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INSIDE

National Defence Défense nationale

Canada

The Royal Canadian Navy returns to ARCTIC ICE

Lead Arctic/ Offshore Patrol Ship to be delivered in 2018

By Lieutenant-Commander Tom Sliming

The Royal Canadian Navy (RCN) is making a concerted effort to expand its operations in Canada's Arctic region, increasing the frequency and duration of its annual forays into remote and desolate waterways long ago visited by intrepid explorers such as Amundsen, Franklin and Peary.

However, it must do so with great caution, as its current Halifax and Kingston-class vessels were not designed to function with this type of operation in mind. In fact, the RCN's presence in the Canadian Arctic is only possible if conditions permit; that being essentially ice-free waters. In reality, in the face of its prevailing ice conditions, the RCN has to leave the "heavy lifting" in our Arctic to the Canadian Coast Guard (CCG), whose vessels and sailors have a well-deserved reputation of "owning" the North.

It was not always that way. In fact, a look back at the nascent CCG of 1962 reveals that it was not the first government agency to operate in the Canadian Arctic. In the mid-1940s the RCMP vessel *St. Roch*, a small wooden sailing schooner, made a couple of remarkable journeys through the Northwest Passage despite its diminutive size. However, notwithstanding the successes of *St. Roch*, the first real icebreaking ship to operate in the Canadian Arctic belonged to the RCN.

Canada's first icebreaker

Her Majesty's Canadian Ship (HMCS) *Labrador* was Canada's first purpose-built icebreaker. *Labrador* was constructed in Sorel, Que., and commissioned in the navy in 1954. She was at the time the most advanced icebreaker in the world and had a remarkable, albeit short, naval career.

Labrador achieved many notable firsts while patrolling and supporting research in the North. For example, after sailing from Halifax in July 1954 she rendezvoused with two U.S. Coast Guard ships off Melville Island, marking the first time ships met in the Arctic sailing from both the east and west. Transiting westward to the Bering Sea, she then became the first large vessel to fully navigate the Northwest Passage. Later that same season, she continued on to Esquimalt, B.C., for a brief visit, after which she returned via the Panama Canal to her home port of Halifax, in the process becoming the first ship to circumnavigate North America in a single voyage.

Labrador was later transferred to the Department of Transport, where she served until the birth of the CCG in 1962, at which time she became that service's first icebreaker. CCG Ship *Labrador* continued her illustrious career with the Coast Guard until 1987.

Security in the Arctic

So, while the RCN is now preparing to commit to patrolling the North once again, it did at one time consider the Canadian Arctic its daily business. And, with the arrival of the Arctic/Offshore Patrol Ship, or AOPS, it will once again.

The Canadian Government has made a commitment to the development and security of the Canadian Arctic and has given the RCN a mandate to provide sovereignty presence in the region. For this, the RCN needs a vessel that can operate effectively in all Canadian waters.

The AOPS has been designed to provide the RCN a platform to conduct year-round patrols out to the limits of our economic exclusive zone in the Atlantic and Pacific Oceans, and most importantly, in the Arctic during the navigable season. What this means in practical terms is that, when seasonal ice conditions in the North permit access to commercial interests, tourists, adventurers and illicit activities, the RCN will be there. The new class of ship will provide active surveillance, perform constabulary duties and respond to any urgent situation as required.

The Harry DeWolf Class

The AOPS will be known as the Harry DeWolf Class, named after Vice-Admiral Harry DeWolf, a Canadian naval hero of the Second World War. The ships will be well equipped for their domestic constabulary role, and will be armed appropriately with their main armament consisting of a remotely-operated 25 millimetre deck gun and two 12.7

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Cover page: A sailor keeps watch as HMCS *Fredericton* departs Constanta, Romania. Photo: DND

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millimetre heavy machine guns as secondary armament.

The ships will be able to support the CH-148 Cyclone, Canada's new maritime helicopter. However, for most northern deployments where the Cyclone's highly sophisticated warfare systems may not be required, a smaller more practical aircraft will likely be carried for routine ice surveillance and other miscellaneous tasks.

The ships can also carry several small boats, such as rigid-hulled inflatable boats, enclosed lifeboats, a landing craft and a diving support boat. Their missions will determine how many and what type of boats they will carry.

In addition to boats, there is a vehicle bay for pick-up-sized trucks and utility vehicles such as snowmobiles and all-terrain vehicles. Depending on conditions, these could be placed onto sea ice, transported to shore in the landing craft, or offloaded to a jetty with the ship's crane.

The vastness of the Canadian Arctic is not often realized. A voyage from Halifax to the eastern entrance of the Northwest Passage is further than a trans-Atlantic voyage to Europe. In the west, it is shorter to sail to Japan from Esquimalt than to reach our Arctic waters. With a sparse population spread out in small villages and hamlets over this huge expanse of territory, there will be very little support for AOPS in the Arctic.

Self-sustaining AOPS

For what will essentially be expeditionary deployments, an AOPS must be as self-sustaining as possible. As the small northern communities do not have the capacity to resupply or fuel large ships, an AOPS will be able to carry enough supplies to see it through a 120-day mission. It will also have a robust cargo capability with the ability to carry up to six containers on its quarterdeck and an additional two on its flight deck. Additionally, as the ship cannot carry enough fuel for a full northern deployment, fuel will be pre-positioned at the Nanisivik Naval Facility, which is a fuelling and berthing facility being built near the eastern entrance to the Northwest Passage.

One of the most important capabilities an AOPS will possess is her ability to navigate in ice, critical for a ship that operates in the Arctic.

Vice-Admiral Harry DeWolf, a Canadian naval hero of the Second World War.

One of the most important capabilities an AOPS will possess is her ability to navigate in ice, critical for a ship that operates in the Arctic. The question often arises as to whether or not the ship is an ice breaker. While an AOPS will be extremely capable at breaking ice, it is not commonly referred to as an ice breaker. This is because the term "ice breaker" refers to the role of a ship, and the AOPS' primary role will not involve breaking ice for other ships. It is a naval vessel and it will conduct primarily naval missions. The ships will operate in new ice up to one metre thick and maintain forward progress at up to three knots in these conditions. So, though they do possess the capabilities of an ice breaker, they will generally only break ice for their own mobility.

Construction of the AOPS

The contract to build the AOPS was awarded to Irving Shipbuilding Inc. in January 2015, with construction scheduled to begin in September 2015. The lead ship, HMCS *Harry DeWolf*, will be delivered in 2018, with the remaining five ships to be delivered by 2022.

After tests, trials and workups, the RCN will conduct its first operation in ice in 60 years – HMCS *Labrador* would be proud.

When seasonal ice conditions in the North permit access to commercial interests, tourists, adventurers and illicit activities, the RCN will be there.

Photo: DND

FACT SHEET

HARRY DEWOLF-CLASS ARC

The Arctic/Offshore Patrol Ship (AOPS) project will deliver six ice-capable ships, designated as the Harry DeWolf Class, after Canadian wartime naval hero Vice-Admiral Harry DeWolf. The AOPS will be capable of:

- **armed sea-borne surveillance of Canada's waters, including the Arctic**
- **providing government situational awareness of activities and events in these regions**
- **cooperating with other partners in the Canadian Armed Forces and other government departments to assert and enforce Canadian sovereignty, when and where necessary.**

Construction of the first AOPS will begin in September 2015, with HMCS *Harry DeWolf* scheduled for delivery in 2018.

