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A Victoria Class submarine.



THE CHICOUTIMI ACCIDENT: LESSONS LEARNED AND NOT LEARNED

by Peter T. Haydon

On October 2nd 2004, HMCS CHICOUTIMI commenced its transit to Halifax, Nova Scotia as the fourth and final Victoria Class submarine accepted by the Government of Canada from the United Kingdom. During the late morning of October 5th 2004, CHICOUTIMI had an ingress of water through the conning tower, substantial enough to trigger a series of electrical events that culminated in an electrical arcing of the main power cables and fire in the Commanding Officer's cabin that spread rapidly to the deck below, causing significant damage and casualties. The crew contained, suppressed, and overcame the fires, stabilized the situation and sought help from the outside agencies. Several hours later an unrelated fire occurred in an oxygen generator in the weapons storage compartment that was short-lived and caused no further injuries or damage. In total, the crew sustained nine casualties, including one fatality, Lt(N) Chris Saunders. Once outside assistance was rendered, restoration of on board systems commenced, medical care and evacuation were effected, the submarine was taken in tow October 7th and was returned to Faslane, Scotland, October 10th. (Opening paragraph of Vice-Admiral MacLean's letter forwarding the Chicoutimi Board of Inquiry findings to CDS)

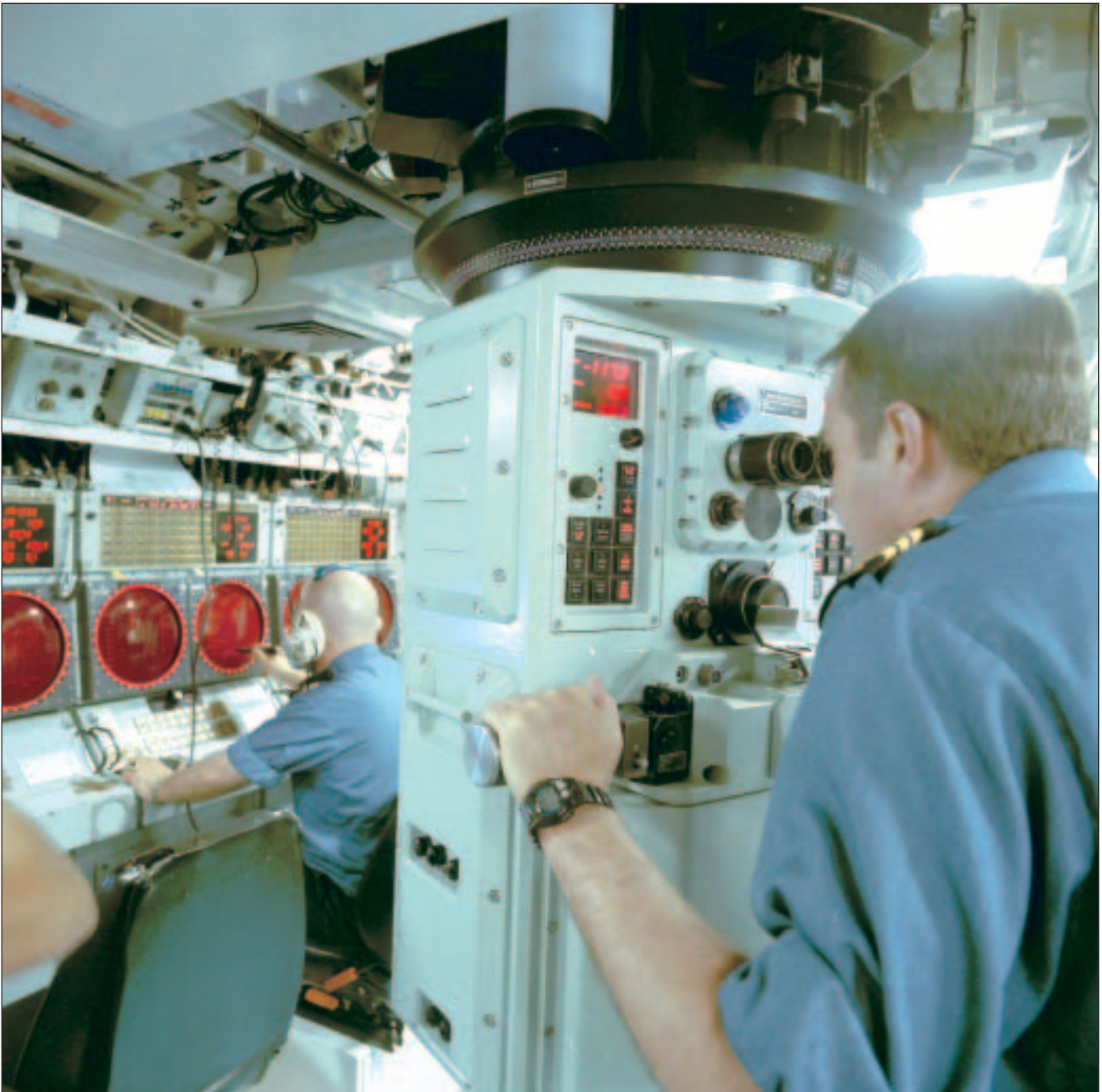
Chicoutimi's accident gave rise to a wide-ranging public debate on Canadian submarines, and, to a lesser extent, on Canadian naval policy. The intensity of the debate fluctuated, as did the level of credibility of some of the 'revelations,'

as the media attempted to keep the story alive. As a result, a rather confusing picture was painted. The basic issues became even less clear when the rationale for buying the four former Royal Navy (RN) submarines was challenged in Parliament. Overall, the debate showed a marked lack of basic public understanding of naval policy and the purpose of Canada's submarines, and it failed to clarify the policy it questioned. This article will discuss some of the key issues within that debate in the hope that they will be more readily understood.

