Canadian government from Britain during the 1960s are subsequently relatively weak. The most notable works which fit this bill include J. David Perkins's *The Canadian Submarine Service in Review* and Julie H. Ferguson's *Through a Canadian Periscope: The Story of the Canadian Submarine Service* in both its first and second editions.[7] These two sources are particularly notable because they are the most comprehensive accounts of the Canadian submarine fleet during the Cold War but were written using incomplete information. By consulting sources that have become available to the public within the last 10 to 20 years, such as Patrick Croften's summary of the procurement process in *The Canadian Submarine Acquisition Project*, this paper seeks to fill gaps in our understanding of naval procurement by the Canadian government.[8]

The Cold War was characterised by continued military competition and political tension between the North Atlantic Treaty Organization (NATO) and the Warsaw Pact, led by the Union of Soviet Socialist Republics (USSR). While nuclear weapons and nuclear propulsion greatly changed the character of maritime forces, the Cold War also saw the rise of previously unforeseen reliance upon conventional maritime forces (in this case, non-nuclear hunter-killer submarines or SSKs). In the late 1960s and beyond, Canada based its maritime planning upon five missions that the Soviet fleet would likely have the capacity to execute and which the RCN as a part of NATO had to be ready to defend against. First, Soviet submarines would seek to take the strategic offence, which would include the use of submarine-launched ballistic missiles and/or cruise missiles against surface and land targets. Second, the USSR would seek to interdict allied shipping along sea lines of communication (SLOCs). Third, once the Soviets attained nuclear propulsion, SSNs would remain in close proximity to ballistic missile nuclear submarines (SSBNs) and nuclear-powered cruise missile submarines to protect them from enemy anti-submarine efforts. Fourth, the Soviet submarine fleet would likely adopt offensive tactics to follow up on its strategic offensive mission: this would mean that enemy submarines would use "torpedoes or anti-ship missiles against warships and commercial vessels" and that NATO needed to develop effective countermeasures. The difference between the second presumption and the

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7 J. David Perkins, *The Canadian Submarine Service in Review* (Vanwell Publishing, 2000); Julie H. Ferguson, *Through a Canadian Periscope: The Story of the Canadian Submarine Service*, 2nd ed. (Dundurn Press, 2014).

8 Canada, Parliament, House of Commons, Standing Committee on National Defence, *The Canadian Submarine Acquisition Project: A Report of the Standing Committee on National Defence* (Queen's Printer for Canada, 1988).

fourth is not clear. However, one could consider that the second presumption would be characterised by stopping and investigating ships travelling along SLOCs close to the Soviet Union and would therefore be a relatively benign interruption. The fourth presumption specifically references attacks on military vessels, thereby turning an inconvenience into an act of war. The fifth mission was that the Soviets would use their submarines to place mines in Canadian coastal waters, but by the end of the 1980s Rear-Admiral John Anderson, Chief of the Canadian Submarine Acquisition Project (CSAP), deemed this unlikely.[9]

View looking into engine room of HMCS *Okanagan*, November 1990. (Credit: Thomas Malcomson)

The "average" SSK could spend a great deal more time in a given area than could purpose-built aircraft. SSKs were compared to airplanes for reasons of cost: it was relatively inexpensive to deploy an airplane on a reconnaissance mission, but it was even less expensive to deploy SSKs. The value of the SSK as an intelligence-gathering platform over that of aircraft was apparent. They could loiter in an operational area quietly, whereas comparably tasked aircraft and anti-submarine (A/S) surface vessels were rather loud and were therefore easy to detect by submerged submarines of any ilk. Aircraft designed for anti-submarine warfare (ASW) could easily betray its presence by virtue of its task: to fly quickly and identify threats with active sonar. The RCN began to budget annual allotments to rent submarines to act in a "clockwork mouse" capacity.[10] In other words, Canadian submarines would conduct manoeuvres under the surface of the water and A/S forces would attempt to locate, track, and/or tag them electronically to designate them "destroyed" in training scenarios. Upon reassessment, the navy determined that without active submarines of its own,

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[9] Canada, *Canadian Submarine Acquisition Project*, 23. Although this study was conducted well after the *Oberon*-class boats were purchased and placed into service, these presumptions of Soviet submarine strategy were nevertheless valid in the decades prior to the acquisition of the First Canadian Submarine Squadron. Anderson's role in the CSAP is discussed below.

[10] Joseph Jockel, "Canadian Nuclear-Powered Submarines," Working Paper No. 91 (Wilson Centre, International Security Studies Program, 1988), 13.

it would not be able to develop counter SSN tactics; eventually, developing A/S tactics against nuclear-powered submarines as part of NATO became a component of Canada's contribution to the alliance. Overall, "[t]he government confirmed the RCN's ASW role and gave them a ceiling of 9,047 men and 19 percent of the defence budget" to build a navy focussed on ASW.[11]

This form of naval development characterised the RCN's posture in the early 1950s, and it became apparent that, even as an ASW training force for NATO allies, the RCN required more than the single submarine it had been using. RCN proposals indicated a need for three submarines to attain "725 submarine training days per year on the East Coast and 240 on the West Coast."[12] Furthermore, the navy was developing anti-submarine technologies and required an active submarine to run tests as needed. "Even so," writes Julie Ferguson, "the RCN had to make do with the use of a submarine for only six months a year until 1953," when the British Royal Navy (RN) expanded its own ASW operations and Britain's engagement in the Korean War necessitated a reorganisation of deployed military assets.[13] Once access to even that single submarine was eliminated, fears arose within the RCN as to whether it could meet its ASW commitments to NATO in either peace or war. The RCN began plans to convince politicians of the need for a Canadian submarine service, "based on the premise of independence in ASW training."[14] Rear-Admiral S. Mathwin Davis (RCN) noted in 1987 that it was obvious to the Naval Staff as early as 1958 that Canada needed nuclear-powered submarines, preferably of the American *Skipjack* class, and a review of the situation by the Nuclear Submarine Survey Team determined that SSNs could in fact be built using Canadian resources and infrastructure. The sticking point was cost.[15]

Possessing submarines as a weapons platform has never been a primary concern for Canadians or their political representatives unless war is imminent.[16] Canadian politicians have a long history of dithering over issues of military procurement, and the acquisition of the First Canadian Submarine Squadron was no exception.[17] The conflicting priorities of the government lay

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11 Ferguson, *Through a Canadian Periscope*, 260.

12 Ferguson, *Through a Canadian Periscope*, 260.

13 Ferguson, *Through a Canadian Periscope*, 260.

14 Ferguson, *Through a Canadian Periscope*, 261.

15 S. Mathwin Davis, "It Has All Happened Before: The RCN, Nuclear Propulsion and Submarines, 1958–68," *Canadian Defence Quarterly* (Autumn 1987): 34–35; Jason M. Delaney, "The One Class of Vessel that is Impossible to Build in ~~Australia~~ Canada," *The Northern Mariner/Le marin du nord* 24, nos. 3 and 4 (2014): 262.

