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STRONG, SECURE, ENGAGED AND A FUTURE CANADIAN SUBMARINE CAPABILITY

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Exercise Solo Flight

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STRONG, SECURE, ENGAGED AND A FUTURE CANADIAN SUBMARINE CAPABILITY

Canada has had a contentious relationship with its submarine service over the last 20 years. In 1998, the British *Upholder*-class submarines were purchased, Canadianized and commissioned as the *Victoria*-class. Since then, the Royal Canadian Navy (RCN) and the Department of National Defence (DND) have struggled to bring them into service and see them put to use, while encountering many setbacks along the way, all in plain view of the public and of politicians. Despite this, they have provided valuable contributions toward Canada's defence and security agenda.¹ Canada's newest defence policy, "Strong, Secure, Engaged" (SSE), stipulates that the *Victoria*-class will be modernized, but makes no mention of a procurement project to replace these submarines.

An important question, then, is whether SSE could effectively end the submarine service in Canada, or if it in fact sets conditions that will allow for the eventual replacement of the *Victoria*-class.

This study had initially set out to determine, as objectively as possible, whether the missions and funding articulated in SSE would allow for replacement of Canada's submarines. However, as the research developed, a more important question became apparent: what is the political position of submarines, and will their replacement be *politically* viable, or even valuable?

¹ E.S. McCallum, "How can we promote, inform and highlight success of the Submarine Service, whilst maintaining the need for Operational Security?" (Advanced Command and Staff Course Paper, UK Joint Services Command and Staff College, 2016), 1.

This paper contends that SSE does not preclude procurement of future submarines but that, more importantly, it sets the only conditions under which replacement could be politically viable in the future. The paper will set out recommendations for the RCN to ensure the best political conditions for their replacement when the time comes to stand up a submarine procurement project.

This paper is laid out in three parts. It will first look at the treatment of submarines in defence policy and in practice over the last half century, in order to inform predictions of how submarines will be treated in the near future. It will then look at the treatment of submarines in SSE, after briefly considering what future submarine capability may be required. Finally, it will look at submarines in the political context, using elements of policy models from Graham Allison and from Gill Walt and Lucy Gilson, in order to assess the current value of submarines to different stakeholders, and to recommend steps that RCN leadership can take to increase the value of submarines to relevant stakeholders moving forward.

SUBMARINES IN PAST DEFENCE POLICIES

An informative first step is to evaluate the historical treatment of submarines in policy and in practice. In 1964, Lester Pearson's recently-elected Liberals produced their "White Paper on Defence".² The government had, in November 1963, approved the procurement of three *Oberon*-class submarines (O-boats), a process started under the previous Progressive

² Wikipedia, "List of Canadian federal general elections," last accessed 3 May 2018, https://en.wikipedia.org/wiki/List_of_Canadian_federal_general_elections.

Conservative (PC) government.³ A series of studies under the PCs had in fact recommended the procurement of SSNs, with the O-boats and some other US submarines to act as a stop-gap primarily for anti-submarine warfare (ASW) training.⁴ The Liberals' policy deferred consideration of the procurement of SSNs until after further study on ASW operations, but in the end did not purchase any.⁵ It is relevant that the O-boats had limited value other than for ASW training, and that SSNs would have been required in order to counter Soviet missile submarines, particularly under arctic ice.⁶ Also, the O-boat procurement was contingent on offset defence contracts from Britain, showing that submarine procurement has long been a tool of economic as well as defence policy.⁷

In 1971 the Liberals, now under Pierre Trudeau, issued a new defence policy shortly after acceptance of the final O-boat.⁸ Despite acknowledging the importance of the sea, deterrence and sovereignty to Canada, the policy is notable for recommending anything *but* submarines to achieve the navy's submarine-type missions: scientific submersibles, an arctic "subsurface surveillance perimeter" and air-cushion vehicles are recommended.⁹ The O-boats were

³ Julie H. Ferguson, *Through a Canadian Periscope: The Story of the Canadian Submarine Service* (Toronto: Dundurn, 1995), 251, 259.

⁴ K.H.Coffen, "A Submarine Replacement Project for Canada" (Joint Command and Staff Program Paper, Canadian Forces College, 2012), 6–7; Ferguson, *Through a Canadian Periscope...* (Toronto: Dundurn, 1995), 251.

⁵ Department of National Defence, *White Paper on Defence* (Ottawa: Queen's Printer, 1964), 14–15, 23; Ferguson, *Through a Canadian Periscope...*, 259.

⁶ Ferguson, *Through a Canadian Periscope...*, 251, 260.

⁷ *Ibid.*, 250, 251, 259.

