

# STARSHELL

SPRING / SUMMER 2020 | ISSUE 89 NAVAL ASSOCIATION OF CANADA

## Covid-19 and Maritime Security

The History behind the RCN's New Paint-Jobs  
Jamming, Spoofing, and New Maritime Threats  
Broad Area Maritime Surveillance





# Starshell

ISSN-1191-1166

PATRON: HRH THE PRINCE PHILIP, DUKE OF EDINBURGH

## OFFICERS OF THE CORPORATION

PRESIDENT: Bill Conconi

VICE PRESIDENT: Bruce Belliveau

TREASURER: Tom Conway

SECRETARY (EX. DIRECTOR): David Soule (ex-officio)

## COMMITTEE CHAIRS

NOMINATING COMMITTEE: Mike Hoare

NAC ENDOWMENT FUND COMMITTEE: Michael Morris

NATIONAL AWARDS SELECTION COMMITTEE: Barry Walker  
(Bruce Belliveau)

NAVAL AFFAIRS COMMITTEE: Open (Interim Executive Director)

MEMBERSHIP COMMITTEE: King Wan

FINANCE AND INVESTMENT COMMITTEE: Tom Conway

## NATIONAL APPOINTMENTS

NATIONAL ARCHIVIST: Richard Gimblett

CHAIR, HISTORY AND HERITAGE: Alec Douglas

EDITOR, STARSHELL: Adam Lajeunesse

ASSISTANT EDITOR: Chris Yurris

## EXECUTIVE DIRECTOR, SECRETARY/COMMUNICATIONS:

David Soule | 613-837-4026 | [executivedirector-nac@outlook.com](mailto:executivedirector-nac@outlook.com)

STARSHELL magazine is published three times per year (with occasional special editions) by the Naval Association of Canada (NAC). The editor is solely responsible for the selection of material.

Contributions are encouraged and should be sent direct to the editor at [adam\\_lajeunesse@outlook.com](mailto:adam_lajeunesse@outlook.com).

NOTE: All material must reach the editor no later than the 15th day of the month prior to the month of publication. All photographs submitted for publication must be accompanied by suitable captions and accreditation. Photos should also be high-resolution (at least 200dpi). Changes of address are to be sent to the executive director, David Soule, [ExecutiveDirector-NAC@outlook.com](mailto:ExecutiveDirector-NAC@outlook.com).

The opinions expressed in this publication are deemed to be exclusively those of the author(s) and are not necessarily shared by the Naval Association of Canada, the Royal Canadian Navy, or the Department of National Defence. If copyright is specified for any item, permission to copy must first be obtained through the editor, otherwise material may be copied without permission provided appropriate attribution is given to both the author(s) and STARSHELL.

## DISTRIBUTION and SUBSCRIPTIONS

STARSHELL is circulated electronically via email and displayed as a flipbook accessed through the NAC website.

Cover Image: HMCS *Windsor* in Halifax (December 2017). Photo: Chief Petty Officer 2nd Class Shawn M. Kent.

## From the Editor Adam Lajeunesse



This edition of *Starshell* finds much of the world just starting to emerge from the Covid-19 lock-down after the coronavirus pandemic upended society and created new and unexpected security concerns. As such, this edition has a special focus on the impact of the virus on the RCN and our allies. The office of VAdm Art McDonald has drafted a article for the NAC on the Navy's approach to the virus, its preparations and the impacts it has felt. We also include Dr. Ann Griffiths new Niobe paper on the coronavirus and its effect on shipping, the cruise industry, and naval warships. Chris Yurris also takes a quick look at some of the challenges that our allies have faced.

With an eye towards emerging threats, we've reprinted a fascinating article by Dan Goward on navigational jamming and spoofing. We also have a new Niobe paper by Major Matt Fraser on the opportunities present in autonomous vehicles for broad area maritime surveillance.

To go with our ongoing look at the Navy's new dazzle paint, naval historian Jason Delaney offers a history of the RCN's decision to choose the camouflage pattern that it did, including the paint mix recipe for anyone looking to provide their fishing boat with an aggressive new look.

The year 2020 may be looked back upon as a turning point for the naval community. Emergency government spending has put defence procurement in a challenging new fiscal environment, while post-pandemic China has become increasingly aggressive in the waters of the South China Sea. Where Canada and its allies go from here is an important question and one that we'll revisit regularly in future editions.

Adam Lajeunesse

Editor, *Starshell*

[adam\\_lajeunesse@outlook.com](mailto:adam_lajeunesse@outlook.com)



# Starshell Number 89 (Spring/Summer 2020)

## Table of Contents

### Articles & Sections

From the Bridge, Bill Conconi.....	3
The Front Desk, David Soule.....	5
BoA Commemoration, VAdm Art McDonald.....	12
RCN During the Pandemic, Navy Staff.....	16
Covid-19: Impacts on Allied Navies, Chris Yurris.....	19
Rough Waters, Ann Griffiths.....	21
The Origin of the RCN's New Camouflage, Jason Delaney.....	27
Canadian Students at Sea.....	33
Battle of Isla La Tortuga.....	34
Broad Area Maritime Surveillance, Matt Fraser.....	37
Fleet Deployments.....	43
Time to Start Thinking about Subs, Jeffrey F. Collins.....	44
Winthrop and the Raid on St. Nazaire, Fraser McKee.....	46
Rick Guitar NAC Mainstay, Richard Archer.....	48
Wasteful Canadian Defence Spending, Roger Cyr.....	51
Plaque Presented to Bermuda, Len Canfield.....	52
Losing the Navigation and Timing War, Dana Goward.....	53
Memoirs of the late RAdm Welland.....	58
From the Branches.....	65
Letters to the Editor.....	69
Book Reviews.....	70
Last Post.....	73



*Cyclone helicopter aboard HMCS Halifax during Operation REASSURANCE. Photo: Corporal Braden Trudeau*



## From the Bridge

### Bill Conconi, National President

Someone once said, "May you live in interesting times." I believe we are there. It has been stated "...

never in living memory has the world seen a challenge like this." The last was, I guess, the 2018 Flu. The current Covid-19 pandemic is truly global and far reaching.

While increased understanding helps in keeping infections under some sort of control, the associated economic costs are now coming into focus. Our national government is increasing our debt in never seen before amounts as it tries to keep the economy going and provide essential services.

What this increased debt will do to previously announced capital spending on our navy as we look to renew and staff our fleet remains to be seen. It becomes very important that the Canadian public understands the key role our navy plays in our maritime defence and security, as well as our economic well-being and way of life. As our government works to rebuild our economy, it will be important for all to understand that we are an asset here, not a liability.

We all have a role to play in getting this message out. The topic of strategic priorities will rise as discussions around budgets unfold and our government struggles with its future finances. There will be chances both formally and informally to be a part of this discussion, whether meeting and talking in small groups, writing letters to the editor, or in making formal presentations - all will be important. In preparation for this, a visit to the Naval Affairs section of our website ([navalassoc.ca](http://navalassoc.ca)) and a re-read of our Briefing Note No. 3, "Why Does Canada Need a Navy," will help firm up your presentation points. I encourage you all to help get this message out as we educate Canadians about our navy, whether it be renewing the fleet

or recruiting our needed sailors for this expanding role.

In the midst of all this, we are told we will be moving to a new normal in a post pandemic world. We will not be able to go back to the normal that existed a few short months ago. Conferences are on hold, travel is curtailed, and even smaller gatherings are not immediately possible. As a result, new paths forward will increasingly be virtual.

Our history at the branch level has predominantly been one of luncheons and speakers, educational evenings and leadership talks catering to small gatherings. Forty is often considered a good turnout. With these gatherings not being allowed now a few branches have moved to online events/webinars. NAC-O has had good success with virtual events and a sister organization, RUSI-NS, has held some very successful talks/presentations with the last one approaching 150 in attendance. These are available right across the country in real time or viewed later if there was a schedule conflict or if time zone challenges proved insurmountable. The net result being the development of a much wider audience. Also, the ability to record the sessions will allow us to build a library of events to take forward. I encourage all branches to consider this as an alternative and, if conducting an online session is not locally possible, you will always be welcome to be a part of other speaker events.

Our NAC News will highlight opportunities here and I encourage you to take advantage of them. One model could be that in addition to special online presentations, local presentations could also be captured and later shared with members across the country.

Missing of course will be the social connections we used to regularly enjoy but this will again be doable as restrictions lift. As well, online meetings which seem to be the new norm,



can be organized to have “play time” or more social discussions after adjournment while many are still online. With reduced need to travel this saves time which could be invested in good open discussion. Much like what used to take place after a regular meeting over a pint.

To use another adage, “In every crisis there is both challenge and opportunity.” We have, I believe, this situation here and I am confident we will take and capitalize on our opportunities while being informed and guided by our challenges.

Yours Aye,  
Bill Conconi  
National President

### Keep in touch with the NAC

If you are receiving NAC News, but are not a member, please consider joining. Or, keep in touch through social media.

Join the NAC  
[navalassoc.ca/branches/](http://navalassoc.ca/branches/)

View our newest Naval Affairs work  
[navalassoc.ca/naval-affairs](http://navalassoc.ca/naval-affairs)

Archived weekly NAC new links  
[navalassoc.ca/naval-affairs/nac-news/](http://navalassoc.ca/naval-affairs/nac-news/)

Follow us on Twitter  
[@navalassn](https://twitter.com/navalassn)

Should you wish to donate or leave a memorial visit:  
[NAC Endowment Fund](#)

NAC reference to assist veterans and/or seniors is located at [Veteran's Corner](#)



*HMCS Halifax during Operation REASSURANCE. Photo: Corporal Braden Trudeau, Formation Imaging Services*



## The Front Desk

Looking Forward 2020-2021

**David Soule, Executive Director**

Moving forward – Historian Daniel Todman observes in “Britain’s War: Into Battle 1937-1941” (201-202) that the British leadership, based on the fact that most of them had some involvement in the First World War, understood the challenge they faced in 1939. Most were confident they would eventually win, although it would take time, perhaps 3 years. There was a general belief that in the end, the Germans (with or without Hitler) would negotiate a settlement as they had done in the previous war. What none of them imagined were the campaigns of 1945. This last sentence has had a profound impact on me. It caused me to reflect on where we as an organization are, where we want to go in the future, and what the future holds for us; something over which we have little influence at this point in time. Like the British leadership in 1939, we can plan and prepare based on experience and expectations, but we cannot imagine all future possibilities and outcomes.

As our National President notes, there are opportunities ahead for the NAC. There are also significant challenges. The COVID-19 pandemic had a major impact on planned revenue generating activities, such as the planned Battle of the Atlantic Gala dinner and a national conference scheduled for this past May. This revenue is critical to sustaining our Naval Affairs program. It also supports the publication of *Starshell*, as well as funding our participation in a number of associated national strategic level events such as the CDA annual Defence and Security Conference. All to say, the next 18 months will determine how far we can progress our current program.

As our President also notes: our Navy, like the rest of our national programs and services, will also face challenges. There are promises to keep and programs and expenditures to maintain, but they may not be realized for a variety of reasons. That said, we will continue to support our Navy and progress our current programs as best as possible.

### 2020 NAC National AGM

This was held on 16 June in a virtual format. While many of us still prefer a more social face-to-face interaction, this format allowed members from across the country to participate, some of whom are normally unable to travel. All the associated reports are posted to the national website and are available for your review and reference.

The AGM welcomed three new members and confirmed the following individuals for a second three-year term (appointments by the NAC National BoD noted as well)

- Bill Conconi- (2nd term - extended to 2023) (NAC National President)
- Jeff Gilmour – (2nd term - extended to 2023)
- Bruce Belliveau (NSNAC) – (1st term – 2023) (appointed NAC National Vice-President)
- King Wan – (1st term – 2023) (Chair Membership)
- Tim Addison – (1st term – 2023)
- Tom Conway – (1st term – 2023) (National Treasurer and Chair of Finance and Investment)



On behalf of all of you, I congratulate these individuals for stepping up to support our program and goals. Other National Board members are:

- Mark Phillips (term expires 2021)
- Rod Hughes (term expires 2021) (Editor – NAC News)
- Michael Hoare (term expires 2021) (Chair – Nominating)

There are four directors whose service to the Board has expired or who are resigning. On behalf of all members, I would like to express my sincere thanks for their participation and support to the NAC and, in some cases, long service to the NOAC at the Branch or National levels over the years.

Ian Parker showed much leadership and drive in implementing the NAC Naval Affairs program. Without his effort, I am not sure we would be as well advanced in implementing the program. Barry Walker, who served as your National Vice-President over the past three years, dedicated a great deal of effort to supporting the introduction of a National Member database as well as providing the National Executive with sage advice. He also played a key role in planning the Battle of Atlantic gala and conference that was to be held this past May. Brian Cook provided key support to National to ensure the NOABC 100th event was a success. David Coulson has ably served the NOAC and NAC over many years and his service is greatly appreciated. Thanks to all for your dedication.

## **2020 Event Sponsors**

I want to extend a personal thanks, as well as a sincere thank you on behalf of all NAC members, to our sponsors for the 2020 BoA Gala. While the Gala and associated NAC national conference event was cancelled, and other opportunities to host a similar event are being explored, our sponsors have stood with us. All have expressed their willingness to support a future event as well. For some this commitment may be a challenge given the unknowns created by the pandemic, but their intent is greatly appreciated. We simply cannot execute the program we are committed to without their support. Please take time to view page 11 and see who these

companies are. This list is also on the website with links to what services they provide our Navy and other related Canadian maritime and other related business they are engaged in.

## **2020-2021 Program and Opportunities**

As I mentioned earlier, we face some challenging times over the next while (I leave it to you to determine how long the “while” will be). That said we are actively engaged with the RCN to determine next steps, possibly but unlikely, this Fall for the next NAC sponsored event. What is more realistic at this point is a special event in Spring 2021, where we could plan to host a major social event, conference, and AGM. We also plan to use our sponsorship partner team, AMP, to expand our potential sponsorship audience. In addition, we will engage a commercial marketing partner to better market our offerings.

In the interim we are exploring how best to share our branch and other program events with all members. To date, using media tools such as GoToMeeting and Zoom, we have shared NAC-Os monthly speaker engagements live with members across the country and can share event highlights such as presentations after the event. This is very inexpensive to do, and I believe is a significant value-added benefit to your membership. We can also leverage this to attract new members or at least participate with like-minded associations such as RUSI(NS). The reality is we offer some very interesting speakers. True, not all presenters would be willing to share their thoughts live outside the venue of the event, but the technology is definitely there to do this for all members; we need to use it to our full advantage.

In my view the best example of our “product offering” was the NOABC 100th anniversary conference in October 2019 where three premier subject matter experts addressed Canada-China relations. This was the best event on this topic I have participated in and have seen or read since. The only regret is that we could not stream this live/post-event to other members across this country that could not make the trip to Vancouver. We have the “products” and attract some excellent speakers but we need to market this to grow our membership baseline and

offer this “product” to those who seek to become more aware of our programs. And the technology exists for us to do this relatively inexpensively, so watch this space!

## Membership

Since the June 2019 National AGM, the focus of effort at National level has been the creation of a template for a national membership database using the software application WildApricot. This has been targeted at the largest branches, NAC-O and NAC-VI. Thanks to a big effort by Gerry Powell (NAC-O), supported by Bill MacDonald (NAC-VI) this task has largely been completed. While NAC-O has used the system for well over a year, the next stage is for NAC-VI to get it working for their branch.

Over this coming year, the intent is to populate the system with member information from all branches to create a complete national members database. To date nearly 80 percent of NAC members are in the database. The system can be used for a variety of branch and national applications including event registration, member focused emails such as NAC News, branch newsletters, event registration among other uses. The cost of the system will be borne by the national office. More to follow in regard training and informing members on how to use the system.

## Membership Committee

In early 2020 King Wan assumed Chair of the membership committee with support from fellow board member Mark Phillips. In the coming months the committee will seek representatives from individual branches as members. This is a critical issue for the NAC and key to our survival.

## NAC Committees

So you do not want to serve on the national board of directors as a member? Perhaps participating as a member of a national committee of interest is a more appealing way to support the committee. Your National Board is looking for volunteers for the following committees: finance and investment committee and naval affairs (looking for a director as well). There will also be ad hoc committees, focussed on marketing our brand to attract new members and

make Canadians more aware of our association. All you need to do is contact me by email at [executivedirector-nac@outlook.com](mailto:executivedirector-nac@outlook.com) and I will put you in touch with the committee chair.

## Concluding Remarks

It is easy to be a bit glum in regard the future of our and other like-minded associations, let alone the country’s prospects for the future. I do believe that, with some prudent planning, use of resources such as affordable media tools, and “products” we produce through our naval affairs program, we can remain viable. While we face some revenue generating challenges to support our programs and member services, there are opportunities to explore. I think we make a difference, and we have some very good opportunities to demonstrate our support for the Navy and educate Canadians on the reasons why their Navy matters. I am very excited by the media tools we can use to become a closer and more informed association; we need to start using them on a routine basis.

Finally I want to thank all the members who have contacted me over the past year for assistance, to offer advice, or simply just kept in touch. Our Naval Affairs team of Ann Griffiths and Adam Lajeunesse have provided professional and enthusiastic support all year and are a real pleasure to work with. I extend a special thanks to the National Board members who have supported me this past year and put up with my less than perfect administrative skills! I want to thank our President, Bill Conconi, for his support and friendship. To all of you – stay safe and healthy out there and do find a way to have a good laugh. It keeps us young!





# Battle of the Atlantic Gala Canceled

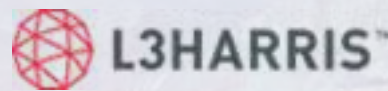
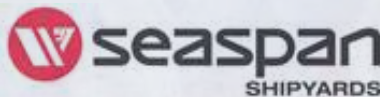
The 2020 NAC BOA Gala, conference and AGM have been postponed until further notice out of concern for the health and welfare of those we seek to honour: our loyal NAC members far and wide, those who loyally serve in the RCN, and those who support the NAC. We are working on a plan to host a replacement dinner and conference in October along with other RCN activities which may be scheduled at that time. The AGM will be held via electronic means in June.

While the gala was canceled we would still like to thank our sponsors, whose generosity is very much appreciated and continues to be essential in informing Canadians about our navy and the importance of maritime security to our safety and way of life.

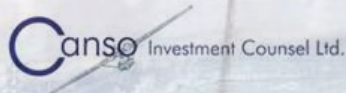
## Signature Plus

**BAE SYSTEMS**

## Signature



## Premier



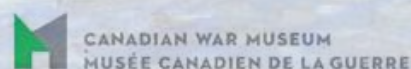
## Corporate



Prespectus  
Associates



## Supporters





# NAC Endowment Fund

*Annual Report to the Membership for 2019*

Every year, the NAC Endowment Fund trustees provide a summary of the Fund activities for the previous year. In 2019, the Fund received donations totaling just over \$31,200. Largely due to the excellent portfolio management we receive from Odium Brown but also reflecting the market recovery following the market fall in December, 2018, our investment portfolio performed exceptionally well (it may be useful to note that, as this is written in June, 2020, the impact of COVID19 has been minimal – the portfolio is down under 4% so far in 2020 – it now stands at about \$935,000). We were able to maintain the granting level - in doing this, your trustees continued to work toward two objectives –making grants which are consistent with NAC’s mission while also growing the fund (which in turn will allow us to increase the grants). We would particularly like to acknowledge those donations which we received in memory of former members and friends – they are:

- Marie Bain
- John Dugan
- Brooke Campbell
- David Gilbert
- Roderick Jack
- Joseph Anthony Stachon

In 2019, the Fund made grants totaling \$38,331 (from requests totaling over \$46,000). These were as follows:

## **Remember the Past**

- Contribution toward upkeep of the Battle of Atlantic Memorial at HMCS Prevost (London) - \$5,000;
- \$2,000 toward the cost of a statue in Cobourg, Ontario, to commemorate Fern Sunde – the first woman wireless operator in a merchant ship during the Battle of the Atlantic (she made 71 passages!); and,
- Shipbuilder statue, to commemorate the BC shipbuilding industry, in North Vancouver, BC - \$5,000.

## **Support Today’s Navy**

- \$5,000 to the Canadian Naval Memorial Trust to support installation of a video system (for public education) in HMCS Sackville;
- \$2,000 to the CFB Esquimalt Museum toward the cost of scanning/digitizing historic records; and,
- A \$6,081 grant to the Broadmead Care Society to assist with the replacement of beds in the Veterans Memorial Lodge.

## **Build the Future**

- \$5,000 to the Royal Canadian Sea Cadet Education Fund (RCSCEF) for scholarships;
- \$2,000 to the Quadra Foundation to fund scholarships for former HMCS Quadra cadets;
- \$2,500 contribution toward NAC Calgary’s Wilson scholarship in support of post-graduate studies in military/strategic studies;
- \$1,750 to offset the costs of a program to allow Montreal sea cadets to build a boat and then sail it;
- \$1,000 to support projects in four Montreal-area sea cadet units; and,
- A \$1,000 directed contribution (funded by one of our members) to support program delivery in RCSCC Minas (in Windsor, NS).

*\* Some may appear to be miscategorized – but where does 'remembering the past' become public education under 'support today's navy'?*



The need for funding to support the type of work we do is ongoing – typically, the deserving requests for grants are considerably in excess of what we are able to fund and there is every reason to expect that the level of requests will grow as the NAC Endowment Fund becomes better known. As your trustees, we ask your continuing support to assist us to grow the fund. Tax-deductible contributions can be made at any time (there is a donation form elsewhere in this issue of Starshell) and donations can also be made through Canada Helps, by donations of securities or as part of your estate planning.

Thank you for your support!

Your trustees,

Michael Morris (Chair)

Derek Greer (Treasurer)

John Anderson

Richard Lewis

Doug Plumsteel



*Cyclone helicopter, Combat Camera*



# NAC Endowment Fund - Donors

*The trustees of the NAC Endowment Fund would like to acknowledge the generosity of the following people, who donated to the fund in 2019*

## **\$1,000 or Greater**

- Campbell, Janet
- Cooper, H. A. (Mike)
- Harrison, Ronald E.
- Hunt, Patrick
- Logan, Bruce

## **\$500 to \$999**

- Anderson, John
- Campbell, Peter A.G.
- Drage, Peter J.
- Drent, Jan
- Driega, A.W.
- MacLauchlan, Al
- McIlwaine, Robert
- Morres, Michael
- Pagé, Simon
- Sparkes, Ken
- Zuliani, Ray & Anne

## **\$250 to \$499**

- Bate, C. Derek
- Currie, John
- Edwards, Davis C.
- Fletcher, David Mark
- Fournier, Larry
- Gooch, Bryan
- Greer, Derek
- Plumsteel, Doug
- Rich, Darren
- Saunderson, William J.
- Smith, Howie
- Spence, Hugh
- Thomas, William C.

## **\$101 to \$249**

- Austin, James
- Bialkowski, Bill
- Bowen, Michael P.
- Carlisle, William
- Chance, Peter
- Conconi, Bill
- Cowie, Jeff
- Critoph, David
- Garnett, Gary

- Glassford, Roger
- Gruber, John
- Healey, E.J.
- Hoare, Dr Michael
- Jones, Ken
- Lapointe, Jocelyne S.
- Makin, Marion
- Marshall, Rowland C.
- Milne, William J.
- Nicolson, Charles
- O'Reilly, Eileen
- Raven, Donald
- Roots, Fred
- Smith, Calvin A. H.
- Stachon, Patricia
- Stock, David J. B.
- Urquhart, Ian
- Wan, King
- Ward, Peter
- Whiteley, Nigel
- Williams, Edgar

## **\$100 or less**

- Abbott, Arthur H.
- Abbott, Harry D.
- Addison, Tim
- Allard, Bernie
- Archer, Richard
- Ashley, David
- Atwood, James
- Auns, Vilnus
- Bain, George
- Baird, A. Melvin
- Barber, Josh
- Barker, Christopher
- Bey, Peter
- Bialek, Murray
- Booth, Robert T.
- Boylan, Douglas
- Brossard, Michel
- Broughton, William J
- Brown, Daniel
- Brownfield, Edward
- Buchholtzer, Guy P.
- Butterfield, Sybil
- Chipman, Peter A
- Clark, Michael L.

- Coell, Sue
- Collins, David
- Cotaras, Constantine
- Darlington, Robert A.
- Del Col, Roy
- Dempster, Marshall
- Dodgson, James
- Doell, Jack
- Douglas, Peter
- Dunlop, Alan
- Edwards, Robert
- Ellis, Michael B.
- Ernst, Victor Garry
- Evans, Gary Best
- Evans, Rogers A.
- Fama, Joe
- Fleck, John
- Glass, Saul
- Hallett, Thomas
- Hare, H. Irvine
- Hendel, Hans
- Herrndorf, Fred
- Hinchliffe, Douglas R.
- Hoes, Peter
- Hovey, Robert
- Jack, Noelle
- Jones, C. Harvey
- Lait, Ken
- Little, James
- Macintosh, Macgregor
- Melville, Bruce
- Millar, John S.
- Mitchell, David
- Mitchell, Robert
- Moore, George A.
- Moore, Russell D.
- Murray, John B.
- Nash, John
- Naval Assn. of Edmonton
- Nelson, Meredith
- Nicholson, Elizabeth
- Oland, Richard
- Page, Michael
- Parker, Stan
- Porter, H. Tim
- Porter, L. F.
- Reader, Peter V.
- Reid, Ernest
- Richardson, Sherry
- Rideout, Brian
- Rimek, Stan
- Shead, Bill
- Soule, David
- Stewardson
- Tate, Maurice
- Taylor, William J.
- Trusler, Dr. George A.
- Waddell, Harvey
- Wand, Donald
- Watkins, Robert A
- White, Robert
- Wilcock, Bryan
- Williamson, Robert J.
- Wilson, Donald
- Woznow, Harry
- Wyatt, Rachel
- Wynnyk, J.





