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## 38th PARLIAMENT, 1st SESSION

### Standing Committee on National Defence and Veterans Affairs

#### EVIDENCE

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**Tuesday, February 15, 2005**

**The Chair:** I'd like to reconvene the 20th meeting of SCONDVA, the Standing Committee on National Defence and Veterans Affairs.

I'd like to welcome our second witness, Dr. Peter Langille, who has taught at a number of facilities. He is now at one of the country's great universities, the University of Western Ontario, in London, Ontario. Notwithstanding that I managed somehow to become a graduate of that place, it is truly a great university. I invite you all to visit it. It was recently voted Canada's most beautiful campus.

I want to welcome you, Professor Langille, and invite you to make some opening comments. If you could stay within the 10-minute timeframe, it would allow time for questions.



**Mr. Howard Peter Langille (As Individual):** Honourable Chair and members, good morning, and thank you kindly for this opportunity.

The acquisition of four Upholder submarines has clearly raised numerous difficult, often contentious questions. When the issue arose in 1996, I had no plan or even a desire to participate in the related discussion. With others, I'd recently completed a challenging section of a joint DND and DFAIT study, *Towards a Rapid Reaction Capability for the United Nations*, which at the time was a high priority of our government. Submarines and anti-submarine warfare were not on my research agenda. However, the experience of that short-lived debate on the Upholders definitely warrants a few additional questions.

First, why was there so little in-depth scrutiny and so little constructive criticism of this submarine acquisition program when it initially became an issue? Why were those who work on defence and security issues in academe either silent or part of the larger effort to secure this deal?

Second, why was there so little consideration accorded to the opportunity costs associated with these Upholders, as well as a few similar decisions? Combined, these do appear to have far greater costs than many recognize.

Third, why was the acquisition program still a high priority within DND when there were so many other competing demands for finite resources? Most were aware that the Canadian Forces were already encountering problems in meeting their day-to-day operational requirements in other demanding roles, which were placing an undue stress on available personnel and resources.

Today, I'm not going to suggest that I have definitive answers to each, but I believe these questions and even my preliminary observations speak to a few larger issues of defence decision-making, as well as the current state of our defence effort and our capacity to contribute to the security issues that matter.

To convince me to participate in a CBC debate on the acquisition of four Upholder submarines that was already planned, I recall that Jason Moscovitz, from *The House*, called and indicated he really needed me because I was among the few who knew something of the issues, and unlike others, I might address several critical issues related to the proposed program. At the time, he indicated that cabinet was split on the issue and that the PM would soon have to make a final decision.

Of greater concern, he also went on to note, "It appears everyone else is working for the sub lobby". I wasn't CBC's first preference; they were simply having a difficult time finding anyone who'd even speak to the potential problems, costs, or implications of acquiring the Upholders.

So when I heard that there were few, if any, inclined to even raise questions about the program, I sensed a wider systemic problem, one that I'd encountered previously.

Professor Erika Simpson, who is also at the University of Western Ontario, and I agreed to volunteer in attending several media debates, and we co-authored two short newspaper articles. As expected, that didn't make us popular. Challenging a billion-dollar-plus priority program in DND entails a few risks. I recall that we were almost alone.

So why was there so little in-depth scrutiny and so little constructive criticism? In my opinion, that question is directly related to a wider problem with contemporary Canadian defence analysis.

One DND program, the Security and Defence Forum, formerly known as our military and strategic studies program, has been deliberately structured to establish a supportive academic constituency. I have no problem with that, but through privileged funding and an array of incentives, our defence officials now control a fairly dependent academic community. Of course, this isn't a monolithic community devoid of diversity or one uniformly in step with ADM of Policy and Communications Ken Calder's priorities on every issue. There are exceptions; there are a number of very good SDF centres with highly respected, good scholars. I'd cite UBC as a superb, well-balanced example.

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So it's apparent that not all ascribe to the notion that they're paid to conduct a public relations mission or to reflect and reinforce DND's preferences.

Another exception where there appears to be far better independent analysis is within the Canadian Forces' own officer training command schools and at RMC. Here as well, with Wolf Koemer and Michel Rossignol, I think you have far better independent analysis.

However, in an era of increasingly scarce university funding, the desire to acquire privileged access funding for travel, conferences, scholarships, paid interns, special projects, and additional contracts is really tough to resist. Yet few in the field of security and defence, or any in the SDF, can now claim to be truly independent or objective. The majority, in

centres like Queen's, Dalhousie, and Calgary, are inclined to rationalize and support departmental priorities. Accordingly, many are reluctant to question or challenge a priority program of DND, such as the acquisition of the Upholders. Quite a number really want to be respected as part of our wider defence network.

Naturally, many within the SDF also try to please their funders--it's understandable--often by aligning their analysis with departmental preferences. To cite one example, a former professor of mine explained that, "With no other funds, of course we have to prostitute ourselves". Another administrator of an SDF program commented, "You don't expect us to bite the hand that feeds us, do you?"

In short, this makes some the equivalent of embedded academics. Like media partners who receive the special privileges, there is a wider tendency to highlight the preferred line. Yet departmental preferences, or even service preferences, do not necessarily lead to appropriate or cost-effective government decisions.

Moreover, as the SDF spans coast to coast, they do have considerable influence over not only academic programs but political and media discussions of related issues. I'm not alone in thinking that their efforts and attempts to influence have not all been that productive in developing a sound, modern, effective defence effort, or a wider, well-informed constituency for defence. Ambassador Michael Kergin recently observed that while senior American officials had hoped to see a wider constituency for defence, many of the related efforts had proven to be counterproductive. Why? I'll try to explain that later.

Further, there is a risk in providing considerable perks, influence, and insufficient independent oversight to a DND academic forum. Personally, I think that's one among several of the contributing reasons why we're here today. Regrettably, I believe the government was swayed to make a few dubious decisions, not only on the acquisition of the Upholders, but also in buying over 100 Leopard tanks. In both cases it was quite clear that these were already dated platforms and, if not largely irrelevant, were likely to be replaced by newer, more cost-effective systems.

As to opportunity costs, overall, when the immediate costs--which appeared to have been deliberately fudged to give the impression of a great deal in a period of fiscal restraint--are combined with upgrades, new electronics and weapon systems, crews, and maintenance, the Upholder acquisition program may represent a total expenditure of somewhere in the area of \$1.5 billion to \$2.4 billion.

