



The Deck Log

Newsletter

Master Mariners of Canada (MMC)

NL Division

July – September 2024

Any opinions, expressed in this newsletter, are those of the author and do not necessarily represent the views of the Master Mariners of Canada (MMC), NL Division. Editor: Glenn Fiander

July & August, 2024

No monthly division meetings held, during the summer.

July 8th to July 10th, 2024

The training ship *State of Maine* paid a visit to St. John's. It is owned by the United States Maritime Administration and operated by Maine Maritime Academy. One of 6 such training vessels being operated by six different marine training schools in the US. *State of Maine* undertakes annual summer training cruises for both 1st and 3rd year deck/ engineering cadets. This year, crossing the Atlantic to visit Spain and Portugal before visiting St. John's. There were 202 students, 25 faculty and 20 crew onboard. The students largely operating the vessel, under supervision of the faculty and crew. This is likely the vessel's last cruise, as it is due to be replaced by a new vessel in the coming year.



State of Maine docked in in St. John's

During the vessel's stop in St. John's, MMC NL Division, and the Marine Institute organized some events for the vessel's crew.

- There was a reception, held at the Crow's Nest, for the officers and senior cadets.
- Tours were arranged of Marine facilities.
- Cadets from the vessel got to participate in a simulator exercise, for a good friendly competition. An exercise from the last Nautical Skills completion was utilized.

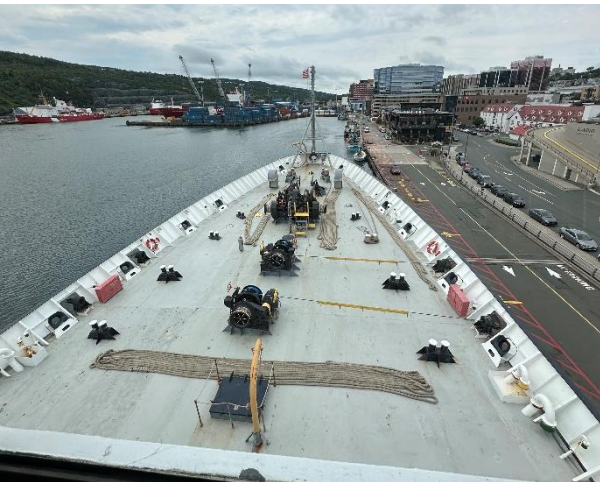
In turn, Captain Gordon MacArthur invited NL Division members, and Marine Institute personnel, for a tour of the vessel and lunch.



Social at the Crow's Nest



Navigation Exercise at the Marine Institute



State of Maine Tour

Sept. 10th, 2024

A Merchant Navy Memorial Service was held on September 10th, 2024, to recognize the contribution and sacrifice of Canadian merchant seafarers to the victory in World War II. Jointly organized by MMC NL Division and the Marine Institute. NL MMC division members attended and Divisional Master, Captain Jim Parsons, was MC for the ceremony. A wreath was laid on behalf of the NL MMC Division.

During WWII, over 333 Newfoundland Merchant seamen, including one woman, lost their lives. Canada lost over 70 ships and 2,000 Merchant Navy Personnel, including 8 women radio officers and stewardesses. The Merchant Navy lost 1 in 8 persons, or at the peak of the Battle of the Atlantic, 1 in 4 – more personnel lost than the armed forces.

In 1995, a small committee of Merchant Navy Veterans met and decided to erect a Memorial to those who were lost and to all who served. With the cooperation and assistance



of Government, and other bodies, they were successful in establishing that Merchant Navy Memorial. It was unveiled on August 29th, 1997 and is located on the grounds of the Marine Institute of Memorial University, 155 Ridge Road, St. John's. Listed on the Memorial are the names of all 333 Newfoundland Merchant Navy Personnel who lost their lives. In 2003, September 3rd of each year was proclaimed as Merchant Navy Veterans Day.



Captain Parsons, Speaking at the Memorial Service



Merchant Navy Memorial Service Sept. 12th, 2024



MMC NL Division Members, at the Merchant Navy Memorial Service

Sept. 12th, 2024 Monthly Meeting

The monthly meeting, for September, took place at the Crow's Nest (12 present) and also conducted by MS Teams (3 present). One member phoned in.

Divisional Master, Captain Jim Parsons, opened the meeting and welcomed all members present at the Crow's Nest and via MS Teams.

The agenda was adopted, as presented, and the minutes from the previous meeting were adopted without any

Officer Reports

- Divisional Master, Captain Jim Parsons reported:

Merchant Navy Veterans Day Ceremony: Captain Parsons stated that there was a good turnout for the ceremony but would like to see more people attend, and it is critical that the Master Mariners support such initiatives. There were minor audio challenges and Captain Parsons recommended next year to complete a sound check and have someone walk the periphery prior to the start of the ceremony.

The "Imagine Marine Conference 2024" will take place in Ottawa October 2 & 3, 2024. Captain Parsons will be moderating a session entitled **Increasing Seafarer Training Capacity and Accessibility** with other marine industry representatives including Captain Tony Patterson and Jennifer Howell. Canada needs to hire 19,000 new seafarers in the next 10 years, but obstacles exist to increase the training of Canadian mariners. This session delves into these challenges and what solutions can be deployed to improve the ability to access training, including the required sea time for certification. Captain Parsons is seeking input from members prior to the conference. More details are found below.

- Treasurer:

Our Treasurer, Captain Sean Quinlan, was at sea and will provide an update at our October meeting.

- Membership:

Captain Richard Edwards, Assistant Div. Master – Membership was unable to attend the meeting.

Captain David Stone recently joined as a full-time member.

Captain Phil Lind, National Membership Chair stated that membership is growing in all divisions. There will be a new division created, titled Laurentian, with the Capital Division becoming a subcategory of that division.

Captain Lind also stated that they are working through issuing certificates for all new full-time members that have paid. This process will need to be streamlined to ensure all certificates are issued. Certificates are now digital and can be printed in PDF format. There may be a way for the divisional treasurers to indicate a person has paid and then the National Membership Chair would be able to easily determine who the new members are and issue certificates.