## Battle of the Atlantic – 75th Anniversary Commemoration

**Vice-Admiral Art McDonald**  
**Commander Royal Canadian Navy**

Shipmates, as you are aware, 2020 is the 75th anniversary of our victory in the Second World War's longest campaign, the Battle of the Atlantic – a national effort against a formidable foe. Ironically, this anniversary has fallen upon us as we now struggle with a different type of foe and again we need to unite from coast-to-coast-to-coast in our actions to secure a critical victory in the pandemic we face. It goes without saying that we are in a very uncertain and unprecedented time as we fight to vanquish this new hidden enemy, as our predecessors did against theirs 75 years ago. Beyond a doubt, the fight against COVID-19 is going to have an impact on all of us – indeed it already has significantly impacted our daily routines, both at work and at home. In this light, I have decided that our year-long celebration of the anniversary will undertake a nation-wide operational pause of all RCN-led commemoration activities until at least the end of May. Significantly, this means that the premiere BOA Sunday commemorative events and ceremonies planned for 3 May 2020, including the National Commemoration at the National War Memorial - as well as the events planned in the few days running-up to BOA Sunday - will all be deferred. This decision aligns too, by the way, with the recent announcement by the Naval Association of Canada (NAC) that, following consultation with the RCN, the NAC-led BOA Gala Dinner previously scheduled for Thursday 30 April at

the National War Museum is also deferred. These deferrals align with the unprecedented requirements of our current national pandemic response efforts and clearly reflect our prioritization of the health and well-being of our veterans, our sailors, our families and of our communities at large. Further, the unfortunate necessity for deferral reflects the fact that your safety remains an RCN/CAF priority.

Obviously, we'll resume our commemorative events again later this year when the situation permits. Expect to hear more from the RCN in this regard as soon as it becomes possible to predict when we'll resume these important activities. For now, however, I'd share that it is intended that we'll reset to have all previously planned 75th anniversary BOA commemoration events, ceremonies, and gala (NAC concurring – TBC) scheduled for a Fall date – perhaps coincident with NIOBE Day (TBD).

Meanwhile, expect too some guidance and encouragement soon from the RCN as to how we can all individually and safely salute our amazing predecessors – the veterans of the Battle of the Atlantic as well as the other wars and operations conducted since in which the RCN has repeatedly distinguished itself as a proven warfighting service – come the first Sunday in May. And, in the interim, Shipmates, please continue to look after yourself, your family, and your shipmates!



NAVY  
BIKE  
RIDE  
Presented by  
IMO

ROYAL CANADIAN  
NAVY MARINE  
ROYAUME DU CANADA

# JUNE 13 TO AUGUST 30, 2020

## Navy Bike Ride Update

Navy Bike Ride (NBR) will be altering its event from a physical to a virtual challenge. We will be naming it the “Navy Bike Ride: Battle of Atlantic Challenge.” Taking place 13 June to 30 August 2020, this event will give us the opportunity to educate participants on the incredible role our Canadian Forces played in the Battle of Atlantic.

## Battle of the Atlantic Challenge

The 2020 Battle of the Atlantic Challenge encourages participants across the country to cumulatively conduct 25,000 rides between 13 June and 30 August 2020. This will be in honour of the 25,000 voyages Canadian Naval and Merchant Marine Forces conducted during World War II in the Battle of the Atlantic 75 years ago.

Whether indoors or outdoors, we are inviting cyclists to get out and ride while respecting the rules of social distancing, while also qualifying to win some great prizes. Registration for this event can be completed on our website at [NavyBikeRide.ca](http://NavyBikeRide.ca)!





# In Memoriam



*Our hearts are heavy with the recent news from HMCS Fredericton. There are no words to describe a loss as tragic as this. On behalf of the entire Air Force and Navy family, we offer our deepest condolences, love and support to the families, friends and loved ones of all those affected by this devastating loss.*

*Our thanks go out to all those involved in search efforts and in particular our NATO partners operating in the area.*

*This incident serves as a difficult reminder of the sacrifice that our brave men and women face daily while defending and representing our nation, both at home and abroad. It also serves to remind us all how dangerous even routine operations at-sea and in the air can be. In the face of these realities, the sailors and aviators aboard Navy frigates operate as one team – one family – a family that today mourns together.*

*To the families and loved ones of Master Corporal Matthew Cousins, Sub-Lieutenant Abbigail Cowbrough, Captain Kevin Hagen, Captain Brenden Ian MacDonald, Captain Maxime Miron-Morin, and Sub-Lieutenant Matthew Pyke – we extend our deepest sympathies. As we take the time to come to terms with this tragedy, our thoughts are with you and we stand ready to support you through these difficult times.*

Lieutenant-General Al Meinzinger, Commander RCAF  
and Vice-Admiral Art McDonald RCN







# Maritime Security in the Age of Covid-19

# The Royal Canadian Navy is “Ready to Help, Ready to Lead, Ready to Fight” during the COVID-19 pandemic

## Naval Staff, Office of the Commander of the Royal Canadian Navy

Ever since the Royal Canadian Navy (RCN), and Canadians at large, began taking extraordinary measures to combat COVID-19 in mid-March, the health, safety and welfare of our Regular and Reserve Force sailors, civilian members of the Defence Team, and our families has remained a top priority.

It is a responsibility that the RCN has carefully balanced – and always will balance – with the requirement to be ready to complete the missions assigned to the Canadian Armed Forces (CAF) and RCN by the Government of Canada.

However, as the Navy Team was working through the challenges introduced by the COVID-19 pandemic, we were faced with the sudden and tragic loss of six of our shipmates from Her Majesty’s Canadian Ship (HMCS) *Fredericton* following the ship borne Cyclone accident in the Ionian Sea at the end of April.

The RCN as an entire organization mourns alongside the crew aboard *Fredericton*, who are now back at sea, supporting NATO assurance and deterrence measures as part of Op REASSURANCE, Canada’s contribution to NATO in Central and Eastern Europe.

The sailors and aviators aboard our ships operate as one team – one family – a family that mourns together. But one that is also resilient and is continuing on with their critical mission – one now dedicated to the memory of our fallen shipmates and their families:

- Captain Brenden Ian MacDonald,
- Captain Kevin Hagen,
- Captain Maxime Miron-Morin,
- Sub-Lieutenant Matthew Pyke,
- Sub-Lieutenant Abbigail Cowbrough, and
- Master Corporal Matthew Cousins.

While *Fredericton*’s NATO deployment continues, a flight safety investigation is ongoing, and efforts are underway to locate and recover the remains of those still missing and their helicopter in order to provide the families, the CAF and the Canadian public with a factual account of the events that occurred in as timely a manner as possible, as well as to aid them find closure.



*HMCS Calgary's boarding party prepares to enter the ship's hangar during Task Group Exercise 20-1. Photo: Corporal Jay Naples, MARPAC Imaging Services*

## The Fight against COVID-19

And just as *Fredericton*’s mission continues, so does ours in our continuing fight against COVID-19. For example, the RCN has taken a number of measures to prevent the spread of COVID-19, while also ensuring that we maintain the forces necessary to respond when called upon by the Government of Canada. In order to do this, the RCN put members on stand-by across the country, ready to respond to COVID-19 as part of Op LASER, the CAF’s pandemic response operation. Readied forces



included five COVID-free warships (three frigates and two maritime coastal defence vessels), two domestic response companies, two small boat units, two teams of clearance divers, five general duty companies of Naval Reservists, and teams of local response forces. As part of this effort, the RCN also provided assistance to long-term care facilities, with medical and other support personnel.

## Impact on Operations and Training

HMCS *Calgary* was expected to deploy to the Asia-Pacific earlier this spring once the ship successfully completed high readiness training. However, due to the regional impacts of COVID-19 in the March-April time frame, *Calgary's* international deployment was deferred. Instead, *Calgary* remained at-sea with our RCN assets through early May, augmenting the RCN's ability to respond to potential domestic tasks related to Operation LASER.

transnational criminals and terrorists that might otherwise do us harm. The decision to suspend the *Nanimo* and *Whitehorse* employments early was taken in consultation with our U.S. counterparts and was aimed at limiting our sailors' potential exposure to COVID-19 (especially in light of ready accessibility to fulsome medical support). It also afforded the RCN maximum capacity to preserve at-sea readiness and capability to carry out core missions in support of the Government of Canada, if tasked, once the ships returned to Canadian waters in mid-April.

Finally, HMC Ships *Glace Bay* and *Shawinigan* returned to Canada earlier than planned from Operation PROJECTION Africa for similar reasons, as well as the cancellation of two U.S. Navy-led annual African Theatre exercises - OBANGAME EXPRESS and PHOENIX EXPRESS - in response to the global effort to contain the spread of COVID-19. With these cancellations, the ships returned to Canada in early April and formed part of the RCN's response to any potential requests for domestic support.

With regard to COVID-19's impact on current operations, the RCN is doing everything possible to ensure the health and safety of our sailors at sea, as this is essential to our ability to remain operationally deployed. As a result, our operations are continuing – modified on a case-by-case basis and taking into consideration the nature of the respective mission and tasks, the class of ship in question, and the area of operations and its unique pandemic considerations.

So, in addition to HMCS *Fredericton's* mission in support of Operation REASSURANCE, the RCN is also committed to participating in Exercise Rim of the Pacific 2020 (RIMPAC), the world's largest multi-national maritime military exercise that takes place in and

around the Hawaiian Islands and Southern California. Although changes will almost certainly have to be made in terms of the scope and timing, due to COVID-19, as long as it can be done safely, the RCN will participate this year as we have in every RIMPAC since 1971.



A Naval Reservist changes shifts at a long-term care center, in Verdun, Quebec, Operation LASER. Photo: Corporal (Cpl) Genevieve Beaulieu, Valcartier Imagery.

Her Majesty's Canadian Ships *Nanimo* and *Whitehorse* returned to Canada earlier than planned from Operation CARIBBE, where they had been helping stop the flow of illegal narcotics in the Caribbean Basin and Eastern Pacific region, keeping drugs off our streets and denying funds to

Our preparations to get us to this point and going forward

As part of those early decisions made to mitigate the risk, in mid-March, the Navy quickly decided to embrace telework where possible, while maintaining core services at all its units. Our goal was (and is) to minimize the physical presence of sailors and civilian employees in our corporate workplaces and aboard ships, all while following Public Health guidance for hygiene and physical distancing to the greatest extent possible.

However, modern warships are not designed to permit ideal physical distancing. Navy leadership and individual command teams are using common sense to create physical distance on board ships to the greatest extent possible, and to take additional steps to safeguard the health and operational effectiveness of our sailors. Ships are taking extra precautions in terms of hygiene, including wearing masks and protective eyewear and strictly adhering to recommendations made by the Directorate of Force Health Protection and the Public Health Agency of Canada.

As we approach the beginning of June, we are seeing provinces and regions across the country begin to relax COVID-19 restrictions. This work is occurring in an asymmetric way, responsive to

regional conditions. Here at the RCN, we have been similarly working to plan for the gradual resumption of activities, in a deliberate and incremental manner. The easing of restrictions will occur at a different pace based on geography, function, physical space limitations, the availability of social infrastructure and individual circumstances. In all cases, we will continue to listen to our health experts, respect physical distancing requirements, and take appropriate measures to provide a safe work environment.

The past several weeks have been challenging for Canadians – the RCN, the Royal Canadian Air Force and CAF included. But Canadians and our respective armed services are resilient. For the RCN, we continue to draw inspiration from our service's storied past, pausing in May to mark the 75th anniversary of victory during the Battle of the Atlantic, the longest naval battle of the Second World War. Paying tribute to our naval predecessors -- which also coincided with the 110th anniversary of the founding of the Navy -- allowed us to honour our rich history, even as we remembered the honour, courage, and sacrifice of our fallen, and together we found the strength to rise and stand tall as we have done for more than a century.



*HMCS Nanimo patrols Desolation Sound during a maritime domain awareness patrol. Photo: RCN Strategic Outreach.*



# The Global Pandemic: Impacts on Allied Navies

Chris Yurris

The COVID-19 Pandemic has altered the short-term plans of several allied navies. As of April 22, there were confirmed cases of COVID-19 on 26 US Navy ships, with the outbreak on USS *Theodore Roosevelt* receiving the most public attention. Almost a quarter of the 4,800 crew members aboard the carrier tested positive for the virus. Moreover, the removal of Capt. Brett Crozier, for his criticism of the USN for failing to adequately protect its sailors from the disease, was the source of public backlash, with calls for his reinstatement – leaving the US Navy with an awkward political hot-potato.

Aboard *Roosevelt*, the outbreak resulted in the death of a sailor, the second service member to pass away from the virus. Despite its crisis, the need to demonstrate preparedness in the face of Chinese naval maneuvers led the carrier to return to sea on May 20th, after almost month sitting at anchor at Guam. While the ship is sailing once more, new safety protocols have been introduced to prevent a similar outbreak in the future, with crew members undergoing daily health checks and wearing face masks.

While *Roosevelt* received the most attention, Covid-19 has spread across the US Navy. The destroyer USS *Kidd* experienced a severe outbreak, with nearly 90 crew members testing positive for the virus in late April. The outbreak occurred while the vessel was participating in an anti-drug trafficking operation near South America and the destroyer docked in San Diego on April 28 to undergo a thorough cleaning and disinfecting. On May 19th the *San Diego Union Tribune* reported that the destroyer's crew was beginning to return to the warship after nearly three weeks in quarantine.<sup>1</sup>

The French Navy experienced an outbreak of the coronavirus aboard its own carrier, *Charles de Gaulle*, with nearly half of the carrier's crew - over 1,000 sailors - testing positive. The outbreak saw 24 crew members hospitalized, and one placed in

intensive care. Among those infected were two US sailors assigned to the carrier as part of the US Navy's Personnel Exchange program. Following the outbreak, the carrier was docked in Toulon, France in mid-April to undergo a thorough disinfecting process.

As of May 11, fully 98% of the carrier strike group's crew who had tested positive for the virus were recovered. Signs of poor preparation were identified, with the vessel lacking face-masks until late in the mission; moreover, the ship's command allegedly relaxed social distancing guidelines at a critical point.

The coronavirus pandemic has also caused the French Navy to halt operations in the Gulf of Guinea off the West African coast, as part of the permanent operation *Corymbe*. To fill in the gap left by the French departure, the Italians deployed the Frigate



USNS *Mercy*. Photo: Petty Officer 3rd Class Gabrielle Joyner, US Navy Public Affairs, Hawaii

*Luigi Rizzoto* the area, where it is intended to "to safeguard the freedom of navigation and the protection of national interests."<sup>2</sup>

The Royal Navy's flagship, the HMS *Queen Elizabeth*, has also experienced difficulties with the coronavirus, although avoiding outbreaks of the severity experienced on *Theodore Roosevelt* and *Charles de Gaulle*. On April 23rd, the BBC reported that the aircraft carrier was docked in Portsmouth prior to departure to test all 800 crew members. On May 15, *Queen Elizabeth's* crew ended their quarantine period, leaving the UK healthy.

Allied navies have also helped in the efforts to alleviate the shortages of essential supplies in the fight against the coronavirus, along with providing medical support. The USN, alongside the US Army, have begun work on 3D printing COVID-19 testing swabs. The US Navy also deployed USNS *Comfort* - a hospital ship - to New York City, where it treated 182 patients for the coronavirus in the epicenter of the nation's outbreak. The 1,000-bed vessel's full capacity was not required, with social distancing and stay-at-home orders somewhat limiting the previously



*French carrier Charles de Gaulle. Photo: Wikimedia Commons*

anticipated surge of cases. Similarly, USNS *Mercy*, *Comfort*'s sister ship, was deployed to Los Angeles, treating 77 patients over a six-week period.

Likewise, the Royal Navy has worked to combat the shortage of personal protective equipment (PPE) for healthcare workers. For example, sailors at Royal Naval Air Station Culdrose produced 2,000 masks for essential workers, using 3D printers. The Plymouth Naval Base has also been working 24/7 to 3D print PPE for the National Health Service.<sup>3</sup>

Moreover, RN cadets have been volunteering on the frontlines of the pandemic, with students in medical fields working in hospitals in the UK. For example, 21-year-old Officer Cadet Beth Oelmann, a second-year student nurse, has volunteered in the Cardiff University Hospital, treating patients suffering from the virus.<sup>4</sup>

The Royal Navy has also altered its deployments. The 45 Commando unit of the

Royal Marines shifted from an operation in the Arctic to provide support in the British overseas territory the Turks and Caicos. The aim of the trip is to deter the illegal movement of people onto the territory, in order to limit the spread of the virus. After spending two weeks in quarantine, the team of 30 has trained alongside the Royal Turks and Caicos Police Maritime Division. As of May 22, the territory has 12 confirmed cases of the virus; of those cases, there has been 1 death and 10 which have recovered.

The incapacitation of some of the world's largest and most powerful ships has demonstrated a vulnerability that allied navies had never expected. In the Pacific, the situation was particularly concerning as China brought both its carriers to sea while *Roosevelt* remained stuck in Guam. The confined nature of a warship makes them ideal breeding grounds for the virus and difficult to control once an outbreak occurs. For now, at least, most allied navies appear to have brought the situation under control.

<sup>1</sup> Dyer, Andrew. "USS Kidd Sailors Begin Return to COVID-19 Stricken Warship While Carrier Roosevelt Prepares to Return to Sea." *San Diego Union-Tribune*, 19 May 2020,

<sup>2</sup> Breeden, Aurelien. "How an Invisible Foe Slipped Aboard a French Navy Ship." *The New York Times*, The New York Times, 19 Apr. 2020

<sup>3</sup> "Plymouth Naval Base Helps Produce Masks for Local NHS." *The Royal Navy*, 22 Apr. 2020,

<sup>4</sup> Royal Navy News. "Royal Navy Cadets Step Up to Help With COVID-19 Response." *The Maritime Executive*, 18 May 2020,



*US Secretary of the Navy visits Mercu in Los Angeles. Photo: US Military Health System*

# Rough Waters

## The Effects of Pandemics at Sea

### Dr. Ann Griffiths

Many states are beginning to loosen the restrictions that were imposed to reduce the spread of coronavirus/COVID-19 (the particular illness that comes from the novel coronavirus). As they start to do this, it has become clear that it is far easier to shut down an economy than it is to open it, particularly as it is being done piecemeal and under circumstances in which the future of the pandemic is still unclear.

The novel coronavirus pandemic has had major effects on lives. For years in the future, we will be measuring the mental, physical and financial costs to citizens. These costs will be financial – job losses, revenue losses, for example – but people will also have to deal with the death of family members or friends, restricted freedom, postponed surgeries, among other things. These costs are spelled out in the news every day. But what we do not hear about are the effects of pandemics on the industries and organizations that operate on the oceans. This may happen out of sight for most people, but the maritime industry has been hit hard as well. And these industries must be considered as we try to move beyond the pandemic. The problems on land will reverberate in the maritime industries, and the problems in the maritime industries will reverberate on land. The maritime sector may not seem like a place to look as we unwind the restrictions on land, but unless we consider the maritime sector, the effects of the pandemic will take longer to overcome.

### The Cruise Ship Industry

It may seem frivolous to think about leisure activities while people are suffering from so many other stresses. But if we are looking at the effects of the novel coronavirus/COVID-19 on the oceans, the

cruise ship industry is a factor. It would not be an understatement to say that the industry has been decimated. After a number of well-publicized cases of COVID-19 on board cruise ships, the industry has lost bookings by the thousands. Even assuming that people would still book trips, and that cruises were scheduled, many ports have now placed restrictions on cruise ship visits for the 2020 season. And indeed, the entire cruise ship season may be cancelled.

Despite the fact that many people enjoy cruises, given loss of income and health concerns, the last thing they are considering right now is taking a cruise. And that is understandable. But the cruise ship industry employs thousands of people directly – including booking agents, crews on the ships (both for ship operation and for passenger service) and maintenance personnel. Job losses just *directly* related to the devastation of the cruise ship industry will be substantial.

It is the indirect costs, however, that will have the biggest impact. The cancellation of cruise ship visits will have a huge impact on the tourism industry in ports where they stop. Cruise ships bring millions of tourists to ports. In these ports, they go on excursions, they visit local attractions, buy souvenirs, visit bars and restaurants. This provides income to thousands of local businesses and creates jobs.

Many places rely heavily on cruise ship visits. Los Angeles had over 70 cruise ship visits in January and February 2019, and in Miami 112 cruise ships visited in a single month – January 2019.<sup>1</sup> The United States has a huge economy, so a cataclysmic fall in the number of cruise ships stopping at ports represents only a small proportion of total Gross Domestic Product. But the general numbers in the United States will hide many smaller numbers, and the bottom line is that some places will be hit extraordinarily hard if the 2020 cruise ship season is cancelled.



The cancellation of the season will significantly affect places that rely on tourism for employment and revenue. The port of Vancouver had 280 cruise ship visits in 2019, with a direct and indirect impact of \$1.5 billion.<sup>2</sup> And the port of Halifax had 873,000 cruise ship passengers visit in 2019, with a direct and indirect impact of \$373 million.<sup>3</sup> In its short season from mid-May to mid-September, Anchorage, Alaska, had 46 cruise ship visits in 2019.<sup>4</sup> In Freeport, Bahamas, more than 45 cruise ships visited just in January 2019.<sup>5</sup> In smaller places, like Halifax, or smaller countries, particularly in the Caribbean, the effects of cancelling the cruise ship season will be dire. Many Caribbean states rely heavily on tourism for their government coffers. When this money disappears, what will happen? The Bahamas is still trying to rebuild after a devastating hurricane, and international organizations and other states may be unable or unwilling to subsidize lost government incomes in the Caribbean. With loss of employment opportunities and government services, will criminal organizations step into the breach, will narcotics smuggling across the Caribbean into the United States increase, will mass migration occur?

This is not the first time that the cruise industry has been affected by a deadly virus on board ships. There have been well-publicized incidents of norovirus on cruise ships in the past, although very few cases in proportion to the total number of people traveling. Like coronavirus, norovirus is very contagious. You can get norovirus from contaminated food or water, an infected person, or by touching contaminated surfaces. The norovirus outbreaks led cruise lines to adopt strict protocols for cleaning, and the industry bounced back. But norovirus deaths are much less significant than the current situation. In the United States, the norovirus is responsible for 570-800 deaths annually, and only very few deaths per year occur on cruise ships.<sup>6</sup> Furthermore, unlike norovirus, coronavirus is spread by droplets, so it is harder to stop the spread once it is on a ship. As well, COVID-19 tends to affect older people more seriously than younger people, and older people are often the demographic group that takes cruises.

When the dust settles from the coronavirus, it is hard to know what will happen with the cruise industry. But, in the meantime, people will be leery of taking cruises, and the economies of places relying on



*CAF support to long-term care facilities, Photo: DND*

the visitors from cruise ships will be hit hard.

## Shipping

A much more significant element for economies in general is the cargo/container shipping industry. Love or hate globalization, there is no denying that the world is interconnected and interdependent. That can clearly be seen if you watch global shipping.

In the past 30 years, there has been more and more global trade, and production and finance have become much more geographically fluid. This has led to states becoming interdependent in terms of production and distribution of goods. Where once an entire product was manufactured in one facility, it is quite probable that the same product now receives parts from a variety of sources around the country or, increasingly, around the world. Production has often relocated to where labour costs are low. Corporate owners, producers and end-product consumers may be scattered around the world. To increase efficiency, multinational corporations adopted global supply chains based on the principle of ‘just enough, just in time.’ They adopted policies to keep inventories low and shipments timed to the exact production schedule. Prices of goods went down as companies reduced their costs by reducing labour costs, eliminating storage costs and creating economies of scale. Consumers flocked to buy the cheap goods in their stores.

What many consumers don’t realize is that these goods arrive via the oceans. What happens when

something occurs to disrupt this finely choreographed dance? That is what we are experiencing now – a disruption caused by a pandemic. And as the pandemic spread, the choreographed dancers began to stumble.

When coronavirus/COVID-19 was first recognized in China in early 2020, the Chinese authorities locked down the city and province that was at the centre of the outbreak. They also shut down factories elsewhere in the country. Other Asian countries followed suit. What do we care that a factory is closed in China? Like it or not, a high proportion of the world's manufactured goods is produced in Asia, China in particular. The economic effects of the shutdown in China began to ripple around the world. If factories are not operating, goods are not being produced. If goods are not being produced, ships are not being loaded with containers to transport across the oceans to the end-users.

The discombobulation of the shipping industry would have been complete if all countries had shut their economies at once. If that had happened both supply and demand would have been in sync, and the shipping industry would have had a better sense of the future. But the timing has differed around the world. First China shut down its economy, then other Asian states, then Europe, then the Americas, and now Africa. This affects the cargo shipments traveling around the world.

After a shutdown for roughly a month, shipping companies began transporting cargoes from China again, but now there were logjams at the destinations. Container ships arrived at ports in Europe and North America and in some places found bottlenecks in the once-smooth process of unloading the cargo containers and loading new containers for the return trip.

A problem that developed in Europe, despite the European Union, was that goods could no longer cross borders as seamlessly as they used to. Material unloaded at ports could not get to its final destination in what only a few months ago was a continent without borders. As well, moving cargo from ports via trucks became more difficult as truck drivers were understandably not willing to travel to areas where COVID-19 cases were high (for example, some parts of the United Kingdom, Italy, Spain, New York). And

some communities along the truck routes closed ranks against outsiders, and became reluctant to fuel and serve long-haul truck drivers as they travel. Assuming that drivers could overcome the difficulties of travel, in some cases they could not get cargo for the return trip to the port because there was no outgoing cargo because no one was working at factories, or no one was working in the office to process incoming containers, or authorize the handover of outgoing material.

We began to see tangles in the smooth functioning of ocean transport. For the global trade system and shipping industry to work, there has to be some sort of rough balance of goods coming and going. This balance is not exact – i.e., even before the pandemic, trade in and out of countries was not equal. To vastly simplify a complicated system, here is what happens. Full containers, which are paid for by the receiving company, are loaded on to a ship. The ship transports the full containers to the destination where they are unloaded. The ship then receives a new load of containers full of some other material, again paid for by the receiving company, which the ship takes to another destination. In the best case scenario, the containers are moving back and forth full; they are not moving one way full, and then stopping. The dream scenario becomes a nightmare if some industries are shut down, and different states close and then open their economies at different times. Containers are now arriving ports, but there are fewer full containers leaving. Shippers have little incentive to move empty containers – who will pay for the transport of empty containers? The receiving company may agree to pay for the transport in both directions, but not happily and not without passing along the cost to the end user.

