

Defence / Safety / Security / Enforcement

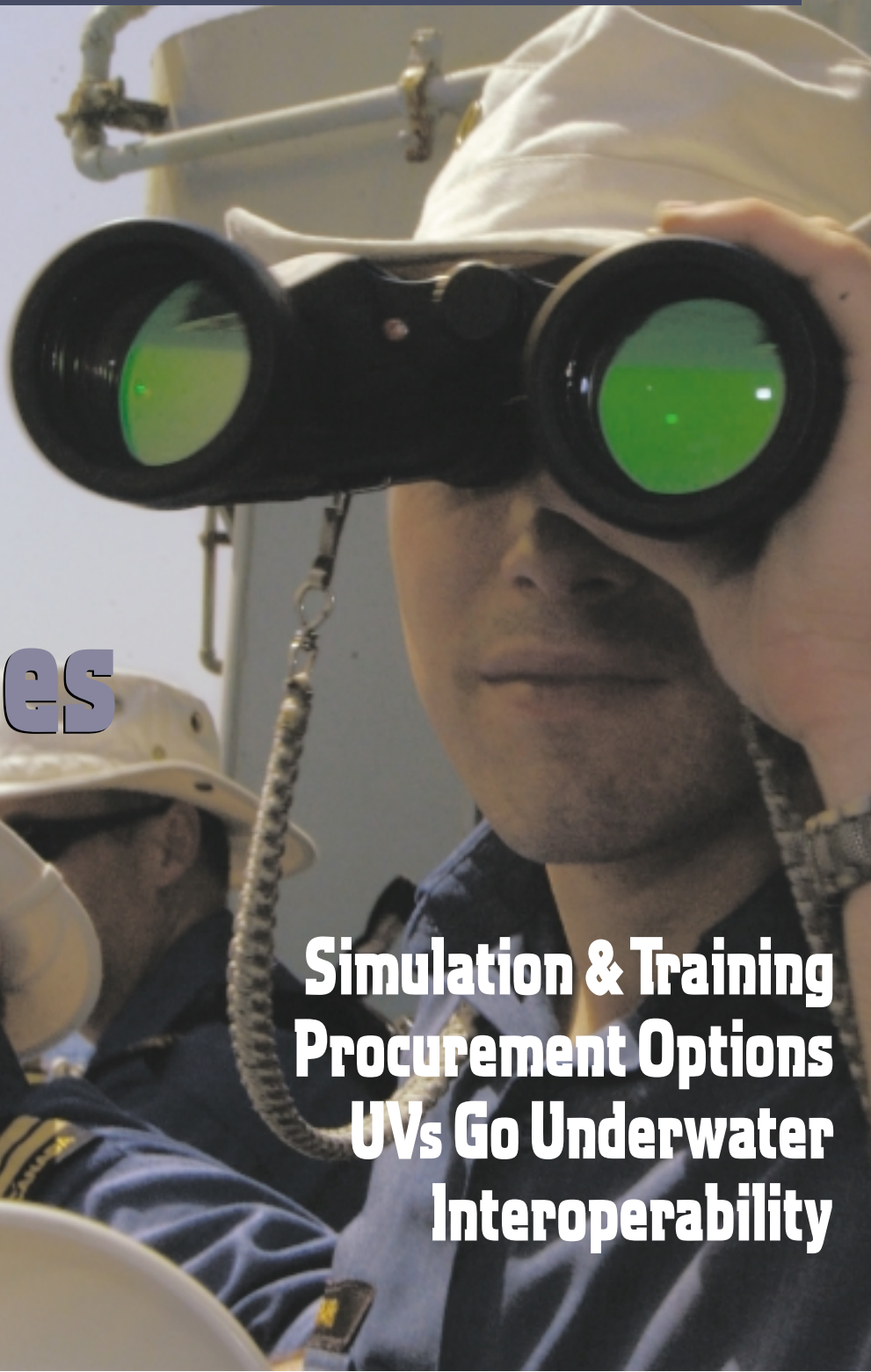
# FRONTLINE

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Issue 4, 2005

**VAdm  
Bruce  
MacLean**

Canada's  
**NAVY  
Diversifies**



**Simulation & Training  
Procurement Options  
UVs Go Underwater  
Interoperability**



# Vice-Admiral BRUCE MacLEAN

## Diversifying the Naval Portfolio

Appointed as Chief of the Maritime Staff (CMS) in the summer of 2004, VAdm Bruce MacLean now faces (as do all of the current Chiefs of Staff) the more appealing challenge of counteracting the severe downsizing of the 1990's. *FrontLine* editor, Chris MacLean (no relation), recently met with the CMS to discuss how the Canadian Navy "fits" into the new schematics of the transformed CF.

Citing geographical separation and staffing needs (both leadership and technical trades) as the primary hurdles to getting the Navy prepared for peak efficiency, VAdm MacLean explains that not only quality, but quantity is also necessary in order to maintain operational tempo and to ensure that ships are "capable of proceeding safely to sea."

The sustainment part of the business, the need for senior leadership to undertake programs which will prepare the Navy for tomorrow is a current demand that is being felt after the down-sizing. "Are the challenges that we face insurmountable? No. Do we still have the top kinds of individuals we need at the NCM (non-commissioned member) level and the officers to do our business? Yes we do. We are very privileged to have a strong cadre of leadership from the Leading Seamen all the way to the flag ranks – but it's tough slogging and we have to fight for every piece to make sure we have the kind of success we need in the future."

### Defence Policy

According to VAdm MacLean, the *Defence Policy* and the *International Policy Statements* have been very reinforcing for the Navy. "What we had described in our *Leadmark* document reflects where we have been going since the end of the cold war. Our business hasn't changed but it's growing, and in many ways this *Defense Policy*

*Statement* is more powerful, in terms of the naval component, than was previously in the 1994 White Paper.

"In 1991, when Gulf War One broke out, and we became engaged in that conflict, and then subsequently when we became involved in maritime interdiction operations, we didn't really know how to do them. We were focused very much on the blue water, open water combat, far right scale of the conflict spectrum.