So, why does Canada have submarines?

The traditional rationale for maintaining a submarine capability is that they can do things that other vessels cannot, largely as a result of stealth, endurance and flexibility. On its own, this abstract rationale does not explain why Canada has submarines. Even though the April 2005 Defence Policy Statement endorsed the operational value of submarines, the actual reason for maintaining them is still not as clear as it should be. It is little wonder, therefore, that people are confused by this aspect of naval policy. To make the rationale for Canadian submarines clearer, one needs to know more about the modern submarine and what it can and cannot do.

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DND photo BR816-194

Search periscope onboard *Victoria* Class long-range patrol submarine.

The modern submarine is fitted with a wide selection of electronic equipment to gather information on other vessels, and from ashore, and then process that information into either targeting data or general information for integration into a much larger picture of activity in a specific part of the ocean. An example of the latter is the use of Canadian submarines to monitor the movements of Soviet intelligence vessels close to our shores during the Cold War, and, later, to monitor foreign fishing vessels and ships engaged in criminal activities.¹

Even though the modern submarine still has most of the offensive capacity of its predecessors (firing torpedoes and

missiles, and laying sea mines), its primary role has changed from one of hunting and destroying shipping and other warships, to a much broader concept that includes integration into naval task forces to provide distant surveillance, and also to act as part of the defensive screen if that fleet is attacked. The British and American navies routinely integrate submarines into their task forces, and submarines have also been integrated into the NATO Standing Naval Force Atlantic.

Technology is seldom static, and submarines lend themselves to many innovations, such as the use of remotely operated and autonomous unmanned vehicles. Fitted

with this technology, submarines can carry out bottom searches, and conduct reconnaissance of rather large areas of coastline, especially in remote areas beyond the range of other warships. Not only does this capability lend itself to military tasks, such as minehunting and beach surveys, it can easily be applied to underwater search and rescue operations, such as that carried out when Swissair 111 crashed into St. Margaret's Bay off the coast of Nova Scotia. The ability to support special forces operations is also a natural extension of this capability, but one that requires considerable training.

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Putting aside acquisition costs (a modern diesel-electric submarine costs about as much to build as a frigate), the operating costs of a submarine are less than most other warships because it requires only about 48 people to operate it, and it also uses less fuel on a daily basis. The other advantage is that a submarine can stay on patrol for about 30 days (with a ten-day transit to and from the patrol area, for a 50-day patrol) without refuelling or re-stocking food and water. A single frigate has only enough fuel to be away from port for about 12 days. A group of warships supported by a replenishment ship has an endurance of about 30 days, and can provide surveillance over a larger area than a single submarine, but at a far higher cost.

The submarine's ability to provide antisubmarine warfare (ASW) training services to surface and maritime air forces is an asset possessing both national and international implications. Contrary to what some believe, antisubmarine warfare is not a dead capability; there has been a worldwide growth in submarine ownership,² and many of the countries now operating submarines have foreign policies that are opposed to US, NATO, and UN sponsored operations. The suspected presence or actual deployment of a foreign submarine can slow down and possibly deter a sea-based intervention operation.³ Being able to exploit this uncertainty is an enormously powerful political lever, particularly if a state is strongly opposed to the actions of other states in a specific crisis. Depending on the urgency to put forces or humanitarian assistance ashore, an intruding submarine must be kept away from the main force, and a protective antisubmarine screen put in place. This level of protection cannot be effective without prior training. The lessons learned by the British and the Argentines during the 1982 Falklands War are proof of the influence of an actual submarine or even the suspicion of a submarine's presence upon operations on a wider scale.⁴

An added benefit of operating submarines is that other submarine-operating navies share deployment information under a process called waterspace management that precludes mutual interference and thus promotes safety. Canada has always been concerned about foreign submarines operating in its waters, especially northern waters. By operating its own submarines, Canada is a part of the

international waterspace management system and thus knows when submarines of other navies are operating close to or in waters under Canadian jurisdiction.⁵

Can all those tasks be done by surface ships? No, they cannot. Information on foreign submarine movements, ASW training, and the use of stealth are unique benefits gained from operating submarines. Moreover, the submarine is often a more cost-effective way of conducting some surveillance operations at sea. Simply, submarines provide the government with a degree of flexibility that cannot be obtained

by other means; that they cost less than surface ships to operate is a bonus.

Could Canada survive without submarines? Yes, but the price of national security would be higher, and some of the benefits mentioned would not be available. In particular, not being a part of the waterspace management system would raise serious concerns about the use of Canadian waters by foreign submarines, especially in Arctic waters. Also, by not operating submarines, Canada would not be able to take advantage of the enormous steps being taken in all facets of underwater technology. A natural synergism exists between the Research and Development and submarine communities, especially in ocean science. Canada claims jurisdiction over a huge ocean domain that is home to literally thousands of species, and also holds enormous resource potential, and there is a continuing need to know a great amount more about many aspects of that ocean area. Because much of that area is accessible only with difficulty, the use of a submarine will further this and other scientific research. Our *Victoria* Class submarines might not be able to do more than make short voyages under fringe ice, but that is still better than not being able to venture there at all.