Now instead of what was once a surprisingly smooth system, given its complexity, we now have a system that is increasingly out of whack. The bottlenecks and imbalance in what is incoming and what is outgoing creates logistical headaches for everyone. In particular, ports must now find a place to store all the empty containers that no one wants to ship. If enough of these containers build up, the port runs out of space to put them and this clogs up the ability of a port to operate, further messing up the logistics. Alternatively, in order to keep efficiency up, and costs down, shipping companies cancel sailings.<sup>7</sup>

But then you have the problem not of what to do with empty *containers*, but what to do with empty *ships*. Satellite images show hundreds of ships laid up – for example, docked or anchored in waterways around China.<sup>8</sup>

There is a relationship between air freight and ocean shipping and that relationship becomes clear when one part of the system is disrupted. High-value or perishable goods are often transported via air, not just via cargo planes but also in the cargo section of passenger flights. Air freight rates have increased markedly in the past months as airports limit and/or cancel flights. That means higher costs and less capacity so more goods are being transported by ships. This can be a problem for perishable goods because it takes longer – and they are subject to all the problems we have already discussed.

Travel restrictions during a pandemic are another element of the problems for shipping. In the past few months there have been restrictions on travel, including border closures, air travel cancellations and port quarantines. These measures affect the crews of shipping lines, and their effective operation. In many places the crews are not allowed to go ashore. This may seem like a small inconvenience, but it has implications. In this situation, often the crews cannot be changed because the old crew may not be able to fly home, and a new crew may not be able to fly in, and because of the need for a period of quarantine if anyone leaves the ship. Data compiled by the International Chamber of Shipping (ICS) and the

International Maritime Employers' Council (IMEC) indicates that 150,000 seafarers were in need of crew change by May 15.<sup>9</sup> This means the same crew is obliged to keep working all the time. Some crew members are over-worked and the other crews cannot get to work because of the travel restrictions. Aside from the humanitarian considerations, tired crews are not at their best, and their inattention may lead to accidents. And an additional problem is that in some places dock workers have been unwilling to deal with ships and unload them, particularly if the ship hasn't been at sea for 14 days (the quarantine period for COVID-19).

One more factor about shipping. One of the effects of the pandemic has been the collapse of oil prices. This, one might think, would be helpful to the shipping industry – i.e., cheaper oil, cheaper transport. And, indeed, that is an element of it. But there are other elements. As companies begin to crack under the pressure, credit becomes harder to get. Fuel vendors, banks and insurance companies are all assessing the financial health of their customers, and the credit lines they provide. No one wants to lend money to a company to buy fuel if that company will go out of business before the loan can be paid back. So credit terms become tougher and payment dates become shorter.<sup>10</sup>

The economic implications of the disruption of shipping are vast. The trading system is out of step. China has attempted to get its economy back to 'normal' by getting people back to work and the factories up and running. But the rest of the world is not yet back to work, and it may be some time before people in the West are buying consumer goods like they were just a few months ago. China is now producing goods for which demand may no longer exist, and to use in production processes that are not in operation. Population centres far from the coast will be affected by disruptions. The tangles in this complex web may stretch supply chains to the breaking point. Even when we are successful at stopping the spread of COVID-19, it may take months to sort out the chaos in shipping and supplies.

## Navies

It may seem strange to add navies to this discussion. How do pandemics affect navies? As in



*Lieutenant-General Michael Rouleau, Commander of the Canadian Joint Operations Command (CJOC) speaks during the Rehearsal of Concept drill on April 3, 2020 in preparation to deploy CAF personnel under Operation LASER. Photo: Canadian Armed Forces Photo*



the other elements discussed here, there are direct and indirect ways that navies will be affected by this pandemic.

Although navies are making remarkable progress developing the technology of unmanned vessels, warships still have crews, and will have them for the foreseeable future. Without a crew, a ship is simply a vessel; it floats but it does not move or fight. Pandemics affect people, and navies are not immune from this. While hard economic times are often good times for recruiting in the armed forces, this will not help in the immediate future.

During a pandemic navies must keep crews isolated before they deploy on missions to avoid illness in the crew while underway. Crew members live in the community and thus are subject to infection just as anyone else is. So, in addition to their time away from their families while at sea, navy crews now have to be isolated for two weeks even before going to sea.

This is a lesson that is being re-learned as several warships have been hit with COVID-19. In the past month a number of navy ships have had crew members test positive, and more than 2,000 USN sailors have contracted coronavirus, according to Defense Department data.<sup>11</sup> Because of the possibility of a crew member having COVID-19 for days before manifesting symptoms, it is easily possible for other crew members to be infected. Ships have tight quarters, and therefore it is difficult to keep social distancing rules. Warships have sickbays but they are not equipped for large numbers of infectious sailors. The best (or worst?) example of a warship being stricken by coronavirus is the US Navy aircraft carrier, USS *Theodore Roosevelt*. When one crew member was found to be ill with COVID-19, he was airlifted off the ship, but it was too late, the virus had spread. There was a delay, and it was finally decided that about two-thirds of the approximately 4,000 members of the crew would be removed from the ship in Guam and isolated for 14 days ashore. More than 800 crew members eventually tested positive, with one fatality. The ship had to be deep cleaned by remaining crew – and as you can imagine, deep cleaning an aircraft carrier is a huge task. While the original members of the crew have now finished quarantine, the other members are entering it. This is not just a problem for the US Navy – almost half the

crew of the French aircraft carrier, *Charles de Gaulle*, tested positive for COVID-19 in mid-April and the ship returned to port in France to quarantine. In addition to these two aircraft carriers, other USN ships have had sailors test positive.

Returning to port or having crews onboard sick in quarantine affects operations. At worst, it can take a warship out of service. Even without sick crew members, warships can be removed from operations or exercises for preventative reasons. For example, two Canadian Maritime Coastal Defence Vessels (MCDVs) left a counter-narcotics operation in the eastern Pacific early to return home, and two other MCDVs returned early from their exercises off the coast of West Africa. They were returned to Canada as a preventative measure.

Navies play three general roles – war-fighting, constabulary, and naval diplomacy. All of them have been affected by the pandemic. Taking warships away from exercises and operations leads to deterioration of training and operating with other navies, and reduces the presence and capability of armed forces. Removing warships from duty also puts holes in American deterrence. Other states (or non-state actors) may be tempted to take advantage of naval absence or inattention or incapacity to press their own agenda.

Removing ships from constabulary exercises and operations may mean leaving criminal organizations free rein to transport narcotics or people. And, in addition, as the price of oil goes down, companies and states are filling up every available storage container to try both to capitalize on the low prices and to stabilize them. This has meant tanker ships that are no longer needed to transport oil are now being used as storage containers for oil. They sit anchored offshore, and may represent a tempting target for attack. Navies will have to keep close eye on the approaches to these tankers.

There is a financial element to the relationship between navies and pandemics. Governments have unveiled massive programs of assistance to help workers who have lost their jobs, and companies that have lost their revenue. These assistance programs will cost billions, or trillions in the US case. How will this affect naval budgets and operations? Navy ships are extremely expensive, and it may be tempting for

governments to rethink naval budgets when the dust of the pandemic settles. Governments will have new priorities after the pandemic, and navies may not be one of them. New ships may not get built, old ships may have to carry the load for a little longer.

## Conclusion

We seem to be turning the corner on (the first wave of) coronavirus. But as we move to restart 'normal' life, we cannot get the economy back to full speed without thinking about the maritime pieces of the economic jigsaw puzzle. Whether it is the thousands of jobs in the tourism/cruise ship industry, the disruption of industrial supplies and consumer goods, or the long-term implications on maritime security, we cannot ignore this sector. Our economy, our security and our leisure activities on the oceans have all been affected by the coronavirus pandemic. The effects will be felt for months, possibly years, even after we get COVID-19 under control.

## Notes

<sup>1</sup> Crew Centre (October 7, 2020), [www.crew-centre.com](http://www.crew-centre.com)

<sup>2</sup> Cruise ship numbers come from *CBC News* (May 17, 2020). Financial impact comes from Ross Marowits, "Cost of Cruise Cancellations Hits Canada Hard," *The Globe and Mail* (May 18, 2020).

<sup>3</sup> Ross Marowits, "Cost of Cruise Cancellations Hits Canada Hard," *The Globe and Mail* (May 18, 2020).

<sup>4</sup> Crew Centre, Anchorage Alaska Schedule (October 7, 2020), [www.crew-centre.com](http://www.crew-centre.com)

<sup>5</sup> Crew Centre, Bahamas, Schedule (October 7, 2020), [www.crew-centre.com](http://www.crew-centre.com)

<sup>6</sup> Norovirus Statistics, available at: <https://www.norovirus.com/norovirus-statistics/>.

<sup>7</sup> Data from Sea-Intelligence shows that Asia-North Europe trade lane reached 38% of canceled capacity the third week of April. The consultancy anticipates the other deep-sea trades will also reach peak impact with, for example the Mediterranean to North America East Coast having 33% blank capacity in week 19 and Asia to East Coast South America seeing a staggering 59% capacity removal in week 20. Jasmina Ovcina, "Sea-Intelligence: We are at the peak impact of the pandemic in terms of blank sailing," (April 27, 2020).

<sup>8</sup> Matthew McClearn, "The Big Park," *The Globe and Mail* (May 6, 2020).

<sup>9</sup> Jasmina Ovcina, "150,000 seafarers in need of crew change," *Offshore Energy* (May 4, 2020).

<sup>10</sup> Irene Notias, "The Achilles Heel of Shipping," *Maritime Executive* (April 13, 2020).

<sup>11</sup> Meghann Myers, "Navy COVID-19 cases pass 2,000 as military cases continue to rise," *Military Times* (May 4, 2020).



Helicopter Air Detachment onboard HMCS Halifax during Operation REASSURANCE. Photo by: Corporal Braden Trudeau, Formation Imaging Services

# It's not all Black and White

The Origin of the RCN's new Commemorative Camouflage.

**Jason Delaney, CD**

**Naval Historian, Directorate of History and Heritage**

There has been significant attention surrounding the exciting and vibrant new camouflage patterns adorning HMC Ships *Moncton* and *Regina*. This attention is amplified by the tantalizing notion that they harken back to the hallowed wartime era when the nascent RCN came into its own during the longest protracted battle of the Second World War: The Battle of the Atlantic. In reality ... it is all true!

The result of this endeavour is two warships painted in vivid naval camouflage actually used by Canadian warships during the Second World War. Within a short time, these two ships have generated a good deal of public attention and were scheduled to showcase the historic look at port visits and a major international exercise prior to restrictions put in place for the global Coronavirus pandemic.

Nevertheless, the recreation from black and white wartime photos to full colour paint schemes is something only Peter Jackson could fully appreciate after producing his cinematic masterpiece that transformed the First World War experience from one hundred year old film footage to real world speed, sound and colour in, *They Shall not Grow Old*. But, the question many want answered is: where did the idea come from? In a nutshell: it was me ... or at least I would like to think it was.

But you see, herein lies the problem. Everyone is essentially self-centric believing that the outcomes of the world around them are somehow influenced by their own will when it is actually a matter of perspective. I have encountered this on many occasions interviewing both serving and retired members concerning key moments in our navy's history only to come to the conclusion that no one



*HMCS Regina during Task Group Exercise (TGEX) 20-1 off the coast of Vancouver Island. Source: Maple Leaf Navy*



could possibly have as much influence over events as many believe they do. One only has to read Rear-Admiral Jeffery Brock's two volume, *Memoirs of a Sailor*, or Paul Hellyer's *Damn the Torpedoes*, to understand both as cases-in-point. Historians excluded, most individuals only see one part of a larger mosaic influenced by many. In essence, the events and outcomes are larger than themselves despite their vantage point.

As a naval historian within DHH, I have endured countless yarns of how someone conceived of an innovation or new ship design on the back of a cigarette package or napkin in a darkened mess late at night when the drinks are flowing, opinions unhindered and the stories become more grand. Everyone wants to believe that they have left their mark on history. A retired senior officer once told me that there are two people you want to talk to before you die: a priest and an historian. But, as the son of an RCMP officer, I was taught never to trust evidence from when the informant (or suspect) was in his/her most unreliable state and never trust a story that makes the teller seem fantastic.

In the end, I can only tell you what I know. As much as I would like to claim that it was my idea, I was not the one to do the drawings, take it up the chain of command, find the budget, plan it into the ship's maintenance schedule, mix the correct colour ratios and slap it on the hull...*et voila!* The only thing I can claim is that there was an idea. When it was first conceived of, I rolled up my sleeves, did the historical grunt work, produced an assessment with recommendations and then the whole thing was shut down. That was over a decade ago. Where the recent idea came from and who suggested it, I have no idea.

In a sense, one could say that, originally, the idea actually came from the air force. I remember sitting at my desk in building 347 of the former CFB Uplands in Ottawa in 2009. At the time, this was the home of the Directorate's Post-War Naval History Team working on volume III of the Official History of the Royal Canadian Navy. I was going through the pile of periodicals that normally stacked up on my desk when I came across an air force journal that was showcasing a CF 18 demo aircraft painted in an historic paint scheme.\* I took the journal next door into the office of my boss and Senior Naval Historian, Michael Whitby, and declared that the navy could

take a lesson from the air force and get some much deserved publicity by painting one of our warships in a commemorative camouflage paint scheme. In his characteristic "no bull" demeanour, he barely took pause from his computer and suggested that since the RCN's centennial was coming up in 2010, I should write a briefing note and send it to Lieutenant-Commander Pat Jessup at MARLANT Public Affairs.

Having done briefing notes before, I knew that beside a specific format, one has to outline specific recommendations from which senior command could choose. This meant a lot of work ahead of me. If I were to follow through with the idea, I had to somehow figure out which camouflage patterns would be appropriate for historical value and correctness as well as determine what those schemes would look like in real life on a ship's hull and in full colour.

For the first part, this meant researching what patterns were used and when. For the second part, I received the help of Lieutenant(N) Carl Gagnon, a former ship-mate from HMCS *Carleton* who was serving at the time on the Naval Centennial Committee. Carl had a unique skill set involving computer generated design having helped produce the ship's badges for the Maritime Coastal Defence Vessel (MCDV) fleet in the 1990s. I shared with him, my idea of a Second World War camouflage pattern and he went to work producing images of what some would look like on the hull of a *Kingston*-class vessel. He even enhanced an actual photo of an MCDV at sea painted in one of the patterns. The image was striking to say the least. What hit me most was how vibrant the colours looked on the recreation, which was a far cry from the black and white Second World War photos to which I was accustomed.

For me, the biggest problem was to find the actual colours. As a professional historian, I am uncomfortable unless there is a concrete reference and it is not credible unless it is covered in dust. The one secondary source that gave me some hope as to understanding the colour complexity was the well-researched publication, *Naval Camouflage 1914-1945: A Complete Visual Reference*, by David Williams. Yet, I felt it was not enough. That is when I found them. Upon the suggestion of a colleague I checked a shelf I never paid much attention to at the back of the Directorate's archives. There I found a set



HMCS *Moncton* in WWI Admiralty Paint. Photo: RCN Twitter

of Canadian Naval Orders from 1944. As I opened them to the camouflage section, I discovered the bulky colour plates used in various schemes all laid out as if I were choosing a colour swatch from the hardware store to paint a room in my house. Each one had its own colour code and referenced on the patterns detailed in subsequent pages.

I completed my briefing note satisfied that I had done the best to provide four accurate and correct patterns with recommendations to senior naval staff. Unfortunately, as mentioned, the idea was shut down. Then in the summer of 2019, I received an e-mail forwarded to me from my former boss. It was from the Commanding Officer of the Fleet Maintenance Facility on the east coast, Captain(N) Dave Benoit. He had been given a task with an extremely short timeline: find an historical naval camouflage pattern to apply to an RCN ship in time for the anniversary of the Battle of the Atlantic. Fortunately, I still had all the research and documentation I had produced for MARLANT Public Affairs 10 years earlier and simply handed it all over to him.

A few weeks later I began to receive phone calls and e-mails from the maintenance establishments on both coasts. Senior naval authorities had chosen the Admiralty D-Day Disruptive Pattern painted on the hulls of RCN ships participating in the invasion of Europe in 1944. I was stunned by the individual questions I was fielding about paint colours and how to apply the pattern correctly. My biggest challenge at this point was to reassure them that it was okay to take liberties with the pattern when applying it to the

ship. After all, during the war, it came down to “a guy with a brush.” I was at least able to dig back into the sources and find Humbrol mixing ratios for each of the colours involved so that they could be reproduced as accurately as possible. It was also important to reinforce the main purpose of the pattern, which is to break up the visual clues that give away a ship’s class and armament. In other words, the pattern had to flow up into the super structure, funnel and main weapons to obscure them. Besides having stunning visual effect, the pattern is actually practical in the

sense that it is meant to inhibit the enemy’s ability to identify the class of vessel and determine its course and speed, visually. So, having a camouflage pattern on a modern warship has some practical value when operating in the littorals against enemies with limited or no use of technology.

Practical value aside, I am quite happy that the decision was made to approve the project in commemoration of an important period in our navy’s past. Knowing our history is what binds us together as a military service and fosters a sense of identity. Certainly, no one is experiencing this more than the sailors of both warships who must truly feel like they are living part of that history.

In the end, a D-day pattern was chosen instead of the original idea to display one that was used by escorts during the Battle of the Atlantic. The latter, however, are already replicated on HMCS *Sackville* in Halifax and HMCS *Haida* in Hamilton so this was an opportunity to showcase something “new”... I mean something else that is “old.” What I have endeavoured to present with a little bit of candor, is my limited view of how the project came about and why, but, I would be more than a little self-centered if I did not point out that there were a lot of individuals involved at various levels. Indeed, there is much to the story that I do not know. I am only glad that I have a part of the story to tell... from my perspective.

\* If memory serves it was a RAF D-Day pattern to commemorate the 65th anniversary that summer, which makes it an ironic coincidence that the patterns on *Moncton* and *Regina* are also D-Day patterns.

# Naval Camouflage 1914-1945: a Complete Visual Reference

David Williams

The paint mixtures for the Admiralty D-Day pattern in use in 1943-44 are as follows:

Colour	Reflective Factor	Mixture	Equivalent
B15 (Dark Blue Grey)	15	- 1 part Black Paste - 2 parts Green Paste - 23 parts Blue Paste - 28 parts Blue Black Paste - 122 parts White Lead Oil Paste	<u>Humbrol</u> No. 96
B30 (Mid-Blue Grey)	30	- 1 part Green Paste - 1 part Blue Paste - 40 parts Blue Black Paste - 18 parts Zinc Oxide White - 116 parts White Lead Oil Paste	Combination of <u>Humbrol</u> Nos. 25, 34, 94 and 101 in a ratio of 1:14:3:1.
B55 (Light Blue Grey) Or Western Approaches (WA) Blue*	55	- 1 part Green Paste - 16 parts Blue Black Paste - 376 parts Zinc Oxide White - 320 parts White Lead Oil Paste	Pale Blue Israeli – a combination of <u>Humbrol</u> Nos. 34, 64, 80, and 109 in a ratio of 45:3:2:1.



HMCS Moncton in WWI Admiralty Paint. Photo: RCN Twitter





*HMCS Regina followed by HMCS Brandon sail in formation with Task Group 303.1 in the Strait of Georgia. Photo: Corporal Jay Naples, MARPAC Imaging Services.*

# Mom's in the Navy

## A NAC publication about family and service

This book was born of a conversation with a mother of small child. She said that her son loved to read books about firemen and policemen. It seemed a great idea to create a book about sailors. Why not create a book that tells fictionalized accounts about real things that the Royal Canadian Navy does?

Part of the Naval Association's mandate is public education, and this was a way to tell Canadian families about what their navy does.

The deployment of the RCN to Haiti in the aftermath of the devastating earthquake in 2010 was selected as the subject of the book. It was selected because it provides a good narrative and a mission that was easy to follow and easy to illustrate. This is your NAC Naval Affairs Program in Action!

For every book sold, NAC will donate \$1 to the MFRCs on the East and West Coast; Your Navy's preferred fund for this project

To order a copy you can visit the NAC website or contact:

David Soule, Executive Director of NAC  
([ExecutiveDirector-NAC@outlook.com](mailto:ExecutiveDirector-NAC@outlook.com))

Dr. Ann Griffiths ([ann.griffiths@dal.ca](mailto:ann.griffiths@dal.ca)).





# Canadian Students at Sea

The RCN launches a new program to connect Canadian university students to their navy

The RCN has a new engagement program, designed to connect the Navy to the next generation of Canadian leaders. The Students at Sea initiative, mimicking the successful Canadian Leaders at Sea program, was trialed with great success in 2019 and has become a regular part of the service's outreach effort, giving university students a chance to engage with members of the Canadian military and get a glimpse of navy life.

This spring, seventeen students from St. Francis Xavier University travelled to Halifax and, over the course of a very full day, visited the Navy's Atlantic Operations Centre, Maritime Security Operations Center and Joint Rescue Coordination Centre to see how Canada's governmental agencies monitor the country's maritime approaches and manage search and rescue in the Atlantic. There was time for a walk-by of the new oiler *Asterix* as well as a tour of the dry-docked submarine HMCS *Windsor* and the patrol ship HMCS *Moncton*. To really show off the Navy's capabilities, students spent the afternoon aboard the patrol frigate HMCS *Ville de Québec*, where high speed manoeuvres, boarding and firefighting demonstrations, as well as a tour of the ship's operations room and bridge, brought to life Canada's responsibilities – and capabilities – at sea.

Improving Canadians' understanding of their Navy, and the role it plays in the country's security and



*StFX students touring Ville de Québec. Photo: RCN Imaging Services*

prosperity, is an important part of sustaining the service and building its future fleet. Canadian Students at Sea is a step towards showing Canada's future leaders what the Navy does and how its work shapes and secures the country. StFX's students were taken by the RCN's generosity, with both its time and energy – from a personal briefing with Rear-Admiral Craig Baines (Commander, Maritime Forces Atlantic) to guided tours by Captain (N) David Benoit (CO of Formation Maintenance Facility Cape Scott).

This trip was made possible with generous support from the Faculty of Arts, the Brian Mulroney Institute of Government, the Public Policy and Governance Program, and the Department of Political Science.



*StFX students aboard Ville de Québec. Photo: RCN Imaging Services*



# EPIC BATTLE OFF ISLA LA TORTUGA

Heroic Venezuelan Patrol Ship Sinks Defending Nation from  
Unarmed Cruise Ship

## Special Guest Contributor:

**General Vladimir Padrino Lopez**  
**Minister of Defense for the National**  
**Armed Forces of the Bolivarian**

This March saw one of history's most epic naval battles take place in the Caribbean Sea, where a valiant effort by the Venezuelan Navy to ram an unarmed cruise ship was less than completely successful. In the early hours of March 30, the expedition cruise ship RCGS *Resolute* was – as they would have people believe – performing basic maintenance while drifting just over 13 miles off the coast of Isla La Tortuga, 60 miles from the northern coast of Venezuela. This provocative behaviour required a response and the vessel was approached by the Venezuelan patrol ship ANBV *Naiguatá*, which accused it of violating Venezuela territorial waters and ordered it to proceed to port under escort.

While the *Resolute*'s Master was in contact with his head office *Naiguatá* fired several warning shots before bravely ramming the starboard side of the cruise ship in an attempt to turn its head towards Venezuelan territorial waters. A video released by the Venezuelan navy documented this heroic ramming with a dramatic video of a sailor firing an AK-47 in the howling wind.

What unfolded was an epic battle. Displacing 1,700 tons, the Venezuelan warship had only a 76mm naval gun, a German-built anti-aircraft system, and a pair of deck-mounted machine guns to defend itself. This was an uphill battle for the Bolivarian warship, pitted against a cruise liner, equipped with multiple dining rooms, a gymnasium, a saltwater pool, and accommodations for 146 passengers. Intelligence

# Just for a Laugh



reports suggested that the vessel may even have been armed with state-of-the-art on-deck yoga capabilities.

Despite the socialist fervour and brilliant tactical acumen of the Venezuelan commander, the *Naiguatá* was undone by the *Resolute*'s reinforced ice-strengthened hull and, while the courageous charge did significant damage to the cruise ship's forward paint-job, *Resolute* survived the onslaught intact.

In what the Venezuelan government described as an act of "aggression and piracy" the cruise-ship's unwillingness to sink resulted in a breach in the *Naiguatá* below the water line, leading the patrol ship to take on water – soon sinking and leaving 44 sailors to be rescued.<sup>1</sup>



*The Venezuelan patrol boat Naiguata (Wikimedia)*

With the crew in the water, the enemy cruise ship was reported to have spend over an hour in the area in an attempt to assist the sailors, who were too brave to be rescued; instead waiting for assistance from Venezuela.

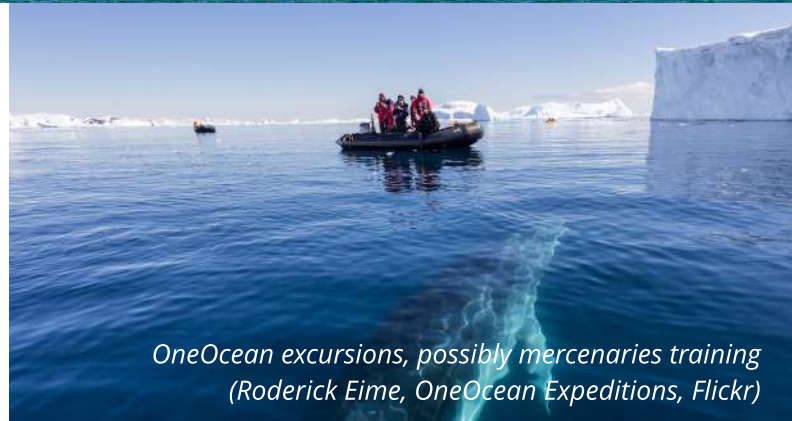
The Venezuelan government has made it known that this valiant assault on the unarmed, but curiously sturdy cruise ship, was in defence of the revolution against what was clearly an imperialist attempt to conduct mercenary raids from *Resolute*.

Admittedly, a careful reading of the cruise line's brochure has not revealed any planned mercenary attacks on Venezuelan military installations; however, these may be considered optional excursions, which would require passengers to pay extra.

Despite this, incontrovertible evidence of the cruise ship's nefarious intent was tweeted by the Venezuelan Navy soon after the battle, showing multiple rigid-hulled inflatable boats secured to her deck. Each of these craft is capable of carrying up to twelve heavily armed soldiers, or a dozen tourists enjoying a day's whale watching excursion. Indeed, It's a well-known fact that these RHIBs are often used by the cruise industry for commando raids and regime change excursions.

