A very practical requirement: under-ice operations in the Canadian Arctic, 1960-1986

Adam Lajeunesse

Department of History, University of Calgary, Calgary, Alberta, Canada

Published online: 22 Nov 2012.

To cite this article: Adam Lajeunesse (2012): A very practical requirement: under-ice operations in the Canadian Arctic, 1960-1986, Cold War History, DOI:10.1080/14682745.2012.727800

To link to this article: http://dx.doi.org/10.1080/14682745.2012.727800
A very practical requirement: under-ice operations in the Canadian Arctic, 1960–1986

Adam Lajeunesse
Department of History, University of Calgary, Calgary, Alberta, Canada

In May 1986 three American nuclear attack submarines (SSNs) surfaced at the North Pole. Their mission was routine – weapons tests, environmental studies, and data collection – similar to dozens of operations that had come before. Politically however this operation attracted some unusual attention. Barely a year after the USCG Polar Sea had created a public uproar by transiting the Northwest Passage without Canadian permission these boats resurrected the smouldering political issue of Canadian Arctic sovereignty. Specific information on their routes was not provided but the fact that two of them had been deployed from the Atlantic led many to assume that they may have travelled through the waters of the Canadian Arctic Archipelago.¹

The question of American activity in Canada’s Arctic waters had long been a sensitive subject. Yet, while the routes and activities of these boats have normally been classified, it had long been suspected that they were operating in secret throughout the Canadian north. These concerns date back to the 1960s when such operations were known to have begun and continued into the 1980s, when the increased strategic importance of the region brought the issue to the fore. Despite the close military relationship between the two countries, the continued American refusal to recognise Canada’s maritime sovereignty in the region meant that any US activity in the north was viewed with suspicion and concern by the Canadian public.

This feeling was amply demonstrated in 1986 as opposition members in the House of Commons, the Canadian media and the general public expressed their apprehension that the United States was secretly and regularly deploying its forces into the Arctic. It was assumed that there was little the Canadian government could do to control or monitor this activity and that Canadian sovereignty must be suffering accordingly. Eventually, this mounting public and political pressure forced the government of Brian Mulroney into

¹ This operation (labeled SUBICEX 1–86), involved the USS Hawksbill, Ray and Archerfish and took place in the Beaufort Sea, the Arctic Basin and the Greenland Sea; Submarine Cruises, (list compilation date unknown), US Navy History and Heritage Archives (NHH), Waldo K. Lyon Papers.
something of a confession which implied that Canada did in fact have some knowledge of these transits. Still, the ambiguity of this statement and the government’s general stonewalling on the matter meant that few of these concerns were alleviated.

Experts on the subject have traditionally fallen in line with these suspicions and have questioned how much knowledge Mulroney and past Canadian governments really had about American operations. In 1987 John Honderich wrote that ‘to expect the United States to routinely inform Canada every time one of its submarines traverses Canadian water is to fail to understand how the US military works.’ That same year, Franklyn Griffiths hypothesised that one day the US might be able to bring the log books of its secret submarine transits to the International Court of Justice as evidence that the passages of the Arctic Archipelago had long been used as an international waterway. In 1990 David Larson guessed that Canada might have been able to establish some form of secret agreement with the Americans, yet just as likely was the possibility that the transits were being made without permission. In 1998 Elizabeth Elliot-Meisel conjectured that Canada had no way of monitoring or stopping the transits of these boats. And, in one of the most recent major works on the subject, Shelagh Grant wrote in 2010 that the presence of these undetected submarines posed a danger to Canadian sovereignty, even if only a theoretical one.

The purpose of this article is to challenge these assumptions and to present a far different interpretation of the Canadian-American defence relationship in the Cold War Arctic. In fact, from the 1960s to at least 1986 (the point at which all publicly available documentation ends) the American submarine program in Canada’s northern waters appears to have been undertaken not as a secret assault on Canadian sovereignty but as a fully cooperative venture. During this period the US Navy did not use these waters as a regular patrol area and, when it did, transits were normally conducted as some form of joint operation. The documents now available list only eight such voyages between 1960 and 1986 and it seems likely that Canada knew about each of these and concurred with their taking place. This cooperation extended not only to submarine operations but to the development of Arctic underwater listening and detection systems as well. The development of these systems spanned

---

7 This is assuming the documents used are accurate for the time period covered. There remains a possibility that there were other American voyages into the Canadian Arctic during this period that are not considered simply because the brief route descriptions found in the current documentation may have omitted Canadian portions of a larger exercise. Such transits could affect the conclusions reached in this paper, though this must await future declassification.
8 Of these eight there were only two for which there is not immediately available evidence to support either Canadian concurrence or active participation – that of the USS Spadefish in 1984 and the Pintado in 1978. This is discussed further into this article.
more than a decade and may even have reached a more advanced level of functionality by the early 1980s than is generally presumed.

While Canadian politicians may have offered bluster and nationalistic rhetoric when speaking publicly on the question of Arctic sovereignty, the facts suggest that behind the scenes the defence of the region was being carried out in the same cooperative spirit which has always characterised the defence of the continent. The fears of secretive American submarine passages were unfounded and concerns over the diminution of Canadian sovereignty exaggerated.

