

# From the Bridge

November 2017



**MASTER MARINERS  
OF CANADA**

"THE COMPANY OF MASTER MARINERS OF CANADA is a professional organization, representing command-qualified mariners as well as like-minded seafarers, industry and government members, and cadets across Canada. Our work with and for our members is organized around three pillars: awareness, education and advocacy."

[www.mastermariners.ca](http://www.mastermariners.ca)

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## FROM THE MASTER'S DESK

I am very pleased to have been elected as the President and National Master for the Master Mariners of Canada (MMC). For me it means I get to help an organization give back to our profession by acting in an advocacy role for shipmasters and senior shipboard officers, and in many ways anyone who is part of Canada's marine transportation industry. This was a particular honour as we celebrated our 50<sup>th</sup> anniversary this year.



My intent is to work with the MMC National Council members to build on the solid framework we laid out in our strategic plan to increase our visibility thus making membership more attractive to people to join. We can do this through and engagement not only with industry and government but also with the public and especially youth

Communications is a very key goal for the MMC and we developed a strategy that included a more dedicated media message and I think this has gone very well. We have also had great opportunities to continue our work with the Federal government, such as Transport Canada, by bringing our expertise and experience to help with topics such as the Polar code and the Ocean Protection Plan. The MMC has divisions across the country and with people engaged in marine activities across these regions we can take a leading role in holding symposiums or forums that focus on particular or challenging issues such as the Right Whale Zone or the examination of autonomous technology for ships.

My sincere thanks to Captain Rick Gates, under whose leadership as the previous President, the MMC has certainly moved towards a position in relevancy in discussions around marine affairs in Canada and in particular the pursuit of topics that will resonate with the public and increase our visibility and value.

Yours Aye,

**Chris Hearn**

**National President. Master Mariners of Canada.**

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**Members and readers are encouraged now to follow the Master Mariners of Canada on LinkedIn.** Simply look for us in the Search function. *Our presence on LinkedIn was suggested by Capt. Farrokh Kooka at the AGM in North Vancouver and was overwhelmingly agreed to by the Board. The Retention and Recruitment Committee agreed to take on this new initiative for the Company. Capt. Jim Ewart and Robbin Sinclair administrate the page. Any ideas are welcome including pictures and relative posts that will help our social media presence stay current and followed. Please contact Jim at [marine@silanorth.com](mailto:marine@silanorth.com) or Robbin at [robbin@silanorth.com](mailto:robbin@silanorth.com)*

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## Officers Elected at the 205th Board Meeting of October 1, 2017.

Captain Christopher Hearn,	President
Captain Christopher Hall,	Vice President
Vacant	Assistant Vice President
Captain Rick Gates	Past President
Captain Jack Gallagher	Treasurer
Captain Ivan Lantz	Secretary

### Committee Chairs:

Captain Farrokh Kooka	Membership
Captain John McCann	Views & Positions, Maritime Ambassador, Delegate to IFSMA
Captain Anthony Patterson	Education & Professional Development, Delegate to IMO HTW
Captain Christopher Hall	Strategic Plan & Communications
Captain Christopher Connor	Communications
Captain David Whitaker	Editor FROM THE BRIDGE, Scholarship Administrator
Stephanie Connor	Webmaster
Robert Jette, Q.C.	Delegate to Canadian Maritime Law Association
Captain James Calvesbert	Certificates
Captain James Parsons	Chairman, CMMC Foundation
Captain John Ennis	Administrator, CMMC Foundation

## Report from Ottawa: Submitted by Captain Tom Brooks, Capital Division.



**Veterans' Appreciation Day:** The Capital Division once again accepted the annual invitation from Veterans Affairs Canada (VAC) to host a table at their "Canada Remembers" ceremony at Billings Bridge on Nov. 8<sup>th</sup>. The ceremony begins with a March-on of the Colours and a Veterans Parade in the Centre Court, which is set up for a band with chairs for the public. This is followed by a standard veterans' ceremony with anthems and prayers. Following the ceremony, the public is invited to visit and engage in conversation with representatives from various Veterans Organizations and community groups who have set up a wide array of interactive and educational display tables. This year there were 19 display participants spread out along one of the Centre's hallways leading to the VAC Tower. The management of the Shopping Centre then provides musical entertainment in the Centre Court.

**Remembrance Day:** This luncheon is a regular event following the Ceremony at the National War Memorial on November 11<sup>th</sup>. After the march-past by veterans, they and interested parties, cross over to the Chateau Laurier Hotel for a free luncheon (always meatloaf) and music by a small military group. This luncheon is very popular as a warm ballroom would be to those suffering for hours in the Ottawa November cold. The Division always sends the Chateau a thank you note.



REMEMBRANCE DAY LUNCHEON AT THE CHATEAU LAURIER  
L-R CAPTAINS CHRIS HEARN AND MIKE HUBBARD AND RUBY LEGGE AND PAM THORNE

**Fundy Division is proud to be hosting the 2018 AGM.** In conjunction with the AGM in September next year, a symposium is being considered that will be relevant to the marine transportation and fishing industry, as well as regulators, science community and public at large. The committee will provide more details in the coming months. The timing for our events was specially scheduled as such so that they would occur in the same time frame as the

Association of Canadian Port Authorities' AGM and Conference, which is also being held in Saint John. It is our intention to create as many synergies between the two events as possible, thereby creating the potential to increase awareness with others outside of MMC." <http://www.acpa-ports.net> **Captain Chris Hall. Fundy Division**

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### Captain G.O. Baugh Memorial Fund.

#### A letter from a recent recipient: -

*Dear Trustees, I was one of last year's recipients of the Baugh Fund Scholarship. Since then, I have finished my second school term at BCIT and I have had the chance to go work on a general cargo ship in the Arctic for my second sea-phase this summer. I have learned a lot both in school and on the ship, and I am still very happy I decided to pursue a career in the maritime industry.*

*Thanks to the scholarship, I managed to concentrate more on school for the second year, by not having a job on weekends. Also, It helped me to be able to afford passing my SVOP (Small Vessel Operator Proficiency) last May and subsequently getting a job driving little ferries in Vancouver. This is a job which not only helps me financially to finish my diploma, but it also gives me the opportunity to work on the water when I am not on a ship. I really enjoy this job, and the Baugh Fund Scholarship helped me obtain it.*

*I wish to thank you again for giving me the Baugh Fund Scholarship last year. It helped in so many different ways and I am grateful that I was one of last year's recipients.*

**Sincerely, Sandra Lebon (Deck Cadet, BCIT)**

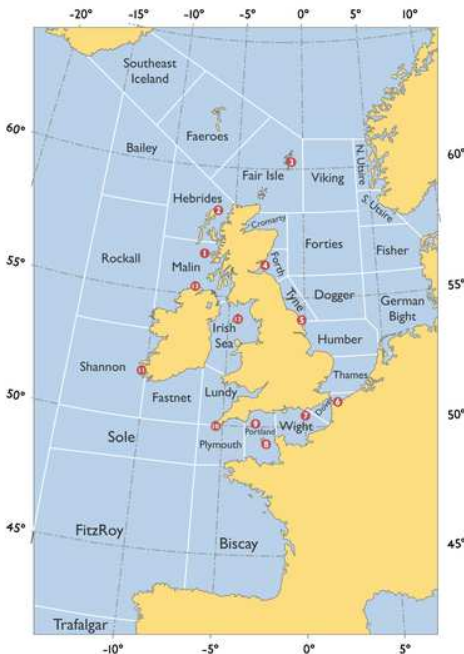
**Two x \$2,000 Scholarships were offered for the year 2017.** The recipients have been selected and presentations will be arranged shortly. The two winners are: -

**Alexander Brisson:** Fisheries and Marine Institute of Memorial University, St. John's, NL

**Stephen Lavigne:** British Columbia Institute of Technology Marine Campus, North Vancouver. BC

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**Dogger, Fisher, German Bight: Shipping Forecast celebrates 150 years.** The maritime service launched in 1867 and is still 'vital' to seafarers, says the Royal National Lifeboat Institute (RNLI), despite new sources of weather data.