Despite surviving the courageous socialist onslaught, the *Resolute* was driven from the field of battle – after loitering for only one hour in a rejected attempt to rescue the crew of *Naiguatá*. Indeed, unarmed passenger liners will think twice before challenging the Bolivarian revolution.

<sup>1</sup> Venezuela, Ministry of Defence, “Comunicado Oficial de la Fuerza Armada Nacional Bolivariana,” (March 31, 2020)



*OneOcean excursions, possibly mercenaries training (Roderick Eime, OneOcean Expeditions, Flickr)*



*RCGS Resolute (Rab Lawrence, Flickr)*



*RCGS Resolute showing battle damage (CNW, Twitter)*



# Contribute to the NAC's Naval Affairs Program

The Naval Association of Canada Naval Affairs program through research, national and local programs, provides a voice to educate Canadians and their leaders on the importance of Canada's Navy to our nation's well-being, economic prosperity, sovereignty, and defence.

Our Mission is to inform and educate Canadians about Canada in a maritime world and to explain the application of sea power in the national interest. We do this through our new suite of publications, which includes research papers, Briefing Notes, and Bibliographies – products that provide a solid base of understanding for Canadians of the importance of Canada's maritime interests.

Crucial to this program is getting the right information. The NAC's membership is one of the country's best reserves of knowledge and we need you to contribute to the Naval Affairs program. So, consider working with us to produce an informative briefing note on a subject of your choice, or use our NIOBE Paper series to offer your thoughts on maritime security.

Visit the Naval Affairs Website to see our work:

<https://www.navalassoc.ca/naval-affairs/about-naval-affairs/>





## Broad Area Maritime Surveillance

### An Unmanned Solution for the Royal Canadian Air Force

By Major Matt Fraser

Unmanned aircraft systems (UAS) have experienced extraordinary growth in the past three decades, particularly in the defence and security sectors.<sup>2</sup> The overarching mission sets that have driven contemporary innovation into defence UAS include those that are predominantly “dull, dirty and dangerous”<sup>3</sup> and pose untenable risk to manned platforms. Today the military UAS continuum ranges from specialized tactical micro-UAS platforms to semi-autonomous, high-altitude long-endurance (HALE) vehicles that are fitted with sophisticated sensor and communications suites and are capable of projecting air power globally.

While Canada led the industry in early UAS research and development activities in the 1960s and demonstrated modest engagement in operational UAS applications during the war in Afghanistan, the Canadian Armed Forces (CAF) and more specifically the Royal Canadian Air Force (RCAF) have since fallen significantly behind alliance partners in practical UAS skills and experience.<sup>4</sup> This paper will identify several operational areas in which the RCAF could, in conjunction with existing CAF frameworks, leverage a single emerging UAS concept to achieve synergistic effects in the joint operating environment. In the interests of clarity, the following examination will be delivered through the lens of the United States Navy’s (USN) Broad Area Maritime Surveillance (BAMS) initiative and how it could be employed to great effect in support of a variety of RCAF missions. Despite the perspective from which it is examined here, it is crucial that BAMS be viewed not as something to be conducted by a specific platform but rather as a conceptual UAS capability, and that any future or derivative analysis remain impartial and informed only by legitimate CAF operational requirements.

This paper was originally published in 2019 as a Joint Command and Staff Programme 45 (JCSP) Service Paper at the Canadian Forces College, Toronto. It has been edited and reproduced here as part of an ongoing partnership between the CFC and the NAC to bring forward some of the best work in the field of maritime security to both inform and provoke discussion.<sup>1</sup>

The aim of this paper is to examine and recommend a practical option for the use of unmanned aircraft systems in support of RCAF missions. The paper will highlight several RCAF defence and non-defence mission sets that could be conducted more effectively or efficiently by a UAS in comparison to a conventional platform.

### Broad Area Maritime Surveillance

In 2017, the government published a Defence White Paper entitled *Strong, Secure, Engaged*.<sup>5</sup> In this policy paper, the overarching defence priority established by the government and CAF strategic leadership is *strong at home*, which includes the detection, deterrence and defence against threats to or attacks on Canada.<sup>6</sup> Having the longest coastline in the world, the defence of Canada’s maritime approaches, including the Arctic, is of utmost importance in the future operating environment. Arctic sovereignty is particularly challenging given the harsh climate, vast geography, sparse population and limited infrastructure. In spite of the factors that serve to restrict CAF presence in the Arctic, the effects of climate change and economic globalization are converging to make the Arctic increasingly accessible and thus potentially a source of security threats.<sup>7</sup> If it is to fulfill its core mandate, the CAF must develop innovative means of conducting

persistent intelligence, surveillance and reconnaissance operations across the continuum of domestic maritime operating environments, including the Arctic.

The current CAF initiative to field an RCAF-operated UAS is the Remotely Piloted Aircraft Systems (RPAS) project, a derivative of its predecessor, the Joint Unmanned Surveillance Target Acquisition System (JUSTAS). As a major capital procurement project, the objectives of RPAS are intrinsically linked to the strategic objectives and investment initiatives outlined in *Strong, Secure, Engaged*.<sup>8</sup> Characterized as a medium-altitude long-endurance (MALE) UAS, the ultimate aim of the RPAS project is to deliver:

... an integrated persistent long-range, intelligence, surveillance, target acquisition and reconnaissance capability ... capable of providing near-real-time information to tactical, operational and strategic commanders to support both domestic and deployed operations, and when required, provide a precision strike capability to support operations.<sup>9</sup>

It is envisioned that RPAS will act as a force multiplier and not a replacement of any existing capability. Still in the Review and Refine

Requirements phase, the forecast completion of RPAS is 2030 and the current maximum budget allocation is \$4.99B (CAD).<sup>10</sup>

Intelligence, surveillance and reconnaissance (ISR) is a framework by which integrated activities of collection, exploitation and processing of information are planned and executed in a synchronized manner and the resulting intelligence products are disseminated in direct support of operations.<sup>11</sup> In practical terms, the aim of ISR is to build situational awareness and facilitate superior decisions, essential elements of any effective military operation. Although ISR is an inherently joint activity, the core attributes of speed, reach, precision and elevation inherent in air power make the RCAF a principal stakeholder in the ISR enterprise. Furthermore, UAS platforms are “ideally suited for collection missions that are long and tedious (dull), hazardous to humans (dangerous) or are carried out in undesirable conditions (dirty),”<sup>12</sup> attributes that are the epitome of maritime and Arctic ISR operations.

An emergent UAS paradigm that is well positioned to address the specific challenges of Canada’s maritime and Arctic security mandate is the Broad Area Maritime Surveillance (BAMS) concept. Developed and trialed by the US Navy (USN)

*QinetiQ workers prepare to deploy the Vindicator drone before a live fire exercise onboard HMCS St. John's. Photo: Private Sarina McNeill*



beginning in 2012, BAMS was driven by the unique operational requirements of maritime ISR and the inherent challenges that otherwise limit or preclude the employment of existing UAS fleets in the maritime domain. BAMS commenced its first operational deployment in January 2020 and continues to undergo implementation.<sup>13</sup>

The BAMS platform, known as the RQ-4C Triton, is based on an enlarged version of the Northrup-Grumman RQ-4 Global Hawk with several distinct improvements that enable maritime and Arctic operations.<sup>14</sup> The BAMS UAS concept offers a persistent beyond-line-of-sight maritime ISR platform that embodies both the MALE and HALE concepts of operations. The inherent strengths of BAMS lie in its reach, endurance, ability to operate in austere conditions and versatile suite of maritime-centric sensors. Although it does not fully replicate conventional maritime capabilities, BAMS augments them by providing a fused recognized maritime picture that allows conventional manned platforms to focus on localized kinetic activities (i.e., active and primarily conventional) military engagements); a complementary capability closely aligned with the core tenets of RPAS.

The BAMS air vehicle is fitted with anti-ice capability, lightning protection and a reinforced fuselage for protection against hail, birds and wind gusts. These features allow BAMS to transition safely from a benign HALE operating envelope (50,000 ft and higher),<sup>15</sup> through cloud and volatile maritime weather, down to low levels. At the lower level it transitions from general wide-area surveillance to focusing the sensor suite and platform's overall field of view on one specific area/target. The robust features of BAMS facilitate this tactical agility with minimal risk to the vehicle, attributes that lend themselves well to operations in the harsh Canadian maritime domain.

BAMS features a 360-degree array of active and passive sensors that are task-tailored for maritime operations. With a greater than 400 nm sweep width, the multi-function active sensor (MFAS) maritime radar of BAMS is adept at scanning the wide swaths of ocean or shoreline of Canada's expansive maritime approaches. The MFAS is equally capable of individual target investigation to a very high degree

of fidelity and generating a detailed radar image of a contact for the purposes of automated target recognition, a task that is the essence of maritime security operations.

BAMS is fitted with an auto-tracking, multi-spectral electro-optic/infra-red (EO/IR) targeting system sensor that produces and transmits high-fidelity imagery and full-motion video of targets or areas of interest. BAMS also features an absolutely essential element of any maritime ISR platform – an Automatic Identification System (AIS) receiver. AIS is an automatic maritime tracking system consisting of ship-based transponders which transmit vital information about ships such as name, type, position, size, registration, speed, track, ports of call, etc. When employed as a corroborative tool in conjunction with other sensors, AIS is vital in identifying suspect maritime vessels requiring further investigation or interdiction.<sup>16</sup>

Essential to persistent UAS maritime security operations, particularly in the vastness of Canada's northern maritime approaches, are the elements of coverage and endurance. BAMS is capable of remaining aloft for over 24 hours, has an operating range of over 8,000 nm and can cover more than 2.7 million square miles in a single mission.<sup>17</sup> In a Canadian context, BAMS can survey an area that equates to two-thirds the size of Canada's landmass or the entirety of Canada's Exclusive Economic Zone from Yarmouth, Nova Scotia, to the northern tip of Ellesmere Island to Vancouver Island in a single sortie.

In comparison to its conventional manned maritime ISR counterparts, namely the CP140 Aurora, BAMS is far superior at conducting long-range detection, deterrence and defence in the Canadian maritime domain. BAMS is operated with less than half the crew of the Aurora (four versus 10), has twice the endurance, twice the range and a superior ISR sensor payload.<sup>18</sup> And, as noted, BAMS is also the platform of choice to conduct the dirty, dull and dangerous mission sets. Maritime surveillance missions, particularly in Canada's northern reaches often face adverse meteorological and environmental conditions (dirty), protracted and risky periods of tedium (dull) and few viable alternates should an emergency occur (dangerous). Executing these



missions using an unmanned platform, with no corresponding degradation in capability, diminishes the effects of external mission stressors, increases the tolerance for risk, and affords the RCAF greater operational flexibility.

While BAMS is specifically designed to fulfill a maritime surveillance role, it could readily be employed in an expeditionary ISR capacity to support another element of *Strong, Secure, Engaged* – i.e., engagement abroad in mandates such as the operation in Libya in 2011.<sup>19</sup> In addition to the payload specifications discussed above which are compatible with virtually any expeditionary mission, BAMS possesses a sophisticated electronic support measures (ESM) suite that acts as a force multiplier in the delivery of theatre-wide operational effect. On-board or built-in ESM allows BAMS to detect, classify and localize electromagnetic radiation in the battlespace, using RF emissions detected to determine what platforms and/or potential threats are present in the battlespace, and enhance operational decisions.

BAMS is also a capable network relay and data-fusion centre, a synergistic joint effect delivered by the CP140 in Libya during *Operation Mobile*.<sup>20</sup> Not only can BAMS act as a theatre communications relay platform facilitating communications among elements that are not within line-of-sight of one another, it can also fuse sensor inputs from deployed friendly forces and rebroadcast the common operating picture via data link. This capability would allow the RCAF to “drastically increase interoperability, situational awareness, targeting efficiency and sensor picture clarity of the total force while also providing a resilient alternative to vulnerable satellite communications systems.”<sup>21</sup> While the CP140 has proven itself capable in these domains, unlike the CP140, BAMS can maintain station much closer to the battlefield, above the engagement zones of hand-held (‘man-portable’) weapons systems.

BAMS also possesses significant potential in the non-defence role of national search and rescue (SAR). Canada’s SAR regions extend from the mid-Atlantic Ocean, to the geographic North Pole, to approximately 600 miles west of Vancouver Island. SAR events that occur at the outermost boundaries of

these areas are extremely demanding for conventional SAR assets, particularly when a protracted search is required and on-station time is severely limited by extended transit requirements. The extraordinary agility, reach and endurance of BAMS combined with

MQ-4C "Triton" UAVs. Photo: Northrop Grumman, by Chad Slattery



a sensor payload that closely rivals modern fixed-wing SAR platforms such as Canada’s Airbus CC-295, make it a perfect complement to the national SAR enterprise.

One of the many possible SAR scenarios invoking the engagement of BAMS involves a vast search area in the mid-Atlantic resulting from a missing aircraft or sailing vessel. In this instance, BAMS could be deployed to the scene in advance of the manned SAR assets, operating in a MALE/HALE configuration to quickly cover the search area using the full suite of on-board sensors. Upon detecting and classifying possible SAR targets from the aloft position, it could then descend through cloud into an identification configuration so as to ascertain each targets’ identity and relevance via EO/IR. Whether the outcome of this process is the positive location of the SAR target or simply the elimination of hundreds of irrelevant targets, BAMS could substantially reduce search-phase pressure on conventional manned SAR assets. While RPAS systems are great for the often tedious ‘search, locate and identify’ aspects of SAR, however, the complexities of the ‘rescue’ part of the situation necessitate conventional human engagement on scene.

The RCAF is also routinely engaged in

humanitarian response and disaster relief (HADR) missions in the wake of catastrophes such as earthquakes, hurricanes, fires and floods. Often the first task of any HADR response is area reconnaissance. A deliberate and detailed survey of the affected area provides a clear operational picture to enable the effective allocation of HADR resources. With its ability to provide sustained, real-time multi-spectral imagery over a wide area of operations, conceivably in advance of the deployed force's arrival, BAMS constitutes a highly effective post-disaster reconnaissance platform that would enhance Canada's whole-of-government commitment to HADR missions both domestically and abroad.

From a cost perspective, a modest BAMS fleet capable of fulfilling core *Strong, Secure, Engaged* requirements is tenable under the current RPAS procurement framework. Based on existing foreign military sales data, the approximate per unit cost of BAMS including control, support and training systems is estimated at \$250-\$850M (CAN),<sup>22</sup> making the BAMS concept a feasible option to satisfy the CAF's future UAS operational requirements.

Despite its versatility and robust design, BAMS does possess some inherent limitations. Perhaps foremost among these is the lack of precision strike capability, an attribute that makes BAMS non-compliant with the defined requirements of RPAS. However, public opposition to the concept of armed UAS operations is one of the factors that has been cited as a key impediment to recent UAS procurement initiatives in Canada.<sup>23</sup> If the public debate over the ethical and moral aspects of armed UAS operations continues in Canada, an analysis, justification and/or validation of the RPAS precision strike requirements may be in order, and any compromise in this area could serve to streamline the program.

Another noteworthy barrier to the CAF's implementation of a strategic UAS asset such as BAMS is the inevitable and costly requirement for reliable multi-band satellite communication accessibility to support beyond-line-of-sight UAS operations.<sup>24</sup> Canada's limited access to existing SATCOM architecture is unlikely to improve and is a capability gap that it must bridge in close synchronization with any beyond-line-of-sight UAS

procurement initiative. Several Canadian SATCOM projects have been initiated to enhance CAF's limited capabilities in this domain,<sup>25</sup> however significant investment effort will be required to ensure SATCOM accessibility and the full exploitation of MALE/HALE UAS capabilities, particularly in the Arctic.

## Conclusion

This paper examined the strengths and weaknesses of the BAMS concept in the context of the CAF strategic vision, existing defence frameworks and various RCAF missions. While the analysis was conducted through the lens of the specific BAMS platform, it was intended to illustrate that a collection of sophisticated capabilities under one conceptual umbrella could be employed with synergistic effect across the joint operational domain.

Despite some limitations, BAMS is potentially an ideal candidate to fulfill the strategic objectives of the RPAS program from the perspective of both cost and operational effectiveness. Conceptually it offers the appropriate mix of specialized maritime-centric features while remaining versatile in its potential scope of operational employment activities both domestically and abroad. If decisively applied,<sup>26</sup> the BAMS concept would improve RCAF efficiency, effectiveness and interoperability while simultaneously allowing the CAF to re-establish its footing and credibility in a defence sector that will become increasingly prevalent in the modern battlespace.

In light of the analysis here, the following recommendations are provided for the consideration of the Chief of Force Development and engagement with CAF/Department of National Defence (DND) stakeholders as applicable. First, establish a CAF/Defence Research and Development Canada (DRDC) consortium to conduct a detailed study of the operational merits of the BAMS concept, in whole or in part, in the context of CAF doctrine, operational requirements and overarching government strategic direction. The analysis should also include requisite fleet size along with possible basing and mission control centre options. Second, expand the scope of RPAS to include consideration of a hybridized MALE/HALE UAS that is capable of global,

all-weather operations. Third, validate and/or justify the RPAS precision strike requirement to ensure compatibility with government and international policy, public/societal expectations, CAF operational requirements and potential barriers it might impose on timely RPAS program implementation. If possible, consideration should be given to deferring the precision strike capability to a future MALE project. And, finally, analyse existing CAF SATCOM procurement initiatives to ensure compatibility and synchronization with possible RPAS command and control (C2) support requirements.

## Notes

<sup>1</sup> This paper was written in 2018 while the author was attending the Canadian Forces College. It was written in fulfillment of one of the requirements of the course of studies (CSP 45/PCEMI 45, 15 October 2018, DS545 Component Capabilities). The paper was updated in February 2020. The paper is a scholastic document, and thus contains facts and opinions which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the government of Canada and the Canadian Department of National Defence.

<sup>2</sup> Gary Schaub Jr., "JUSTAS for All? Innovation and UAVs in the Canadian Forces," *Defence Studies*, Vol. 15, No. 2 (June 2015), p. 124.

<sup>3</sup> P.W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin Press, 2009), p. 54.

<sup>4</sup> Danny Garrett-Rempel, "Will JUSTAS Prevail? Procuring a UAS Capability for Canada," *Royal Canadian Air Force Journal*, Vol. 4, No. 1 (Winter 2015), p. 20.

<sup>5</sup> Canada, Department of National Defence (DND), *Strong Secure Engaged: Canada's Defence Policy* (Ottawa: DND Canada, 2017).

<sup>6</sup> *Ibid.*, p. 14.

<sup>7</sup> Levon Bond, "JUSTAS and Project Epsilon: Integrated Intelligence, Surveillance, and Reconnaissance of the Canadian Arctic," *Canadian Military Journal*, Vol. 11, No. 4 (Autumn 2011), p. 24.

<sup>8</sup> DND, *Strong Secure Engaged*, p. 39.

<sup>9</sup> Royal Canadian Air Force, "Update and New Name for the Joint Unmanned Surveillance Target Acquisition System (JUSTAS) Project," 6 July 2018.

<sup>10</sup> DND, Defence Capabilities Blueprint, "Remotely Piloted Aircraft Systems (RPAS) Project," 30 May 2018.

<sup>11</sup> Department of National Defence, *Royal Canadian Air Force Doctrine: Intelligence, Surveillance and Reconnaissance*, B-GA-401-002/FP-001 (Ottawa: Royal Canadian Air Force, 2017), p. 5.

<sup>12</sup> *Ibid.*, p. 17.

<sup>13</sup> Gareth Jennings, "US Navy Deploys Triton UAV for First Time," *Jane's* 360, 27 January 2020.

<sup>14</sup> Northrup Grumman, "MQ-4C Triton: Making the World's Oceans Smaller," October 2018.

<sup>15</sup> The Simons Foundation, Arctic Security Briefing Papers, "Canada, the Arctic and the Expanding World of Drones," October 2018.

<sup>16</sup> Captain Daniel Arsenault and Captain Josh Christianson, "Punching Above Its Weight: The CP140 Aurora Experience within Task Force Libeccio and Operation MOBILE," *Royal Canadian Air Force Journal*, Vol. 1, No. 3 (Summer 2012), p. 29.

<sup>17</sup> *Jane's Navy International*, "US Navy Officially Inducts Triton UAV into Service," June 2018.

<sup>18</sup> Royal Canadian Air Force, "CP-140 Aurora: Technical Specifications," November 2017.

<sup>19</sup> Arsenault and Christianson, "Punching Above Its Weight," p. 31.

<sup>20</sup> *Ibid.*, p. 30.

<sup>21</sup> Tyler Rogoway, "The Navy has the Ultimate MH370 Search Tool, It's Just Not Operational," *Foxtrot Alpha*, 18 March 2014.

<sup>22</sup> Chris Pocock, "Australia Confirms MQ-4C Triton Buy," *Aviation International News Online*, 28 June 2018.

<sup>23</sup> CBC News, "Liberals' Drone Shopping Exercise Sets Stage for Debate over Lethal Force," 28 February 2016; Michael Byers and Kelsey Franks, "Unmanned and Unnecessary: Canada's Proposed Procurement of UAVs," *Canada Foreign Policy Journal*, Vol. 20, No. 3 (December 2014), p. 285.

<sup>24</sup> Conrad Edward Orr, "Can Unmanned Aircraft Systems Meet Canadian Air Power Needs?" *Royal Canadian Air Force Journal*, Vol. 5, No. 3 (Summer 2016), p. 19.

<sup>25</sup> DND, Defence Capabilities Blueprint, "Space Systems," 30 May 2018. By this I mean that the capability and concepts are not watered down over time, perhaps due to fiscal restraints, political intervention or entrenched institutional resistance.

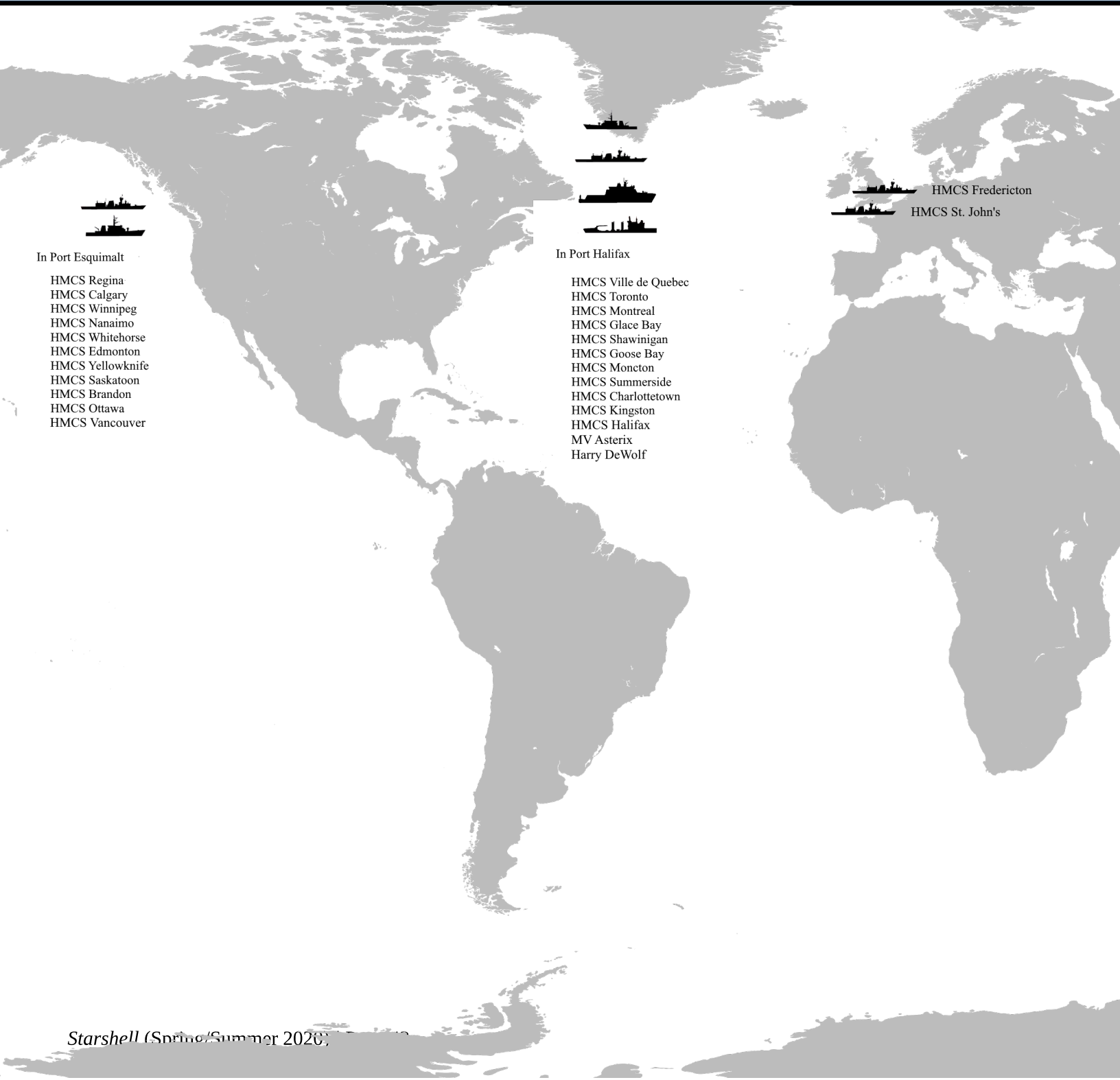
Major Matt Fraser joined the RCAF as an Air Combat Systems Operator (ACSO) in Sept 2001. He has completed two operational tours at 423 (Maritime Helicopter) Squadron in Shearwater, NS, and taken part in multiple operational deployments aboard numerous (many now retired) Her Majesty's Canadian Ships. In addition to his operational experience, Major Fraser has completed several instructional and staff postings throughout his career, including an assignment as Staff Officer Unmanned Aircraft at 1 Canadian Air Division Headquarters in Winnipeg, MB. Major Fraser is currently posted to Military Personnel Command in Ottawa as ACSO and Construction Engineer Career Manager.



# RCN FLEET DEPLOYMENTS

JUNE 2020

An active and globally deployed fleet, the RCN operates across the world. From sovereignty and counter-narcotics missions to deterrence and training operations with partners and allies, Canadian ships are constantly on the move. This section offers a snapshot of fleet deployments as *Starshell* goes to print.



