

DEAL OF THE CENTURY

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Submarines are perhaps the most misunderstood weapon system in the Canadian Forces. Few Canadians, even those well versed in military matters, understand their role in Canada's defence. Worse, the technical issues that have afflicted the *Victoria* class submarines have dominated the media narrative for a decade, convincing many that [they really are a set of lemons](#) put upon us by the crafty British. In actuality, the navy had relatively few options to replace its aging *Oberons* in the 1990s. It was the decisions made then, rather than any inherent technical shortcomings, which created many of the problems since experienced in the activation of these vessels. Yet, the choices for the navy were stark. Faced with a government that was essentially hostile to the idea of submarines, and limited in what it could spend, the used, but highly modern *Upholders* were the only option open to the RCN: it was either that or the end of the Submarine Service.

Submarines have long been controversial in Canada. The navy has spent most of its existence without having any. Two were acquired during [World War One](#), but the service divested itself of them following the end of the war. Although many Canadians served in British submarines during World War Two, none were procured for the conflict and the government resisted the navy's demands until the early 1960s. The navy was able then to convince the government at that time that its growing role in the field of anti-submarine warfare for NATO's maritime defences required the acquisition of submarines in order to provide training targets. [Two old American surplus WWII era submarines](#) were leased and shortly thereafter [new Oberon class submarines were purchased from Britain](#). These submarines largely worked as "clockwork mice" during naval exercises; however in the 1980s modern combat systems and the [Mk. 48 torpedoes](#) were acquired for the boats making them operational weapons for the first time.

Little known is that the navy had been lobbying for submarines since the 1950s, and what it really wanted were nuclear submarines, not conventional ones like the *Oberons*. However as [the historian of the Canadian submarine programme](#) points out, there was real concern with the nature of an operational system: the cost of an SSN was so steep, it made no sense to acquire them simply for training purposes.

With the addition of the large torpedoes, the subs became the most potent weapon system operated by the Canadian armed forces. [A single shot from the Mk. 48](#) is capable of [completely destroying](#) all but the largest of vessels. As the Falklands War vividly demonstrated, such an action could compel real strategic action on the part of

adversaries. After the sinking of the [General Belgrano](#), the Argentinean navy retired from the field and left the island bound garrison of troops to their ultimate fate.

What many do not realize, the Argentines almost pulled off the same feat against the British. Their submarine, the *San Luis* achieved a fire solution on HMS Hermes, but the torpedoes failed to hit the ship because of a very simple technical error (its gyroscopes malfunctioned because an electrical cable had been misinstalled, reversing the polarity of the connection). Had Hermes been hit, the Royal Navy would have been forced to retire, ending Britain's efforts to take back its colony. British naval forces knew that an Argentinean submarine was pursuing them, but were unable to effectively target it in return. Local acoustic conditions rendered British forces helpless: over 150 weapons, most of its ASW ordnance, were released with no hits scored. According to the Argentinian Captain of the *San Luis*: "There was no effective counter attack. I don't think that they knew we were there until they heard our torpedoes running." The implication is that every weapon expended in the British ASW effort was against a false target.

The mere threat of submarines causes a potent deterrent effect on navies. The publication of a "[Notice of Intention](#)" by the RCN during the [Turbot Crisis](#) of 1995 helped to de-escalate the threat of confrontation between the Canadian and Spanish navies.

The navy flirted with the idea of SSNs again during the 1980s, taking advantage of an offhand comment by then defence minister Erik Nielsen to make a renewed case for them. The end of the Cold War and a growing government deficit saved the navy from a programme that likely would have eaten the service alive during the cash strapped 1990s. Indeed, it was the lack of any extra revenue to procure submarines that ultimately led the navy into the predicaments with which it currently wrestles with the *Victorias*. While the report of the Special Joint Committee on Canada's Defence in 1994 ultimately supported the idea of replacing the aging *Oberons*, it was only if they could be replaced within the navy's then existing budget. Based on that guidance, the lucky appearance of [the Upholder subs on the market](#) probably saved the Canadian submarine service from a lingering death.

