

Republic of the Marshall Islands
Maritime Administrator

ANNUAL REPORT ON MARINE SAFETY INVESTIGATIONS

2025

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LIST OF ABBREVIATIONS AND ACRONYMS

2/E	Second Engineer
2/O	Second Officer
3/O	Third Officer
ABS	American Bureau of Shipping
Administrator	Republic of the Marshall Islands Maritime Administrator
ASD	Able Seafarer Deck
BV	Bureau Veritas
BWT	Bilge Water Tank
IMO Casualty Investigation Code	International Maritime Organization Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident
CCS	China Classification Society
CH	Cargo Hold
cm	Centimeter
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea
C/O	Chief Officer
COT	Cargo Only Tank
CPR	Cardiopulmonary Resuscitation
CRS	Croatian Register of Shipping
CT	Cargo Tank
IACS	International Association of Classification Societies
IMO	International Maritime Organization
IRS	Indian Register of Shipping
Li-ion	Lithium-ion
LR	Lloyd's Register
KR	Korean Register
kn	Knots
LNG	Liquified Natural Gas
LSA	Life Saving Appliance
Maritime Act	Republic of the Marshall Islands Maritime Act 1990
Maritime Regulations	Republic of the Marshall Islands Maritime Regulations
m	Meters
MEDEVAC	Medical Evacuation
MLC, 2006	Maritime Labour Convention, 2006

LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

MN	Marine Notice
MOB	Man Overboard
MOU	Mobile Offshore Unit
MRCC	Maritime Rescue Coordination Center
MSA	Marine Safety Advisory
No.	Number
OS	Ordinary Seafarer
OOW	Officer of the Watch
OSV	Offshore Support Vessel
PPE	Personal Protective Equipment
PTW	Permit to Work
RA	Risk Assessment
RINA	Registro Italiano Navale
RMI	Republic of the Marshall Islands
Rules for Marine Investigations	Republic of the Marshall Islands Rules for Marine Investigations and Administrative Proceedings
S	Starboard
SAR	Search and Rescue
SMS	Safety Management System
SOLAS	International Convention for the Safety of Life at Sea
STCW Code	Seafarers' Training, Certification and Watchkeeping Code
TSS	Traffic Separation Scheme
VHF	Very High Frequency

Message from the Administrator

Tom Jenkins
Deputy Commissioner of Maritime Affairs



Welcome to the Administrator's Annual Report on Marine Safety Investigations. This year's report presents the maritime industry with an overview of investigation trends, key findings, recurring safety themes, and lessons learned obtained through investigative and safety-derived activities undertaken by the Administrator in 2025.

The Administrator remained committed throughout the year to conducting independent, objective, and timely investigations into very serious marine casualties, marine casualties, marine incidents, and occurrences involving RMI-flagged vessels globally. The Administrator's long-standing focus on determining not only what happened, but more importantly, understanding why incidents occurred and to identify what measures should be implemented to prevent recurrence, is fundamental to the Administrator's unwavering commitment to safeguarding lives at sea, protecting the marine environment, and promoting a culture of continuous improvement in maritime safety.

Throughout 2025, the Administrator's investigative process continued to align with international best practices as set forth by the IMO Casualty Investigation Code. Each investigation has been approached not as a means of attributing blame, but as a tool to enhance collective learning and improve systematic safety outcomes.

The Administrator continued to strengthen collaboration with seafarers, owners, operators, industry stakeholders, and regulatory authorities in support of transparency, understanding, and the proactive sharing of data-derived safety findings. Through these efforts, the Administrator's aim is to contribute not only to the safety performance of RMI-flagged vessels, but also to the entire maritime industry and the prevention of marine incidents.

During 2025, the Administrator investigated 958 total reports comprising very serious marine casualties, marine casualties, marine incidents, and occurrences. Since 2021, on average, the number of reports has increased by 8% per annum; a trend that reflects both a growing fleet and heightened awareness of transparent reporting. This increase also reflects the need for continuous improvement and focus in pursuit of solutions to mitigate the risks inherent within a dynamic and ever-changing maritime environment.