AOPS SPE

Length:

Beam:

Complement:

MULTI-PURPO

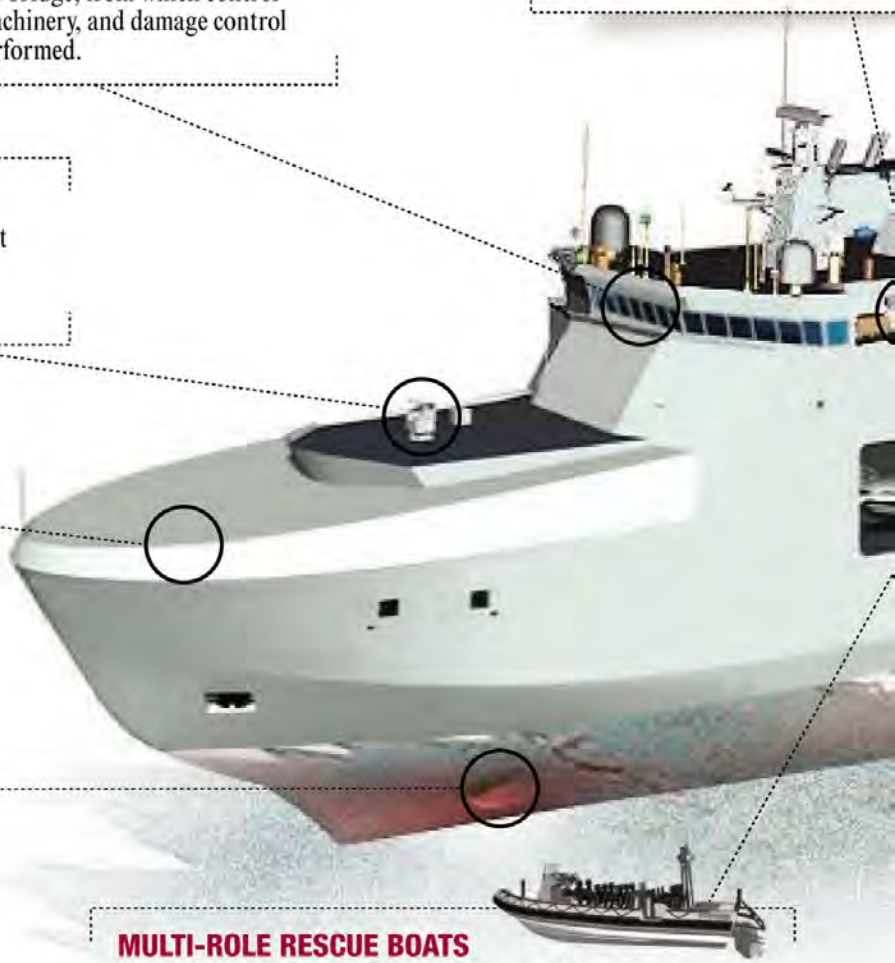
Where operation
execution will be

INTEGRATED BRIDGE NAVIGATION SYSTEM

Modern integrated bridge, from which control of navigation, machinery, and damage control systems can be performed.

BAE MK 38 GUN

Remote controlled 25 mm gun to support domestic constabulary role.



ENCLOSED FOCSLE/ CABLE DECK

Protects foredeck machinery and workspace from harsh Arctic environment.

BOW THRUSTER

To enable manoeuvring or berthing without tug assistance.

MULTI-ROLE RESCUE BOATS

Top speed of 35+ knots, 8.5 metres long. Will support rescues, personnel transfers, or boarding operations.

Royal Canadian Navy Public Affairs – January 2015
www.forces.gc.ca

TIC/OFFSHORE PATROL SHIP

ECIFICATIONS:

	103 metres
	19 metres
	65

Halifax-class Canadian Patrol Frigate
Displacement: 4,770 tonnes

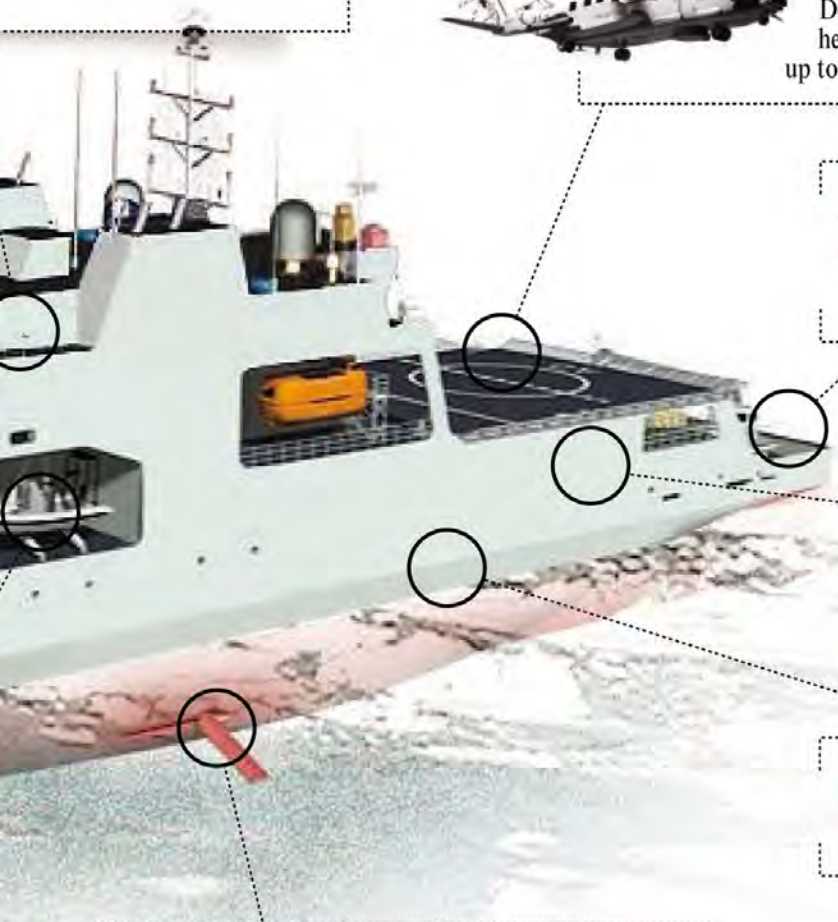
Harry DeWolf-class Arctic/Offshore Patrol Ship
Displacement: 6,440 tonnes

Kingston-class Maritime Coastal Defence Vessel
Displacement: 970 tonnes

To scale

SE OPERATIONAL SPACE

al planning and mission
coordinated.



HELICOPTER CAPABILITY

Depending on the mission, the embarked helicopter could range from a small utility aircraft right up to the new CH-148 maritime helicopter.

CARGO/PAYLOADS

Multiple payload options such as shipping containers, underwater survey equipment, or a landing craft. Ship has a 20-tonne crane to self-load/unload.

VEHICLE BAY

For rapid mobility over land or ice, the ship can carry vehicles such as pickup trucks, ATVs, and snowmobiles.

DIESEL/ELECTRIC PROPULSION

Propulsion: Two 4.5 megawatt main propulsion engines, four 3.6 megawatt generators.

RETRACTABLE ACTIVE FIN STABILIZERS

Deployed to reduce ship roll for open ocean operations, retracted for operations in ice.

STEADY STATE

The Victoria-class submarine fleet is now operational

By Darlene Blakeley

"Life aboard submarines is good!"