Consternation, mourning and [national soul-searching](#) in the United Kingdom greeted the [temporary silencing of Big Ben last week](#), but at least another favourite fixture of the nightly and early morning radio is to continue. The hymnal cadences of Viking, North Utsire, South Utsire, through Shannon, Rockall, Malin all the way to southeast Iceland, will be heard as usual on Thursday, as [the shipping forecast](#) celebrates 150 years of uninterrupted service.

The shipping forecast, the longest continuous weather forecast ever made, has been a public service since 1867 when it was used to warn of storms. The warnings were first issued using the electric telegraph until radio became available. Storm warnings were sent over the telegraph wires to harbours, where signals were hoisted to warn ships at sea.

When the BBC was formed in the 1920s, the maritime forecast became a fixture of the daily wireless programme where it would remain with occasional modifications and a break during the war when the broadcast was discontinued for fear it would help the enemy. The forecast was still made, however, and disseminated to the Royal Navy.

Though today's seafarers have access to many more sources of meteorological data, and many radio listeners famously use the late-night [incantatory broadcast](#) – never more than 380 words, and always following the same strict format – for soporific rather than navigational purposes, the [broadcasts still fulfil a vital safety role](#).

Peter Dawes, lifesaving services manager at [the RNLI](#), said: "[It] is an excellent source of information, and a vital tool in helping people make critical safety decisions at the coast and at sea. We urge everyone to check the weather before heading to the coast, in order to stay safe."

A century and a half ago, the shipping forecast was the most practical application of the techniques of weather forecasting pioneered by [Robert FitzRoy](#), Vice-Admiral and founder of the Met Office, a few years earlier.

A disastrous storm off the coast of North Wales, in 1859, in which the *Royal Charter* steam clipper foundered along with more than 130 other ships, with the loss of 800 lives, led the naval scientist to start publishing a tentative series of weather forecasts from 1861.



FitzRoy, the Captain of *HMS Beagle*, on which [Charles Darwin](#) made the voyages that led to his theory of evolution, was one of the fathers of modern weather forecasting, rightly foreseeing that new technology, including improved communications and observations, would render accurate predictions of the weather possible. But he was ridiculed for years for his efforts, and his petitions to the Board of Trade for public support went unanswered. Discouraged by the response, and having exhausted his fortune in attempting to set up a regular forecasting service, he killed himself in 1865.

After his death, the regular forecasts he initiated ceased, but public outcry led to their reinstatement in 1867 as a safety tool for mariners, and they have continued with occasional modifications ever since.

FitzRoy is now commemorated in every shipping forecast as a sea area was named after him in 2002. This caused its own [consternation on introduction](#), nearly on a par with that currently surrounding Big Ben, because FitzRoy replaced the long-standing and sonorous Finisterre, an area of sea close to similarly named areas of the French and Spanish maritime areas.

The shipping forecast is now 93% accurate overall, and the forecast for inshore waters is about 97% accurate. Wind direction is not always as easy to get right as wind speed, with about 80% accuracy and more than 90% respectively, while about 15% of gale warnings turn out to be false alarms. **August 24<sup>th</sup> 2017.**

**Submitted by Captain Alan Knight. Maritimes Division.**

[https://www.theguardian.com/uk-news/2017/aug/24/shipping-forecast-marks-150-years-service-bbc-met-office?CMP=share\\_btn\\_link](https://www.theguardian.com/uk-news/2017/aug/24/shipping-forecast-marks-150-years-service-bbc-met-office?CMP=share_btn_link)



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### Technology Push Needs Reality Checks.

At the Global Superyacht Forum, the Vice President of Innovation from Rolls Royce, Oskar Levander unveiled their design of their next evolution of the yachts for the uber-rich. He is quoted as saying: -

***"Our ship intelligence and remote-control concepts have allowed us to design a yacht for the future that has the bridge located below the bow, inside the vessel. The crew is able to monitor and control the vessel using sophisticated sensors, cameras, display screens and situational awareness technologies; but an internal bridge frees up the traditional area of the bridge in the forward part of the superstructure to let owners and guests enjoy a panoramic vista that is traditionally only enjoyed by the crew".***

<https://www.rolls-royce.com/media/press-releases/yr-2017/13-11-2017-rr-unveils-crystal-blue-luxury-yacht.aspx>



Clearly, even on fully crewed vessels, the traditional rules for collision avoidance are being totally abandoned to ensure a superior customer experience. The vessel is designed to accommodate a crew of twelve to look after an equal number of passengers and it appears not only will their accommodations be well below decks, but the traditional navigation bridge will be moving to a cupboard there as well. Although there is likely a spectacular view from the front of an airplane I don't think anyone would like to see the flight crew in row forty-five in order that the first-class passengers have an unimpeded view of where

they are going. This argument may be lost on the buyers of the new super yachts as they likely have never been in row forty-five or are even aware that it exists.

Rolls Royce having been around the marine industry for a long time should know that **Rule Five** is not going anywhere soon, nor should it: -

**Look-out: Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.**

I know that members of Master Mariners of Canada do not need reminding of the Rules of the Road, however, these designs and statements serve as a warning that we must be visible and vocal in providing our professional expertise in relation to the development of new technologies or the likes of Rolls Royce will be setting the standards that our members have to work with.

**Captain Jack Gallagher. Maritimes Division.**

***Captain Jack Gallagher is the principal of Hammurabi Consulting and on the national executive of Master Mariners of Canada.***

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**The New World of the Seafarer:** On this day of recognition, I would like to celebrate the women and men who commit their careers and their lives to being at sea for extended periods of time.

The future facing the maritime industry today is a very different one from when I first went to sea in 1977. Back then the sextant was king. Today the people working at sea are aided by countless new technologies and digital innovations that have had a huge impact, improving both operations and safety.



In this new environment, manning and developing the potential of seafarers are as vital as ever. No one knows quite how the job of seafarer is going to evolve as vessels become increasingly sophisticated and more automated. The appearance of remote-controlled, autonomous or even unmanned ships will transform the role of the seafarers immeasurably. But these developments should not be feared. The skill sets needed may be different, but such ships will still require support from competent and ingenious teams of engineers. As such they will give birth to exciting new roles and opportunities.

Look at the aviation industry, where today planes more or less fly themselves and pilots are essentially system engineers, who carry out their role in close collaboration with their air traffic control counterparts on land. There is no doubt in my mind that this is the direction in which the maritime industry is heading.

As technology advances, our role at Transas is to empower the seafarers. It is irrational to think that automation and technology alone will be enough to solve all our problems. I firmly believe that our industry will continue to be built upon and depend upon people having the right skills and the right training so they can confront and overcome whatever challenges are thrown at them.

Smart technologies and improved connectivity have the potential to remove much of the drudgery that in recent years has crept on to the bridge and into the engine room, allowing it to be passed back to dedicated shore-based staff -- or perhaps even to intelligent algorithms. The crew will be able to focus instead on the tasks they know best -- namely, delivering the ship and its cargo safely from A to B.