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However, it's unlikely that Canadians will ever know the total cost because what was spent on the Upholders had to be denied to the other sectors of the defence effort. Clearly, this decision represents a significant political and institutional problem with far wider implications. To my mind it's partially responsible for stemming the modernization of our defence effort as well as being partially responsible for shifting the wider understanding of our actual, rather than imagined, defence and security requirements.

If it was a unique decision, it might be easier to dismiss it as a one-time error. However, the problem has been compounded because it wasn't unique. It was combined with another dubious decision at roughly the same time. Both distorted our defence effort and both stymied much needed reform in other sectors. Both the Upholders and the Leopard tanks pulled funding away from other priorities, including our day-to-day operational needs, particularly in peace operations and more specifically in UN peace operations.

Now, you all know DND's and DFA's preference is now clearly for NATO, an all-white, all-northern, mostly affluent, and almost exclusively Christian military alliance, with the exception of Turkey. Both the Upholders and Leopards complemented former NATO priority roles, yet contrary to what some of our officials claim, NATO may not be viewed universally as a legitimate, credible alternative for policing the rougher effects of globalization in the south. Last week even Condoleezza Rice downplayed the aspirations for NATO assuming a global role.

I think most of you also heard UN Secretary-General Kofi Annan's plea last year that Canada aim higher. Everyone here is likely aware of Canada's contribution to UN peace operations. From being a former leader in that respect, we've withdrawn to a rank in the mid-thirties, with about 200 troops deployed as blue helmets. Instead of our earning diplomatic and political capital as well as being a widely respected voice on related issues, we are now viewed by some in the south as well as some even within the UN Secretariat as similar to our neighbours, always telling them what to do but seldom

willing to provide any tangible contribution in order to help. That's been the case since 1997, shortly after the Upholder decision.

To conclude, I'll say I believe Canada and our defence effort can do far more to help avoid a more divided, dangerous, and heavily armed world. Here the best route forward may be a return to the universalist project of the past century. This isn't new or revolutionary. It's derived from the horrible experience of two world wars and the high-risk experience of the Cold War, as well as the tough experiences and lessons learned in our attempting to maintain contemporary peace and security. In my opinion, we simply have to revitalize multilateral defence cooperation through a more effective United Nations to be able to fulfill assigned tasks in preventing armed conflict and in rapid deployment for diverse, robust peace operations, including those tasked to protect civilians.

An additional 5,000 troops is a very good idea and should help. Similarly, the acquisition of either strategic air- or strategic sea-lift appears essential if we hope to be of assistance in diverse emergencies at home or abroad. The SHIRBRIG should also be a higher defence priority. It's at the bottom of the barrel now, and it's almost embarrassing that we're only committing at this point somewhere in the area of nineteen troops to help in Sudan.

A healthy defence effort, like a healthy democracy, requires wide debate with constructive criticism, tolerance for diverse perspectives, and consideration of the options and the potential costs and benefits, as well as occasional dissent in opposition. You expect that. Other Canadians expect that. We haven't really had it.

   (1020)

There are a few indications that we may soon turn the corner and get back on track; however, we're going to need further support for more independent and balanced analysis to help guide a more compelling and more relevant defence effort.

Thank you.

 

**The Chair:** Thank you, Dr. Langille.

That's very constructive criticism. Some of it was a sort of segue into our defence review, which we're all dying to get going on. But we aren't there yet; we're still on the subs. I want to ask colleagues to remind yourselves of that. Let's keep our questions focused on the issue of the procurement of these four submarines.

With that in mind, we'll start our first round of seven minutes. We'll start with Mr. Casson, please.

 

**Mr. Rick Casson (Lethbridge, CPC):** Thank you, Dr. Langille, for those comments. They're very thought-provoking and are maybe some new revelations that have come to us that certainly weren't brought forward before.

As the chairman indicated, we are dealing with procurement of the submarines. We will try to focus our questions on that, but maybe the chairman will allow some leeway as we branch off to other places.

It's an interesting comment to say that by offering money to academics and to universities and think tanks DND can sway the comment that comes back from academia. Can you give us an idea of how many dollars we're talking about—maybe you're not aware of these things—how this functions, and where the money comes from? Does it all transfer to other DND budgets? Does it come from other arms of government?

How do you see this working so that the end result that comes back is what they want to hear?



**Mr. Howard Peter Langille:** It comes from the office of the assistant deputy minister for policy and communications. He has a director of public policy who manages the Security and Defence Forum.

How does it come back such that they get the results they want? They have, I believe, a rather limited pot of \$2 million to disperse, with most SDF centres receiving about \$100,000—plus interns, plus conferences, plus travel, and special contracts that DND provides over and above that pot of money. There are also contracts available through the defence industries for consulting work.

Initially, I support the effort from government to ensure that we have a well-informed defence community of scholars who really know the issues and are reliable and ready to provide policy-relevant feedback to decision-makers, as well as to committees such as your own. That seems eminently reasonable.

One of the problems, however, is that within the ADM policy and communications sector there's a strong desire and interest to hear their preferences reflected publicly in the media—politically. To an extent, that's a bit of a conflict of interest.

   (1025)



**Mr. Rick Casson:** Yes, it is.



**Mr. Howard Peter Langille:** I'm not sure how many of you are aware of how scarce funding is for universities and academics. But \$100,000 provides quite a lot, at least the core of a program and a research centre, as well as office space and perhaps one, if not two salaries, within a wider group of perhaps eight to ten participating scholars, who are in Ottawa every year for a conference and who are also provided travel opportunities abroad to NATO and other missions. It's a privilege similar to that accorded to this committee. It's a means of acquiring access and providing participation within the wider network.

The SDF effectively provides our defence department with considerable control and leverage over the agenda of international relations that is taught in most of our prominent universities. It also serves to provide a measure of academic credibility to what some might consider to be an organized lobby. At this point, their more prominent members appear to have a near monopoly over most discussions of defence issues.

I don't agree with the attempt to acquire considerable control over the academic community. I think it reflects a relatively insecure, almost juvenile approach on the part of a few defence officials. I also think it has been counterproductive. It hasn't really convinced Canadians because so many of those who participate in it are what I view as dogmatic realists, people who are quite dismissive of internationalism; human and global security; the UN, particularly UN peace operations; and arms control and disarmament. That's not particularly appealing to the broader Canadian public because it contrasts with our core values, principles, and traditions. As a result, I don't think their message has been well received. Kergin is right.