"But throughout the 1990's, new technology, emphasis on command and control, and also a focus on what actually counts in the 1990's and beyond, has led us to becoming more adept at doing these low level, almost constabulary, policing types of operations. Whether you're talking about anti-drugs, anti-proliferation, anti-terrorism, the ability to do boarding operations successfully, all of this has allowed us to maximize and expand the scale of operations for our ships."

Canada's Navy is now a combat-capable, general purpose force that is becoming more efficient and capable across a wide spectrum of operations. "But it's still a frigate, destroyer, and submarine, small ship navy. We've had to adapt to move from the blue water into the littoral regime closer to shore (green water), and we've had a lot of experience in the last 15 years." In terms of being able to provide littoral support and force protection for marine or army units, as called for in the *Defense Policy Statement*, Canada's Navy has been doing just that with the United States Navy over the last 10 years as part of coalition operations.

So what *is* new? "The introduction of amphibious capability for the Canadian Forces, and all that that entails, is something that we are now starting to address with land forces and the air forces. We need to understand where exactly we want to position – what kind of capability

May 2003 – Arabian Gulf – HMCS Iroquois (centre), HMCS Regina (left) and New Zealand warship HMNZS Te Mana (rear) were members of Task Force 151, in support of Operation Apollo and Operation Enduring Freedom.



PHOTO: CPL SHAWN M. KENT



VAdm Bruce MacLean  
Chief of the Maritime Staff

## **CHALLENGES:** by VAdm Bruce MacLean

As any Service Chief can tell you, there are a myriad of challenges all the time – and why would you want a job which doesn't have challenges? – that's just the nature of any progressive business, in my view. I think the Navy is well-positioned in terms of the technological leap forward that we made in the 1990's with the introduction of the Canadian Patrol Frigate (CPF) and the modernization of the 280-Class into the Tribal Update and Modernization Program (TRUMP). But that was 10-15 years ago, and we now have to invest significantly again to ensure that the navy we have today is sustainable for the next 10-15 years before we move to the next technological jump.