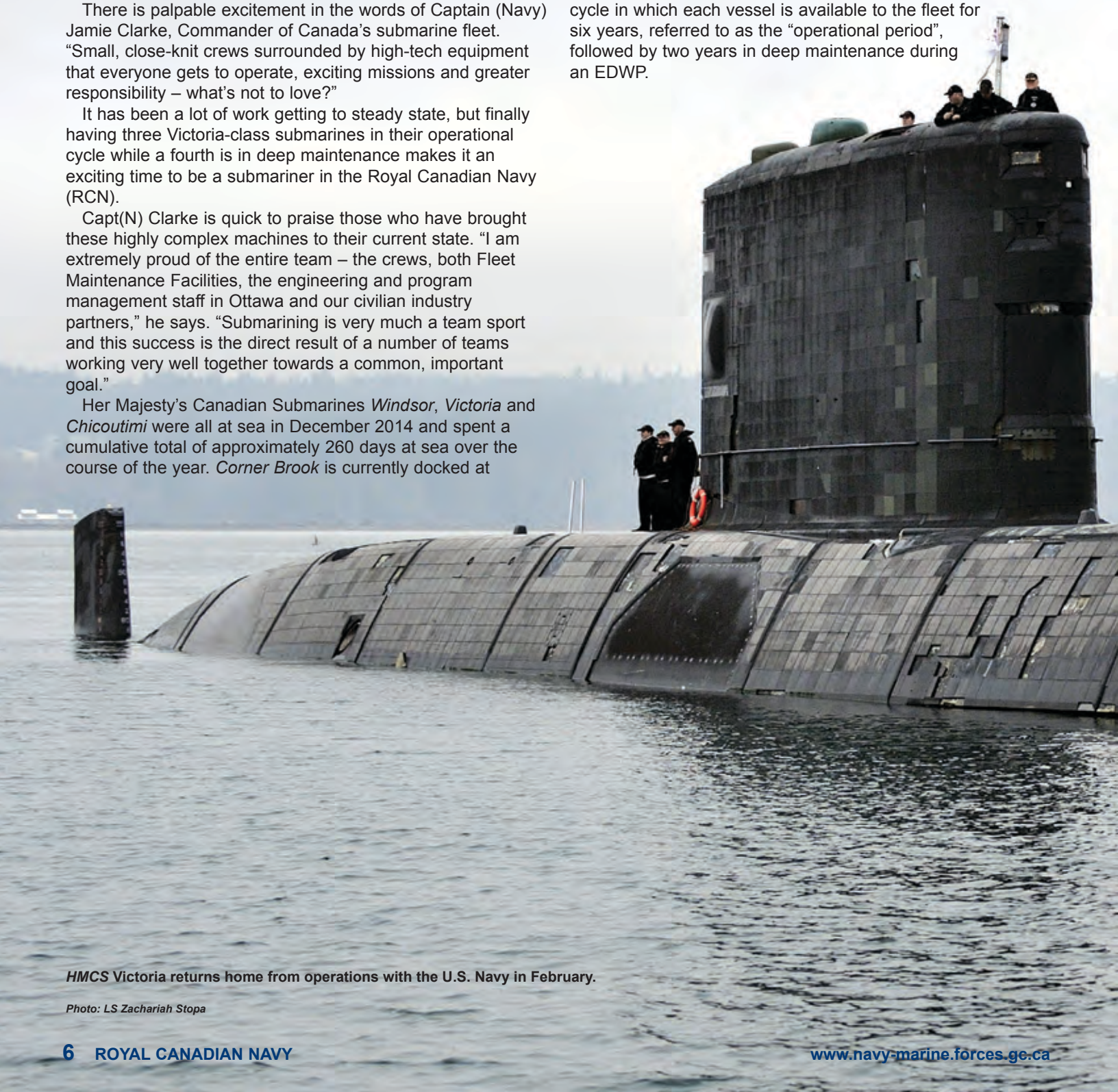
There is palpable excitement in the words of Captain (Navy) Jamie Clarke, Commander of Canada's submarine fleet. "Small, close-knit crews surrounded by high-tech equipment that everyone gets to operate, exciting missions and greater responsibility – what's not to love?"

It has been a lot of work getting to steady state, but finally having three Victoria-class submarines in their operational cycle while a fourth is in deep maintenance makes it an exciting time to be a submariner in the Royal Canadian Navy (RCN).

Capt(N) Clarke is quick to praise those who have brought these highly complex machines to their current state. "I am extremely proud of the entire team – the crews, both Fleet Maintenance Facilities, the engineering and program management staff in Ottawa and our civilian industry partners," he says. "Submarining is very much a team sport and this success is the direct result of a number of teams working very well together towards a common, important goal."

Her Majesty's Canadian Submarines *Windsor*, *Victoria* and *Chicoutimi* were all at sea in December 2014 and spent a cumulative total of approximately 260 days at sea over the course of the year. *Corner Brook* is currently docked at Victoria Shipyards to undergo its extended docking work period (EDWP) until 2017.

Canadian submarines generally operate in an operational cycle in which each vessel is available to the fleet for six years, referred to as the "operational period", followed by two years in deep maintenance during an EDWP.



***HMCS* Victoria returns home from operations with the U.S. Navy in February.**

Photo: LS Zachariah Stopa

The three operational submarines will still require in-service maintenance from time to time, in order to make sure they are always ready. These maintenance periods are predictable and planned but mean that submarines can't be put to sea 365 days a year for the six years between EDWPs.

"My intent is to program schedules similar to the surface fleet that will allow our submariners enough time at sea to build and maintain their expertise, while also giving crews a reasonable balance between time away and time at home with family," explains Capt(N) Clarke. "Our submarines will continue to go to sea to carry out a wide range of activities."

Recruiting at an all-time high

Generating qualified submariners can be challenging at times. The training varies by military occupation; however, all new submariners complete the same basic submarine course and subsequent qualification prior to receiving their dolphins. "All submariners are expected to have a detailed knowledge of their submarine and be able to operate major systems – a significant difference from our surface colleagues," says Capt(N) Clarke. "Like every sailor and officer in the RCN, ours is a career of continuous learning so future submariners can look forward to gaining new knowledge, qualifications and responsibilities as their career progresses."

The RCN is actively recruiting new submariners. "Any structure involving the training and qualifying of people always works better if the system runs continuously as opposed to having boom and bust cycles," explains Capt(N) Clarke. "This keeps instructors current and provides a higher level of training to our new submariners. Over the past number of years we haven't always recruited in the numbers we would have liked, but for the last couple of years recruiting has been at an all-time high."

He thinks that the elements that draw people to submarines are a sense of adventure, the ability to use sophisticated equipment, travel and meeting people. "As well," he jokes, "sneaking into a formation of ships while remaining undetected, whether it be to gather intelligence or fire a weapon, is pretty cool!"

A strategic asset

The Victoria-class submarine fleet is an important strategic asset for Canada. Submarines are stealthy, lethal and persistent, making them ideal for surveillance and intelligence gathering. They enjoy unparalleled freedom of action and independence to act at a time and place of the Government's choosing. In an emerging crisis, their presence can profoundly shape regional decision-making and, should deterrence fail, their lethality can contribute decisively to combat operations, both in defending surface forces and placing opposing forces at peril.

Victoria-class submarines are extremely versatile, allowing them to operate in any weather condition for periods of up to 45 days, and perform in a variety of roles to fulfill Canada's requirements for a balanced, multi-purpose and combat-effective naval fleet. In addition to their inherent lethality and strategic importance as a war-fighting vessel, they fill a wide array of peacetime naval roles including fisheries patrols; surveillance of all three Canadian coastlines; support to maritime law enforcement and other governmental departments; maintenance of fleet skills; bilateral engagement

Continued on page 8

Continued from page 7

with continental defence partners; participation in multinational exercises; and deterrence of would-be terrorists, smugglers and polluters.