Freeing the seafarers from unending paperwork will give them more opportunity to carry out pro-active maintenance or devise creative solutions or procedures that will have a long-term positive impact on vessel efficiency and safety.

Our approach to training also needs to reflect this changing picture. We would do well to embrace the potential of Virtual Reality, Augmented Reality, Artificial Intelligence and other such tools so that seafarers are as prepared as they can be. Needless to say, maritime academies will continue to play a critical role in providing competence and support for the emerging human factor requirements.

There is nothing preventing the innovations I've outlined here from developing independently along their own individual paths. But at Transas we believe that it is necessary to join the dots. The rewards and benefits will be so much greater if we can bring these vital parts of the modern maritime experience together. That is why we are building a new platform based on technology, content and expertise, which will enable a richer exchange of information and experience among a broader range of stakeholders. It will enable us to make wiser decisions. Moreover, it will encourage new generations to join the maritime industry.



The new world is here already and we are here to help you embrace the change, because for us, seafarers matter.

**Frank Coles. June 23<sup>rd</sup> 2017**

*The opinions expressed herein are the author's and not necessarily those of The Maritime Executive.*

<http://www.transas.com>

<http://maritime-executive.com/editorials/the-new-world-of-the-seafarer>

<https://www.youtube.com/watch?v=mVppbLS1rno>

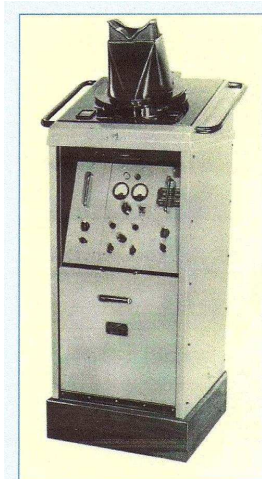


**70 YEARS OF RADAR**

**KELVIN HUGHES CELEBRATED 70 YEARS OF RADAR IN 2017:** In 1947 the first Type 1 radar was produced and installed on a new fishing trawler. The Type 1 then went on to be the first Type Approved radar, gaining its Type Approval certificate on 11 August 1948.

Heralding the release of commercial maritime radar in 1947, Arthur Hughes wrote in his introduction to 'New Eyes for a New World\*': ***"If my Grandfather could pay a visit to the bridge of a big modern liner, the array of instrument would bewilder and confound him and he would most probably say I don't believe it!"***

Before the introduction of radar, ships relied on navigation methods and equipment that had not changed for centuries. Ships' equipment comprised of compasses, sextants, charts and chronometers all of which could be obtained through the companies of Kelvin Bottomley and Baird and Henry Hughes and Son.



The Type 1 radar display console. The unit was fitted with a panel which could be pulled up to cover the control panel

In the interwar years, Henry Hughes and Son became world leaders in the design and supply of depth sounding equipment and working with S. Smith and Sons (England) also became one of the leading suppliers of aircraft compasses and instrumentation. Arthur J Hughes was a very prominent figure in these years and published numerous books including one about the history of aerial navigation.

Initially there were reports of misgivings about the Type 1 radar as the display was only capable of being effectively viewed in night vision conditions, causing headaches and eyestrain when used on a bright day.

At the heart of the radar transmitter was a cavity magnetron. These early magnetrons units only had an operating life of about 200 hours and because of a fear of running up substantial operating costs, the ship's Master would lay down strict instructions on radar use. Ship's instructions reportedly stipulated that the display should only be switched on long enough for a range and bearing to be taken and then switched off.

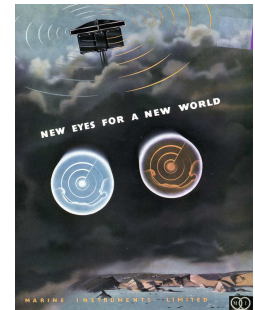
Later systems fitted to trawlers had run time clocks fitted in a locked cupboard that recorded the amount of time the system had been used. The ship's operators then rented the radar system and only paid for it when it was in use – an early version of pay as you go.

Crews quickly became familiar with the equipment and could confidently utilise the information displayed. Radar became an accepted feature of an increasing number of ships' bridges and it was in the fogs that caused the initial installations that radar won the appreciation of the Masters and navigating officers.

In the early 1950s and realising the growing need for better understanding of the equipment, a training school was established at the end of the famous mile-long pier in Southend, Essex. The training school remained there for many years before relocating to the top floor of a department store in Southend before finally becoming part of the main buildings within Kelvin Hughes in Hainault.

The first recorded customer on the books of Henry Hughes & Sons was Captain William Bligh.

Also see: <https://cdn.kelvinhughes.com/upload/pdf/articles/70-years-of-radar.pdf>



For more of the history of Kelvin Hughes see: <https://www.kelvinhughes.com/about/history>

\* Download a copy of "New Eyes for a New World". It is quite interesting: -

<https://cdn.kelvinhughes.com/upload/pdf/brochures/historical/new-eyes-for-a-new-world-1946.pdf>

**Christmas at Sea:** Most readers will recall Christmases at sea and in a seafarer's career those spent at home, on leave, are few and far between. I recall two notable Christmases at sea. One was Christmas 1948. I was 3<sup>rd</sup> Mate on a British general cargo ship – Scottish officers, Indian crew. We were at anchor off Bahrein; no cargo operations or other work to spoil the traditional festivities. This was one day when we could expect a hearty meal. The dining saloon was of traditional layout, one headed by the Master, the other by the Chief Engineer.

The Christmas menu was the traditional bill of fare. Immediately before the feast started two bottles of Scotch whisky appeared, one for each table. The Old Man, one of dignified demeanour, a euphemism for an old curmudgeon, poured himself a moderate dram then offered the bottle to his Mates who were very circumspect in quantities poured. The Cadets, below the salt and official drinking age, were offered ginger ale. At the Chief's table the drams were more liberally poured. We all stood and chorused, "MERRY CHRISTMAS". A good meal was enjoyed by all but, although we mates noted the Engineers putting some meaning into the word "MERRY", not one dared suggest a second dram from the bottle at our table. The Old Man finally departed – the bottle went with him.



The Arab bagpipes on number 2 hatch



Out on No. 2 hatch, a group of Arab workers provided music for us that afternoon – on bagpipes. Some of us Scots were astounded that Arabs could play the 'pipes' – had they learned from British regimental pipe bands? Others thought that bagpipe music originated in Arabia and that we Scots had just added a tartan to the bag. Despite our curmudgeonly Captain, we joined the Engineers and had a good time. Of course, the Old Chief, from Glasgow, got drunk, insulted the Master and lost his false teeth.

By contrast my Christmas Eve 1965 was a dark and stormy night as we bucketed about, hove to, 30 miles west of Cape Finisterre. I was Master of an Israeli ship with a mostly Jewish crew. While the 2<sup>nd</sup> Mate was taking over from the 3<sup>rd</sup> Mate I dodged into the small pilot's cabin abaft the chartroom, to check on my three sleeping children, ages 12, 9 and 7. Despite the movement of the ship and the associated noises one hears on a ship in heavy seas, they slept soundly, wedged into two bunks and a settee. Their stockings were hung and swayed, making it difficult for me to pop into them the stocking stuffers my wife had brought with her for the occasion. When they awoke about daybreak, imagine their surprise at finding that even out on the ocean wastes, Santa had not forgotten them.

Down in my quarters, my wife, sailor-like, had wedged herself into the double bunk. She'd expected I'd be on the bridge all night. The artificial Christmas tree was well guyed and the paper decorations swayed. Only the cook, our younger daughter and myself were able to enjoy breakfast that Christmas Day. I informed all hands that Christmas dinner would be served the next day and luckily the weather cooperated and we were back on course across Biscay to the Channel, bound for Antwerp.