Overall, the modern submarine is a highly versatile vessel that provides a navy with additional flexibility in a cost-effective way. In the present, rather uncertain world where military capabilities are maintained as contingencies against the unexpected, a submarine provides excellent defensive capability for use nationally or internationally, with the added capability for conducting routine surveillance tasks at other times. This is why Canada has submarines.

Why did Canada buy the four British Upholder Class submarines?

At various times, the Canadian navy has operated submarines since 1914, and Canadians have routinely served in Royal Navy submarines since the Second World War. Although the operational need for Canadian controlled submarines has always existed, it was not until the late 1960s that a credible Canadian submarine capability was acquired when three *Oberon* Class vessels were purchased.

In the early 1980s, the initial steps were taken to replace the *Oberons*, which would become obsolete in the 1990s after roughly 25 years of use. In terms of fighting equipment, the submarines were already obsolete when plans were first made to replace them, but, as ASW training platforms, they remained useful. At that time, several options existed for new submarines. These included the Dutch *Walrus* Class, the Swedish *Näcken* Class that, in turn, became the basis for the Australian *Collins* Class, various German designs, such as the *TR-1700*, and the then-very-new British *Type 2400* Class, which emerged later as the *Upholder* Class. Building submarines in Canada was considered too difficult, as it had not been done since the First World War. To build a submarine in a Canadian shipyard, there would have to be either a major technology transfer from another country or a very long and expensive learning period. Simply, it was more cost-efficient to buy submarines from an experienced builder than to convert a Canadian yard for a relatively small requirement.⁶

By 1986, planning for the replacements for the *Oberons* was well advanced. However, it was interrupted as a result of the 1985 voyage of the US Coast Guard icebreaker, *Polar Sea*, through the Arctic. This event brought the issue of Canadian Arctic sovereignty to the forefront of public attention. Concern was also expressed in the media that American, British and Russian nuclear submarines were using 'our' Arctic waters to conduct strategic strike and antisubmarine warfare. In 1986, the new Conservative government decided to use the idea of acquiring nuclear-powered submarines as a political solution to the Arctic problem. Between late 1986 and April 1989, the Canadian Navy was committed to a nuclear-powered submarine programme, and it actively looked at options for buying either British or French submarines, and of making the necessary technology transfer to allow them to be built and maintained in Canada. This was not the first time the Canadian Navy had sought these vessels. Proposals had been made on at least three previous occasions, all with the same result – it was just too expensive.⁷

When the government cancelled the nuclear-powered submarine programme in April 1989 for that very reason, the navy was left without a plan to replace the rapidly aging *Oberons*. In the interim, however, those submarines had been given new equipment and offered to NATO as front-line ASW vessels to offset the decline in the Canadian surface fleet antisubmarine capability.⁸ Even though a new replacement concept was put together quite quickly, the options had started to decrease – the Dutch *Walrus* Class was out of production and most of the various German options were too small for North Atlantic operations. The government procrastinated. When the Liberal government took office in the fall of 1993, their focus was more on disarmament than on replacing what was then seen by many politicians and

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lobbyists as a Cold War legacy system. It appeared as if the submarine replacement programme would remain stalled – and that it might even die.

A year later, after a comprehensive defence review, the strategic and operational value of a diesel-electric submarine capability was re-confirmed. But again, time had marched on and only the four British *Upholder* Class submarines remained as valid options. The Australians were having problems with the *Collins* Class and costs were escalating, and the *Oberons* were already on borrowed time, and there was not enough time or money to build a new class of submarine in Canada. Buying the four *Upholders* from Britain was the only realistic option left open if a submarine capability was to be retained. As the *1994 Defence White Paper* established:

...submarines can conduct underwater and surface surveillance of large portions of Canada's maritime areas of responsibility, require relatively small crews, can be operated for roughly a third of the cost of a modern frigate, and work well with other elements of the Canadian Forces. ...if it should prove possible in the current environment of military downsizing around the world to acquire three to six modern diesel-electric submarine on a basis that was demonstrably cost-effective (i.e., that could be managed within the existing capital budget), then the Government should seriously consider such an initiative. The United Kingdom is seeking to sell four recently constructed conventional submarines of the *Upholder* Class, preferably to a NATO partner. The Government intends to explore this option.⁹

A Department of National Defence (DND) paper written in May 1995 provided the rationale for the submarines:

Submarines have several distinct advantages of government policy, both nationally and internationally. They may be pre-positioned in an area of interest, overtly or covertly. They enjoy an unparalleled degree of freedom of action and independence. Finally they can be easily withdrawn without diplomatic cost or commitment.¹⁰

