

From the Bridge

August 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

THE COMPANY OF MASTER MARINERS OF CANADA

NOTICE OF 50th ANNUAL GENERAL MEETING OF THE MEMBERSHIP

To take place at 1430 on Saturday, September 30th 2017 at

The Marine Campus of BCIT
265 West Esplanade
North Vancouver, B.C.

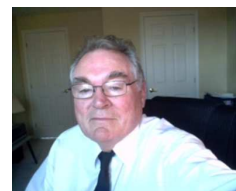
The Meeting Agenda, the Minutes of the 49th AGM plus information about the Special Resolution and the Seminar can be found at <http://www.mastermariners.ca>

FROM THE MASTER'S DESK

Celebrating 50 years

On July 13th, the Board of Directors held its 203rd Board Meeting, the last one before the 50th Annual General Meeting at BCIT in North Vancouver on September 30th.

I am very pleased to report that great progress has been made in the development of the Polar Code Ice Navigation Course under the stewardship of Captains Hearn and Patterson of Newfoundland Division.



Congratulations to Captain Hall of Fundy Division for pulling together with our promo company, "this is Duke", in getting the Twitter and Face Book pages organized and the photo contest. At this last BOD meeting, the Board members were asked to make a small video talking about their reasons for joining and what they get from their membership – I hope you did; I also volunteered and made a small video, about 1 minute 38 seconds for "this is Duke" to be posted. As I'm not particularly skilled at these new communication platforms, so I'm not sure what happened or who else volunteered for the project. The aim is to promote our 50th Anniversary and also be a recruiting tool. Our biggest challenge in the coming years is to recruit new members, we are at the present down to 341 members and our Charter allows for us to have 600 members. We need to keep the Company going for the next 50 years.

Captain Parsons of Newfoundland Division has been busy in arranging a one-day Seminar, prior to our AGM in North Vancouver on September 29th at BCIT. The topic is "Mitigating Risk in Marine Transportation, Are Moratoriums Necessary in the 21st Century". The committee has gathered together an impressive line up of speakers. I would urge members to register on the Evite link on the Website or Face Book. Registration is Free, but the committee needs to have a handle on numbers for arranging for refreshments and other seminar information.

As this is my last "From the Master's Desk", I will take the opportunity to thank all the Board of Directors for their support and dedication to MMC, Captain Gallagher, our astute Treasurer, Captain Lantz, our

amazing Secretary and editor of The Daily Newsclips, Captain Whitaker, editor of "From The Bridge" and our general correspondent with the other Master Mariner Organizations around the world. Captain Kooka, Great Lakes, for stepping in at short notice and taking up the Membership Secretary's position.

Sincerely,



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



The Captain G.O. Baugh Memorial Scholarship

A letter from one of last year's winners.

June 24, 2017

The Captain G.O. Baugh Memorial Fund
c/o Captain David Whitaker
The Company of Master Mariners of Canada Foundation
509-15111 Russell Avenue,
White Rock, B.C. V4B 2P4

Dear Baugh Fund Trustee,

I wish to reiterate how honored I feel to have been selected to be a recipient of The Captain G.O. Baugh Memorial Fund Scholarship. The fact that I was selected to be one of the three recipients in Canada in 2016 goes beyond the monetary value of the scholarship.

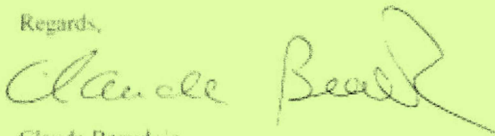
I feel delighted to inform you that I have successfully completed my second year at the Marine Institute of Memorial University.

I have used the scholarship to enroll in and complete further courses this spring, including Small Vessel Proficiency Operator (SVOP) and Dynamic Positioning (DP).

I am entering my long sea phase period and will be starting off my work term on the RRS Ernest Shackleton chartered by Tactical Marine Solutions Ltd.

I hope that I have been able to answer all your questions, and please do not hesitate to contact me should you require any further information.

Regards,



Claude Beaudoin
2nd year Nautical Science
Marine Institute

For 2017 the Baugh Fund is offering two Scholarships, each worth \$2,000.00.
See <http://www.mastermariners.ca/baugh-memorial-fund/> for full details.



The Lonsdale Quay Hotel in North Vancouver has rooms for anyone attending the AGM.

See below for the contact details.

This hotel is nestled in nature's backyard, central to the mystic North Shore Mountains. Cypress, Grouse and Mount Seymour offer year round activities with Capilano Suspension Bridge and Lynn Valley a trip into the evergreens. As you go west, you can easily visit Lighthouse Park, Lions Gate Bridge and Horseshoe Bay. Easy access to downtown Vancouver using the Seabus.

Transportation from the airport to the hotel is straightforward. Take a look at:
<https://www.youtube.com/watch?v=qpXBCFzhCjg>

For room reservations, contact Dayna Kim at dayna@lonsdalequayhotel.com before August 28th.

Tel: 604 986 6111 or Toll Free 1-800-836-6111 Fax: 604 986 8782

Lonsdale Quay Hotel <http://www.lonsdalequayhotel.com>



Triad of success in maritime industries: This year's World Maritime Day theme provides an opportunity for some original thinking as to how ships, ports and people can work together for the benefit of us all.



Everyone who reads this column knows about the fire triangle – how you need material, oxygen and heat to support combustion, and if you take one of these away, the fire goes out. All are equally important.

So, it was not difficult to warm (sorry) to the Secretary General of the International Maritime Organization when he announced that IMO's theme for this year would be **"Ships, Ports and People"**. Nobody could possibly object to this excellent three-pronged theme, which perhaps reflects Mr. Kitack Lim's own enthusiasms, as he has been involved with all three during his distinguished career in the maritime world.

Just like our fire triangle, each of these components, we can see, is equally essential for the well being of humanity. It was the S-G's predecessor, Admiral Mitropoulos, who pointed out that if it was not for ships, half the human race would starve and probably freeze, in the dark. Ships are the messengers of world trade, which, despite eccentric views of people who espouse national self-sufficiency, ensure that the growing population of the world can be supported. The capacity and precision of modern ships have brought us industrial efficiency and a "just in time" economy, that does away with a lot of waste we might otherwise suffer. And IMO's message, since its inception, has been to tell the world of the importance of safe shipping, which operates with due attention to the marine environment.

But it is probably worth repeating the caution that you can have too much of a good thing, and if the shipping industry is in a state of gross over-capacity, while its users might rejoice at its cheapness, in the end it profits nobody. An absence of reward punishes those operating high-quality ships and ultimately makes them less safe, as corners are cut by people who can't earn enough to maintain standards.

And in the quest for efficient shipping, the second component in Mr. Lim's tripartite theme – the ports – are equally important. The efficiencies of the best-designed and carefully managed ship will be wasted if the ports to which she travels are inefficient, corrupt or technically inadequate. We can see plenty of illustrations of these sad handicaps to international trade – ports where the absence of berths or decent cargo-handling equipment condemns ships to swing uselessly around their anchors, waiting their turn for a berth.

A question of priorities: True, it may be a consequence of the less developed nature of the State, but it might also be a question of priorities of national governments, which have been unconvinced by the arguments for port efficiency upgrades. And how many ports do seafaring readers know that are notorious for their corruption and general unfriendliness to their floating visitors, and whose reaction, when the last mooring rope is let go is one of profound relief?

