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## Standing Committee on National Defence

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EVIDENCE

**Tuesday, November 24, 2009**

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**Chair**

**The Honourable Maxime Bernier**



## Standing Committee on National Defence

Tuesday, November 24, 2009

• (0905)

[English]

**The Chair (Hon. Maxime Bernier (Beauce, CPC)):** Hello, everyone.

[Translation]

I call to order the 40th hearing of the Standing Committee on National Defence.

[English]

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Monday, February 23, 2009, we are doing our study on Arctic sovereignty.

We have with us two witnesses from the Department of National Defence. We have Vice-Admiral Bruce Donaldson, Commander, Canada Command. We also have Commander Dermot Mulholland, Director of Maritime Policy, Operations, and Readiness and Chief of the Maritime Staff.

First of all, you'll have five to seven minutes to make a presentation. After that, the members will ask you questions.

I want to thank you for your availability today. The floor is yours now.

**Vice-Admiral Bruce Donaldson (Commander, Canada Command, Department of National Defence):** Thank you, and good morning, Mr. Chair. It's great to see you and the members of the committee once again.

I understand that I'm here today to help answer your questions related to the protocols governing the movement of submarine traffic. I bring with me Commander Dermot Mulholland, who is the subject matter expert on water-space management within the offices of the Chief of the Maritime Staff. For any of the more technical aspects of submarine movement you wish to discuss, I will happily turn to Commander Mulholland and allow him to provide you with his expertise.

I know that in the past this committee has expressed a great deal of interest on the topic of submarines in Canada's north. It is certainly very timely, as there has been a fair amount of media interest generated on this. I'm sure you've seen the media coverage of the Russian Akula submarines off the coast of the United States that occurred in early August of this year, and more recently, the news that the USS *Texas* transited through the Arctic and broke through the ice near the North Pole.

[Translation]

While submarines sightings in this part of the world are noteworthy and can generate a great deal of media attention, they do not necessarily pose a threat to Canada. Submarines have a number of routing options while transiting the Arctic that do not require entering Canadian territorial waters. The North Pole is approximately 225 nautical miles away from the boundary of our exclusive economic zone, and we recognize the right of all nations to exercise freedom of navigation in international waters according to international law. The movement of submarines is no exception.

[English]

It would be useful at this point to contextualize our discussion with some basic information on how we govern submarine movement within Canada.

Due to the classification of information, it is a matter of policy that we do not discuss the movements of allied submarines, nor do other allied nations discuss ours. However, what I can tell you is that as a partner in NATO, Canada maintains regular direct liaison between our submarine operating authorities, or SUBOPAUTHs, which are located on each coast, and other allied SUBOPAUTHs. The SUBOPAUTH is a national authority responsible for all aspects of the employment of submarines, and it is our connection to other submarine operators for day-to-day at-sea operations.

NATO has also established a submarine movement advisory authority that acts as the central repository for all submarine movement for a given area. What this regular communication with our allies does is reduce the possibility of a collision between submerged submarines. The submarine movement advisory authority implements a number of safety protocols and plays a critical role in reducing the possibility of collision between submerged submarines.

This process I have just described to you deals with the movement of allied submarines only. But we also closely monitor non-NATO submarine activity. Canada Command and its subordinate Maritime Component Commands in the Atlantic and Pacific maintain close cooperation with U.S. Northern Command in collaborative surveillance of non-NATO submarine activity in the Atlantic and in the Pacific. Activities of non-NATO submarines in the world's oceans, in international waters, do not violate international maritime law and are within normal practice.

● (0910)

[Translation]

The Canadian Forces routinely monitor the waters off our coasts, and we will continue to monitor any vessel of interest during transit while recognizing that all nations have freedom of navigation in accordance with international law. And we have a number of very effective mechanisms in place to monitor the activity off our shores.

In terms of aerial surveillance, one of our most effective capabilities is RADARSAT-2, which is a polar orbiting satellite that provides regular marine surveillance coverage of Canada's Arctic region. This capability greatly increases our situation awareness of what is occurring in our Arctic domain.

[English]

Equally important is the coastal and inland water surveillance conducted by our Canadian Rangers in the north. As you are aware, the Canadian Rangers are the eyes and ears of the Canadian Forces in the Arctic. About 1,600 Rangers from numerous communities across the north provide presence and surveillance in some of Canada's most remote areas. I have met with many members of this unique organization and I can assure you that the Rangers have proven time and again to be an invaluable asset when it comes to monitoring activities on the land and waters of northern communities. Because of their unique traditional knowledge and expertise, they're usually the first to notice and report any unusual activity in the area.

Finally, we utilize the marine security operations centres to great effect in order to build what we know as maritime domain awareness. These centres enable departments and agencies to work collaboratively to collect and analyze intelligence and other information in an effort to develop solid all-source awareness of activity in the maritime approaches to Canada.

The Canadian Forces work with our inter-agency partners to ensure a whole-of-government approach to monitoring Canada's waters and to bring together a common understanding of the activities taking place in our waters.

[Translation]

The increased amount of activity that we can expect to see in the Arctic as it becomes more navigable may lead to security considerations, but we also need to be mindful of the impact this will have on the safety of navigation in the Arctic.

In the event of an incident, be it from a marine vessel of any kind or a major air disaster, the Canadian Forces will have a role to play, either directly or in supporting other government departments and agencies in providing such disaster assistance, when required, as part of a whole-of-government ability to respond quickly and effectively to whatever should occur in our northern region.

[English]

Let me conclude by saying that the changes under way in the Arctic undoubtedly necessitate increased whole-of-government vigilance in order to ensure the safety and security of Canada's Arctic. We are working closely with our federal and territorial partners, as well as with the peoples of the north, to safeguard this precious inheritance and to ensure that Canada fulfills its

responsibilities as an Arctic nation. This responsibility also means looking beyond Canada and fostering cooperative and meaningful relations with our Arctic neighbours in order to address the ever-changing environment in the north.