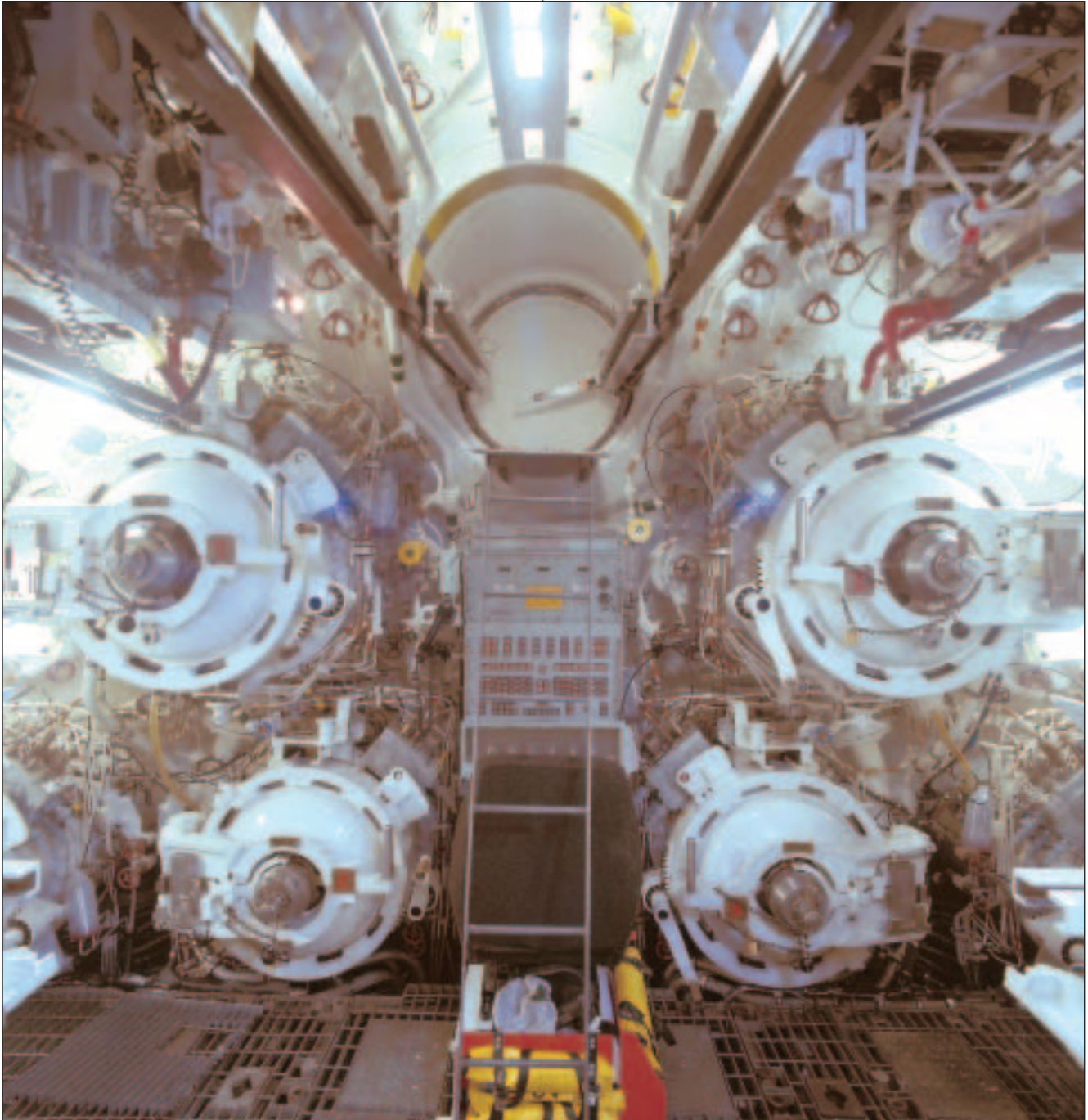
The same can actually be said for most naval forces, except that a submarine has the unique advantages of stealth and extended endurance. The point being made was that submarines are able to conduct surveillance, maintain a government presence, and respond to situations while on patrol, thereby meeting the basic criteria of sovereignty protection, which today is inseparable from the primary naval activity in homeland security. Unfortunately, what made sense to the navy was less easily understood by the politicians, and the programme became stalled once again.

It took four years to conclude the deal with the British. Much of the delay was a simple function of the need for the submarines not having enough political support in Canada despite the new defence policy decision. The political log-jam was only broken after some high-level interventions from both the United States and Britain that eventually convinced the Prime Minister that the deal was sound, made strategic sense, and the submarines would be of assistance in the new era of collective security.¹¹ Interestingly, the recent SCNDVA hearings into the *Upholder* Class acquisition (whose nomenclature would change to *Victoria* Class in Canadian service) concluded that the Chrétien government took

too long to close the deal, and this contributed to the complexity of re-activating the submarines – but this was not a factor in the subsequent accident aboard *Chicoutimi*.

Was it a good deal?

Once political intransigence was overcome, the details of the transfer were worked out. This was also beset with problems because more time had elapsed than ideal between the British taking the *Upholders* out of service and the Canadians taking delivery of them. As a result, re-activation would be costly and complex. The design was good; it incorporated many of the features of a British T Class



DND photo BR816-179

Torpedo room of *Victoria* Class submarine.

nuclear submarine and embodied the latest concepts of automated control, and thus required fewer people to operate than the *Oberons*. The endurance was adequate for North Atlantic and Pacific littoral operations, and the package came with a complete simulation training model for every system in the submarine. One problem was that they were fitted for a British torpedo system rather than the Canadian system built around the Mk 48 torpedo, which was common with both American and Australian systems. These torpedoes and systems had been bought for the modernized *Oberons* and would remain effective for many more years. There was no point in abandoning them. Another logical requirement was to upgrade the communications suite to conform to North American standards.