16 Marc Milner, *Canada's Navy: The First Century* (University of Toronto Press, 1999), 174.

17 See Aaron Plamondon, *The Politics of Procurement: Military Acquisition in Canada and the Sea King Helicopter* (University of British Columbia Press, 2010).

in its confused desire for a submarine service – confused because the political branch of the government did not necessarily want submarines, while the military leaders were very aware of the necessity of establishing a subsurface ASW capability – and in the begrudging admission that if Canada were to have a submarine capability, the government would need to find the funds at the expense of more politically popular programs. The *Oberon*-class submarine (or O-boat) was selected not because of its cheapness nor for any particular combat strength (it was, in fact, out of date by the time the very first keel was laid) nor because it was a reasonable alternative to another type of boat. The O-boats were chosen by default: the federal government dithered for so long that the only option available at the end of its procurement program was this seriously outdated submarine class.

The RCN had determined it needed to own a minimum of five submarines and ideally 11 submarines during wartime; as the situation stood in the early 1950s, all rented or leased submarines would have to be returned to their navy of origin in the event of a military emergency, crippling Canadian sub-surface operations. When news of these estimates and operational situations reached the minister of national defence, Brooke Claxton, he said simply, "'it would be spreading our resources very thinly' to have a [dedicated national] submarine service. He was content with rental submarines."[18]

The Cabinet Defence Committee (CDC) was less than thrilled at the idea of a dedicated submarine service, and the Liberal government refused to budge on its stance regarding submarine rental agreements. Eventually though, under ongoing pressure from the RCN, the government allowed the RN's Sixth Submarine Squadron (SM6) to operate out of Canadian harbours in exchange for 200 officers and men inserted into the RN's submarines.[19] Canada obtained the A-class submarines based in Halifax under a Heads of Agreement contract for the period of four years. The annual rental fee was $645,000 (rising with inflation) "plus the cost of two dockings." The A-class submarines were crewed by the RN, although RCN's Flag Officer Atlantic Coast tried to post the 200 Canadians transferred to the RN's Sixth Squadron under this plan.[20]

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18 Ferguson, *Through a Canadian Periscope*, 261.

19 Ferguson, *Through a Canadian Periscope*, 261.

20 Peter Haydon, email message to author, 27 April 2016. "The Oberon acquisition was the culmination of a decade (roughly) of work by the RCN to acquire Canadian submarines that saw an interim agreement with the RN to station two of their submarines in Halifax in return for about 200 RCN people of all ranks to serve in RN submarines prior to bringing the Oberons to Halifax in 1966. I [Haydon] was one of those who went to the RN for five years. The path to the Oberons was rocky and politically unpopular much of the time. The RCN didn't help their own cause by a couple of untimely flirtations with SSNs." "Dockings" refers to maintenance cycles.

The arrangement would last only a few years. By the mid-1950s Canada had to start looking for another source of submarines, even though the government was slashing the peacetime budget of the armed forces, which was already nearing its peacetime ceiling of 20,000 personnel. These situations were compromising Canada's ability to meet its naval commitment to NATO, which in turn lowered Canadian politicians' influence and credibility abroad.[21]

As could be expected, the Chairman of the Chiefs of Staff Committee (which consisted of the heads of Canada's three armed services plus a chairman) wanted more information about SSKs, and the Conventional Submarine Survey

Torpedo tubes on HMCS *Okanagan*, November 1990. (Credit: Thomas Malcomson)

Committee (CSSC) was formed. Its recommendation was based on the need for cost effectiveness and suitability to a task (presumably ASW): if the RCN and the government were more concerned about cost, the CSSC recommended the 1950s-vintage RN *Oberon*-class submarine[22]; if suitability for its specific role (ASW) was to be the lead contention, the CSSC recommended with great emphasis the United States Navy's (USN) newer *Barbel*-class SSK, a submarine nearly twice the size of the *Oberon*s, designed in 1955, and which out-performed the *Oberon*s in all ways but was nearly as expensive per unit as an SSN. The CSSC specified that the *Barbel*s should not be purchased if the RCN was to buy three submarines or fewer, preferring the *Oberon* class

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21 Ferguson, *Through a Canadian Periscope*, 260.

22 As Captain Jolin points out, "[The *Oberon*s] were [arguably] obsolete on build [*sic*] … The submarine was a glorified Type XXI German Electro-boat and the fire control and sensors were minor improvements on RN Second World War equipment." Jolin, email message to author, 12 August 2019.

in this case.[23] The *Barbel*s, regardless, would come at an operational cost as well as a financial one: each submarine would be built offshore for $170 million, and in order to afford the submarine the RCN would have to scrap its plans for six new escort vessels. The CDC placed two conditions on *Barbel* procurement: NATO's Supreme Allied Commander Atlantic (SACLANT) would have to approve Canada's new submarines as NATO-tagged vessels (taking the place of the planned surface vessels), and the committee requested that further studies be conducted on other extant SSK designs that might be built instead of the *Barbel* class. SACLANT was in charge of the areas of the Atlantic Ocean claimed by NATO countries. SACLANT's opinion would also reflect the opinion of the USN: on North America's east coast, NATO and the USN were synonymous. If the USN thought the idea of an active and expansive Canadian submarine service had merit, so too did SACLANT. Canada had opted to follow the United States' lead, and if Canadian politicians could be convinced that investing in a submarine fleet was in Canada's best interest from SACLANT's perspective, they also knew the USN would have a vested interest in the initiative. In that case politicians would be more willing to invest in the weapons platform and would be able to justify the expense. If the Canadian government invested in an asset SACLANT or the USN did not approve of, Canada's political capital would be expended for nought. Marc Milner comes to a similar conclusion and remarks, "[s]ince the [*Barbel*s] would have to be built abroad, there was no domestic political capital to be gained in their purchase [from the United States]":

> When Douglas Harkness, the minister [of national defence], suggested that the RCN purchase British O Class submarines at a mere $9 million a piece, the navy estimated that with the money saved by not buying Barbels, it could build at least four additional frigates. The government thought otherwise, and adopted a program of three O-boats and eight GPF. Typically, it took two more years to decide the final details of the submarine acquisition. Once it was determined that they could not be built in Canada, the hardest part of the process was sorting out what industrial offsets Britain would provide for ordering the submarines from a UK yard.[24]

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[23] Ferguson, *Through a Canadian Periscope*, 273; Jason M. Delaney, "Submarine Procurement and the *Victoria*-class Acquisition from an Historical Perspective: Having Submarines is the Point!," *Canadian Naval Review* 4, no. 2 (Summer 2008): 25.

[24] Milner, *Canada's Navy*, 231. GPF is the abbreviation for General Purpose Frigates, a class of vessels intended to replace the RCN's destroyers from the Second World War.