**The Chair:** There's a minute left. You have time for another question.



**Mr. Rick Casson:** When it comes down to choosing one program over another, those are choices that everybody makes. Whether it's DND or whoever, you do have those choices to make. You indicated you felt that the choice to go with this Upholder program had detrimental effects on other procurement options in the military. Do you see that as being an extraordinary circumstance or just the normal ebb and flow of making a choice at some point in time?



**Mr. Howard Peter Langille:** I actually believe it was quite extraordinary. Do you want me to elaborate?



**Mr. Rick Casson:** If there's time.



**The Chair:** Yes, but be brief if you can.



**Mr. Howard Peter Langille:** Few can claim to have all the answers as to why DND acquired the subs or the 120 Leopard tanks, which was an equally unique decision. Arguably, neither platform has any substantive role in Canadian Forces contemporary operations. I'd also like to hear a compelling explanation for buying those additional tanks, which the Canadian Forces can't airlift. They are seldom needed in our operations abroad. They entail major costs and require enormous logistics for fuel, maintenance, and recovery.

  (1030)



**The Chair:** Perhaps you could keep to the subs.



**Mr. Howard Peter Langille:** The Upholders represent a naval tradition from a former era as well as a drain on other naval programs, and the Leopards represent an army tradition from a former era as well as an enormous drain on other land force programs. So why did DND want both programs? They corresponded to former operational priorities in anti-submarine warfare and heavy mechanized tracked armour, roles that were essential in the Cold War. These were longstanding roles. Canadian Forces had acquired considerable expertise and experience over the past 50 years. They also complemented other traditions and the lingering desire to retain those big league army and navy roles. As was expected, there was some modest support from sectors within the Pentagon. I don't discount that. At the time there was also a sense of urgency within DND and the Canadian Forces. Both faced a domestic constituency that was supportive of UN peace operations, which was at odds with internal priorities.

Did the Upholders and the Leopards represent an internal effort to control the defence agenda? I think so. Was there a better way to avoid being drawn into uncomfortable new roles than by locking the Canadian government into what I view as a weapons-driven defence policy? I doubt it.



**The Chair:** Thank you.

Now, I can sense Mr. Bachand's anticipation for his questions --



**Mr. Claude Bachand:** I talk submarines.



**The Chair:** There you go, yes. Talks submarines. That's just what your chairman was going to remind everyone.

It's seven minutes, Dr. Langille, for the question and answer, and as my colleague said, I want to remind us all, to get the most out of the witness' time here, let's try to talk submarines.

[*Translation*]



**Mr. Claude Bachand:** I am not going to get into a long debate on the UN to say that I share your view that it should be a much more important body. However, many people also call for a reform of the UN. I close right away this parenthesis.

Back to the submarines! I think that you will not be surprised, Dr. Langille, if I tell you that all the great academics, all the high-ranking officers of the Canadian navy as well as all the senior officials of the Department of National Defence who appeared before us sang the same song on the same note: the *Upholder* submarine program is an excellent and very important program.

I hope that you have sympathy for the backbenchers who are here trying to see the light to ensure that taxpayers have their money's worth. We somewhat hit a wall because we are faced with the fact that there is a kind of secrecy culture inside the Canadian armed forces. We have unfortunately to recognize this even in the work of our committee. We, as honourable members, don't receive much respect and we are considered as a necessary evil.

Do you have sympathy for us, Dr. Langille, and are you surprised that great academics as well as senior National Defence officials all sing the same song, to the expense of some people who, like me, would like to have a little more critical mind?

   (1035)

[*English*]



**The Chair:** Dr. Langille, do you have any response?



**Mr. Gilles-A. Perron (Rivière-des-Mille-Îles, BQ):** You're leading the witness.

**Some hon. members:** Oh, oh!



**Hon. Bill Blaikie:** In an appropriate direction.



**The Chair:** There we go. I thought you'd agree, Bill.

Dr. Langille.



**Mr. Howard Peter Langille:** I have tremendous empathy, not only for this committee but for any that takes the risk of challenging a DND priority issue.

As with the earlier request from the CBC, they weren't asking for a sub expert, which I don't claim to be; they were just asking for someone who would provide some critical assessment that ran contrary to the coordinated, monolithic line coming out of our officials, as well as our academic community.

At that time, I wasn't surprised. I'm hardly surprised to hear that you've heard a fairly similar line from our officials as well as our academics. I think that reinforces the general thrust of the argument I've tried to make, that we don't have sufficient balance and diversity and a wider range of opinions that are informed on defence issues. I think that's tragically irresponsible.

I think it's regrettable that there are others outside, within Canadian society, and even within academe who are relatively well informed on these issues but are excluded and marginalized. They don't receive any funding because they've been constructively critical in the past. That's been sufficient to ensure that they wouldn't be participants inside a wider government forum.

I don't think our tax dollars, public money, should be spent to represent one perspective. That's not the way this committee functions. It's not the way Parliament functions.

[Translation]



**Mr. Claude Bachand:** Now I would like to have your perspective on the submarines inquiry. As you know, there are two inquiries. In my view, the inquiry by the parliamentary committee will likely go much further than the inquiry by the navy. As representatives of the Bloc, we have expressed our disagreement since the beginning with the fact that in fact a technical inquiry on the *HMCS Chicoutimi* is made by the navy. We expressed our dissatisfaction because we have great difficulty in admitting that the people who promoted this purchase, this acquisition, without a procurement procedure—it was plain and simple that we wanted those submarines—, those very people who convinced the Department of National Defence to buy these submarines, who looked after their refit as well as the training of the submariners, are now those who have to assess what happened exactly.

I don't want to bring grist to your mill nor to bring you to give the answer I expect. Don't you find it strange however, that the very people who may have made mistakes are called today to denounce their own mistakes, which is generally against human nature?

  (1040)

[English]



**Mr. Howard Peter Langille:** It's just a perspective, but I think it's absolutely bizarre. Have we seen it before? Yes. The initial military inquiry into what happened in Somalia was composed of four generals, as well as an academic who was



very close to and paid by the defence department. Their findings were widely deemed to be dubious, so the government launched a subsequent inquiry because it wasn't satisfied that they were balanced or independent.



**The Chair:** I guess that answers the question. The time has run out.

Now we'll go to Mr. Blaikie, please, for seven minutes.



**Hon. Bill Blaikie:** Thank you, Mr. Chairman.

A lot of things have been raised--more than we can deal with in seven minutes. First of all, I'll ask some questions that may require just short answers.