Was it a good deal? Yes it was. And apart from the fact that they were the only submarines available, the four *Upholders* were modern, well built and of proven technology. These were exactly the same criteria that applied to the three *Oberons* when Canada bought them from Britain in the 1960s. With a few exceptions, Canadian submariners had been brought up in the British system and were comfortable with British submarine technology. The Canadian naval dockyards were also well experienced in maintaining British-built submarines.

Although clouded in some poorly explained concepts, the price was right too. The official announcement of 6 April 1998 stated:

The project includes \$610 million for the acquisition and \$140 million for project-related costs. It includes the cost of crew training, simulators, spare parts, Canadian modifications, and project support. To maximize savings and value for Canadian taxpayers, the project involves an innovative eight-year, interest-free, lease-to-buy agreement in which

Canada's lease payments will be 'bartered' for the ongoing use of Canadian training facilities by the British forces at Canadian Forces Bases Wainwright, Suffield, and Goose Bay.¹²

Unfortunately, this financial quid pro quo was badly explained, and the wrong impression was gained of the actual cost of the four submarines, their re-activation, the spare parts, and the training simulator. The real cost of the package, including the costs of 'Canadianization,'¹³ will be somewhere around one billion dollars (roughly \$250 million per submarine) which is less than half the price the Australians paid for their new submarines – and considerably less than the cost of building four similar submarines in Canada.

Another advantage of buying the *Upholders* was that crew training could start again. The training gap created by the delays in getting the *Upholders* and the need to pay off the *Oberons* for safety reasons was a major concern. Skills not maintained quickly erode, and once lost are seldom regained without enormous effort and cost – it is essentially the same as acquiring a new capability. As one commentator explained, the modern submarine is almost as complex as a spacecraft and certainly very much more complex than a surface ship. Submarine crews need to keep training to remain proficient and safe. While some of that training can be done ashore in a simulator, the final training has to take place at sea within a carefully controlled program. Only when all that training has been completed satisfactorily will the submarine be certified as safe for operations.

Overall, not only was it the lone option, it was also an excellent deal that provided the Canadian Navy with four modern submarines in a time frame that allowed essential training to continue. Unfortunately, in the 'rush to the headline' in the wake of *Chicoutimi's* accident, several journalists were quick to dismiss the entire programme as either unnecessary or inappropriate for Canada's post-Cold War military posture, or the result of political mismanagement.¹⁴ The temptation, no doubt spurred on by the politicization of the accident by turning it into an opportunity to damn the government's defence policy, was to question the overall requirement for submarines, and advocate that the money be spent on other defence programmes. One such proposal, offered by the *National Post*, wanted to abandon the submarines as Cold War relics in favour of a larger army:

Even if Canada selects a broader set of military priorities, spending hundreds of millions of dollars on used submarines – or any submarines, for that matter – is not



HMCS *Chicoutimi* in the Eide Transporter.

DND Photo HSC2000-1634-19 MARLANT Formation Imaging

the best way for us to work toward better domestic and global security. Subs are not particularly useful in surveillance (a task mostly performed from the air or from high-speed surface craft, not under water) or in peacemaking.¹⁵

Many agreed with this view. Others did not, and said so openly.¹⁶ What this part of the public debate demonstrates is that the strategic rationale for Canadian military capabilities, not just submarines, is not well understood. Such defence debates on the back of an unfortunate accident really serve nobody's interests. Public debate on Canadian defence policy is useful, but it has to take place within an appropriate context, rather than as part of an unfortunate accident.

No matter how good the deal, it was poorly explained publicly, and this did not help the Navy explain the *Chicoutimi* situation. But the financial and policy aspects of the submarine programme were not the only areas subjected to public scrutiny; the fact that the vessels are taking so long to be made operational was also criticized.

Why is it taking so long to make the submarines fully operational?

The delay is a function of several factors. First, the re-activation was very much more difficult than originally expected, a fact noted by the *National Post* on 18 October 2004.¹⁷ However, the engineers at the

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Barrow shipyard were very open in saying that this was the first time they had to lay up and then re-activate a modern submarine, and if they had to do it again, several things would be done differently. The ‘culture of safety’ that submariners everywhere embrace requires that all systems be checked and re-checked before use, especially after a prolonged period of inactivity. A submarine put into long-term maintenance or de-activated has most of its key systems taken apart, so that component parts can be tested before re-assembly. This takes time, but it is time well spent.

Second, despite claims that the four submarines have been plagued with technical defects, the re-activation has gone remarkably smoothly. Defects were found, but that is why an extensive trials programme was necessary. The usual procedure is for the submarine to sail daily to conduct a series of trials on virtually every system and piece of equipment. At the end of the day, a progress report is sent and any defects are repaired before starting the trials again next day. If the defect is serious, the submarine will come back to the shipyard or support base. Over a two-month trials period, the list of defects is probably quite large, but the end state is one in which all defects found have been fixed. One cannot assess the technical condition of a submarine, or any other vessel for that matter, on the basis of a couple of days’ reports. One has to look at the whole trials and shakedown period to make a valid assessment.



Quiet waters.