Nobody should leave port feeling that they had been put through the wringer. Ports are very important and deserve to be cherished for their value to the smooth running of trade. If IMO can spread best practice in port operations, as with ship management, it will be doing the world, not just the shipping industry, a favour. There is no shortage of excellent examples of ports that do the business, in every part of the world and size range. There are also technical assistance schemes in place to help backward ports, as it were, to catch up. It is also worth recalling that it is the ships that constitute the port's main revenue stream, so maritime prosperity works all ways.

Mr. Lim's third element is "people" and you can argue that human beings represent the lubricant that keeps the other two running smoothly. Both ashore and afloat, you don't get very far without clever people who know what they are about. It is good to have this endorsement, because for many years, when IMO spent a great deal of its efforts on matters of structure and machinery, you sometimes felt that the "human element" was becoming a sort of afterthought.



That has changed in recent years and now the seafarers are always considered in the formulation of new regulations or recommendations. True, the STCW Convention is regarded as one of the regulatory "pillars", but the interface between people and ships, ports and machinery they will be operating is generally universal and considered to be centre stage in virtually every area of regulations. Ships and ports need top-class professionals to operate them, and this requires deep thought about how best to attract, recruit and retain the people who will get the best out of the ships and ports they serve.

Perhaps this year, as the IMO theme provides a welcome opportunity to focus on its three-part topic, we will see some original thinking as to how ships, ports and people can work together to the benefit of us all.

Michael Grey. theSea. May/June 2017 www.missiontoseafarers.org

"Connecting Ships, Ports and People"



World Maritime Day 2017

Thursday September 28th

photo from www.imo.org

The GPS of its time: Surveyor James Cook remembered 250 years after mapping Newfoundland. Cook's charts so accurate you can navigate with them today.

A world-renowned explorer who literally put Newfoundland and Labrador on the map is being recognized for his work 250 years later.

James Cook surveyed most of the province from 1763-1767, charting areas unknown to the British at the time.

"He spent 1763 at Saint-Pierre and Miquelon, the Strait of Belle Isle, returned in 1764 and finished that area," said Paul Wylezol, organizer of the James Cook 250 celebrations.

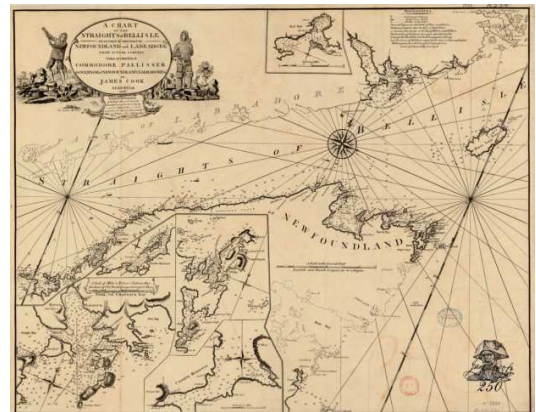
"In 1765 and 1766 he charted the south coast and in 1767 he completed between the south coast and the Strait of Belle Isle."

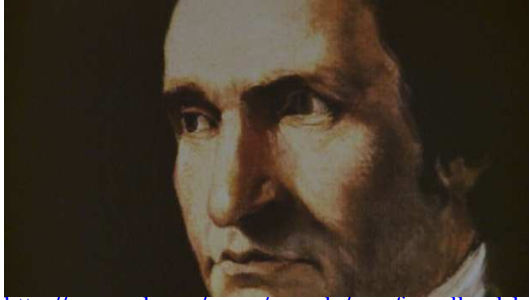
Cook was named the surveyor of Newfoundland and his maps were so good they are still used today.

"His maps were really the first truly accurate maps, you could still navigate with these maps. Until you got into GPS really, that whole stream all comes from Cook," said George French, archivist at the Corner Brook Museum.

The museum has a "Cook in Canada" exhibit that explains how he mapped the province. This summer his work is being celebrated across the globe.

Those celebrations include the western part of Newfoundland with new signs and map replicas going up at the Discovery Centre in Woody Point and museums on the North Shore and the Bay of Islands. Two hiking trails near York Harbour and Lark Harbour will be renamed in Cook's honour.





Wylezol says marking the 250th anniversary of Cook's work is an opportunity to educate both residents and tourists.

James Cook 250 celebrations tie in with Canada 150 and the Tall Ships Regatta that's coming to Corner Brook and the Northern Peninsula the end of July.

"Coincidentally, the greatest tall ship mariner of all time surveyed our coast 250 years ago this year. It's quite an interesting connection," said Wylezol.

For more information on the celebrations, check out the [James Cook 250 website](http://www.jamescook250.ca). By Colleen Connors, Jun 14, 2017.

<http://www.cbc.ca/news/canada/newfoundland-labrador/james-cook-map-250-charted-survey-1.4158921>

Unmanned Ships on the Horizon: With a new testbed and several research projects underway, autonomous shipping is one step closer to becoming a reality. And DNV GL is working on developing the necessary rules.

The little craft bearing the DNV GL logo gingerly braves the waves, as it skippers across the Trondheim Fjord under the watchful eyes of Kjetil Muggerud and Henrik Alfheim from the Norwegian University of Science and Technology (NTNU) in Trondheim. Both students are investigating how advanced control systems and navigation software could control an unmanned vessel, using a 1:20 model of DNV GL's concept vessel *ReVolt*.

"Advances in sensor technology, data analytics and bandwidth to shore are fundamentally changing the way shipping works. And as operations are digitalized, they become more automated," says Dr. Pierre C. Sames, Director of Group Technology & Research at DNV GL.

Governments around the world are looking into unmanned shipping as a way to move more cargo to sea in order to contain the spiralling costs of road maintenance caused by heavy lorry traffic, not to mention air pollution. Norway has taken the lead in exploring innovative ways of tackling this issue and bridging its many fjords and sea passages to ease transit.



The DNV GL experimental scale model is used by NTNU researchers for trials.



Cargo vessels without a superstructure could one day be controlled from a virtual bridge on land.

Cost is a key consideration in all of this. In 2016 government agencies and industry bodies established the Norwegian Forum for Autonomous Ships (NFAS) to promote the concept of unmanned shipping. In support of these efforts, the Norwegian government has turned the Trondheim Fjord into a test bed for autonomous ship trials. Other nations, most notably Finland and Singapore, are pursuing similar goals.

DNV GL is in the midst of this development, following its mission to make sure the technologies enabling autonomous ships will perform to the benefit of humans, their assets and the environment.

The human factor: "If we look at recent advances in driverless car technology, the thought of trying something similar with ships does not appear too far-fetched. After all, water has at least one great advantage: there is less traffic than on roads and reaction times are usually longer," says Sames.

The DNV GL experts identified three main factors that could positively influence the uptake of autonomous shipping: "Automation reduces the potential for human error. In addition, water transport can be cheaper and more energy efficient than moving goods on land."

With a battery propulsion system, as seen on DNV GL's *ReVolt* model, an autonomous ship would also be lower in maintenance than conventional ships. Additionally, an unmanned cargo vessel would also become more economical,

as eliminating the superstructure would save weight and create more cargo space. Furthermore, unmanned ships may be used in hazardous operations, e.g. firefighting, or as stand-by rescue vessels for offshore structures.