You mentioned that the Upholder and the Leopard tanks were being bought just as they were about to be replaced by newer technologies. I think that was the phrase you used. What did you mean by that, in terms of the submarines? You said they were being purchased just when they were about to be obsolete. You didn't say "obsolete", but I think you used "replaced".



**Mr. Howard Peter Langille:** I meant, given their primary and secondary roles, there was a wide array of platforms that were likely to be far more cost-effective already on line.



**Hon. Bill Blaikie:** In terms of submarines...?



**Mr. Howard Peter Langille:** I wouldn't consider subs essential. I think submarines were essential when we were facing a submarine threat and when anti-submarine warfare was a high priority.

I was on the defence committee almost a decade ago when the Minister of National Defence, Kim Campbell, provided the rationale for acquiring those subs. As I recall, she said they were necessary to counter the threat posed by new submarine programs in Iran and Peru. That threw me for a bit of a loop. At the time the Liberal foreign affairs critic, Lloyd Axworthy, asked if she would repeat the question. The Chief of Defence Staff, Admiral Anderson, who was sitting next me, just about put his head down, because this was simply not a compelling rationale.



**Hon. Bill Blaikie:** Now that we have them, with all the money, time, energy, training, and everything else, not to mention political capital, that's been invested, do you think it's plausible to argue that they should be stood down or gotten rid of? Is it just throwing good money after bad, or is there an argument for keeping this dimension of the navy now that all this has transpired? It's different to make the argument before the decision is made, but 10 years after the decision was made, and all this has happened--



**Mr. Howard Peter Langille:** It's far easier in hindsight, isn't it?



**Hon. Bill Blaikie:** We're not called upon to make that decision. I want to make that.... We're looking at the purchase, but nevertheless it morphs from time to time into a larger debate about the role of submarines.



**Mr. Howard Peter Langille:** It's a very good question. I don't have all the answers.

My sense is that we should really be looking at whether these can be satisfactorily rebuilt so they are operational. At present I understand that none of them is really safe to go below 20 metres. Is that correct?

It's not correct, Keith?

  (1045)



**Hon. Keith Martin:** No, it's not.



**Mr. Howard Peter Langille:** Okay. That's simply what I heard from someone actually in your riding, Esquimalt—Juan de Fuca.

**Some hon. members:** Oh, oh!



**Hon. Bill Blaikie:** We don't always take Keith's word for it, I'm thinking.



**Mr. Howard Peter Langille:** It would require further study to determine whether these can be made cost-effective platforms.



**Hon. Bill Blaikie:** Okay, fair enough.



**Mr. Howard Peter Langille:** I'm not in a good position to answer that question.



**Hon. Bill Blaikie:** Do you see them as potentially having a role in that kind of rapid reaction capability you talked about? I take it you see it as a priority for the forces to have that rapid reaction capability when we're called upon by the international community.



**Mr. Howard Peter Langille:** I don't think the subs provide any rapid reaction capability and I don't think they are necessary to counter any direct military threat to Canada that is really conceivable.

At the time, that was cited as the primary role. The secondary roles were in surveillance. Heavens, they even went into fisheries patrol, because that was fashionable at the time. Even search and rescue was cited, as well as peacekeeping. I'm not aware of any use of submarines in any of those secondary roles.



**Hon. Bill Blaikie:** I want to get as much covered in the seven minutes as I can here.



**Mr. Howard Peter Langille:** I think they were dubious rationales.



**Hon. Bill Blaikie:** You referred, when you were talking about your conversation with Jason Moscovitz—I think it was he you were quoting—to his saying everybody else is part of the sub lobby.



**Mr. Howard Peter Langille:** That may have been a cavalier, off-the-cuff remark—



**Hon. Bill Blaikie:** A journalistic remark, yes.



**Mr. Howard Peter Langille:** —indicating that he couldn't find anyone who was willing to question the point.



**Hon. Bill Blaikie:** Has there been any sort of academic study, or are you aware of any study, of links between retired Canadian naval personnel and the corporations that are actually doing the work? I think BAE said they had set up a Canadian company to do the modernization, to have the company overseas. We had some indication of this at one point; then it moved off the radar screen of the committee.



**Mr. Howard Peter Langille:** I'm not aware of any recent academic study that links those who are at the forefront of the industrial lobbying effort with those who are retired officers. It was very apparent in 1996 that many of those who were involved in promoting the subs were recently retired naval officers.



**The Chair:** A last brief—



**Mr. Howard Peter Langille:** As long as they have a one-year period away from being directly engaged in related matters, that's considered legal.



**The Chair:** You may have a last question, Mr. Blaikie, if you have one.



**Hon. Bill Blaikie:** I have lots.

I don't know whether you want to answer this question, but you referred to the main spokespersons for this academic world over which DND has leverage. I'm not sure whom you mean.



**Mr. Howard Peter Langille:** I'd prefer not to name names—



**Hon. Bill Blaikie:** All right.



**Mr. Howard Peter Langille:** —but I think you see them frequently on TV and in *The National Post* and in various media sources.



**Hon. Bill Blaikie:** All right, I've got you.



**The Chair:** I think we can figure that out.



**Mr. Howard Peter Langille:** They also may have been witnesses before this committee.



**The Chair:** That's right. We can figure that out.

Okay. Thanks, Mr. Blaikie.

Now, Mr. Bagnell, please, for seven minutes.



**Hon. Larry Bagnell:** Thank you.

I think the fact that the CBC, which has a very good research department, couldn't find an expert in the world who had anything negative to say about this purchase and had to go to someone like yourself who, as you said, is not a sub expert says how good it was.

Your testimony on this particular purchase reminds me of the saying that just because you're paranoid doesn't mean someone isn't following you. Just because the analysis wasn't good in this particular case.... I don't disagree with you there, as I think the committee has some problems with procurement, which I want to ask about, but all of the subsequent analysis has shown that it was an excellent and critical modernization of our navy.

As for the troops in Africa, of course, I'm delighted we're supporting African troops to deal with their problems there, as opposed to sending a lot of ours.

The committee has some concerns about procurement in general, because you talked about systems as opposed to details. I think that's an important area where the committee has a lot of concerns. I wonder if you can talk about procurement problems in the armed forces in general—why it takes so long to make major military purchases and what we could do to speed that up.

  (1050)



**The Chair:** It's a general question.... I'm going to allow it, but I still want to keep it focused on the submarines; that's what we're here for. So let's try to focus on that part, with some general comments too.

Dr. Langille.



**Mr. Howard Peter Langille:** You're absolutely free to interpret my remarks however you like. I'm not pleased about our response to Africa.