Third, when the navy deployed to the Middle East as part of *Operation Apollo*, the government did not make additional funds available at first, and so the money necessary to mount that operation had to be found from within the navy budget. The submarine re-activation programme was one of the casualties. Instead of work being done to ‘Canadianize’ the submarines and progress with training, the national commitment to the *War on Terrorism* had to be sustained. The point here being that the defence budget is just too small to mount a major operation and maintain the readiness of the rest of fleet at the same time.

Fourth, the extent of individual and crew training required to bring the submarines to full operational readiness is considerable. It is also a considerable feat just to bring the crew to a level of training to undertake a passage across the ocean. All naval ships are maintained at a level of readiness appropriate to their scheduled activity. For instance, some ships will be fully operational and able to conduct the most difficult operations under any criteria. This requires lengthy prior training, including what is known as weapons certification. Other ships will be kept at lower levels of readiness for lesser intensity operations, with the emphasis on safety of the ship and its crew. The nucleus of Canadian submariners retained after the *Oberons* were paid off thus had to undergo an intensive training programme to learn the new submarine’s systems and also to learn to work as a team in those vessels. Unlike surface ships where skills tend to be compartmentalized – engineers work only on the propulsion systems and weapons technicians work on weapons systems – a much higher degree of interchangeability is required in a submarine. To put the re-training problem into context, the *Victoria Class* can be thought of as fourth-generation submarines. This meant that the Canadian submariners had to skip a generation of vessels. They had to convert directly from the second-generation *Oberons* to the fourth-generation *Victoria Class*.

Canadian submariners have done similar difficult things in the past. Taking over the former USS *Burfish* in 1961 and turning it into HMCS *Grilse* was not easy. Taking over three British-built *Oberon Class* submarines in the late 1960s and welding them into the First Canadian Submarine Squadron was not easy.¹⁸ Keeping those *Oberons* running as they got older and less reliable was not easy either. The bottom line is that the training submariners receive at all rank levels is superb and it is completely focused on safety.

The Canadian submarine safety track record is remarkable. Since 1950, when the first RCN officers and men were loaned to the RN as part of the ‘deal’ to provide submarine target services in Halifax until today, some 55 years later, only two men have been killed in the line of duty. The first was Petty Officer Laverne McLeod, who was killed in 1955 when a torpedo exploded in HMS/M *Sidon*, and the second was Lieutenant Saunders, who lost his life in the *Chicoutimi* accident.

Why did the *Chicoutimi* accident generate so much media interest?

A major problem at the time of the accident was that information was scarce, because nobody actually knew all the facts. Only a Board of Inquiry could determine precisely *what* happened and *why* it happened. The media, with its traditional reservations with respect to submarines, believed the story should be told publicly without waiting for the Board of Inquiry. As a result, journalists were left to dig for pieces of information, but did not have the technical knowledge to evaluate those various informational components. Hence, the media coverage included both fact and fiction, often linked by speculation.¹⁹ Also, the media overlooked two important elements.

First, people who have survived an incident of this nature seldom remember exactly what they were doing at the time. It comes back later, sometimes much later. And sometimes it comes back incompletely. Those who were not actually part of the incident or corrective action are only recipients of hearsay in the aftermath, and thus will not know exactly what happened. Like those who were not there at all, their accounts are suspect.

Second, the culture of safety that has evolved in the Canadian submarine service demands that defects or suspected problems be investigated and fixed without delay while at sea. The only option is to return to port. The rigorous training that accompanies that culture provides the instinctive response mechanisms to an unforeseen incident. However, weather and circumstances often produce unique situations that can lead to situations not directly attributable to any one person or pre-existing condition. The explosion aboard HMCS *Kootenay* in the fall of 1969 is an example of how something that cannot be inspected easily, and does not warrant routine inspection, can become defective and cause an accident. There are no tests or inspections that can be done once a space or piece of equipment has been sealed off, short of taking it all apart again, and there has to be some legitimate reason to follow that course of action. At some point, one has to trust the builders to have done their jobs correctly and the safety inspectors to have acted similarly. The ‘one-in-ten-thousand’ chance that something has been overlooked is probably within the tolerances of quality control today. Navies are not risk-free environments nor, one suspects, can they ever be made so without increasing acquisition and operating costs beyond all reason. Some risk must be accepted, and that will be countered to the maximum extent by excellence of training.

Conclusions

By way of bring this article to a close, it might be useful to review some of the more controversial statements made in the press as a result of the *Chicoutimi* accident.

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Canada doesn't need submarines!

Hopefully, I have explained and provided some examples of the versatility of the modern submarine, and of its cost-effectiveness in promoting maritime security in several ways. The 1994 decision to keep that capability was carefully considered politically. Reversing it now would make no sense. Arguments have been made that Canada should cut its losses and abandon the submarine programme. These contentions are based upon short-term considerations, rather than on the longer-term benefits Canada stands to gain by operating submarines.

Submarines are a Cold War legacy!

The modern submarine is a versatile surveillance and information management platform that has considerable potential in crisis management operations, and for national security. What has not been explained well, particularly in Canada, are the changes that have taken place in submarine technology and in their concepts of operations, but some excellent explanations are readily available from other sources.²⁰ There is little resemblance between the Cold War submarine and the modern submarine of the 21st century. The modern submarine is as logical a part of a modern navy as the helicopter. It makes little sense to dismiss a naval capability without understanding either the full implications of that action or the potential value of the capability to the country as a whole, when it is enhanced by emerging technologies.

The *Upholders* were a bad deal!