Early December, in the company's Haifa office, the Chief Marine Superintendent noted that I would be at sea for Christmas and missing my family. Suddenly he suggested that my family fly to Israel and have Christmas at sea with me. He telephoned my wife, who agreed to get the children out of school early. Arrangements were quickly made and my family duly arrived at Haifa. On the morning of sailing day I was astonished to receive from the catering department, a Christmas tree, paper decorations and a big turkey.

I had to explain to the catering superintendent when he noted that most of the crew were Jewish (not eligible for Christmas turkey, I suspected), that seafarers of all faiths generally enjoy the food and festivities of others. We sailed with enough turkey and trimmings for all hands and the cook, Mr. Finkelstein. Besides my family, the other Christians on board were the Danish Chief Engineer and the Irish "Sparks". Mr. Finkelstein gave us all a great Christmas dinner and I did not spare the good Israeli wine to accompany it. I wondered how my old curmudgeonly Captain, 17 years previously, would have handled the situation. Also I wondered if any other shipping company would have accorded a master such a bonus as having his family flown to his ship to enjoy CHRISTMAS AT SEA, together.



ZIM ship DVORA

**Captain Angus McDonald, Maritimes Division.**

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**For another look at Christmas at Sea** read Robert Louis Stevenson's poem:

<https://www.poemhunter.com/poem/christmas-at-sea/>

The poem also appeared in the November 2015 edition.

**Captain Alan Knight, Maritimes Division.**

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**The National Research Council teams with United States Coast Guard and Department of Homeland Security to advance icebreaking technology:** Today, the National Research Council of Canada (NRC) hosted dignitaries from the United States Coast Guard (USCG), United States Department of Homeland Security (DHS) Science & Technology (S&T) Directorate, and United States (U.S.) Navy to discuss and showcase progress made on the testing and evaluation of design models for the U.S. heavy polar icebreaker acquisition program. During this phase, the NRC is conducting environmental characterization of ice conditions using physical modelling from its ice tank.

"This collaboration benefits both countries as they engage in vital research and development to improve the technology of icebreaking ships," said Iain Stewart, President of the NRC. "Our knowledge of how ships and offshore structures can operate in harsh environmental conditions combined with our world-class research facilities and expertise positions Canada as a strategic partner in providing safety and efficiency to the new U.S. polar icebreakers."



The testing is assessing the models' manoeuvrability in ice and icebreaking resistance, building baseline requirements for new U.S. heavy polar icebreakers, and expanding the current design and operational knowledge. The Canadian and U.S. governments are also working on the long-term management of the polar icebreaker's hull integrity, which they will assess through field trials.

"Model testing activities enable us to examine critical design elements and make informed design decisions early in the acquisition process," said Rear Admiral Michael Haycock, U.S. Coast Guard Assistant

Commandant for Acquisition and Chief Acquisition Officer. "The data we gather from model testing at the NRC is going to be a major driver of our heavy polar icebreaker acquisition program's success and will be critical to our efforts to effectively manage costs, mitigate risks, and maintain an accelerated program schedule."

This partnership was formalized through the Critical Infrastructure Protection and Border Security (CIPABS) Agreement, managed by the Defence Research and Development Canada's Centre for Security Science (DRDC CSS), an Agency of the Department of National Defence, on behalf of the Government of Canada, alongside DHS S&T who manages it on behalf of the U.S. Government. The results of this partnership will boost the knowledge and expertise of both the United States and Canada in icebreaking ship technologies.

"This is a wonderful example of international and cross-component collaboration," said DHS Under Secretary (Acting) for Science and Technology William N. Bryan. "Supporting the operational mission of DHS is why Science & Technology exists. In this case, I am particularly proud that S&T is able to work with our neighbours to the north and bring their expertise to bear on supporting the mission of the Coast Guard."

<https://www.canada.ca/en/national-research-council/news/2017/07/the-national-research-council-teams-with-united-states-coast-guard-and-de.html?wbdisable=true>

July 26, 2017 – St. John's, NL

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**Nova Scotia's Nautical Institute has been training young men and women for careers at sea for over 140 years:** Part of Nova Scotia Community College (NSCC), the Nautical Institute, originally started in Halifax in 1872 as the Halifax Marine School, is located in Port Hawkesbury on the Strait of Canso and draws students from all over the world.

The face of the commercial marine industry has changed drastically in the past several years with ships' sizes of both container vessels and bulk carriers reaching levels not anticipated 30 years ago, and with the constant evolution of technology.

Presently there is a huge shortage of seafarers and according to a 2015 study, there will be an additional 140,000 seafarers required by 2020 for the international marine industry, says Capt. Vivek Saxena. Capt. Saxena, a Master Mariner and the Institute's Academic Chair, said the Port Hawkesbury facility is considered one of the best in the country in training seafarers for the international marine industry.

"All of our programs are Transport Canada accredited. We have regular audits and they make sure the school follows all the required regulations, not just for Transport Canada training, but also for international marine training certification," he said, which means Transport adheres to IMO (International Maritime Organization) regulations. "The good thing about the IMO regulations and recognition is that our students, when they graduate with a Transport Canada certification, can work anywhere in the world," on any size vessel with no restrictions or limitations on tonnage.

The Nautical Institute offers diploma programs and recertification programs for seafarers who need to upgrade in their particular area of expertise.

"On average we get about 1,000 students (annually) for recertification programs which range from one day to maybe four weeks. We also have core programming for people wanting to get into the industry," in either marine navigation or marine engineering, said Capt. Saxena.

The marine navigation program has two levels. In the three-year program there is a work term requirement at sea.



"We have connections within the industry that take students on their vessels. The program requires 360 days onboard a ship. Students leave campus at the end of April (for sea duty) and return in September. So it is a continuous program and quite intensive," he said. "After three years students can choose to stay an additional year and get an advanced diploma," he added.

The marine engineer's program is two and half years with a requirement of 180 days at sea. Obtaining an advanced diploma in marine engineering requires an additional year and a half.

Capt. Saxena said students with diploma programs enter the industry at "the lowest level officer" but once in the industry can rise to the level of Captain with additional training and courses.

The Institute also offers a rating level program. Students can take a bridge watch rating which is a 25-week program. It

requires 15 weeks on campus for the academic side and 10 weeks of sea time. The program "gets you the bridge watch certificate from Transport Canada, allowing you to work on any commercial vessel," said Capt. Saxena.

In 2016 the Institute added a new program, ship's cook. NSCC offers a culinary program and the Institute decided to incorporate a ship's cook into its offering. Students who complete the two-year culinary program can take additional courses to obtain a ship's cook certificate.

Capt. Saxena says there is always the challenge to attract young people to the industry. "The new generation is not too keen to explore these opportunities," he said. "There is a push by IMO to encourage youngsters coming from high school, plus we do our part," he said. The Institute holds a marine day each year and Capt. Saxena visits high schools to speak with students. "The problem is this industry is not visible to people on land. All these seafarers work in the middle of the ocean. Nobody sees what they do, so youngsters really don't see how cargo is loaded and how it is taken from point A to point B," he added.

What is also changing the industry is the length of time seafarers are away at sea and away from their families. Unlike when Capt. Saxena made his first trip at 18 and was away for 18 months, most companies are offering employment with equal time off for time served on board. And advancements in technology have helped reduce the feeling of isolation. "Every crew member has access to internet, they can make calls with their own cell phones, so the distance away from family is not that great. Also, shipowners realized that keeping seafarers for longer duration on board is not productive so it makes more sense to go see families after four weeks or six weeks," he said.