"First and foremost Canada is a maritime nation," explains Capt(N) Clarke. "We have the longest coastline in the world and our prosperity as a nation is inextricably linked to the sea. As Prime Minister Harper noted at the christening of the Royal Canadian Navy Monument in 2012, 'Canada and its economy float on salt water.' We are incredibly reliant on the sea. To protect our prosperity and our very way of life, it is important that we know what is going on above, on top of and beneath the surface of the world's oceans."

A multi-role navy complete with submarines is critical to understanding what is going on in this maritime domain, and submarines are particularly well suited for this role. "A fully fueled and stored submarine can go to sea and disappear," says Capt(N) Clarke. "It can detect and monitor activity in vast regions of oceans – all while remaining undetected allowing them to see, and report on, behaviours and activities wherever they are located. A single submarine at sea in a time of tension can change the way navies or foreign governments operate. A single diesel submarine is a true strategic asset and a tremendous tool of diplomacy for the Canadian government."

A member of the "sub club"

Canadian submarines are also an important element of Canada's strategic relationship with the United States. Canada participates in a global "water space management" regime which key allied submarine operators use for the prevention of mutual interference. As a member of the "sub club", Canada gains privileged access to intelligence that would otherwise be beyond its means to attain.

"The Victoria-class submarine is a capable submarine that is in every way the equal of our diesel submarine operating allies," says Capt(N) Clarke. He explains that on arrival in Canada from Britain in 1998, they were fitted with state-of-the-art fire control systems, converted to fire American torpedoes, and given significantly enhanced navigation equipment. Since that time, a state-of-the-art main sonar has been installed aboard *Windsor* and the same sonar will be installed in the rest of the class.

The technical organization responsible for the oversight of the class, Director Maritime Engineering and Program Management (Submarines), has developed a comprehensive plan to update most of the systems on board the submarines so they will remain effective and relevant for years to come. New communications masts, updated heavy-weight torpedoes and engineering monitoring equipment has already been purchased and will be installed aboard the entire class in the coming years.

Canadian submarines are able to work seamlessly with our allies. *Victoria* participated in the Rim of the Pacific exercise last summer – the world's largest maritime exercise. As well, they routinely work with U.S. and NATO allies both off the coast of Canada and abroad. In fact, Victoria-class submarines have operated from Oslo to Hawaii and Baffin Island to the Panama Canal, covering a significant portion of the globe exercising and operating with allies.

Diesel-electric versus nuclear

Conventional diesel-electric submarines like the Victoria Class, because of the stealth capabilities and increased manoeuvrability inherent in their smaller size, as well as their extremely quiet electric propulsion system, have advantages in certain scenarios over their nuclear counterparts, especially in littoral environments and strategic choke points.

"Diesel and nuclear submarines are very different weapon systems – one a vessel of manoeuvre, the other a vessel of position," explains Capt(N) Clarke. "Diesel submarines such as the Victoria Class are extremely manoeuvrable and our crews are trained and comfortable operating in very shallow water and close to shore. In fact, a submarine is the only platform that can operate freely in contested waters or areas where we do not have air superiority."

Whether operating in a domestic sovereignty role like *Corner Brook* did in Arctic waters in 2007 and again in 2009, conducting counter-narcotic missions in the Caribbean and eastern Pacific as both *Corner Brook* and *Victoria* have done, participating in national and international exercises to develop skills and those of other RCN and allied sailors, or any other range of international operations, Canadian submarines will continue to go to sea. "And they will be very busy," says Capt(N) Clarke.

HMCS* Corner Brook *sails in Canada's Arctic waters.

Photo: DND

SUBMARINE STATUS

HMCS *Victoria*

HMCS *Victoria* was declared fully operational in 2012. Since that time, *Victoria* has participated in various advanced international exercises such as the Rim of the Pacific (RIMPAC), revealing the modern and unique capabilities of the Victoria-class submarine while providing anti-submarine training for Canadian and international maritime vessels. As part of RIMPAC 2012, *Victoria* was the first of its class to fire the Royal Canadian Navy (RCN) Mk48 torpedo, sinking the decommissioned United States Naval Ship *Concord*. This clearly demonstrated the lethality of Victoria-class submarines.

Victoria worked with Special Forces during Joint Exercise 2013 and other binational continental defence exercises, and also participated in operations on behalf of Canada.

HMCS *Windsor*

HMCS *Windsor* docked in 2014 to allow for replacement of one of its generators. The RCN took advantage of that docking period to accelerate the previously planned installation of some exciting upgrades, including a state-of-the-art bow sonar system that wasn't originally scheduled to go in until 2016. The new sonar system will bring the entire sonar suite of the Victoria Class forward – from 1980s technology into the 21st century – in order to continue to act on behalf of Canada in the face of emerging maritime threats. *Windsor* was back at sea in December 2014.

Windsor sailed from June 2005 to December 2006 and spent 146 days at sea in 2006 alone. The submarine participated in a number of large Canada/U.S. exercises, advanced and improved special operations forces capabilities, and trained with Canadian ships in essential warfare skills. *Windsor* also participated in the first-ever parachute rendezvous at sea, practised with Canada's Patrol Pathfinders (soldiers specialized in the insertion and extraction of follow-on forces). The submarine also conducted several sovereignty patrols off Canada's East Coast for intelligence gathering, surveillance and reconnaissance. Since the end of its last deep maintenance period in 2012, *Windsor* has spent a total of 174 days at sea.

HMCS *Chicoutimi*

HMCS *Chicoutimi* completed its EDWP and returned to the RCN fleet in December 2014. This was the first EDWP conducted by industry under the Victoria In-Service Support Contract (VISSC). This contract highlights a key strategic knowledge sharing initiative and partnership between the RCN and Canadian industry. The successful completion of *Chicoutimi*'s return to operations was enabled by the skills and talent of Canada's submarine community and the relationships forged with industry. These partnerships enabled the establishment of new supply chains and the integrated logistics to sustain these complex weapons systems.

***Signalling from HMCS* Victoria.**

Photo: DND

HMCS *Corner Brook*

HMCS *Corner Brook* is docked at Victoria Shipyards Co. Ltd., in Esquimalt, B.C., to undergo its EDWP under the VISSC with Babcock Canada Inc. It is scheduled to remain in EDWP until 2017.

Corner Brook has participated in various NATO and Canada/U.S. exercises, where it received high praise for its contribution as a simulated enemy in order to assist in the training of NATO and U.S. surface and air forces.

Corner Brook deployed to the Arctic in support of Operation Nanook in August 2007 and again in August 2009, where it participated in a counter-narcotics exercise and conducted covert surveillance patrols in the vicinity of Baffin Island. In March 2008 and again in 2011, the submarine also deployed as part of Operation Caribbe. *Corner Brook* received a CDS Commendation in 2008 for operational excellence.

Corner Brook's crew received the Operational Service Medal for the submarine's successful participation in Operation Caribbe in 2008 and 2011. Op Caribbe is a U.S.-led, multinational effort to interdict drug trafficking in the waters of the Caribbean Basin and the Eastern Pacific. These were the first operational medals received for service in Victoria-class submarines.