**Managing the operations**

The deployment of American nuclear submarines to the Arctic dates back to the voyage of the USS *Nautilus* in 1958. The *Nautilus*’ trip to the North Pole, via the Bering Strait, was as much a scientific and public relations venture as a military expedition; however, its success quickly raised the possibility of regular naval operations in a potentially important new maritime region. Lying between the United States and the USSR, the Arctic Ocean offered the US Navy the possibility of operating directly off the exposed Soviet Northern coast and interdicting Soviet shipping along the Northern Sea Route. From a peacetime perspective, thought was even given to using this new route as a commercial and military transit corridor between the Pacific and Atlantic Oceans. 9

Given its geographic position, it was inevitable that the US Navy would feel it necessary to include the Canadian Arctic Archipelago in its plans to develop an under-ice navigation and war-fighting capability. The first voyage through Canadian waters was undertaken only two years later by the USS *Seadragon* which passed from east to west through the Parry Channel. Politically, this transit posed a potential problem for the Canadian government. In 1960 the Canadian position vis-à-vis its Arctic waters was ambiguous at best; the Cabinet had reached a decision in principal to claim complete sovereignty over these waters by drawing straight baselines around the Archipelago. However, this claim had never been made official, nor had it been conveyed to Washington. 10 The Canadian position, that the waters transited by the *Seadragon* were internal, thus conflicted with the view held by the United States, that the Canadian territorial sea extended out only three nautical miles around each island and that the waters beyond were international.

As early as 1959 the Department of External Affairs and the Royal Canadian Navy had hoped to ‘manoeuvre’ their American counterparts into requesting permission to pass submarines through the Archipelago. Yet by 1960, hopes for such an easy solution

---


had been dashed as these suggestions were refused outright. While neither the US Navy nor the State Department were seeking to antagonise their Canadian allies, they remained leery of creeping maritime jurisdiction and the setting of any precedents which might infringe upon the freedom of the seas and American rights of navigation elsewhere. In 1960 however, this difference of opinions did not generate the kind of diplomatic gridlock which the two countries would experience after the passage of the Manhattan or the Polar Sea decades later. Rather, it was handled with a remarkable degree of flexibility and cooperation which ultimately served both states’ interests.

Captain George Steele, commander of the Seadragon, made it clear in his 1962 book, Seadragon, Northwest under the Ice, that the voyage had been undertaken with the assistance of Canada and in the context of joint alliance cooperation. To further insure that Canadian sensitivities were not bruised, the US Navy invited a Canadian observer aboard the Seadragon in the person of Commodore OCS Robertson (RCN). Yet, while aboard, Robertson functioned as more than an observer. He played a significant role during the voyage and actively contributed to the success of the Seadragon’s transit. As the former commander of the icebreaker HMCS Labrador, Robertson was as familiar with the region as anyone alive, save the local Inuit, and his advice was actively sought by the ship’s command and by the civilian scientists aboard. Robertson even took the opportunity to subtly emphasize Canadian sovereignty by running films on the north, giving lectures on the subject, and bringing Canadian stamps for the American crew to send mail during their brief stopover at the Air Force base at Resolute.

Despite being denied the explicit acceptance of Canadian sovereignty which it had initially sought, External Affairs was generally pleased with the result. The request for concurrence which it received implied at least some Canadian control over these waters, since even notification would not have been required for operations in international waters. Robertson’s presence also ensured that the passage could be seen as a joint military venture. All considered, it was assumed that the voyage had actually strengthened Canada’s sovereignty. The next transit therefore proceeded in much the same manner. In 1962 the USS Skate crossed the Perry Channel, again Canada was formally notified and

---

11 John Diefenbaker, Memorandum: Canadian Position in Relation to Arctic Waters; Passage of USS Seadragon, 21 May 1960, Canadian Department of History and Heritage Archives (DHH), MG 01/XII/C/125, Defence, 1952–62, vol. 56.
12 At the time the US was actively opposing expanded maritime claims elsewhere. By 1960 Indonesia had drawn baselines around its entire archipelago and the Philippines would do likewise in June 1961. Unlike the Arctic however, these nations lay astride vital sea lanes and their actions provoked vigorous American protests. In 1960 the US conveyed its displeasure by announcing that the submarine USS Triton would pass through the waters about to be claimed by the Philippines on its circumnavigation of the globe.
15 Short Summary of Operation [USS Seadragon’s transit], 14 September 1960, NHH, Waldo K. Lyon Papers.
16 Memorandum from Under-Secretary of State for External Affairs to Secretary of State for External Affairs, 10 June 1960, Documents on Canadian External Relations, vol. 27 (1960), document no. 665.
External Affairs remained confident that American concurrence was strengthening the Canadian claims.\footnote{Memorandum from the Deputy Minister of Defence to the Undersecretary of State for External Affairs, 18 July 1962, Library and Archives Canada (LAC), RG 25, vol. 11, file 9057–40.}

Despite the general contentment with this functional arrangement, concerns remained that the United States may eventually cease to be so cooperative. The Canadian legal position remained undeclared and was therefore insecure. The result was that, while External Affairs was content with the level of American cooperation, it remained in the awkward position of having to assert its sovereignty as vigorously as it could without being able to declare the basis of that sovereignty. During the return passage of the USS Skate for instance, Ottawa learned of the transit only after it had already begun. The department felt the need to protest, yet worried that this might be misunderstood and create a ‘political embarrassment’.\footnote{Memorandum on Passage of USS Skate, 20 September 1962, LAC, RG 25, vol. 11, file 9057–40.} Instead, Canada chose to push the idea of consultation and cooperation on these passages as much as possible. It was admitted however, that specifying the basis of Canada’s right to be consulted had to be expressly avoided, since doing so might upset a delicate status quo.\footnote{Ibid.}