In Canada's geographical context of two disparate, mutually exclusive coasts, east and west, the ability to transfer between those coasts is very, very challenging and consequently quantity is important in order to continue the operational tempo in the world of today. Therefore, we need sustainment capability, which is the quantity piece – that will take resources, and that part is going to be challenging, not so much for the CPF, but for the TRUMP because there is no money set aside and I need that capability for as long as I can until I can migrate it to the next class of ships which really don't come on board until the latter part of the next decade. So, I will invest in the CPF, and I will preserve the TRUMP capability for us long as we can, for that command and control capability, that area air defense capability, and we'll obviously preserve the quantity so that those ships are in fact capable of proceeding safely to sea. But that does mean we will allow other aspects, such as anti-submarine warfare capability, to atrophy. These are tough decisions to take, but if I want to invest in the right capability downstream, I will have to make those sacrifices to keep those ships in the inventory.

Another challenge is the senior and middle leadership to prosecute those types of programs (the sustainment part of the business) to prepare the navy of tomorrow – which takes project management skills, both from an engineering and logistics prospective, and from a surface operations officer prospective at the lieutenant commander and commander level. I need that in the projects side, I need that kind of skillset to meet the current demand in the navy. And of course we have a new and exciting Defense Policy Statement which, as good and as exciting as it is, creates challenges both in terms of additional resources and particularly, in my view, on the people side. We have to find the resources and the people to grow that capability over the next five to seven years to position the navy for success as part of the overall Canadian Forces transformation.

The third challenge is recruitment. The more technologically capable we've become, the more money there is to spend, which has a perverse and bizarre result that we are a competitor for the folks on the industry side that are also looking for those same people – we have to compete for very scarce, highly talented, folks at all levels – and so consequently, even if I had all the resources and the money to do that, it doesn't necessarily guarantee that I will have those people for the future. So the over all recruiting challenge is huge. The competition for folks in the highly technical trades is really a tough, and going to sea is not for everybody, so consequently those numbers are down, in some cases 15-25% under what I need. So those folks are cycling through those ships to a greater extent, and that puts pressure on the system.

Going to sea is part being in the navy, and it's not the lifestyle for everybody. If I had my way, then generally speaking the average sailor in a ship will spend 100 days or more out of Halifax and Esquimalt in any given year, and in some cases it will peak past 150 into the 200-day mark. To do that year in and year out is tough on a family, particularly in the modern family with working spouses and the sociological changes we have seen in the past two generations. It's a tough business, and we want the very best. ■

do we want and how much of that capability do we need, and therefore what kind of an at-sea component should be added to the fleet that we currently have. And that is going to be important as we start to shape the future over the next year.

"In about a year from now, I hope to have a good answer in terms of exactly what we need – but that is not going to stop us from starting to develop some exercises over the next 18 months so we can begin to put into place this kind of capability for Canada."

When Canada acquired submarines in 1998, it was primarily to cover surveillance requirements off the east and the west coasts. Now, with the *Defense Policy Statement* increasing the opportunity for Canadian influence both in leadership and in terms of coalition operations, the submarine could become important for delivering that overall capability.

The CMS considers the submarine to be an essential component of covert activity, partly because of its ability to stay at sea for extended periods of time, its small crews, and also its significant potential in the special operations offshore capacity.

## **Security Environment**

The new security environment has certainly affected the future course of the Navy by way of a growth in business. From a security perspective (and particularly in collaboration with the United States), the National Security Policy, the Maritime Strategy, the Defence Services Program, and the Budget have all recognized the importance of the maritime approaches to Canada as being an essential pillar of security functions. VAdm MacLean explains that there are a number of ongoing projects which will now be part of that.