Canadian sailor commands multinational task force

Commodore Brian Santarpia

Commodore Brian Santarpia of the Royal Canadian Navy took command of Combined Task Force 150 (CTF-150) in December 2014 and is based in Bahrain. CTF-150 is one of three multinational naval task forces operated by the 30-nation Combined Maritime Forces (CMF).

1. What does your job as Commander CTF-150 entail?

As Commander of CTF-150, I lead a team of 30 Canadian and Australian staff here in Bahrain to conduct Combined Maritime Forces (CMF) counter-terrorism and maritime security operations in the Middle East. Our area of operations is very large, spanning over two million square nautical miles.

My job is three fold. First, under international maritime law and conventions, I am responsible for conducting maritime security operations with the naval and air assets assigned to me by CMF. These operations ensure security and safety in international waters, so that all commercial shipping can operate freely while transiting the region. We do this by having ships on the water and aircraft in the air observing what we call "pattern of life". We then analyze all of this information and take action when and where required. These operations also complement the counter-terrorism and security efforts of regional nations to disrupt the use of the seas as a venue for attack or to illegally transport illicit cargo such as weapons, narcotics, luxury goods, ivory and, more recently, charcoal.

Second, I must ensure that CTF-150 staff and assets stand ready to respond to any maritime terrorist threats or attacks, environmental and humanitarian crises, and safety of life at sea situations. Such attacks are a real threat in the region and they could have a huge impact on the global economy, so we are ready to deter and deny terrorists the ability to conduct such attacks against coalition forces or merchant vessels.

Photos: DND

Commodore Brian Santarpia, right, thanks the executive officer after a tour of a South African Navy submarine.

Finally, I am responsible for conducting leadership engagements and capacity-building activities to help regional navies and security agencies improve their readiness and capabilities, and also to constantly improve interoperability between all partners.

2. What do you do on a typical day?

We have a pretty rigid and standard battle rhythm here. On a typical day, I start by receiving my morning commander update brief by those working on the watch floor (which is operated 24/7). After that, the staff and I

talk about the operations and the schedule of the day, making sure that I will be where I need to be to lead the operations, brief CMF or meet with representatives from other naval partners (there are 30 nations in CMF). When I am not on the watch floor being briefed or providing direction, at CMF receiving or giving briefings, I spend the rest of my time in my office, reviewing orders and other staff products.

Every two weeks or so, I need to leave Bahrain for few days to conduct leadership engagements in some of the regional countries. The security of our Area of Responsibility requires an international teamwork approach and every nation can play a significant role. For that reason, I spend a fair bit of time on the road.

3. How many other Canadians work with your team, and are there personnel from other countries?

Our team composition is very unique and brings together a diverse array of talents. First, the team is composed of both Canadian and Australian staff, 24 and seven respectively. The Australians are all from the Royal Australian Navy (RAN), while the Canadian contingent is much more diverse. We have 17 members of the Royal Canadian Navy (RCN), two members of the Royal Canadian Air Force, three of Canadian Army and two of the Canadian public service. We are a fully combined and multidisciplinary team, with members from all of the Canadian Armed Force's services. It is a concept that is working very well for both Australia and Canada, and I anticipate that our success will result in more of this type of cooperation in the future.

4. How do you ensure the effective integration of staff from different countries and backgrounds?

As any team, be it a staff, ship or other unit, would do before a deployment: we planned, practised and were certified. Our journey started in June 2014 when I met our RAN Chief of Staff in Bahrain during our recce. In September we met again in Ottawa where the senior members of the team, the RCN's Chief of Staff and I spent two weeks building our understanding and knowledge of the mission to come, drafting plans and orders, and finalizing the training program.

During the last week of October, the entire team met in Halifax to complete our work-ups at the Maritime Warfare Centre (MWC). There, we spent a week simulating our deployment. That training put together by the MWC and some CMF experienced Canadian and Australian staff, was extremely valuable and ensured that we would be able to "hit the ground running" as soon as we assumed command in theatre.

5. What are some of the challenges that CTF-150 faces, and what are some of its successes?

CMF is a unique military organization, unlike any other in which I have served. There is no governing body regulating the activities and participation is purely voluntary. Moreover, CMF is not constituted by a treaty, nor is it a defensive pact or a law enforcement agency. These features provide CMF with both its great strength and challenges. The organization has strength because every participating nation comes with a unique skillset and national mandate, which allow contributing nations to complement each other. It can also be a challenge though, because you cannot order a nation to

Continued on page 12

On board USS* Simpson*, a Canadian Armed Forces naval boarding party specialist provides feedback to a member of the Seychelles Coast Guard during an exercise.

Continued from page 11

carry out any duty that is not part of its national mandate. Consequently, our biggest challenge is to properly and efficiently task the units assigned to us to generate the greatest operational effect, while respecting everyone's national mandate.

Another challenge is to manage a force flow that constantly varies from, at times, very few ships and aircraft to, in other periods, a significant number of assets. In both cases – having many ships and aircraft or very few – the staff must be creative and flexible to execute the mission. This is done by having a thorough understanding of the mission, the regional environment and the national limitations of each ship or aircraft contributing to the mission.

One of our biggest successes so far has been achieving efficient interoperability between all of our different assets, such as maximizing the air coverage available by airborne assets to provide coverage for the seaborne assets, or having major warships providing support to the smaller warships. In these ways, we can maximize the time that ships spend on-station and the operational effect they provide.

6. Why is it important that the RCN hold this type of position with our allies and partners?

There is a lot to gain for Canada, the Canadian Armed Forces and the RCN in an opportunity like this to lead a multinational task force in an operational theatre. Firstly, it gives our personnel a greater understanding of the challenges associated with conducting maritime security operations in a coalition environment. While many nations have similar approaches to operations and staff work, other partners operate differently. When called upon, the knowledge and experience gained here in working efficiently and effectively with other nations will serve Canada tremendously. When the crisis hits, there's no time to learn anymore.

Secondly, it clearly demonstrates Canada's commitment to work with partners and allies to ensure peace and security in the maritime environment in the Middle East and off the coast of East Africa. Maritime commerce transiting through the Strait of Hormuz accounts for 30 per cent of the world's crude oil shipments, while 12 per cent of total global maritime trade transits through the Bab el-Mandeb – security of this trade is vital for global stability. Protection of sea lanes in this region of the world maintains the free flow of maritime commerce and trade and contributes to Canada's economic growth.

In addition, any disruption to maritime trade through security threats such as terrorism increases the cost of shipping, creates uncertainty in financial markets and poses threats to stable energy and other commodity supplies. Maritime security operations within the CTF-150 Area of Operations are a proactive response to these threats.

7. When does your command end, and who will replace you?

Command of CTF-150 is typically rotated between participatory nations on a four-to-six month basis. Our tenure will end in April and I will relinquish command to the French Navy.

8. How do you cope with being away from home for months, and how do you help your staff deal with it?

I believe, first of all, that deployments like this are easier to handle if you have the support of friends and families back home. It would certainly be much harder without that support and I can't thank the families and friends of our team enough for their love and support.

We cope with the challenge of separation from friends and family by staying busy and putting everything we can into the mission (we are here to work after all). But I also encourage the staff to maintain a balance between work and leisure while off-watch to make sure we all get the rest we need when possible. We also try to conduct sports and social activities as a group every week, which is good for both morale and esprit de corps.

Commodore Brian Santarpia greets a member of the Royal Australian Navy.

Photos: DND

A Canadian Armed Forces naval boarding party specialist observes Kenya Navy Special Boat Unit members during an exercise.