With respect to procurement problems and things taking so long, in the 1994 defence white paper I recall there was a decision made to buy off the shelf. Frequently, we've decided to go for offsets—and, understandably, for contracts that employed Canadians. That complicates and lengthens the procurement time. I really don't have more to say on that. As I'm not an expert on subs, I'm neither an expert on military procurement.

Thank you.



**The Chair:** Do you have any thoughts on Mr. Bagnell's question about the long time it took to get those subs purchased? Any thoughts on that, or the barter, or anything?



**Mr. Howard Peter Langille:** To be quite honest, these subs were the result of a very longstanding program that dated back to 1986 or 1987, stemming from a DND program initially developed to acquire 12 nuclear-powered submarines, as announced in Perrin Beatty's white paper in 1987. That program never died. And to my mind, when the opportunity came

up, DND saw its chance and the navy saw the prospect of retaining the wider spectrum of a big power's navy, albeit in miniature. I think that should have made some people aware of the probable consequences of making a miscalculation, because the environment has changed so substantially since 1987.



**The Chair:** Thank you.

Larry, over to you.



**Hon. Larry Bagnell:** Just on this sub purchase, do you think there are any hidden agendas as to why we wouldn't have more protection in the north with our navy—and submarines?

**A voice:** Where's your riding?

**Some hon. members:** Oh, oh!

**Hon. Larry Bagnell:** I have a vested interest.



**Mr. Howard Peter Langille:** I don't see any hidden agenda as to why there isn't more protection in the north. I just don't think we've made it a priority, because there are other pressing priorities. I don't think these subs will ever actually serve to address sovereignty requirements in the north.



**Hon. Larry Bagnell:** But the last witness said that if we have a sub, even if it can't go under the ice, if it's around the edges, then the other nations have to tell us that they have subs in the area. There have been a lot of sightings, right up to the present, of other countries' subs, even our allies, in our waters. So is that not a benefit to us, having some sort of submarine, because other nations now legally, by international law, have to tell us when their subs are in our waters?



**Mr. Howard Peter Langille:** I'm not entirely familiar, because I came in only at the last minute of your last testimony.

With all due respect, I can't see these subs as ever going into the Arctic. If there are problems with the hull on deep water submersion, they're not going to be heading up into icier waters.

But what are your options? Do you really see other subs frequently up there? I don't think so, and if they're operating up there, they are likely submerged; therefore, you can't even identify which country they're from. You can get on the hotline and call different national capitals and ask if they have a sub operating in our waters, but whether they tell you or not is entirely up to them.

The second option a sub has is to ping it with sonar, but that's not going to elicit a particularly positive response. The only other option a sub has of this nature is to fire a wire-guided torpedo, which risks far wider escalation and is exceptionally unlikely. So when they're submerged, they're of near useless value in sovereignty protection.



**The Chair:** Thank you.

Now we'll start a second round, with a total time of five minutes for the question and answer.

Mr. MacKenzie, please.



**Mr. Dave MacKenzie:** Dr. Langille, I appreciate your comments. One of the interesting things is that you say this cost could very well be \$2.5 billion, from our \$750 million.



**Mr. Howard Peter Langille:** I was guesstimating.



**Mr. Dave MacKenzie:** I understand that, and I think that's fair enough.

Frequently we're told this was a good buy. I guess I have some doubts in my mind. When we buy something that has been around for 15 years and is still not operational, I think that's a stretch. Would you give us your opinion on that?



**Mr. Howard Peter Langille:** I couldn't agree with you more. Would the Brits have offered a great deal on something that they knew was exceptionally reliable and cost-effective? No, there are no real great deals.

It was my understanding that initially DND came out with a figure of around \$600 million to \$700 million for the acquisition program. You may correct me if I'm wrong, but I think within about eight months they conceded that figure was likely to be more in the range of double. In other words, it would be closer to \$1.5 billion just for the acquisition. Then you do the refits, add Canadian electronic weapons, provide several crews, provide the maintenance, and you extend it over a period of time. You spend a lot of money.



**Mr. Dave MacKenzie:** One other question I have is this. Until that submarine is operational, is it only on paper and an academic who would say it's a good submarine? Do we need to see it in operation before we can say that?



**Mr. Howard Peter Langille:** You don't want to take too much from academics, I'd concede that, but there are operational trials. It has to be tested and proven to be effective. Hopefully someone aside from our naval representatives would be around to conduct those, to oversee them, and to demonstrate to the Canadian government that they weren't entirely wrong. I hope they weren't entirely wrong, but I know they were partially wrong.



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

Just as a contextual comment, we've pretty much heard from everybody--currently serving and retired naval people and most of the academic world who have come to us--that this will prove to have been a good purchase. So you're providing some balance today in that you're talking about it in a general sense as well. We appreciate that.

We'll now go to Mr. Martin for five minutes.



**Hon. Keith Martin:** Thank you very much for being here, Dr. Langille.

Your comments, by extension, put into disrepute a lot of academe, in that not only with defence issues and security issues, but for anybody involved in foreign affairs, social policy, health care...somehow, in those areas, governments will only want to acquire academic specialists who see the world through their eyes. That's difficult to swallow, I might say. But having said that, I'd like to point out that the sub was also recommended unanimously by the defence committee, by all parties, which was extraordinary.

The comment that former Prime Minister Campbell said about Iran having subs...Iran does have subs. You're aware of that?

  (1100)



**Mr. Howard Peter Langille:** Well, fine, but do they pose an imminent threat to us?



**Hon. Keith Martin:** All I'm pointing out is that I wondered, sir, if the criticism was how Iran could have subs. Did you think they did have subs, could have subs, don't have subs...? All I'm pointing out is that Iran is in a very difficult situation now with respect to us and western allies, so a compelling argument can be made that Iran's acquisition of subs could potentially pose a threat.

So I wonder if the root of your criticism is really that you have a different view as to where the foreign policy of our country ought to go, because our defence policy is, of course, an arm of our foreign policy. Is that, Dr. Langille, the root of your criticism?



**The Chair:** Again, let's keep it focused on the subs. Dr. Langille, as per the subs, do you have a philosophical objection to the foreign policy?



**Mr. Howard Peter Langille:** No, actually, I am quite supportive of our foreign policy; at least, the last time I taught it, it seemed to be an eminently reasonable foreign policy, but one that was not being strongly enough complemented by our defence effort. Keith, you can interpret this, again, however you like. I didn't plan to generate any wider disrespect for academics or any engaged in policy-relevant research. I also noted that there were numerous excellent exceptions, even within the SDF program, and some great academics.