This indirect route led to a number of tenuous requests. In September 1962 the Canadian Interdepartmental Committee on Territorial Waters suggested that the Canadian Nuclear Safety Committee should be consulted before any future voyages. Ultimately this procedure was not followed.\footnote{Memorandum for the Minister, Arctic Sovereignty: Passage of USS Skate through Waters of Arctic Archipelago, 20 September 1962, LAC, RG 25, vol. 11, file 9057–40.}

That August, External Affairs also made an attempt to prevent the US Navy from releasing any information which might cast doubt on Canadian sovereignty. The State Department was told that Canada had no intention of raising the sovereignty issue but felt that any press release concerning American activities ‘which did not imply Canadian complicity’ could conceivably encourage the Russians to demand passage as well.\footnote{‘Note for Mr. Cadieux, RE: Draft Memorandum to Minister on Arctic Sovereignty’, LAC, RG 25, vol. 11, file 9057–40, 18 September 1962.}

Every effort was made to approach the issue in as casual and non-confrontational a manner as possible, since the fear of an American rejection of Canadian sovereignty remained ever present. When Canada did seek diplomatic remedy or reassurance, it generally sought to do so in a very low-key visit. After both the Seadragon and the Skate’s passage, Canadian diplomats called on their American counterparts to remind them of the importance of consultation and of seeking appropriate and timely clearance. These subjects were however always brought up as a casual afterthought during conversations on another subject.\footnote{Memorandum: Canadian Arctic Passage of US Submarine Seadragon, 25 August 1960, NHH, Waldo K. Lyon Papers; Memorandum: USS Skate Visit to Canadian Arctic Archipelago, 1 July 1959, LAC, RG 25, vol. 5282, file 9061–40, pt. 2.}
From the Canadian perspective, this approach was far from ideal as it relied entirely on a continued American willingness to cooperate. Yet, it was pursued for a very simple reason: it was the only practical approach available. As the United States had proven itself unwilling to request formal permission for these transits, Canada had only two options: to declare sovereignty outright and demand compliance or to work with the Americans and assert as much control as possible on a functional basis. The first approach was unlikely to succeed and would probably have resulted in a political and diplomatic crisis. From a sovereignty perspective it must also have appeared counter-productive. In the early 1960s Canada was still considering its options in the north and was unsure as to what political or legal approach to take. Many politicians and prominent bureaucrats felt strongly that a functional approach served Canada’s interest through the establishment of a precedent of American acceptance and a recognition of Canadian control. An outright claim may have forced the Americans into a damaging rejection of Canadian sovereignty.

The discreet Canadian approach was taken to avoid forcing the US into saying or doing anything which could be seen as a rejection of Canadian sovereignty while also avoiding any public outcry which might force the government’s hand. Ultimately this policy was a success, mostly because the State Department and the US Navy continued to prove so sensitive and responsive to Canadian concerns. There was no attempt to undermine Canadian sovereignty and the few mistakes that were made were simply that – mistakes that were quickly remedied. In 1960 for instance, news about the USS Seadragon’s transit was supposed to be issued in a joint Canadian-American press release. The US Navy however, submitted the release to External Affairs at the very last minute with no chance for input. In fact, the incident embarrassed the State Department which then requested that the Navy improve its procedures.

In fact, all the political apprehensions surrounding the issue do not appear to have filtered down to the operational level where Canadian and American agencies seem to have worked in complete cooperation. After his time on the Seadragon in 1960 Robertson actually authored a short piece on the importance of continued and increased US operations in the region which found its way into the Seadragon’s patrol report. The Commodore was again brought aboard an American boat for a short time in the winter of 1960. This time the vessel was the USS Sargo and the invitation certainly illustrated the level of trust and cooperation between the two militaries. While it may have been seen as politically necessary to have a Canadian observer

---

23 See Lajeunesse, supra note 10.
aboard during a transit of the Northwest Passage, the *Sargo*’s operations were almost exclusively limited to the Arctic Ocean.27

This cooperation extended beyond the military as well. While these submarines were engaged in exploration of their own, they still relied heavily on Canadian charts and there was little apprehension on the Canadian side about providing such assistance. In the early 1960s the Department of Mines and Technical Services was readily handing over what hydrographic information it had on the Queen Elizabeth Islands and the Parry Channel while the Canadian Hydrographic Service was actively helping the US Navy chart its future submarine routes.28

**The abandonment of the Arctic**

Despite this promising beginning the Arctic was not to become a significant theatre of operations in the 1960s. The first voyages had certainly generated a great deal of excitement and after the voyage of the USS *Skate*, the US Navy had prepared an ambitious seven year program of operational and research cruises.29 Two of these voyages, planned for 1967 and 1968, were even scheduled to be in Canadian waters.30 By 1963 however, this entire program had fallen through. Logistically the decade was a difficult time for the US submarine service after the loss of the USS *Thresher* with all hands in 1963. The *Thresher* disaster had revealed certain structural deficiencies in American boats and shocked the Navy into a major overhaul program called SubSafe. The effect was to curtail the availability of nuclear submarines for operational deployment and, against the Navy’s more pressing conventional missions, the Arctic program was considered expendable.31