Thank you very much for your attention. Both Commander Mulholland and I would be happy to take your questions.

**The Chair:** Thank you very much, Vice-Admiral Donaldson.

I will now give the floor to Mr. Wilfert for seven minutes.

**Hon. Bryon Wilfert (Richmond Hill, Lib.):** Thank you, Mr. Chairman.

Thank you gentlemen, for coming. I apologize in advance that I have to go to the House at ten o'clock. But I appreciate your being here.

The twin issues that we're obviously dealing with in the Arctic are the issues of sovereignty and security, issues on surveillance and enforcement capabilities. Clearly the Canadian navy, it has been suggested—and I'd like you to respond to this, Admiral—needs to relearn how to have a greater significant role in the Arctic. What's the best way to achieve that when there's only a certain amount of resources, a certain amount of capability?

For government, government is about prioritizing. If in fact we are serious about sovereignty and security in the north, then we have to look at what kind of equipment we need in the north and how much of the existing capabilities that are needed have to be surrendered in order to provide the kinds of tools we need. There's the type of submarines, if we're going to go into that, or if we're going to deal with surveillance in space, or whatever we're doing, we have to be able to prioritize. Obviously the recommendations from the navy are absolutely critical. Then there's the delivery of those operational capabilities down the road.

Can you respond to, first of all, the notion that we have to relearn how to play a greater role in the Arctic? How would we achieve this?

If you were able to put on the table to government your wish list and say, these are the objectives that government has set out—which is sovereignty and security—and this is the best way to achieve it, by using the navy.... At one time, I know we joined exercises with the other branches of the force as well as the RCMP, as well as Customs, etc. If you were to outline to us the best way to go about doing this, what would you suggest?

● (0915)

**VAdm Bruce Donaldson:** Sir, first of all, I agree that this is an important area for us to be considering. It is the changes taking place in the north, I think, that cause us to look ahead and ask how we need to position ourselves to be able to respond to the safety and security threats of the future. I can't really give advice for the navy—my counterpart, Vice-Admiral Dean McFadden, commands the navy—but I certainly can talk about what I need as the commander of Canada Command in actually delivering capability in the north.

Do we need to relearn how to operate in that environment? I would say that in terms of naval experience, in terms of Canadian Forces experience on the water, we have been constrained from a lot of naval presence on the water in the Arctic. However, the Canadian Coast Guard has significant presence in the Arctic. They understand the region, they know how to operate up there, and I would say it's important at this stage—as we see a change in the environment that increases the level of activity and perhaps the frequency of naval presence that we wish to have up in the Arctic—that transfer of knowledge is very important.

We're looking at putting our folks into coast guard ships when they're conducting operations in the Arctic; we're looking at operating more frequently with the coast guard, and we do that every year up in the Arctic; we're looking at working with other navies, such as the Danish navy, that have experience up in that region so that we can get knowledge transfer there; and we're looking at continuing to exercise to push ourselves farther and farther north as conditions permit so that we get more awareness of the factors that we have to take into consideration as we adjust how we do our business.

I don't think we need to reinvent how we do our business. I think we have to be realistic about the navy's role in the Arctic, because there's really not a conventional military threat facing us up there. What that means is that we have to be prepared to have a presence. We have to be prepared to cooperate with others and, quite often, to deliver a capability that's needed to address safety concerns or security concerns early that are really within the mandates of other government departments.

Do we have to relearn how to do this? No, I think we know how to do this, but more of us need to get smart on it, and we need to be sharing information that we have and we need to be continuing to stay abreast of changes that are happening in the north.

How do we go about that? I've described some of the mechanisms, but I think it's really through collaboration and cooperation that we will develop the types of capacities that we need to operate up in the north.

We also need to look at our basic footprint as we move ahead, and there are some initiatives that have been described to this committee before to address that. We need to look at the types of vessels that would be available, and there are initiatives that have been described at this committee before that do that as well.

**Hon. Bryon Wilfert:** Through you, Mr. Chairman, I raise the question because last month I spent some time with the head of the Danish navy, Nils Wang. As for what they are doing and the techniques they are using, they've completely remodelled.... In fact, they've mothballed their submarines and have taken a different approach in terms of their Arctic waters.

I just wondered what, without necessarily commenting on what they've done but in terms of the sharing of information.... They've decided they want to be very specific, have a niche, in terms of what they do. They've said they can't be all things to all people. And the admiral was pointing out that although they got rid of the submarines, they became much more proficient in other areas of operation.

● (0920)

**VAdm Bruce Donaldson:** We have a very good relationship with the Danish navy and with the Danish armed forces. As you know, our chiefs of defence met in the Arctic last summer. We were looking at a number of ways to cooperate, to share information, to share perspectives.

I would hazard, sir, that Canadians expect us to have a capability in the Arctic, but I would say they don't expect it to be at the expense of our capabilities on our other ocean spaces. So with the size of our ocean spaces, we have to be smart about what we're investing in. We have to be smart about how we set ourselves up, not so much to have a ring of steel around our ocean spaces, which is impossible, but rather to have a network of systems that informs us to allow us a response capability where it's needed on time, and also to allow us to develop the types of new capabilities we'll need to apply. And I believe we're on the right track for that.

**Hon. Bryon Wilfert:** Thank you, Mr. Chairman.

**The Chair:** Thank you very much.

[*Translation*]

Mr. Bachand, you have seven minutes.