Another challenge, said Capt. Saxena, is "we have an industry that is very heavily male-dominated. We are encouraging more women to get into the business. As an industry, it is our responsibility to get more women involved," and the numbers are growing annually, he added.

The Institute is also heavily focused on getting more indigenous people involved in the industry. "We have always had a good relationship with the indigenous population," said Capt. Saxena. "Right now our First Nations' population on campus is about 10 to 12 people and we encourage more to come into our program," he said.

Pamela Toney, student adviser for trades and technology and indigenous support at the Institute, said her goal since arriving at the campus nearly five years ago, has been "to have more indigenous students in our marine department."

In addition to the navigation and engineering diploma programs, the Institute has provided a number of short programs for indigenous students involved in the commercial fishery. Those programs include basic and advanced first aid, marine emergency duties, advanced firefighting, survival craft training, etc.

During the Institute's annual open house, Toney said she talks with aboriginal students "about job opportunities, to work on big ships and make a good living. We are getting the numbers up there," she said, adding that the Institute has attracted indigenous students from across Canada.

The Institute has a good working relationship with industry in Canada, says Capt. Saxena. Every March the Institute stages a career fair on campus that attracts companies from across the country that come talk with students and make presentations. "The feedback we get from industry is so positive. Last year a lot of companies who take students said our students were the best in Canada. We are very proud of that," he said.

Capt. Saxena's comments are supported by Brooke Cameron, Algoma Central Corporation's Manager Human Resources and responsible for cadet recruiting. "Nova Scotia Community College is a truly professional organization. The facility provides students with an outstanding educational environment, which you can see in the successes of their graduates. We have been working closely with the college for over seven years now and the relationship continues to improve and strengthen due to the dedication and knowledge of their staff. NSCC continues to provide our organization with a skilled workforce that will help support Algoma's continued growth and development," she said.

Vanessa Suess, Recruitment Specialist for McKeil Marine, added, "We have had a number of their cadets over the years on our vessels and we are always very pleased with the skill level of candidates that come from the program as well as their advanced facilities."

**Tom Peters. July 11<sup>th</sup> 2017.**

<http://www.canadiansailings.ca/nova-scotias-nautical-institute-has-been-training-young-men-and-women-for-careers-at-sea-for-over-140-years/>



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**What was the Halifax Explosion?** The Halifax Explosion was a disaster that occurred in a thriving city at a time of war. The Explosion was the result of a collision between two ships, the *Imo* and the *Mont-Blanc*, in the Halifax Harbour. At 9:04:35 on the morning of December 6, 1917, a munitions ship, the *Mont-Blanc* exploded, immediately killing more than 1600 men, women, and children. More than 9000 others were wounded, 12,000 buildings were damaged, either laid flat or made uninhabitable, barely a single pane of glass was left to keep out the weather. The destruction covered 325 acres of Halifax, and Dartmouth across the harbour.

See more at <http://www.halifaxexplosion.org/intro.html>

**The year was 1917 and Halifax, like the rest of the world,** was fully embroiled in the First World War. Serving as the assembly and departure point for transatlantic convoys carrying supplies and soldiers to the war effort overseas, the small city was quickly evolving into a world-class port and major base of naval operations. Halifax was a hub of activity. Troops bound for battle swept in and out of the city, labourers flowed to and from work as the war created a significant industrial and residential boom, and children of all ages wandered to their schools for lessons. In a time of war and devastation, Halifax was thriving.



That all changed the morning of December 6, 1917. Approximately six minutes after 9:00 am, a dreadful miscommunication between two ships in the harbour resulted in an explosion of cataclysmic proportions. 2,000 people were killed and 9,000 more were injured. The city was reduced to ruins and debris.

Considered Halifax's darkest day, the sheer magnitude of the traumatic event left a lasting impression on the city and its residents. The tragedy bred countless stories of courage and hope that in many ways shaped what Halifax has become.

Recognizing the significance of the Halifax Explosion as part of both the city's history and Nova Scotian history, the

Maritime Museum of the Atlantic developed a temporary exhibit in 1987 entitled "A Moment in Time".

You can read much more in the following: -

<https://maritimemuseum.novascotia.ca/what-see-do/halifax-explosion>

<https://maritimemuseum.novascotia.ca/research/ships-halifax-explosion>

<http://www.theglobeandmail.com/news/national/the-girl-who-lived-remembering-the-halifax-explosion-through-a-childs-eyes-99-years-later/article33203811/>

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**IMO and Liberia looking to enhance maritime security:** IMO is helping Liberia to develop a national maritime security strategy. The initiative got underway with a weeklong fact-finding exercise (14-18 August) involving senior officials from Liberian Government departments and agencies with a stake in maritime matters. Based on the findings, a proposal will be presented to Liberia suggesting the best way forward. One clear objective is to encourage collaboration and a multi-agency approach to maritime security in Liberia.

Liberia is signatory to both a code of conduct dealing with maritime crime signed in Yaoundé, Cameroon in 2013 and to a memorandum of understanding between and IMO and the Maritime Organization for West and Central Africa which addresses establishment of an integrated coast guard network for the area.

Source: IMO. 28/08/2017

<http://www.hellenicshippingnews.com/imo-and-liberia-looking-to-enhance-maritime-security/>

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**Energy Savings With SeaForward. By BC Ferries:** A recent pilot project has reduced the *Queen of Oak Bay's* ship services energy consumption by the equivalent of 30 sailings from Horseshoe Bay to Departure Bay. Energy efficiency measures like this one can be incorporated into new build vessels.

The process initially started in 2013 with an audit to assess electrical energy usage. In a follow-up project, BC Ferries partnered in the development and demonstration of an energy-optimization software tool. This software was deployed to collect and manage electricity data for more than 20 areas on board the ship and provided generator metrics as well. The benefits of this initiative were a reduction in fuel consumption, cost and associated carbon emissions, as well as improved asset life and reduced maintenance costs.

Consumption reductions from the above initiatives are being monitored in the new software and are on target for a reduction of more than 272 tonnes of CO<sub>2</sub> emissions, which is equivalent to removing approximately 57 passenger vehicles per year. Similar measures will be rolled out to other existing vessels where possible.

This project was possible with the support of Transport Canada and is a joint initiative with 3GA Marine, Clearlead Consulting and Panevo Services. The objective was to develop and demonstrate a Ship Service Energy Optimization

software tool that would provide an audit function to determine major ship service power consumers and enable an optimization function from both a technological and operational perspective, thereby reducing emissions.

"BC Ferries is committed to safeguarding the environment, as well as finding new ways to improve the sustainability of our operations," said Mark Wilson, BC Ferries' Vice President of Engineering. "Thanks to the Transport Canada-sponsored initiative and deployment of the new energy software, not only can we actively measure energy usage, we can also put control variables in place across the system to ensure savings."

BC Ferries' Environment and shipboard Engineering teams led this energy conservation initiative, which falls within Sustainable Operations under BC Ferries' SeaForward program. The program, which brings together the company's existing environmental activities, conservation efforts, community investments and new sustainability endeavours, was recently announced. SeaForward's goal is to reduce BC Ferries' environmental footprint, improve the sustainability of our operations and support coastal communities. <http://onboardmagazine.ca/2017/04/19/energy-savings-with-sea-forward/>



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## Collision Regulations and Right Whales

Currently there exists a speed restriction in a large section of the Gulf of St. Lawrence with the intent of reducing the potential of fatal ship strikes of right whales by vessels.