Strategically, the Soviet threat in the region had also failed to materialise. After the USS *Nautilus* had proven the utility of the Arctic as a transit corridor there had been fears that Soviet boats might use that same route to head south, thus bypassing NATO defences at the Greenland-Iceland-UK (GIUK) gap. The patrol report of the *Seadragon* raised this as a possibility as early as 1960 and the announcement that the Soviet SSN *Leninsky Komsomol* had visited the North Pole in June 1962 certainly stoked such fears. The Canadian defence establishment understood this could conceivably pose a risk and in 1963 the Naval Board had agreed that some surveillance capability was needed in the Arctic waters.32

Yet the Soviet SSN fleet in the early 1960s was small and what concerns existed over Soviet Arctic activities were based on potentiality rather than any existing danger.

---

27 The *Sargo* entered the McClure Strait very briefly en route to the North Pole.
30 Comments on Draft Seven Year Program, 22 November 1962, NHH, Waldo K. Lyon Papers.
32 Staff Study of the Operational Requirements in the Canadian Arctic, 9 April 1963, DHH, 79/246.
By 1964 the Canadian Navy, which was then considering acquiring SSNs of its own, assessed the dangers from Arctic operations as minimal and, in fact, more of a political than a military concern. A report of the Nuclear Powered Submarine Program concluded that:

\[
\ldots\text{the USSR can acquire no major military capability which it would otherwise lack nor can it achieve any strategically significant result. Indeed, one can argue in all seriousness that there are few areas in which the USSR could achieve less for a given expenditure of resources than by deploying its submarines to the Canadian Arctic.}\]

This threat assessment mirrored conclusions in the United States. As late as 1967 the Chief of Naval Operations was writing to senior Arctic scientist Waldo K. Lyon to say that the US Navy had no information that the Soviets had made a complete Arctic transit, had modified their boats for that purpose or had any intention of deploying further assets to the region. The potential missile firing locations in the Arctic at the time were considered inferior to those in the Atlantic or Pacific and it seemed very unlikely that the Soviets would use the region for reasons of politics, environment, and distance.

**Under-ice detection systems**

The end result was that scarce US SSNs were deployed elsewhere and, after the USS Sargo’s 1962 transit, the Arctic was abandoned entirely for five years. Yet, while polar operations were not considered pressing enough to warrant much American attention, and certainly not significant enough to justify the acquisition of SSNs for the Canadian Navy, work continued on under-ice detection systems and technology. Records on Canadian under-ice research remain largely classified; however from what is available, it appears as though these projects had begun in earnest as early as the late 1960s and were undertaken jointly with the US Navy and a number of other American defence and research agencies.

In 1968 the Canadian Defence Research Establishment Pacific (DREP) had conducted preliminary experiments by placing five recording instrument packages on the seafloor at strategic choke points through which enemy submarines would have to pass to transit the Arctic Archipelago. These noise spectrum analysers recorded underwater sounds once per hour for a year and were designed to provide a better understanding of the character of Arctic waters. That same year the Canadian Defence Research Establishment Atlantic (DREA) was working on a separate sound...
propagation study in Hudson Bay and Hudson Strait. Both projects were joint ventures, undertaken with the help of the US Underwater Sound Laboratory, Naval Ordnance Laboratory, and the Naval Underwater Weapons Research and Engineering Station. The purpose of all this effort was to improve Northern anti-submarine capabilities and, ultimately, to create an operational submarine detection network.

The first really practical experiments with a prototype system were begun in 1969. The controversial voyage of the SS *Manhattan* that year had certainly spurred the Canadian government of Pierre Trudeau into placing more emphasis on Arctic initiatives and the defence of sovereignty. Canadian defence policy shifted in the 1970s to reflect these new priorities and a subsurface surveillance system was publicly considered in the 1971 Defence White Paper. This system was envisioned as part of a larger North American detection grid and research continued to be undertaken as a joint Canada-US project – an ironic fact given the threat to Arctic sovereignty represented by the *Manhattan* was seen as coming from the United States.

In 1969 the DREP had installed a test ‘barrier’ of sono-buoys, donated by the United States, in Viscount Melville Sound and M’Clure Strait to determine how such a barrier might be practically deployed and to see if it could work as an ‘interim’ system. By April 1970, they had deployed a similar barrier through the ice in that same area to measure ice drift and under-ice ambient noise. The system was temporary at best as experiments showed that the region’s harsh ice conditions would destroy 80% of the devices within five months. By 1973 the DREP had moved to experiments with a larger vertical line array system in Barrow Strait while sono-buoy testing continued in Baffin Bay. These early experiments were largely unproductive in that they failed to provide any usable acoustic data and provided little tracking information. Yet they had built a foundation of acoustic knowledge in the North and established a firm precedent of cooperation in Arctic defence.