HMCS *Toronto* returns from overseas mission

Friends and family welcome HMCS* Toronto *as she returns home to Halifax. **Photo: LS Dan Bard**

HMCS *Toronto* returned to her home port of Halifax January 18, after a successful six-month deployment in the Mediterranean Sea on Operation Reassurance, Canada's response to Russia's military aggression towards Ukraine.

HMCS *Fredericton* has replaced *Toronto* on the operation, which promotes security and stability in Central and Eastern Europe. (See page 14.)

Toronto and her helicopter air detachment were tasked to patrol the Mediterranean and Black Seas through the monitoring of shipping to help detect, deter and protect against terrorist activity as part of Standing NATO Maritime Group 2 (SNMG2).

Since deploying in July, the ship travelled more than 30,809 nautical miles in the Atlantic Ocean and the Mediterranean and Black Seas. The ship's helicopter detachment flew 181 sorties, totaling more than 445 flying hours.

"HMCS *Toronto's* success on Operation Reassurance represents the Royal Canadian Navy's ability and willingness to react rapidly to international crises and to work side by side with our NATO allies," said Vice-Admiral Mark Norman, Commander of the Royal Canadian Navy (RCN). "Together with our partners, the RCN brings security, stability and support to complex situations throughout the world."

While operating in the Black Sea, *Toronto* led Task Unit 02 (TU.02) of SNMG2, which included the Spanish frigate *Almirante Juan de Borbón*. TU.02 operated with the Romanian frigate *Regele Ferdinand*, the American destroyer USS *Ross*, and with naval vessels from Bulgaria, Georgia, Turkey and Ukraine.

"I am extremely proud of the crew of HMCS *Toronto* and their determination and dedication during this deployment on Operation Reassurance," said Commander Jason Armstrong, Commanding Officer of *Toronto*. "The success of this deployment is a direct reflection of the crew's training and professionalism, which was demonstrated throughout the mission."

ICE SHIP

After leaving the sunny Mediterranean Sea following a six-month deployment on Operation Reassurance, HMCS* Toronto *received a sudden reminder of winter in Canada en route to Halifax in January.

Photo: MS Peter Reed

Demonstrating Canada's resolve within the NATO alliance

HMCS Fredericton *departs Black Sea with SNMG2*

By Lieutenant (Navy) Jennifer Fidler

In late March HMCS *Fredericton* departed the Black Sea after three weeks of joint NATO training exercises and maritime situational awareness operations with warships from several allied nations.

Fredericton and five other allied warships currently assigned to Standing NATO Maritime Group 2 (SNMG2) were in the Black Sea to enhance maritime security and stability in Central and Eastern Europe. Their presence demonstrates Canada's and NATO's steadfast commitment to allies and security partners in the region, especially in the context of Russia's continued aggression towards Ukraine.

SNMG2 is a multinational, integrated maritime force made up of vessels from various allied countries. These vessels are available to NATO to perform different tasks ranging from participating in exercises to intervening in operational missions.

Upon leaving the Black Sea, Commander of SNMG2, American Rear-Admiral Brad Williamson, and his staff embarked in *Fredericton*, making her the flag ship of the task group. Scheduled to stay on board for a week before returning to USS *Vicksburg*, the Admiral noted, "*Fredericton*'s participation makes a huge difference in the overall capabilities of the force. Having both a Canadian and U.S. ship deployed together as part of SNMG2 demonstrates the transatlantic bond and affirms that NATO is truly a North Atlantic alliance."

Lieutenant-General Jonathan Vance, Commander Canadian Joint Operations Command, agreed. "The Canadian Armed Forces' participation in these joint training exercises and maritime situational awareness operations in the Black Sea strengthens our operational readiness and interoperability with our NATO allies and security partners in the region. It also enhances NATO's capabilities to respond quickly and effectively across the full spectrum of operations and demonstrates Canada's resolve within the NATO alliance."

Fredericton has been deployed overseas on Operation Reassurance since late December, replacing HMCS *Toronto,* and is the third Canadian warship to undertake the mission (HMCS *Regina* was the first).

Fredericton is the first modernized frigate to deploy after completing the Halifax-class modernization/frigate life extension upgrade. This includes a new combat management system, new radar capability, a new electronic warfare system, upgraded communications and missiles, and a new integrated platform management system.

"HMCS *Fredericton*'s new systems and capabilities mean high expectations of performance and reliability, and they've already proven their worth," said Commander Jeffrey Murray, *Fredericton*'s Commanding Officer. "Our new processing power and radar capability gives us a better picture of what's going on in the area with speed and clarity, and allows us to integrate with the rest of the task group to get the full picture."

In the Operations Room of *Fredericton*, new workstations provide more detailed information to the operator, necessary to analyze the maritime environment. Having information

HMCS* Fredericton *conducts a replenishment-at-sea with German supply ship FGS* Spessart *during Operation Reassurance.

Photos: DND

integrated into one display also means the information can be analyzed quickly and more efficiently. “Operators are better able to focus their attention on vessels of interest and a more robust picture can be presented to the task group,” explained Cdr Murray.

While in the Black Sea, SNMG2 warships visited Varna, Bulgaria and Constanta, Romania, where their crew members engaged in community relations.

“These activities help foster better relations between the navies, as well as give back to the communities, a key component in the task group’s visit,” said Cdr Murray.

Upon their departure from the Black Sea, the SNMG2 warships stopped in Istanbul, Turkey, where they said goodbye to Turkish Ship TCG *Turgutreis*. They have now exited the Mediterranean Sea and will continue operating together in the North Atlantic.

Fredericton is expected to return to Canada in late summer.

See the video!

In November 2014, after HMCS *Fredericton* completed her Halifax-class modernization refit and before heading overseas on Operation Reassurance, the ship headed south to the coast off Norfolk, Va., for sea trials and to test fire the upgraded Evolved Sea Sparrow Missile System. The Royal Canadian Navy employs Evolved Sea Sparrow Missile Systems as the main above-water warfare defence capability on the Halifax-class frigates.

See the video at: http://www.navy-marine.forces.gc.ca/en/multimedia/video-gallery.page

***A marine systems engineer repairs a diesel generator on board HMCS* Fredericton.**

Ships of Standing NATO Maritime Group 2 come alongside during a port visit to Istanbul, Turkey.

HMCS* Fredericton*’s helmsman and throttleman brace for a turn during an exercise.

HMCS* Fredericton*’s CH-124 Sea King helicopter prepares to hoist a crew member from the fo’c’sle during an exercise in the Mediterranean Sea.

Model builder pays tribute to submarines

Dwayne Hill displays his model of Her Majesty's Canadian Submarine **Windsor.**

By Carmel Ecker

When the Royal Canadian Navy (RCN) celebrated its submarine centenary in 2014, one submarine enthusiast offered up a very tangible lesson in Canada's boat history. Remote control model builder Dwayne Hill has built from scratch 1/48 scale models of every class of submarine to enter Canada's service.

During 2014, Mr. Hill visited 15 schools near his Brossard, Que., home with his detailed recreations, and talked to students about Canada's submarine history. "It was very well received," he says. "In two cases, I was asked to stay to present to more classes throughout the day."

Not only are the models perfect replicas of their full-size predecessors constructed from actual vessel plans right down to the tiniest details, the remote controlled ones also do the same things the real boats did, such as dive, surface and fire torpedoes, albeit in much smaller bodies of water.

Mr. Hill's collection started 30 years ago with submarine USS *Tang*. He didn't know it at the time, but *Tang* was the same class of vessel as HMCS *Rainbow*, which was originally an American submarine sold to Canada in 1968. When he discovered that in 2003, he made the necessary modifications, repainted it and *Tang* became *Rainbow*.