SACLANT's approval, ostensibly, was important to the CDC because the acceptance of a "new" maritime resource for the Canadians by SACLANT would gain the CDC, and the supporters of the RCN's submarine service, political capital that could then be used to influence cabinet. Richard Oliver Mayne suggests that such desires and demands originated from *within* the Canadian navy itself and were submitted to SACLANT headquarters rather than being calculated requests from SACLANT himself.[25] SACLANT's ruling regarding the submarine issue was anticipated to have greater weight in influencing cabinet than the opinions and arguments of Canadian experts. It appears that high-ranked naval officials interpreted SACLANT and NATO force requirements in such a way that they could perform an end run around the civilian government in an attempt to force it to dedicate an increased budget to the navy for capital expenditures.

This strategy did not work, for the effects of Canadian civilian influence upon naval procurement grind slowly and often carefully. The end run was blocked by civilian due process. A senior Canadian military officer would get an allied commander, usually a USN officer, to make the request for item "*x*," such as nuclear submarines. Since the request came from an ally, the request would appear to have a great deal of weight because the allied commander would make the point that "*x*" was necessary to maintain or improve Canada's standing within the alliance and particularly with that specific ally. This process could be rendered ineffective if Canadian politicians were to contact their colleagues in Washington, D.C. and in Brussels (the home of NATO's headquarters) to confirm the veracity of the request in question.

The *Oberon* class had been removed from consideration in August 1960 because it failed to meet Canadian operational standards. But each submarine cost less than half of a single *Barbel* and could be purchased without having to discard the RCN's planned escorts. This option was very appealing to cost-conscious politicians, and the *Oberon* design returned to the RCN's assessment list. Vice-Admiral Herbert S. Rayner, Chief of the Naval Staff (CNS), offered two acquisition schemes to the defence minister in 1962. The first proposal was to construct six *Barbel*s in Canada, which would give NATO very powerful SSKs that could be used in deterrence exercises and more significantly could be deployed in containment duties.[26] The *Barbel*s could also be deployed on patrol for far longer than could the *Oberon*s. The second

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[25] This is discussed in great detail in Richard Oliver Mayne, "The *Annapolis* Riddle: Advocacy, Ship Design and the Canadian Navy's Force Structure Crisis, 1957–1965" (PhD diss., Queen's University, 2008), 50–58, 60, 68–69.

[26] Andrew Richter, *Avoiding Armageddon: Canadian Military Strategy and Nuclear Weapons, 1950–63* (University of British Columbia Press, 2002), 160–62.

option was that six *Oberon*s could be built offshore and Canada could still acquire four ASW frigates. The first option was a good arrangement for NATO, and the second option was good for both NATO and Canada. The latter option would allow Canada to establish an economical submarine fleet for general use *and* obtain four frigates that could be used for NATO-specific purposes.[27] The first instance, the acquisition of *Barbel*-class submarines in order to fulfill specific NATO plans and needs, would give Canada and the RCN a great deal of political capital with NATO, for the act of expending such a large amount of monetary capital would prove that Canada was taking its NATO responsibilities seriously. As Karl Lautenschläger observed, "Naval strategists do not face an 'either/or' choice between surface forces and submarines, but rather the task of balancing these forces in a way that enhances the capacity of the whole navy to achieve overall mission goals."[28]

Following this logic, Canada's allies could infer that Canada was committing to collective security from the execution of a large naval procurement program; the program would thereby advance Canada's agenda to gain as much political capital for as little expenditure as possible. The four frigates would provide predictable A/S performance for a known cost; submarines, as will be seen, were deemed unpredictable, and Canada did not necessarily have the capabilities to train its personnel to a level of high competence in a submarine fleet. In this respect, Canada sought to fulfill NATO's demand for participation with a competently trained surface squadron and would experiment with the *Oberon*-class submarine on its own, away from the operational criticism of its allies. By investing in a submarine capacity, Canada's allies would be more greatly impressed that Canada was interested in staying on top of maritime technological and operational developments.[29] It was not until the 1970s that Canada began to plan a post-war navy with a particular goal in mind: NATO required a surface ASW fleet, and Canada could provide one.[30] Vessels not committed to the NATO ASW effort would be deployed in support of smaller European states; if another war were to break out the action would be in Europe, and Canada's transoceanic navy would be present and able to provide immediate help.

Rayner preferred the first option, believing that the United States' proximity to Canada would ease the acquisition process and would thus increase the value of the submarine to the RCN; the *Oberon*s would require replacement

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27 Milner, *Canada's Navy*, 228–29; Davis, "It Has All Happened Before," 38.

28 Karl Lautenschläger, "The Submarine in Naval Warfare, 1901–2001," *International Security* 11, no. 3 (Winter 1986–1987): 97.

29 Lautenschläger, "The Submarine in Naval Warfare," 95.

30 Lautenschläger, "The Submarine in Naval Warfare," 97.

parts and facilities unique to the RN, which would be extremely difficult to access during time of war. Rayner was convinced that the USN *Barbel*s towered over the *Oberon*s in capability. His arguments to this effect were such that Prime Minister John Diefenbaker's minister of national defence, Douglas Harkness, began to favour the *Barbel*s, and his support increased when SACLANT approved the replacement of RCN surface ships in NATO with submarines. Questions exist as to who, precisely, requested that Canada provide *nine* RCN submarines flagged for NATO's use by 1966, although Marc Milner suggests these numbers (three *Barbel*-class submarines, six SSNs, and eight General Purpose Frigates) came from the report of the RCN's Ad Hoc Committee on Naval Objectives prepared in July 1961.[31] SACLANT was reportedly enthusiastic about a potential Canadian *Barbel* fleet because they were large, modern, and a far more lethal weapons platform than the *Oberon*-class submarine; the *Barbel*s also outclassed any of Canada's surface A/S vessels. By supporting the *Barbel* acquisition over that of the *Oberon* class, SACLANT was informing Canada implicitly that it would need to provide either surface vessels or modern SSKs or both. The *Barbel*s were just as useful as ASW platforms as they were deterrents. The *Oberon*s were just obsolete enough that they would not be particularly valuable for NATO (though they could be useful for Canada, and the frigates could still be allotted effectively for NATO use).[32]

For a number of years, the search for alternative submarine designs had quietly proceeded through the RCN and was barely noticed by outsiders; for instance, a feasibility study into nuclear propulsion was proposed by Commander Geoff Phillips following a visit to the nuclear reactor at Chalk River, Ontario in 1949.[33] In 1957, the RCN's Director of Undersea Warfare, Captain (N) Patrick Russell, took subsurface ASW operations to the next rational level: the cooperation of aircraft and submarines. His efforts took shape as the unreleased "A/S Weapons Systems Effectiveness Study." His

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[31] Milner, *Canada's Navy*, 225–36; Davis, "It Has All Happened Before," 38; Delaney, "Submarine Procurement," 26. It is also possible that SACLANT merely wanted Canada to live up to its responsibilities to NATO and that the shift to subsurface ASW training was an initiative he could easily support. Delaney suggests that it was a collection of Canadian "navy planners" that recommended the nine *Barbel*s, not SACLANT as Davis reports. This recommendation was made in a report dated 30 June 1960 by CSSC, which was headed by Commander (and engineer) Robert Stephens, the RCN's first nuclear-trained technical officer who had served on the Nuclear Submarine Survey Team.