While politics certainly provided a powerful motivation for this research, the strategic situation was also beginning to shift. By the mid-1970s the Soviet Navy had grown into a legitimate blue water fleet with a powerful nuclear submarine arm. Its arsenal of modern SSN and ballistic missile submarines (SSBNs) had increased exponentially and the range of Soviet submarine launched ballistic missiles (SLBNs)
had kept pace. While the details of this naval evolution are well documented elsewhere, the relevant point is that by 1972 the Soviet’s new SS-N-8 SLBM, with a range of 7800 km, offered their navy the capability of striking North American targets from firing positions in the Arctic. By 1975 the SS-N-8 model two, with a range of 9100 km, offered the new Delta class submarines the ability to strike the entire United States from as far as the North Pole. These new missiles also made the Arctic an ideal launch position, and in some cases the only one, from which Soviet submarines could attack both European and North American targets. The effect was to allow Soviet SSBNs to forego transiting the GIUK gap en route to their patrol stations. By the mid-1970s this shift had been confirmed by NATO listening posts in the gap as detections dropped sharply. Soviet doctrine had shifted and the Arctic had assumed a new strategic importance.

Waldo K. Lyon, the senior under-ice submarine expert in the United States, wrote in 1972 that the growing Soviet threat had prompted a reaction from the Canadian government which was moving faster towards developing a functional Arctic SOSUS network. Lyon had extensive contacts within the Canadian Arctic scientific and military communities and would certainly have been familiar with the mindset and intentions of those establishments – if not necessarily with those of the political class. By 1974, it was clear that no such system yet existed. However, in a situation review brief that year, Lyon wrote that one was under consideration for installation as early as 1975.

How this system was further developed remains classified. Joseph Jockel believes that it was abandoned in the mid-1970s after it was realised that it would have required SSNs to make it truly effective. Since the 1971 White Paper there had also been little further public mention of an Arctic SOSUS net and in 1983 the government’s own Senate Standing Committee on Foreign Affairs certainly implied that it did not exist by stating that the construction of an Arctic detection capability would be useful if it could be done at a reasonable cost. Accepted opinion is therefore that Canada was never able to develop a detection capability of any real effectiveness. While there is not enough evidence to dispute this conclusion with any certainty, documents from the personal papers of Waldo K. Lyon seem to imply that such a system, or a number

---


48 Honderich, p. 92.


of such systems, actually reached an advanced experimental stage in the early 1980s and perhaps even a level of functionality that is not generally appreciated.

Evidence of this development is fragmented but can be found in a number of American reports and in the operational details of the few submarines which transited the Archipelago during the late 1970s and early 1980s. Such transits were actually relatively infrequent – however, the most common task listed, aside from survey work, was the testing of under-water detection systems. The first cruise in Canadian waters since operations were suspended in 1962 seems to have been undertaken by the USS *Flying Fish* in 1977 and one of the boat’s missions was listed as providing services to Canadian ASW research personnel in Barrow Strait and to acoustic research studies in the Kane Basin.

By 1981 Canada was involved in a joint Canada-UK-US submarine exercise, SUBICEX 1–81. According to the Canadian-American Permanent Joint Board of Defence (PJBD) journal, one of the participating American boats, the USS *Silversides*, was tasked with providing ‘a realistic target for the Canadian sensor system in the Canadian Archipelago, which is designed to interdict submarine infiltration from across the polar cap’. Two years later the USS *L. Mendel Rivers* was again testing what were described as acoustic sensors in Nares Strait and magnetic sensors in Barrow Strait, the same areas where the USS *Flying Fish* had provided research support four years earlier.

A 1981 study, examining the feasibility of resupplying SSNs from icebreakers, also mentioned this system and described it as an ‘undersea defence sensor and communication system which was actively monitoring submarines leaving for and returning from patrol and able to detect hostile intruders’ (italics added). Two years later, Waldo K. Lyon again cited this capability in a report, stating that the Canadian defence establishment was currently operating acoustic and magnetic sensors in chokepoints in certain key passages ‘which have been tested against US submarines many times’. Lyon even assumed their integration into the US command structure in the event of a major conflict. As late as 1985, Canadian senator Paul Lafond, the chairperson of the Senate Committee on National Defence, had confirmed in an interview that an experimental hydrophone system had in fact been installed in the narrows of Lancaster Sound between Borden Peninsula to the south and Devon Island to the north.

How operational and permanent this system ultimately became remains in question. Statements made by officials throughout the late 1980s certainly suggest that

---

53 Submarine Cruises, (list compilation date unknown), NHH, Waldo K. Lyon Papers.
57 Waldo K. Lyon and Allan Beal, Proposal for Forward Area Logistic Support of Submarines in the Arctic, 1 August 1983, NHH, Waldo K. Lyon Papers.
it was not a permanent arrangement. By 1986 Allan Lawrence, head of the Canadian section of the PJBD, and Fred Crickard, a high-ranking DND official, were publicly calling for such a system to be installed in the Northwest Passage – implying that whatever was being experimented with in the early 1980s had been decommissioned by 1986, or was at least extremely classified.\(^{59}\) There was certainly no system in place in the early 1990s as by that point, the Canadian military was actively seeking quotes for the ‘Arctic subsurface surveillance system’, or ARCCSSS – which was supposed to establish fixed listening arrays in Robeson Channel, Jones Sound, and Barrow Strait.\(^{60}\) And in fact, while the limited documentation surrounding this project makes some mention of the early acoustic research conducted in the 1970s, there is no mention of any system operating in the 1980s.\(^{61}\)

It therefore seems likely that whatever had been installed had never become permanent or fully operational. Regardless, two facts stand out. Firstly, the Canadian military was not quite as blind to what was transpiring in the region as was generally presumed and secondly, far from sneaking about the Canadian north without regards to Canadian sovereignty, the United States appears to have been working closely with Canadian defence agencies for more than a decade to maximise Canada’s surveillance capabilities.