**Mr. Claude Bachand (Saint-Jean, BQ):** Thank you, Mr. Chairman.

I would also like to welcome our two witnesses. I attended Mr. Donaldson's change of command ceremony when he took over at Canada Command. I also salute my commander, Mr. Mulholland. In fact, I was embedded on the HMCS *Winnipeg*, when Mr. Mulholland was commander. I thank him for the wonderful experience I had. I even piloted the frigate at 4 o'clock in the morning. When I told the soldiers about that the next day, many of them said that had they known, they would have prepared their wills the night before. Mr. Mulholland was very patient with me, and it was a wonderful experience.

Now I'd like to ask some questions, especially about the USS *Texas*. The situation seemed to surprise a number of observers, because many did not expect that type of submarine to be able to travel in Arctic waters.

We are trying to do a study on sovereignty. Professor Pharand, who appeared before us a few months ago, explained that we must exercise some control over submarines in the high Arctic, because different countries could use their presence and the number of times they have travelled there to claim sovereignty. Therefore, it is important to control submarine movements.

An analyst said that there was a third incursion in the region this year. Do you know if there were any others?

I know that when the USS *Texas* surfaced at the North Pole, it was far from our coast, in international waters. However, before moving into international waters, did it travel through Canadian territorial waters? Is it required to signal its presence there? Did it do so? It is important for us to know that.

I will start with those questions. After that I will see if I have time for any more.

[English]

**VAdm Bruce Donaldson:** Thank you for your question, Mr. Chairman.

I would say, first of all, in terms of the surprise of seeing the new class of submarine in the Arctic, that it is really an issue for the Americans as to why it is that the submarines surfaced at the North Pole. Clearly, they wished to make a point by doing so, and I think they were successful.

Concerning submarine control in the Arctic, first of all I'm not convinced that submarine movement actually does bolster any national claims. Submarine movement is transitory. There is a legal regime to control this that does not prejudice states' claims to anything. In the Arctic, outside of territorial waters and outside of currently established exclusive economic zones, I'm aware of quite a lot of scientific work going on to see what other claims could be made by states in the region. I'm not of the opinion that submarine movements materially affect that type of work.

We heard about a submarine placing a flag on the seabed. I think that was far more for public consumption than it was for any legal claim. And we see other types of demonstrations of Arctic presence and capability that sound impressive but really don't substantively amount to very much more. In fact, we have done similar types of things in the past.

● (0925)

[Translation]

**Mr. Claude Bachand:** May I add something?

You could continue your explanation, but I want to move you in another direction. As you know, our committee conducted a study on submarines following the fire on board the HMCS *Chicoutimi*. I clearly remember them telling us how important it was for our navy to have submarines, because they were part of a fellowship, and that any movements in Canadian territorial waters required notification.

I would like you to answer the following question: were any of the incursions, the USS *Texas* or the other three, in territorial waters reported to the government one way or another?

[English]

**VAdm Bruce Donaldson:** Well, sir, first of all, *Texas* was not in our territorial waters. But had she been, it would have been clear to us that she was. We have a way of managing these things in which I have every confidence.

**Mr. Claude Bachand:** But you will not explain it to us.

**VAdm Bruce Donaldson:** If you look at a map and look for the best and safest way for a submarine to get to the North Pole, it is not through the Canadian Arctic. There are much easier ways of getting to the Arctic. Submariners are practical folks, like my friend Mr. Mulholland, and they wish to avoid hazardous areas. They wish to travel undetected—and as quickly as they can undetected—to get where they're going. If you look at the Canadian Arctic, everything in the Canadian Arctic argues against that kind of direct, unimpeded route and forces submarines into places they don't want to be in the first place.

You've talked about incursions this year. I know of no incursions this year in our waters by submarines.

You talked about the importance of having submarines, because of the regime that gives us. I will say that it is because we have submarines that we profit in two respects.

First, we are party to the movements of other submarines so as to deconflict movements and avoid collisions. There is a very high interest in the allied community, and in fact amongst all submariners, in avoiding collisions between submarines.

Second, it is because we have submariners that we can form the very close relationships with our allies that give us far more information exchange and understanding of one another and mutual respect, which makes for control mechanisms for movements within our waters and exchange of information. It gives us that much more confidence in the measures. It allows us a transfer of knowledge about operating in different areas that makes us better at what we do and makes others better at what they do. Wherever we wish to transfer that knowledge, it also allows us to share information on other submarines, because the whole community keeps track of this.

So we have a very effective method, first, of controlling the movements of submarines and making sure we understand where submarines will go and that we control submarines that need to be controlled in our waters, and second, for exchanging information on other submarine movements that we all track.

Does that answer your question, sir?

**Mr. Claude Bachand:** Yes, thank you.

**The Chair:** Thank you very much.

Now I will give the floor to Mr. Harris.

**Mr. Jack Harris (St. John's East, NDP):** Thank you, Mr. Chair, and welcome to our guests. It's good to have you here.

I was interested in your comments that the Americans and any submariners wish to travel as quickly as possible and undetected. I assume that's one of the major reasons for having submarines in the first place.

You also indicated that what was important in the Arctic, from our point of view, was information, not necessarily a show of force. I wonder, given the tools that you have, whether you have adequate information. You have mentioned RADARSAT-2, you've mentioned the Canadian Rangers, and you've mentioned the marine security operations centres, which I gather do data collection and review as opposed to a surveillance type of operation.

Can RADARSAT-2 determine what the movement of submarines is underwater and under ice to the Northwest Passage, for example?

● (0930)

**VAdm Bruce Donaldson:** Sir, thank you for your question.

RADARSAT-2 is really about imaging objects on the surface. In that respect, it is not an effective surveillance mechanism for submarines that are transiting underwater or under ice. Having said that, RADARSAT-2 is but one of a large number of sources of information that we base this on. What RADARSAT-2 enables us to do is focus our observation in specific areas of the north in response to other information that tells us we should be looking carefully at what's going on there. I guess that's what I would say in response to your question.