⁸ Wikipedia, "List of Canadian federal general elections,"; Coffen, "A Submarine Replacement Project for Canada," 7.

⁹ Department of National Defence, *Defence in the 70s: White Paper on Defence* (Ottawa: Information Canada, 1971), 3, 6, 8, 18, 24.

mentioned only in passing, when the navy was directed to shift from ASW expertise toward more general duties.¹⁰

The PCs, elected under Brian Mulroney in 1984, released their ambitious defence policy in 1987, shortly after the O-boats had been updated.¹¹ The navy had been directed to study SSNs from 1985, the results of which were used to make a strong case for procurement of 10 to 12 to better counter the Soviet missile submarine threat.¹² However, this plan was scuttled with the 1989 budget, which slowed spending in order to tackle the structural deficit.¹³ A new study then looked at conventional submarines (SSKs), but was eventually cancelled after the fall of communism and the election of the Liberals 1993.¹⁴

The Liberals quickly produced their 1994 defence policy, revealing their intention to cash in on the ‘peace dividend’ by gutting the armed forces. They had previously opposed the plans for SSNs, but then even closed the SSK project office. Concurrent with the policy writing, however, the government was considering the bargain-rate British *Upholder*-class submarines. The policy mentions submarines in the context of the operational cost savings relative to surface ships and procurement cost savings of the *Upholders* or similar used submarines, with only a

¹⁰ *Ibid.*, 27.

¹¹ A.J. March, “Deeply Complicated: Canadian Submarine Procurement Options” (Joint Command and Staff Program Paper, Canadian Forces College, 2014), 2; Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada* (Ottawa: Canadian Government Publishing Centre, 1987), 46.

¹² Department of National Defence, *Challenge and Commitment...*, 6, 10–11, 14–15, 17, 19–20, 24, 43, 50, 52–4; Coffen, “A Submarine Replacement Project for Canada,” 8–9; McCallum, “How can we promote...success of the Submarine Service?” 26.

¹³ Eugene Lang, “The shelf life of defence White Papers,” *Policy Options*, last modified 23 June 2017; Coffen, “A Submarine Replacement Project for Canada,” 11–12.

¹⁴ March, “Deeply Complicated: Canadian Submarine Procurement Options,” 7; Coffen, “A Submarine Replacement Project for Canada,” 12; Lang, “The shelf life of defence White Papers.”

cursory discussion of capabilities.¹⁵ In 1998, the government followed through, purchasing the British boats for \$750M, considerably less than their \$2.28B build cost.¹⁶

Under Paul Martin's new leadership from 2004, the Liberals released the government-wide International Policy Statement in 2005, including a defence policy.¹⁷ Though it did not survive the subsequent 2006 election, its content is relevant. The *Victoria*-class (*ex-Upholders*) had an expected end-of-life in the late-2020s, thus the 20-year policy should have included a replacement project starting in about 2016. However, though the policy aimed to continue "bringing the *Victoria*-class submarines into service" and eventually to deploy them globally, replacement was not mentioned.¹⁸ Relevant is the state of the submarines at this time: the recent fire in CHICOUTIMI, scrutiny of the purchase arrangements, and other problems.¹⁹ It likely is not coincidental that submarines received minimal treatment in the policy.

After their 2006 election, the Conservatives released the Canada First Defence Strategy (CFDS) in 2008. Though this was an ambitious plan to return the forces to higher funding levels, submarines were not mentioned at all, despite their end of life coinciding with the policy horizon.²⁰ It might be suggested that submarines were excluded only because accrual funding

¹⁵ Department of National Defence, *1994 White Paper on Defence* (Ottawa: 1994), 8, 34–35.

¹⁶ Coffen, "A Submarine Replacement Project for Canada," 13.

¹⁷ Wikipedia, "List of Canadian federal general elections."

¹⁸ Coffen, "A Submarine Replacement Project for Canada," 94; Department of National Defence, *Canada's International Policy Statement: A Role of Pride and Influence in the World – Defence* (Ottawa: ADM(PA), 2005), 14, 30.

¹⁹ CBC, "Canadian dies of injuries from submarine fire," last updated 7 October 2004, <http://www.cbc.ca/news/canada/canadian-dies-of-injuries-from-submarine-fire-1.514028>; CBC, "Fed misled public about sub deal: MP," last modified 30 November 2004, <http://www.cbc.ca/news/canada/feds-misled-public-about-sub-deal-mp-1.512288>; CBC, "Another sub, another leak," last modified 2 July 2002, <http://www.cbc.ca/news/canada/nova-scotia/another-sub-another-leak-1.310945>.