In Port Esquimalt

HMCS Regina  
HMCS Calgary  
HMCS Winnipeg  
HMCS Nanaimo  
HMCS Whitehorse  
HMCS Edmonton  
HMCS Yellowknife  
HMCS Saskatoon  
HMCS Brandon  
HMCS Ottawa  
HMCS Vancouver

In Port Halifax

HMCS Ville de Quebec  
HMCS Toronto  
HMCS Montreal  
HMCS Glace Bay  
HMCS Shawinigan  
HMCS Goose Bay  
HMCS Moncton  
HMCS Summerside  
HMCS Charlottetown  
HMCS Kingston  
HMCS Halifax  
MV Asterix  
Harry DeWolf

HMCS Fredericton

HMCS St. John's

# It's Time to Start Thinking about New Subs

Jeffrey F. Collins

Deficits and debt are spiking, and the pandemic has overwhelmed treasury decisions. But, at some point soon, Ottawa needs to make a decision on whether to acquire a submarine replacement.

It generally takes 15 years to procure new major capital equipment for the Canadian military, and the four existing Victoria-class diesel-electric submarines acquired second-hand from Britain in 1998 have a planned operational life to 2035. Overlaying this is the reality that the two sources of past Canadian sub buys, the British and the Americans, now operate nuclear-only undersea fleets.

Past attempts at Canada going nuclear in the 1964 and 1987 defence white papers revealed that option as too costly and politically contentious. When then-defence minister Peter MacKay floated the idea again in 2011, it met opposition pushback, despite the advantages nuclear subs hold in being able to transit Arctic ice and was quickly dropped.

Even the price tag of a non-nuclear acquisition deterred the Trudeau government from including a replacement project in its 2017 Strong, Secure, Engaged defence policy or the National Shipbuilding Strategy, a multi-decade attempt to provide the Navy and Coast Guard with built-in-Canada vessels. Instead, the government opted for an estimated \$2.5-billion modernization project in the mid-2020s to keep the Victorias going to 2035.

With no options for new or even second-hand buys from our two closest allies, consideration will have to turn to one of three options, one of which is to build overseas, preferably in

collaboration with a country with similar requirements like Australia or Japan, or to build at home using one of the National Shipbuilding Strategy yards.

Neither will be cheap. A 2003 Department of National Defence audit picked a \$3-billion to \$5-billion price tag for four brand new subs. That was 17 years ago. Of course, Ottawa could scrap the 100-year-old submarine service entirely as Denmark did in 2004 once the best-before date passes.

However, going the Danish route would result in the loss of a vital capability that, by its very nature, is unknown to most Canadians. Subs, after all, work best when they are out of sight.

What is known though are the headlines: the tragic 2004 fire aboard the HMCS *Chicoutimi*, the 2002 flooding in the HMCS *Corner Brook* and its grounding in 2011. Despite being purchased in 1998, years of sitting mothballed in British waters, the need to restart spare-part supply lines and to “Canadianize” the subs to our navy’s operational standards meant that Victorias did not achieve full operational status until 2015. This year, it emerged that not one of the four subs actually went to sea in 2019 due to maintenance and repair issues.

Yet beneath the surface, there is much to consider in renewing the capability. Canada’s submarines, current and past, have provided our decision-makers with vital functions that few other countries possess. Submarines are known popularly for their weapons, but it is the combination of their very presence and intelligence and surveillance capabilities,

*HMCS Chicoutimi off Victoria.*

*Photo: Cpl Carbe Orellana, MARPAC Imaging Services*



including the ability to loiter for weeks undetected, that are their greatest assets.

For a country with the world's longest coastline, bordering three oceans, submarines have proved instrumental in upholding Canadian sovereignty and strengthening critical alliances.

A mere “notice of intention” to deploy an Oberon-class submarine altered the political calculus of Spain during the 1995 “Turbot War” off Newfoundland in Ottawa's favour. The Victorias regularly deploy to the Arctic during the summer months for covert surveillance missions. In the Caribbean, these subs participate in anti-drug monitoring.

Further afield are the 100-day-plus missions in 2017-18 in the Mediterranean and East Asia. Working with NATO and Japanese allies, respectively, the subs were involved in training, counter-smuggling and counter-terrorism operations.

In an attempt to boost familiarity with a complex and tense region, the Pacific deployment represented the first time a Canadian sub had deployed to Japan in 50 years. Tellingly, the subs are also up for consideration for deployment to monitor the enforcement of UN sanctions against North Korea.

Even before the onset of COVID-19, the Indo-Pacific was the scene of a naval arms buildup between major regional players, China, Japan, South Korea, India and Australia. Now, factor in the worsening tensions between Beijing and Washington.

With Canada looking to uphold multilateral security norms and diversify trade relations, helping secure our own waters and those of allies will become more important, not less in the years ahead. Now is the time to consider a future replacement — a lot happens in 15 years.



*An exercise version of the MK48 Heavyweight Torpedo aboard HMCS Victoria. Photo: David Malysheff*



# SURG. LT. JOCK WINTHROPE AND THE RAID ON ST. NAZAIRE

**Fraser McKee**

By early 1942 Churchill and the Admiralty were worried about the larger German warships attacking the continuous convoys, every five days on the average, crossing the Atlantic. With the occupation of the French coast, the only repair drydock that, if required, could take their largest ships, *Tirpitz*, *Gneisenau*, and *Scharnhorst*, outside almost land locked Germany itself, was the 'Normandie' drydock some eight miles up the Loire River at St. Nazaire. It was to that facility that *Bismark* had been heading after sinking HMS *Hood*, damaged in May of 1941. Thus a plan was proposed to blow up the drydock entrance gate by ramming an expendable ship loaded with explosives into it and detonating them. This became Operation Chariot; the ship selected was the elderly destroyer HMS *Campbeltown*, ex-USS *Buchanan*, acquired in the 50 destroyer deal with the U.S. in 1940. The plan was expanded to include carrying commando-trained troops to blow up the underground drydock pumping equipment in case the gate demolition was insufficient. With 353 naval personnel, 249 Army, one civilian (NAAFI canteen manager) and a newsman, these were to be carried in

*Campbeltown* (LCdr Sam Beattie, RN), 1 MGB as force Commander's ship (CDR R.E.D. Ryder, RN), 1 MTB and 16 'Fairmile' style wooden-hulled motor launches. The latter and the destroyer carrying the Commandos. *Campbeltown*'s lower bow was packed with five tons of 24 depth charges, hidden in a sealed tank below her foc's'le gun, to be fired by a 2½ hour delay fuse.

In the Naval force, almost unknown to any Canadians to this day, were four RCNVR officers, all of whom had been on loan to the RN for various purposes. Surg. Lt. James 'Jock' Winthrope had been born in Saskatoon, son of a dentist, graduated from the University of Saskatchewan in science, and in medicine from the University of Toronto. He joined the RCNVR in February, 1941. With only a few months of training, at the request of the RN, with many others he was sent to them on loan. Posted as ship's medical officer to *Campbeltown*, she was on Atlantic convoy duties until selected for the Chariot operation, her crew reduced to 77. Winthrope was retained as the Naval force's *only* medical person.

S/Lt. D. Lloyd Davies of Montreal and Lt. Graham M. Baker from Toronto, both also RCNVR's, were appointed to two of the MI's, Davies as X.O. of his.



*'The Old Mole', the Raid on St Nazaire, Saturday, 28 March 1942 by Mark Littlejohn (b.1958)  
Falmouth Art Gallery*



The fourth 'VR was S/Lt. John E. O'Rourke, appointed as Communications Officer for the operation in CDR. Ryder's MGB. He was the only one of the four to reach home.

The force left Falmouth in the evening of March 26th, escorted by two small Hunt-class destroyers. Apart from an incident with a U-boat that presumed the destroyers were headed for Gibraltar, they arrived as planned at St. Nazaire at 0130 on the 28th, rammed the center of the gate at high tide and rode partly up over it. Due to about 10 minutes of violent last-minute gunfire from shore, there were already several wounded, which Jock Winthrope attended in the dark and flames with his only assistants a couple of stewards. The commandos aboard descended onto the dock's upper face by ladders and went into the dockyard to go about their demolitions.

A pre-assigned ML-177 came up to *Campbeltown's* quarter and took off about 50 or more wounded and other naval hands, and Winthrope. She backed clear, heading down the Loire. However she was soon hit by 88mm gunfire, set afire, drifting and sinking. That was the last anyone reported as seeing Winthrope, still trying to help his wounded. His body

was found several days later outside the estuary, recovered by sympathetic French and buried in the village of Escoublac La Baule.

Of the other three, when Graham Baker's ML-447 tried to land her commandos on the Old Mole, she grounded, and Baker, attempting to get a line ashore was machine-gunned from the Mole and killed, his body never recovered, the ML set afire and sunk. Lloyd Davies in ML-267 landed the troops she was carrying, but under intense fire, re-embarked them, pulled out into the harbor, was repeatedly hit by gunfire and crippled. Davies, wounded on the back of his head and shoulders was eventually taken prisoner, spent the rest of the war in camps in Germany. John O'Rourke, in CDR Ryder's MTB-314, although damaged, got back to England with him.

While the Raid was a success in that when the destroyer exploded the following morning, the drydock was unusable for the remainder of the war, the cost was severe – 144 killed (23% casualty rate), and 215 as prisoners of war. Jock Winthrope and Graham Baker were some of those casualties and should be far better known.

*John Alan Hamilton (1919–1993) IWM (Imperial War Museums)*







# Rick Guitar NAC (Ottawa)

## Mainstay

**Richard Archer**

This is the third in a series of articles on members of NAC-Ottawa who have contributed so much over the years. Previous articles addressed the contributions of Fred Herrndorf and then Jim Carruthers.

As a serving officer in 2006, and after being talked into it by the late Cliff Chaulk, Rick Guitar joined the Ottawa Branch of what was then the Naval Officers Association of Canada (NOAC). At the time he was working with a lot of purple organizations in NDHQ and he wanted to stay in better touch with what the Navy was up to. Almost immediately he was shanghaied into becoming Branch Treasurer, serving with distinction from 2006 to 2011.

This was a period of both good and bad times for the branch. It was an era of serious concern for diminishing membership, and thus income. Branch activities and charities were at risk, but Rick successfully saw the finances of the branch through thick and through thin.

One useful engine of branch income for many years has been the series of tales of wartime and then peacetime experiences captured in the publications called *Salty Dips*. These publications record the memories of particular NOAC/NAC members, putting a personal touch on many historical events of great interest to naval buffs.

The first *Salty Dips* volume was published in 1983 under the late Mack Lynch. The *Salty Dips* file is currently managed by a committee of nine drawn from branch membership. The committee chair promotes the series, works with other members of the committee to find stories and co-ordinates activities. A separate chief editor is responsible for reviewing the stories and developing the volume. Since the *Salty Dips* effort has costs, incomes and profits, as branch treasurer Rick was there to provide both control and advice and to put the finances on a solid footing.

After he turned over the treasurer job, his

association with *Salty Dips* was maintained. He was asked to chair the *Salty Dips* committee and shepherd through Volume 10, a book devoted to submarines. As this article is being written, Rick and his cohorts are working on Volume 11, devoted to how life in the Navy has changed.

So Rick Guitar has been a stalwart of the Ottawa Branch for many years. But where did his proactive support for both the Navy and the NAC come from?

Well, he tells me that as a kid growing up in the Niagara Peninsula near the Welland Canal, he was always interested in things nautical and railway-related. On the railway side of things, he says that one of his first memories was seeing an old steam engine in action. So the scene was set for him to pursue an interest in machinery.

Nonetheless as a teenager, trying to pick a career was a challenge. He was in first year university when he thought of fulfilling his interests by joining the Navy. He applied to RMC, from whom he received an offer. However, he wasn't sure that he wanted to commit to the compulsory service at the time and declined. After graduating university with a degree in economics and political science, he tried a few lines of work but decided to go back to school at Georgian College to study marine engineering.

As part of marine Engineering training at Georgian, he spent a summer as an engineering cadet punching fires and tracing systems on board the SS *Scott Misener*, a bulk carrier on the Great Lakes. She was built at Port Weller Dry Docks in 1954 using a steam turbine from a WW2 RN fleet tanker. They spent the summer picking up iron ore at Pointe Noir in Quebec, sailing to Chicago to unload, heading to

Thunder Bay for grain and hauling that down to Montreal, Sorel, Quebec, and Baie Comeau. But his love the Navy hadn't abated – in due course he applied to join again.

Shortly after he began the academic part of his civilian marine engineering at Georgian, the CF decided he would undeniably be an asset and offered MARS training. He already had a university degree, so unfortunately they didn't want to send him back to school to study engineering. For his part, however, it seemed a good idea to start getting paid again and so he took up the offer. He reported for duty in February of 1983, and made it as far as MARS IV, where sadly it didn't all work out. But he continued to hope for a career in the Navy, and true to his wish to be associated with marine engineering, he applied to become a sailor in the marine electrical trade, even with his university degree. Another factor was that he had met his future wife Donna, and he needed to be financially secure.



He then compounded all this by volunteering for submarines, and off he went to the Basic Submarine Course. He was posted to HMCS *Ojibwa* and subsequently served in *Onondaga* and *Okanagan*. His trades training also progressed, including the Electronic Technicians course. It is in this period of his life that he grew to like the title “submariner”, and it is the source of his ongoing interest in all things that sail under the sea.

But onwards and upwards. In 1988 he applied to get back into the officer stream. Because the CF didn't want to send him back to school, he requested to become a Logistics Officer. In January 1989 he was appointed Officer Cadet, promoted to Acting Sub-Lieutenant, and then Sub-Lieutenant all on the same day. Following Basic Logistics Officer Training somebody in the career shop thought the most logical thing to do with him was to post him from the Submarine Squadron to CFB Portage La Prairie.

Portage actually turned out to be a useful and rewarding posting, because he had all kinds of responsibilities, much more than he would ever have had in Halifax or Esquimalt, and he could go home for lunch every day. He was number two in Base Supply and ran Local Procurement and Customer Services. While there he was promoted to Lieutenant by then-Colonel Ray Henault.

Finally in 1992 he was posted back to his first love, the Navy. He joined HMCS *Terra Nova*, but soon was moved to *Iroquois* where his Head of Department training was completed in 1993. In the following years he was Supply Officer for Reserve Training Unit (Atlantic), and then for *Gatineau*, where on short notice he deployed for a blockade of Haiti. The notice was so short that he was informed of this while the ship was conducting ASROC drills off Roosevelt Roads. After posting, he took up a position at Base Supply Halifax, where a major restructuring took place combining procurement and Customer Services. He took his experience from Portage to lead his 60-person section through to support the Dockyard and Fleet. For his final job at sea, he was Supply Officer in a CPF, HMCS *Charlottetown* during which time he participated in STANAVFORLANT and CARIBOPS. His sea time over, he was posted in 1997 on a final geographic move to the centre of the universe, NDHQ in Ottawa.



He undertook various supply, financial and administrative jobs in the Ottawa area, at the same time as he earned an MBA and was promoted to lieutenant-commander.

In 2008, his active naval life was catching up with him and it looked as if he might become unpromotable for medical reasons. He thus decided that retirement was a better course of action. He applied for and won a competition to become a DND civilian contractor working in NDHQ, taking on various jobs. By 2017 his value and contributions were so highly evident DND adopted him as a permanent public servant. He currently works in the department on forecasting supply and repair requirements.

A theme throughout his working and volunteer life has been to give back. The Navy took him in and

gave him a very rewarding career and a solid basis on which to have a great family life. Even though a busy serving officer in 2006, he joined the Ottawa Branch of then-NOAC so as to contribute to the aims of the association, including support for the Navy's aspirations. He quickly volunteered for the branch treasurer position, and his giving back has been sustained to this day in his successful efforts to keep the Salty Dips saga alive and well. Well done, Rick Guitar.



## NavRes Officers – Can We Count You In?

- Do you want to be counted among the over 10,000 former cadets that have contributed so much to naval and civilian life in Canada?
- Have you thought about reconnecting with former officer cadets with whom you did summer training?
- Would you like to hear about events planned to celebrate the 100th anniversary of the RCNR in 2023?

The University Naval Training Division Association of Canada is seeking to connect with all former cadets who participated in UNTD, ROUTP, NROC, UNTD2 and RESO programs. Count yourself in at [www.untd.org](http://www.untd.org) and check out the Nominal List and other material on the web site, or contact us at [inquiries@untd.org](mailto:inquiries@untd.org) if you have any questions.

## It's All About Connections...



# Wasteful Canadian Defence Spending

**Roger Cyr**

Over the years there has been criticism of how Canadian defence procurement is conducted, or rather how inept it is. There is proof of this ineptness almost daily, with the end-result that our military is left with unreliable, inferior and expensive equipment that does not meet requirements. We need to look at two major purchases for the military; the Arctic Offshore Patrol Ships (AOPS), and the CH148 cyclone helicopters. Both projects are fraught with delays and the costs are astronomical. There are two reasons why defence procurement is so unreliable. The first is that instead of choosing a proven design and purchasing it, the military selects a product, and spend years making modifications to the design to make it uniquely Canadian. The second is that bidders need to explain how Canadian industries will benefit. In the end, Canada gets a flawed product, at astronomical costs.

With the ships, the design is based on the Norwegian Coast Guard Ship *Svalbard*. The estimated design cost of this ship class is \$288 million to make it Canadian, versus an off-the-shelf cost estimate of about \$10 million. The Norwegians spent less than \$100 million to design and built the first ship in 2002. The Danish built two ships for \$105 million in 2007, and the Irish did the same for \$125 million. For Canada, the budget for the project is \$3.5 billion for six ships, or \$600,000,000 per ship. This immense difference in cost is attributed to a major Canadian redesign, to take a war capable ship design and convert to a non-combatant by removing the weapons, and to provide industrial benefits to Canadian industries. The Norwegian ship design has the ships fitted with weapons, whereas these were removed in the Canadian configuration. The cost of the Canadian variants works out to ten times what the normal costs should have been, with no naval combat systems.

With the helicopters, a contract was awarded to Sikorsky for \$1.8 billion to produce 28 helicopters, with deliveries scheduled to start in January 2009, the CH-148 Cyclone. This works out to \$64 million per helicopter. In February 2010, the first CH-148 arrived in Canada. Because of design issues, the first 19 of the

28 CH-148 Cyclones were to be delivered in an interim standard which does not meet the original contract requirements. On 10 July 2012 in reference to Sikorsky missing another delivery deadline, Defence Minister Peter MacKay called the Cyclone purchase "the worst procurement in the history of Canada." In June 2018, the Cyclone was declared to have reached its "initial operating capability", some nine years after the award of the contract, and only 19 have been delivered so far.

There were other options for the procurement of shipborne helicopters, such as the NH-90, and these have proven to be effective and less expensive. The NH-90 was developed in response to NATO requirements for a helicopter which would be capable of being operated in naval environments, called the NATO Frigate Helicopter (NFH). As of July 2019, NH-90s have logged 185,000 flight hours in the armed forces of thirteen nations. The NFH cost is estimated at \$40 million, and it has been fully operational for years.

So, why does Canada take a design, try to make it uniquely Canadian and spend enormous amounts of money to achieve this, and get an inferior product as a result. Why not simply buy an off-the-shelf, proven product, which would be compatible operationally with our NATO allies, and achieve immense cost reductions? Simply put, defence procurement seems to be a cash guzzling exercise that is obviously not getting value for the money spent.

Military purchasing should be striving to procure proven materiel that is readily available, and at a reasonable cost. Canada at one time had a significant defence industry, which could build major weapon systems, such as warships and armoured vehicles. But it is no longer the case. Defence industries must sell their products to our own military, but they must also be able to count on exports in order to successfully develop a major weapon system.

Canada does not have a substantial defence industrial base since our military needs are insignificant as compared to major powers. We have modest defence needs, and hence cannot maintain a vibrant defence industry that would thrive on defence exports, except for niche markets such as the armoured vehicles being built by General Dynamics. Canada needs to clearly define its military requirements and proceed to buy existing weapon systems that are available from our allies, and will meet our needs, without spending time and money to Canadianize them.

# RCN Plaque and Storyboard Presented to National Museum of Bermuda



A number of 'senior' members of the Nova Scotia Branch of the Naval Association of Canada have fond memories of Bermuda and ready to share salty dip of a deployment / 'run ashore' with new members.

Given the Royal Canadian Navy's lengthy association with the island and the commercial and cultural links between Nova Scotia and Bermuda over the years, Bob Lancashire was a bit surprised by a question posed by Venture Class '56 classmate Dennis Briggs.

Dennis and his wife were visiting the National Museum of Bermuda located in the Commissioner's House at the historic Royal Naval Dockyard, Ireland Island during a cruise ship stop in Bermuda. The US Navy was represented at the museum but there was "a lack of reference to any RCN activity in the area."

Bob Lancashire, vice-president of NSNAC

brought the matter to the Board's attention. It was decided to contact the Museum to point out the significance of the RCN-Bermuda association and explore how to have the RCN represented. After an exchange of correspondence, a 'work crew' was formed, including Peter Haydon, Bob Lancashire, Charles Westropp, Rowland Marshall, Pat Jessup (graphic design) and Len Canfield. In fairly short order a 24 by 15 inch metal plaque and 2 by 3 foot display board were produced.

The "Royal Canadian Navy and Bermuda" display board includes text and photos of RCN ships of the Second World War and Cold War eras, along with a group photo of the training staff at HMCS Somers Isles 1944-45.

The plaque, cast by Lunenburg Industrial Foundry & Engineering, reads: "Presented to the National Museum of Bermuda in recognition of the lengthy ties and bonds of friendship between the Royal Canadian Navy and Bermuda and the training support provided to the RCN and the Canadian Armed Forces in peace and war. *Presented by the Nova Scotia Branch of the Naval Association of Canada.*

Arrangements were made for transporting the 45 pound plaque and display board to the museum. Charles Westropp, recalling early deployments to Bermuda and later while serving as Commander Canadian Fleet Atlantic, MARCOMHQ 'volunteered' to add Bermuda to a planned visit to the US and make the presentation to the museum in early March.

As he commented on his return to Halifax, "Curator Deborah Atwood and museum staff have selected a great space to display our kit and will provide photos when the plaque and display board are mounted. The museum is in really good shape and definitely worth a visit."

Contact: Len Canfield, NSNAC Tel: 902-443-1726  
or [len.canfield@ns.sympatico.ca](mailto:len.canfield@ns.sympatico.ca)



# HOW THE WEST IS LOSING THE NAVIGATION AND TIMING WAR

**Dana Goward**

President of the Resilient Navigation and Timing Foundation.

In an age of nuclear, biologic, and chemical weapons, it is hard to imagine a global conflict on the scale of the last world war.

Yet huge economic and social disparities remain between nations. Tribalism, national pride, and fear of “the other” are all too common. And so, struggles between nations and groups of nations continue. Perhaps more quietly and subtly, but nevertheless very much in earnest.

In every way, each side is looking to exploit their adversaries’ weaknesses. For the last forty years or so, adversaries of the West have found an easy target in satellite-based positioning, navigation, and timing (PNT). A combination of vulnerabilities and broad dependence have caused US security officials to call it “a single point of failure for critical infrastructure.”

Of course, PNT has been important since prehistory. Nations have long sought advantage over each other by improving their own capabilities and, at times undermining those of their adversaries. The British weren’t the only ones desperately searching for a way to find longitude in the early 1700’s, for example.

This war for navigation and timing was greatly accelerated, though, with the advent of America’s Global Positioning System (GPS) and Russia’s GLONASS, both of which became fully operational in 1995.

## Jamming

The exceptionally weak nature of these signals, along with the tremendous military and civil advantages they provided, made them targets very early on. As one example, Iraqi forces were reported to have employed jammers to help protect high value targets in the 1991 Persian Gulf war, even though U.S. forces

had only a limited number of receivers and a partial constellation to work with.

Such things were mostly discussed in hushed tones and behind closed doors. At least until 1997 when the Russian company Aviaconversia offered a portable GPS/GLONASS jammer for sale at the Moscow Air Show. The 4w jammer reportedly had a range of 150 km to 200 km.

The United States Army was sufficiently interested to place an order for almost \$200,000. In the years that followed, both global navigation satellite system (GNSS) technology and the technologies to disrupt it evolved. For years reports of disruptions, at least in the public sphere, were rare. Though occasionally they would make it into the popular media.

*GPS Satellite Art. Photo: NASA*



One of the first was actually between frenemies within the West. In 2000 the Greek government held a competition for procurement for a new army tank. The contract was to be for 250 tanks and estimated at \$1.4 Billion. Competitors included tanks from Germany, France, Britain, and the United States. The British and US tanks performed poorly during the trials. It seems a French security agency had hidden

GPS jammers on the range and remotely activated them whenever the British and American tanks were on the field.

Jamming weak GNSS signals quickly evolved from the province of elite military electronic warfare units to something easily available to anyone with \$35 and an internet connection.

## **The Advent of Spoofing**

As jamming became more prevalent, a second GNSS weakness was eventually revealed – spoofing, or deceiving receivers with potentially hazardous misleading information.

In retrospect, this development was probably inevitable. As part of encouraging wide use and adoption of GPS, the United States made its signal characteristics public knowledge. Thus, GPS became “America’s gift to the world.” Naturally, other GNSS operators followed suit to encourage broad adoption of their signals.

These efforts were wildly successful. GNSS signals have been adopted for an incredible array of previously unimagined uses. But making the details of the signals public, in addition to making the incredibly useful, also accelerated the ability of bad actors to be able to send false signals.

The first public claim of this was in 2011 when Iran came into possession of a US surveillance drone that had been operating next door in Afghanistan. Iranian engineers said they had transmitted false GPS signals to the drone to cause it to cross the border and land at an Iranian airfield.

US officials at first said it couldn’t happen. Several months later Todd Humphries at the University of Texas essentially said “sure it can – watch” and spoofed a drone in front of the press in the university’s stadium.

Since then, spoofing technology has become cheaper, more capable, and easier to use. A predictable technological progression. Small spoofing devices are now readily available, inexpensive, can imitate multiple constellations at once, and can be operated by any moderately informed user.

While jamming and spoofing by individuals and groups are a serious threat, it is the West’s national adversaries that should be of greatest concern. They

are winning the navigation and timing war and gaining power in other areas as a result.