Small craft with great ambitions: DNV GL has initiated or is taking part in various projects revolving around ship automation and autonomous control. The *ReVolt* project is one example; once all aspects of the autonomous control technology are mature, such a design could possibly be built and deployed as a 100 TEU feeder vessel on fixed routes in coastal waters.

Another project with DNV GL involvement, the Advanced Autonomous Waterborne Applications Initiative (AAWA), led by Rolls-Royce, is investigating a wide array of aspects relevant to commercial unmanned shipping – from technical development to safety, legal and economic aspects as well as societal acceptance.

"At DNV GL, we are doing a lot of work to understand the potential risks that come with autonomous ship systems in order to set new standards for them," explains Sames. "We are already working on developing requirements to be able to test and classify unmanned vessels in the future," he adds.

The Autosea project of NTNU, supported by DNV GL, Kongsberg and Maritime Robotics, seeks to understand the performance of novel sensor systems and the error potential of autonomous control technology, especially collision avoidance. The NTNU scientists are also working on an autonomous craft for Trondheim harbour. The idea is to provide an on-demand ferry service to passengers and bicycles across a channel at the push of a button.

Featuring electric propulsion, an induction-charged battery, GPS navigation and an anti-collision system, the craft will carry up to twelve persons. It is intended to function as a cost-saving alternative to building a bridge. A pilot study is planned for this year, and the ferry is expected to start operating in 2018/2019.

Meanwhile two commercial projects are nearing completion: Rolls-Royce is supplying automatic crossing systems for two DNV GL-classed double-ended, battery-powered ferries the Norwegian operator Fjord1 plans to commission in 2018. Both vessels will navigate autonomously under the captain's supervision, and he has the option to take control at any time. The first ferry will still require human-controlled berthing, while the second one will be able to perform this task automatically as well.

The unmanned offshore vessel *Hrønn*, under construction at Fjellstrand shipyard for a Norwegian and UK consortium led by Automated Ships and Kongsberg, will also be delivered in 2018. The light-duty, fully automated utility ship will be deployed in a shuttle service for offshore installations but could be used for many other purposes, ranging from research to fish farming operations.

Furthermore, a plan to build the first unmanned and fully electric container feeder ship was recently unveiled by Kongsberg and the Norwegian fertilizer specialist Yara. After her delivery, *Yara Birkeland* will initially operate as a manned vessel and start traveling between the Norwegian ports of Brevik and Larvik autonomously in 2020.

The challenges: Overall, autonomous shipping opens up great opportunities for the European shipbuilding and shipping industries. But new competencies have to be built before autonomous ships can become a commercially viable reality. Key research must be done to improve sensor technology, the acquisition of high-resolution ranging data and instrumentation accuracy. Software plays a very important role in this scenario by enabling situational awareness, a prerequisite for automated decision management. While existing know-how from the aerospace and automobile industries can be leveraged, specific expertise in ship autonomy has yet to be built up, states Sames. The research activities at NTNU, sponsored by DNV GL and industry stakeholders, are instrumental in creating a new generation of highly skilled ship autonomy experts.

Another concern is the operational availability of on-board machinery. No immediate repairs are possible on an unmanned craft so reliability of all mechanical and electronic components is of utmost importance. "In addition, having battery-powered unmanned vessels would eliminate movable parts from the power generation system and make them easier to maintain," says Sames.

Segments that could see the first autonomous vessels in operation include ferries or offshore supply vessels operating in coastal areas or smaller cargo vessels operating in short-sea-shipping. However, the expert cautions that, as yet, there is no legal framework that governs the use of unmanned ships. DNV GL is developing a set of rules, but to avoid potential conflicts with international law autonomous ships will not be able to operate in international waters until the IMO develops appropriate regulations, which will take time.

For the deep-sea segments, autonomous shipping is not an option today, says Sames. "These vessels travel distances that go beyond the range of battery propulsion, and they require well-trained crews on board who can respond quickly to any technical issue," says Sames. "If an unmanned vessel had a technical issue in the Atlantic, it would take days to reach it and fix the problem. This would not be safe or economical," he adds.

Additional crew support: However, advances in automation can benefit all industry segments in some way, even without fully autonomous control. In the future, some ship traffic could be controlled remotely from land-based virtual bridges – with one shipmaster overseeing several vessels at the same time.

"But the most likely scenario is that the technology which enables autonomous ship operations will simply be an additional option for operation – meaning they could be used for specific purposes without fully replacing traditional, manned operations," Sames suggests. "So for example, autonomous navigation and control systems could support the crew in steering a vessel, increasing safety and optimizing operational efficiency."

By [MarEx](#) 2017-06-08. Source: [DNV GL Maritime Impact magazine 01/2017](#)

Autonomous Vessels and the Casualty Investigation Conundrum. (One Person's View).

Research is being done on autonomous vessels with an aim of reducing maritime casualties. The literature often cites the issue of fatigue as either main causes or contributing factor to maritime casualties. This issue can be solved in one of two ways: either sufficiently crew the ship or eliminate the crew. It is not surprising that technology companies are spending vast sums on the technological solutions and dragging the marine world down this path. It is this author's personal contention that flag states should be embarrassed at the numbers that are allowed on "MINIMUM Safe Manning Certificates". If crew are fatigued, there are clearly not enough on board to carry out the business of the ship. That however is a rant for a different day, with this article exploring the issue of casualty investigations.

Given that autonomous ships will have faults and that not all ships on the sea will be autonomous it is reasonable to assume that casualties will continue to occur.

When casualties occur, there is an obligation for flag states and coastal states to ensure that a safety investigation is conducted to determine the cause, contributing factors and safety deficiencies. Both flag and coastal state could be frustrated in their trying to fulfill their obligation depending on where the control centre for the autonomous vessels are located.

There is a global dispersion of entities involved with modern ships with owner, charterers and managers often in different countries. Like every other aspect of commercial shipping the control centres will end up in jurisdictions that offer the greatest economic advantages.

Let us imagine a fictitious collision in Canadian waters between a Vanuatu flagged bulk carrier and a Panamanian flag tanker. One shipowner is headquartered in Singapore while the other is headquartered in Greece. The ship operations centre for one is in China and the other operations centre is in Vietnam.

As a Coastal State, with trained casualty investigators operating under the authority of the Canadian Transportation Accident Investigation and Safety Board Act, what action can be taken? Currently the only extra-territorial provision of the Act allows them to investigate casualties occurring outside Canadian waters to Canadian flag vessels. There is no provision for them to go to the operations centre where they could seize evidence, interview operators and examine documents. The investigator would be in a position of having to be invited by the authorities of the country where the operations centres reside, use the invitation to procure a visa and then travel to a jurisdiction where they have no powers to investigate.

The flag state investigators similarly would also have no authority in the jurisdiction where the operations centre resides. The ship may be sovereign territory of the flag state but the operations centre would clearly not be. Neither is it likely that operations will be set up in the flag state.

Competent researchers have noted that the technical issues related to autonomous ships are leading the policy and regulatory issues. This is but one case where policy and law need to be considered so that the existing requirements in SOLAS to conduct safety investigations can be complied with.

A flag state solution could compel shipowners to set up their operations centres in the country of registration. What would this mean for registries that are nominally in one country but de facto run out of another such as Liberia and Vanuatu? Where would the operations centre need to be in order that it be accessible to flag-state investigators under flag state law?