For instance, the high frequency surface wave radar systems, which have been in experimental mode for the last 10 years providing surveillance up to 200 nautical miles off the east and west coasts, now has money allocated. Once a frequency allocation issue (the band potentially interferes with some marine band radio operations) is sorted out with Industry Canada, that project will move forward – probably within the next couple of months.

Another aspect of the broader security function is the introduction of the Marine



*Feb 2004 – Canadian Frigate HMCS Toronto (left) and American warship, USS Bulkeley, manoeuvre in the Indian Ocean as part of Canada's support to Operation Enduring Freedom, the US-led campaign against terrorism. HMCS Toronto has deployed to the Arabian Gulf twice in as many years.*

PHOTO: AIRMAN ROBERT BROOKS, U.S. NAVY

Security Operations Center (MSOC). “This is basically what we already had on the east and the west coast for naval use, but this command and control capability has been expanded to include other government departments as well as U.S. agencies, so we have an all-capability situational awareness. The aim is ultimately to be able to tell you, when you have a radar image: the name of that ship; what it’s doing there; who’s the master; what it’s carrying.”

With some 1,700 ships coming and going daily off both coasts, the intent of the MSOCs is to do at sea what has been done with air traffic control. That situational awareness piece is important to effectively utilize the resources that Canada does have, given the size of our naval force, and “we need to breakdown the barriers among all the folks who have that kind of intelligence and information – whether it’s the RCMP, CSIS, the military, or whether it’s the Americans or the Dutch. The more you can actually get that common operating picture, the easier it makes your business, so we’re investing a lot of time and effort in that. But we’re not there yet – it will take another three or four years to bring that to what I consider to be a very high level of fidelity but we’re getting there.”

## Interoperability

Canada’s Navy plays a coordinating role between the east, west and northern coasts – but also a defence role. Inland,

around the Great Lakes and the St. Lawrence, the leadership role transfers to the Royal Canadian Mounted Police, and Transport Canada and the Canadian Coast Guard (CCG). The Navy provides supporting pieces there with the MSOCs so that ultimately all the internal and external waterways will be “wired.”

The CMS agrees that interoperability among these groups is critical. “Obviously any government agency has scarce resources. We have to find ways to maximize the overall capability in an economical and effective way so we don’t duplicate – and so we get the absolute best value for the money. For instance, the Navy will concentrate on the Canadian Patrol Frigate (CPF) upgrade program, the single class surface combatant (SCS), we do submarines, we do coastal defence vessels. Fisheries and the Coast Guard are going to fold into that in a way that we are not duplicating capabilities and assets, and that’s always a bit of a challenge but we have a very close relationship with DFO and the CCG, we meet on a regular basis at my level, just to make sure that our plans are absolutely coincident.

Interoperability with allies is key, asserts the CMS. “Interoperability to me is not just the technical piece, exchanging e-mails, it is an understanding of how your partners do doctrine, what are their ‘bounds’ in terms of what they can do during an operation, it is understanding, as completely as possible, how they do their business.”

In the 1990’s, after a budget investment of about \$12 billion from the Canadian Government, the Navy decided to focus on the command and control – the interoperability pieces.

Noting that they wanted complete interoperability with NATO, the Navy also viewed the United States Navy (USN) as being the premier partner, both from a North American perspective, and as being

a leader in naval affairs. Focusing on this, they have undertaken a number of bilateral exercises and operations with the Americans. “HMCS *Winnipeg* is in the Arabian Sea today, working jointly with the Americans. On occasion, we send a Canadian ship to join an American carrier group so that one of their ships can be redeployed elsewhere. It becomes a very cohesive group.”

Importantly, this helps position Canada, as an important ally and partner, at the top end of the command and control interoperability piece. And it is a win/win situation because it gives the Americans a very significant understanding of how to do coalition operations (whether it’s with the Canadians, the British, or other partners).