**American SSN operations**

A closer look at American submarine operations, from the resumption of activity in Canadian waters in 1977 until 1986 (when records become totally unavailable), bears out this trend of close cooperation and gives lie to the assumptions that Canada was either ignorant of or uninvolved in the defence of its Arctic waters. After the USS *Skate*’s passage in 1962 there were a total of six American SSN voyages through the waters of the Archipelago. Records seem to indicate that the majority of these were undertaken with the full knowledge, concurrence, and often even the participation of the Canadian government. The USS *Seadragon* and *Skate* requested concurrence to transit the Northwest Passage while Commodore Robertson was invited aboard the USS *Sargo* which had briefly entered M’Clure Strait. The presence of the next submarine in Canadian waters, the USS *Flying Fish* in 1977, actually appears to have been made at the *request* of the Canadian government.\(^{62}\)

The 1979 voyage of the USS *Archerfish* was a cooperative venture and officially labelled a joint Canadian-UK-US exercise. On its northbound passage, through the Labrador Sea and Davis Strait, it even engaged in war games with Canadian Forces

---


\(^{60}\) *Arctic Subsurface Surveillance System*, 28 July 1992, DHH, 93/110; This project was ultimately cancelled on the basis of cost.

\(^{61}\) *Arctic Subsurface Surveillance System: Strawman Design*, 28 July, 1992, DHH, 93/110, item 415B.

aircraft and the HMCS Ojibwa. The second such three nation exercise was undertaken in 1981 where the USS Silversides, as mentioned earlier, provided detection services to Canadian arrays. Two years later, the USS L. Mendel Rivers undertook similar duties.  

By the 1980s American Arctic submarine activity had increased dramatically as global strategic circumstances again appeared to be shifting. In 1981 the Soviet Navy deployed the Typhoon class SSBN, the first Soviet boat specifically designed for under-ice operations and by 1981 there were a total of 82 SSBNs stationed at Soviet Arctic bases equipped with 991 SLBMs. In addition to this build-up, the development of the long-range cruise missile caused some serious concern within defence circles. The short range and slow speeds of the cruise had traditionally limited its use as a strategic strike weapon; however the development of missiles with a 3000 km range, like the SS-NX-24, had made it a potentially useful first-strike weapon. Areas in the Canadian Arctic thus became ideal cruise launching positions, in range of the major targets on the East Coast and far from significant Western anti-submarine warfare assets.

In part a reaction to this Soviet build-up, American naval strategy in the 1980s underwent a significant and aggressive shift towards Arctic operations. Articulated for the first time in 1983 by Admiral James D. Watkins, the ‘Maritime Strategy’ was a broad maritime concept for the global conduct of war in which the US Navy planned to attack Soviet forces directly in their northern bases. As Watkins explained, this naturally meant that the US was ‘putting increased emphasis’ on under-ice operations.

American activity in the Arctic thus rose from 12 ship deployments in the 1970s to 37 in the 1980s. Yet, this overall increase in transits did not translate into significant new deployments into Canadian waters. The US Navy’s focus remained on operations in the Polar Basin and in the Russian Arctic seas – areas where the Maritime Strategy foresaw future submarine combat. From the period where documents are available, only three of the 22 Arctic deployments up to that point involved operations in the Archipelago.

Arranging the transits

How these transits were structured within Canadian-American defence arrangements remains unknown, however they appear to have been arranged on an *ad hoc* basis.

---

63 Submarine Cruises, (list compilation date unknown), NHH, Waldo K. Lyon Papers.
64 Honderich, p. 99.
68 Submarine Cruises, (list compilation date unknown), NHH, Waldo K. Lyon Papers.
69 Ibid.
Certain statements seem to imply that the Canadian government was even unsure as to whether or not the US was informing it before every voyage. During the Polar Sea crisis of 1985 the PJBD chairman of the Canadian section, Allan Lawrence, told the press that he was unsure if the government ‘really knows whether our sovereignty has been transgressed by either American or Soviet submarines’. That year, the associate defence minister, Paul Dick, was also asked if the Americans informed Canada when they dispatched submarines into Canadian Arctic waters – his response was simply: ‘we know they tell us sometimes’.

A proper and more complete understanding of the defence relationship from this period will have to await further documentation. However the evidence available seems to suggest that the pattern of behaviour observed in the 1960s had continued into the 1980s. With the Canadian legal position on Arctic sovereignty still undeclared and with a genuine defence problem to manage, the Canadian government considered the American presence to be a practical requirement and simply continued its functional working relationship. Operations were dealt with on a case-by-case basis and an overarching agreement to govern Arctic activity was not seriously pursued. The rationale for such a policy had not changed, as to have worked out such an agreement would have required Canada to take the awkward and potentially dangerous step of finally clarifying its position vis-à-vis sovereignty.

The lack of such an agreement is by no means certain; however, by 1985 records indicate that the PJBD was just beginning to work out an official joint Arctic defence, research and infrastructure sharing strategy. By December of that year the American section of the PJBD had offered a draft Arctic defence strategy to the board for review. This draft remains classified but a letter from Allan Lawrence to the Prime Minister indicated that it focused on enhancing North American defences against Soviet submarines. That same meeting also saw mention of an Arctic maritime NORAD. This proposal was suggested unofficially yet received widespread approval from both the Canadian and American sections. Lawrence strongly indicated his approval to Mulroney for such a solution, stating: ‘there are political and emotional arguments against such a scheme, just as there are logical arguments in its favour’.