The speed restriction is an impingement on vessels common law right to navigate. As navigation is federal jurisdiction only federal legislation can impinge upon or expunge the right. In the current case, Transport Canada has chosen to use the Collision Regulations to limit this right but using section seven of the Collisions Regulations issued pursuant to the Canada Shipping Act which states:

### *Notices to Mariners and Notices to Shipping*

*7. Every vessel shall navigate with particular caution where navigation may be difficult or hazardous and, for that purpose, shall comply with any instructions and directions contained in Notices to Mariners or Notices to Shipping that are issued as a result of circumstances such as*

- (a) unusual maritime conditions;*
- (b) the undertaking of marine or engineering works;*
- (c) casualties to a vessel or aid to navigation; or*
- (d) changes to hydrographic information.*

I am a humble sailor and not a marine lawyer but I would argue that anyone appealing a fine issued under the present system should be able to convince a judge that even if the purpose of the speed restrictions is just, the legal mechanism is faulty.

The collision regulations were developed and exist to prevent collisions between vessels are not intended to meet other government objectives.

Section Seven, above, indicates that the notices to shipping are providing information that will assist the vessel where conditions are difficult or hazardous. Having navigated this area for many years only hazard is the annual influx of sea ice in the winter. The presence of whales, walrus or seals does not make navigation more difficult in the slightest. They certainly do not increase the risk of collisions between vessels.

The definitions in the regulations deal with vessels, traffic separation schemes and all manner other items but nothing about marine mammals. The closest one could argue is the definition of a *inconspicuous, partly submerged vessel or object* but that goes on to define such as a raft, vessel or floating object. Clearly not a marine mammal.



My only conjecture is that they wish there to be a new provision for a stand-on marine mammal but never a give-way marine mammal however such provisions would only apply when mammals and vessels are in sight of one another.

Perhaps it is intended that marine mammals are considered Not Under Command as they are unable to alter according to the rules but it is difficult to fit this with the requirement that it be a vessel and that there be an exceptional circumstance.

Although I agree the high mortality of Right Whales we have seen this year must be addressed I suspect that legislation related to Species at Risk or other such legislation would have been more appropriate in the circumstances. Using alternative legislation might mean that Transport Canada would not be the enforcement agency and give rise to enforcement difficulties but government employs admiralty, constitutional and other lawyers to assist departments navigate the complexities of existing legislation.

It may well be that there is no legislation on the books that allows for the speed restrictions that have been put in place for the purposes that the government is trying to achieve. In this case we can expect to see legislation put in place over time grant such powers. This will only be high on the legislative agenda if the current fines are appealed and the courts determine that this the Collision Regulations cannot reasonably be used for the protection of marine mammals.

This is an issue that I will continue to follow with interest and will follow up if new information is forthcoming.

**Captain Jack Gallagher. Maritimes Division.**

*Captain Jack Gallagher is the principal of Hammurabi Consulting and on the national executive of Master Mariners of Canada.*

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**Man versus machine. The benefits offered by channelling massive amounts of data from ship to shore are too significant to ignore, but what will be left for seafarers to do?** You might argue the modern age at sea began with the invention of the autopilot. Sometimes affectionately referred to as 'Iron Mike', autopilot made the admittedly tedious job of helmsman largely redundant, except for manoeuvring in confined waters.

Many years later came the age of electronics, digital intelligence and the computer, which would occasionally have a mind of its own and 'say' No. The equipment started to second guess seafarers and gradually, bridge watchkeepers woke up to the fact that they were no longer navigating, but 'overseeing' very clever machinery that was doing most of the navigation for them.

Through that advancement, the participatory world of celestial navigation had gone and human beings were relegated to a sort of insurance. They were required by law, but also just in case the equipment went wrong, when they would be expected to step in. For the ship's navigator, the quiet satisfaction of a landfall after a long ocean passage, or a well-reasoned dead reckon position, is a thing of the past. GPS and clever satellites now do all the calculations, and with the disappearance of paper, nobody even has to put a position on the chart.

The mariner, it has been said, has become a monitor, and the legendary ability of seafarers to work around the problem or intervene when something goes wrong, has been seriously diminished. Those amazing feats of seamanship and engineering, which saw people fabricate replacement rudders using spare hatchboards and derricks, or build intricate pieces of machinery out of lumps of metal, have been relegated to the history books. Today, serious problems are sorted out by someone ashore.

Any seafarer of a certain age will recall those days when for no apparent reason, the senior engineers looked meaningfully at each other and disappeared from the saloon or smoke room. A couple of minutes later the engine would chuff into silence. Somehow, they'd detected an impending fault and were already on their way down to the machinery space. Now, sensors discover some aberrant item in their electronic checklist, transmit the details to the engine manufacturer ashore, and within a short space of time a solution is prescribed to the engineers monitoring their machinery aboard ship.

It would be cruel and premature to suggest that the skills and experience of flesh and blood engineers are redundant. They still need to patrol the machinery spaces, using all their senses to detect the bearing running hot, some unexpected vibration, or a leak of lubricant, fuel or other flammable liquid. But the ability to monitor and respond to so many other elements remotely is simply part of the Big Data revolution.



The world is changing very fast. Today, the world's largest cruise company can sign a deal with one of the major machinery manufacturers to monitor and maintain no fewer than 400 engines aboard the 79 ships in its fleet for the next 12 years. This is made possible by modern data transmission and communication, with all this information streamed live from ship to shore. The prize from all this live monitoring is a promise that performance will be improved and maintenance itself become more structured and responsive to need, against older, cruder methods, when machinery was opened up when it was faulty, or against a set timescale.

The ability to transmit enormous quantities of data to and from a ship, along with more decision-making of all kinds being undertaken ashore, is changing the nature of jobs afloat. The role of the hands-in seafarer is being superseded by that of a monitor, watching machinery, rather than running it.

So, the very real challenge today will be to ensure that the seafarer's job remains interesting and fulfilling, and does not become downright boring, as he or she is left waiting for the computer to 'say' No, or the alarm to sound.

Michael Gray. *theSea*. Sept/Oct 2017. [www.missiontoseafarers.org](http://www.missiontoseafarers.org)

You might also like to read the following: -

<https://www.marineinsight.com/marine-navigation/10-things-to-consider-while-using-auto-pilot-system-on-ships/>

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**U.S. Navy to draw on civilian expertise to avoid more collisions:** The review of deadly collisions involving two U.S. destroyers will include analysis of best practices outside the U.S. Navy, looking to private organizations as varied as British Petroleum and the Mayo Clinic, Navy Secretary Richard Spencer said on Friday.

Spencer said his review will seek expertise from the civilian maritime community and look at lessons learned from the private sector, not just the Navy. He cited British Petroleum's comprehensive review after the Deepwater Horizon disaster and the Mayo Clinic's efforts to optimize teamwork in high-pressure environments.

Spencer's review is one of two that the Navy is conducting after collisions involving the *USS Fitzgerald* and *John S. McCain* killed a total of 17 sailors. The Chief of Naval Operations is leading the other.



"We're addressing it on multiple fronts," Spencer told reporters at Navy shipbuilder Bath Iron Works, which built both of the warships.

The Navy Secretary's first visit to the shipbuilder, which employs 6,000 workers, came a day after the Navy and shipyard completed negotiations on a contract for two more Arleigh Burke-class destroyers.

It was long-awaited and welcome news for the shipyard.

Sen. Angus King quipped, "Anytime you want to visit Bath, you're welcome. Now that you've established the precedent, bring a couple of destroyers with you."