²⁰ Coffen, "A Submarine Replacement Project for Canada," 94; Department of National Defence, *Canada First Defence Strategy* (Ottawa: 2008).

would make their replacement fiscally immaterial with respect to the policy.²¹ However, the trend of negative perception of the *Victoria*-class had continued: among other issues, CHICOUTIMI's repairs had been put off by years.²² So, it is more likely that considerations of political liability led to the omission of submarine procurement from CFDS.

Implications of Past Policy for the Present

It is difficult to glean overall trends from this review of defence policies – sometimes submarines are mentioned, sometimes not; sometimes commitments are kept, sometimes not. But some conclusions can be noted: near their end of life, submarines find their way onto the political agenda, though perhaps not in time to avoid a capability gap. Furthermore, the ambitions demonstrated by conservative parties has typically been tempered – either by the Liberals, who settle for a nominal, rather than effective, capability, or by a change in the economic or security situation. Finally, when submarines become a political liability, they do not make it into defence policy at all, as in 1971 and in 2008.

Considering this in the current context, a few assertions can be made. One is that recent successes, discussed later, probably account for the fact that submarines are not currently politically toxic enough to be excluded from defence policy. Another is that, given procurement timelines, a commitment in SSE to replace the *Victoria*-class likely would not have avoided a capability gap in the late 2020s. So then the commitment in SSE to modernize the class actually gives the navy the breathing room to push for a timely procurement project in order to preclude a

²¹ Department of National Defence, *Canada First Defence Strategy*, 11–12, 18.

²² CBC, “Chicoutimi repairs delayed four years,” last modified 28 April 2006, <http://www.cbc.ca/news/canada/nova-scotia/chicoutimi-repairs-delayed-four-years-1.615422>.

capability gap at the extended end-of-life. Finally, in the past, new governments have generally followed through on at least the minimum commitments of the preceding government with respect to submarines. This gives hope that future governments will comply with the modernization plan, which will then give the navy time to make a case for a replacement submarine project.

A FUTURE SUBMARINE AND SSE

Requirement for a Future Submarine

Before considering SSE's treatment of submarines, it is necessary to determine what a notional replacement might look like. The first question might be whether Canada needs submarines at all. There is currently a general push toward unmanned vehicles, and SSE discusses remotely piloted systems, including unmanned underwater vehicles (UUVs).²³ It is important to recognize differences between piloted and autonomous vessels. The former is not feasible for covering the ranges required of submarine missions, given the difficulty in communication over long distances underwater, and particularly under ice, if submersibles were to operate in the arctic. The latter, autonomy, is only in its infancy – the US Navy has begun work in this area with surface vessels, but it is not clear that, for a submarine project started in the 2020s, autonomous technology will be mature enough to replace manned submarines.²⁴ Finally, there is the consideration of the missions required. Surveillance might be carried out

²³ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa: 2017), 73.

²⁴ Defense Advanced Research Projects Agency, "ACTUV 'Sea Hunter' Prototype Transitions to Office of Naval Research for Further Development," last modified 30 January 2018, <https://www.darpa.mil/news-events/2018-01-30a>.

solely by UUVs, or by a fixed perimeter, and deterrence could perhaps be achieved using fixed sea mines.²⁵ But the 1987 policy makes the clearest case for submarines: without the ability to manoeuvre and to prosecute targets, surveillance does not equate to sovereignty.²⁶ There is no certain near-term method of covert surveillance target prosecution at sea other than using submarines.

SSE Submarine Missions

So then, does SSE support the ongoing employment of submarines? The answer is that it does so explicitly. It indicates that the RCN must include submarines, which are part of “the necessary fleet mix” for naval operations and can be required assets in a Naval Task Group (NTG). It also notes their critical role in Joint Intelligence, Surveillance and Reconnaissance, a significant focus of the policy.²⁷ The policy also commits to modernizing the existing *Victoria*-class submarines.²⁸ There are a number of other missions and capabilities cited in SSE for which submarines are eminently suited: interdiction of maritime threats far from Canada; arctic operations (particularly SSNs, though this is not what the RCN currently operates); defending freedom of action in naval combat operations, where submarines are critical; deterring adversaries at sea; and defending maritime approaches and sea lines of communication.²⁹

²⁵ Department of National Defence, *Defence in the 70s...*, 18; Department of National Defence, *Challenge and Commitment...*, 50.

²⁶ Department of National Defence, *Challenge and Commitment...*, 17, 24, 50, 52–3.

²⁷ Department of National Defence, *Strong, Secure, Engaged...*, 34, 54, 60, 63–5, 83.

²⁸ *Ibid.*, 34, 35, 50.