It is unlikely that owners and flag states would agree to a "Big Brother" solution where all information sent into the various operations centres from the ship sensors and all operations centre activity is monitored and sent in real time to a few key locations where access to any coastal or flag state could be assured. The potential for loss of commercial confidential information and for cyber-attacks would surely override safety investigation concerns. This solution would also require the adoption of common data standards and the ability to store vast amounts of data.

The author does not see an easy solution. Already marine safety is compromised by many flag and coastal states that conduct less-than-comprehensive investigations. It would be a further blow to maritime safety if lack of access to the people and records necessary to carry out the work frustrates the investigations.

A slow and considered approach to autonomous ships is required. The legal, policy and operational considerations are complex. In the interim the ships should be provided with sufficient crew to conduct all operations and be well rested.

Captain Jack Gallagher. Maritimes Division.

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

Life on a Coaster: I graduated from Plymouth University in September 2016 with an 'Officer of the Watch (Unlimited) CoC' and BSc (Hons) degree. The time had come to start job seeking and look for my first ship to begin my career as a qualified officer. The major problem facing me was my experience, or lack of. Most companies, quite fairly, decided it was too risky to let a green officer learn and make mistakes on their expensive vessels.

After a month or so of searching I finally got lucky. A small UK based company called Faversham Ships Ltd. (<http://www.favershamships.co.uk>) took me in and offered me a Second Officer position on one of their coasters. The ship's name was *Vitality*, a 90-metre LOA bulk carrier that operated in

and around Europe. I joined her in Belgium on a cold November day full of both excitement and nervousness in equal parts.

After sailing I was given a handover by the Chief Officer and made to feel very welcome. I returned at midday to relieve the Captain. The ship happened to be in the Dover Strait, which immediately made me nervous, but despite the best efforts of a ferry to make sure I was comfortable with the Colregs, my confidence grew and in the end my watch passed uneventfully.

In the 2½ months that I sailed on her I have had some great experiences. I have been to many small, sleepy ports in Europe and given responsibilities that I would never have dreamed of doing until much later in my career. The satisfaction and responsibility of being a sole watchkeeper was something I also grew to enjoy. It reassured me that I was trained properly and was able to do my job.

All in all, I have thoroughly enjoyed life on coasters and I'm looking forward to heading back out. Life on board always seemed a lot more rough and ready

than when I sailed on larger vessels but that only added to the charm. The crew was obviously smaller but we were more close-knit. We were more social and I like to think it was similar to the good old days that I am so frequently told about.

So, if ever you are offered the opportunity to work on a coaster, take it because you may never look back.

Jamie Edwards. HCMM Apprentice. From "The Journal" Issue 2/2017. www.hcmm.org.uk



Scientists find 38 million pieces of trash on Pacific island. Researchers say density of trash the highest recorded anywhere despite island's extreme remoteness: When researchers travelled to a tiny, uninhabited island in the middle of the Pacific Ocean, they were astonished to find an estimated 38 million pieces of trash washed up on the beaches.

Almost all of the garbage they found on Henderson Island (24.3744°S, 128.3271°W) was made from plastic. There were toy soldiers, dominos, toothbrushes and hundreds of hardhats of every shape, size and colour.

The researchers say the density of trash was the highest recorded anywhere in the world, despite Henderson Island's extreme remoteness. The island is located about halfway between New Zealand and Chile and is recognized as a UNESCO world heritage site.

Jennifer Lavers, a research scientist at Australia's University of Tasmania, was lead author of the report, which was published in [Proceedings of the National Academy of Sciences](#).

Lavers said Henderson Island is at the edge of a vortex of ocean currents known as the South Pacific gyre, which tends to capture and hold floating trash.

"The quantity of plastic there is truly alarming," Lavers told The Associated Press. "It's both beautiful and terrifying."

She said she sometimes found herself getting mesmerized by the variety and colours of the plastic that litters the island before the tragedy of it would sink in again.

[Billions of plastic pollutants being dragged into Arctic waters](#)
[Discovery of plastic-eating caterpillar could prove a boon in waste disposal](#)

Lavers and six others stayed on the island for 3 1/2 months in 2015 while conducting the study. They found the trash weighed an estimated 17.6 tons and that more than two-thirds of it was buried in shallow sediment on the beaches.

Lavers said she noticed green toy soldiers that looked identical to those her brother played with as a child in the early 1980s, as well as red motels from the Monopoly board game.

She said the most common items they found were cigarette lighters and toothbrushes. One of the strangest was a baby pacifier.

Rethink our relationship with plastic: She said they found a sea turtle that had died after getting caught in an abandoned fishing net and a crab that was living in a cosmetics container.

By clearing a part of a beach of trash and then watching new pieces accumulate, Lavers said they were able to estimate that more than 13,000 pieces of trash wash up every day on the island, which is about 10 kilometres (6 miles) long and 5 kilometres (3 miles) wide.



Henderson Island is part of the Pitcairn Islands group, a British dependency. It is so remote that Lavers said she missed her own wedding after the boat coming to collect the group was delayed.

Luckily, she said, the guests were still in Tahiti, in French Polynesia, when she showed up three days late, and she still got married.



Lavers said she is so appalled by the amount of plastic in the oceans that she has taken to using a bamboo iPhone case and toothbrush.

"We need to drastically rethink our relationship with plastic," she said. "It's something that's designed to last forever, but is often only used for a few fleeting moments and then tossed away."

Melissa Bowen, an oceanographer at the University of Auckland in New Zealand who was not involved in the study, said that winds and currents in the gyre cause the build-up of plastic items on places like Henderson Island.

"As we get more and more of these types of studies, it is bringing home the reality of plastic in the oceans," Bowen said.

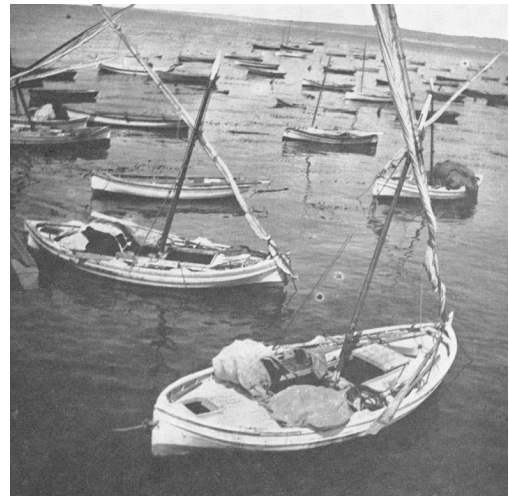
The Associated Press May 16, 2017. <http://www.cbc.ca/news/technology/trash-pacific-1.4117224>

Are Ships The Careless Giants Of The Sea? It was late summer 36 years ago on a beautiful calm evening in the Bay of Bengal off the southern coast of India. We had just departed Tuticorin bound east then south for Cochin. Tuticorin is an ancient port city dating back to the 6th century AD known for its pearl diving and rich fishing grounds. I was a brand new Jr. Third Officer onboard the *S.S. President Adams*.

I was on watch as we sailed into the Bay of Bengal before turning south for Cochin. It was a calm dark foggy night with little vibration or noise from the ship. All was clear within one hundred miles and the Captain had gone below.