The process to become a member of the Master Mariners of Canada has been simplified to a 4-step process:

1. Open the MMC webpage [Home - Master Mariners of Canada](#)
2. Click the link:” Become a Member”
3. Click on the Division that you would like to join
4. Complete the application form and click submit

- Special Events:

Captain Kris Drodge was unable to attend the meeting but provided the following updates.

There are plans to organize a fundraiser to the Seafarers Wellness Center initiative and this will occur in Q1, 2025.

Captain Drodge is also working on a Christmas get together for our members.

- Secretary, Captain Ray Dalton reported:



Sept. 12th Monthly Meeting

Captain Dalton stated he is updating the monthly agenda and adding the following sections as standing agenda topics:

- Seafarers Wellness Center
- Nautical Science Society
- Nautical Skills Competition

National Update

Captain Eben March, National Master reported:

The Master Mariners of Canada website will be available in English and French.

The AGM will be held in Ottawa on Thursday afternoon and Friday October 3 & 4, 2024 following the Imagine Marine Conference 2024.

The National treasurer is seeking assistance and is looking for someone to help her out and possibly take over the role at a later date. The person in this position does not need to be a member of the Master Mariners of Canada. Captain March asked everyone to see if they could recruit someone for that role.

National is also looking for a treasurer for the Master Mariners Foundation. The Foundation operates separately from the Master Mariners, with its own funds, and is used to fund scholarships and bursaries for Nautical Skills competition.

Captain March stated that at the upcoming AGM they will discuss issuance of certificates that have resulted from Corporate memberships. The initiative to allow corporate memberships have seen a great increase in corporate members, new members and has increased revenue in all divisions but they need to work out who receives a certificate. If a person is included in a corporate membership and has a command endorsement, they should receive their individual certificate as they will have voting privileges.

Nautical Science Society (NSS)

Two Nautical Science students gave an update on the first meeting of the Nautical Science Society. The Nautical Science Society was restarted late last year, after being dormant for several years.

- All Nautical Science students are automatically a member of the society.
- The NSS is a sub committee of the MI student council.



Sept. 12th Monthly Meeting

- There is a lot of interest for students wanting to join the executive.
- There may be funding available through the MI student council.
- The Master Mariners are also willing to help and keep closely connected with the NSS.
- There is a new NSS executive position for Liaison and this position will work with the MI student council.

Imagine Marine Conference 2024

The Canadian Marine Careers Foundation (CMCF), in partnership with Master Mariners of Canada (MMC), will be hosting its inaugural IMAGINE MARINE CONFERENCE 2024 for the marine shipping industry from October 2-3, 2024, in Ottawa, Ontario. This national workforce development conference will bring together marine sector stakeholders, speakers and HR/EDI experts and resources to share best practices, inspire ideas and develop strategies and solutions to Elevate Marine's Recruitment and Retention Game in the face of increasing talent shortages in Canada's competitive labour

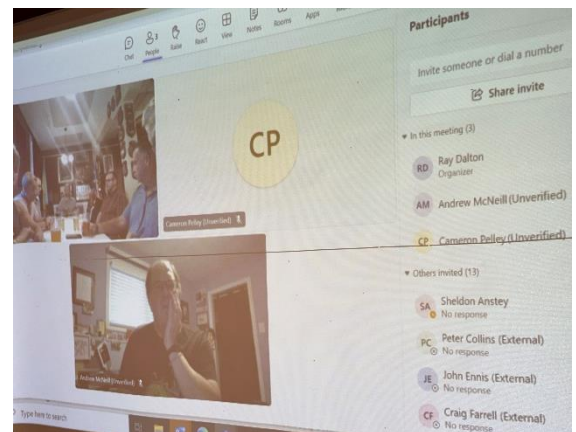
Link: https://imagine-marine.ca/im-conference?utm_source=CMCF+Newsletter&utm_campaign=5635ec2edd-EMAIL_CAMPAIGN_2024_07_11_01_11_COPY_01&utm_medium=email&utm_term=0_ffc0203d5c-%5BLIST_EMAIL_ID%5D

Keynote Addresses

- Angela Splinter, CEO of Trucking HR Canada
- Nancy Andrews, Chief Engagement and Communications Officer at Canada's Ocean Supercluster

Programs

- Leadership in Action: Confronting Marine Skills Shortages for a Sustainable Future
- Moving the Needle on Advancing Gender Diversity at Sea and On Shore
- Creating New Pathways into the Marine Sector
- Workplace Wellness
- Level Up: Next Steps in Building a Vibrant Indigenous Marine Workforce
- The Future Marine Worker
- Level Up Workshop: Inclusive Recruitment, From Job Ad to Onboarding
- Increasing Seafarer Training Capacity and Accessibility



Sept. 12th Monthly Meeting

- Increasing Seafarer Training Capacity and Accessibility

Merchant Navy Memorial - upkeep

The Merchant Navy Memorial is located in front of the Marine Institute. The Master Mariners of Canada have taken it over from the Canadian Merchant Navy Veteran’s Association, to keep the ceremonies going. This is in collaboration with the MI who provide logistical support as well as covering some of the costs.

There are two areas that need to be addressed:

1. The monument grounds upkeep falls under the Pippy Park Commission and is not being kept up to the standard that it deserves.
2. The list of names on the monument is not complete and there is no clear way to add names that deserve to be on the monument.

There was a general discussion among the members regarding the best way to manage this. One suggestion was for the MMC to organize a spruce up of the grounds a couple of times a year and set up a process where any new names could be added on an annual basis. Another suggestion was to procure government funding either through Veteran Affairs division of the Federal Government or through the Provincial Government.