²⁹ *Ibid.*, 34, 35, 50, 52, 60, 79–80

SSE Funding

If the existing submarines are indeed replaced, there are many potential solutions. The main considerations regard the type (conventional or nuclear-powered), design (Canadian, foreign bespoke, or military off the shelf [MOTS]), build (Canadian or foreign) and the number of platforms. What is needed for this analysis is to determine a reasonable estimate for timelines and cost to compare to the funding in SSE. LCdr (now Cdr) Tony March found that first-of-class build timelines for license-built submarines can be up to nine years, but are closer to five years in an experienced yard.³⁰ Production of a new design can take even experienced countries on the order of six to eight years, and can cost as much as one or two submarines.³¹ However, for this analysis, it will be assumed that a modified MOTS design would be used, and it will be assumed that this will add four years from design award to design delivery, with another four years for the design definition prior to that, and five years to build the first vessel.

Cdr (now Capt(N)) Keith Coffen produced a thorough examination of the costs of a number of build options, varying the power plant, design approach, build approach and number of vessels. For this analysis, it will be assumed that replacement capability will be relatively modest, with the acquisition of six MOTS SSKs. Coffen's work estimated that acquisition costs would be \$4.2B in 2013 dollars, with personnel, operations and maintenance (PO&M) costs of \$12.9B over 30 years, for a total program cost of \$17.1B.³² Importantly, his estimates of the cost of delaying the program included not only annual inflation of two percent, but also a 3.8 percent

³⁰ March, "Deeply Complicated: Canadian Submarine Procurement Options," 21.

³¹ *Ibid.*, 9–10.

³² Coffen, "A Submarine Replacement Project for Canada," 97.

real cost inflation.³³ These numbers can be used to determine the expected funding of a submarine procurement project, based on some assumptions about the *Victoria*-class service life: the latter will be modernized as indicated in SSE, and will reach their end of service life at a rate of one per year, starting in 2034. Given the current objective is to have three submarines in service at any given time, the first replacement submarine would be required in 2036. It will further be assumed that it will take 12 years to deliver the new submarines. Considering all this, along with the estimated design and build timelines from above, the design (or MOTS modification) contract would be awarded in 2027, and design definition would start in 2023. Applying the 3.8 percent annual delay inflation rate then gives a cost of \$7.1B in 2013 dollars to start the project in 2027. If these costs are assumed to be spread evenly from then until delivery of the final hull in 2048, then annual procurement costs will be \$337M in 2013 dollars. Further application of annual inflation of two percent leads to budget year (BY) annual costs starting at \$445 in 2027 and rising to \$531 in 2036, adding a total of \$4.87B in cash spending over this period.

In considering a replacement project, it is important to determine whether, fiscally, it would fit with the SSE framework, or if it would greatly exceed the existing funding plan. The cost estimates arrived at above fit well into the SSE funding plan. In the cash expenditure view, SSE anticipates maximum BY spending of \$33.4B in 2027-28, before dropping to a roughly constant level at about \$27.5B annually from 2030-31.³⁴ The submarine acquisition expenditures would push this up by about a half billion dollars, pushing maximum spending up to \$33.9B in 2027-28, and keeping it at about \$28B from 2030-31, an increase of about 1.8 percent. This cash

³³ *Ibid.*, 75, 78.

³⁴ Department of National Defence, *Strong, Secure, Engaged...*, 98

spending fits well into the anticipated drop in spending from 2028, and would in fact improve some of the figures on which SSE focuses, such as the ratios of major capital spending to total defence spending and defence spending to gross domestic product.³⁵

To find the effect on the accrual budget is slightly more difficult. The expected BY cash expenditures for submarine procurement, taking into account inflation of two percent, total \$12.1B. Spread over the 42 years of service from entry of the first submarine into service in 2036 to decommissioning of the last in 2078 gives an annual accrual cost of \$289M. Given the expected accrual budget of approximately \$30B in 2036-37, this would increase accrual spending by one percent.³⁶ There would be little appreciable increase in PO&M costs until sometime in the 2040s when four or more submarines would be in service.

It can be seen, then, that a replacement submarine project would certainly push both cash and accrual spending up, but only by small percentages, and in fact lines up well with anticipated drops in capital spending starting in the late 2020s. Of course, this analysis has only considered one project. In fact there are likely many such projects across the forces that were not mentioned in SSE but which are deemed important capabilities, and in sum they could add up to a significant amount of spending.

³⁵ *Ibid.*, 46; David Perry, *Following the Funding in Strong, Secure, Engaged*, (Calgary: Canadian Global Affairs Institute, 2018), 4.

³⁶ Department of National Defence, *Strong, Secure, Engaged...*, 97.