[32] Delaney, "Submarine Procurement," 24–25.

[33] Michael Whitby, "Vice-Admiral Harry G. DeWolf: Pragmatic Navalist," in *The Admirals: Canada's Senior Leaderships in the Twentieth Century*, eds. Michael Whitby, Richard H. Gimblett, and Peter Haydon (Dundurn Press, 2006), 231.

report merged this collaborative approach with the concept that nuclear fission reactors could be used on submarines as a power plant and argued that these hypothetical submarines should and could be built in Canada.[34] Outgoing CNS Vice-Admiral Rollo Mainguy was of similar mind.[35]

In April 1961, CNS Vice-Admiral H.S. Rayner commissioned Rear-Admiral Jeffry V. Brock to head the Ad Hoc Committee on Naval Objectives. Its aim was to "define the purpose of the Navy and make recommendations concerning the role, tasks and composition of the Fleet required to meet the

A master seaman in the control room of HMCS *Okanagan*, November 1990. (Credit: Thomas Malcomson)

Navy's responsibilities in the future in the most effective and economical manner. This will entail an examination of the probable nature of naval forces during the next twenty-five years."[36]

Rayner's primary concerns were that the rapid pace at which the technologies of war were developing would put undue strain upon the RCN, both developmentally and in the RCN's ability to defend against the new

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34 Delaney, "Submarine Procurement," 23–24; Delaney, "The One Class of Vessel," 261. Captain Russell's innovative "arguments, conclusions and recommendations were convincing enough to serve as the basis for the creation of a submarine service approved by the Naval Board later [in 1957]"; Delaney, "Submarine Procurement," 23. Currently, nuclear fission – the destruction of an atom with a laser or by a kinetic reaction with another fissile particle (enriched uranium being the usual material) – is the only viable nuclear power source. Nuclear fusion technology – the creation of a new particle by forcing atomic components together – is still in its infancy.

35 Delaney, "The One Class of Vessel," 261–62.

36 J.V. Brock, "The Report of the Ad Hoc Committee on Naval Objectives," July 1961 (hereafter the Brock Report), vii, Desmond W. Piers fonds, Fonds 2002/13, Box 4, Folder 3, Canada, National Defence Headquarters, Directorate of History and Heritage, Ottawa (hereafter NDHQ-DHH).

technologies. Rayner viewed the RCN as a progressive organization whose institutional and operational stability had survived the Second World War and remained viable in the Cold War period.[37] Brock's stance was that the advent of nuclear weapons cheapened the lives of all mankind because they made it possible to destroy one's enemy entirely, whereas that outcome had been unfeasible in the past.[38] Brock warned that conventional fleets not armed with nuclear weapons would become increasingly important as the Cold War progressed: "[W]e must be careful to not to [*sic*] be misled into believing that nothing less than a nuclear warhead makes [constructing a conventionally armed naval fleet] worthwhile."[39] Brock advocated for a flexible fleet that could be used in a variety of ways, rather than a strictly ASW fleet: "[Y]ou will find that the committee recommendations also constitute a progressive plan for fulfilling other urgent needs and enabling the Navy to perform other useful functions of a more versatile nature," he wrote.[40]

Since the end of the Second World War, the RCN had longed for a large, general-purpose fleet, something the civilian leadership did not consider necessary. As a result, the navy focused upon ASW, a role NATO sought to fill and was thus the only role Canadian politicians were prepared to pay for. A small ASW fleet was just the right size as it required limited commitment. Rayner underscored the urgent need for the RCN to transition into an ASW fleet, but Brock opined this would hobble rather than empower the RCN's goals to meet the needs of the nation and its alliances simultaneously. As far as submarines were concerned, he was a strong proponent. He noted that "approximately 5 percent of the landed surface, in coastal belts about 250 miles wide on the Atlantic, Pacific and Indian Oceans and warm water seas, accounts for 96 percent of the world's principal cities and well over half the world's population." The inference here is that the loss of any major portion of this area could threaten the Canadian economy directly or indirectly through loss of trade and access to natural resources, and a submarine capability could act as a mitigating factor in conflicts of Arctic sovereignty.[41] He remarked that a shipbuilding program would help "Canada's defence efforts in the future," and that:

> [I]n view of the economic growth to which Canada can look forward, there is no reason to believe that the somewhat higher dollar costs of

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37 Brock Report, ii–iii.
38 Brock Report, ii.
39 Brock Report, ii, 22.
40 Brock Report, iii.
41 Brock Report, 21.

> our security insurance premium need represent a rising percentage of our gross national product. Various cost studies carried out by [the Ad Hoc Committee on Naval Objectives] fully support this judgement, and lead to the conclusion that adequate defence forces would be a sound investment which will contribute to strengthening Canada's international position in the latter part of the 20th Century.[42]

The Soviet Union was likely to use submarines to disrupt merchant shipping along well-used SLOCs upon which Western surface ships travelled. Western shipping relies heavily upon surface vessels, and unless modern naval forces accompanied merchant fleets, it would be all but impossible to deter or hunt down enemy submarines.[43] Despite assessing the Soviet submarine fleet of approximately 400 ocean-going submarines as being one of the greatest defence risks faced by the Western alliance, Brock noted that it did not significantly alter the security environment. Many of their submarines possessed nuclear propulsion and submarine-launched nuclear missile technologies, but by 1960 so did the submarines of the United States Navy, and the nuclear capacities of the subsurface fleets of Britain and France were growing in turn.[44] The capability of Soviet submarines to lay mines was of minor concern, but that, combined with their ability to launch strategic attacks against the West, further illustrated the flexibility of a submarine platform and, thus, the potential benefit of submarines for the Canadian navy.

The versatility of submarines made them "useful for many tasks in cold war situations," particularly in situations when extreme stealth was called for.[45] Soviet fishing fleets were well equipped with communication devices and, presumably, radar and possibly even sonar equipment. This allowed seemingly benign fishing fleets to relay vital operational information to Soviet submarines. Brock voiced great concern on this point, commenting, "[o]n an average day, the number of Soviet fishermen employed off Canada's east coast is greater than the number of personnel in the RCN's entire Atlantic command."[46]

Brock tempered this awareness with a measure of practicality. In the first place, he wrote, the time needed to develop enriched uranium from a lower stage of refinement for power production to a grade suitable for use in nuclear weapons was almost prohibitive, pointing out that it had taken nine years

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42 Brock Report, 54.
43 Brock Report, 35.
44 Brock Report, 39.
45 Brock Report, 40.
46 Brock Report, 40.

from the discovery of the sheer power of nuclear fission to its employment as a weapon (1936 to 1945). In the second place, telecommunications were another direction in which military technologies could evolve. He insisted that the Allies not fall behind in either field in order to maintain defensibility on the high seas.[47] Canada needed to develop its military for several reasons: first, to improve its effectiveness; second, to strengthen Canada's conventional forces; and third, to train Canada's soldiers and sailors to maintain, utilise, and defend against nuclear weapons.[48] The Brock Report predicted that technological progress, along with the development of grand and operational strategies, favoured the submarine:

> [M]ajor technological trends in general favour the submarine and will quite certainly increase its offensive capability against targets at sea and ashore. Those possessing great endurance and the ability to remain submerged for lengthy periods will remain relatively immune from air reconnaissance or attack. Because of the vastness of the oceans and the formidable technical problems in long range underwater detection, they are likely to continue to have greater freedom of unfettered movement than any other maritime forces …. The submarine expressly designed for the anti-submarine role … is considered now to be a formidable opponent to other submarines and to have significant potential for further development …. It must be assumed that the competition for superiority in submarines will tend to be very close [between the Allied nations and the USSR], and to fall only a little behind could be expected to have a drastic effect on ASW usefulness.[49]

What follows is one of the strongest remarks made in the Brock Report:

> Despite their many advantages, the high cost of present types of submarines, especially nuclear-powered, results in a relatively high ratio of cost to A/S effectiveness. This is offset to a considerable extent by their capacity to carry out additional tasks, for example, A/S training of other forces. Nevertheless, attention is drawn to the advantages that may be gained from the development of smaller and much less expensive submarines for the A/S role.[50]

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47 Brock Report, 41, 49.
48 Brock Report, 50–51.
49 Brock Report, 63.
50 Brock Report, 62–64.

These comments had a great deal of significance for the RCN's small fleet. They form the outline of a specific strategy for the RCN: a dedicated ASW component within the fleet, comprised of a large number of small, relatively inexpensive vessels, both surface and subsurface vessels. It was to work in concert with army and air force assets, and within the RCN itself all components – surface and sub-surface – needed to work together cohesively to succeed in their collective objectives. Such a fleet could conceivably work with other navies to train for ASW tasks, something Brock considered to be of great benefit to collective security arrangements.[51]

Brock developed a strategic concept called "Small Cheap and Many" in order to mitigate for Canada the increasing popularity of putting "too many eggs in too few, highly vulnerable baskets," namely aircraft carriers and fleet-based ballistic missile submarines amongst its allies.[52] For Canada, this would manifest in a fleet consisting of *St. Laurent*-class destroyers and a squadron of SSKs, all of which would be equipped with the best of modern technologies and would test new technologies as research and development plans required. He suggested that smaller, more specialised submarines might be constructed specifically for the ASW role.[53] As Milner points out, however, Brock's strategic concept was not the paper's focus; rather, it was a means for Brock to petition for the creation of what he dubbed heliporters, which were intended to replace the *Prestonian*-class frigates. "However, since they were to operate up to fourteen heavy helicopters, the heliporters were really thinly disguised small aircraft carriers."[54] These vessels would be specifically intended for an ASW role but would also be utilised to fulfill Canada's role in collective security, such as training and defence operations:

a) defending Canada's interests against attack from the sea;
b) meeting our commitments to collective security arrangements;
c) contributing to other external undertakings;
d) supporting the Canadian Army in actions arising out of (b) and (c); and,
e) establishing and maintaining Canadian sovereignty in the Arctic.[55]

In each of these situations, the RCN would be responsible for the following

51 Brock Report, 62–64, 66.
52 Brock Report, 67, 70.
53 Brock Report, 64, 67; Milner, *Canada's Navy*, 230.
54 Milner, *Canada's Navy*, 230.
55 Brock Report, 64, 70–71.

operational goals:

a) to defend sea lines of communication through control, escort, and convoy of shipping;
b) to detect, locate, and destroy enemy submarines;
c) to contribute to early warning of missile attack by submarines;
d) to patrol the coastal areas and approaches to Canadian waters;
e) to keep our ports, anchorages, and approaches free of mines;
f) to provide logistic support afloat for the fleet;
g) to transport, land, and support Canadian Army contingents as required;
h) to provide mobile command and base facilities for external undertakings; and
i) to carry out and support Arctic surface and under-ice operations.[56]

Milner comments that, "[u]nfortunately not everyone in the navy wanted to go where Brock was steering."[57] Brock could not sell the idea of heliporters to the navy, and his strategic concept "proved impossible to implement" because sceptics were quick to point out the flaws in Brock's "first opportunity to put [his own hands] on the helm" in many years.[58]

Brock placed a great deal of emphasis on the anti-submarine capability of each ship, ranging from destroyer escorts to HMCS *Bonaventure*, Canada's sole aircraft carrier.[59] Notably, Brock remarked that a close eye needed to be kept on the repair of vessels to ensure that maintenance costs would not reach "unacceptable limits."[60] He was quick to mention that his committee was recommending that new ships be built to replace aging – and expensive – vessels and weapons platforms.[61] For instance, the committee recommended that active sonars could no longer be deployed as independent systems, advocating instead for multi-use platforms, such as ships that could excel at ASW and combined "versatility and simplicity."[62] This need was not limited to weapons platforms but to weapons as well, including missiles and torpedoes.[63]

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56 Brock Report, 73.
57 Milner, *Canada's Navy*, 230.
58 Milner, *Canada's Navy*, 230.
59 Brock Report, 75–81; Milner, *Canada's Navy*, 229. Brock considered *Bonaventure* an all-purpose vessel, underscoring the ship's troop lift capacity as much as its role as a naval aircraft-launching platform.
60 Brock Report, 78, 81.
61 Brock Report, 81.
62 Brock Report, 81; Milner, *Canada's Navy*, 230.
63 Milner, *Canada's Navy*, 231.

Brock anticipated that the period from 1960 to 1980 would see tremendous development in hull and guidance technologies, and in the reliability of ranged weapons such as the ubiquitous torpedo, arguing that trends for both the Soviets and NATO nations indicated that such technological improvements "favour the submarine and will quite certainly increase its offensive capability against targets at sea and ashore."[64]

A sailor and visitor in discussion in the engine room of HMCS *Okanagan*, November 1990. (Credit: Thomas Malcomson)

Despite the work Brock and his team put into their report, Brock's political position was not at all secure. Soon after he was relocated to Halifax as Flag Officer Atlantic Coast, the new Liberal minister of national defence, Paul Hellyer, sacked Brock and Admiral William Landymore took his place.[65] It bears mentioning that the Brock Report is not viewed well in some quarters. Peter Haydon, for instance, remarked, "in a greater scheme of things the Brock Report was an abberation [*sic*]. He asked to do the study to give himself something to do between postings – he would become Vice-Chief of the Naval Staff that summer and was uneployed [*sic*] for the preceding Spring/early-Summer. The 1959 Study was the point of departure for subsequent fleet plans, not the Brock Report which, anyway, was never published and most copies destroyed."[66]

Eventually, Diefenbaker's government decided against acquiring the *Barbel*s.[67] The RCN's January 1961 report to the CDC neglected to mention

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64 Brock Report, 62–63, 66.