This close cooperation seems to refute much of the fear and insecurity which characterised so many of the Canadian sovereignty debates of the 1980s. It appears as through the defence of the region was undertaken in a fully cooperative spirit and it is difficult to perceive how such operations could have eroded Canadian sovereignty. Of the nine American submarines which entered the Canadian Arctic Archipelago between 1960 and 1986, seven of them appear to have done so with the full knowledge and consent of

---

71 Ibid.
73 Allan Lawrence to Prime Minister Brian Mulroney, 13 December 1985, DHH, 82/196.
74 Ibid.
the Canadian government and six of them either had a Canadian representative aboard or involved the active participation of Canadian forces in war games or tracking system tests. The two passages for which there is no immediately available evidence of Canadian participation or concurrence are those of the USS Spadefish in 1984 and the USS Pintado in 1978, both of which were undertaking survey work.\textsuperscript{75}

Documents on these expeditions are extremely limited. The vessel patrol reports are unavailable and the PJBD discussion from 1978 and 1984 are either classified or partially so. It is entirely possible then that these transits were known to the Canadian government but the records are simply lacking. Indeed, a report written by Waldo K. Lyon in 1983 would seem to suggest this. In it Lyon presents a proposal for forward deploying USCG icebreakers into the Arctic Archipelago for the purpose of resupplying American SSNs in wartime. This report’s relevance lies in the fact that it includes not only an admission that American submarines had, by that point, transited nearly all potential passages through the Archipelago but a map very clearly showing the routes of those transits. Citing Canadian political sensitivity Lyon suggested that the report not be released too broadly and that its level of classification be set at either no foreign distribution or Canadian-American eyes only. Had any of these transits been kept secret from the Canadian government it would seem odd to classify a report of this nature in a way which might permit distribution to Canadian defence authorities.\textsuperscript{76}

The impact on Canadian sovereignty

Working on the assumption that Canada knew about most, and perhaps all of these voyages, it would seem prudent to ask whether or not there was anything to the criticism levelled at the government in 1986. Even if these voyages were cooperative, could they still be considered damaging to Canadian sovereignty? Some authors have suggested that such knowledge might ironically have been more damaging to the Canadian claim than ignorance. Michael Byers for instance believes that Canada knew about at least some of these voyages and that a combination of knowledge and acquiescence without permission might have fatally weakened the Canadian legal claim. To Byers, Canada’s inability or unwillingness to protest effectively could serve as evidence that ‘in the corridors of international diplomacy, where it really matters – Canada has already surrendered its claim’.\textsuperscript{77} John Carrol and Kenneth Curtis have likewise commented that the presence of American submarines in the area would have a significant impact on the application of international maritime law.\textsuperscript{78} The authors of Arctic Front have suggested something

\textsuperscript{75} Submarine Cruises, (list compilation date unknown), NHH, Waldo K. Lyon Papers.
\textsuperscript{76} M. Allan Beal and Waldo K. Lyon, Proposal for Forward Logistic Support of Submarines in the Arctic, 1 August 1983, NHH, Waldo K. Lyon Papers.
\textsuperscript{77} Michael Byers, Who Owns the Arctic? Understanding Sovereignty Disputes in the North (Vancouver: Douglas & McIntyre, 2010), p. 77.
similar, that these submerged transits might accomplish what the government had feared from the voyage of the SS Manhattan in 1969 – the establishment of the precedent required to classify a strait as international.\textsuperscript{79}

Yet, it seems unlikely that this could be the case. The Canadian Department of National Defence had certainly considered the issue and, as early as 1971, had concluded that a submerged transit could not establish a right of passage.\textsuperscript{80} In order to be admissible to a court as evidence of a strait’s usefulness to international traffic, these submarine voyages would have had to have been public knowledge. An examination of the records of the ICJ and similar bodies does not yield a single example of a state using a secret voyage as evidence.\textsuperscript{81} Rob Huebert has noted that international tribunals can only publish evidence that is publicly acknowledged and, as state secrets, submarine voyages would have no such standing.\textsuperscript{82} In 1948 the Corfu Channel Case had used only the records of British warships and the commercial vessels that had docked at Corfu harbour and submitted themselves to customs inspection.\textsuperscript{83} The many vessels that transited without submitting themselves to customs in Corfu were not included in the court’s calculation. As this case is the precedent on which the relevant international law is based, it seems highly unlikely that unregistered and highly secret submarine passages could be considered precedent for making the Northwest Passage an international strait.