SUBMARINES AND THE POLITICAL CONTEXT

As or more important than the more objective criteria of requirements and funding is the political context in which submarines are considered. This section will first review useful aspects of some policy models, then will look at the current situation to consider the stakeholder implications of a submarine replacement project. Finally, it will look forward to assess what situation might need to exist in the future in order for a submarine replacement project to be politically feasible, and it will consider how the RCN can move toward this state.

Policy Analysis Models

Aspects of two policy models will be used, from Allison's governmental politics model and Walt and Gilson's policy analysis model. Allison developed his model to explain government decision-making during the Cuban Missile Crisis, but uses the model to look at other important decisions in the international sphere.³⁷ He acknowledges, however, that it can be used below the national level.³⁸ One of the tenets of this model is that it assumes a fairly confrontational outlook in analysing decisions as it considers the "power and performance of proponents and opponents of the action in question".³⁹ In terms of trying to guide future policy decisions, the RCN would presumably be best served by reducing this adversarial nature of decision-making as much as possible. The model describes decision-making as being the subject of "bargaining according to...processes" which, in this case, could include the less-formal

³⁷ Graham Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, 2nd ed. (New York: Longman, 1999).

³⁸ *Ibid.*, 255–6.

³⁹ *Ibid.*, 256.

processes that get defence issues onto the policy agenda, rather than only strict formal procurement processes.⁴⁰ The model recognizes the many participants in these processes, and the fact that a larger number of participants may lead to more buy-in, but makes decision-making considerably more difficult.⁴¹ Importantly, there is a difference between principals (decision-makers) and agents (experts), and they do not typically have the same motivations and goals. Vital to the analysis here is to recognize where the RCN falls in this field, and to determine actions required in order to frame the issue favourably.⁴² To do this successfully, Allison cites Kindon's assertion that, in order to move an issue from the public agenda to the decision agenda, a "policy entrepreneur" is often needed in order to cause convergence of the public, policy and the political streams by controlling the decision-making agenda and attractively framing the desired solution.⁴³ Stated more succinctly, this means that an individual or a small group needs to facilitate the framing of a decision so that the policy outcome aligns with public sentiment and with the government's political agenda. Effective ways of succeeding in this problem framing are to link the issue to an existing problem, to connect it to an issue of loss aversion, and to recognize that there potentially are "personal..., domestic political...and organizational interests" at play.⁴⁴ Allison describes participants' power as a combination of their "bargaining advantages, skill and will in using [these], and other player's perceptions of [both]."⁴⁵ Finally, some considerations that are likely to be particular challenges in the context of a submarine procurement decision are the "pace of the game", where a lack of immediacy can make it

⁴⁰ *Ibid.*, 260.

⁴¹ *Ibid.*, 262, 271–2.

⁴² *Ibid.*, 272–3, 280.

⁴³ *Ibid.*, 280.

⁴⁴ *Ibid.*, 280, 281, 298–9, 307.

⁴⁵ *Ibid.*, 300.

difficult to get a decision; getting the attention of decision-makers; and avoiding the tendency to assume that help with low-priority issues will be forthcoming.⁴⁶

Walt and Gilson's model assumes a more cooperative perspective, but is similar in that it does not put less emphasis on the content of proposed policies, but more on the context, processes and actors involved.⁴⁷ Consideration of context must include the "complex social, political and economic interactions" that lead to outcomes, and must not focus solely on the technical aspects of the desired outcome.⁴⁸ Taking this idea further, they cite Wuyt in noting that "the public cannot be separated from the state", as the state is the means through which the public acts, and thus is an integral part, rather than an "additional factor", in policy analysis.⁴⁹ Finally, the model cites Grindle and Thomas in noting that policy analysis should also focus on elite actors such as politicians and senior bureaucrats, should look at how the agenda is set and decisions are made and implemented, and is served well by evaluating the processes, critical factors, supporting and resisting responses to policy, required resources and any "enabling or constraining contexts."⁵⁰

Current Situation

Perhaps the most relevant aspect of the current situation is the context resulting from the public's perception of submarines. It was 20 years ago that the Liberal government purchased the *Victoria*-class from Britain, and a seemingly continuous stream of negative press has ensued

⁴⁶ *Ibid.*, 300, 308, 310.

⁴⁷ Gill Walt and Lucy Gilson, "Reforming the health sector in developing countries: the central role of policy analysis," *Health Policy and Planning* 9, no. 4 (1994): 353.

⁴⁸ Walt and Gilson, "Reforming the health sector...", 354, 359.

⁴⁹ *Ibid.*, 363.