The Canadian Navy also works with other significant like-minded coalition partners such as the Japanese and the Australians. Canada participates in RIM-PAC Exercises on a regular basis.

## Acquisitions and Assets

One of the most important pieces to note is the Joint Support Ship (JSS) which is in predefinition at the moment, “we have been progressing that now for a couple of years,” VAdm MacLean states. “We hope to have a minimum of three ships, with the first ship delivered in about 2012. What will that do? It will do three things. First and foremost, it will provide the one-stop-shopping for the naval task group, or in this case, the standing contingency task force, or any other kind of task force the naval component needs. It would be the equivalent of the air tanker which allows the air fighters to get from one point another, but it’s more than that because it also provides second line support, it provides aviation capability, it provides hospital capacity for the task group, and it replaces the capability we currently have in our two remaining auxiliary oiler replenishment ships.”

But the CMS has even bigger plans for the JSS. “We want to do more than that, he says. “Once you decide to build something, if you build it a little bigger it’s the cost of additional steel, maybe an extra 10¢ on the dollar. And that’s important because you now have created conditions for doing something else with this ship – and that could be providing additional space for command and control capability (not the kind that we do at sea, which is important, but if you wanted to have that ship positioned off a coast, you could put an additional 80-100 people in there just to do the command and control). With more space you can carry army vehicles, aviation equipment, or maybe put ATCO (rented modular container) trailers in there to carry more people. There is no limit to the sorts of arrangements you can do. So it’s an AOR (Auxiliary, Oiler, Replenishment) naval capability vehicle – what I call ‘AOR Plus.’ And that ‘plus’ is some strategic sea lift in addition to some command and control capability for working in the littoral regime. But that is not an amphibious capability.

“The amphibious capability, which has really focused on people, is also important – what we’re now looking at is giving a contingent the capacity to move quickly ashore from, in all probability, air vehicles.

“The JSS is pretty much an AOR Plus capability, we will still need an amphibious capability. Similarly, an amphibious capability doesn’t give you the AOR capability, so they are complimentary but mutually exclusive. There is some overlap, unquestionably, but we will need to understand what that ‘amphibiosity’ piece will be.”

The upgrade program for the patrol frigates is another priority, as is the single class surface combatant (SCS) which offers a blend of what the Tribal Update and Modernization Program (TRUMP) 280-Class destroyers and the CPFs do, and will replace them both.

The Submarine Capability Life Extension (SCLE) program, in the form of the four, now infamous, Victoria-Class conventional submarines acquired from the Royal Navy, has managed to keep some of our submarine capabilities operational, but MacLean acknowledges that they are only a stop-gap, and he says that we will need a new submarine in the future. “Basically, SCLE gained us 20-30 years for the submarine force, so we can look at submarines for the future. It will need some kind of an update into the future but at the moment, frankly, my emphasis is on getting the submarines to what I would call the standard operating level – and we have had delays with that program, as you are well aware. So, my emphasis is focused squarely on getting these submarines to sea and making them as operational as possible as soon as I can. And we will take resources from the sustainment piece, and from the CPF particularly, in order to accelerate that to the greatest extent possible. That’s within my sense of allocating our scarce resources to achieve the greatest efficiency, and that is a very significant priority for me.”

Another important component of naval transformation is being carried out on the west coast at the moment. This involves six small Orca-Class vessels, and is intended to replace existing introductory officer training and the complementary

presence surveillance capability. It should be completed over the next couple of years.