The Administrator takes this opportunity to thank owners, operators, and crewmembers of RMI-flagged vessels for maintaining the highest standards and working diligently to ensure crew welfare, marine safety, security, and the protection of the marine environment.

Principles of Marine Safety Investigations

Marine safety investigations are conducted in accordance with the Maritime Act, Maritime Regulations (Chapter 6), Rules for Marine Investigations, and the IMO Casualty Investigation Code.

Under the IMO Casualty Investigation Code, marine safety investigations are conducted to determine the causal factors of the casualty, with the objective of preventing similar casualties or incidents in the future, and to make safety recommendations, as necessary. Marine safety investigations do not seek to apportion blame or determine liability.

Accurate and timely reporting by Masters, owners, and operators in accordance with the Administrator's reporting requirements is vital to ensure an appropriate response and that necessary support can be provided in order to identify safety critical factors and lessons learned. Further, the analysis conducted by the Administrator is used to identify trends which can then be shared with Masters, owners, and operators to improve safety.

This report excludes data pertaining to the investigation of reports of misconduct by RMI-documented seafarers.

Report Classification

All reports to the Administrator are classified in accordance with the following.[1]

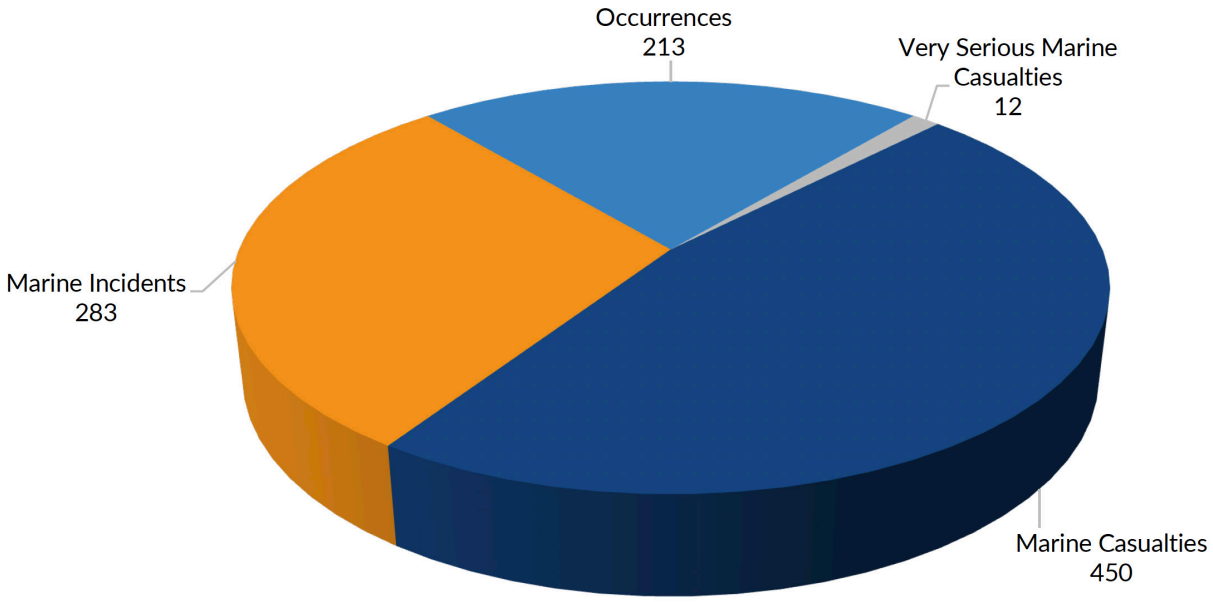
- **Very serious marine casualties** are those involving loss of life, total loss of the ship, or significant environmental damage.
- **Marine casualties** are events, or a sequence of events, directly in connection with the operation of the vessel, that have resulted in serious injury, loss or material damage to the vessel, grounding or disabling of the vessel, collision or allision, and severe damage to marine infrastructure or to the environment.
- **Marine incidents** are events, or a sequence of events, other than a marine casualty, which have occurred directly in connection with the operation of the vessel, that endangered, or if not corrected, would endanger the safety of the vessel, its occupants, or the environment.
- **Occurrences** are other conditions and events which are not marine casualties or marine incidents but require investigation by the Administrator.