⁵⁰ *Ibid.*, 364.

since that time. A review of CBC online news found 59 articles about the *Victoria*-class, with 30 of them negative in nature and eight of them neutral. This negative press started with leaks in two submarines in 2002, then the fire and death in CHICOUTIMI, the ensuing seven-month pause in submarine operations, and the news for years afterward about the board of inquiry, alleged liability claims against the UK, repeated delays in the submarine's repair timeline, and controversy surrounding the costs to transfer the vessel from Halifax to Esquimalt.⁵¹ Other issues included questions in the House of Commons about the funding mechanism for the purchase, a dent in VICTORIA's hull, costs and timelines of upgrades to handle US torpedoes, CORNERBROOK's grounding, WINDSOR's generator failure and ensuing costs and delays after a lengthy refit, weld issues in VICTORIA and CHICOUTIMI, and other miscellaneous failures.⁵² This is the context in which the public typically thinks about Canadian submarines. Only 21 of the articles were positive in nature, but it is relevant to note that only four positive articles appeared from the purchase through 2013, and the rest appeared from 2014 onward, with all but one of the latest 15 articles being positive or neutral in nature. This indicates that the context is shifting as more boats enter operations and fewer failures, delays and cost overruns experienced. Walt and Gilson describe constraining and enabling conditions with respect to policy propositions. It is clear that the negative press associated with the *Victoria*-class has contributed to constraining of any initiative to replace them in the near future. However, the

⁵¹ CBC, "Another sub, another leak,"; CBC, "Canadian dies of injuries from submarine fire,"; CBC, "Navy submarine returns to sea," last modified 17 May 2005, <http://www.cbc.ca/news/canada/navy-submarine-returns-to-sea-1.525813>; CBC, "Martin raises submarine liability with Blair," last modified 15 October 2004, <http://www.cbc.ca/news/world/martin-raises-submarine-liability-with-blair-1.504964>.

⁵² CBC, "Used U.K. submarines prompted compensation demand," last modified 2 May 2012, <http://www.cbc.ca/news/canada/nova-scotia/used-u-k-submarines-prompted-compensation-demand-1.1270576>; CBC, "Navy to upgrade torpedoes for troubled subs," last modified 8 April 2011, <http://www.cbc.ca/news/canada/nova-scotia/navy-to-upgrade-torpedoes-for-troubled-subs-1.999264>.

recent better press has likely helped to enable more political discussion of their capabilities, to the point that they were mentioned explicitly, and slated for modernization, in the recent defence policy.

This leads to another point, which is Allison's assertion that it can be difficult to get the attention of decision-makers. In the military context, this is particularly important, as it is usually inappropriate for military leaders to comment publically on policy recommendations.⁵³ But, as Wuyt noted, "the public cannot be separated from the state," and this can lead to a solution which is being used more frequently with respect to submarines: the dissemination of positive news in the media by the RCN, which can increase the public's awareness of submarine missions and can showcase the service in a favourable light. Some notable examples of this are an interview with RAdm Newton when he publicised WINDSOR's deployment in response to adversary submarines in the North Atlantic; a tour at sea of WINDSOR; and inclusion of a member of the press on CHICOUTIMI's recent deployment to Asia.⁵⁴

A further examination of the context and of the many players, particularly the "personal..., domestic political...and organizational interests" that Allison noted, reveals probable reasons that a submarine replacement project was not cited in SSE. The major decision-makers are the government, particularly the Prime Minister, the Cabinet and the Treasury Board. Generally, for both political and personal reasons, these politicians and political appointees would distance themselves from floundering defence projects. From a political and

⁵³ Allison and Zelikow, *Essence of Decision...*, 308.

⁵⁴ CBC, "Incident in North Atlantic last fall shows why Canada needs submarines, navy says," last modified 27 May 16, <http://www.cbc.ca/news/canada/nova-scotia/hmcs-windsor-submarine-canada-navy-greenwood-subs-halifax-1.3601633>; CBC, "Sub Culture: Aboard a Canadian submarine prowling the Pacific," last modified 7 February 2018, <http://www.cbc.ca/news/thenational/sub-culture-aboard-a-canadian-submarine-prowling-the-pacific-1.4512960>.

organizational perspective, they need to push forward a certain policy agenda which currently includes growing the middle class and using the armed forces both to increase security and Canada's role as a global actor, and to grow the economy and create jobs.⁵⁵ The Liberals' election platform specifically committed to using the National Shipbuilding Strategy (NSS) both to build previously-promised ships and to build the economy and create jobs.⁵⁶ The success of the NSS is not yet publically assured, with the Arctic/Offshore Patrol Ship (AOPS) build proceeding apace but yet to deliver a ship, and construction of the Joint Supply Ship (JSS) not yet started. Given this, it is likely that the prospect of adding new submarines to the list of naval procurement projects was too great a political risk. To compound this problem, the Liberals stood on a platform of fixing the funding issues associated with naval projects started but underfunded by the Conservatives.⁵⁷ Again, taking on a new build submarine project at the same time as they more than doubled the budget for the Canadian Surface Combatant (CSC) was likely a political step too far.⁵⁸

The motivations of RCN leadership are different from those of political players: securing adequate capability within the constraints of the political environment. This is the context in which comments such as those made by a recent Commander of the RCN were made, when he suggested that there needs to be a debate about the capability requirement for submarines, rather than about the specifics of the *Victoria*-class platform itself.⁵⁹ But this is to miss the point: as then-General Natynczyk stated in orders to the RCN, probably produced as much for public

⁵⁵ Liberal Party of Canada, *Real Change: A New Plan for a Strong Middle Class*, (2015), 68.