Also joining the entourage were U.S. Sen. Susan Collins, who helped obtain funding for the ships, and U.S. Reps. Chellie Pingree and Bruce Poliquin.

Spencer said the Navy needs additional destroyers as it seeks to add more than 50 ships to the fleet in coming years. An additional \$5 billion to \$5.5 billion in annual spending is needed over 30 years to reach the 355-ship goal, according to the Congressional Research Service.

The Navy is looking at its options, and Spencer acknowledged those include bringing back into service retired frigates and cruisers, if that is deemed to be a cost-effective means of helping to reach the goal.

He said the Navy is also looking to overhaul its relationship with shipbuilders by working together to both contain costs and to ensure that there's adequate shipbuilding infrastructure.

Maine's congressional delegation praised Spencer for the fast pace of contract negotiations on the two destroyers that ensures there will be no disruptions in workflow at the shipyard.

"We can't simply sit here and mandate, 'We want ships built.' We have to understand what the actual industrial base can support and where capacity is. Where we can help to expand capacity in lockstep with our suppliers, our contractors, we will do so," Spencer said.

BATH, MAINE – Sept 30<sup>th</sup> 2017

<https://www.japantimes.co.jp/news/2017/09/30/world/u-s-navy-draw-civilian-expertise-avoid-collisions/#.WdObA0wZO-4>

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**Fifty Years On, Ship Models Continue to Demonstrate Value:** French engineering firm Artelia is celebrating the 50th anniversary of the creation of Port Revel, its ship handling training centre specializing in supertankers, LNG carriers and cruise ships.

Port Revel is the largest and most technical lake-based ship handling training centre in the world and has no equivalent in terms of its size and technical installations. Situated on a five-hectare lake close to Grenoble, it consists of a physical reproduction of the most dangerous sites for navigation (Cape Horn, etc.), and features a fleet of 11 1:25 scale models of ships, five tugs and a team of instructors and tug pilots.

The team at Port Revel is in direct contact with the maritime sector and follows the technical changes it is undergoing. Because manufacturers of the full-size items needed to build the model ships do not offer scale models, everything,

including propellers, pods and rudders, is custom made. With on-site tailoring, the 11 hulls can faithfully simulate 22 ship types, including ferries and ro-ro vessels. To represent different types of propulsion and power ratings, including diesel-electric and steam turbine configurations, the Port Revel engineers reprogram a model's propulsion system. The facility is equipped with a wave generator that can create different types of waves, about 40 powerful current generators (up to three knots) and wind generators (up to 30 knots).

Cutting edge electronic equipment is available to record the trajectories of models during the training sessions with pinpoint precision. In addition, the facility features digital navigation simulations with a view to confirming overall layouts of new ports and port extensions designed by Artelia engineering teams.

Service offerings focus on partnerships: special sessions and installations are designed in close collaboration with the trainees. The company can reproduce particular ports and piers at scale for training or test and can customize courses accordingly.



The Port Revel Hydraulics Laboratory develops physical scale models to determine the behaviour of moored ships subjected to hydrodynamic forces in conditions that enable numerical models to be validated.

In 1952, oil company Esso was considering building larger oil tankers for the Gulf-to-Mediterranean route via the Suez Canal, but needed to know beforehand what impact the new-generation ships would have on shipping operations and on the canal's banks. The Société Grenobloise d'Études Et d'Application Hydraulique (Sogreah) suggested checking their calculations using a scale model of the vessel in a lab setting.

Applying William Froude's law of similitude, they built a 1:25

model of the proposed 30,000-ton tanker that was accurate in every relevant detail, including hull form, displacement and propeller. The first tests were conducted in a towing tank with the model attached to the towing carriage. The next step was to make the model self-propelled by adding an electric motor scaled according to the same law. Self-propelled models behave in much the same way as the full-size ships they represent.

In 1954, Sogreah went a step further when the team designed a 1:25 model of the *Esso France* tanker with a seat each for the Captain and the helmsman; each with their eyes at the height they would be on the ship itself. In front of them, the key items found on any bridge, including the wheel, rudder angle indicator, compass, anemometer, engine order telegraph and speed and distance log. Captains came from near and far to test the model as all concerned quickly realized how useful the technique would be for training crews and captains under conditions approaching reality.

Next, Esso and Sogreah began looking for a site where they could sail their burgeoning fleet of scale models. They drew a circle 100 kilometers in radius centred on Grenoble then overlaid a wind map. At Saint-Pierre-de-Bressieux they found a privately owned, two-hectare lake where the wind effects were minimal. In 1966, the partners drained the lake and began reshaping its bed to model the Suez Canal and the approaches to selected ports and harbours, as closely as possible. The idea was to reproduce local bottom effects and familiarize trainees with both the effects and their vessel's response. Other features were added progressively.

**Training Continues:** Training exercises in Port Revel's replica of the Suez Canal began in July 1967, and continue to this day. Sogreah, now known as Artelia, bought Esso's share of the centre in 1970.

Now, over 7,000 ship Captains and Pilots have participated in training courses on such as berthing, getting underway and overtaking other ships in canals, in a wide range of conditions, involving cross-currents, wind, rudder failure, etc. Over 60% of trainees come from North America; others from Russia, Europe and Brazil.

Recently, the Panama Canal authority asked Port Revel to oversee the establishment of its on-site training centre using scale models to familiarize Pilots with the new locks. According to Artelia, 50 years on, the concept of manned scale model ships continues to demonstrate its efficiency for achieving safe maritime navigation, and a new hull is expected to be commissioned next year.

<https://www.maritime-executive.com/features/fifty-years-on-ship-models-continue-to-demonstrate-value>

Watch 2 VLCCs meeting in shallow water: [https://www.youtube.com/watch?v=A0JFgarc3\\_k](https://www.youtube.com/watch?v=A0JFgarc3_k)



**Value of Autonomy Questioned:** In June, [Rolls-Royce and Svitser](#) demonstrated the world's first remotely operated commercial vessel in Copenhagen harbour, Denmark, and last month, [a platform supply vessel was successfully put through a sequence of maneuvers](#) in the North Sea under remote control from a Wärtsilä office located in San Diego, California, some 8,000 kilometers (5,000 miles) away.

The companies' vision for autonomous shipping is part of a wave of enthusiasm and research around the world, but there is also a backlash.

The Maritime Union of Australia has come out saying "those representing the workers in the transport industry question both the productivity and economics of automated ships and ports."



Speaking after the opening the International Transport Workers Federation (ITF) office in Singapore on September 6, President Paddy Crumlin and General Secretary Stephen Cotton described the push for automation as a "marketing rush" where the consequences have not been thought through.

"Automation shouldn't be a replacement for good industrial relations. It shouldn't be used as a form of union busting which it sometimes is. It is also being used as a marketing tool that hasn't got a practical or productive consequence," said Crumlin.

While Crumlin accepted the technology existed, the risks and governance related to autonomous shipping remains ill defined, he says. "No one's going to rush in without all those risks being defined and a governance framework so they know who they are going to sue if it does go wrong. "I don't think there's been a balanced conversation, because it's the big new, bright thing."

Crumlin also said: "Robots don't pay tax."

Cotton said he believed autonomous shipping was a long way off. "If you look at the cost, wage cost is a very small part of operating a ship. But in reality the investment to build fully autonomous ships is an issue I struggle to see quite how it will implement itself.

"Maybe coastal trade, maybe the river trade, but can you really see the English Channel or the Singapore Strait controlled by some master chess player in a darkened room? It's a very long way off."