[The Upholders were designed as ultra-quiet conventional submarines](#) meant to defend the so-called Greenland-Iceland-UK (GIUK) gap, through which Soviet SSNs and SSBNs would have to transit in order to attack Western resupply convoys or to manoeuvre into their firing positions respectively. With the end of the Cold War, and dealing with its own deficit programmes, the UK MOD decided to invest all its efforts in SSNs, and terminated the programme after just four had been built. The submarines were placed up for sale, but given that they were virtually the same submarine as the

nuclear *Trafalgar* class and based on sensitive US technology, the MOD could not just sell them to any navy. Indeed, from the very beginning, Canada was the preferred customer given its close relations with both the US and the UK. Indeed, two successive US Secretaries of Defence lobbied Canadian politicians to step up to the altar and accept the subs.

However, submarines were politically unpopular within the Chretien government. The former foreign minister called them “un-Canadian” and Chretien himself dithered on the decision. Sensing that the window was about to slam shut, the navy lobbied hard for their acquisition in what was called the deal of a century – four slightly used subs for \$750 million. The old supply vessel *HMCS Provider* would be paid off early and planned refits for the O-boats foregone.

But the navy had to live within the tight limits that had been established by that \$750 M figure. As such, much of the spare parts the RN had warehoused for the submarines were not purchased, or some of the technical information concerning the engineering of the submarine’ systems acquired from VSEL (later BAE Systems). Further, a series of technical problems were discovered in the submarines as they began to be reactivated by the Royal Navy. Many of these were fixed before the boats were turned over to Canada, however, several expensive fixes remained when we acquired them. The heavy demands made on the navy at the beginning of the War on Terror in 2003, just as the submarines were arriving in Halifax also limited the ability to move quickly in resolving these issues.

In many ways, the problems experienced by the subs represent an “own goal” on the part of the navy.

The decisions that were made at the time in order to get the boat, were to come back to haunt the navy years later. The failure to acquire sufficient spares or establish supplier relationships for parts resulted in many of the significant delays in making the subs operational as the navy worked to create its own network of industrial relationships to manufacture the specialized equipment found on no other naval system. This, rather than the frequent argument that the subs were poorly constructed, is responsible for the delays in the programme. Yet, given the constraints under which the navy had to operate in the mid-1990s meant that there really were no other alternatives if the service was to be preserved. From several different perspectives, despite the problems that came with the boats, it really was *the deal of the century!* No new system could be considered given the cost constraints, no other used system was likely to come along, and the O-boats were nearly at the end of their operational lives.

That the navy was willing to rashly run such risks perversely shows the importance attached by the navy to preserving the service. Students of politics will be quick to point out that bureaucratic organizations seek to preserve both budget as well as

mission, if not also increase them. However, the scale of the effort to protect the subs meant it had to be a navy wide effort, rather than simply the selfish pursuit of interests by a (very) small part of the service. Still, the desire by the RCN to protect its sub-surface capabilities escapes many Canadians, including those with backgrounds in military affairs.

Michael [Byers and Stewart Webb's recent critique of the Victoria class submarine programme](#) "re-surfaces" what are actually very old concerns about the strategic requirement for these weapon systems in the inventory of the RCN. Their opposition to submarines is based purely on tactical considerations surrounding the current strategic environment. A strategic consideration of submarines is focused, rather, on the options that the system gives the Canadian government in an unknowable future security environment.

Of course, the submarine has long had a sinister reputation stemming from both the major global conflicts of the twentieth century. The vessels themselves with their black hulls are [visually menacing](#). The unrestricted submarine campaigns conducted by the German navy in both wars cemented in the public's imagination [the inherent "evil"](#) of the submarine. The sinking of vessels like the [Lusitania on the 7th of May 1915](#) with the loss of 1,201 persons, all of them civilian passengers and crew, framed the essential horror of this weapon. Later, the long Battle of the Atlantic with the steady loss of merchant mariners, [in equally horrible circumstances, reinforced this image](#). In Western nations, it is often forgotten that similar horrors were suffered by [German](#) and [Japanese](#) sailors in the unrestricted submarine operations conducted by allied navies.