Just before the 2400 watch change the fog lifted and to my shock I found the ship in the midst of a sea of tiny yellow lights. Upon closer inspection it turned out to be dugout canoes with single occupants carefully standing motionless holding small oil lamps aloft hoping to be seen. We had improbably steamed through a fleet of small boats over 50 miles offshore. As I scanned the now visible horizon I saw a multitude of beautiful small flickering yellow lights. The way was clear dead ahead as we had already passed through the fleet. Then the fog descended once again and the fleet disappeared from sight as though it were never there.

The Second Mate walked onto the bridge and saw nothing. We informed the Captain and were told to continue. There was nothing to indicate that we had steamed over any of the small fishing boats except the law of probability. We discussed that night for the rest of the voyage. It was not that we did not care, quite the contrary. There was no VHF contact with shore. Turning and steaming back into the fleet in dense fog to check was obviously repeating a grave risk. What we experienced was the plight of small boats at sea for as long as small boats have ventured beyond the sight of coasts.



What I learned that night is that professional mariners care deeply about the plight of all those at sea. Too often the public narrative is the opposite, much of it fictional myth that 'killer ships' and tugs with tows are mindlessly cutting their way through fishing boats, sail boats and small craft without the slightest remorse:

"It was a towering wall of steel bursting out of a squall at full speed, bearing down on their ketch Siren. In a few dramatic moments, Siren was shattered by the indifferent juggernaut. Struggling for his life, Peter Hardin felt the hand of his wife being torn from his grip as the huge white letters on the supertanker's stern-Leviathan-steamed away." *The Shipkiller* Justin Scott. ISBN 978-1-60598-371-4

There have been tragic accidents between ships and small boats. But rarely is it due to criminal negligence. On the ships and tugs I have sailed on in the last three decades I have never known a professional mariner that did not show great concern about small boats. But it would do no harm to remember how my ship appeared through the eyes

of the fishermen and fleet we unknowingly steamed through 36 years ago. And I am incredulous at how often a ship that departed the other side of the world weeks earlier could meet a local small boat that just left its berth and is now crossing said ship's bow at exactly the most dangerous point. Las Vegas would not give odds on that yet it we see it often.

As a pilot I find serious concern on the bridge about potential collisions with small boats in piloting waters. I see professional mariners that will go to great lengths to avoid small boats. Are professional mariners unintentionally violating COLREGS in that process? In the next article I will open that provocative discussion. (Part One out of Three articles on [COLREGS.](http://gcaptain.com/ships-careless-giants-sea/))

<http://gcaptain.com/ships-careless-giants-sea/> May 14, 2017 by Grant Livingstone

COLREGs – Give Way or Stand On. Part Two out of Three Part articles on [COLREGS.](http://gcaptain.com/ships-careless-giants-sea/)

Are some professional mariners unintentionally violating COLREGS in a conscientious effort to avoid close quarters situations with small boats? A review a few of the most common violations professional mariners are being found at fault for or debate in inland waters with small boats is worthy of discussion.

The first is the classic crossing situation Rule 15; "When two power driven vessels are crossing so as to involve risk of collision the vessel which has the other on her starboard side shall keep out of the way and shall if the circumstances of the case permit avoid crossing ahead of the other vessel." The obligation of the stand on vessel triggers Rule 17(c). In brief a power driven vessel which takes action in a crossing situation to avoid collision shall if the circumstances of the case permit *not* alter course to port for a vessel on her own port side.



This is very common in inland waters as small powerboats (or sailboats) on the ships port bow are not yielding or giving way in a crossing situation. The small boat appears to be set on crossing the ships bow port to starboard. This is where professional mariners Prudent Seamanship (common sense on the water) kicks in. If there really is a risk of hitting the small boat (crossing our bow from port) by maintaining our course as stand on vessel, then altering course to starboard might *increase* the risk of collision.....depending on the circumstances. By altering course to starboard, we potentially chase the small boat crossing our bow to starboard.

Therefore many professional mariners may see a turn to port (common sense) as the most expedient and safest way to clear the small boat heading to our starboard. We'll pass astern of the give way vessel to avoid collision if they won't give way. The fatal flaw in that common sense view is when the small boat gives way at the very last second and turns to their starboard or stops to avoid crossing our bow. In that case, small boat giving way off our port bow, the odds of collision go up dramatically if we turned our ship to port.

In case after case the professional mariner that turned to port to avoid a small boat crossing to starboard from its port bow (violating Rule 17(c)) are found at fault. Very similar is Rule 19 under Conduct of Vessels in Restricted Visibility; Rule 19(i) an alteration of course to *port* for a vessel *forward* of the beam other than a vessel being overtaken shall be avoided.

Mariners often find themselves trying to outguess the small boat crossing their bow. If we are the stand on vessel at what point do we give way? Any decision based on "outguessing" falls under the COLREGS admonishment not to make decisions based on scanty information. Rule 17(b) ends with; If collision cannot be avoided by the action of the give way vessel alone, she (stand on vessel) shall take such action as will best aid to avoid collision. The professional mariner shall take action to avoid collision but it *cannot* be a turn to port for a vessel off the port bow.

In part three of this series we look into what may be the Grand Daddy of COLREG debate and interpretation among professional mariners; Rule 34. Traditionally referred to as the 'Danger Signal'.

<http://gcaptain.com/colregs-give-way-stand-part-two/> June 20, 2017 by Grant Livingstone

Five (Or More) Short Blasts – On Sounding The Danger Signal:

This is PART 3 of a series about the COLREGs.

The Grand Daddy of [COLREGs](#) debate and interpretation among professional mariners may be Rule 34; traditionally called the 'Danger Signal' five short blasts on the ships whistle. I have sailed with professional mariners that would sound five short blasts at everything and those that would only sound five short blasts when they believed collision was eminent. Many times sounding five short blasts only confounds private boaters who do not understand its meaning. There are circumstances where professional mariners hesitate to sound any signal fearing the small boat will turn the wrong way.

I used the term 'Danger Signal' on the bridge and when I sounded five short blasts that meant potential danger of collision in my mind. After conferring with esteemed colleagues who are expert, my view of Rule 34 has evolved and it may be worth discussion.

Rule 34 (d) is clear. When vessels in sight of one another fail to understand the intentions or actions of the other, or is in DOUBT whether sufficient action is being taken by the other to avoid collision, the vessel in DOUBT shall immediately show such DOUBT by giving at least five short rapid blasts on the ships whistle.

Failing to understand the actions or intentions of the other may arguably exist without risk of collision. Initially under that circumstance we have time to wait and assess after sounding five short blasts. Assuming we are the stand on vessel we maintain course and speed. After time to assess, if the other vessel does not appear to be taking sufficient action to give way or avoid collision and we are still in doubt Rule 7(a) directs us to consider that risk of collisions exists. This is when action to avoid collision, Rule 8, can become a sticky wicket. Time may be running out for proper and sufficient action to avoid collision. In many close quarters situations the mariner would need a crystal ball to know if the give way vessel was going to clear safely (avoiding a collision) before 'crossing bows'. But Rule 8(e) is clear; if *necessary* to avoid collision or allow more time to assess the situation a vessel shall slacken her speed or take all way off by stopping and reversing her means of propulsion. "If necessary" is highly subjective and possibly very difficult to assess until *after* the fact. Perhaps there will be no collision and therefore no need to make large course alterations or slacken speed and take all way off. But if there is a collision after sounding five short blasts and the mariner did not take sufficient action to avoid collision they will be held at fault; severely so.