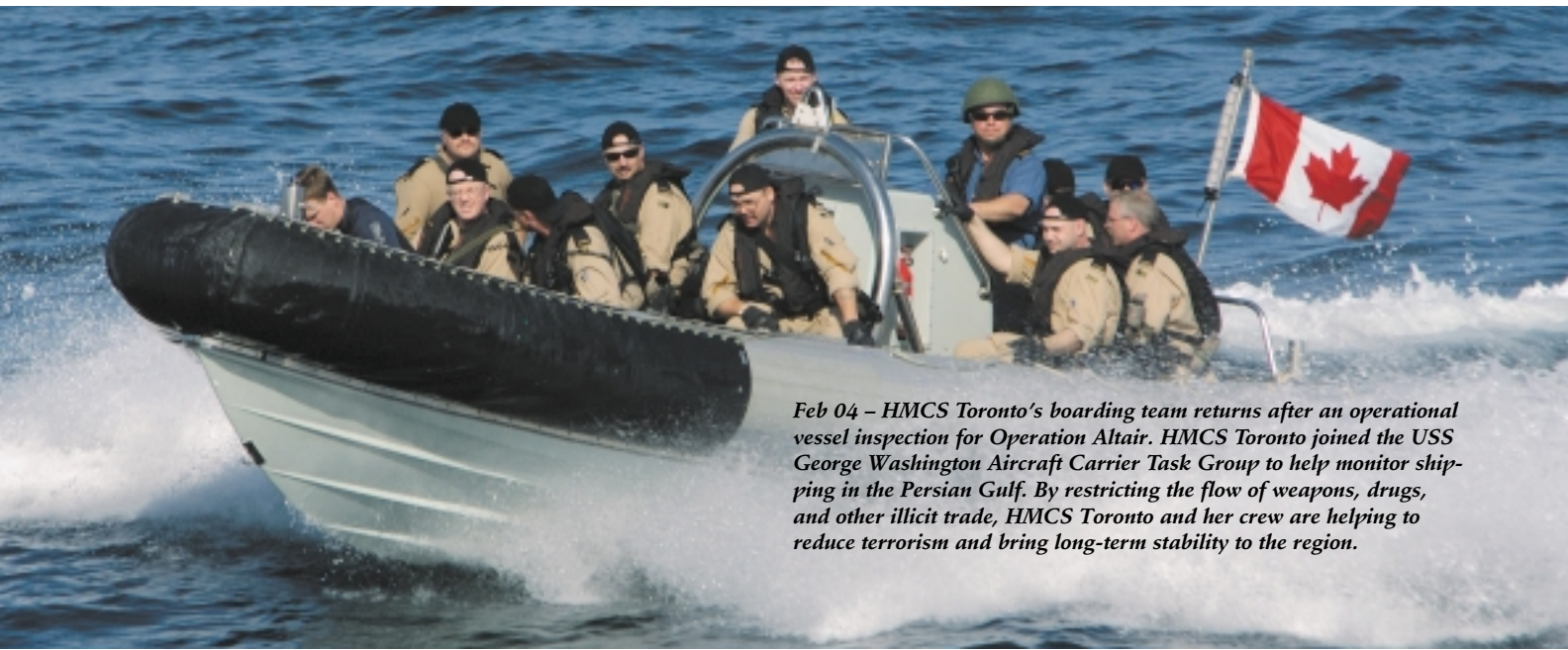
If there is a downside to this flurry of activity, it might be that if all of these shipbuilding programs suddenly come to fruition (the CPF upgrade, the Joint Support Ship, amphibious capability, combined with additional DFO and CCG ships), there will be a number of potential building programs chasing the few shipyards in Canada. Will we have the talent supply to satisfy this spike in demand?

## **Anti-Submarine Warfare**

Arguably the most challenging of all areas is warfare against the submarine. And it takes an enormous amount of effort to remain current in that area. But in response to questions about the validity of maintaining ASW capabilities, the CMS reminds us that “Canada has always been a leader, it was a very key element, of course, in the cold war period. The question is, as you move into the 1990’s and beyond, is ASW going to have the same kind of prominence? I don’t think so, but it is still a very tough warfare area and it still exists, and there are still over 300 submarines in the world today. The growth in submarine numbers is increasing – over 43 nations have them. Even if the country that you might be engaged with doesn’t have submarines, neighbors might, and that may in fact present a problem.”