In an article published by [The Conversation](#) this month, Dr. Christian Matthews from Liverpool John Moores University's department of maritime and mechanical engineering, said: "Removing experienced crew from ships means that any accidents that do occur could be far more severe."

Autonomous ships are expected to have fewer accidents, as the majority of collisions and groundings are caused by human error. "If we accept that autonomous vessels might be navigated without making the same mistakes as a human crew, then the statistics do seem to stack up. But things are actually much more complex than that," he says.

A [study from March 2017](#) analyzed 100 accidents that occurred from 1999 to 2015. The researchers attempted to assess whether the accidents would have been more or less likely to happen if the vessel had been unmanned. They found that the likelihood of groundings or collisions might have been decreased, but they also identified that where accidents do happen, the consequences may become more severe without a crew to intervene. In particular, accidents involving fires may be more serious if there is no crew to act as firefighters.

"This means it's far from clear that the overall risk from accidents would decrease significantly if ships were unmanned, although there is certainly a case to be made that there will be fewer," says Matthews.

A [recent study](#) reviewing the potential economic benefits of unmanned ships found that there are savings to be made, mainly related to crew pay, accommodation and utilities. The study found that if potentially improved fuel efficiency is factored in then an unmanned bulk cargo carrier may be able to reduce the cost of carrying freight by around 3.4%.

However, there is also a practical problem, says Matthews. The majority of ships operate on heavy fuel oil that must be heated and purified on board before use. The study found that it would be impractical to automate this process. If that were the case, then unmanned ships would need to operate using a more refined fuel. This would reverse the economic argument substantially, increasing the cost of transporting freight by as much as 14.8%.

Meanwhile, the *Yara Birkeland* is touted to become the world's first autonomous ship. The vessel, ordered by the fertilizer company Yara and currently being built in Norway, is expected to launch in 2020. It will operate close to the Norwegian coast, so the current lack of international regulations governing autonomous shipping won't apply.

More vessels are in the planning stages, and equipment manufacturers such as [Kongsberg](#) continue to develop the technology. Additionally, class societies are boosting their involvement including, for example, [DNV GL](#) and [ABS](#), and regulatory discussions are now underway at the IMO. By [MarEx](#) 2017-09-09



<https://maritime-executive.com/article/value-of-autonomy-questioned> <https://www.youtube.com/watch?v=EwurMleAlCc>

**Norway Nominates Another Autonomous Ship Test Area:** The Norwegian Maritime Directorate has nominated a second area to be used for testing autonomous ships. The Coastal Administration, the Maritime Directorate and a consortium led by GCE Blue Maritime on Møre signed an agreement last week that enables Storfjorden and its associated side harbours to be used. Trondheimsfjord was approved as a test fjord in 2016.

By [MarEx](#) 2017-10-03.

For more see: <https://www.maritime-executive.com/article/norway-nominates-another-autonomous-ship-test-area>

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**Collisions happen:** It's hard to believe in this day and age collisions still happen. Yet, they do, with startling frequency and potentially horrendous outcomes. 65-80% of these collisions **or more** can be directly attributed to human error. Whether it is a lack of situational awareness, inadequate training or one of a slew of other human factors, the bottom line is that errors by ship's crews are responsible for these casualties.

Recently, the [North of England P&I Club](#) published [Collisions : How To Avoid Them](#), an in-depth look at collisions, COLREGS and applications of COLREGS\*\*. It's understandable that the P&I clubs are interested in reducing marine casualties – the fewer casualties, the fewer insurance claims that are made. However, at the same time, the [Nautical Institute](#) published the latest edition of [Navigator](#), *their* online magazine with the motto of, "*Inspiring*

*professionalism in marine navigators.*" This latest edition is entirely devoted to avoiding collisions and the human factors involved. In the end, it's not about the financial cost of marine casualties such as collisions, but the human cost – careers lost and mariners injured or killed.

We have it all on the bridge and in the wheelhouse now – ARPA, AIS, multiple radars and maybe even night vision. With all this gear, why do we still have collisions? Well, as [Collisions : How To Avoid Them](#), "...reminds mariners of the basics of the COLREGs and that they must be kept well in mind and obeyed notwithstanding the profusion of equipment on the modern bridge. That equipment does not avoid collision. It is merely an aid to collision avoidance. What avoids collisions is compliance with the COLREGs." – The Hon Mr. Justice Nigel Teare.

The electronics help us as long as we understand their limitations. As the computer adage states, "Junk in, junk out." We all know that it requires 3-6 minutes for the information on the ARPA to be accurate after a course or speed change, but how many people will look at the target information (input from the ARPA) on the ECDIS and immediately accept it as accurate? Likewise, the true course vector on the ARPA may take a few minutes to register a course change by a vessel, whereas the rate of turn field on the AIS will register it within a minute. There are checks and balances with electronics, but again, we must be trained and familiar with them.

***"It is helpful to think of the Colregs as 'ship separation rules'. This mindset helps encourage early and positive actions. It is better to make an early adjustment to course or speed than to spend too much time using VHF, radar features or ECDIS/AIS to make an assessment."* – Dr. Steve Price**

One afternoon, early in my career, while weaving through traffic in the Mediterranean, the Captain offered some very simple, yet extremely pertinent advice, "Always leave yourself an out." Whether it is dealing with traffic, loading cargo or any other of the hazardous situations with which we deal, having an escape route and the *wisdom of when to use it* will save your posterior aspect.

Along the same lines, a crusty Chief Mate had passed along some of his wisdom. He suggested that instead of daydreaming of home during those quiet hours of watch, I should instead play "What if." That is, I should ask myself what I would do in different situations if something went wrong. At the time, we were talking about fires, flooding or personnel issues onboard, but the same could be applied to traffic situations. Even if everything is going well in a crossing situation, ask yourself, "What if?" What if the vessel didn't do what you expected? What would you do? When would you do it? Not only are you exercising the muscle between your ears, but *you are making a plan*. And, once you have that plan in mind, you can refine it in your next "What if? session" or use it when necessary.

Human error was likely involved in the collision of the car carrier *Baltic Ace* with the container ship *Corvus J* in December 2012. \*\*\* *Baltic Ace* sank within fifteen minutes with eleven crewmembers lost or killed. Those people will never come back. Take a few minutes – show the articles referenced above to the watch officers and seamen on your ship – it might just make the difference in the next close quarters situation. Unlike the video that appears in the following link, we aren't all lucky enough to have our disasters in the simulator.

<https://madden-maritime.com/2013/01/30/collisions-happen/>

\*\* <http://www.nepia.com/insights/industry-news/pi-club-publishes-cd-on-how-to-avoid-collisions-in-restricted-visibility/>

\*\*\*Also read" <https://www.bahamasmaritime.com/wp-content/uploads/2016/05/Baltic-Ace-TJ-REPORT-20160527-FINAL.pdf>

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That concludes this edition of "From the Bridge". The next edition will be in February and the deadline for submissions is February 16<sup>th</sup>. Between now and then, of course, is Christmas so I will take this opportunity to wish you all a Happy Christmas with Best Wishes the New Year.

Please write to me if you have anything to submit to this newsletter. I look forward to hearing from you. You can reach me at 509 – 15111 Russell Avenue, White Rock, B.C. V4B 2P4 or by e-mail at [whitknit@telus.net](mailto:whitknit@telus.net).

Sincerely, David Whitaker FNI

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**YOUTUBE LINKS to Master Mariners of Canada video in English et en Francais**

English: <https://youtu.be/IKrQF8yvyoY>

Francais: [https://www.youtube.com/watch?v=icy\\_ikC67rk](https://www.youtube.com/watch?v=icy_ikC67rk)