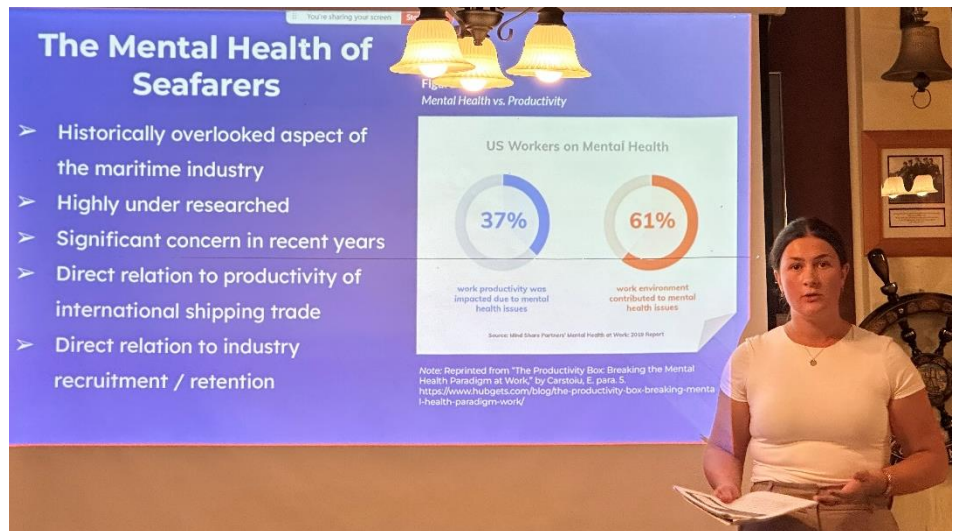
Captain Chris Hearn is planning on having a meeting in the near future to see if we can get action on these issues.

Presentation

Nautical Science student presentation entitled “Sailing Through Storms: Unveiling the Mental Health Challenges of Seafarers”.

Megan Fiander, a second year Nautical Science student is heading to the Massachusetts Maritime Academy in October to present at the International Association of Maritime Universities (IAMU) conference.

Megan wrote a very strong paper in her term two communications class, and she subsequently had the paper accepted by IAMU-S (student stream of conference) and will in turn present on it during the October 8th conference.



Megan Fiander Presenting at the Sept. 12th Monthly Meeting

Megan gave a very powerful presentation on a topic and there was good discussion with all present to help Megan clarify some items. All agreed that Megan will do a great job in delivering her presentation and representing the Marine Institute and the Master Mariners of Canada.

Nautical Trivia

In the last edition (Apr. – June 2024) of the Deck Log, I asked what is the world's largest fastest container ship. The answer was the seven vessels of the Maersk B class, at 37 knots. That edition is found on the MMC website at: <https://www.mastermariners.ca/wp-content/uploads/2024/07/2024-2-The-Deck-Log-Apr-Jun.pdf> Although very fast, these containers vessels are not the fastest vessels ever built.

Question, what is the world's fastest vessel?

Commercial and military vessels, that is. For comparison, have included some high speed racing, recreational craft and others. The answers vary dependant on vessel type being referred to.

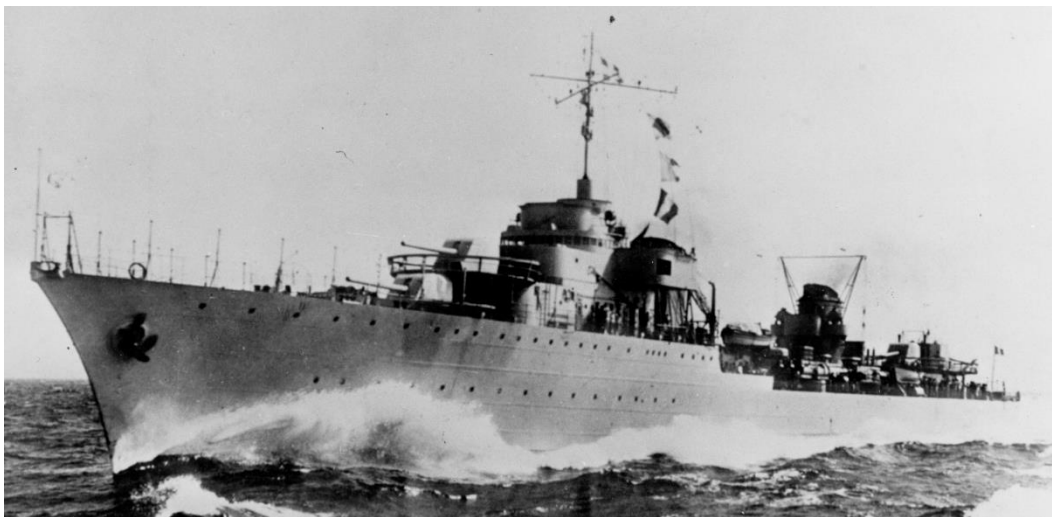
Answer (for high speed catamarans): HSC Francisco at **58 knots**. Displacement 1,516t, 59,000hp. Waterjet propulsion. Ferry running on a 146 mile route between Buenos Aires, Argentina and Montevideo, Uruguay.



HSC Francisco Source:

https://upload.wikimedia.org/wikipedia/commons/4/44/Francisco_D%C3%A1rsena_Norte_-_01.jpg

Answer (for conventional hulled naval vessels with propellers): Le Terrible at **45.02 knots** (trials 43.8 knots). French Navy destroyer (1 of a class of 6), in service from 1935 to 1955. Displacement 3,417t, 73,000shp, scrapped, conventional propellers.



Le Terrible Source:

https://en.wikipedia.org/wiki/French_destroyer_Le_Terrible#/media/File:Le_Terrible_NH_86548.jpg

Answer (for semi-planing monohulled naval vessels): Freedom Class littoral combat ships at **47 knots**. Displacement 3,500t, 96,000hp, waterjet propulsion, in service.



USS Minneapolis-Saint Paul

Source: <https://www.twz.com/wp-content/uploads/content-b/message-editor%2F1628012871534-uss-minneapolis-saint-paul-lcs-21.jpg?strip=all&quality=85>

Answer (for hydrofoils): HMCS Bras d'Or at **63 knots**. Experimental Canadian Navy hydrofoil. In service from 1968 to 1971. Displacement 240t, 25,500hp, high speed propellers. Now preserved at the Musée Maritime du Québec at L'Islet-sur-Mer, Quebec.