65 Robert H. Caldwell, "Rear-Admiral William M. Landymore: The Silent Service Speaks Out," in Whitby et al., *The Admirals*, 279.

66 Peter Haydon, email message to author, 22 July 2016.

67 Milner, *Canada's Navy*, 235. This decision was due in part to Diefenbaker's ignorance of national military defence; he dithered over important decisions to the detriment of his reputation and that of his party and damaged the Canadian military's ability to do its job. Diefenbaker was openly honest and literally honest to a fault. And, worst for Canada/US diplomatic relations, Diefenbaker hated the United States and President John F. Kennedy and did not bother to hide it. For instance, he was unwilling to follow blindly Kennedy's lead during the Cuban Missile Crisis. As well, he would be burned by the way he handled the NORAD negotiations and the

SACLANT's request for nine operational submarines by 1966, and it took until 7 March 1961 for the CNS's report containing the request to reach cabinet. Diefenbaker announced in April 1961 that no decision had yet been made. His government refused to state outright that it would not acquire the *Barbel* class, but the prime minister's vacillation on submarine acquisition allowed the issue to pass by without much notice. In the meantime, Canadian shipyards lobbied hard to procure contracts to build the *Barbel*s for Canada, and the press reported the acquisition as a foregone conclusion. Shipyards were excited at the prospect that *Barbel*s could be produced in Canada because as Kim Richard Nossal points out, "indigenous development and production serve the nation's defence … but it also strengthens the defence industrial base, and the technology developed (or transferred) also creates spin-offs that rebound to the economic benefit of the country. Moreover, a weapons system that is successfully developed indigenously can be marketed and sold to the armed forces of other countries."[68] Had Canada purchased the licence to build the *Barbel* class within its borders, it did not mean that the United States would necessarily allow Canada to "farm out" the design to other states interested in purchasing the submarine for Canada's own profit. However, the *Barbel*s were withdrawn from consideration by the United States, most likely because Diefenbaker did not want to make a decision.[69]

Accordingly, the government's mindset moved away from providing a fleet of offensive ASW submarines for NATO to its contingency plan to float training-only submarines. The longer Canada delayed its decision, the longer the three existing *Barbel*s languished and gradually became unfit to sail. Regardless, the submarine had been withdrawn from consideration: if the USN had wanted Canada to have an effective subsurface fleet, it most likely would not have crippled Canada's efforts to negotiate for their purchase despite Canadian attitudes. This also suggests that the USN was more interested in Canada acquiring a larger ASW surface fleet. The resulting inference is that since the USN wanted Canada to invest more in its surface fleet and the request from SACLANT to purchase the *Barbel*s was likely a machination developed by well-meaning Canadian naval officers in an attempt to circumvent Canadian civilian bureaucracy in the navy's favour, Canada lost the opportunity to acquire the *Oberon*-class submarines HMS *Ocelot* and *Opportune* from Britain

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scandal surrounding nuclear weapons in Canada.

68 Kim Richard Nossal, *Charlie Foxtrot: Fixing Defence Procurement in Canada* (Dundurn, 2016), 99.

69 Ferguson, *Through a Canadian Periscope*, 275; Delaney, "Submarine Procurement," 25; Delaney, "The One Class of Vessel," 265.

because of the government's dithering.[70] The strategic maritime situation had also changed, resulting in a shift of priorities in RCN thought regarding submarine acquisition. Both the USN and the RN were withdrawing their SSKs from the market: the USN stopped building SSKs entirely, and while the British renewed the Heads of Agreement and kept SM6 in Canada, the revised contract stipulated that Canada must find other means to retain submarines for its fleet.[71] The RN withdrew its submarine from consideration for rental or lease because its increasingly nuclear-powered fleet needed SSKs with which to train domestically.

The RCN attempted to clarify its subsurface self-image by establishing the Submarine Committee in 1962 to "study the navy's operational requirements for submarines." The Submarine Committee was headed by Commodore R.P. Welland, Assistant Chief of Naval Staff (Air and Warfare), and his team examined the findings of the Conventional Submarine Survey Committee, re-examined the Heads of Agreement as it pertained to the RN Sixth Submarine Squadron, and reassessed the costs which the RCN had faced in the past to adjust them for the present.[72]

There were three separate and conflicting agendas at work during the submarine acquisition process in the early 1960s. First, and the most obvious, was Diefenbaker's serious lack of understanding of national defence. Peter Haydon wrote that it was "Diefenbaker's idiosyncrasies and failure to understand the bilateral defence agreement as a whole which led … [to] the threats to national security."[73] Diefenbaker did not understand the nature of the

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[70] Ferguson, *Through a Canadian Periscope*, 293.

[71] Ferguson, *Through a Canadian* Periscope, 275.

[72] Ferguson, *Through a Canadian* Periscope, 275, 276.

[73] Peter Haydon, *The 1962 Cuban Missile Crisis: Canadian Involvement Reconsidered* (Canadian Institute of Strategic Studies, 1993), 20, 21, 38, 40, 41, 62, 66, 225, 226, 230, 232, 233, 235, 260. As Haydon pointed out on p. 62, "By October 1962, the relationship between Diefenbaker and Kennedy had deteriorated to the point of no return. Through a series of incidents, each man had come to distrust the other's motives and integrity." Further, Haydon included in his second annex several messages and his analysis thereof. In "Document 19" it is easy to infer that Rear-Admiral K.L. Dyer, the RCN's Maritime Commander Atlantic, sought support from Vice-Admiral E.B. Taylor, Commander, US Antisubmarine Forces Atlantic, in order to clear away political detritus in Ottawa. They sought to present their mutual support (in terms of professional knowledge and opinion) to justify their decisions regarding the Cuban Missile Crisis and their deployment of RCN and Royal Canadian Air Force (RCAF) assets to Prime Minister Diefenbaker and Minister of National Defence Harkness. This example, and several others Haydon offers (e.g., documents 20, 21, 22, and 23), illustrate that Dyer acted effectively and that this effectiveness was certainly despite the lack of guidance from the Diefenbaker government but that it occurred *with* the knowledge and authority of Dyer's immediate superiors. At no point did he overstep his bounds, states Haydon. Peter Haydon,

defence agreement between Canada and the United States, and it is possible that he did not understand the difference in missions between those for NATO and those for the bilateral defence agreement being negotiated. In this latter case, Diefenbaker would have been conflating ASW operations between the two arrangements. NORAD was not an alliance. It was a functional arrangement for continental aerospace defence, and it did not have a maritime component at that time. Continental maritime defence arrangements between the two navies were outside the NORAD framework.

HMCS *Okanagan* visits Toronto, November 1990. (Credit: CAF image IOC90-22-4, courtesy Julie Ferguson Collection, Naval Marine Archive – The Canadian Collection, Picton)

Second, the British seem to have manipulated the relationship between Canada and the United States to their advantage as the *Barbel* option began to fall apart. The removal of the *Barbel*s from consideration entirely by the USN and the Admiralty's insistence that Canada find other ways of maintaining a sub-surface capability meant that Canada had only one option remaining: to purchase the *Oberon*s the RN was offering, with all the strings the Admiralty had attached to the purchase.[74] It took until March 1962 for the CDC to make a decision on the submarine issue: it recommended that three *Oberon*s

email message to author, 7 July 2017.