The MSOCs are really information exchange centres, yes, but they allow us to bring all sources of information together, not just military information but information from across government, so that we have all the information we hold on what is going on in a maritime domain and can make sense of it. Vessel reports, radar data, reports from vessels we have and aircraft we have on patrol, and that type of thing are all brought together, with a single understanding of what's happening in our maritime domain.

**Mr. Jack Harris:** I gather from this that it is perhaps relatively easy for anyone wanting to traverse the Arctic undetected; if their intelligence is good and they don't emit radio traffic and they follow whatever measures they have to avoid detection, it would be fairly easy for a sophisticated country to traverse the Arctic without being detected. Am I right about that? I think the *Texas* demonstrated that they could get to where they got without anyone knowing they were there until they surfaced.

How many countries have a capability of operating in the Arctic, say, through the Northwest Passage or under ice? Could you tell us that? Are there a lot? How many of them are allies? How many of them are countries other than our allies?

**VAdm Bruce Donaldson:** Well, sir, there are two questions.

First, in terms of the ability to traverse the Arctic undetected, if you're talking about the Arctic Ocean, yes, it would be relatively easy to traverse the Arctic Ocean undetected, particularly if no one was really looking for you and expecting you to be there. Having said that, when you look within our maritime areas of responsibility, I would argue it would be very difficult to transit that undetected.

Why is that? It is a very challenging region of the world from a navigational standpoint. There are many areas that are not very well charted. The extent of the ice is unknown, and submarines don't like to experiment by feel, which is essentially what they'd be forced to do.

Do I expect that there are lots or any submarines transiting through our archipelago clandestinely, sneaking around under the ice? I do not. In fact, I think it would be reckless. I also believe that submarines that operate in the north, like anywhere else, do so respecting international law. As such, I do not think it would be easy for submarines to transit these areas undetected. I think it would be extremely challenging.

In terms of the number of countries that operate submarines under the ice, I think testimony was given earlier about six that can operate under the ice, including the British, French, Americans, Russians, I think Chinese, and German. But I would say not many of those countries are likely to operate under the ice.

It's not only a matter of being able to hold your breath; it's really a matter of being able to deal with the unique environment that is encountered underneath the ice. I can get Commander Mulholland to speak a little about that environment, if you like. If not, suffice it to say that it's not like having a submarine somewhere else. Somewhere else you always have a way out, which is up. Under the ice you do not, and that requires levels of proficiency, an understanding of the environment, and a sensor package that allows you to operate without getting yourself into trouble, that allows you to get out of trouble if you get into trouble.

● (0935)

**Mr. Jack Harris:** Can you tell us what nations are trying to achieve that level of proficiency or experience? I'm assuming the Russians are and the Americans are.

**VAdm Bruce Donaldson:** I would say that the Russians have it. Clearly, the Americans have it. And I would say the British and French have it; they may have it in different degrees. I really can't say about the other nations.

**Mr. Jack Harris:** There was some discussion earlier, and I know you're being recalled on this point because—

**VAdm Bruce Donaldson:** Excuse me, sir. To clarify, what I'm saying they have is the ability to operate under ice. I'm not saying they have the ability necessarily to operate under the ice that's within our sovereign waters. I think that's under ice generally. It's another layer of complexity that I'm not sure any one of them is comfortable with.

**Mr. Jack Harris:** Particularly because of the uncertainty of ice presence and where it might be, the changing nature, etc.

**VAdm Bruce Donaldson:** The challenge of ice adjacent to land and the depth of the water. It shoals considerably around land, and we really haven't had the type of hydrographic surveys done in the north that we've been able to do in other parts of the country. That's some of the research that's going on now that I've talked about already. We're able to keep vessels safe in the areas where they need to transit in the north, and we continue to build our awareness of the region, but I would say it still poses some challenges for the operations of submarines submerged under the ice in the Arctic.

**The Chair:** Thank you.

Did you want to add something?

**Commander Dermot Mulholland (Director, Maritime Policy, Operations and Readiness, Chief of Maritime Staff, Department of National Defence):** Yes, sir, only to say that, as the Admiral has pointed out, a submarine by its very nature has a lot of vulnerable fittings external to it. These can be damaged quite a bit by touching the bottom of the sea. Submarines, even in areas that aren't iced, are very careful to avoid shallow waters for numerous reasons. They don't have very much room to manoeuvre, so they tend to stay away from these. Certainly the problem is compounded greatly in areas that are iced, where navigational techniques are much more difficult and the sonar conditions, which enable them to see where they're going, are not conducive to safe and efficient navigation.

**The Chair:** Thank you very much.

I will give the floor to Mr. Hawn for seven minutes.

**Mr. Laurie Hawn (Edmonton Centre, CPC):** Thank you, Mr. Chair.

Thank you both for being with us today.

Admiral Donaldson, I want to follow up a little bit on what Mr. Harris was saying. I know you can't get into detail, but are you confident that the various measures we have for detection and awareness can detect submarine traffic in the Arctic?

**VAdm Bruce Donaldson:** Am I confident? I'm confident that we can risk-manage this. We're looking at developing technologies that will give us a higher degree of confidence when some of the challenges to operating submarines diminish. We continue to look at vulnerabilities and try to adjust to them.

I don't want to give the impression, after discussing all the challenges, that it would be impossible for a submarine to actually operate up in our north; in fact, it would be possible for a submarine to operate in our north. We take that seriously. If we get an indication that there may be submarines operating in the north, of course we'll react to them, but at this point I feel confident that we have enough of a network of intelligence, sensors, and response platforms that we know what's going on up in our north.

**Mr. Laurie Hawn:** You talked about the obvious desirability of not having sub-to-sub collisions. Within NATO, obviously, we operate very closely. You talked about the non-NATO subs. From your knowledge of submarine ops—the Russians, for example, or the Chinese or anybody else—are their procedures pretty similar to NATO procedures? Do they conform to general safety considerations and communication in terms of avoidance of collision?