HMCS Bras d'Or

Source: <https://legionmagazine.com/the-winged-ship/>

Answer (for surface effect craft): Skjold Class corvettes at **60 knots** (calm seas). Displacement 274t, 16,300hp, waterjet propulsion. These vessels use a fan-blown skirt compartment between the two rigid catamaran-type hulls. They ride on a cushion of air, similar to a hovercraft. Except that the flexible skirts are located only at the bow and stern. In service.



***Skjold Class* Source:**

https://www.reddit.com/r/Warthunder/comments/t7ioh6/gaijin_pls_add_the_norwegian_skjoldclass_corvette/

Answer (for submarines): Soviet submarine K-222 at **44.7 knots** (underwater), 25 knots on the surface. Displacement 5,197t, 80,000shp, 2 propellers. In service from 1969 to 1988, scrapped 2010.



***K-222* Source:**

https://upload.wikimedia.org/wikipedia/commons/1/1c/Papa_class_submarine_2.jpg

Getting back to a comparison with the previous mentioned container ships, that can achieve 37 knots. Answer (for conventional hulled merchant vessels): SS United States at **39.38 knots** (trials). This American ocean liner was in service from 1952 to 1969.

During the Second World War, ocean liners were seized or requisitioned and used to transport soldiers between various fronts. In 1945, the US Maritime Commission requested designs for a ship that could handle the role for future conflicts. The United States was partially paid for (roughly 60%) with government funding. In event of war, the plan was to use the liner as a troop ship. Onboard furnishings could have been easily removed, to make

room for a 14,400-man US Army division. Vessel size and speed providing the ability to rapidly deploy a division anywhere in the world, without the need to refuel (10,000 miles at 30 knots).

Vessel Name	<i>United States</i>	
Length	302 m	
Beam	30.9 m	
Draft	9.86 m	
Displacement	47,264 t	
Gross Tonnage	48,853 t	
Passenger Capacity	1,928	
Crew	1,044	
Propulsion	180,000 kW (240,000 shp), steam turbines, 8 boilers. 4 shafts & single rudder.	
Cruising Speed	30 knots, 56 km/h	
Maximum Speed	39.38 knots (trials), 72.93 km/h 22.7 knots going astern Note: 43 knots was achieved, for a short time, during trials.	
Fuel Consumption	755 t per day (30 knots), 1,678 t per day (all boilers running at full power)	

Taking into account possible wartime damage, when being utilized a troopship, the vessel was built to a higher standard than most passenger liners. There were 2 engine rooms, so has the vessel could continue operations if 1 were put out of action (say for a torpedo strike). Two shafts remaining in operation &, depending on the level of vessel damage, still able to steam at 27 to 28 knots. The vessel was more heavily compartmentalized, so has to handle greater levels of flooding. To guard against fire, most of the vessel was constructed of fireproof materials. The only wood onboard reported to be the butcher's blocks & the pianos.



SS United States Source: <https://www.ssusc.org/history-the-glory-years>



SS United States Source:

https://images.squarespace-cdn.com/content/v1/5df6b4db88a9697f28878602/1582763906752-Z185KCFWIR6UP1S01E6I/44_SSUS+copy.png?format=1500w

The propulsion plant was the same as used for an aircraft carrier. There was plenty of power in reserve. At the 30 knot service speed, only 6 of 8 boilers were used (at 60% of their total capacity). It was speculated that the turbines could not use all of the steam that the plan could produce, at full output. At high speeds exhaust fan capacity, to get rid of boiler exhaust, was somewhat limited. Had there had been more exhaust capacity, it was speculated that 50 knots might have been possible. Of course, coming with a greatly increased fuel consumption.



SS United States, On Trials Source:

https://images.squarespace-cdn.com/content/v1/5df6b4db88a9697f28878602/1580769312027-R5T793DVTA1ALXTWKZP0/speed_trials+copy.jpg?format=1000w

The speedy liner also resulted in bragging rights for the Americans. On the maiden voyage *United States* broke the eastbound transatlantic speed record that was held by Cunard's RMS *Queen Mary*, by more than 10 hours. Making the maiden crossing from the Ambrose lightship (at New York Harbor) to Bishop Rock (off Cornwall), UK in 3 days 10 hours 40 minutes. With an average speed of 35.59 knots. On the return voyage *United States* also broke the westbound transatlantic speed record, also held by *Queen Mary*, by returning in 3 days 12 hours 12 minutes. With an average speed of 34.51 knots. Winning the Blue Riband (Hales Trophy), an unofficial accolade given to the passenger liner crossing the Atlantic Ocean, in regular service, with the record highest average speed. The record remains unbroken, by a passenger liner.

The liner was maintained by the US Government, until being sold in 1980. Over the years, there were various proposals to turn the vessel into a cruise ship, convention center, hotel, shopping center or museum. None came to pass & the *United States* now remains moored in Philadelphia. However, as options for further utilization of the liner have been unsuccessful, it has been recently announced that the liner will be sunk off the coast of Florida. There it will serve on as an artificial reef for the use of recreation divers.

For comparison, here are some much smaller high speed craft.

Answer (for boats specifically designed to break speed records):
Spirit of Australia at **300 knots**
(275.98 knots for the 2 way run required for the water speed record).
Record set in 1978, on a reservoir (smooth water) in Australia. Any wave action being undesirable, at such speeds. Powered by a jet engine putting out roughly 2,700 hp.
Displacement, not much at such speed.



Spirit of Australia Source:

https://en.wikipedia.org/wiki/Water_speed_record#/media/File:Spirit_of_Australia.jpg

Answer (for super yachts): Bolide 80 model at **73 knots**. 6,000hp from 3 diesels. Fuel consumption, 11 litres per mile at 40 knots, 13 litres per mile at 55 knots & 16 litres per mile at 70 knots. However, if you can afford this 24.9m yacht, the high fuel bill should not be an issue.



Bolide 80 model Source:

<https://cdn.boatinternational.com/convert/files/2023/06/72f09410-103e-11ee-a261-1186e2956f76-bolide-80->

Answer (if you want a larger yacht with more creature comforts): *Foners* at **70.1 knots**. 3 x 6,700 gas turbines & 2 x 1,280hp diesels drive 3 water jets. One of the creature comforts is a bullet proof lining for the superstructure.