In conclusion it may not be necessary to slacken speed or change course or take all way after sounding five short blasts when risk of collision is deemed to exist. But it is Prudent Seamanship to take some action and may, one time out of one thousand, save a professional mariner's career and possibly live(s).

Many thanks to Pacific Maritime Institute's Bill Anderson Jr., Gregg Trunnell and Steve Burtchael for their invaluable advice on COLREGS. July 3, 2017 by [Captain Grant H. Livingstone](#)
http://gcaptain.com/five-short-blasts-sounding-danger-signal/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+Gcaptain+%28gcaptain.com%29

Terminal operators allowing shippers to get away with murder: Shippers continue to put lives at risk by flouting cargo regulations. And they'll carry on getting away with it as competition among terminals for business is so fierce that blind eyes are turned on a daily basis to boxes that could kill.

A quick glance at our partner Marine Traffic's site shows the severity of shippers failing to follow guidelines correctly. Remember the *MSC Daniela*? The 13,800-teu boxship suffered a fire on April 4th this year in its after section off Sri Lanka. The ship continued to smoulder for weeks after the blaze was extinguished. MSC suspects shippers misdeclaring hazardous cargoes was the most likely reason for the blaze.

The ship was eventually able to make its way to Shanghai, arriving on May 22nd, for what officials at the time say would be a fortnight's repair work. As of today, Marine Traffic clearly shows this huge boxship still moored at China Industry's Chanxing yard. The fire – caused most likely either by a non-declaration of IMDG cargo, or by poor stowage of the same by the shipper – ripped through up to eight bays of the ship. All lashing platforms would have become distorted and now brittle, and will need replacement. New hatch covers will need to be fabricated. Cell guides might also need some attention, at least the opening flange part. Also any electrics will have burned out, so maybe a massive re-wiring is also required. Then a spot of painting and finally new sea-trials might be required.

At least no one died in this accident.

The same type of unprofessional behaviour by shippers was also likely the cause of the Tianjin port explosion two years ago, an inferno that killed 173 people and racked up damages in excess of \$4bn.



I was chatting with a terminal operator who described this week's current travails. Operations had to be stopped on one ship on Monday, as a hazardous container did not have labels. This container had loaded in another overseas port, been feedered, landed at a terminal nearby, stored, trucked through the port, entered the operator's terminal, stored again and then loaded before anyone realised.

Tuesday saw the same hassled operator struggling with five feu that were loaded beyond their maximum payload and whereas seemingly VGM compliant, needed to be lightened before shipment.

The same day he had to put up with a customer sending over a bayplan, then asking my source to manually update 155 containers as IMDG hazardous.

"This is just a snippet of safety violations experienced this week, and we still have three days to go to complete the week", my frustrated source confided.

There is little in terms of process efficiency or compliance within our industry, and we are very lucky that we get only a few cases such as the *MSC Daniela*.

The root of the problem lies with commercial competition. Terminal operators are unlikely to take a strong stance on non-compliance as competitors hover nearby willing to take anything that comes their way.

Occasionally I get the odd greenwashing release from the world's largest terminal operators, talking about what they are doing to save the environment together. It would be nice to see them come together with a collective stance on safety. **Sam Chambers. Spash24/7. July 7th 2017. Submitted by Captain Alan Knight, Maritimes Division.**



Piracy continues to decrease while focus shifts to maritime kidnapping: The threat of piracy and armed robbery of ships around the globe has continued to decline in the first half of 2017 – but kidnapping of crews is on the rise.

A new report from the International Chamber of Commerce (ICC) says that the first six months of the year saw a total of 87 incidents reported to the organization's International Maritime Bureau. That compares with 97 reported for the same period in 2016.

A total of 63 vessels were boarded in maritime routes across the globe, according to the report. Twelve were fired upon and only four were successfully hijacked.

While piracy on the high seas has declined, the kidnapping of maritime crewmembers is on the rise.

A greater number of crews were kidnapped while at sea in 2016—the highest in the past decade—despite the fact that global piracy has seen some of its lowest levels, according to a January report from the ICC.

"The continued fall in piracy is good news, but certain shipping routes remain dangerous, and the escalation of crew kidnapping is a worrying trend in some emerging areas," said IMB Director Pottengal Mukundan in a statement released for the report.

"The kidnappings in the Sulu Sea between East Malaysia and the Philippines are a particular concern," he added.

The January report states that there had been a threefold increase in maritime kidnappings in 2016 when compared to the previous year. Pirates kidnapped a total of 62 people in 15 separate incidents. Just over half that number were captured off the coast of West Africa. The remaining 28 were abducted from tugboats, barges, fishing vessels, and merchant ships of the coasts of Malaysia and Indonesia.

While the African coast may not be the hotbed of piracy that it once was, Southeast Asia has seen a steady rise since 2015, when the region saw more than one-third of pirate attacks globally.

Most of the pirates in the region had targeted ships with commercial cargo because it could be sold on the black market. However, the crews of the large vessels are increasingly targeted for abduction because it can yield a high ransom payout. It's widely believed that the kidnappings have increased in the region because stolen gas and other goods do not yield as high a financial reward as they once did.

According to a report from Oceans Beyond Piracy, a majority of the kidnappings occurred in the Sulu and Celebes Seas that separates the Philippines and Indonesia. The pirates will often take their captives—who are usually ranking officers and/or engineers from bulk carrier ships—to the shoreline, where they are subjected to frequent abuse and under the constant threat of being killed by their captors.

The rise in these incidents has led authorities in Indonesia, Malaysia, and the Philippines to draft a joint document on standard operating procedures in an effort to secure the waterways bordered by the countries. In May 2016, the three countries also agreed to coordinated patrols to improve the maritime security.

Source: FoxNews. 10/07/2017

<http://www.hellenicshippingnews.com/piracy-continues-to-decrease-while-focus-shifts-to-maritime-kidnapping/>



BC Ferries crew credited with marine rescue: Two BC Ferries crewmembers are being credited for rescuing seven passengers from a small boat that ran aground.

The crew on the *Queen of Nanaimo* got the distress call Friday and immediately climbed into a rescue vessel and travelled to the boat that was stuck on some rocks. The seven passengers were transferred into the rescue vessel and then onto the *Queen of Nanaimo*.

"We can respond to an incident in as little as five minutes," said Darren Johnston, BC Ferries' Director of Fleet Operations. The seven passengers were transferred into the rescue vessel and then onto the *Queen of Nanaimo*. It's just one of more than 100 marine emergencies BC Ferries vessels respond to every year, according to a press release.

Those emergencies can range from recovering people from the water, to providing first aid treatment, to providing visual confirmation of a situation on the water.



Crews also responded to five other marine incidents this past weekend.

"We appreciate the patience of our customers when there's an incident because our response generally results in a delay for them," said Johnston. "We find it is one occasion when our customers can appreciate why we're late."

BC Ferries makes more than 170,000 sailings every year. **Metro Vancouver. July 19th 2017**

Crewmembers from the *Queen of Nanaimo* retrieve two canoeists from water near Tsawwassen terminal on Sunday, July 16, 2017

<http://www.metronews.ca/news/vancouver/2017/07/18/bc-ferries-crew-credited-with-marine-rescue.html>

New nautical maps identify Nunavut wildlife hazards for ships. World Wildlife Fund Canada releases first of maps showing where animals frequent:

As the Arctic's sea ice continues to hit historic lows and more vessels clog Northern shipping lanes, the World Wildlife Fund-Canada is reminding pilots to mind their neighbours on the high seas, in the first of a series of maps from the organization identifying ecological habitats.