If the fact that Canada knew about the transits could serve to remove the secret nature of the transits then a case would have to be made that they were being undertaken as a protest of Canadian maritime claims or without Canadian assistance and participation. This would seem an impossible proposition given the cooperative nature of the operations. These voyages were clearly part of the decades-long joint continental defence effort and were no more a protest of Canadian waters than were the Dew Line resupply voyages of the 1950s. Like those re-supply missions, American submarine operations were also covered by pre-existing joint defence arrangements. In 1952 the PJBD decided that a need existed to streamline and simplify the operation of Canadian and American warships engaged in continental defence. Vessels often travelled into the waters of the other power and constant diplomatic applications for clearance were considered unnecessary and inefficient. As such the PJBD established simpler rules for naval clearance in the form of Recommendation 52/1:

\begin{quote}
In the interests of the security of the northern part of the Western Hemisphere, Canada and the United States should make provisions to ensure that public vessels of either country engaged in matters of concern to mutual defence should be able to
\end{quote}

\textsuperscript{80} Letter from E.B. Armstrong to the Minister of National Defence, 8 February, 1971, DHH. 85/333.069.080
\textsuperscript{82} Ibid.
\textsuperscript{83} International Court of Justice, Corfu Channel Case, 1948.
visit ports or territorial waters of the other country, or its possessions, with
a minimum of formality.84

To ensure this was the case the PJBD stipulated that, while diplomatic visits should
continue to be coordinated through diplomatic channels ‘informal or operational
visits’ would require only ‘advanced notification through service channels’.85 These
new rules were approved by the Canadian government on 19 May 1952 and two days
later by the Americans. Since American submarine transits were clearly engaged in
matters of mutual defence and clearly operational in nature, there was no need for
a formal diplomatic request to enter Canadian waters and no need for Ottawa to have
granted any formal permission. All that was required was notification of Canadian
service authorities and this appears to have taken place.

The need for secrecy

Despite the fact that the joint defence relationship appears to have been so well managed
and sovereignty so well protected, the Canadian government preferred to keep this
relationship and these activities out of the public eye. Even basic information surrounding
submarine activity was not declassified and when the US Navy released such information
it excluded mention of activities in Canadian waters. In 1977 for instance, the USS Flying
Fish conducted operations in both the Archipelago and the Arctic Ocean. The original US
Navy press communication instructions dictated that the route was to be classified.
However, that was eventually rethought in an effort to give more credibility to the Arctic
submarine program. Yet, in the revised public release, only the ‘general route’ was given
from Norfolk to the central Arctic basin via the Greenland Sea and ‘deep water channels’.86
Secrecy within the Canadian government itself even appears to have been fairly secure.
As late as 1982, while working on an important memorandum to cabinet on Canadian
sovereignty, External Affairs bureaucrats demonstrated a complete ignorance of all
American submarine activity after 1962.87

The motivation for such concealment likely stemmed from a desire to not upset the
existing arrangements or cause domestic political difficulties. Arctic sovereignty has
historically been one of a very few subjects capable of evoking aggressive Canadian
nationalism and the political implications of this public sentiment have never been
pleasant for any government. In 1969, the public outcry over the Manhattan forced the
Trudeau government into an unwanted confrontation with the United States and this was
to reoccur in 1985 when the Polar Sea ultimately forced the Mulroney government to
negotiate with the US in an atmosphere of public hostility and intense political pressure.

---

84 PJBD Recommendation 52/1, NARA, RG 59, General Records of the Department of State, PJBD
Subject File 1940–59, box 6.
85 Ibid.
86 COMSUBLANT to USS Flying Fish, May 1977, NHH, Waldo K. Lyon Papers.
87 Secretary of State for External Affairs to Cabinet, Memorandum to Cabinet, Status of the Arctic
Conclusion

The political and diplomatic fallout from the *Polar Sea* incident largely remains classified. However, it clearly affected Canadian defence priorities. By 1987 the government’s new White Paper on defence called for the acquisition of 10–12 SSNs and an underwater detection system to locate intruding submarines.88 This aggressive unilateral approach represented a considerable departure from past Canadian behaviour and certainly shocked and worried the US Navy. Indeed, the strength of this Canadian reaction, on an issue where the United States saw no real problem with current arrangements, surprised the American section of the PJBD, which was both ‘mystified and disturbed at the effects’.89 Attempts to maintain the joint defence relationship appear to have continued throughout the late 1980s as the two sides continued to work towards a joint Arctic defence strategy, though progress was slowed by political considerations.90 Whether the crisis affected American plans to deploy further vessels into the Arctic Archipelago remains unknown as are the full the repercussions of the political fallout on Arctic operations.

When all is considered, the fear and apprehension surrounding Arctic submarine operations appears to have been a significant overreaction. Contrary to generally accepted assumptions, the US appears to have been genuinely eager and willing to include and cooperate with their Canadian counterparts in the defence of the region. The US Navy proved itself a responsible partner and from the very earliest operations in the Archipelago, Canadian personnel were involved, consent was sought, and publicity was coordinated. The development of Canadian underwater detection systems, from the 1960s into the 1980s, in whatever form they eventually achieved, was also undertaken with material and scientific assistance from American defence agencies. Rather than taking advantage of a lack of Canadian situational awareness in the North, the US was in fact actively assisting the Canadian defence establishment to augment that capability.

While Ottawa was never able to extract the explicit recognition of Canadian sovereignty that it would have preferred, its functional approach ultimately ensured that American defence activities were not taking place without Canadian participation and were not setting a potentially damaging precedent. In the final analysis, while popular anxiety over the issue may have been understandable given the lack of public disclosure at the time, a closer examination indicates that much of that concern and anger was without foundation. And, while the passionate political displays of the time may have been unavoidable, the PJBD was likely correct in its assessment that such emotions were simply ‘unwarranted’.

89 Allan Lawrence to Prime Minister Brian Mulroney, 13 December 1985, DHH, 82/196.