⁵⁶ *Ibid.*, 70.

⁵⁷ *Ibid.*

⁵⁸ Andrea Gunn, "Ottawa commits \$60 billion for 15 new navy ships," *Herald News*, last modified 7 June 2017, <http://thechronicleherald.ca/novascotia/1475921-ottawa-commits-60-billion-for-15-new-navy-ships>.

⁵⁹ McCallum, "How can we promote...success of the Submarine Service?" 2.

consumption as for naval leaders, the RCN needs to demonstrate the fruits of the taxpayers' heavy investment in submarines; and this certainly needs to occur before any discussions about future platforms can take place.⁶⁰

Future Situation

This brings us finally to the future political situation *vis-à-vis* submarines and, in particular, the potential for a submarine replacement project. First, RCN leaders need, as much as possible, to minimize the adversarial nature of decision-making emphasized by Allison. There are two main ways of doing this: avoiding tensions between the RCN and government while pursuing a replacement project; and minimizing potential for political conflict on the subject, so as to avoid the chance of a debate about the need for future submarines. Both can be accomplished by making a submarine replacement project politically valuable, and can be helped by ensuring that the RCN well understands and remains flexible with a number of options that can deliver desired capability.

Part of this is recognizing where RCN leaders fall in Allison's field of principals and agents, and what power they wield. The RCN, supported by DND, clearly possesses expertise in the area of naval operations. However, it is also sometimes construed that armed forces leadership use their expertise to act against the government in pursuing as much capability as possible, regardless of the government's political direction. There is another possible approach, however, which is to ensure that RCN leadership strives to achieve a position of trust with the

⁶⁰ CBC, "Rebuilt HMCS Chicoutimi submarine to return to navy," last modified 6 January 2014, <http://www.cbc.ca/news/canada/nova-scotia/rebuilt-hmcs-chicoutimi-submarine-to-return-to-navy-1.2486251>.

government. A notable example of this is in the difference between Generals Matthew Ridgway and Maxwell Taylor, who each served as Army Chief of Staff under President Eisenhower in the US: the former pushed for a large conventional army at cross-purposes to the president's aim of concentrating instead on nuclear deterrence and economic growth; when the latter took the reins, he pushed much the same agenda, but provided the president options, and couched everything in terms of the president's policy agenda. He was much more successful than his predecessor in ensuring the army maintained important capabilities.⁶¹ RCN leaders must take a similar approach: they must ensure procurement options are well-understood, which can be accomplished through capability studies, and they must tie these as much as possible to the policy agenda of the day, which today includes middle class jobs, global engagement and gender equality. This also acknowledges the power that RCN leaders have in procurement – little direct power, but great powers of influence if they are able to enhance their status as trusted partners of the government in defence and in policy implementation, and as trusted consumers of resources, demonstrating good value to the public.

This brings us to the second point, which is how to build that trust with the public. If asked now, many citizens might say of the submarine service that it has consumed vast resources with little or no output. They would be at least partly right – the fleet certainly had many teething troubles over more than a decade; but more importantly, submarine successes are not typically advertised.⁶² But this approach, while maintaining operational secrecy, does not acknowledge the

⁶¹ Donald Alan Carter, "Eisenhower Versus the Generals," *The Journal of Military History* 71 (October 2007): 1169–1199.

⁶² CBC, "MacKay says submarine fleet has spotty history," last modified 14 February 2012, <http://www.cbc.ca/news/politics/mackay-says-submarine-fleet-has-spotty-history-1.1289091>; CBC, "Canadian sub on mission to bolster North Korea surveillance," last modified 6 February 2018, <http://www.cbc.ca/news/canada/hmcs-chicoutimi-submarine-canada-pacific-north-korea-1.4511238>.