Not surprisingly, it's his favourite model, even though it was among the most difficult to build. It took three attempts to properly form the hull out of Styrofoam and fibreglass, and learn how to replicate various parts from drawings and photographs.

"If I had the pick of the 19 that I have, *Rainbow* would be my choice. It's a super nice boat. It runs very well and lasts a long time in the water," he says.

After the success of his first build, Mr. Hill honed his skills as a model builder with the help of fellow enthusiast Ted Scrivens. The pair eventually began building in tandem, modeling sister ships from various classes of Canadian naval vessels.

In addition to building 12 surface ships from Canada, the U.S. and Britain, Mr. Hill sculpted models of submarines HMCS *Windsor* (Victoria Class), HMCS *Okanagan* (Oberon Class) and *U-190*, a Second World War German submarine that was captured by Canada and put into service at home after the war.

In 2010, during the RCN's 100th anniversary, he took his models to various shows, and it was at that time someone mentioned the upcoming submarine centenary. "I thought, I've got four of the five classes, why don't I build the fifth one?"

The task proved to be more difficult than he anticipated. He spent months looking for the plans of Canada's first two submarines, *CC-1* and *CC-2*, which were purchased in 1914. Mr. Hill checked every resource at his disposal, but kept coming up empty-handed.

Originally built for Chile at a Seattle shipyard, the two submarines were instead sold to Canada. "When the boats were sold to Canada, it's like the plans up and went away," says Mr. Hill. "When I started looking for the initial builders' drawings I went from Seattle to Puget Sound to Connecticut to England to Montréal, only to find out that nobody really knew where the plans were. I eventually got my hands on a chap, who was 93 at the time, who basically built the plans for me based on drawings. [The submarines] were built in the same dockyard where he used to work. He sent them to me in December 2013 and I took four months to build it."

Without those plans, Mr. Hill says, it would have taken much longer to build *CC-2* and the result would not have been as accurate. Once completed, he demonstrated the boats in action for his school presentations.

Because they are fully functional vessels, both the structure and the radio control components must be water tight. Mr. Hill says he goes a little overboard making his vessels robust, but it ensures the submarines will survive a few days at the bottom of the lake if something goes wrong.

"I've lost a couple of submarines for

a week, week and a half. But when I do finally find them and bring them up, there's nothing wrong with them other than the battery ran out of power," he says.

Operating his vessels is done by a remote control kit that runs at 72 or 75 MHz, so the signal will pass through water. The kit includes a handheld transmitter and a receiver that fits neatly into a water-tight compartment on each vessel. The remote control kits cost $400 to $500 each, and the Styrofoam, fibreglass, plastic and brass needed to fabricate each boat costs another $400 to $500. It's a significant investment, but no more than most other people's hobbies.

Mr. Hill isn't sure why he's so interested in warships, particularly from the Second World War, but it's a passion he's had for as long as he can remember. "I used to love reading the stories of what happened during the war, how these guys went out. They were passionate about what they were doing, understanding what they had to do against Germany to make sure we were free."

A collection of some of Dwayne Hill's models.

In his early teens, he bought and assembled several plastic kit models. But at age 25, when he discovered the remote control models he now builds, there was no looking back.

His home is now a tribute to his passion with about 1,000 books and 600 videos on the First and Second World Wars, the Korean War and the Vietnam War, as well as more contemporary conflicts. "As I build my models, if any of those videos or books talks about or shows the boat, that's what I use to do the details," he says.

Mr. Hill's collection has made an impression on several museums, and since his 14-year-old son prefers the action of hockey to his dad's passion for models, he says his collection will eventually be donated to them.

But for now, Mr. Hill, who is 55, has two more projects on the go as he looks forward to retirement at the end of 2015. He already has the hulls built for Castle-class corvette HMCS *St. Thomas* and River-class frigate *Thetford Mines*, two projects that will keep him busy and happy for at least another couple of years.

HMCS *Toronto* receives U.S. Navy Meritorious Unit Commendation

HMCS *Toronto* has received recognition from the U.S. Navy for her support of Combined Task Force 150 (CTF-150), significantly disrupting the flow of drugs, criminal and terrorist activities while deployed on Operation Artemis in the Middle East.

A U.S. Navy Meritorious Unit Commendation was presented to the ship by U.S. Chief of Naval Operations Admiral Jonathan Greenert on February 20 in Halifax. U.S. Ambassador to Canada Bruce Heyman, Commander of the Royal Canadian Navy Vice-Admiral Mark Norman, and several members of the U.S. and Canadian governments and navy leadership also attended the ceremony.

A non-U.S. naval force receiving a U.S. Navy unit decoration is a rarity; this event marks only the fifth occurrence in the last 45 years.

"An honour such as this continues to demonstrate the world-class capabilities of the Royal Canadian Navy's ships and their crews," said VAdm Norman. "I would like to thank Admiral Greenert for bestowing this honour on HMCS *Toronto* and her crew, and I congratulate the officers and sailors receiving this commendation today for modelling what duty and dedication entails, and for upholding the Royal Canadian Navy's tremendous reputation for excellence at sea."

Photo: LS Peter Frew

The United States Navy presents HMCS **Toronto** *with the Meritorious Unit Commendation.*

The U.S. Navy's Meritorious Unit Commendation recognizes HMCS *Toronto* for service in 2013, while conducting maritime security operations with CTF-150 in the Middle East. The ship and crew demonstrated exceptional professionalism and thoroughness in the tracking, boarding and searching of Contacts of Interest, resulting in an impressive string of narcotics seizures, including more than 1,300 kilograms of heroin and over 6,000 kilograms of hashish. Seizures of a large magnitude can significantly affect the ability of unlawful organizations to fund their illegal operations.

Photo: Lt(N) David Etmanskie

Battling heavy seas – *HMCS* Montréal *battles heavy seas while attempting a replenishment-at-sea approach during workups (short training missions) in February.*

Photo: Cpl Eric Girard

Ice diving – *Leading Seaman Gabriel Mercier, a clearance diver with Fleet Diving Unit (Atlantic), assists Aimie Neron, an underwater archeologist with Parks Canada, in removing her diving helmet at the Old Port in Québec City during an ice dive exercise March 4 in preparation for planned diving operations in the Canadian Arctic. As part of an effort to unlock the secrets of Her Majesty's Ship* Erebus*, and to learn more about the fate of the Franklin expedition, Parks Canada and Royal Canadian Navy divers will join together for Operation Nunalivut and conduct approximately 11 days of intense ice diving and underwater archaeology in April.*

Photo: DND

Lowering the flag – *Sailors from HMCS* Hunter*, the Naval Reserve Division in Windsor, Ont., lower the flag to officially close their old building on a blustery February 14. The blizzard conditions were a fitting tribute to an iconic building that has housed and trained sailors for the last 74 years.* Hunter *was established in March 1940 and formally commissioned on November 1, 1941, named after a British vessel that served on the Great Lakes in the War of 1812.* Hunter *will commission its new state-of-the-art facility during the Battle of the Atlantic weekend in May.*