Submarines were not an issue in the Kosovo, Afghanistan, or Iraq conflicts, so they tend to be forgotten. But during the Falklands campaign, in the early 1980’s, between the UK and Argentina, there was a significant threat from Argentinian subs, and could have affected the balance.

PHOTO: MCPL COLIN KELLEY



*Feb 04 – HMCS Toronto’s boarding team returns after an operational vessel inspection for Operation Altair. HMCS Toronto joined the USS George Washington Aircraft Carrier Task Group to help monitor shipping in the Persian Gulf. By restricting the flow of weapons, drugs, and other illicit trade, HMCS Toronto and her crew are helping to reduce terrorism and bring long-term stability to the region.*

Dec 2003 – Pacific Coast – Ordinary Seaman Jennifer Courneyea, a naval communicator aboard the replenishment ship HMCS Protecteur, uses semaphore flags to message to the frigate HMCS Regina during a replenishment-at-sea (RAS). Able Seaman Mathew Heim, also a naval communicator, holds a clipboard containing the text of the message to be sent.



CPL CHARLES BARBER

“If you look at other countries around the world today, and do your sums, you will quickly come to the realization that submarines can present a particular challenge,”



May 2002 – HMCS Yellowknife, at sea near Vancouver Island, BC. Naval reserve officer Acting Sub-Lieutenant Philip Henry charts a course through the busy Strait of Georgia. HMCS Yellowknife worked with the RCMP and other naval reserve vessels in the hostage taking exercise Coastal Vigilance/EverReady 2.

PHOTO: CPL COLIN KELLEY

says VAdm MacLean. “Are they going to present a challenge to Canada tomorrow? I don’t think so, but we invest long-term in capability. Take the frigates – I think it was 1977 when we declared we were going to have a new frigate. The first ship came off the line in 1990 and the last ship was delivered in 1996, and those frigates are going to be with us until at least 2020. From start to finish that is 45 years! Who knows what is going to happen tomorrow let alone 20, 30 or 40 years from now, so you cannot afford to get out of the business. And ASW will certainly be a part of our business in the future, so we have to be very careful. I don’t give up any kind of capability lightly... it is so important to maintain as broad a capability as you can, bearing in mind the world is changing.”

The Navy is willing to reduce ASW capability in the TRUMP only because it will still be resident within other ships so he feels he will still have enough of the expertise, the professional piece. He is convinced ASW could be an important element of the future and may even become predominant once again. “I’m capabilities-based, and it’s like stock, I like to have maximum diversification!”

### Simulation Technology

Congruous to similar comments made by the Chiefs of the Land and Air Staff, VAdm MacLean tells us that modeling and simulation (M&S) technology is “incredibly important to our business. It’s so expensive

to operate a ship at sea when you have the whole crew there. The amount of money you can save (whether it’s radar training, command and control training, or operation room training) is very significant.”

Being able to link training groups in the east with teams on the west coast through distributed systems makes for a very powerful tool.

He is quick to caution, however, that M&S can’t replace sea time. “You still have to go to sea to do the final piece, and the example I use is in my own simulation training when I was becoming a submarine commanding officer. In the simulator we were doing up to five-ship attacks and we became very proficient in doing this in the trainer. But when we went to sea, it was more difficult doing a one-ship attack for real, than it was doing a five-ship attack in the simulator because of all the variables associated with being at sea – everything from being seasick to having a crew member throw his plate of peas down the periscope, well you name it, it’s real life and it can be far more challenging than any simulator. Many things can, and do, go wrong in real life, so you have to take that simulator piece and turn it to reality. But boy, you can sure save a lot of time and money by using it, and that’s the way of the future. It has been the way the future for the past ten years. **FL**

Visit [www.FrontLine-canada.com](http://www.FrontLine-canada.com) for a pdf version of the Navy’s update to its “Leadmark” strategic vision document.