Foners Source: <https://cdn.boatinternational.com/convert/images/20200305/1-241689I-2560x1440.jpg/r%5Bwidth%5D=1920/1-241689I-2560x1440.webp3.jpg/r%5Bwidth%5D=1920/72f09410-103e-11ee-a261-1186e2956f76-bolide-80-3.webp>

In the News

Grounding

On June 25th, 2024 a 80m cargo ship *Baltic Arrow* went aground (photos next page) on the River Nene near Cambridge, UK. Wedging itself diagonally into both banks and fully blocking the narrow waterway. The bulker went aground at the bow and the stern while inbound for the port of Wisbech, an inland port located about 30 miles due north of Cambridge. Water levels, in the Nene, had been pretty low, prior to the grounding. The *Baltic Arrow* grounded at a low tide and was refloated at the next high tide, on the same day. Tugs were brought in to assist. Wisbech is a port where vessels routinely operate with the expectation that they will go aground at their berth. The river is so shallow that the daily fluctuations in its depth will leave vessels resting on the muddy bottom at low tide - a so-called "not always afloat but safely aground" (NAABSA) mooring arrangement.



***Baltic Arrow* aground Sources: (photo directly above)**

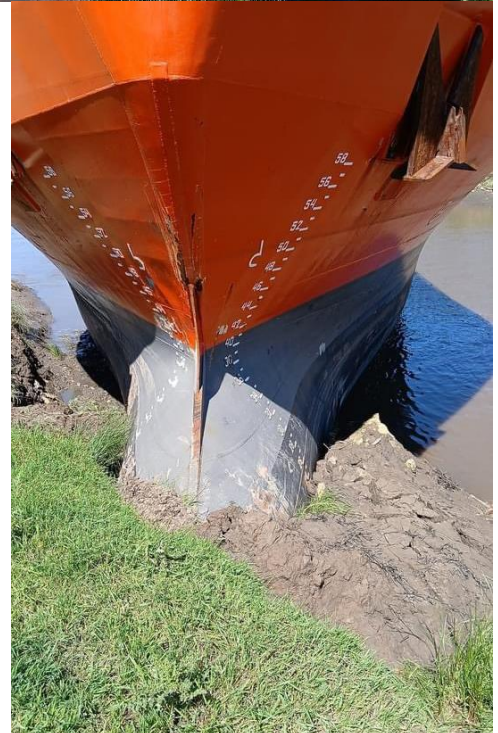
[https://www.lynnnews.co.uk/ media/img/1BBEILUNGNNMXWPPS7DN.jpg](https://www.lynnnews.co.uk/media/img/1BBEILUNGNNMXWPPS7DN.jpg)

(other 4 photos): <https://www.maritime-executive.com/article/ever-given-2-bulker-goes-aground-at-both-ends-on-river-nene>

Baltic Arrow is a regular visitor, and it is designed to safely operate in a grounded condition. As dramatic as the grounding may appear, it was expected that the vessel was undamaged by the contact with the "soft and sludgy" riverbed, and would likely return to service without a need for repairs. No official report available, as to the cause of the incident. Looking at the high water mark in the photos, even when the tide is high, there isn't much water under the keel or manoeuvring room, for that matter.

Similar to when the container ship *Ever Given* blocked the Suez canal in 2021. However, with slightly less economic impact and vessel damage. See article in the Oct. – Dec. 2021 of the Deck Log. That edition is found on the MMC website at:

<https://www.mastermariners.ca/wp-content/uploads/2022/07/2021-4-The-Deck-Log-Oct.-Dec..pdf>



The outcome for the *Baltic Arrow* was much better than that of the *Lagik*. In December 2000 that vessel also went aground (bow & stern) on the River Nene, while attempting to make a 180° turn, in a turning basin. When the tide dropped, the result was quite different. The combination of the weight of the steel cargo and the falling tide, broke the vessel's back. The vessel was a total constructive loss and the river closed for 44 days.



***Lagik Aground* Source:**

<https://www.shipspotting.com/photos/1918293>

More photos found in the report noted below.

***Lagik Aground* Source (photo right):**

https://live.staticflickr.com/65535/51855679557_a84d8638f3_z.jpg



A report on the *Lagik* grounding can be found at:

<https://assets.publishing.service.gov.uk/media/547c712de5274a429000010f/lagik.pdf>

Bulk Carriers Collide

In July 2024, the LNG fueled bulk Carrier HL ECO, lost power while manoeuvring to anchor and collided with the bulk carrier YM Serenity. The video, at this link: https://gcaptain.com/watch-dramatic-collision-between-bulk-carriers-off-queensland-coast/?subscriber=true&goal=0_f50174ef03-78322cb9b0-139902913&mc_cid=78322cb9b0&mc_eid=8fb15eb136 , shows contact with the LNG fuel tank. Fortunately the tank was empty, preventing a potential explosion/fire. Screen captures from the video, shown on the next page.



Screen Captures Source: https://gcaptain.com/watch-dramatic-collision-between-bulk-carriers-off-queensland-coast/?subscriber=true&goal=0_f50174ef03-78322cb9b0-139902913&mc_cid=78322cb9b0&mc_eid=8fb15eb136

Tariff Request for Chinese-built Ships

In August, the Canadian Marine Industries and Shipbuilding Association issued a call for the Canadian government to impose a 100 percent tariff on Chinese-built ships, as a step to protect domestic capabilities and national security. See a complete article at: <https://maritime-executive.com/article/canadian-shipbuilders-calls-for-100-percent-tariff-on-chinese-built-ships>

In the Jan. – Mar. 2022 & April – Sept. 2023 editions of the Deck Log, there are articles on the vessel being built to replace the research vessel CCGS Hudson. Those editions are found on the MMC website at: <https://www.mastermariners.ca/wp-content/uploads/2022/07/2022-1-The-Deck-Log-Jan.-Mar..pdf> & https://www.mastermariners.ca/wp-content/uploads/2023/11/2023-2_3-The-Deck-Log-Apr-Sept.pdf . Using the Hudson replacement, as an example of the cost of building a ship in Canada: If a 100% tariff were to be implemented, would it be enough to make Canadian yards competitive, from a cost point of view?