With respect to Iran, they may have submarines. They're mostly, to my mind, hunter-killer submarines, like those we're acquiring, so they don't have any offensive capability at this point. If they acquired former Russian boomers with a



capacity to launch medium-range ballistic missiles, I might consider that a direct threat. As it stands, I don't see Iran as a direct military threat to Canada. Sorry.

We may make the stupid decision to go to war against Iran, but I don't think it will be by conventional means, and I don't think the Americans even plan to do it. I'd suggest that someone else will be given the appropriate technology to take out those questionable capabilities by air. Nobody wants a land war in Iran.



**Hon. Keith Martin:** Nobody does. We would absolutely agree with that, and we certainly hope that doesn't happen.

On the line of the subs, I have two quick questions. One, where did you get the numbers for the costs of the subs? Second, how would you reorganize the advisory capacity to DND, to make it more effective?



**Mr. Howard Peter Langille:** I think that's a very good question. I did write a note about that.

Where did I get the numbers as to the cost? I just did a rough calculation, to be quite honest. I went through what I assumed the cost would be for new weaponry, refitting, new electronics, and several crews. Actually, in this case we're probably talking about four crews, if not more, and then the recurring cost of maintenance, basing, and fuel. It appeared to me that we'd grossly underestimated the initial figure. If DND, eight months after they announce a figure and give it to cabinet, comes back and suggests they missed by 100%, that strikes me as not having done their own homework, or as having some pretty poor people responsible for this task.

I'm not actually--

   (1105)



**Hon. Keith Martin:** Where did you get that figure, \$1.4 billion? We never had a 100% increase. No one has said that. You're the first person to say that, sir.



**Mr. Howard Peter Langille:** Thank you, and I apologize if I'm mistaken. Could you tell me what the actual cost is--



**The Chair:** We'll get to the bottom of that.



**Mr. Howard Peter Langille:** --as well as the wider opportunity cost that needs to be foregone?



**The Chair:** If I might, I don't want to entertain a debate on it. The committee will be pursuing these points but not at this time.

We will go through the chair, please.

Mr. Martin has asked a couple of questions. You've answered the first one, Dr. Langille. Can you briefly answer the second one?

The second one was, how could you get a better advisory group together for DND?



**Mr. Howard Peter Langille:** To my mind, right off the top you need to open it up and encourage wider participation, diverse perspectives, and a broader range of people who are willing to provide constructive criticism. I'm not here because I'm anti-defence. I actually am quite supportive of even the priorities announced in the 1994 white paper on defence. I entirely agree with the need for additional troops as well as lift--whether it's air or sea, I'm not sure--as well as the need for the Canadian Forces to be more flexible and mobile and have a credible rapid deployment capability.



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

We'll go on now.



**Mr. Howard Peter Langille:** Could I also say that there may be a need to move this SDF program away from the ADM of Policy and Communications. I think I indicated they simply have too strong an interest in advancing their own preferences and priorities. I'm not the perfect one to suggest where it should be managed, but conceivably the Privy Council Office could do a better job of it. It has often hosted an array of forums on defence and national security issues -- and to my mind it has provided a more balanced and independent program.

Another option would be to have the Minister of National Defence review the oversight committee, which I hope would mean that some younger scholars, who are at least modestly aware of contemporary challenges, threats, and requirements, could be brought in. I think we've relied somewhat too much on the old guard, who've been around for a very long time.



**The Chair:** Thank you.

You're certainly not the first person I've heard at this committee question the nature of the advice given to the government vis-à-vis defence matters. You are the first one who has challenged it to any extent on this particular study.

Those of us who served on this committee before have certainly heard this and about the need, for one thing, to have parliamentarians who don't come and go on this committee--unless the people don't re-elect them. We need to have people stay on the same committee and actually as parliamentarians and humble backbenchers, as my friend said, develop some expertise and the wherewithal to ask the right questions. We'll be looking at all this as part of our defence review.

Now it's my colleague's turn.

[Translation]



**Mr. Gilles-A. Perron:** Thank you, Mr. Chairman.

Good morning, Dr. Langille. I would like you to confirm me whether I read or heard you properly when you said that the Department of National Defence gives subsidies, contracts and all kinds of perks to universities, academics or professionals to do research whose conclusions will suit them. Did I understand properly? True or false?

[English]



**Mr. Howard Peter Langille:** I think you did understand me. The only area where I might have a different interpretation is that I don't think our defence officials are so brash as to say, we expect you to do this. I don't think they make it a direct demand. It's just that the relationship is structured in such a way that the funding, the subsidies, the perks, may depend on them doing what DND prefers. In other words, it's a fairly sophisticated structural relationship where you don't have to tell people what you expect, although I do know there have been occasions when DND officials have indicated that they don't like what they're hearing from some people within the SDF, the academic community.

  (1110)

[Translation]



**Mr. Gilles-A. Perron:** Mr. Chairman, I'm not addressing Dr. Langille but you. In this case, this confirms the theory of my friend Claude Bachand that those who are presently conducting the inquiry will come to the conclusions they are willing to come to. In my view, their conclusion will be very easy: human error. It will not be the equipment, but a human error.

Dr. Langille, I know full well that you, as doctors, academics and scholars, have good and serious contacts outside Canada, in other words with French, U.S., or German academics, etc.

Have you ever discussed the purchase of the *Upholders* by the Department of National Defence with contacts outside Canada? If yes, what were the proposals or the remarks of your learned foreign colleagues?

[English]



**Mr. Howard Peter Langille:** I can honestly say that I haven't discussed the acquisition of the submarines with foreign colleagues. I have discussed the problems of Canadian defence analysis with foreign colleagues.



**The Chair:** But not the subs, you say. Okay.

I don't think he has anything to offer on the subs per se on that point.

[Translation]



**Mr. Gilles-A. Perron:** Mr. Chairman, I raised this because last week, when I was out of the country, I heard simple remarks, for example on the fact of paying people to get a favourable study. I have been told that Americans, Canadians and British are doing it. We are told to do it, if everybody does it. I thus confirm that this is commonplace in the National

Defence departments of all countries. This concludes it, as I have no other comments to make and no further questions to ask. I will come back to this issue.



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

[English]

We have this room until noon. If colleagues continue to have questions and Dr. Langille has the time, we can continue.

Mr. Bagnell is next for five minutes.