At less than one half the cost of buying other submarines, and for very much less than the cost of building them in Canada, the price was right. Considering that no other submarines were available, it made absolute sense to buy the four *Upholders*. It was the only way training could be continued without unreasonable interruption. Not to have bought them would have meant that Canada would have had to give up the ability to operate submarines – with all the attendant consequences. Many of the critics of the deal seem to base their opinions on partial information rather than on full understanding. However, the deal was never really explained fully, and that was a serious oversight.

Chicoutimi had a record of defects and should not have sailed!

As HMS *Upholder* in its Royal Navy service, *Chicoutimi* was the 'first of class' and put through an extensive trials programme in which systems were stressed to the breaking point. Unlike an automobile, a new type of submarine cannot be test-driven for a couple of years before production begins. If one is lucky, there will be a few months to seek out the inevitable design faults and construction errors. Like HMCS *Halifax*, another 'first of class' vessel, *Upholder* was expected to have defects. In fact, it would have

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been troubling had there not been any. The problem is that the media is invariably too quick to criticize a design on the basis of 'first of class' trials.²¹ This leads to a wrong impression. It is also wrong to cast *Chicoutimi* in *Upholder's* image; the re-activation process made all four submarines very different. *Chicoutimi* should be judged on what happened to her under her Canadian name alone. As tempting as it must have been for the press to garner every snippet of information, sound practice should have demanded confirmation. On the other hand, journalists were often given access

to accurate information and had access to senior naval officers, yet they persisted in using lower-level sources to provide the details. It is difficult not to disagree with the criticism: “News reports and editorials about the *Chicoutimi* event have been at once dramatic, speculative, and accusatory.”

But in an information vacuum, the media can only use what it gleans. Newspapers seldom have a defence specialist, and, in most instances, stories – for that is what they are seen to be – are given to reporters to cover without great thought for that reporter's background. Only when a story becomes a major one are the experts assigned to it. By then, some of the wrong facts already may have been published.

Overall, probably the saddest thing about the *Chicoutimi* accident is that it was allowed to become political, and, in the process, political factors sometimes appeared more important than the actual facts of the incident. As a result, the accident distorted the reason why Canada has chosen to maintain a submarine capability. But in the process, the accident should point to the fact that Canadian defence policy is politically charged, and thus, is highly controversial. In such circumstances, decisions are often delayed, causing the options to be reduced. That Canada does not seem able to go about routine equipment replacement in an orderly manner is frustrating, to say the least, to many of us who are involved in the defence policy process and its analysis. David Rudd, in his “Down to the Sea in Subs,”²² provides some very necessary words of caution about trying to re-write defence policy in the shadow of a recent accident. Hopefully, we will be able to move ahead now that the Board of Inquiry findings are public, and will also be able to draw some lessons from this accident. Of those lessons, it is hoped the recognition of the need for timely and complete explanation of new military equipment programs is taken to heart.

It has been said that a service needs to establish its legitimacy in the public eye by being able to answer the question: “What function do you perform that obligates society to assume responsibility for your maintenance?”²³ Failure to answer this question adequately is often a reason why individual services do not enjoy public support. The *Chicoutimi* accident has shown, clearly, that Canadians

generally do not understand the rationale for their navy. Nor, one suspects, do they understand just what that navy has given Canada over the past 50 years. This is not a call for another public relations initiative. There have been too many failures already, and most such initiatives are seen as 'spin doctoring' anyway. Rather, this is a call for a real

public education programme that will bring and explain the Canadian Navy to Canadians from coast to coast, so that the next time the navy hits the headlines, the public debate can focus on the facts and the issues at hand in a responsible way.