Submariners have often embraced this reputation: on the return of *HMS Conqueror* following the end of the Falklands War in 1982, [it flew the Jolly Roger on its periscope along with a broom](#) to indicate a "clean sweep" of all its targets, reviving [a tradition](#) from the First World War.

In what seems to be a recurring pattern, Canadian qualms over submarines were raised even before the close of the Cold War and the debate over the so-called peace dividend. In 1983, the Senate Subcommittee on National Defence in its report *Canada's Maritime Defence* noted "[Submarines'] major disadvantage is that they are quintessentially weapons of war and would be able to contribute little to the accomplishment of the ancillary duties assigned to MARCOM in peacetime." A decade later, the Canada 21 report argued:

In the new strategic context, there is no obvious need to maintain the wide range of air, ground, *and ASW* conventional forces needed to repel an attack because it is difficult to conceive of any military power with the desire or ability to attack Canada.

On the then proposed *Upholder* purchase, the *Globe and Mail* editorialised “[e]ven if we could afford the \$800 million [cabinet] knows that nothing is a bargain if they are not necessary.” Even some retired naval officers argued against the systems. Former submarine captain Ed Gigg wrote that

Britain has every right to reap the so-called “peace dividend” by taking *Upholder* submarines out of service; but Canada should not consider adding to the British dividend by purchasing submarines for which there is no demonstrable need,

and Capt. “Tex” Thomas argued that “In a time of changing focus for the fleet, increasing complications for funding and emphasis on versatility and flexibility, there is no justification for acquiring new submarines.” In sum, there is a long history of opposition to submarines in Canada.

The problem with these arguments is basically their *tactical* orientation to submarines as weapons. First, it is difficult for Canadians to imagine a replay of the Battle of the Atlantic emerging once more at sea. Secondly, it is impossible for them to imagine Canadian crews deliberately targeting foreign commercial shipping in the same way that [contemporary Canadians condemn our participation](#) in the strategic bombing campaigns against Germany during World War Two. Both of the above scenarios imagine how the vessels might be used in a specific circumstance, rather than considering the types of general options such a capability gives to a Canadian government.

We should consider, therefore, these options that open up to governments. Because of their inherent stealthiness they can:

- operate in a state’s backyard, unsupported and in the face of opposing sea control efforts;

- conduct non-politically intrusive operations in forward areas;
- be inserted for a wide range of operational tasks (intelligence indication and warning, special operations);
- conduct a wide range of operations with a high degree of survivability.

Submarines, thus, offer considerable strategic flexibility to the nations that operate them. Besides their ominous offensive capabilities, three roles fall naturally to submarines: Strategic Conventional Deterrence, Intelligence Collection, and Operational Support.

Strategic Conventional Deterrence

Submarines are enormously difficult to find at sea. In World War Two, [the huge casualties](#) suffered by German wolf packs were partly caused by the speed of convoys that forced most submarines [to attack on the surface](#) where ships and [aircraft](#) could more easily [attack them](#). However, modern submarines (particularly nuclear submarines) are much faster which gives them the tactical manoeuvrability to attack while submerged. As noted above, the Royal Navy found out in the Falklands War, modern ASW is far more tricky.

Such operational difficulties exert a strong psychological effect on navies. Knowledge of an operational submarine in a particular area will often deter navies from entering it at all. Following the sinking of the *General Belgrano* by *Conqueror*, the Argentinian navy returned to port. The knowledge that the Canadian navy had deployed submarines to the Georges Bank in 1995 assisted in managing the crisis between Spain and Canada during the Turbot War.