**Hon. Larry Bagnell:** Thank you.

You asked why the British would give up such a good deal--low price, great subs. A previous witness explained to us that because the British had decided to go to a nuclear submarine fleet, they could not afford to have two submarine fleets. The people in the British navy and the public were a bit upset that they would give up such state-of-the-art boats for so little money.

You talked about the cost of \$1.5 billion. We made a deal with the British that they had to fix them up so they were in perfect running order before we would purchase them, so they had to pay for all that. Does your cost of \$1.5 billion include any of the money the British had to pay to fix them up and put them in perfect working order? We only paid the \$750,000.



**Mr. Howard Peter Langille:** I wasn't of the opinion that we received them in perfect working order. I'm sorry, but that seems to run contrary to everything I've heard.

You asked why Britain would give up a conventional program, because they were heading to a nuclear program.... Why did they go nuclear if they had really good conventional subs? If the Upholders were such a wonderful platform, why did they bother to shift? That confounds me somewhat.

   (1115)



**The Chair:** I don't want to get into a question and answer with the witness and the member, so I'll take that as a rhetorical question.

Next point, Mr. Bagnell.



**Hon. Larry Bagnell:** This is also related to your costs. You mentioned that several crews and maintenance could have contributed to those costs. Crew costs? No matter what submarine anyone buys, you're going to have crew costs and maintenance, so I don't see how that's relevant or makes this purchase any different from any other purchase.



**Mr. Howard Peter Langille:** No. I simply put forward the costs as a means of demonstrating the opportunity costs, the foregone costs, to actually address some of our day-to-day operational requirements. We knew we didn't have sufficient personnel or knew personnel were being overly used, frequently rotated in and out of missions to the point where they came home divorced and didn't know their kids, and we occasionally lacked adequate equipment in high-risk missions that were under way or were likely to be forthcoming over the next decade.

This wasn't a hypothetical scenario. This was something where it was understood that we would be deploying considerable numbers of Canadian forces and that they would be in areas where they needed the best possible protection. So I viewed it as an opportunity cost; the acquisition of the subs as well as the Leopard tanks took away from our capacity to really meet our operational needs of the moment.



**Hon. Larry Bagnell:** Let's go back to the time when we made a deal with the British that we were supposed to get subs in good working order for \$750 million, and you suggested that we didn't get them in good working order. Tell me specifically, as to what we should have charged the British for because that was the deal, what was not working right? What was wrong with them that we didn't get the British to pay for?



**Mr. Howard Peter Langille:** It appears there have been some problems with the electronic and electrical systems. It appears there were problems with heating and cooling systems. It appears there were problems with hulls, and from what I did here, there were problems submerging. To my mind, the wider package didn't come in excellent shape.

Now, I don't know what the Canadian deal was with the British government to ensure that these were in outstanding --

**A voice:** We have some information on it. We're still waiting for a copy.



**The Chair:** Last question, Mr. Bagnell.



**Hon. Larry Bagnell:** Have we subsequently billed the British for those problems you just mentioned?



**Mr. Howard Peter Langille:** I can concede that I don't know whether we have or have not billed the British.



**The Chair:** Thank you.

I erred. I do have another member, Mrs. Hinton, and maybe some others will join in.

Mrs. Hinton.



**Mrs. Betty Hinton:** I just have a rather brief question. I listened very carefully to both witnesses today, and you've both been very interesting.

I asked Dr. Shadwick how many submarines the Chinese had, and his response was that they had a couple of dozen. I have since learned that they in fact have 57, which is a pretty significant number of submarines. Also, we talked earlier about Iran having submarines. From my perspective, that's something I as a member of Parliament should be a little concerned about. I'm not suggesting that either of those two countries is the enemy, but I am suggesting that if we have one country that has that kind of capability and another one that's catching up quickly, then submarines are something that I don't think are optional.

Now, whether the ones we purchased are the right ones or not is something to be debated. The more I learn, the more dismayed I get about how the purchase was made.

Given the fact that the Chinese have that number of submarines and the fact that Iran has submarines and is looking at nuclear capability, in your opinion, having studied this, do you believe those submarines have been acquired for passive measures or for potentially aggressive measures?

   (1120)

 

**The Chair:** Do you mean the submarines from the other countries?

 

**Mrs. Betty Hinton:** Yes.

I have one other comment to make while you're waiting to gather your thoughts there.

Regardless of whether these countries have submarines, the situation Canada finds itself in right now is that we don't have a sub that can go out and check out these submarines. The comment came from Mr. Martin that we're not in a position to go check out submarines that might be checking our country out, whether they come from Iran, China, the United States, or wherever else. We're just simply not in a position to guard our coastline.

Dr. Langille, comment if you would, please.

 

**Mr. Howard Peter Langille:** I believe the Chinese and Iranian subs were acquired for passive or aggressive measures. I'd assume they were acquired for much the same reason we acquire ours, for concerns regarding national security and defence. That's a relatively passive measure. Fifty-seven is a number I've never heard before.

 

**Mrs. Betty Hinton:** Well, even if it was thirty-seven....

 

**Mr. Howard Peter Langille:** Regardless of whether we have subs, we still can't check. No subs are likely to be able to check where other subs are coming from. Once they submerge, you can't identify them. All you can do is check to determine whether they're diesel or nuclear powered, but underwater, at least, I don't think you're going to be able to really pick up the profile well enough to say that's an American or that's a Russian sub. If they surface, of course, you can, but

we do have other options for tracking subs. We have a number of long-range patrol aircraft that do it at a far more cost-effective level.



**Mrs. Betty Hinton:** Excuse me for interrupting you, but the chair is going to call me in a minute.

Regardless of whether it's an Iranian submarine, Chinese submarine, or American submarine that's in our waters, and I'll grant you--and I'm not a submariner--it's probably difficult to determine what country the sub comes from, although I would think you'd be able to ping it and get an idea of what size it was, and with experience you should be able to know what country it's likely to have come from.... I guess what I'm asking you is, are you opposed to Canada having submarines in general or are your objections simply to the way in which these submarines were purchased and what you believe we got for our dollar? That's what I'm trying to find out.



**Mr. Howard Peter Langille:** Let me preface that by saying I don't think there's ever been an incident where Chinese or Iranian subs have been detected anywhere near continental North America.

Am I opposed to having subs in general? No, I just think given the timing and the other pressing needs on our defence effort, that wasn't an appropriate decision to make, and there were, to my mind, a lot of very critical requirements that were overlooked. The opportunity costs, when you factor in the wider picture, are rather significant.