larger picture: that submarine operations are important not just operationally, but also strategically, both with respect to their understanding that the Canadian public has of their value, and the understanding that allies and potential adversaries have that Canada is capably working below the waves. As a corollary, Canadian Special Forces have, over the last few years, taken a much more open position, subjecting themselves to articles and interviews to explain what they do and why they do it.⁶³ The RCN would be wise to follow a similar approach, advertising mission successes as often as possible, and appropriately considering the strategic value of communications against the operational value of maintaining secrecy. LCdr (now Cdr) Eric MacCallum posited that the best way to do this is to focus on the submarines' ASW role as part of an NTG.⁶⁴ There is truth to this; however, as the positive press surrounding CHICOUTIMI's recent deployment to Asia shows, where details of surveillance in support of sanctions against North Korea were revealed in news and video reports, wider publicity about all relevant missions is both possible and comprehensible to the public.⁶⁵

Another important consideration is Walt and Gilson's admonishment not to concentrate solely on technical aspects of policy. This would seem to imply that the design requirements for new submarines should be ignored. This is not that case, but a mature viewpoint would recognize that there is no point in fighting for the best technical solution when that very fight could undermine the acquisition of an acceptable solution in a reasonable timeframe. Application of this principle can be brought forward to today, well before a procurement project is even

⁶³ Adam Day, "Canada's special operations forces come out of the shadows. Again. Kind of," *Legion Magazine*, last modified 30 June 2016, <https://legionmagazine.com/en/2016/06/canadas-special-operations-come-out-of-the-shadows-again-kind-of/>.

⁶⁴ McCallum, "How can we promote...success of the Submarine Service?" 31.

⁶⁵ Lookout, "HMCS Chicoutimi celebrates achievements," last modified 27 March 2018, <http://www.lookoutnewspaper.com/hmcs-chicoutimi-celebrates-achievements/>.

considered by the government: a focus on technical improvements to existing ships and submarines, if it leads to frequent time alongside, delays or cost overruns could have a negative strategic impact, in terms of public perception, that outweighs the more immediate benefit of increased capability. Such upgrades should be considered carefully if the RCN is to set the best possible conditions for future procurement.

Another issue on which the RCN and DND should focus is on success of the NSS. As stated above, it would not be politically palatable to announce a new submarine project when neither the AOPS nor JSS projects have yet delivered a ship. Thus efforts made to ensure smooth and, as much as is now possible, timely implementation of these build programs will be repaid in the future when the public and the government demonstrates trust in the RCN and DND to execute a submarine procurement project. Part of this goes back to the point above about not focussing excessively on technical aspects of policy – if delivery of ships is to be delayed in order to add capability, the benefit must be weighed against the potential loss of confidence in the navy to facilitate on-time delivery of new ships.

Finally, if the RCN can manage approaches cited herein that will convince the government and the public of the significant value of the existing submarines, then it can potentially succeed in setting conditions for what Allison described as loss aversion, that is, the stronger inclination to keep something that one already possesses than to acquire it in the first place. Indeed, Coffen recognized the corollary that, if the RCN must eventually pull the serving

submarines from service without a replacement capability entering service, it is likely that Canada will not again soon re-acquire submarine capability.⁶⁶

CONCLUSION

Thus, considering this analysis, it can be seen that SSE does in fact set the only feasible conditions for submarine replacement. In the current context, though submarines are supported by SSE and though their replacement could be fiscally possible, replacement is currently *politically* infeasible. This is due primarily to the public perception of the 20-year history of the *Victoria*-class, but is also due to the lack of tangible success of the NSS to date. The modernization of submarines promised in SSE provides the breathing room the RCN needs to show success in both submarine operations and in shipbuilding, before a submarine project would need to be stood up in about 2024.

Directly stemming from this conclusion are recommendations as to how RCN leadership can help to set the political conditions for submarine replacement in the future. The first is that the navy advertise should as much as possible submarine operations and successes, keeping in mind that the associated strategic gains from publicity often can far outweigh the operational benefits of secrecy. The second is that the RCN should do everything it can to support the on-time, on-cost delivery of ships in the NSS build program. An issue that could prevent this is the modification of the build specifications due to the addition of new capabilities. However, as with submarine operational secrecy, build modifications can have negative strategic results in terms of loss of public confidence that may outweigh any operational gains from increased capability.

⁶⁶ Coffen, "A Submarine Replacement Project for Canada," 23.

A more broad conclusion is that, to become trusted partners of the government, leaders must ensure they are facilitating the government in achieving its objectives, rather than considering only the navy's needs. This may seem to undermine naval capability, as it requires investigating and presenting various capability procurement options in good faith, rather than only the desired option; and it means tailoring these options to the political agenda of the day. This may seem like selling out on the armed forces in order to smooth relationships with political masters. But if the public, and through them the politicians, cannot be convinced of a legitimate capability requirement through leaders' actions as a trusted partners in defence and in policy implementation, then it could be that Canada can do without that capability.

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