On parade – *A ceremonial Guard of Honour comprised of 100 members of Maritime Forces Pacific paraded during the prorogation of the first session of the 41st Parliament of the Legislative Assembly of British Columbia February 10. Also participating was the Naden Band of the Royal Canadian Navy and an artillery saluting battery from 5th B.C. Field Regiment Royal Canadian Artillery. The ceremony began with a 15-gun Vice-Regal Salute when Her Honour, Lieutenant Governor Judith Guichon, met Premier Christy Clark on the steps of the Legislature Building. A Guard of Honour is traditionally paraded on formal occasions when the Monarch or Vice-Regal representatives, including the Lieutenant Governor, are present in the Legislative Assembly.*

Photo: MCpl Michael Bastien

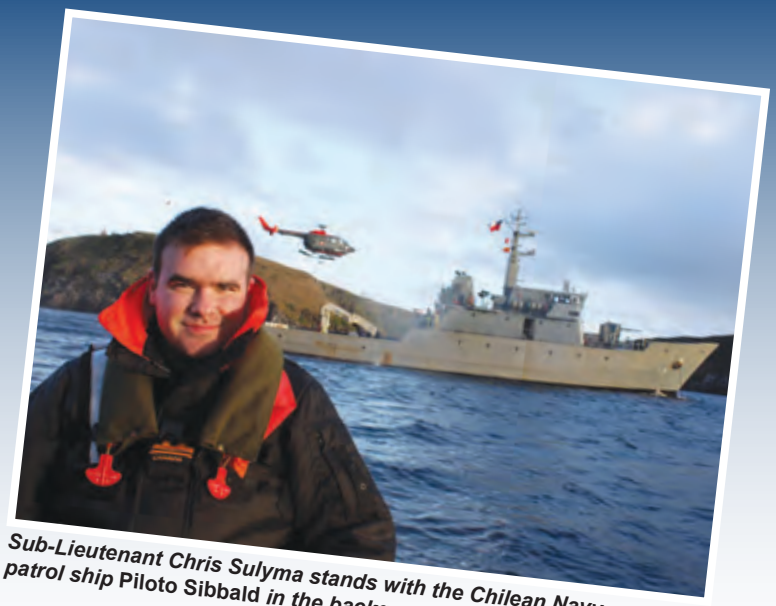
Photo: Cpl Blaine Sewell

Op Caribbe – *HMCS* Nanaimo *(foreground) and HMCS* Whitehorse *conduct manoeuvrability exercises off the northern coast of California during their transit south to participate in Operation Caribbe. Op Caribbe is Canada's participation in the multinational campaign against illicit trafficking by transnational organized crime in the Caribbean basin and the eastern Pacific Ocean.* Whitehorse *was instrumental in the seizure of drugs in two separate incidents in the Eastern Pacific Ocean in March.*

Photo: LS Marilou Villeneuve

A race to the finish – *Sailors from HMCS* Ville de Québec *race towards the finish line during the Ice Canoe Race at the Carnaval de Québec on February 8. The Canoe Race, a legendary competition, has been held since the Carnaval's first edition. Each year, several courageous teams compete with one another during a tumultuous ride along the St. Lawrence River between Québec City and Lévis.*

REGULUS program keeps sailor's skills sharp



Sub-Lieutenant Chris Sulyma stands with the Chilean Navy auxiliary patrol ship **Piloto Sibbald** *in the background.*

By Jamie Cook

It's said that a ship is only as strong as her crew. Skills, experience and proficiency are critical for all ranks and sea trades, and for the operational excellence of a navy as a whole. When the Royal Canadian Navy (RCN) was anticipating limited at-sea experience for some sailors as the Halifax-Class Modernization (HCM) program was kicking into gear, it looked to the REGULUS program.

"REGULUS is about getting young men and women of the RCN to sea during a period of reduced sailing opportunities," says Lieutenant (Navy) Arthur Halpenny, REGULUS Personnel Coordinator.

Through personnel exchanges with friendly navies around the world, Canadian sailors hone their skills and gain valuable international experience while working on board foreign vessels, strengthening the RCN's core competencies.

Since the program's inception in 2010, more than 150 RCN personnel have been sent abroad to countries such as the United States, New Zealand, Australia, the United Kingdom and Chile.

"The exchanges are mutually beneficial," says Lt(N) Halpenny. "If possible, we'll place our sailors in billets that the partner navy may have trouble filling. Partner navies, in turn, often seek RCN training once they witness the talent and professionalism of our sailors."

But the benefits go beyond simply keeping sailors well trained. In the 21st century, successful maritime operations depend upon partnerships and coalitions. Programs like REGULUS build bridges between like-minded navies, allowing them to work together to confront and deter threats to maritime security.

"The young Canadian and allied sailors who bond on these adventures will be the institutional leaders of tomorrow," explains Lt(N) Halpenny.

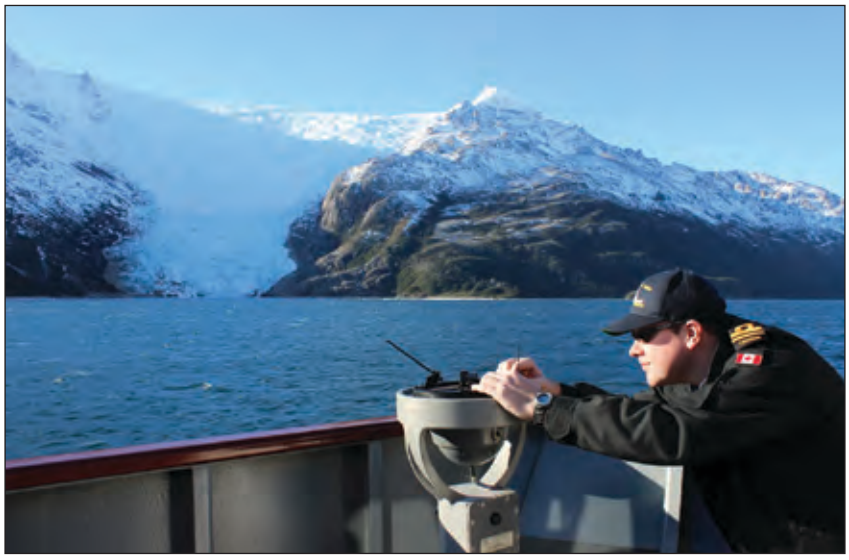
Sub-Lieutenant Chris Sulyma participated in an exchange with the Chilean Navy in April 2014 and found himself on board an auxiliary patrol ship tasked with fishery patrol, lighthouse resupply and search and rescue operations off Chile's southern coast.

"I found the Chilean officers and crew to be extremely friendly, eager to help and genuinely curious about Canadian culture," says SLt Sulyma. "The ship itself helped us celebrate Canada Day, and the local restaurant went so far as to learn how to make poutine for us. We also celebrated the ups and mourned the downs of Chile's soccer team in its drive for the World Cup."

However, working in a foreign country does bring with it some challenges. Many of those sent on exchange have experienced homesickness or culture shock to varying degrees, whether it's struggling to learn a new language or adjusting to a military culture different than the RCN. "There were times where I questioned why I had volunteered, but I was down south with some great people and made some amazing friends who I still speak to today on a regular basis," says SLt Sulyma.

With several frigates having completed their modernization work and the remaining pre-HCM ones beginning theirs, the HCM program is moving along at an impressive pace. However, due to its resounding success, REGULUS is slated to continue for years to come.

"Every sailor sent on exchange through REGULUS has resulted in a tangible return to the RCN in the form of experience and skills gained, new ideas and a better understanding of and engagement with our partner navies," says SLt Sulyma.



Sub-Lieutenant Chris Sulyma takes a bearing while on board the Chilean Navy auxiliary patrol ship* Piloto Sibbald *in the Beagle Channel off Chile's southern coast.