Maybe Commander Mulholland would be better for that.

● (0940)

**Cdr Dermot Mulholland:** There is no similar protocol among non-NATO submarine-operating nations in the Atlantic. We do have similar protocols with certain nations in the Asia-Pacific region to avoid mutual interference when submarines are operating on exercises with each other, and that sort of thing.

With the Russians, the answer is no. They do operate an underwater telephone communications device on an international frequency, usually for emergency communications, but beyond that there is no process in place to allow a Russian submarine and a NATO submarine to operate in the same vicinity at the same time.

**Mr. Laurie Hawn:** So it's not similar to ICAO, the International Civil Aviation Organization. There are no similar procedures in place, no international SOPs to deal with that.

**Cdr Dermot Mulholland:** No. If the submarines are on the surface, then the normal collision regulations would apply to them, but underwater, if they don't know they're operating in the same space of water, then there is no procedure for them. No.

**Mr. Laurie Hawn:** But submarines can obviously see around them to some extent.

**Cdr Dermot Mulholland:** To some extent they can. Yes, sir.

**VAdm Bruce Donaldson:** Certainly, sir, we don't have a history of submarines colliding with one another. That type of thing is seen as a major incident and a highly unusual accident.

**Mr. Laurie Hawn:** We talked about maritime domain awareness. Admiral Donaldson, are there any holes in our maritime domain awareness that you're concerned with and that we should address?

**VAdm Bruce Donaldson:** Maritime domain awareness, a perfect awareness of everything happening within our maritime domain, is a huge area. There's a lot of activity, and we necessarily have to focus on some of the areas of higher concern. As the MSOCs mature, as our approach to maritime domain awareness matures, as the techniques and information available to us and our pursuit of

automatic information transmission in commercial vessels give us more information that we can manage, and as our sharing of information matures, we're getting better and better at it. In fact, I think it's an international success story that's garnering a fair amount of interest around the world.

We tend to speak quite a lot about the success and the approach of our MSOCs. Certainly we still have work to do, work that we continue to do. We have opportunities to push the awareness out further than our own maritime spaces to get intelligence and information from vessels before they even leave port, and that sort of thing. NORAD, as I think the committee has been told, is undertaking a maritime warning role; as that matures, it will allow us to refine how we go about things as well.

**Mr. Laurie Hawn:** For either one of you, with respect to environmental impact owing to increased naval operations in the north—it's the kind of question that an environmentalist would ask—what measures do our ships take to operate in an environmentally responsible manner?

**VAdm Bruce Donaldson:** Our naval ships are incredibly fastidious. We comply with Canadian law. We're extremely careful, as are all Canadian Forces, not to leave a footprint in the north. We recognize how vulnerable the environment can be, and we take great pains to avoid any impact on the environment. Whether it's discharges, waste from activity, or what we build when we operate in the north, we take everything out with us when we go.

● (0945)

**Mr. Laurie Hawn:** What would be the impact on our sovereignty if we didn't have submarines for collecting information? What would be the impact if we had no submarines in the Canadian navy?

**VAdm Bruce Donaldson:** The answer to that will be awfully speculative. I can only give you an opinion.

By virtue of having operated submarines for as long as we have, and by virtue of the capability of the submarines that we now possess, we have in effect become part of an international group of professional submariners. As part of this group, we share information about movements, capabilities, and techniques that we would not otherwise have been able to acquire or maintain.

Do you want to add anything to that?

**Cdr Dermot Mulholland:** As a NATO submarine operating nation, we are required to have a submarine operating authority and to participate in the submarine movement advisory authority, which is the central clearing house for submarine movements. That is an obligation on our part, but it is also a two-way street that enables us to remain informed about submarine movements as they pertain to Canada's maritime domain.

**The Chair:** Thank you.

Now, Mr. Wilfert.

**Hon. Bryon Wilfert:** I have two quick questions. The first one may be a bit theoretical. What does the term "Canadian sea power" mean when it is applied to northern waters?



**Vadm Bruce Donaldson:** I suppose it's the ability to exert control over the maritime environment; to deny, where necessary, maritime activities to others if the Government of Canada so wishes; to enforce Canadian laws in our jurisdiction; and to protect Canadian interests and Canadian citizens in international waters.

**Hon. Bryon Wilfert:** I raise this because our current interest in the Arctic stems from two issues: climate change and resource development. To deal with these issues, we are going to have to increase our maritime presence, particularly because some nations don't recognize Canada's legal claim to parts of the north. Monitoring and police action will be necessary, which raises questions about the types of capabilities we need. Some navies are not using submarines; others are. Norwegians are becoming specialists in certain submarine activities; the Danes aren't. As to freer passage because of climate change, the capabilities we need to be thinking about are not for today but for 10 years down the road.

Could you respond to that?

**Vadm Bruce Donaldson:** Sir, I agree that we expect an increase in activity. I would agree that climate change is making new opportunities for resource development. I think that is going to cause pressures on the Arctic in terms of volume of activity, different types of activity, and the environmental and human consequences of that activity. When we look at that problem, it's not really a military problem. The Government of Canada needs to have a clear regulatory environment, needs to have the ability to monitor and control activities, and needs to be able to respond when activity threatens that regulatory environment or threatens northern peoples or the environment.

I agree that this will probably entail a larger maritime presence, but I think it will entail a larger government presence in the north. I think that's been recognized; we're working toward that. We have three exercises per year that are designed not to increase military capability in the north per se, but to create that whole-of-government ability to know what's going on and respond to it in the high north and in the western and eastern Arctic.