By buying the subs, the Upholders, we've lost enormous diplomatic capital and influence in the UN Secretariat, in the southern hemisphere, because we don't contribute to the vast majority of the emergencies they encounter. They've lost faith in the north in general for its lack of commitment to development and its lack of commitment to their security. I'd argue that facing a far more divided world, we'd better take some of their interests into account, and our defence effort can help. But I don't see that the subs or the Leopards are going to help.



**Mrs. Betty Hinton:** All right. Well, you're certainly not going to get any argument whatsoever out of me that it was a mistake to cut back on defence funding. I'm absolutely with you all the way. Whether this was a mistake to make the purchase of the submarines, I guess remains to be seen, but are you suggesting from your comments now that you think we should be a stronger military so that we can in fact not neglect the southern hemisphere? Right now we have trouble meeting our commitments for the northern hemisphere.

  (1125)



**The Chair:** We're kind of into defence policy review, with all due respect.



**Hon. Bill Blaikie:** I wonder if we could have the witness back.



**The Chair:** Yes, I think we'll invite the witness back then.

That's an interesting question, Mrs. Hinton. It's really not on the subs, but it's certainly a question we're going to ask many times.

I want to ask one on the subs per se, and then see if there are any final ones. Mrs. Hinton anticipated my one question directly on your opinion.

If I could summarize, you're not against subs per se; you just didn't see them as a priority purchase of the Canadian government for the military at that time, given the other needs we have.



**Mr. Howard Peter Langille:** Yes.



**The Chair:** It came to light at this committee that what was commonly believed—that these subs were acquired by a barter arrangement—was in fact not the case at all. Do you know anything about that? Do you have any comments as to why that perception was allowed to stand when it clearly was not the case?



**Mr. Howard Peter Langille:** Honourable chairman, I'm not well positioned to comment on that issue. I'd try my best, but I really, frankly, can concede that I don't know.



**The Chair:** That's fair enough. You've already given us enough food for thought. I appreciate your candour.

I see a final question from Mr. Bagnell...oh, I'm sorry, I didn't see your hand, Mr. Blaikie.



**Hon. Bill Blaikie:** I just want to ask a question. If he's going to keep yapping, then I'm going to take my—



**The Chair:** Here's my point, if everybody will listen to me. I'm giving any colleague a chance for another question.



**Hon. Bill Blaikie:** Well, I'm trying to get the meeting—



**The Chair:** We have until noon. I've indicated that.

I'm going to give Mr. Blaikie a chance—





**Hon. Bill Blaikie:** On the notice, the meeting was from nine o'clock to eleven o'clock.



**The Chair:** No, it says nine o'clock until noon on the committee agenda.



**Hon. Bill Blaikie:** On my notice here it says ten o'clock until eleven for our particular witness.



**The Chair:** Does it? I guess there's....

Bill, do you have a question?



**Hon. Bill Blaikie:** What's been introduced here is a whole new cost that we haven't looked at in terms of the purchase. I think it's relevant to what we might have to say about the purchase, although it's not relevant in a way that we initially thought of because we were looking at the purchase of the subs per se. I think what Dr. Langille has introduced this morning is this idea of opportunity costs when we bought the subs.

It's not just what you bought. The argument seems to me to be that even if the Upholders were perfect, even if they had no problems, there would have been a whole lot of opportunity costs in terms of what we couldn't buy because we bought the subs at the time, given the fiscal parameters that were set by the government at the time. Of course, if there were larger fiscal parameters, then those opportunity costs wouldn't necessarily have been what they were.

The fact is that buying the subs at that time, in that fiscal framework, meant that we really had to seriously diminish or shrink the kinds of things that we were otherwise doing in terms of peacekeeping. I think that's a brand-new argument in a way. It's relevant to the purchase of the subs, but also to the broader defence review, which we obviously can't get into this morning.



**The Chair:** I agree with you. We can only spend the tax dollars in one place.



**Hon. Bill Blaikie:** I think that's the argument you're making, and I just want to confirm that. Even if the Upholders were problem free, these opportunity costs were still a problem. Is that a fair summary?



**Mr. Howard Peter Langille:** To my mind, that's a very accurate assessment.



**The Chair:** I think you conveyed that quite well, and I think it's quite right on. Obviously the committee will look at that.

I'm not sure I totally agree with you, though, Mr. Blaikie. In my mind, that kind of speaks to the issue of the barter. I think it was portrayed as a barter because they were trying to deflect from this very concern that has been raised.

Anyway, I'm going to give Mr. Bagnell the last question, and then we're going to adjourn.



**Hon. Larry Bagnell:** You brought up the surveillance capabilities of the submarines. In that airplanes, surface ships, and submarines use different technologies to do surveillance of submarines, could you just explain those different technologies a bit, as well as their effectiveness? Do the planes, the surface ships, and other submarines, when detecting foreign subs, have identical capabilities to detect, or are some of those methods more effective in detecting other submarines?



**Mr. Howard Peter Langille:** I'd be absolutely willing to defer that question to Michel Rossignol, who could give you a better answer than I can. But it's my understanding that both surface ships and planes can use towed-array radar. Is that correct?



**Mr. Michel Rossignol (Committee Researcher):** No, not totally.



**Hon. Larry Bagnell:** Mr. Chair, I wonder if we could get that answer from the department on the capabilities of those three ways of detecting other subs and also how much we can tell from which nation the sub comes from and our detection methods.



**The Chair:** Those are good, factual, valid questions that arise from Dr. Langille's testimony.



**Mr. Howard Peter Langille:** I know there was an effort to convert what was frequently dragged behind destroyers in terms of our towed-array radar to applications for air use. Whether these were successful, I'm not sure, but I know the advances in sensor and surveillance technology, even that go under the water, are very considerable. I know that from having been in Victoria as a friendly visitor on a pal's fishing boat. You could see just about everything off his \$140 fish finder, and you can buy them over the spectrum he mentions now so that they project it in front of you. That's pretty lame in terms of defence analysis, but it suggests there are other options.



**The Chair:** It's part of empirical knowledge. We're always looking for that here at this committee too.

Dr. Langille, thank you very much. To be fair, you've been quite constructively critical, and that's what we're looking for. And it was certainly very interesting testimony. We appreciate you being with us here this morning. Thank you.



**Mr. Howard Peter Langille:** Thank you, Mr. Chairman. It's been a pleasure.



**The Chair:** The committee is adjourned.