Have you written any articles or papers that you feel might be of interest to those who read the Deck Log? Do you know the authors of any articles or papers that might be of interest to those who read the Deck Log? Space is being made available here, and in future newsletters, for those who may wish to have those articles or papers published/republished.

Please forward any submissions to glenn.fiander@mi.mun.ca, for consideration. If you are not the author, please have the author provide consent to publish. Any submissions will be published, as received, without any editing. The editor reserves the right to not publish any submissions that may be deemed inappropriate. Such decisions would be made in consultation with the members of MMC NL Division.

For this edition, we have a paper written by Megan Fiander. Megan, a 2nd year Nautical Science student at the Marine Institute and cadet member of the MMC NL Division, presented this paper at the International Association of Maritime Universities (IAMU) conference. The conference was held at the Massachusetts Maritime Academy, in October. Indications are that the paper was very well received by an international panel of maritime researchers and professionals. She also presented the paper at the MMC NL Division September monthly meeting (see page 8 above). Thanks to Megan, for submitting her paper for publication in the Deck Log.

See the paper, starting on the next page.

Sailing Through Storms: Unveiling the Mental Health Challenges of Seafaring Professionals

By: Megan Fiander

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Abstract: The mental health of seafarers, a crucial yet often overlooked aspect of maritime industries, has become a significant concern in recent years. Although seafarer's mental health relates directly to the productivity of the international shipping trade, there remains a severe lack of information on seafarers' unique work environments and how those distinct environments affect their mental health. The World Health Organization (2022) lists excessive workloads, long, unsocial or inflexible hours, and conflicting home/work demands as some of the top contributors to mental illness in the workplace. Yet, seafarers are expected to work irregular hours with limited rest in increased isolation levels. This combination of risk factors makes the nature of their work physically exhausting and mentally taxing. Additionally, seafarers are expected to spend a substantial amount of time away from home, with many spending over half the calendar year away from their homes and families (Seafarers' International Union of Canada 2021). Being away from loved ones for extended periods can be very lonely. According to Amy Novotney of the American Physiological Association (2019), loneliness has been found to raise levels of stress, disrupt sleep patterns, and, in turn, harm the body. Although measures are in place to aid those struggling, these measures are far from satisfactory. This paper reviews the multifaceted challenges faced by seafarers, exploring the unique stressors and contributing factors that impact their psychological well-being. The nature of maritime professions, characterized by prolonged periods of isolation, demanding work schedules, and limited access to support systems, exposes individuals to heightened vulnerability. It is, therefore, essential to the health of seafarers that this matter be further investigated while also delivering solutions that help to reduce risk. The initiative to recognize and mitigate this growing issue must begin at the root of the cause: education. Implementing programs to help seafarers recognize and learn to address mental illness will help promote destigmatization and foster a culture of open communication amongst seafarers and stakeholders in the maritime industry (Committee on the Science of Changing Behavioral Health Social Norms 2016).

Keywords: Mental Health, Stigma, Seafarers, Education, Prevention.

1. Introduction

As the maritime industry continues to prosper, it is essential to recognize the unique needs of its employees. Optimal health care, specifically mental health care, must be made available to all seafarers, ensuring peak health among employees and further improving productivity in the industry. The primary objective of this paper is to examine the lack of mental health training/support onboard vessels and the responsibility of the maritime industry to mitigate this growing issue. By reviewing existing shipboard policies and procedures surrounding mental health and investigating possible methods to improve current policies, this report's findings reveal several potential improvement methods to update insufficient policies and benefit seafarers overall. In 2019, the Institution of Occupational Safety and Health (IOSH), in combination with Cardiff University (CU), conducted extensive research on the mental health of seafarers through the “combined use of questionnaires, interviewer-administered questionnaires, semi-structured interviews and an analysis of secondary data provided by insurance companies” (p. 6). The study concluded that seafarers’ mental health and well-being are of considerable concern to the maritime industry and that numerous employers do not recognize the importance of mental health and welfare on board to the same extent as maritime charities and stakeholders. An increase in awareness surrounding the mental health of seafarers has recently motivated the International Maritime Organization (IMO) to reconsider its current “Standards of Training, Certification, and Watchkeeping” (STCW) regulations. They have enacted an initiative to revisit their current policies, with the possibility of incorporating mental health concepts into the training requirements for seafarers (International Maritime Organization 2024).

2. Case Reviews

Examining the following two global maritime incidents sheds light on the complexities and unique challenges of life at sea. Critical aspects such as incident particulars, pre- and post-accident mental health-related response, and incident outcomes are analyzed to determine potential mitigation strategies to prevent similar occurrences.

2.1 *Vessel and Incident Particulars*

The tanker vessel *Atina* is a Malta-flagged crude oil and oil products carrier owned by Ciner Group and operated by the Turkish shipping company Besiktas Shipping. On October 17, 2020, at 0446 local time, the tanker attempted to anchor in the Southwest Pass Fairway Anchorage in the Gulf of Mexico. Despite pre-voyage planning, fatigue and unfamiliarity with the vessel's equipment ultimately lead to disaster. The master, who had been severely sleep-deprived leading up to the accident, miscalculated critical distance assessments. Soon, the vessel struck the oil and gas production platform SP-57B. Fortunately, no one was hurt during the incident, and no pollution was detected from the vessel or platform. However, the damage that resulted from the collision was significant for both parties. The *Atina* inflicted a sizeable 72.9 million dollars in total damages (National Transportation Safety Board, 2021).

2.2 Mental Health Aid Response

The investigation of the incident revealed that the Master operating the vessel at the time had been severely sleep-deprived due to significant travel delays while trying to join the ship. Lack of rest resulted in acute fatigue and poor situational awareness during a critical anchor handling manoeuvre. Faced with pressure from company officials to adhere to the vessel's schedule, the Captain continued working, ultimately leading to the accident. According to the National Transportation Safety Board (2021), no reported evidence of counselling was provided to crew members involved in the accident.