## **Russian and China Advancing**

We know with certainty that Russia and China have maintained and increased their navigation warfare capability for both defense and offense. We can assume this is the case for their allies such as North Korea and Iran as well.

Russia and China have both maintained and appear to be improving their Loran-based terrestrial PNT systems. This allows them to ensure wireless precise PNT services are available to their homelands irrespective of solar storms or enemy attack.

Both have also been actively jamming western and other military forces during exercises and confrontations. Each has also developed aggressive capabilities to spoof GNSS signals over wide areas.

Of the two, Russia has been much more open about their activities. Russia claims to have installed GPS jammers on 250,000 cell towers to confound US cruise missiles. It has bragged that its electronic warfare capability makes aircraft carriers useless, and has touted an electronic shield that can jam GNSS signals thousands of kilometers from its borders.

Russia periodically nettles NATO exercises and its northern neighbors by jamming GPS signals. And it does this so precisely that GLONASS signals in the spectrum next door remain entirely unaffected.

Russian security forces also regularly spoof GPS receivers into thinking they are at airports tens of kilometers from their true location. Almost 10,000 instances of this happening to ships at sea have been documented, and press reports tell us it is a regular feature of life near the Kremlin.

While this is an anti-drone measure for VIP protection, the implications for potential offensive mischief are obvious. China has been quieter, though some might argue even more effective, than Russia in the navigation and timing war.

There is evidence that China has improved upon Russia’s ability in wide-area spoofing. Rather than cause all impacted receivers to report that they are at the same remote location, China’s system seems to move them each to different, semi-random locations (though something in their algorithm seems to favor



points that form circles over time).

China's BeiDou satellite navigation system is newer than GPS, with all the technology implications that brings, and is rapidly achieving a physical dominance. More BeiDou than GPS satellites are visible in the skies of 130 of 195 countries.

China has also announced with Russia intentions for greater cooperation between BeiDou and GLONASS suggesting that the two could merge into a mega constellation. One that, numerically at least, would surpass a combination of GPS and Galileo.

And at the recent Stanford PNT Symposium a representative from BeiDou confirmed China's intent to launch multiple new PNT systems for operation nationally and globally. Among those is a Low Earth Orbit (LEO) constellation broadcasting new L Band signals. The entry proposal now with the

ITU for consideration is for 120 new LEO satellites at 700 km altitude. Such a system could provide more accuracy and resilience, presumably broadcasting at higher power than today's MEO GNSS constellations.

China's most significant advantage is its commitment to a comprehensive PNT architecture that includes multiple diverse sources from legacy Loran to systems that have yet to be developed.

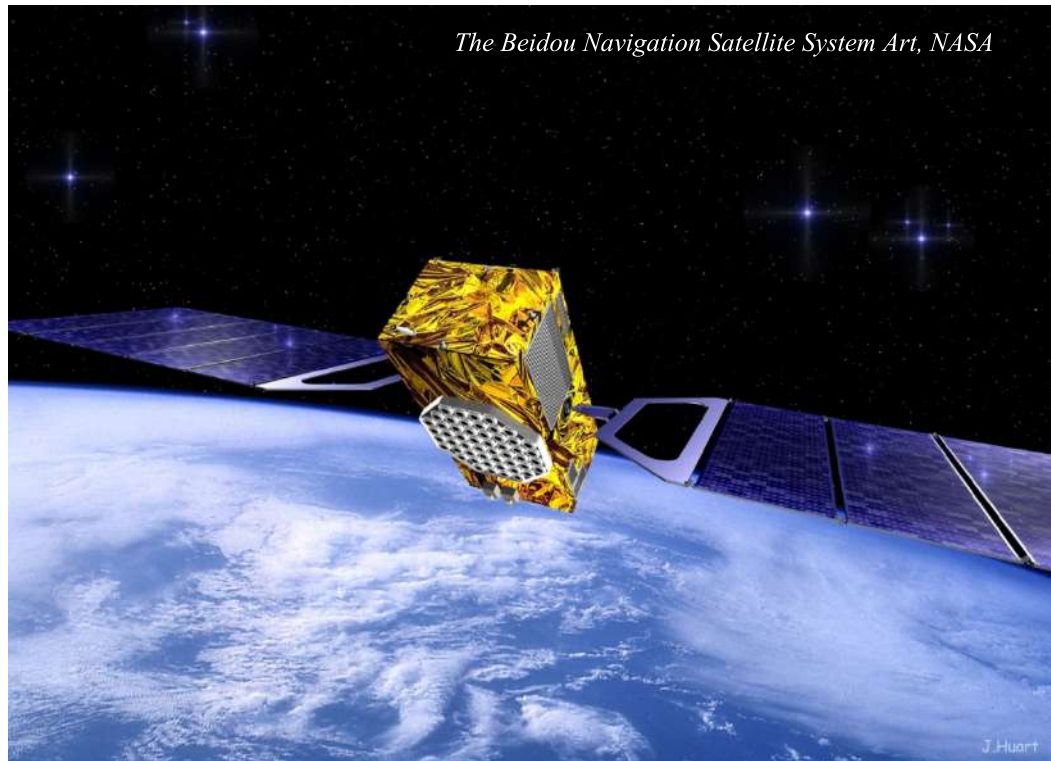
Such a system used by the entire nation, not just military forces, will provide a degree of national resilience and robustness not found elsewhere. Certainly, an economic, military, and societal advantage for China. An advantage in the navigation and timing war, and its quest to become the next sole global superpower.

## The West Mostly Retreating

In 1997 a presidential commission told Bill Clinton the U.S. was likely becoming too dependent on GPS signals. This was confirmed in 2001 by a seminal report by the US Department of

Transportation's Volpe Center. It said that GPS signals were incredibly vulnerable, and the nation must cancel its plans to have aircraft rely entirely on space-based signals for navigation. It said that other transportation modes, and many non-transportation interests, required a complementary and backup capability for GPS. It also said that eLoran looked like a good bet to be that backup and should be further investigated.

Unfortunately, thirteen days after the report was issued, the World Trade Center towers fell. Leaders' attention was diverted elsewhere. Even so, in 2004 President Bush issued an order, which is still in effect, to implement a backup capability for GPS against the inevitable day it was no longer available.



This was described as a national economic and security necessity.

Despite this knowledge and mandate, the United States and the West proceeded to reduce its PNT capability, rather than enhance it. Most notable were the termination of the U.S. and Canadian Loran systems in 2010, and Europe's in 2015. Massive blows to what should have been expanding and increasingly robust PNT architectures.

The result has been that the West's already

dangerous over-dependence on space based PNT has been tremendously exacerbated. Compounding this challenge in many western nations is the lack of governmental leadership for civil PNT issues. The United States is a good case study.

The U.S. Department of Defense has long been aware of GPS vulnerability and has actively pursued remedies. Yet over 99% of GPS users have nothing to do with the military. There are no national efforts to protect their interests and users.

Nor will these users benefit from defense efforts. That department has declared that civil use of GPS has hindered its operations. Therefore, future defense PNT efforts and systems will be “increasingly classified” and therefore not available to civilians.

The U.S. Department of Transportation is tasked with leadership of civil PNT issues, but only lightly so. There is a broad lack of recognition and support for this role across the bureaucracy and within Congress. This has meant that the department has been unable to garner support for even minor efforts such as funding to monitor and report on the health and quality of civil GPS signals. The department has here-to-fore not even attempted other efforts to improve the nation’s PTN architecture – even those mandated by presidential order.

## **And So Goes the War**

So, what does all this mean in the undeclared, low level, navigation and timing war that is taking place pretty much out of sight?

Because PNT is so critical to military and civil activities, it means that the West is at a major disadvantage at all three levels of warfare - tactical, operational, and strategic.

### **Tactical Level**

It means that the odds can be stacked against western forces in specific tactical engagements. Iran has been particularly good at demonstrating this. drone in 2011, there is also reason to believe they bested the US in two subsequent cases.

Many believe it wasn’t a coincidence two US Navy boats wandered into Iranian waters and were captured just after President Obama’s nuclear deal

with that nation. It also happened to be on the day of his last major policy speech. US officials have privately commented that spoofing was not a factor in this incident. But as was the case for the drone in 2011, they offered no alternative explanation for what happened.

There is also reason to believe that, in the most recent military confrontation between the United States and Iran, spoofing was used to move a US surveillance drone into Iranian airspace and enable Iran to shoot it down with impunity.

And of course, every week we see other, less surprising cases of GNSS disruption being a problem for western forces operating in the eastern Mediterranean and middle east. At the tactical level of war, the West’s adversaries are doing very, very well.

### **Operational Level**

At the operational level of war, the goal is to prepare the battle space to your advantage. Russian military doctrine holds that when their forces go into battle, every signal from space will be denied them. As a result, they are fully prepared to ensure these signals are also denied their opponents. They are also reported to have a mobile terrestrial system called Skorpion to provide their own forces the wireless PNT they need to power their systems in battle.

But to be honest, shaping the battle space to disadvantage those who rely upon weak GNSS signals is not difficult. It is within the grasp of virtually every nation.

### **Strategic Level**

It is at the strategic level of war, though, that the West’s adversaries are making the greatest strides.

Every time Russia jams NATO forces, Iran spoofs a drone, or China interferes with GPS near the Spratly Islands, they are enhancing their global stature and diminishing that of America and the West.

They are sending a set of clear, unambiguous messages. To the west they are saying: with the flip of a switch we can neutralize a major component of your military forces.

Without firing a shot, we, or one of our proxies not traceable to us, can strike at the hearts of your



homelands, cripple your economies, and seriously undermine the legitimacy of your governments.

And, by way, if you decide to respond in kind, our homelands are not nearly as vulnerable.

To the rest of the world they are saying America's much touted "gift to the world" in GPS is not worth as much as they claim. And using it might cause you trouble. Use ours also, or, even better, use ours instead.

And they are saying the West and its systems are not as powerful and important as they might seem. They are vulnerable and easily defeated. Ally with us. We are better partners.

These messages are delivered implicitly through their actions. Sometimes a bit more overtly as when the front page of the Moscow Times read "The Kremlin Eats GPS for Breakfast!"

But they are generally effective, because they contain so much truth.

## Architecture vs Systems

For too long the West has had an unhealthy fixation on PNT satellites in medium earth orbit, when we should have been focusing on a robust and resilient PNT architecture to protect our populations. We have put all our eggs in a very vulnerable basket.

Yet there are some encouraging signs. Europe is contracting for an interference detection network. It has admitted that GNSS alone is not sufficient for safety critical applications. And it is exploring what that means in terms of systems.

The United States is in the early stages of figuring out how to build a terrestrial timing backup. One that can be expanded into a navigation system. This is much more of a political problem than a technical one. That means the process is much more complex and uncertain.

Let's hope that these measures continue, and more are undertaken to protect GNSS signals, toughen receivers, and provide difficult to disrupt terrestrial augments.

Let's hope that these are not too little too late. As things are now, it is not too much to imagine that one day soon we might wake up to find that a nation,

terrorist group, or transnational criminal organization has turned our single point of failure into a knife at our throat.



*Artist's vision of satellites deploying solar panels on Earth orbit.  
Source: Wikimedia Commons*

# Canadian Naval Heritage

The serialized naval memoirs of the late RAdm Robert Philip 'Bob' Welland DSC & Bar, MiD, psc, Officer of the Legion of Merit (USA), RCN



## "Nothing Ventured ..."

During the first week of that July Admiral Bidwell and his wife, Mary, invited Stephanie and me to dinner, "To 'wet' your fourth stripe." It turned out the occasion was really to tell us we were being moved to Ottawa, and would that be 'agreeable'. Stephanie was the first to say how much we would miss their pleasant company, so I had no trouble in going along with it. Stephanie knew the polite rules of the Navy as well as I did, we'd be going to Ottawa even if it was not 'agreeable'.

In fact we would miss the Bidwell's; they were an interesting pair. He made a habit of visiting the officers mess, Admiralty House, on Fridays, after work. His presence attracted a crowd, he stood about, clutching a tankard of beer, enjoying himself. He had an amusing view of any subject that arose and managed to manoeuvre us into being straight men for his wit. When asked his opinion on the subject of women serving afloat in the warships. "Why ever would they want to do that? They'd know we'd have them doing the dishes in no time." On the subject of rivalry with the Air Force. "The Navy invented the Air Force; everyone makes mistakes."

His wife, Mary, was a sports addict; she attended every major naval event and a lot of lesser ones. She knew the names of the players, she had a big voice, she took sides with unabashed exuberance. Her behaviour seemed a bit undignified for our admiral's wife until you realized she was genuine. She was not there to patronize the players.

"Come on Stadacona." Of course the Navy won everything. We daren't lose. I became a competitive squash player because I was afraid Mary might be

watching!

"Hugh Pullen wants you as his Director of Training", Bidwell said. I knew Pullen had been moved from Stadacona to Ottawa. He had been promoted to Rear Admiral and was now the Chief of Personnel. I was surprised Pullen had picked on me to run his training department. We had somewhat divergent views on training; he had served his early years with the Royal Navy, and thought the RN did everything right and we ought to ape them. He had



*Admiral Hugh Pullen. His attractive wife, Helen, is in the background. They had seven children..*



not been brought up by a Gus Agar who thought they did everything wrong. I was an open critic of many RN activities; like poor food, officers patronizing the men, not adopting anything American if humanly possible, as examples.

Hughie could be tiresome. An instance was a tussle between him and the head of the Gunnery school, Commander 'Trigger' Wadds. (Wadds reported to Pullen and both were specialist gunnery officers.) Our destroyers were equipped with a double-barrelled 4-inch gun that had been bought from England. It required a crew of sixteen to operate it and the ships were staffed accordingly. Trigger Wadds analysed the duties of each man and concluded, after running live tests on his firing ranges, that only twelve men were needed. He extrapolated for the number of gun-mounts per ship (3) and pointed out that a destroyer's crew could be reduced by a total of eighteen, taking into account the reduction in support people like cooks and storemen.

In order to initiate the staffing change Trigger made a presentation to Pullen. He made comments on an investigation done by the British Army into the numbers required to operate a 6-inch howitzer, "Their manual had not been updated from 1920", said Trigger. "In the interval the internal combustion engine had become commonplace, and it was found possible to reduce the gun's crew by three soldiers, those who were assigned to hold the horses." Triggers attempt at wit backfired; he should have known that criticizing anything British was a no-no. His abbreviated gun's crew was not introduced until after 'Von Pullen' was moved from Stadacona! Hughie hated technology of any sort, so I was surprised he had hit on me.

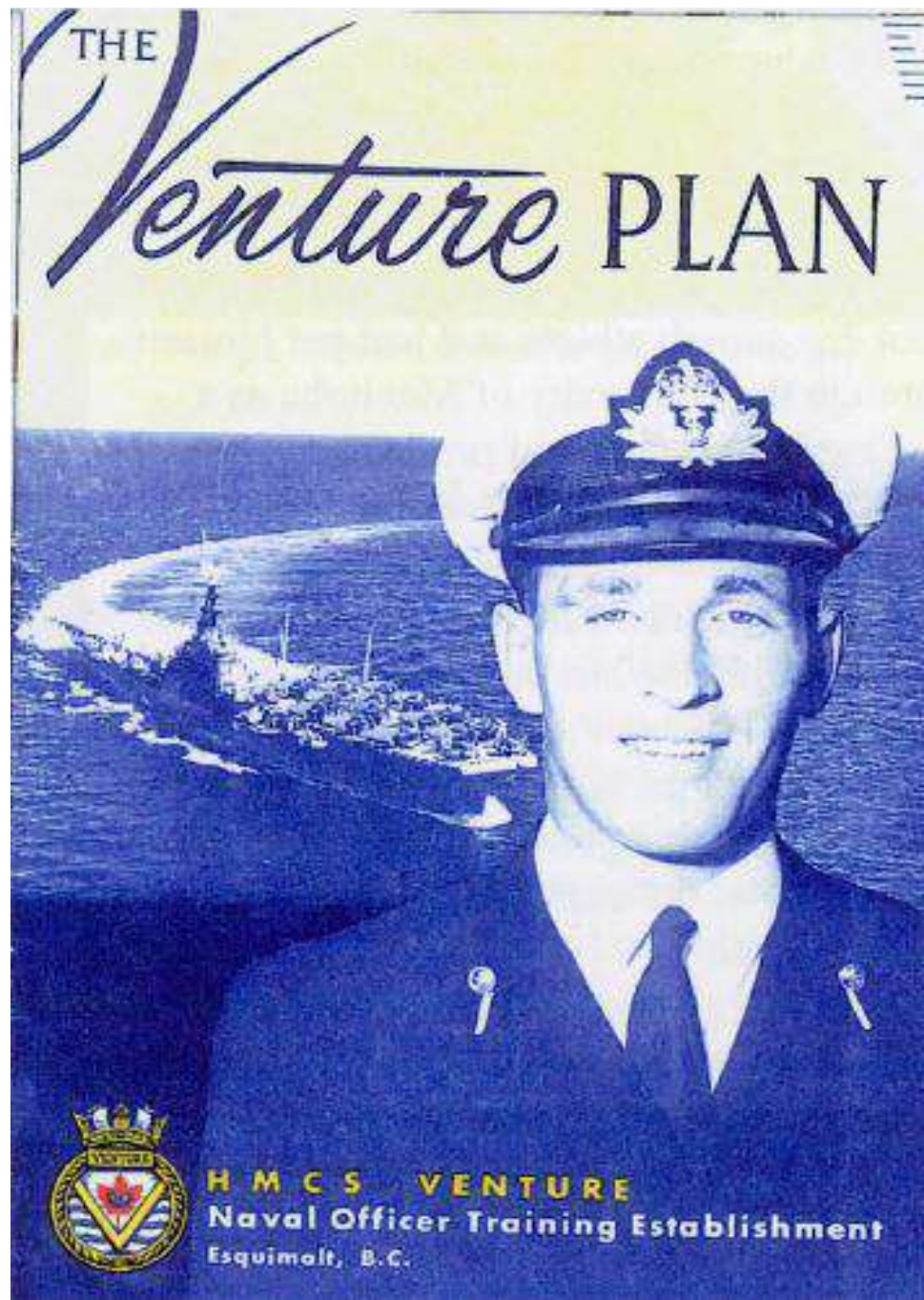
In a day or so my appointment to Ottawa arrived; we packed up the house and we were off a few days later. It was summertime, Stephanie and Jillie decided they'd take the train, at about the time I suggested we drive and camp along the way!

So the boys and I loaded the Ford station

wagon and took a whole week to do the thousand miles to Ottawa. We went around the Gaspé and saw the sea birds on Perce rock. We loafed along the highway overlooking the St. Lawrence, we strolled around Trois Pistoles and Rivière du Loup and visited the ancient ramparts of Fortress Quebec. It was a fine 'guy' trip; we fished in the streams and peed in the woods.

In Ottawa we rented a house on Oakland avenue, it was within walking distance of Ashbury school where Stephanie and I enrolled Mike and Tony. Maybe I could afford it with my increase in pay.

We knew that my appointment in Ottawa was going to last only one year, Admiral Pullen had told me that if his plans went as intended I would then go







*Commander George Amyot. Venture organizer and then Director of Studies. Golf handicap 4.*



*Raymond Phillips, Venture organizer and then the XO*

to the West Coast. Such long-term planning was foreign to me!

In the headquarters on Elgin Street I was given a grand office and a capable deputy, Lt. Cdr. Larry Walker. I got immediate direction telling me to create a new training program to produce permanent force officers.

I started work on 3rd August 1953. Progress would have been more rapid had I not been issued a civil-service secretary called Liz. It took me a whole week to realize I didn't have a secretary, I had an aspiring model. Liz was five foot six, young, blonde, and had been last year's runner-up in the Miss Civil Service competition. When I asked Larry Walker what she did around the office, he said, "Her nails twice a day, her hair on the hour, and goes to aerobic class at ten every morning."

"Does she know how to type?" I asked.

He replied he'd never seen her try, but that her knowledge of English was sparse, "Last week she thought a split infinitive was a new kind of jogging bra." Walker had his own secretary, who was not young, not blonde and twenty pounds overweight and when I asked if he'd trade her for Liz he agreed. Liz was gone that very day. I never saw her again, although I did see her photo when she became Miss Civil Service of 1953.

At this time the Russians were stirring the international pot in Europe, the Korean war still stumbled along. Our wartime allies, the Russians, were becoming a major threat. They were arming with new fighter and bomber aircraft, with warships of all kinds and particularly submarines. It was the beginning of the arms-race with the Western countries and it was recognized as such at this time. Canada was re-arming as part of NATO; the navy was expanding. The Chief of the Navy, Vice Admiral Rollo Mainguy, had said we needed to expand the corps of officers quickly; Pullen told me to have a proposal ready in 60 days.

45 days later, in mid October 1953, I made a presentation to the Naval Board explaining and justifying the scheme and estimating the cost. The plan was approved without changes and I was told to implement it. We had just invented a new naval college.

It was to be called HMCS VENTURE. Admiral Pullen chose that name because in his early life he had trained on a sailing ship called *Venture*. No one argued. Pullen said to me, "You will command Venture. Choose your own staff. Have 160 cadets in the classrooms one year from now." I went full time on the project of getting Venture up and running.



Getting this new college going, starting at zero was akin to my earlier experience with the anti-submarine school in 1941. There were no skeletons, just a clear field ahead. Admirals Mainguy and Pullen were 100 percent behind it, so I had no interference from any source that mattered.

At this time, 1953, there were various organizations in existence for producing officers. The principal one was the Royal Roads Naval College in Victoria, where I had served as the Executive officer just after the war. It graduated 100 or so midshipmen each year, but as noted earlier they were not obliged to stay with the Navy and few did. It was still organized like the Royal Military College in Kingston and could not guarantee to produce the required number of officers.

Another scheme, the UNTD, subsidized university students hoping, but not compelling them, to join the Navy after graduation. This program was completely unreliable for the practical purpose of putting trained men into the cockpits and on the bridges. Both the above schemes had caused serious shortfalls of young officers, and that is why the Naval Board approved the Venture scheme so readily. Venture was designed to deliver predictable results.

I chose the staff to man Venture from the people I knew, and Admiral Pullen, as the Chief of Personnel, saw that I got them. Commander George Amyot was the Director of Studies and had complete charge of the education syllabus and selected his own staff to implement it. George and I had been at Royal Roads together, and had about the same golf handicap. George had a masters-degree in mathematics. He was 6 foot 2, a superb athlete and had put himself through the University of Manitoba as a boxing club-fighter and professional hockey player. He was from St. Boniface.

I chose Commander Ray Phillips as the Executive officer. Ray had been my XO in Haida during the last

year of the war. He was a good planner and doer and people liked to work for him; he had also become a naval pilot. These two officers chose the remainder of the staff. No one interfered, including me.

George, Ray, and I worked out of one office in Ottawa for six months. We made the decisions; some key ones were: recruits were to have the equivalent of junior matriculation. (Royal Roads recruited at senior matric, they belly-ached that we would deflect their potential recruits to Venture. Of course we would!).



*Venture instructional staff, August 1954. We are ready and waiting for the cadets to arrive. Back row, 1 to r: PO Dave Jameson; Lt. Bob Smith; Lt. Cdr. Bernie Lake; Lt. Dave Atkinson; Lt. Doug Williams (in civies); Lt. Phil Bernatchez; Lt. Don Agnew. Middle row, 1 to r: CPO Don Colgrave; CPO Bud Abbott; Lt. Wilf Maundecote-Carter; Lt. Frank Dayton; Lt. Peter Birch-Jones; Capt. Bob Welland; Cdr. George Amyot; Lt. Cdr. Paul Buisson. Front row 1 to r: PO John Tilbury; Lt. Cdr. Don Robertson; Lt. Cdr. Tom Boudreau; Lt. Cdr. Ken McKenzie; Cdr. Ray Phillips; Lt. Cdr. Joe Connor. It is 11 months after the Naval Board approved the project!*

Entrants had to be 16 to 19 years old. Numbers would be chosen from each province proportional to its population. Medical and physical standards would be the same as for naval and air force pilots. Exceptions may be made. (Of every 200 boys in Canada of age 17 only one could be expected to qualify as a fighter pilot. An Air Force statistic, and correct). The course would be two years long. Every promising recruit would be interviewed by Phillips and Amyot in their own province. Those were some of the basic decisions.

We asked the recruiting organization, that had an

office in all major cities, to have enough aspirants to select 60 in the first year. 1,100 young men were initially interviewed, after they had passed the medical requirements. Then Amyot and Phillips interviewed 350, they selected 160. We expected at most, a 5% dropout of those 160 by the end of the second year. That was achieved. I did some digging to find suitable buildings to house our new college; there was no time to build anything. There were choices: Halifax, Digby (Cornwallis), Sydney, Winnipeg, Esquimalt.

I recommended buildings within the gates of the Esquimalt dockyard. These barracks built in 1943, were still in good condition. There was no problem in getting that Raymond Phillips, Venture organizer and then the XO approved. (I was lobbied quite hard by advocates of Sidney and Winnipeg).

I managed to get the sailing yacht *Oriole* refitted in Halifax and sailed, under her own power, from Nova Scotia to Esquimalt; she became part of Venture. I got approval for each of the cadets to be trained to the private-pilot standard at the Patricia Bay flying club. I got approval for each cadet to spend at least six weeks a year at sea in an operational warship. I did the above things because I wanted the cadets to have an adventurous time. Adventuring was to be in addition to completing the equivalent of four years of university academics in two years.

When I was an 18 year-old-cadet the Royal Navy put me into a warship and sent me to Norway and Denmark and Scotland and the West Indies. I was introduced to guns, torpedoes, steam turbines, the big ocean, they had me sail a whaler completely around the Island of Tobago sleeping on the beaches and swimming in the tropic seas. Venture was going to outdo even that. The

main defect with Royal Roads was that the academic people called the shots; classroom time dominated, the boys were bored stupid. Then the people who ran Royal Roads wondered why only ten percent joined the permanent Navy. Venture cadets would be scared stiff for a good part of their time!

Early that August we took the CPR from Ottawa to the West Coast. Mike took charge of his little brothers in their frequent trips to the observation car. Mike and even Tony weren't shy about regaling fellow passengers of their travels; in 1954 not many children had toured Canada, coast to coast, and they knew that.