WWF-Canada unveiled its Hudson Strait Mariners Guide during a meeting of the Canadian Marine Advisory Council in Montreal, May 25.

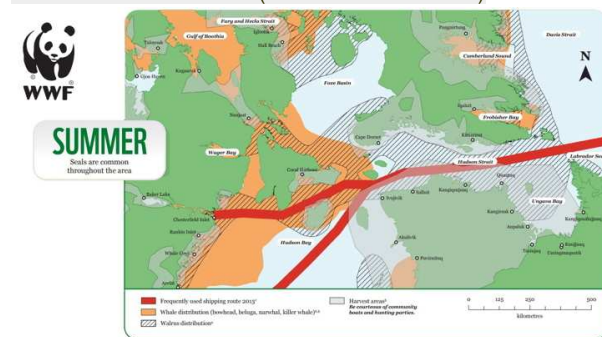
"This is an opportunity to create a high standard for sustainable shipping practices before we see a major increase in activity in the Hudson Strait due to longer open-water periods," said WWF-Canada's senior specialist for sustainable Arctic shipping, Andrew Dumbrille, in a news release.

Currently, the Hudson Strait is one of the only regions in Nunavut that has regular winter shipping.

The map points out areas that whales, seals, polar bears and walrus are known to frequent during the summer and winter seasons, and is the first in a series of nautical maps around the Arctic that will be rolled out in the coming years as commercial shipping in the North, and Nunavut, grows.

Ecological information for the maps came from publically available data, but also incorporated input from social media and community consultations, as well as the Draft Nunavut Land Use Plan, Dumbrille told *Nunatsiaq News* by phone from Montreal.

World Wildlife Fund Canada map showing marine areas in Hudson Strait frequented by whales and walrus and also where northerners hunt. (WWF CANADA MAP)



© 1986 Panda symbol WWF-World Wide Fund for Nature (also known as World Wildlife Fund).
**WWF is a WWF Registered Trademark.

A WWF Canada map showing wildlife hazards, polar bear denning areas, seal distribution and frequently used shipping routes in and around Hudson Strait. (WWF CANADA MAP)



© 1986 Panda symbol WWF-World Wide Fund for Nature (also known as World Wildlife Fund).
**WWF is a WWF Registered Trademark.

WWF-Canada eventually wants to upload the map's information to the main charts published by the Canadian Hydrographic Survey.

In the meantime, Dumbrille said his organization is working on an App for users to plot their courses using the data, and digitizing the data. "This is the beginning of a larger project to more fully embed environmental information into voyage planning and navigation in the Canadian Arctic," he said.

Guides for Lancaster Sound and the Beaufort Sea will be released over the next couple of years, WWF-Canada said.

Given the possibility of expanded shipping through Lancaster Sound from the Milne Inlet port, which serves Baffinland's Mary River iron mine, Dumbrille says compiling a map for that area will take priority for WWF-Canada over the next year.

"For Milne [Inlet] and Eclipse [Sound] the potential for winter shipping is there. We haven't seen it yet, but it's anticipated in years to come," Dumbrille said. "It's really pressing that we need a mariners guide for that region."

High volumes of shipping traffic produce noise that can disrupt feeding patterns for marine animals, as well as disrupt communication and wayfaring for mammals such as whales.

Pollution from heavy-use transport zones or oil spills also runs the risk of irreversibly damaging marine ecosystems.

"This guide should be on every ship that passes through the Hudson Strait," said Fednav's director of government affairs and sustainability, Marc Gagnon in a May 25 statement.

"These kinds of tools go a long way to making sure our shipping practices only add value to northern communities."

May 26 2017. http://www.nunatsiagonline.ca/stories/article/65674new_nautical_maps_identify_nunavut_wildlife_hazards_for_ships/

The Seven Seas: In July I attended this year's Convocation Ceremony for Nautical Science and Marine Engineering students at the British Columbia Institute of Technology. A speaker, referring to the seagoing experience of one graduate, suggested he had 'Sailed the Seven Seas'. But had he? I remember ongoing discussions in a nautical journal many years ago about the meaning of 'Seven Seas'. So I referred to Google.

The phrase "sail the Seven Seas" has had different meanings to different people at different times in history. Ancient Hindus, Chinese, Persians, Romans and other cultures, mention the term "Seven Seas". The term historically referred to bodies of water along trade routes and regional waters; although in some cases the seas are mythical and not actual bodies of water.

The term "Seven Seas" has evolved to become a figurative term to describe a sailor who has navigated all the seas and oceans of the world, and not literally seven.

Why 'seven'? The number seven has a great deal of historical, cultural and religious significance: lucky number seven, seven hills of Rome, seven days of the week, seven wonders of the world, seven dwarves, seven days of creation, seven Chakras, seven ages of man, seven deadly sins and seven virtues — just to name a few.

The term "Seven Seas" can be traced to ancient Sumer in 2300 B.C., where it was used in a hymn by Sumerian high priestess Enheduanna to Inanna, the goddess of sexual love, fertility and warfare.

To the Persians, the Seven Seas were the streams forming the Oxus River, the ancient name for the Amu Darya, one of the longest rivers in Central Asia. It rises in the Pamir Mountains and flows northwest through the Hindu Kush and across Turkmenistan and Uzbekistan to the Aral Sea.

To the ancient Romans, the *septem maria*, Latin for Seven Seas, referred to a group of salt-water lagoons separated from the open sea by sandbanks near Venice. Pliny the Elder, a Roman author and fleet commander, documented this.

The ancient Arabs defined the Seven Seas as the ones they sailed on voyages along their trading routes with the East. They were the Persian Gulf, the Gulf of Khambhat, the Bay of Bengal, the Strait of Malacca, the Singapore Strait, the Gulf of Thailand and the South China Sea.

The Phoenicians were expert sea traders and their sailors set out to in search of markets and raw materials. Their Seven Seas — Alboran, Balearic, Ligurian, Tyrrhenian, Ionian, Adriatic and Aegean — were all part of the Mediterranean.

The Greeks and Romans gave rise to the medieval definition of the Seven Seas. During this time, references to the Seven Seas meant the Adriatic Sea; the Mediterranean Sea (including the Aegean Sea); the Black Sea; the Caspian Sea; the Persian Gulf; the Arabian Sea (which is part of the Indian Ocean); and the Red Sea, including the Dead Sea and the Sea of Galilee.

During the Age of Discovery (1450-1650), after Europeans began exploring North America, the definition of the Seven Seas changed again. Mariners then referred to the Seven Seas as the Arctic Ocean, the Atlantic Ocean, the Indian Ocean, the Pacific Ocean, the Mediterranean Sea, the Caribbean Sea, and the Gulf of Mexico. Other geographers identify the Seven Seas at that time as the Mediterranean and Red Seas, Indian Ocean, Persian Gulf, China Sea, and the West and East African Seas.