74 Delaney, "Submarine Procurement," 25.

be acquired. Britain had one *Oberon* ready for delivery and two additional submarines that would be ready for delivery soon after.[75] The RN had three *Oberon* hulls that were of limited use to it and made arrangements for Canada – now bereft of USN opportunities – to take them. The British agreed to industrial offsets in order to sell the submarine. Essentially, Canada arranged for a purchase in the amount of some $33 million and required Britain to send enough contracts to Canadian industry that the net gain/loss of the arrangement would be nearly zero. This was largely because Britain's naval dockyards were legally bound to make neither profit nor deficit from any construction program.[76] When Harkness announced the *Oberon* purchase to the House of Commons in April 1962, the offset contracts were not yet signed and he was forced to frame the acquisition of the submarine as part of a $300 million naval expansion. Ferguson notes, "[Harkness] justified the decision to build them offshore by showing that three submarines could be had for the price of one home-built submarine."[77]

The third agenda that appears is a function of conservative cost initiatives and possibly a lack of national understanding of the role submarines had in the RCN in particular. Ferguson calls this phenomenon a "surface mentality."[78] This frame of mind is expressed as the belief that surface vessels are inherently superior to subsurface vessels. It is also driven in part by the relative affordability of surface vessels and their known capabilities compared to the relative mystery of subsurface technologies and operational roles.[79] Milner wrote:

> [T]he decision … to adopt the minimal number of less-capable British submarines flew in the face of the navy's own stated priority: establishing a fleet of hunter-killer submarines. The original decision to proceed with a submarine fleet was predicated … on their effectiveness as anti-submarine vessels. The O-submarine could do the job, but the Barbels were much better hunters. Moreover, a fleet of three submarines meant that only one RCN vessel would be available for operational deployment at a time – hardly enough to increase the navy's anti-submarine capability. In short, the navy had wanted hunter

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75 Ferguson, *Through a Canadian Periscope*, 275.

76 Davis, "It Has All Happened Before," 40; Milner, *Canada's Navy*, 231–32.

77 Ferguson, *Through a Canadian Periscope*, 275.

78 Milner, *Canada's Navy*, 231–32; Ferguson, *Through a Canadian Periscope*, 274–75; Delaney, "Submarine Procurement," 23.

79 Ferguson, *Through a Canadian Periscope*, 275.

killers, and got clock-work mice for anti-submarine training instead.[80]

In 1962, the Submarine Committee determined that the only way the government would entertain further discussion of submarines was if the committee could prove that there were tasks that could only be completed by submarines and could justify their purchase. The Submarine Committee succeeded in both objectives.[81] It first determined that a bias existed within the Canadian bureaucratic structure against submarines because of the "evil" use of the platform by Germany in the two world wars. Second, it determined that the point of having submarines was to expand the ability of the RCN to conduct ASW operations.[82] This latter statement had a corollary: if the RCN or the government could not or would not purchase a fleet of submarines of sufficient size to be considered a practical A/S asset, then it would be necessary to purchase a smaller number of submarines in order to train against submarines and thereby develop ASW techniques, thus becoming a useful A/S asset and avoiding the potentially reprehensible use of submarines in active warfare. The RCN would benefit from either decision.[83] The committee's report recommended the procurement of nine nuclear submarines at first, to be increased to twelve. It recommended the USN *Thresher*-class SSN because it possessed the "long endurance, sustained high speed, full ASW detection, tracking, and classification equipment, and a weapons system that would be effective against all comers" that none of the other available submarine classes possessed.[84] The committee recommended that all the submarines be constructed in Canada and estimated the cost of the project to be $400 million stretched over ten years.[85] This plan would require the establishment of an entire industry to construct and maintain the new submarines. In the meantime, the committee recommended purchasing the three available *Oberon*s in addition to three A-class submarines and to continue operating SM6.[86]

Its conclusions never went beyond the Naval Board. The Policy Committee decided the report recommending the SSNs was flawed, and it was "buried on a dusty shelf and the hopes for Canadian nuclear-powered submarines were over for another twenty-five years."[87]

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80 Milner, *Canada's Navy*, 232–33.
81 Ferguson, *Through a Canadian Periscope*, 275.
82 Delaney, "The One Class of Vessel," 264.
83 Delaney, "The One Class of Vessel," 264.
84 Davis, "It Has All Happened Before," 40; Delaney, "Submarine Procurement," 23.
85 Ferguson, *Through a Canadian Periscope*, 275–76; Davis, "It Has All Happened Before," 40. Where Ferguson notes a plan for nine to 12 SSNs for $400 million, Davis identifies a figure of $200 million for two *Thresher*-class boats.
86 Ferguson, *Through a Canadian Periscope*, 276.
87 Ferguson, *Through a Canadian Periscope*, 276.

Diefenbaker's cabinet decided to postpone acquiring the *Oberon*s in September 1962 as a retaliatory measure against Britain because it "had been slow to participate in the offset purchases demanded by the contract."[88] Canada would receive its O-boats, but until then it borrowed an SSK from the United States to maintain its anti-submarine training capacity for the RCN without jeopardising its SSN bid.[89] The United States Congress (because only Congress could approve the transfer of technology to a foreign power) agreed to loan the submarine to Canada in May 1960. The submarine itself had been selected at the end of 1959 from the USN's reserve fleet by its future commanding officer, Lieutenant-Commander Ed Gigg, RCN, and three non-submariners. The submarine had been designed to serve in the Pacific Ocean during the Second World War. Its post-Second World War conversion to a radar picket submarine was supplemented by the Greater Underwater Propulsive Power Program (GUPPY), which gave her more powerful batteries to operate underwater for greater speed or greater duration – or a happy middle ground between the two. Deployed in Esquimalt, the leased submarine, commissioned as HMCS *Grilse* by the navy, was assigned the role of a moving target for personnel in A/S courses and was tasked to the Pacific Naval Laboratory to aid in their research and development of ASW technologies.

Before anything was done, the Tories self-destructed in the federal election of April 1963. Lester Pearson's Liberals formed a minority government and the new prime minister appointed Paul Hellyer as the minister of national defence. The process froze again.[90] In October 1963, Hellyer announced that he was not discussing submarine procurement with the British. This meant that the additional *Oberon*s the RCN had been counting on would not be forthcoming right away, if at all. Irrespective of Hellyer's later decisions, his initial approach toward the navy was sound: he intended to assess the needs of each branch of the military and find a way to fit submarine procurement initiatives into a deficit budget. The navy continued to investigate SSNs as a side project while "making do" with what it had available and planned to acquire USN SSKs in the interim. The Diefenbaker government dithered about

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[88] Ferguson, *Through a Canadian Periscope*, 276. The senior Canadian submariner, Lieutenant-Commander Ed Gigg, strongly advocated that all of Canada's submarines should be purchased or borrowed from the same source, namely the United States. Where Ferguson claims that Canada "disciplined" the British after a fashion, Davis states bluntly that Canada "began pressing the U.K. for deliveries, essentially demanding that the Oberon program be completed by 1967," after "a good deal of shilly-shallying"; Davis, "It Has All Happened Before," 40.