Intelligence Collection

The same features which enhance conventional deterrence also play an important role in intelligence collection. The ability to cruise undetected close to hostile shores demonstrates the utility of these vessels. During the height of the Cold War, [American submarines were able](#) to penetrate the ports of some of the Soviet Union's most sensitive naval installations, conducting signals and electronic intelligence, as well as photographing the undersides of Soviet submarines. Submarines would be able to perform similar missions in other operational contexts, complementing the intelligence resources available to a naval or a ground force commander. Further, such missions might be able to collect intelligence unavailable by other means. Opposing forces can avoid or deceive satellite reconnaissance as long as the orbital periods are known. Long range high altitude aircraft, such as the U-2 and Global Hawk UAV are highly scarce resources which may not be available on short notice. Further, these and other aircraft may be detected, thereby warning the opposition that they are being watched. A

submarine's stealth avoids these problems. No other platform has the ability to covertly track, identify, and monitor vessels in fog conditions. "Bottomed out" submarines, resting on the sea floor, can conduct long range and long term intelligence operations in strategic waterways with little likelihood of being detected. [Canadian submarines have been used in such purposes to monitor American fishing vessels](#) thought to be illegally harvesting fish in Canadian waters and have [supported counter-drug efforts in the Caribbean](#).

Operational Support

Lastly, given the difficulty in finding and communicating with submerged submarines, they are rightly considered solitary weapon systems. However, in some circumstances, they can provide powerful operational support to other military systems. Under good sonar conditions and equipped with a towed array, submarines are capable of covering 125,000 km² over a forty to fifty day patrol, whereas a surface task group of five to six ships, with a combined helicopter capacity of eight craft, has a continuous surveillance coverage of 192,000 km² in a 30 day patrol. Thus, considerable resource savings can be had with submarines, especially given that Canada's *Victoria* submarines are crewed by only 48 sailors whereas a similarly capable naval task group might have as many as 1400, not to mention the considerable fuel costs of a five ship formation as compared with that of a single submarine.

Operating in conjunction with maritime patrol aircraft (MPA), submarines are able to assist in controlling enormous areas. Again, the sensors on board these vessels provide useful long range information; however, the submarine's ability to respond to that information may be limited by speed and safety considerations. Submarines operating with MPA ([or even in the future, organically deployed UAVs](#)) can pass on their target information, allowing the aircraft to conduct more detailed investigations of contacts that are far removed from the submarine's position. This also has the benefit of allowing the submarine to remain covert.

Those arguing that submarines have no use in a Canadian context, thus, are thinking in very narrow terms about what types of threats they can imagine given the current political environment. They have difficulty imagining how the awesome capabilities characteristic to submarines would be employed by the Canadian government in future operations, and thus dismiss them as unnecessary. There is a fundamental problem of using such logic to determine Canadian naval requirements. Our military contributions to Canadian security, whether exercised in terms of domestic operations or those in alliance, coalition or UN operations should be determined by our values and interests rather than the availability of specific military capabilities. Those who rely on the

capability argument avoid the difficult question of what, as a country, we are willing to fight for.

Clearly, as the history since 1991 has shown, there are some things that [even the most war averse government has deemed necessary to support with military force](#). What those issues will be in the future is entirely unknowable, just as it was impossible to imagine the high intensity operations conducted by the Canadian army in Kandahar province in 2006/7, or the bombing operations undertaken by the RCAF over Libya in 2010. Submarines offer tremendous flexibility in how they can be used. While their acquisition costs are high, once acquired, their operations and maintenance costs can be quite low ([the current costs afflicting Canada's Victorias were explained in a previous entry](#)).

Presently, most Canadian cities enjoy historically low crime rates, yet the argument that police forces can be dramatically cut is justifiably risible. That we have not experienced a fire or other natural disaster is hardly an argument for abandoning home insurance. Airports have relatively few crashes but none go without their own fire trucks. So it is with military forces. We purchase military capabilities not with the expectation that they will be used, but with the hope that they will prove entirely unnecessary.

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