I agree with you that this is a work in progress, and we need to be anticipating what we'll need downstream and we need to be working on it now. I'm of the view that we're doing pretty well at that, that it is very challenging to be able to forecast exactly what things will look like. I'm not sure I have seen a consensus on what the Canadian Arctic will look like ten years from now. I think there are a number of different possibilities. We have to be prepared to respond to all those possibilities, not pick one and invest in it. So we're being very careful in the way we maximize the opportunity to create capabilities across the board, not just within the Government of Canada but with our Arctic partners, to make sure we're ready to respond to whatever future we may see in ten years.

Does that address your question?

• (0950)

**Hon. Bryon Wilfert:** Yes. It is clearly an unknown, but obviously having different scenarios before you as we move forward over the next ten years is critical. Also in terms of being able to exercise those capabilities, you need the right tools, and given the most screwed-up procurement program of any country I've ever seen.... This is a whole different topic. In terms of wanting something but it doesn't

go through the channels I would consider to be logical, there are too many fingers in the pie. Then we announce things that never get delivered until well into.... By then they may become either obsolete or considered to no longer be needed because of the process we have. I think that having those strategies on paper is important, but then having hand in hand, ordering what we need based on certain factors—presumably we can't be that far out in terms of what we think will happen down the road. Watching what our neighbours are doing and why they're doing certain things is important.

I thank you for your answer.

Thank you, Mr. Chairman.

**The Chair:** Thank you, Mr. Wilfert.

The floor is to Mr. Braid.

**Mr. Peter Braid (Kitchener—Waterloo, CPC):** Thank you, Mr. Chair.

Thank you to both of our witnesses for being here this morning.

I wonder if I could start with a general question to help set the context. Could you describe the class of submarines the Canadian navy has in the Arctic, the approximate number we have, and the capabilities of those submarines?

**Vadm Bruce Donaldson:** We don't have any submarines in the Arctic at the moment on a permanent basis. We send submarines to the Arctic periodically. Our submarines are not under-ice capable. The class of submarine is the Victoria class, which is a very capable patrol submarine.

I'm not sure that really answers your question as you intended it, but we don't really talk very much about where our submarines are and what they're doing.

**Mr. Peter Braid:** Understood.

Regarding the new Arctic offshore patrol ships, what's the status of that initiative and what capabilities will those ships have?

**Vadm Bruce Donaldson:** I'm not the right person to update you on that, sir. We can take that on notice or I could ask the head of the navy to come and talk about those vessels and their capabilities.

They are vessels, generally speaking, that are designed to operate in all of our ocean spaces to deliver value throughout, but they are really focused on giving us the capability to operate in the Arctic during the navigable season. Beyond that, I'm certainly happy to take that on notice and get some more information from the right spokespeople.

**Mr. Peter Braid:** Thank you.

How does the Canadian navy contribute to help promote and protect Canadian sovereignty in the Arctic?

**Vadm Bruce Donaldson:** The Canadian navy, operating as part of the Canadian Forces, establishes a presence in the Arctic, so there's a physical manifestation of that. The Canadian navy and the Canadian Forces have the ability to work with the whole of government to deliver a range of capability that is not necessarily naval capability, but it is bringing together the Canadian Coast Guard, Environment Canada, NRCan, INAC, and a bunch of other partners in the north to make the best use of the capability that exists in Canada and to be able to focus it. Rather than the Canadian navy, it's far more my organization in Canada Command that helps the whole of government deliver that, where Canadian Forces capabilities are involved.

I would say that the Canadian armed forces and the Canadian navy, as part of that, have a very good ability to manage relations with our Arctic neighbours in order to understand what they're doing, what they're working on, and to work together on creating capacity in the Canadian north and in the Arctic, as a region, so that we can exchange information, we can exchange awareness, and we can be prepared to deal with current and future threats as they emerge. I think all of that promotes Canadian sovereignty and responsibility in the Arctic domain.

I'm not sure I've given you an exhaustive answer, but off the top of my head, that's what I would say.

• (0955)

**Mr. Peter Braid:** That's very helpful, thank you.

Finally, could you provide us with a bit more detail on the water space management regime and Canada's role in that?

**Vadm Bruce Donaldson:** I'll ask Commander Mulholland to fill in the blanks on this, but essentially this is an agreement amongst allied nations to exchange an awareness of the presence of submarines and the routing of submarines so as to avoid mutual interference. Where submarines are operating in the same area it's to arrange for their separation so that there is no mutual interference during operations.

I'm not sure we can get into too many of the details of how we go about that, but in principle that's the idea. It's to make sure you don't bump into someone by accident when you're travelling around the world. When you're operating together you can do so with the confidence that there's no one else, at least no other friendly submarines, that are within the space that you've been given to operate.

Do you want to add anything to that?

**Cdr Dermot Mulholland:** I'd just like to say that there are two safety threats to submarines at sea, under water: one is from collision with another submarine, and the second is from interference from a surface ship conducting certain types of operations involving underwater equipment and so on.

The SUBOPAUTHs around the world act as the referee to keep all these components apart safely. The submarine movement advisory authority does so on an international scope because, of course, submarines often operate outside their own territorial waters, and it acts as a sort of an independent clearing house in that way. The system is very straightforward, actually, and it has worked very well

for at least three or four decades that I know of. Everybody participates voluntarily but willingly.

**Vadm Bruce Donaldson:** I would say, sir, that submarines are inherently vulnerable platforms. Their efficacy is drawn from the fact that they can remain undetected. Once detected, submarines are highly vulnerable. They're incredibly effective, but generally speaking, only if they remain undetected. That is the reason that submarine movements are so highly classified and so highly compartmentalized, so as to protect that ability to maintain the effectiveness of the submarines wherever they are.