The Colonial era, which saw the tea trade sailing from China to England, gave rise to another description of the Seven Seas: the Banda Sea, the Celebes Sea, the Flores Sea, the Java Sea, the South China Sea, the Sulu Sea and the Timor Sea. Their expression "sailed the Seven Seas" meant sailing to the other side of the world and back.

Modern Seven Seas: The modern list of the Seven Seas widely accepted by geographers actually lists the oceans.



North Atlantic Ocean: the portion of the Atlantic Ocean that lies primarily between North America and the northeast coast of South America to the west, and Europe and the northwest coast of Africa to the east.

South Atlantic Ocean: the southern section of the Atlantic Ocean, extending southward from the equator to Antarctica.

North Pacific Ocean: the northern part of the Pacific Ocean, extending from the equator to the Arctic Ocean.

South Pacific Ocean: the lower segment of the Pacific Ocean, reaching southward from the equator to Antarctica.

Arctic Ocean: the smallest of the Seven Seas, it surrounds the North Pole.

Southern Ocean: also known as the Antarctic Ocean, it consists of the southern portions of the Pacific, Atlantic, and Indian oceans and their tributary seas. It is the newest ocean, being designated by the International Hydrographic Organization in 2000.

Indian Ocean: stretches for more than 6,200 miles (10,000 km) between the southern tips of Africa and Australia.

<https://www.livescience.com/27663-seven-seas.html>

Also take a look at: -

<https://oceanservice.noaa.gov/facts/sevenseas.html> and <https://www.theguardian.com/notesandqueries/query/0,-7733.00.html>

Another speaker at the Ceremony, an engineer, told how he often wished he'd been a deck officer. He well remembered his Grade 7 teacher chastising him for staring out of the classroom window at the beautiful sunny day outside. The teacher told him to get on with his work and study hard because "nobody will ever pay you to look out of a window".

Churchill, Man., weighs risk of climate change on future of port, railway. Warming climate opens up opportunities for port but could pose problems for railway:

The promise of a longer shipping season for the now-closed port in Churchill has policy makers and potential investors speaking optimistically about the opportunities climate change might create for the northern Manitoba town in future.

As sea ice melts and the water on Hudson Bay clears, there are proposals to reopen the port. But at the same time, the land underneath the railway that feeds the port, a line already damaged by spring flooding, will become less stable as permafrost melts.

"It is a paradox, of sorts," said Danny Blair, a professor of geography at the University of Winnipeg and researcher with the Prairie Climate Centre.

When spring flooding washed out sections of the Hudson Bay Railway line, it cut the only land link to Churchill, a community roughly 1,000 kilometres north of Winnipeg, which was already struggling after the closure of the port last year.

Manitoba Premier Brian Pallister said any redevelopment plan for the railway needs to include the port, as the two are inextricably linked. "We need to begin to understand better what the future of that port is. That relates to the discussion around rail and other discussions around a potential road link as well."

- **'It's about time to build a road to Churchill': Engineer says it's possible**

Pallister said the Port of Churchill is Canada's only inland deep-sea port and a part of the mid-continental trade corridor. "The port has intrinsic advantages. With climate change, the port will have a broader season, potentially, than it's had."



Advantages for port, challenges for railway: The warming climate has already added a month to the shipping season in Hudson Bay compared to 30 years ago, said University of Manitoba climate scientist David Barber.

The number of ice-free days has been increasing every year by an average of about 1.14 days.

Between 2030 and 2050, Barber said some models predict sea ice in the bay could start to look more like that found in the Baltic Sea, where shipping is open year-round.

But as the water in Hudson Bay warms, so does the land, and that raises questions about viability of the railway, much of which is built over permafrost.

Churchill in 'a desperate situation,' resident says, 1 month into rail service suspension

Researchers at the Prairie Climate Centre used 12 different climate models to create the [Prairie Climate Atlas](#), which gives different predictions of how much the climate could change depending on how much carbon dioxide humans emit over the coming decades.



Even if countries around the world take aggressive action to reduce carbon emissions — the main driver of global warming — the researchers predict Churchill could see the average number of days per year that reach -30 C or colder fall from roughly 44 to 23 by 2050. By 2080, that number could fall to 10 per year.

That has a big impact on the stability of the railway.

"That railway, a good portion of it, is built on permafrost and it's always been a challenge to make sure that railway bed is solid and safe and stable," said Blair. "Even more so in the future — you can't rely upon that solid ground that is based upon permafrost."

A warmer climate not only means more annual precipitation, but more variable precipitation. Instances of extreme rain and snowfall — such as the two massive late-winter snowstorms leading to this spring's flooding that washed out the railway in at least 24 places — could become more common.

- [Battling Mother Nature, again: Manitoba town of Churchill tackles high water levels, flooding](#)
- [1st train in 3 weeks arrives in Churchill following blizzards](#)

"We will get some really heavy precipitation events in the future climate," said Blair.

Groups looking to buy railway, port: Two separate groups have expressed interest in buying the port and railway from Denver-based Omnitrix, which took over ownership and operation of the port and railway in 1997.

- **Northern group signs deal to buy Port of Churchill and rail line**

Churchill Mayor Mike Spence is co-chair of one of those groups, One North — a consortium which includes municipalities and First Nations in northern Manitoba, along with the Kivalliq Inuit Association in Nunavut. He's among those who see opportunities in the loss of sea ice for his community.

"Even now, when I look out on the bay, you see bits and pieces of ice. It's not like it was years ago," said Spence.

He believes that expertise exists that can find ways around the problems climate change will cause.

"With climate change, yeah, it brings you challenges but it also brings you opportunities, so I think we can get through that."

Chief Arlen Dumas of Mathias Colomb Cree Nation leads the Mississippi Rail Consortium, the other First Nations group looking to purchase the rail line. He dismissed the idea that climate change will hurt the viability of the railway.

"I think that everybody's going to have to adjust to how we move forward, but the issue of a rail line is not made any more difficult," he said.

Cameron MacLean, CBC News. Jul 08, 2017

There is more to this story and it can be found at: -

<http://www.cbc.ca/news/canada/manitoba/churchill-climate-change-port-railway-1.4193531>

That completes this edition of "From the Bridge". The next will appear in late November. Please send any items for that edition to me by November 20th. My address is whitknit@telus.net.

Will you be able to attend the Seminar in Vancouver on September 29th? If so, remember to register. Full details of this and the AGM are on the Company's website <http://www.mastermariners.ca>.

Not able to attend the AGM in Vancouver? Don't forget to vote by Proxy.

Enjoy the remainder of your summer. Sincerely, David Whitaker FNI.

Last minute items. Great reading. Courtesy of Captain Alan Knight. Maritimes Division.

Flashback in history: Sinking of *SS La Bourgogne*, 4 July 1898 with the loss of 549 lives.

<https://maritimecyprus.com/2017/07/02/flashback-in-history-sinking-of-ss-la-bourgogne-4-july-1898-with-the-loss-of-549-lives/>

Investigation report: Cruise ship *Carnival Liberty* engine room fire.

<https://maritimecyprus.com/2017/07/05/investigation-report-of-cruise-ship-carnival-liberty-engine-room-fire/>

(Note: I had difficulty opening these two links until I copied and pasted them to my browser.)

Speaking of navigation..... BBC:Voyager: Inside the world's greatest space mission.

<http://www.bbc.com/future/story/20170818-voyager-inside-the-worlds-greatest-space-mission?ocid=ww.social.link.email>