2.3 Analysis

It is inherent that vessel operating companies should ensure that crew members joining a vessel obtain adequate rest time before taking over critical shipboard duties. Without proper rest, the safety of the crew, property, and the environment may be at risk. After consulting with the Master Mariners of Canada - Newfoundland Division (2024), many of them attested to the strict “Hours of Work and Rest Policies” outlined by the IMO; however, many of them agree that although the “Fatigue” section of IMO policy mentions jet lag as a source of fatigue, it does not mention extended travel time as a source of fatigue. Essentially, the “Fatigue” policy cannot fully address mental health issues and likely requires a separate annex to define the mental health policy and procedures onboard vessels.

Had there been emergency mental health procedures in place prior to the accident, the master may have been able to utilize such programs, advocating for themselves, ultimately altering the detrimental course of the operation. Due to the stressful and traumatic nature of the incident, all crew members should have been subjected to appropriate mental health aid after the accident to rule out any long-term adverse effects.

2.4 Vessel and Incident Particulars

The Royal Caribbeans *Wonder of the Sea* cruise ship is registered to the Bahamian flag; it is 362m long, accommodating over 7000 guests and 2000 crew. On November 13, 2022, an unnamed male crew member was found deceased in this cabin after he had taken his own life. Several crew members stated that the man had requested to sign off the vessel earlier that week due to personal issues; however, his request was denied for unknown reasons, and he was asked to remain onboard. It is unclear if the man attempted to obtain mental health aid before his death (Walker 2022).

2.5 Mental Health Aid Response

As of April 2024, Royal Caribbean International (RCI) claims all its fleet vessels have shipboard medical facilities built, staffed, stocked, and equipped to meet or exceed guidelines established by the American College of Emergency Physicians Cruise Ship and Maritime Medicine Section. However, RCI did not reveal whether specific programs are implemented for crew members in addition to standard onboard facilities.

2.6 Analysis

It is evident that the victim had been experiencing mental illness before his death. Had RCI accepted his request to sign off the vessel, he may have been able to obtain proper psychiatric attention, possibly altering his unfortunate fate. It does not appear as if emergency mental health aid was offered to the victim preceding his death; however, it remains under speculation whether RCI has such policies and procedures in place. The implementation of emergency mental health aid onboard is essential to mitigating tragedies like this.

3. Unique Stressors of Life at Sea

Life at sea presents a unique set of stressors unlike those encountered in most other professions. Seafaring entails an isolated environment, demanding schedules, and unpredictable conditions, creating a distinct psychological landscape for those who work onboard vessels. From adverse weather conditions to mechanical failures, sailors must constantly adapt to changing circumstances and navigate through potential hazards. Seafarers must remain alert and focused at all times to ensure their safety and that of their crewmates. A constant state of vigilance and readiness can lead to heightened stress and anxiety levels (Korbin 2023). Some may find it hard to concentrate or make decisions when under a lot of stress. Many experience physical sensations like sweating, heart racing, or tense muscles. Stress can also have a long-term impact on physical health, causing headaches and increased levels of fatigue, even increasing the likelihood of experiencing a decline in health (Canadian Centre for Occupational Health and Safety 2018).

3.1 Effects of Prolonged Periods at Sea

Working onboard a vessel requires notable levels of physicality and mental perseverance. Day-to-day operations require a blend of hands-on work and a balance of physiological well-being. For instance, all vessels operate through a continuous 24-hour watchkeeping schedule, making a traditional sleep pattern unobtainable for watchkeepers. There are two typical shifts a watchkeeper must follow, ‘four on, eight off’ and ‘six on, six off,’ meaning they perform their watch for four hours and rest for eight hours until their next watch, or they keep watch for six hours, only allowing six hours of rest between their next watch. This rigid system runs 24 hours, seven days a week, while a ship operates. Being at sea for extended periods and having only a maximum of 8 hours of free time between shifts leaves minimal room for resting. In this short span, crew members are expected to eat, exercise, enjoy leisure activities and sleep. With such little time, crew members are often forced to sacrifice, choosing rest over exercise or vice versa. Seafarers must spend extended periods abiding by this regimented schedule, working through exhaustion and sleep deprivation. According to psychologists Pilcher and Morris of Clemson University (2020),

Sleep impacts many aspects of an employee’s work performance, including the ability to adequately respond to rapidly changing work demands and stress-inducing environments and interactions. In the short term and perhaps at the most basic level, proper amounts of sleep keep you focused and alert. Poor

or inadequate sleep also negatively impacts many longer-term factors relevant to organizational behaviour and personal health, including self-control and decision-making. (para. 2)

Essentially, sleep deprivation depletes one's situational awareness. A lack of situational awareness in a navigational setting is hazardous. Navigation requires an acute level of observance at all times. Without a maintained focus, accidents due to human error are far more likely to occur. Quick decision-making is also a crucial part of a seafarer's day-to-day work. If lack of sleep dulls the ability to think and act quickly, delays will occur, interrupting the work pattern or, in some cases, leading to workplace accidents. Figure 1 illustrates the effects of prolonged impacts of sleep deprivation.

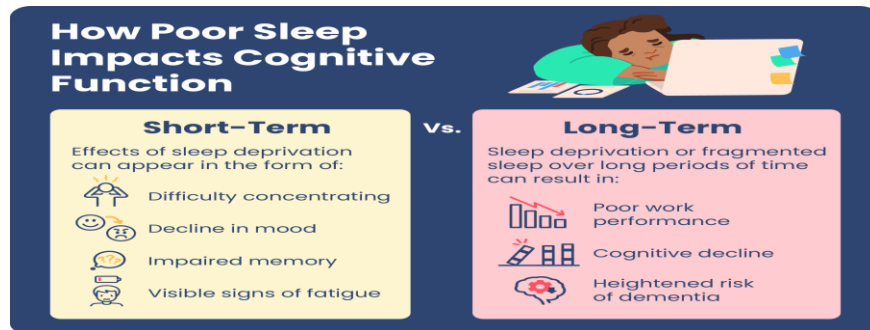


Figure 1. Impacts of Prolonged Sleep Deprivation. Reprinted from “How Lack of Sleep Impacts Cognitive Performance and Focus,” <https://www.sleepfoundation.org/sleep-deprivation/lack-of-sleep-and-cognitive-impairment>

Moreover, a ship's confined and often monotonous environment can amplify feelings of fatigue. Crew members live and work in close quarters, with little personal space or privacy. The repetitive nature of daily routines and the lack of variety in activities can contribute to a sense of despondency, further intensifying the psychological strain of life at sea.