[*Translation*]

**The Chair:** I will now go to Mr. Bachand for five minutes.

**Mr. Claude Bachand:** Thank you, Mr. Chairman.

Admiral, I want to continue on the issue of detection. Analysts who have appeared before us have suggested setting up detection stations at both ends of the North-West Passage. I don't remember the second suggestion, but I remember they suggested setting up a listening station in the Lancaster strait. That station would also recognize submarine signatures. Perhaps you could explain to us how that would be done. They probably have a specific sound that can be picked up.

Do you think that strategically placed detection stations in the north could help detect the presence of foreign submarines in our waters?

• (1000)

[*English*]

**Vadm Bruce Donaldson:** We are experimenting with different technologies in the north to determine, when the level of activity goes up, how to keep track of not just potential submarine activity but also surface ship activity remotely. Underwater detection systems work on a number of different possible bases. They can detect and measure the noise emitted by vessels as they go by. Every piece of machinery has a frequency associated with it. The water flow past a hull makes noise. The cavitation of a propeller makes noise. So there are ways of listening to the noise in the water and detecting the presence of vessels.

Submarines tend to be optimized to put out as little noise as possible in the water. Submariners, being particularly sneaky people, spend their entire lives reducing the amount of noise they make in these quiet platforms. It's very challenging with the modern submarine, particularly a Canadian submarine, to detect through acoustic means the passage of a submarine that doesn't want to be detected.

There are other methods that can be used. For example, the pressure changes when a vessel passes. Some sea mines use this principle. They sense the water pressure change and know that a ship has gone by. That's another way, particularly in a narrow passage, that you can measure the presence of a vessel. Most vessels also have magnetic signatures, so when they pass close to a magnetic sensor the magnetic signature of the earth that the sensor detects changes because of the presence of those vessels. Other technologies have been tried for years to enhance the possibility of detecting submarines and monitoring the presence of surface ships.

Would these be effective in the Canadian north? Potentially, and we're experimenting with them. But the Canadian north offers a number of challenges to these types of detection systems. There is a high degree of other noise up there. When ice is present and moving around, it makes a lot of noise. The patterns of marine life are changing as the waters become navigable, and that is going to affect the amount of noise in the water as well.

When you're looking at a very silent platform it's sometimes very difficult to separate the wheat from the chaff, with the background noise and those discrete, quiet noises you're looking for from a vessel. So we continue to experiment up in the north. Even if we found the perfect solution, it might not be the perfect solution two or three years from now.

[Translation]

**Mr. Claude Bachand:** All right, thank you.

Give me a yes or no answer. Since they were acquired, have the Canadian submarines been equipped with an air-independent propulsion system?

[English]

**Vadm Bruce Donaldson:** Our submarine does not have an air-independent propulsion system. The Chief of the Maritime Staff would be a better spokesperson on this. We have investigated the feasibility of that, but we have a lot of other work going on to make these effective platforms.

[Translation]

**The Chair:** Thank you, Mr. Bachand.

I will now go to Mr. Boughen.

[English]

**Mr. Ray Boughen (Palliser, CPC):** Thank you, Mr. Chair.

Certainly let me add my voice in welcoming you gentlemen and thanking you for taking time out of your day to spend with us.

I have a couple of questions.

First of all, in the great scheme of things, how important is it that we're aware of submarines? You spoke earlier about the fact that our territorial waters around our coastline are fine. There's no infringement upon that. So if the submarines are out there floating around in international waters, is it a big concern of ours? I mean, what is it they do that would be of particular interest to us? They're not like a supply ship or a rigged ship or something. They're floating around under water or under ice. Do we care much, and why do we?

•(1005)

**Vadm Bruce Donaldson:** Sir, I would say that clearly we care, or I wouldn't be here today. There is a degree of angst, perhaps, associated with submarine movements that is out of proportion to what I would consider the threat they pose to us at the moment. At the end of the day, their effectiveness lies in their ability to remain undetected, and we have for years countered that effectiveness by seeking to detect submarines. Particularly during the Cold War, it was very important to us to know where potentially threatening submarines were and what they were doing. As we moved out of that, we became less concerned with the movement of submarines, except, obviously, our own.

I would say that as we look at changing patterns of activity, it's not a bad idea to be aware of what submarines are doing. We focus on that as an allied community. From my perspective as commander of Canada Command, knowing exactly what submarines are doing up in the Arctic is related far more to our potential responsibility for rescuing them if they get into trouble than to what it is they're doing there and why.

Does that answer your question?

**Mr. Ray Boughen:** Yes, I guess so. We don't have any quarrel with folks who have submarines. And we're not concerned about an escalation of the Cold War into a hot war, because the people we are concerned about don't have submarines floating around. I don't quite understand why we focus on them. By our own definition, they're not charting the ocean floor. I don't know that they're doing anything constructive at all other than floating around under the ice or under the water. Because we're not at war, they're not looking to shoot ships of ours out of the ocean.

Anyway, my other question, gentlemen, is whether, in your estimation, we as a nation are equipped to be in the Arctic. Are we equipped militarily, personnel-wise, and equipment-wise? What are your thoughts on that?

**Vadm Bruce Donaldson:** To finish off the first question, sir, as I've said, I'm not particularly fussed. I think submarines that are operating adjacent to Canadian areas of responsibility obey international law. I'm quite comfortable that there's not a requirement to be ready to respond to some sort of activity they may undertake that would be contrary to Canadian interests. There is not a conventional military threat up in the Arctic, but we do need to be aware of what's going on in our domain and we do need to be prepared to respond if something happens that we don't fully understand, where information has not fully been shared with us. So we retain the ability to react, if necessary, to unexpected activity in the north, whatever dimension it occurs in.