NOTES

1. Little has been written about these operations. The story of submarines supporting the Department of Fisheries and Oceans on the Grand Banks in *Operation Ambuscade* was told by Sean Maloney in "Canadian Subs Protect Fisheries" in *Proceedings*, March 1998. Vol. 124, pp. 74-76. Also, Peter Newman in his *Maclean's* article "The Case for Buying Four British Subs" of 6 October 1997 explained how HMCS *Ojibwa* had participated in the apprehension of a drug smuggler in 1993.
2. The precise numbers are always debatable because the 'counts' are conducted in different ways at different times. What is clear, though, is that although not at proliferation levels, the growth of submarine fleets around the world has been steady for over a decade and shows no signs of slowing down, particularly with respect to developing countries. See, for instance, Daniel J. Revette and Lora Lumpe, "Third World Submarines" in *Scientific American*, August 1994, pp. 16-24.
3. Apparently, an unknown submarine was detected close to the US Amphibious Group during *Operation Apollo*. As it turned out, it posed no threat, but, until its intentions were known, it required an escort. See Gary L. Garnett, "Canada Still Needs its Submarines" in *National Post*, 8 October 2004.
4. This situation is described in detail by the commander of the British Task Force, Admiral Sandy Woodward, in his book (written with Patrick Robinson) *One Hundred Days* (London: Fontana/Harper Collins, 1992). Also see Commander Joseph Lodmell, US Navy, "It only takes one" in *Proceedings*, December 1996, pp. 30-33.
5. This organization is part of the headquarters of the US Commander Submarine Forces Atlantic, in Norfolk, Virginia, and Canada keeps one submarine commanding officer in that headquarters for liaison. NATO defines waterspace management as: "The allocation of surface and underwater spaces into areas and the implementation of agreed procedures to permit the coordination of assets, with the aim of preventing mutual interference between submarines or between submarines and other assets, while enabling optimum use to be made of all antisubmarine warfare assets involved." See Patricia Kime, "Navy Should Bolster Crisis Planning for Theater ASW" in *Sea Power*, September 2003.
6. See Commander E.M.J. Young, "Submarines for the Canadian Maritime Forces" in *Canadian Defence Quarterly*, Summer 1986, pp. 25-36.
7. The full story of the 1987-89 nuclear-powered submarine programme remains to be told. The programme was significant for the intensity of the public debate that addressed not only the strategic rationale and whether Canada could actually build them, but also implications on nuclear non-proliferation and the perception that it was an escalation in Canada's level of armament at a time when disarmament was high on many agendas. See Rear-Admiral S. Mathwin Davis, "It Has All Happened Before: The RCN, Nuclear Propulsion and Submarines - 1958-68" in *Canadian Defence Quarterly*, Autumn 1987, pp. 34-40 and his "Le Mieux est l'ennemi du Bien: the Nuclear-powered Submarine Program" in *Canadian Defence Quarterly*, Autumn 1988, pp. 47-56.
8. See Peter T. Haydon, "Canada and the RN Submarine Service: 1915-2000" in Martin Edmonds (ed), *100 Years of the Trade: Royal Navy Submarines, Past, Present and Future* (Lancaster: Centre for Defence and International Studies, 2001); and J. David Perkins, *The Canadian Submarine Service in Review*, (St. Catharines, Ontario: Vanwell, 2000).
9. Canada, National Defence. *1994 Defence White Paper* (Ottawa: Minister of Supply and Services, 1994), p. 47. The decision to lay up the *Upholders* and then sell them was part of a British decision to operate only nuclear submarines. The four diesel-electric *Upholders* were thus orphans, but could not be sold freely because some of the basic technology came from the nuclear programme. Canada was an ideal purchaser.
10. DND briefing note "The *Upholder* Option" of May 1995. (Obtained through Access to Information)
11. Through Access to Information, the media obtained some internal government correspondence concerning the submarine programme. This correspondence made it quite clear that the purchase was discussed with the Americans within the framework of the Permanent Joint Board on Defense (PJBD) and that the Canadian High Commissioner in London was also deeply involved. See "Navy Wanted Vessels Big-time, Papers Show" in the *Halifax Herald*, 21 October 2004. This was essentially confirmed later by former Defence Minister David Collenette, "Chrétien Fretted as Subs Rusted" in the *Toronto Star*, 14 December 2004. Also, see Haydon, "Canada and the RN Submarine Service: 1915-2000".
12. DND News Release NR-98.018 of 6 April 1998.
13. The cost of 'Canadianization' will be around C\$75 million, according to information provided by DND. This will cover changing the torpedo system to use the Mk 48 torpedo already in the Canadian inventory, upgrading the communications suite, adding new electronic warfare equipment, upgrading the radar and identification system (IFF), and making improvements to the firefighting equipment and general habitability of the vessel.
14. See "Does Canada Even Need Submarines?" in *The Gazette* (Sound Off), 16 October 2004, and Scott Taylor, "Difficult to Get to Bottom of Sub Boondoggle" in the *Halifax Herald*, 13 December 2004.
15. "Smart Choices" in the *National Post*, 25 October 2004.
16. For instance, Gary L. Garnett, "Canada Still Needs its Submarines" in the *National Post*, 8 October 2004, and Dr. Richard Gimblett, "Canada's Submarines in Context", *RCMI SITREP*, Nov/Dec 2004. Vol. 64, No. 5, pp. 13-15.
17. See David Pugliese, "Subs Five Years from Full Operations" in the *National Post*, 18 October 2004.
18. I served in the newly formed First Canadian Submarine Squadron in 1966 and 1967 when we made the transition from the first-generation (Second World War) A Class submarines to the *Oberons*.
19. For instance, see the very poorly researched "CBC News In Depth: Canada's Submarines" produced on 13 October 2004. Not only are there errors in the historical data, but also the facts of the accident provided were wrong or at least badly interpreted as other interviews demonstrated, especially the one reported in *The Scotsman* "Canada May Sue Over its Second-hand Submarines" of 12 October 2004.
20. One of the better articles is Mark Hewish, "Submarines to Cast Off Their Shackles, Take On New Roles" in *International Defence Review*, 1 March 2003.
21. In 1991, when HMCS *Halifax* was in the midst of its trials programme, several highly critical media reports were published, essentially condemning the entire programme, using such familiar terms as 'boondoggle' and 'mismanagement,' as well as questioning the need for such a capability. I was asked to write a paper and an editorial to explain the requirement and the circumstances surrounding the contracts to build the ships, as well as to explain the process of 'first of class' trials. Once, people understood all this background, the criticism became more focused, where warranted, and quietly went away where it had been nothing more than 'noise.' See Peter T. Haydon "Canada's New Frigates: Have We Missed Something?" in *CISS Strategic Datalink* No. 29, November 1991.
22. David Rudd, "Down to the Sea in Subs" in *CISS Commentary*, October 2004.
23. Samuel P. Huntington, "National Policy and the Transoceanic Navy" in *Proceedings*, Vol. 80, No. 5, (May 1954), p. 484.