*Admiral Brodeur with George Amyot and cadet Jean Verreneau. Admiral Brodeur's father, a noted Quebec political figure, was instrumental in establishing the Royal Canadian Navy in 1910. The Admiral's son, Nigel, achieved the rank of Vice Admiral. Cadet Verreneau became a naval aviator and retired in the rank of Brigadier General.*



Mike had become an avid bird-watcher; he discovered the prairies to be a living 'Birds of America'.

On arrival in Esquimalt we moved into a bungalow owned by the Navy. It was ten years old, had three bedrooms, hardwood floors, and was located on the waterfront. Our front yard was a sandy beach at the foot of a ten-foot cliff. Salmon and rock-cod were a few casts away all year round. Tony was the most patient and best fisherman. The boys had a row-boat, they explored rocky barren islands fifty yards from the our house Sometimes they caught unusual fish, including a shark that surprised everyone by producing live baby sharks. This house was just a hundred yards from my office. The Stephanie on our waterfront steps in the Naval Dockyard, whole arrangement could not have been Esquimalt. We lived here for three years better for the family or for me.

Admiral Jimmy Hibbard was in command of the

West Coast Navy, he was my immediate boss. He had been a destroyer captain in the war in the Atlantic; I had been in his flotilla when in command of Haida. He had allocated the bungalow to us.

Stephanie put the three boys into a private school in Oak Bay, Glen Lyon, where Mike had attended three years earlier when we lived on St Louis Street. I bought a big station-wagon so Stephanie could drive them to and fro. We were better organized than we had ever been, and were just solvent.

In early August the cadets arrived. We were ready for them. An advance party had been supervising the remodelling of the barracks buildings. There was no shortage of space, so it was possible to alter the interior to accommodate classrooms, a lecture hall, double cabins for the cadets. Amyot, who was fluent in French, had a language lab. constructed and equipped with training aids. We had decided to get



*Admiral 'Scottie' Brodeur is photographed here with the cadets from Quebec. George Amyot is on the Admiral's right, I am on his left. The other officers are french-speaking instructors. Every one of these cadets graduated, most became aircraft-carrier pilots, and later successful civilians. One became a general, two became members of parliament.*

proportional representation from Quebec and didn't expect those boys to be able to understand English. It was our aim to turn out fully bilingual midshipmen two years hence. We were 12 years ahead of Mr. Trudeau's notions on the subject. A library was stocked, mainly from books donated by military organizations across the country. A mass of sports equipment was bought by our professional physical-training officer. We thought everything was ready.

When a new warship is commissioned the naval custom is to smash a bottle of champagne on its bow. The ceremony is always performed by a lady; she is chosen for the task by inscrutable methods I have never understood, nor inquired into. Commissioning a naval shore establishment is not done by a lady and no champagne is splashed. It is done by a gentleman and politics play the dominant role in his selection. Venture had to be commissioned: who should the central figure be?

I regarded his identity as being none of my business, but I didn't want the occasion to go unnoticed within the Navy or the press. I wrote a private note to Harold Groos, my pal from wartime adventuring to Russia; he was then in Admiral Pullien's 'Personnel' department in Ottawa. I asked whether the subject was being considered and that I could be ready as early as the last week of August, "I'll have them in uniform." Harold, who thrived on intrigue, sent me a hand-written response that showed the commissioning of Venture was a current hot topic. "The CNS (Admiral Rollo Mainguy) invited Brooke Claxton (The Minister of National Defence) to do it," wrote Harold. "But the Minister has declined the offer on the advice of the PR Dept. (The Public Relations Department of DND)". Harold then summarized why the Minister would not be attending the commissioning. "The West Coast press will want to know why the Minister needs a second naval college when he's already got Royal Roads. And when is he going to close Royal Roads. They'll want to know if the UNTD (The Navy's subsidized university-student scheme) is going to be cancelled. They'll ask about the cost of Venture and why does it need a sailboat. The NOP press will want to know why officers are needed anyway. The Min. can duck all those, and others, by not showing up." wrote Harold. "I think the CNS will do it, he ain't political!"

My admiral, Jimmy Hibbard, and I had discussed the commissioning and his attitude was that it was the business of the Ottawa headquarters, not his. Jimmy was clever at dodging minefields, even during the war. A signal to Hibbard from Ottawa settled the matter; it told him to arrange the commissioning for the 20th August, and that the CNS would be the central figure. I was surprised at the early date; there was barely time to get the boys into uniform and teach them to put one foot in front of the other - in two languages. The Admiral's secretary, a lady, and I designed the invitation card; it was elegant, with Tudor crown, the Venture badge (just invented by the Heraldic dept. in Ottawa) and golden lettering.

The ceremony, that I concocted from past examples went even better than planned. It rained, thereby providing a reason not to march out-of-step and still-slouchy cadets before the public.

We held a reception in the dining hall; Admiral and Mrs. Hibbard charmed the guests, which included parents of cadets and family members. I had passed the word, via Phillips, to the cadets that their young brothers and sisters would be welcome. (It's common knowledge of parade and party organizers that unruly kids deflect critics from faulty planning and tardy stewards.) The Naden band played zippy music; there was plenty to eat and drink. Nothing bad happened.

An invited guest was Admiral Victor Brodeur, he had retired and lived in Vancouver. He'd served in the Navy from the rank of cadet to rear admiral. We thought he'd be interested in our emphasis on getting young French Canadians into the service. He was.

The province of Quebec has a long record of supporting the Navy, beginning in 1910. Many of the wartime captains of corvettes and frigates were native sons; Louis Audette, Pierre Simard and a dozen others. Julian Savignac was my gunnery officer in Assiniboine. Quebec shipyards built half the wartime Navy.

Someday a clever Quebecker will discover an inoculation to prevent them catching the separatist bug every 15 years and spoiling their own opportunities and dragging the rest of us into intensive care. I'm not holding my breath.





# From the Branches

## NAC Endowment Fund's Grant to the Quadra Education Fund.

**Bill Cannon**

On November 11th, 2019 at HMCS Nonsuch, the NAC Endowment fund presented a cheque to the Quadra Education Fund (QEF). The QEF raises scholarships for deserving cadets at Quadra. Representing the NAC (on the right) is Bill Cannon of the NAE, and representing the QEF is (on the left) Jim Humphries, also of the NAE.

Cannon, Humphries, and Frank May of the QEF would like to thank the NAC Endowment fund, LCdr Derek Greer CD RCN ret, and the NAC executive for their generous support of the Quadra Education Fund.

## Nova Scotia Naval Association Charts a New Course

**Bruce Belliveau, President, NSNAC**

Created in 1945 by veterans of the Battle of the Atlantic (1939-45), the Nova Scotia Naval Officers' Association (NSNOA), as it was then known, was founded in the belief that the sacrifices made by Canadians in winning that War should not be forgotten. It also served an alumni function for those veterans. Those basic concepts continue to be upheld today.

Their education focus was on the Naval Reserve and Sea Cadets. Commemorative trophies were presented to HMCS Scotian for the best non-commissioned member, and to the Navy League of Canada for the best Cadet Corps and best cadet in mainland Nova Scotia. They also helped acquire HMCS *Sackville* as a permanent memorial to the Canadian commitment to the Battle of the Atlantic and set up the related Canadian Naval Memorial Trust (CNMT) that would maintain *Sackville* financially. Later, they acquired one of HMCS *Bonaventure's* anchors for use as a memorial in Point Pleasant Park to Canadians lost at sea during the Cold War (1949-89).

In time, a new generation of naval veterans became members and took over the leadership of the organization. These people were, for the most part, veterans of the Cold War at sea (1949-89) supported by Naval Reservists and Sea Cadet officers. They upheld the concepts of their predecessors especially ensuring that the Canadian commitments to the Battle of the Atlantic remained in the public eye. Support to HMCS



*Sackville* and CNMT were continued and fundraising for both *Sackville* and select charities was a major activity. Other charitable activities included sponsoring a therapy dog for one of the crew of HMCS *Chicoutimi* suffering from PTSD after the 2005 fire aboard and establishing an annual higher education bursary for deserving relatives of former or serving members of the RCN.

Over the years, NSNOA underwent changes to align its activities with the changing social structure of Canada. Building on the organizational change brought in by the National NOAC Executive in 2012 to make the organization more inclusive by opening to doors to all ranks, the Nova Scotia Branch, renamed NSNAC, has gone even further in recognizing the implications of social, technological, and political change. NSNAC, continued to support the RCN and the community, but declining membership and finances limited the extent to which those activities could be undertaken. Public relevance of NSNAC began to erode. For a while, in 2017 and 2018, it looked as if NSNAC might suffer the same fate as other military associations and be forced to close down.

Deciding that NSNAC was too important to be allowed to fail, a group of recently retired members of the RCN offered to take over the management of the organization and reinvigorate it. The new management team intend to present a strategic plan to the membership this summer. The underlying concept is to make NSNAC an established relevant "voice" that supports both the RCN and the broader maritime sector in the Maritime Provinces, the region now covered by the NSNAC membership.

The most recent change, initiated in January 2020, will bring a fresh approach to fostering public understanding of the future, present, and past roles of the RCN in the national fabric while continuing traditional charitable and alumni activities. It will also restore NSNAC's relevance in the community.

By becoming a respected public "voice" in support of the Navy, NSNAC can regain relevance in the local community as well as in the broader maritime sector. By also being active in those communities with naval links -- Naval Reserves, Sea Cadets, naval and maritime museums and/or memorials -- NSNAC can further a more widespread understanding of the importance of the sea and the Navy in the national

fabric. The opportunity to be part of related activities will be an incentive for new members.

All this isn't going to happen overnight; many things need to be done to make this vision a reality. These will be detailed in the new strategic plan.

NSNAC's energies will be directed to four main activities:

(1) Advocacy: NSNAC has the opportunity to become a respected, credible public source of naval information and commentary on broader maritime issues in the Maritime Region. As a result, when naval issues draw the media's attention they can turn to NSNAC for informed background information or comment. Moreover, when media analysis and/or comment is published, NSNAC will be the organization to rebut incorrect views.

(2) History and Heritage: NSNAC will continue its traditional support of HMCS *Sackville* and will embark on a new initiative to commemorate the Battle of the Atlantic. In addition, NSNAC will reach out to regional naval and maritime museums as well as to historical associations and organizations to offer help and advice in setting up naval displays and holding naval-themed events.

(3) Alumni: NSNOA/NSNAC have always stressed the importance of maintaining a versatile alumni activity. This will continue and hopefully expand to meet the needs of the regional community of retired naval personnel and like-minded individuals.

(4) Fundraising. Not only is it important, if not vital, to help raise funds to keep HMCS *Sackville* in being as a safe history warship -- government funding cannot be guaranteed to provide all the necessary funds. Likewise, none of the other planned initiatives can be implemented without new funds. In future, NSNAC will work closely with the CNMT in its fundraising activities to preserve the ship for generations to come. Also, annual dues from members are not enough to support the activities envisaged to restore NSNAC to regional relevance.

So, in charting a new course, NSNAC has a long and productive future ahead.



## NLNAC Builds New Ties to HMCS Cabot

Donald Peckham

Many branches of NAC have described challenges attracting new members, especially if a branch is small or far from salt water and yet, these are the very branches our mandate to bring the naval message to the citizens of Canada would suggest should be large and active. In St. John's, the Newfoundland and Labrador Branch has been facing this problem since at least the mid-1990s. Although, during these intervening years, branch presidents have made attempts to recruit new members, the fact remains that our membership has continued to shrink, albeit slowly.

A glimmer of hope, however, was discerned upon the horizon a little over a year ago when the then new Commanding Officer of HMCS Cabot, Cdr. Alan Brown, reached out to NLNAC to express an interest in fostering closer relations between CABOT and NLNAC. This resulted in NLNAC assisting in the preparations for CABOT's 70th anniversary celebrations in 2019. Subsequently, collaboration between the partners has continued with the most recent example occurring 11 March, 2020, the date of the Newfoundland and Labrador branch of NAC's Annual General Meeting and Mess Dinner at the Crow's Nest Officer's Club.

Thanks to the continued promotion by Cdr. Brown to his ship's company of the relationship with NLNAC, the branch was thrilled to have five serving members of HMCS CABOT, one of whom brought a guest, join us for the evening.



*L. to R./SLt. Perry Bonnell, Cdr. Al Brown, PO2. Elaine Collier, LS. Sarah Squires, OS. Sean Rowsell*



*Join us!*

## The Naval Association of Canada:

- Actively supports the Royal Canadian Navy.
- Educates. We do not lobby.
- Produces position papers, not opinion papers. Members are encouraged to state opinions, but NAC does not.
- Educates all politicians of all parties for they will certainly change and naval ships are around for many political cycles.
- Welcome all who are interested in ensuring Canada has a capable and effective Navy for all three oceans.
- Has local Branches in many major cities across Canada with local activities, social and otherwise.

Visit [www.navalassoc.ca](http://www.navalassoc.ca) for information on your local Branch and its website.

All memberships include a subscription to our quarterly magazine, *Starshell* (yep, you'll get this snazzy magazine delivered four times a year electronically!).



## NAC Regalia Sales

**New Stock and Lower Price Now Available**

Blazer Badge (NAC or RCN)	\$25 each
Blazer Buttons (NAC), large for blazer front <i>Note: small sleeve buttons are no longer in stock but can be special ordered.</i>	New, Much Lower Price
Cuff Links (NOAC or NAC)	\$35/ pair
Medallion Lapel Pins – Gold, Silver, Bronze	\$5 each
Medallion Neck Decorations	\$95 each
Necktie – NOAC/NAC/RCN	\$35 each

Prices include all taxes and shipping.

Email Executive Director, David Soule, [executivedirector-nac@outlook.com](mailto:executivedirector-nac@outlook.com) to confirm availability. Payment: Cheque payable to "NAC National" and mail your order to Executive Director-NAC, 1138 Sauterne Pk., Orleans, ON K1C 2N8 (e-transfer option coming soon)







# Letters to the Editor

## Canadian Medical Facilities

**Roger Cyr**

The past few weeks have shown that Canada lacks a suitable medical facility in the event of a major disaster, be it a virus, earthquake or any other catastrophe. Returning Canadians, suspected of being infected with Covid-19 were quarantined at a hotel on the base at CFB Trenton, and at an employee residence at the NAV Canada site in Cornwall. What is disheartening is that there was such a medical facility, but it was closed in the 1990s because of budget restraints. The National Defence Medical

Centre (NDMC) in Ottawa was constructed in 1961 as a facility to cater to national medical emergencies. The centre was closed due to budget cutbacks and now houses administrative offices. NDMC was built as a state of the art, full-service hospital, its comprehensive design incorporated major developments, including private rooms, a monolithic design to optimize efficiency, and the use of double corridors with patient rooms on the outside emanating from centralized services. Yet this exceptional facility is now used as office space. It is high time that NDMC be restored to its original purpose. There will be other disasters and pandemics in the future, and Canada needs to be prepared when they happen.



*Sailors at long-term care facilities in Quebec during operation LASER.  
Photo: Corporal (Cpl) Genevieve Beaulieu, Imagery Technician,*



# Book Reviews

## **The Quiet Warrior, Thomas Buell (Naval Institute Press, 1987)**

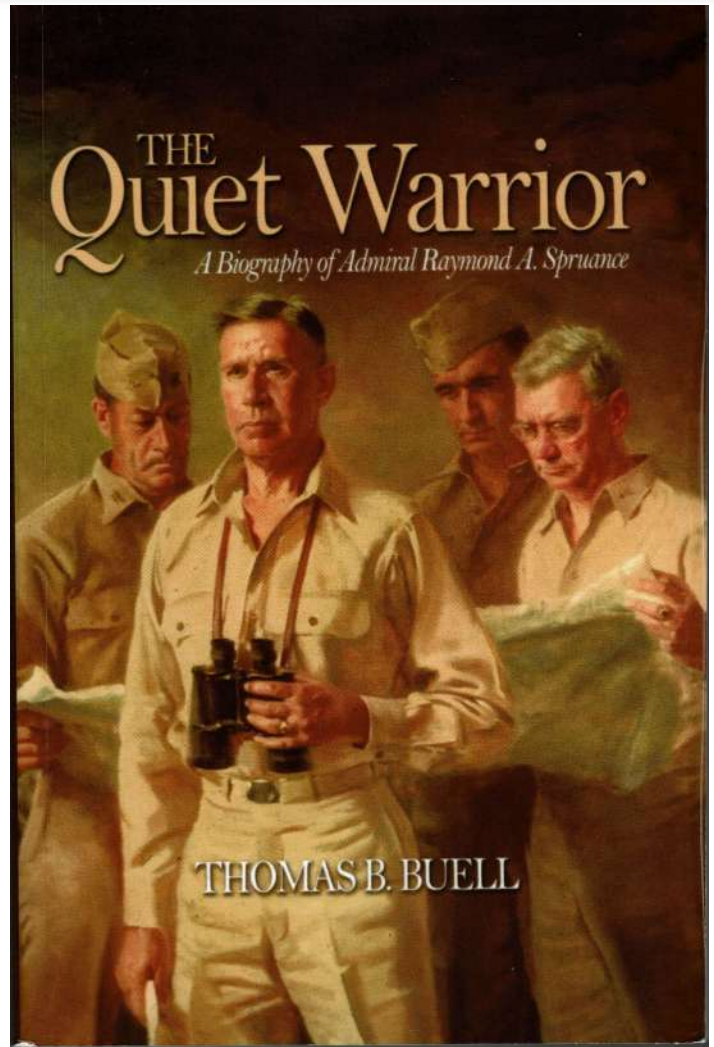
**Reviewed by Gord Forbes**

This is not a new book; this is a 1987 reprint the book that was first published in 1974. But it is very good book.

Those of us who have read about and studied the campaigns in the Pacific during World War 2 know the name of Raymond Spruance quite well. We have undoubtedly read about his exploits as the Commander of the Fifth Fleet. But we probably know little about the man himself. This biography does much to fill in that part of his story. The book starts with his childhood and ends with his death and is done in chronological fashion, but the majority of the book is devoted to his naval career and in particular his exploits during the Second World War.

A 1907 graduate of the US Naval Academy, Spruance rose through the ranks during the First World War and in the slower pace of the interwar years. He commanded a destroyer, cruiser and battleship (USS Mississippi, BB 41) during those years. He also attended and taught at the US Navy War College. He was known as a battleship man and a thinker. At the beginning of the Second World War, he was a fairly junior Rear Admiral in command of a cruiser squadron in the Pacific. His early war experiences were leading his cruisers to support then-Rear Admiral Bill Halsey's carrier task force in raids on Japanese-held islands and outposts. He accompanied this task force in the famous Doolittle raid on Tokyo.

His breakthrough came with the impending Battle



of Midway. Halsey was hospitalized and Admiral Nimitz, now Commander in Chief in Hawaii, put Spruance in command of the task force that would face the might of the Japanese fleet. Spruance had been recommended for the job by Halsey himself. The results of Midway are well known; five Japanese carriers sunk, other major ships sunk or heavily damaged. All this from a "battleship admiral" who overrode his senior air officer and handled the task of



timing his attack to perfection.

Spruance was left in command of the task force which later became the Fifth Fleet, an organization Spruance would command through the rest of the war.

Many books describe battles. Very few books discuss the planning effort that precedes such battles. This book begins each new operation with a chapter on the planning effort. This gives a real insight into Spruance's thinking and how he and his staff came up with the detailed plans for each operation. His method of command was to lay down a general plan of attack, and then to delegate the detail planning to his staff and the commanders of his task forces, primarily his amphibious force commander (R.K. Turner), his ground force commander (usually H. M. Smith) and his carrier force commander (Marc Mitscher). Only once during the war did he take on the duty of Officer in Tactical Command (OTC). But he watched each battle and made the top level decisions when they were necessary.

His operations included the invasions of the Gilbert Islands (Tarawa), the Marshall Islands (Kwajalein), the Marianna Islands (Saipan, Guam), Iwo Jima and Okinawa. He was criticized during the Marianna campaign for not pursuing the Japanese fleet that came out to oppose it. But he resisted that plea recognizing that his primary responsibility was the protection of the invasion forces. He feared that the Japanese would send a force in an end-around to invade the invasion ships while he was focused on the main enemy fleet. Nonetheless, Task Force 58 (the fast carrier task force) accounted for the loss of more than 470 Japanese aircraft and their pilots which practically broke the back of the Japanese carrier force. At Leyte Gulf, Halsey did chase what he thought was the main Japanese fleet (it was a decoy that had only one carrier with no planes) and almost caused disaster for the invasion of the Philippines. It is unlikely that Spruance would have made that mistake.

The invasions of Iwo Jima and Okinawa led to some of the hardest fighting in the Pacific war, including a kamikaze hit on his flagship at Okinawa. But the planning directed by Spruance ensured that despite desperate fighting by the Japanese both invasions were a success. After Okinawa, Spruance and his staff were relieved by Halsey and his staff. Spruance was then entrusted with the planning for the

invasion of the Japanese home islands. Fortunately, the war ended before that invasion, which was predicted to bring untold casualties to both the Japanese people and the American troops, could be mounted.

Spruance was relieved of command of the Fifth Fleet in November 1945 and got the job he wanted, President of the US Naval War College. He retired from the Navy in July 1948 and moved to California. However, he was called upon in 1952 to become the Ambassador to the Philippines where he served until 1955 during some contentious times in that new country. He returned to his home in California where he was able to spend the last years of his life in some comfort. Unlike a lot of wartime leaders, he did not write his memoirs. He died in 1969 and fittingly was buried next to Admiral Chester Nimitz, his old boss, and Admiral Richard Kelly Turner, his trusted amphibious commander during the war.

This is a very well written book that gives a very balanced and fair account of the life of Spruance. It is a real pleasure to read and provides many facets to this man's life.

### **S.S. Nerissa, the Final Crossing, William Dziadyk (Self-Published, 2019)**

**Reviewed by Chris Yurris**

In *S.S. Nerissa, the Final Crossing* retired RCN Lieutenant Commander William Dziadyk provides a succinct overview of the *S.S. Nerissa* and its tragic sinking. *Nerissa's* sinking on April 30, 1941 was the third largest loss of life for a ship sunk by U-Boats in the approaches to the United Kingdom with 207 passengers perishing and 84 survivors. Likewise, the vessel was the sole Canadian troopship lost to enemy action in WW2 (p.96).

The book briefly examines the ship's history before the incident, including in the pre-war years and as a Canadian troopship. Subsequently, Dziadyk discusses the sinking of the *Nerissa*, along with the aftermath of the incident. Several elements of the ship's sinking are discussed by Dziadyk, including the German U-Boat commander responsible, Erich Topp; this was a particularly interesting element, as it offered some perspective into the German side of the

Battle of the Atlantic. Erich Topp had a distinguished career in the German Kriegsmarine and the book successfully ties in his story with the sinking of the *Nerissa*.

In the epilogue, Dziadyk outlines the three goals he tried to achieve with the book. The first, was to provide an interesting read. Second, he wanted to “provide a foundation for future research by historians.” Third, was to advance awareness of the S.S. *Nerissa* to ensure that the 207 persons who perished are remembered. Overall, the author does a proficient job of achieving these goals. The book is to the point, with no instances of leaving the reader to question why extraneous passages were included.

Moreover, Dziadyk ensures that the reader requires very little background knowledge, while also not overloading the work with historical context. Consequently, the read is suitable for those with little to no previous experience in the field, while also offering content sure to keep more knowledgeable readers engaged. Where the book really shines in this regard is through its use of eyewitness accounts. The descriptions provided by survivors is demonstrated in chapter 4, focusing on the final crossing and evacuation. Officer of the Watch (Donald Freeman) detailed his experience swimming half a mile to the nearest raft, alongside Second Officer of the Watch (Pay Sub Lt Lesham), before being hauled onto a raft by a Canadian signalman (p.41).

The book leaves the reader asking several questions, fulfilling Dziadyk’s objective of providing a foundation for future research. For example, we can ask why the readiness of the crew was decreased, with a cocktail party being held in the First Class Dining Room the night of the sinking. Likewise, we are left with questions regarding the delayed search and rescue response. Consequently, the book provides several jumping off points for future research.

Lastly, Dziadyk does a proficient job preserving the memory of the incident and the lives lost. The book provides insight into the lives lost in the incident. For example, the 11 American casualties, who were members of the auxiliary air transport, are explored. Although the United States did not formally declare war on the Germans at the time of the sinking, American pilots were smuggled through the Clayton Knight Committee, as briefly discussed by the author. Moreover, the story of the Lomas family of Joseph

# S.S. Nerissa, the Final Crossing

The Amazing True Story of the Loss  
of a Canadian Troopship in the  
North Atlantic

William Dziadyk, LCdr  
RCN retired

and Elizabeth Lomas, and their three young children stood out. The Lomas family had fled to Canada following the breakout of the war and was aboard the vessel in hopes of returning to the UK, as Elizabeth was homesick. The family risked boarding the troopship with three small children, and unfortunately all five perished in the sinking.

I recommend *The Final Crossing* for navy enthusiasts and more casual readers alike. The book provides a holistic approach of examining the incident, by exploring various themes and topics related to the vessel’s ill-fated final voyage. Dziadyk succeeds at achieving the three themes he set out in the creation of the book; the book is intriguing, while also leaving room for further exploration on the topic. The author offers a noble memorial to the casualties of the sinking of the *Nerissa*, which should be commemorated in an 80th anniversary postage stamp, as he suggests.

If you would like to submit a book review to *Starshell*, just email the editor with the name of the book to receive a copy.