In terms of our ability to operate in the north, I'm comfortable that for the challenges we are addressing now, we have the ability to operate in the north. We are looking 10 years down the road and asking whether we will be positioned 10 years down the road to operate in a potentially transformed north, and we continue to work on different capabilities to allow us to do that. We have identified Arctic reserve companies to specialize in operating in the environment of the north, and we exercise them on a regular basis to increase their capacity to deal with the types of things that we would turn them to in the north.

We are looking at the footprint that we occupy in the north and what we may need in the future in order to stage. We look at our ability to rescue folks in the north or to respond to a disaster if it takes place in the north, and we continue to refine our capability.

We look at our ability to support incredibly important social development through things like Junior Ranger programs and cadet programs, because they do a lot in northern communities.

We are expanding the Canadian Rangers in the north so as to give a better footprint across the north and also to enhance capabilities in individual communities. The Rangers do a whole bunch of work, not in a military sense but in terms of, first of all, being eyes and ears and, secondly, being able to turn in an organized way to help communities in times of need. The Rangers supported the H1N1 vaccination program in the north by helping to organize their communities to deliver that. They had the skill set to do that, so they turned to and helped out.

Yes, I think we're well positioned to operate in the north, but it is a question of balancing the resources that we have against the need. I think we will have to rebalance on an ongoing basis toward a heightened need in the north. For today, I think we're fine.

• (1010)

**The Chair:** Thank you very much. We're out of time now.

To our last member, I will give the floor to Ms. Gallant for five minutes.

**Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC):** Thank you, Mr. Chairman, and through you to the witnesses.

My question has more to do with icebreakers. For the purposes of what the Canadian military does right now, do you feel there's a need to have icebreakers on hand? If so, could you describe what their role would be and, since we don't have them, how urgently are they needed, if at all? With the reports that the ice cap and the Canadian Northwest Passage are opening, has there been discussion about the eventual need for icebreakers becoming obsolete? I ask that question because I understand, for example, that Finland procured four new icebreakers, but by the time they received them, there wasn't a need for four of them anymore and they currently lease them out.

**Vadm Bruce Donaldson:** Thank you for your question.

Is there a need for icebreakers in the military? As you know, we have icebreakers in Canada. The Canadian Coast Guard is world class in terms of their expertise in keeping shipping lanes open when they need to be open in challenging conditions. In fact, quite often, even the U.S. Coast Guard is uncomfortable to move in the north without Canadian icebreakers present, or at least that's my understanding.

In terms of whether we need them and how long we need them, I would be offering an opinion. I think the Canadian Coast Guard may have a much better opinion along those lines.

Do we need icebreakers in the Canadian Forces? No, I don't think we do. We need ice-capable ships. There's a difference. An icebreaker is optimized to actually create a path for shipping through conditions that would not otherwise permit ships to pass. Ice-capable ships can break through a certain amount of ice, and while different capabilities give you the ability to operate in different areas, this gives you an ability to operate where the water is frozen over again, but not to the extent where you actually have to go and smash a channel through it.

Do we need ice-capable ships in the Canadian Forces? Yes, I think we do. By the time we get them, will there be any ice in which we need to be capable? Yes, I think there will. Winter is going to come

every year, and every time winter comes in the north, the water freezes. The ocean freezes.

Currently the ships we have in the Canadian navy are relatively thin-skinned because they're designed to be fast, they're designed to be light, and they're designed to operate in different types of environments. They can go up north under certain conditions, but we have to be very careful of where they go in the north.

In order to establish a naval presence in the north, I would say that ice-capable ships are a useful instrument. But do I foresee a high-speed chase through five feet of ice up in the north? No, I do not. I think this is about presence. This is about being able to go places in our north where we're expected to be. It's about seeing this as whole-of-government and making sure that the large investments we're making in capability in the north make sense for Canada and Canadians. And for the part of it that is reasonably Canadian Forces capability, we're working towards it at the moment.

• (1015)

**Mrs. Cheryl Gallant:** Recognizing that we do not have our own submarines in the Arctic and that there is the transversing done by other countries, including NATO countries, some of which is done by nuclear-powered submarines, in your opinion, for perhaps the patrolling of the Arctic waters for friendly purposes by our allies, do you see a requirement to have any deepwater ports along that coast capable of handling an emergency with radioactivity?

**Vadm Bruce Donaldson:** First of all, going back to your premises, you said that we don't have submarines operating in the Arctic, but we do.

**Mrs. Cheryl Gallant:** Canadian submarines.

**Vadm Bruce Donaldson:** We don't have Canadian submarines permanently with a presence in the Arctic at the moment, but we operate our submarines in the Arctic. Our submarines are not capable under ice, but that doesn't mean they're not Arctic-capable submarines.

You say that we have other submarines transiting the north. The impression I get is that you mean they are transiting through our Canadian territorial waters. I would say that we do not have submarines doing that—at least not without our permission and careful control.

So the premise of the question leads me to believe or suggests that we're going to have a lot of nuclear submarines hanging out in the Arctic. I don't think we will. As a result, I don't see a need for a deepwater port that can deal with nuclear accidents. I think it would be a huge investment for nothing.

We do have the ability to respond to nuclear accidents if they occur on either coast. You know that we have a regime in place to allow, in certain areas, visits of nuclear-powered vessels, and we have the ability to deal with the potential consequences of that. I would say that if there is, through some remote set of circumstances, an accident in the north to which we have to respond, then we would look, between ourselves and our allies, at the capability we can deploy to respond to it.

I don't think having a permanent capability in the north would be a good investment, and it would imply that we have a level of activity up there that I don't think we will have

Does that answer your question?

**Mrs. Cheryl Gallant:** Yes. Thank you.

**The Chair:** Thank you very much.

I also want to thank our two witnesses, Vice-Admiral Bruce Donaldson and Commander Mulholland. Thank you for being with us today.

We will adjourn for five minutes and come back in an in camera meeting. Thank you.

*[Proceedings continue in camera]*

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