[89] J.D.F. Kealy, "The Development of the Canadian Navy, 1945–67," July 1968, 15–16, A.G. Steiger collection, SGR II 223, Box 22, NDHQ-DHH.

[90] Haydon, "To Be or Not To Be Nuclear," 50.

the *Oberon* acquisition for so long that it was not until 1963, when a minority Liberal government under Lester B. Pearson was elected, that the submarines were included in the ship replacement program.[91] Cabinet approved the acquisition of three *Oberon*-class submarines from the RN on 5 November 1963. The RCN wished to continue using the USN submarine because of its high level of modernisation and the ease of future interoperability between the two navies, but the government returned atavistically to the RN to fix the operational gap in RCN capabilities.[92] This was in essence a decision that took two steps forward (new submarine, lower overall cost) and one step back (loss of effective operational subsurface capability) and would roll on through the squadron's 30-year operational period.

Hellyer insisted the *Oberon*s were merely an interim solution until Canada could build SSNs onshore. He downplayed the submarines' A/S capability, removing from them any reason to undergo modernisation,[93] but certain factions at naval headquarters were perturbed that Pierre Trudeau's government bought the *Oberon*-class submarines instead of launching a new nuclear submarine procurement effort. This decision was probably made in the RCN's best interest, as it allowed the RCN to establish a subsurface capability.[94] Regardless, Hellyer's decisions between 1963 and 1967 made it clear that the RCN's traditional *mode d'emploi* would be at risk: Hellyer simply did not "hold the naval force assignments to SACLANT sacrosanct."[95] Pierre Trudeau would later complain that NATO obligations seemed to drive Canadian defence decisions rather than commitments to NATO being the result of Canadian defence priorities. The RCN had sought to use NATO to pressure Ottawa into certain decisions on submarines. But civilian due process hamstrung the navy's efforts to bypass the usual procurement processes in order to obtain the submarines it wanted. SACLANT could not justify counting the Canadian submarine fleet against its force commitment because the *Oberon*-class submarines were just obsolete enough to meet Canadian but not NATO purposes, whereas surface vessels

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91 Delaney, "The One Class of Vessel," 265.

92 Delaney, "Submarine Procurement," 25, 27.

93 Ferguson, *Through a Canadian Periscope*, 284–85; Dan W. Middlemiss, "Economic Considerations in the Development of the Canadian Navy Since 1945," in *The RCN in Transition 1910–1985*, ed. W.A.B. Douglas (University of British Columbia Press, 1988), 254–79. The Trudeau government ordered an increase in general surveillance patrols and a decrease in counter-SSBN activities after it came to power in 1968. Ferguson's *Through a Canadian Periscope* summarizes this period in Canadian naval history well, which is too broad a topic to be discussed here.

94 Delaney, "Submarine Procurement," 25, 27.

95 Peter Haydon, "Vice-Admiral Herbert S. Rayner: The Last Chief of the Canadian Naval Staff," in *The Admirals*, eds. Whitby et al., 267.

could meet alliance needs. Even though the RCN used NATO uncertainties about Canada's ability to conduct ASW operations to arm themselves during their procurement campaign to obtain the *Barbel*s in sufficient numbers, the government was more concerned about cost than military efficiency and, as a concomitant side-effect, less concerned about the political capital Canada could have raised in NATO by supplying an effective submarine fleet for ASW operations.[96] The Canadian government preferred to follow the USN's lead (albeit through SACLANT) and had decided Canadian military planners and A/S assets should concentrate their attentions on USN priorities. One of the strongest arguments used during this period in support of maintaining Canada's submarine fleet was that Soviet plans toward war were progressing, and their nuclear and conventional fleets were being placed in forward, foreign bases worldwide. "Previously," wrote Milner, "the Russian threat in the Atlantic had been limited to submarines, a few large cruisers, and some long-range aircraft. During the 1960s the Soviets … [deployed c]ruisers, destroyers, submarines, and swarms of very-long-range aircraft, all carrying missile systems."[97]

The Canadian Armed Forces had to be positioned to help NATO counter a naval assault by whatever means it could. As a result, although the Submarine Operational Update Program (SOUP) was later developed as an interim measure to keep the *Oberon*s operational, it was primarily a political move intended to balance both domestic maritime and allied military requirements with conflicting domestic funding needs, the latter lying mostly along the lines of establishing and maintaining social welfare initiatives *contra* the RCN's potentially unrealistic dreams of submarine procurement essentials.

This essay has striven to elucidate the discordant relationship that dominated three levels of political and military governance between 1960 and 1968: NATO desired of Canada a modern subsurface fleet, Canadian politicians bemoaned the cost of a military asset they did not understand, and RCN officers simply beat their heads and fists against the generally uncooperative wall of Canadian military procurement practices. Organizational systems and assessment reports were disregarded, dismissed, and disposed of by successive policy makers. NATO strategic advisors and RCN supporters of the Canadian submarine service were constantly at odds with mercurial Canadian political leaders, some of whom were thoroughly enthusiastic about a Canadian submarine service but unable to fully comprehend the scope of what Paul Hellyer was endeavouring to achieve. Thus, when election time came, Hellyer chose to take advantage of the indifference and antagonism of many

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96 Haydon, "Rayner," 257–58.
97 Milner, *Canada's Navy*, 271.

HMCS *Ojibwa* after being moved to Port Burwell, Ontario, to serve as a museum ship, 23 December 2012. (Credit: Mieke de Groot)

Canadians toward military issues during the 1960s instead of pushing senior Canadian leadership to invest in Canada's international security and industrial development. Others, such as Diefenbaker, were so uninterested in supporting Canadian–American relations that it became a disservice to Canada's navy, military, and arguably its industrial complex for decades to follow.

The *Oberon* class of boats did not become a fully functioning fleet for Canada until the SOUP initiative was launched late in their operational lives, but by that time the O-boats were obsolete. The O-boat platform was not the best; it was the cheapest and, really, the only option available to those Canadian politicians who still agreed that a subsurface capability would be an asset for the RCN. In the end, it was deliberately inspired confusion, obfuscation, and a lack of engagement with Canadian attitudes toward its allies and its alliance commitments that nearly caused the Canadian submarine fleet to implode as an organization. If this essay fits anywhere in the larger *corpus* of Canadian military procurement history, it is as a detailed case study of Canadian federal ignorance and indifference of a military asset explicitly requested – and demanded – by Canada's allies. It shows a certain lack of Canadian commitment to its allies in the maritime arena, that there is an integral failure in the Canadian capital military procurement system that goes back well into the Cold War, and that submarines are by far the military combat platform least understood by both the Canadian populace and their leaders.

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