# Last Post

Compiled by Pat D.C. Barnhouse | Starshell Obituaries Editor

Kindly forward all obituaries to Pat at:  
535 Kenwood Avenue, Ottawa, ON K2A 0L7  
or by email: [pat.barnhouse@sympatico.ca](mailto:pat.barnhouse@sympatico.ca)

## NAC MEMBERS

**Cdr Charles Derek Stewart BATE, CD, RCN(R)(Ret'd)** Toronto Br., 93 in Toronto 15/01/20. Jn'd UNTD at *York* as OS (Officer Candidate) in '44, prom RCN(R) S/Lt(L) 06/02/48, Lt(L) 06/02/50, LCdr(L) 06/02/58 and Cdr. Srv'd as CO UNTD at *York* whilst LCdr. Ret'd in '68. Career as a High School principal. (FMcK, WC)

**LCdr Nigel Harvey Hugh FRAWLEY, CD, RCN (Ret'd)** Toronto Br., 83 in Toronto 22/01/20. Jn'd RCN as RMC Cdt 09/09/54. Prom Mid 09/56 thence *Athabaskan* 10/56, *Gaspé* 02/57, *Magnificent* 06/57 and *Niobe* (RN for trg.) 09/57. Prom A/S/Lt 10/57 and S/Lt same date Prom Lt 01/60 fl'd by RN submarines for training and later as part of RCN commitment to S/M manning. Prom LCdr in '68 thence *Okanagan* (i/c) 06/68. Ret'd 08/69. Civ career as lawyer, specializing in maritime and aviation law. (FMcK, e-Veritas)

**Miriam Hughes** NACVI, 88 in Victoria 15/01/20. Widow RAdm Bill Hughes. (RNDM)

**Lt John Daniel LEITCH, OC, RCNVR (Ret'd)** Toronto Br., 99 in Toronto 12/05/20. Jn'd RCNVR Toronto Division 07/40 as Mid (sen. 07/09/39) thence *Stadacona* 01/41 and prom S/Lt 01/41. Prom Lt 01/42 fl'd by ML076 (i/c) 07/42, *Stadacona* 08/43 to qual "n" and *Cape Breton* 10/43. Rls'd in '45. Career as shipping magnate (Chairman Upper Great Lakes Group Inc.) (FMcK)

**Cdr(O) Michael Henry Elvy PAGE, CD\*, RCN (Ret'd)** NACVI, 96 in Victoria 02/20. Jn'd RCNVR as Mid in '41 thence *Avalon*. Prom Prob S/Lt fl'd by *Kings* for trg. Prom S/Lt 10/42 thence *Chatham*. Prom Lt 04/44 fl'd by *Orkney*, *Nene* and RNA Stations Rattray and Arbroath in '45-'46 for Observer trg. Tsf'd to RCN in '46 as Lt(O) (sen 04/44) thence *Stadaconain* '47, *Warrior* in '47, *Stadacona* in '48, 626 Sqn in '48, CJATC Rivers in '48, *Stadacona* in '49, *Magnificent* in '49, *Naden* (Flag Lt to FOPC) in '49, *Ontario* in '51 and *Stadacona* (JOLTC) in '51. Prom LCdr(O) 04/52 fl'd by *Shearwater* in '52, VS-881 (i/c) in '53, *Niobe* (RN Staff College) in '54 and *Bytown* in '55. Prom Cdr(O) 01/57 at *Bytown* thence *Cayuga*(i/c) in '58, *St Laurent* (i/c) in '59, *Bytown* in '60, *Niobe* (RN Exchange) in '62, *Naden* in '64 and CFSC (Syndicate Dir) in '68. Ret'd in '71. Civ career in real estate.(DC) *Times Colonist*, Canada's Naval Aviators)

**Lt Irvin James STRONG, RCN (R) (Ret'd)** NOABC, 90 in Nanaimo, BC 20/01/20. Jn'd as UNTD Cdt at *Cataragui* 01/02/50. Prom RCN(R) A/S/Lt 01/07/52 and S/Lt same date, thence *Discovery* 09/52. Prom Lt 01/07/54 and to Ret'd List in '56. Career with federal public service and the Pacific Marine Biological Station.(WC)

**A/Lt Norman Roger WALKER, RCN (SSA)** NACVI, 88 in Victoria 07/04/20. Qualified and served as an officer in the Merchant Marine. Jn'd RCN on SSA as A/S/Lt 09/02/56 and prom S/Lt same day, fl'd by *Sault Ste Marie* 05/56 and *La Hullose* 10/57. Prom A/Lt 02/58. Rls'd 02/59. Civ career in investment business. Awarded Maritime Museum of BC "SS Beaver Medal".(RNDM)

**VAdm James Crilly WOOD, CMM, OStJ, CD\*\*, RCN (Ret'd)** SNAC, 85 in Halifax 02/03/20. Jn'd as OS in '51 and selected for OCTP as Cdt 09/54 at *Royal Roads*. Prom Mid 09/56 thence *Assiniboine* 09/56. Prom A/S/Lt 09/57 fl'd by *Niobe* (RN for trg.) in '57. Prom S/Lt 08/57 thence *Athabaskan* in '58. Prom Lt 03/59 fl'd by *Niagara* (USN S/M trg.) 09/59, *Grilse* in '61, *Royal Roads* (Staff) in '63, *Grilse* in '65 and *Ojibwa* in '66. Prom LCdr 01/66 thence *Niobe* (RN Perisher) in '67, *Ojibwa* (i/c) in '67 and CFSC 09/69. Prom Cdr 02/70 fl'd by NDHQ 07/70 and COMCANSUBRONONE 07/72. Prom Capt 07/74 thence MARCOM HQ 07/74, *Protecteur* (i/c) 04/76, MARGOM HQ 07/77, CDLS(L) (Royal College of Defence Studies) 12/77 and CDLS(L) (Snr NO and Attache Netherlands) 07/79. Prom Cmdre 07/80 fl'd by NDHQ (DGMDO) 07/80. Prom RAdm 02/82 at NDHQ (CMDO) in '83. Prom VAdm 06/83 thence Commander MARCOM 07/83. Ret'd 07/88. Appointed VP Saint John Shipbuilding and President Saint John Systems Halifax.(BW)

## OTHERS

**LCdr John MacDONALD ADAMS, CD, RCN (R) (Ret'd)** 77 in Fredericton 13/04/20. Jn'd *Scotian* as UNTD Cdt 01/61, prom A/S/Lt 07/63, S/Lt same date and later Lt and LCdr. Srv'd *Brunswickeras* of 09/64.(WC)

**Lt Claude Henry BROOK, RCN** 90 in Kentville, NS 18/12/19. Ex- Merchant Marine. Jn'd as CMD O 14/08/61 and prom Lt 01/64. Srv'd *Victoriaville*, *New Waterford*, *Cornwallis*, *Quinte* and *Buckingham*. Resigned in '69. (SR, *Chronicle Herald*)

**Cdr(Ret'd) Douglas Kenneth BROUGHTON, CD\*** Former NAC-O, 72 in Ottawa 29/02/20. Jn'd as S/Lt 17/12/70, prom Lt 01/74, LCdr 10/78 and Cdr 06/95. Srv'd CFFS Halifax, *Saguenay*, *Athabaskan*, *Saskatchewan*, *Kootenay*, NDHQ, CFCSC, *Iroquois*, CFSRU(A), CFLS Ottawa and Maritime Staff.Ret'd 04/02. (GP,Citizen)

**CPO1 Donald Henry BROWN, MMM, CD\*\*, RCN(Ret'd)** 78 in Halifax 04/20. Jn'd as OSEM 01/07/59, prom PO2 01/69, PO1 04/74, CPO2 4/77

and CPO1 04/79. Srv'd, inter alia, RN S/M's, *Okanagan*, *Skeena*, *Protecteur*, 1st Cdn S/M Sqn., FMG (Atlantic) and MARCOM HQ (Command CPO). Ret'd 01/08/95. (SR, WM, *Chronicle Herald*)

**Lt Donald William COCKBURN, RCN (R) (Ret'd)** 90 in Richmond Hill, ON 04/10/19. Jn'd UNTD at *York* as Cdt(S) 21/01/50 and later classified as Cdt. Prom RCN(R) A/S/Lt 09/52 and Lt 12/54. Ret'd in '59.(WC)

**Kathleen Elizabeth COLLACUTT** 86 in Halifax 31/12/19. Initiated and single-handedly published the *Warrior*, the magazine of the Shearwater Aviation Museum Foundation. (SR,*Chronicle Herald*)

**Lt Charles William Joseph COPELIN, RCN (R) (Ret'd)** Former NSNAC, 85 in Burlington, ON 16/01/20. Jn'd UNTD as Cdt at *Scotian* 02/01/53, prom S/Lt 09/55 and Lt 09/57. To Ret'd List in '58.(WC)

**LCdr William Ross COPPING, CD, RCN (Ret'd)** Former NAC-O, 94 in Ottawa 01/03/20. Jn'd *Donnacona* as RCN(R) A/S/Lt 14/03/52 and prom S/Lt(S) 03/52. Tsf'd to RCN as Lt(S) (sen. 23/01/54) and prom LCdr 01/62. Srv'd *Naden*, *Stadacona*, *Bytown*, *Patriot*(COND) and *Cap de la Madeleine*. Ret'd in '70. (*Citizen*)

**S/Lt Abbigail L. COWBROUGH, RCN.** Former NAC-O, 23 at sea (*Fredericton* Helo) 29/04/20. Jn'd as N Cdt at CMR 26/07/14 thence RMC 08/15. Prom A/S/Lt 01/05/18 and S/Lt 01/05/19. Srv'd Naval Fleet School (Atlantic) and *Fredericton*.(GP)

**Lt (E) Percy Cyril Frost DANBY, CD, RCN (Ret'd)** 101 in Ottawa 26/04/20. Jn'd RN in '38 and during WWII srv'd *HM Ships Resolution*, *Hotspur* and *Sheffield*. Prom CERA and rls'd in '50. Jn'd RCN in '51, CFR'd as CMD ENG 06/55, prom Lt(E)\* 06/59, star removed and thus Lt(E)(sen. 05/57). Srv'd *Cornwallis*, *Sault Ste Marie*, *Stadacona*, *Algonquin* and *Bytown*. Ret'd in '69.(*Citizen*)

**Lt Malcolm Dennis Warren DAWSON, CD\*\*, RCN (Ret'd)** 88 in Centreville, NS 17/01/20. Jn'd RCN as OS 06/55, prom PO1 06/64. CFR'd as CMD



O 04/68 and prom Lt 04/71. Srv'd, inter alia, CFSRU(A), CF Staff School, CFLS St Jean, CFFS Halifax, *Saguenay* and NEU(A). Ret'd 08/87.(SR,*Chronicle Herald*)

**Lt (P) Melville Malcolm DOUGLAS, RCN (R) (Ret'd)** 96 in Bridgewater, NS 07/01/20. Jn'd RCAF in '42 and tsf'd to RNVR FAA in '45 as S/Lt(A). Srv'd RNA Stations Arbroath and Nutts Corners (803 Sqn.) and HMS *Seaborn*. Tsf'd to RCNVR, prom Lt(P) 05/45 and srv'd *Warrior*. To Ret'd List in '46.(SR,*Chronicle Herald*, Canada's Naval Aviators)

**Lt Francis Theodore DOWDALL, CD\*, RCN (Ret'd)** 89 in Perth, ON 18/12/19. Jn'd as OSLMS 06/48, prom AB 09/49, LS 06/51 and PO2 09/60. CFR'd as CMD O 04/66 and prom Lt 04/69. Srv'd *Naden*, *Stadacona*, *Shearwater*, *Magnificent*, *Bonaventure*, *York*, *Cornwallis*, NRS Newport Corners, VF-871, VX-10, VS-880, CFB Montreal, CFB Borden, NDHQ and MARCOM HQ. Ret'd 11/78. (SR,*Chronicle Herald*, Canada's Naval Aviators)

**LCdr John Ivan DOWLING, RCN (R) (Ret'd)** 90 in Charlottetown 06/09/19. Jn'd *Queen Charlotte* as A/Lt 20/11/58 (sen. 01/06/56), confirmed Lt same date and later prom LCdr. To Ret'd List in '64.(DS)

**LCdr Lawrence Patrick FARRELL, CD\*\*, RCN (Ret'd)** 84 in Victoria 10/01/20. Jn'd the RCN as Cdt at *Venture* 12/09/54, prom Mid 09/56, A/S/Lt 09/57, S/Lt 09/58, Lt 09/60 and LCdr 07/70. Srv'd *Stadacona*, *Athabaskan*, *Antigonish*, *Venture* (Staff), *Victoriaville*, *New Waterford*, *Hochelaga* (qual Supply), CFB Ottawa, 201 CFTSD, CFB Esquimalt and MARPAC HQ. Ret'd 11/90.(RNDM)

**LCdr Frederick Knight FOWLER, RCN (R) (Ret'd)** 101 in St John, NB 10/01/20. Jn'd RCNVR as A/S/Lt 15/04/40, prom S/Lt same day and Lt 01/41. Srv'd RN in HM S/M's *Sceptre*, *Truculent* and *United* (stationed *Somers Isles*). Rls'd in '45. Jn'd RCN(R) in '47 at *Brunswick* as ADC to NB Lt Governor. Prom LCdr 01/49 and to Ret'd List in '50.(SR,*Chronicle Herald*)

**LCdr Angus Campbell FRASER, CD, RCN (R) (Ret'd)** Former NAC-O, 81 in Ottawa 22/03/20. Jn'd *Carleton* as UNTD Cdt 02/01/58, prom RCN(R) S/Lt 03/60, Lt 08/62 and later LCdr. Srv'd 1957-77 including a short time also at *Hunter*.(Citizen, WC).

**PO2 Wayne George FRIZZELL, CD\*\*, RCN (Ret'd)** 79 in Lake Loon, NS 11/12/19. Jn'd 05/64, prom LS 10/66, MS 10/71 and PO2 02/77. Srv'd *Bonaventure*, *Margaree*, *Saguenay*, *Assiniboine*, *Huron*, CFH Halifax and CFB Chatham. Ret'd 09/89.(Sr,*Chronicle Herald*)

**LCdr(SB) James GEORGE, RCNVR (Ret'd)** 101 in Toronto 07/02/20. Jn'd as S/Lt(SB) 31/12/40 and prom Lt(SB) 06/41. Srv'd RN (*HMS Lynx*), *Niobe* (i/c Historical Records) and *Stadacona*. To Ret'd List in '45 as LCdr(SB).(DC)

**Lt Kenneth Andrew GRANDMAISON, MMM, CD\*\*, RCN (Ret'd)** 77 in Halifax 23/11/19. Jn'd 08/59, prom LS 03/63, PO2 01/68, PO1 04/70, CPO2 04/74 and CPO1 11/81. CFR'd as Lt 04/90. Srv'd, inter alia, *Kootenay*, *Qu'Appelle*, *Fraser*, *Algonquin*, CFFS Halifax, MARCOM HQ, NEU(A) and NDHQ (DPCOR, DGMEPM). Ret'd 04/97.(SR,*Chronicle Herald*)

**Lt (L) Rodney Frederic Brandon HARRIS -LOWE, RCN** 84 in Peterborough, ON 10/02/20. Jn'd RCN at RMC as Cdt(L) 09/09/54, prom A/S/Lt(L) 05/58, S/Lt(L) 01/59 and Lt(L) 02/59. Srv'd *Cataraqui* (for Queen's U.) *Stadacona* and *Bytown*. Rls'd late 1962. Long-time RMC professor and NDC graduate. (e-Veritas)

**El S/Lt William Hunter HENRY, RCNVR (Ret'd)** 96 in Ottawa 12/01/20. Jn'd RCNVR as El S/Lt 05/44 and srv'd *Stadacona* (Naval Research Establishment). Rls'd in '45.(Citizen)

**S/Lt Louis Henry HOWARD, MiD, RCNVR (Ret'd)** 96 in Ottawa 04/05/20. Jn'd UNTD as OS (Officer Candidate) at *Chippawa* in '42, prom Prob S/Lt 08/44 and S/Lt 11/44. Srv'd *Cornwallis*,

*Hamilton, Discovery, Kings and Sarnia* (MiD for part in rescue of *Esquimalt* Survivors). Rls'd in '45.(B McC, WC)

**CPO1 (Ret'd) Serge Jean-Marie JONCAS, MMM CD\*\*.** 67 in West Quebec 12/05/20. Jnd 04/71 as AB, prom LS 05/75, MS 05/77, PO2 08/81, PO1 08/84, CPO2 08/89 and CPO1 07/06. Srv'd CFFS (Hfx.), Naval Fleet School (Pacific), CFB Halifax, *Annapolis, Skeena, Montcalm, Algonquin, Iroquois*, 1st Cdn Destroyer Sqn. HQ, *Montreal*, 5th Maritime Ops group HQ, CFB Ottawa and NDHQ. Ret'd 19/07/06.(WM)

**PO1 William J. KRILOW, CD, RCN (Ret'd)** 86 in North Sydney, NS 11/01/20. Jn'd RCN as OS 08/51. Srv'd *Cornwallis, Stadacona, Crusader* (Korea), *Haida, Sioux, Crescent, Nipigon, Cape Scott* and Padloping Island weather station. Ret'd 06/71.(SR,*Chronicle Herald*)

**CPO1 John Henry LABELLE, CD\*\*, RCN (Ret'd)** 80 in Halifax 03/12/19. Jn'd as OS at *Donnacona* 10/56, prom LS 03/60, PO2 07/66, PO1 12/70, CPO2 01/77 and CPO1 11/84. Srv'd *D'Iberville, Cornwallis, New Liskeard, Bonaventure, Chignecto, Lanark, Granby, Restigouche, Ottawa, Skeena, Preserver*, CFB Goose Bay, CFS Masset, CFB Halifax, CFB Borden, MARCOM HQ, NEU(A) and CANEX Hfx. Ret'd 10/94. (SR,*Chronicle Herald*)

**CPO2 Murray A. LAHEY, CD\*, RCN (Ret'd)** 84 in Halifax 26/12/19. Jn'd 03/55, prom LS 06/58, PO2 09/62, PO1 07/74 and CPO2 01/78. Srv'd, inter alia, *Iroquois, Huron* and CFFS Halifax. Ret'd 08/83.(SR,*Chronicle Herald*)

**Lt John Randall LUSHER, RCN (Ret'd)** 86 in Elmvale, ON 17/01/20. Jn'd RCN at *York* as ROIP Cdt 07/12/53. Prom Mid 09/56, A/S/Lt 09/57, S/Lt same date and Lt 12/59. Srv'd *Stadacona, Niobe* (RN for trg.), *Micmac, Victoriaville* and HU-21. Qual "P".Ret'd in '63.(WC)

**A/S/Lt (S) George Edward MacCLURE, RCN** 85 in Kingston, ON 12/04/20. Jn'd RCN as Cdt at

RMC 11/09/53, tsf'd to Cdt(S) and prom A/S/Lt(S) 06/67. Srv'd *Naden* and *Bytown*. Honourably released 07/58.(e-Veritas)

**S/Lt Gordon Thomas PERRAULT, RCN (R) (Ret'd)** 85 in Hamilton 12/01/20. Jn'd as UNTD Cdt at *Star* 02/01/54 and prom RCN(R) S/Lt 01/07/56. To Ret'd List in '57.(WC)

**LCdr(NR)(Ret'd) Raymond Lyndon ROBERTS, KStJ, CD** 65 in Halifax 10/12/19. Jn'd ROUTP as Cdt at *Scotian* in '73 and srv'd 20 years.(WC)

**A/S/Lt James Sutherland RUSSELL, RCN(R)(Ret'd)** 80 in St. John, NB 16/01/20. Jn'd *Scotian* as UNTD Cdt 02/57 and prom RCN(R) A/S/Lt 07/59 at *Brunswick*. Ret'd in '62. (SR, WC, *Chronicle Herald*)

**Lt Harry Edgar TRENHOLME, RCNVR (Ret'd)** 97 in Montreal 28/03/20. Jn'd RCNVR as Prob S/Lt in '41, prom S/Lt 05/41 and Lt 05/42. Srv'd *Stadacona, RN, Swift Current, Niobe* and LCI(L) 255 (D-Day and i/c). Rls'd in '45. (Maple Leaf Navy e-List)

**CPO2 William Snowdon WHITEFIELD, CD\*, RCN(Ret'd)** 88 in Halifax 27/12/19. Jn'd RCN 06/52, prom LS 03/55, PO2 12/58, PO1 12/62 and CPO2 09/66. Srv'd, inter alia, *Cayuga* (Korea), NRS Newport Corners, 102 CFTSD, *Nipigon*, CFFS Halifax, CFEME Toronto, FMG(A) and CFS Mill Cove. Ret'd 02/80. (SR,*Chronicle Herald*).

**Lt James Arthur WHITTAKER, CD\*, RCN (Ret'd)** 83 in Dartmouth, NS 06/10/19. Jn'd in '59, prom LS 12/61, PO2 09/63, PO1 03/70, CPO2 01/73 and CPO1 06/76.CFR'd as Lt 06/80. Srv'd, inter alia, *Fraser, St Laurent, Huron*, CANFLOTLAN HQ, CFFS Halifax and NEU(A).Ret'd 04/82. (SR,*Chronicle Herald*)

**Lt Hugh Lam YEE, RCN(R) (Ret'd)** Former Toronto Br., 91 in Toronto 21/03/20. Jn'd *Donnacona* as UNTD Cdt 29/11/48, prom RCN(R) A/S/Lt 07/51 and Lt 07/53. Also srv'd *Scotian*. To Ret'd List in '58.(WC)



# The 2020 CNMT Essay Competition

**Deadline: 30 September 2020**

Submissions must be received by [coord@navalreview.ca](mailto:coord@navalreview.ca) by **30 September 2020**

Each year the *Canadian Naval Review* holds an annual essay competition with a prize of \$1,000, with funds provided by the **Canadian Naval Memorial Trust**. The journal is now accepting papers and encourages submissions from serving and retired naval personnel, academics, students, and anyone with an interest in maritime affairs. The winning essay will be published in *CNR* and runners-up will also be considered for publication, subject to editorial review.

Essays submitted to the contest should relate to the following topics:

- Canadian maritime security;
- Canadian naval policy;
- Canadian naval issues;
- Canadian naval operations;
- History/historical operations of the Canadian Navy;
- Global maritime issues (such as piracy, smuggling, fishing, environment);
- Canadian oceans policy and issues;
- Arctic maritime issues; and
- Maritime transport and shipping.

If you have any questions about a particular topic, contact [coord@navalreview.ca](mailto:coord@navalreview.ca)

## Contest Guidelines and Judging

- Submissions are not to exceed 3,000 words. Longer submissions will be penalized;
- Submissions cannot have been published elsewhere; and
- All submissions must be in electronic format and any accompanying photographs, images, or other graphics and tables must also be included as a separate file.

The essays will be assessed by a panel of judges on a number of criteria, including readability, breadth, importance, accessibility, and relevance. The decision of the judges is final. All authors will be notified of the judges' decision within two months of the submission deadline.



## ***Don au Fonds de dotation de l'ANC***

### ***Oui, je veux aider!***

Oui, je veux supporter notre patrimoine naval et notre Fonds de dotation. Mon don est de :

100\$ \_\_\_\_ 150\$ \_\_\_\_ 250\$ \_\_\_\_ 500\$ \_\_\_\_ 1 000\$ \_\_\_\_ or autre montant \_\_\_\_ \$

Veuillez faire votre chèque payable à **Association navale du Canada-Fonds de dotation** et le poster à :

**Association navale du Canada-Fonds de dotation  
B.P. 42025 Oak Bay  
2200 Oak Bay Avenue  
Victoria BC V8R 6T4**

Des reçus seront émis aux fins de l'impôt sur le revenu (dans le cas d'un don fait par l'intermédiaire de CanaDon ou CanadaHelps en anglais, cette organisation émettra les reçus). Notre numéro d'enregistrement comme organisme de bienfaisance auprès de l'Agence du revenu du Canada est 11924 6551 RR0001.

**Nom** \_\_\_\_\_

Chapitre de l'ANC (si applicable) \_\_\_\_\_

UNTD \_\_\_\_ Venture \_\_\_\_ Autre \_\_\_\_ (Cocher tout ce qui s'applique)

**Adresse** \_\_\_\_\_

**Ville** \_\_\_\_\_ **Province** \_\_\_\_\_

**Code postal** \_\_\_\_\_ **Téléphone** (    ) \_\_\_\_\_

**Adresse courriel** \_\_\_\_\_

Il y a des avantages fiscaux importants pour ceux qui donnent des valeurs mobilières au Fonds. Si vous voulez faire cela, veuillez cocher ici \_\_\_\_\_ et les renseignements nécessaires vous seront envoyés.

Si vous voulez laisser un legs au Fonds, veuillez cocher ici \_\_\_\_\_ et les renseignements sur l'inclusion du Fonds de dotation dans votre testament vous seront fournis.

Vous pouvez également faire un don en ligne par l'intermédiaire de CanaDon ou CanadaHelps en anglais. Allez à son site web ([www.canadahelps.org/fr/](http://www.canadahelps.org/fr/)), inscrivez *Association navale du Canada* dans la case «Recherche» et suivez les instructions.

***Merci de votre soutien!***





## ***NAC Endowment Fund Donation***

***Yes, I want to help!***

Yes, I want to support our Naval Heritage and Endowment Fund! My donation is my gift of:

\$100 \_\_\_\_ \$150 \_\_\_\_ \$250 \_\_\_\_ \$500 \_\_\_\_ \$1,000 \_\_\_\_ or other amount \$ \_\_\_\_

Please make your cheque payable to: **NAC Endowment Fund** and mail to:

**NAC Endowment Fund  
PO Box 42025 Oak Bay  
2200 Oak Bay Avenue  
Victoria, BC V8R 6T4**

Receipts will be provided for income tax purposes (in the case of a donation through Canada Helps, they will be issued by that organization). The Canada Revenue Agency charitable registration number is 11924 6551 RR0001

**Name** \_\_\_\_\_

NAC Branch (If applicable) \_\_\_\_\_

UNTD \_\_\_\_ Venture \_\_\_\_ Other \_\_\_\_ (Check all applicable)

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **Province** \_\_\_\_\_

**Postal Code** \_\_\_\_\_ **Telephone ( )** \_\_\_\_\_

**Email address** \_\_\_\_\_

There are significant income tax advantages available to those who donate securities to the Fund. If you would like to do this, please check here \_\_\_\_\_ and the necessary information will be sent to you.

If you wish to leave a legacy to the Fund, please check here \_\_\_\_\_ and information on including the Endowment Fund in your will be provided to you.

You may, alternatively, donate on-line through Canada Helps. Go to their website (CanadaHelps.org), enter Naval Association of Canada in the search field, and follow their instructions.

***Thank you for your support!***



*Command Chief of the Royal Canadian Navy, Chief Petty Officer First Class David Steeves (left) and Commander of the Royal Canadian Navy, Vice-Admiral Art McDonald (centre), disembark a CH-148 Cyclone helicopter during their visit to HMCS Halifax, in the Mediterranean Sea. Photo: Corporal Braden Trudeau, Trinity - Formation Imaging Services*