3.2 Impacts of Isolation

One of the primary stressors of life at sea is the separation from loved ones and the sense of isolation that accompanies it. Due to the remote nature of maritime work, seafarers are expected to spend months away from their families, some with limited communication options.

Isolation significantly impacts mental health, leading to a host of mental illnesses. According to a study by Tulane University (2020), psychological and physical health are interconnected. Social isolation's adverse health effects range from sleeplessness, reduced immune function, decreased cognitive function, and even poor cardiovascular health. As well, loneliness is associated with higher anxiety levels, depression, and increased suicide rates. For seafarers, experiencing depressive thoughts can affect their overall job satisfaction and performance. Feeling disconnected from their colleagues and support networks, seafarers may struggle to find motivation and fulfillment in their work. This leads to decreased morale and productivity on board ships, potentially compromising safety and operational efficiency.

Furthermore, it is essential to consider the continued effects of previous experiences of isolation. The COVID-19 pandemic exacerbated some of the pre-existing challenges of the seafaring profession while also posing new challenges for the maritime industry. Measures implemented to reduce the spread of the virus, such as border closures and travel restrictions, affected crew changes and contributed to seafarers' time on board being extended even further. Shore leave was restricted or prohibited in many ports, forcing crew members to remain isolated. Such restrictions made it extremely difficult to seek medical assistance or retrieve essential supplies needed onboard (Pauksztat et al. 2022).

Due to the severity of the COVID-19 pandemic, many seafarers developed post-traumatic stress disorder (PTSD) from the stress they endured. PTSD often stems from a very stressful, frightening or distressing event or after a prolonged traumatic experience (National Health Service 2022). In the case of seafarers, exposure to traumatic events at work, including remote exposure, induced such feelings. Although the effects of the pandemic have since subsided, it is imperative to recognize that some may still be struggling with PTSD, and experiencing isolation may affect them differently than others.

The impacts of isolation on seafarers are not limited to their time at sea; they can also extend to their lives on land. Reintegrating into society after extended periods of isolation can be challenging for seafarers, who may struggle to readjust to the pace and rhythms of life onshore (Wilkinson et al. 2019). The disconnect between their experiences at sea and the realities of life ashore can create feelings of alienation, intensifying the challenges of transitioning between sea and land.

4. Suggested Improvements to Shipboard Resources and Procedures

Evidence shows that seafarers face an increased risk of mental health issues in the workplace. To address these challenges, potential solutions include enhancing education programs and communication strategies designed to inform and support seafarers while also working to reduce the stigma surrounding mental illness within the maritime industry.

4.1 Mandatory Educational Program

Understanding new concepts begins with an education on the topic. The same idea applies to navigating the mental welfare of seafarers. More comprehensive education programs are needed to equip crew members with the knowledge and skills to identify, manage, and support colleagues experiencing mental health challenges. This training should cover a range of topics, including stress management, coping strategies, crisis intervention, and suicide prevention.

A mandatory training program should be implemented to ensure that all personnel planning to work on a vessel are appropriately trained by a satisfactory mental health education program. According to Shim et al. (2022), mental health education is a promising tool for raising awareness and understanding and reducing mental health stigma. Shim states, "Mental health education and training enables people to learn and understand issues with mental illness. There is a direct positive impact on people's attitudes toward mental health after pursuing an educational experience" (para. 4).

4.3 Improved Communication Strategies

Improved communication strategies are essential for fostering a supportive environment. Effective communication is crucial in raising awareness, reducing stigma, and promoting mental well-being among crew members. One key aspect of improved communication strategies is encouraging open dialogue about mental health. This involves creating opportunities for crew members to discuss their thoughts, feelings, and experiences in a safe and non-judgmental space. Encouraging conversations about mental health can help break down barriers, reduce stigma, and normalize discussions about emotional well-being (McGinty et al. 2019). Moreover, incorporating mental health considerations into regular communication channels, such as safety briefings, crew meetings, and onboard newsletters, can also help raise awareness and promote positive mental health practices. By integrating mental health messaging into existing communication platforms, maritime organizations can ensure that mental well-being remains a priority for all crew members.

4.4 Methods to Reduce Stigma

Leadership is integral to setting the tone for the maritime industry's attitudes and behaviours surrounding mental health. Leaders can help create a culture of openness, acceptance, and support by demonstrating a commitment to prioritizing mental well-being. This involves leading by example, promoting positive mental health practices, and actively addressing stigma and discrimination whenever they arise (McGinty et al. 2019).

Collaboration and partnership between maritime organizations, industry stakeholders, and mental health professionals are essential for reducing stigma and promoting mental well-being. Working together to raise awareness, develop resources, and implement necessary practices, stakeholders can create a supportive and inclusive environment where all seafarers feel valued, respected, and supported in addressing their mental health needs.

5. Conclusion

Seafarers' unique working environment significantly increases their risk of mental health issues. To address this, additional measures are needed to protect their well-being and ensure their safety. While the IMO has yet to update its STCW policies regarding mental health training aboard vessels, a revision is underway, which may include mandatory mental health training. In anticipation of this policy change, it is recommended that all shipping companies implement supplementary mental health training programs. Education is a key strategy for reducing both risk and stigma. By fostering open discussions, education helps break down barriers and minimize stigma. A combination of educational initiatives and practical emergency mental health training could help mitigate these risks and enhance seafarers' overall quality of life.

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