Additionally, all reports are assigned a primary incident type based on information obtained during the marine safety investigation. The primary incident type details the nature of the incident which resulted in the very serious marine casualty, marine casualty, marine incident, or occurrence.

1 For complete definitions and additional information, refer to Rules for Marine Investigations.

During 2025, the Administrator received 958 total reports comprising very serious marine casualties, marine casualties, marine incidents, and occurrences, a 0.3% increase compared to 2024, and a significant decrease compared to the average annual growth rate of 8% since 2021.

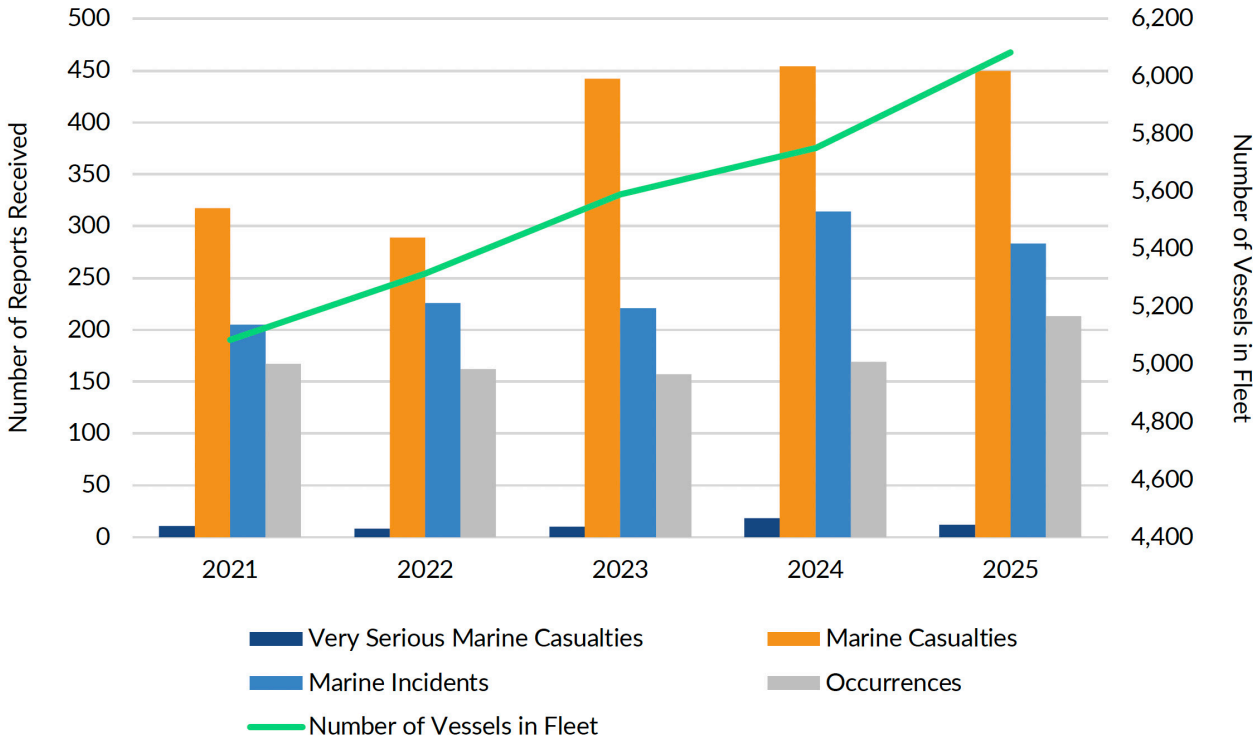
Reports to the Administrator — 2025



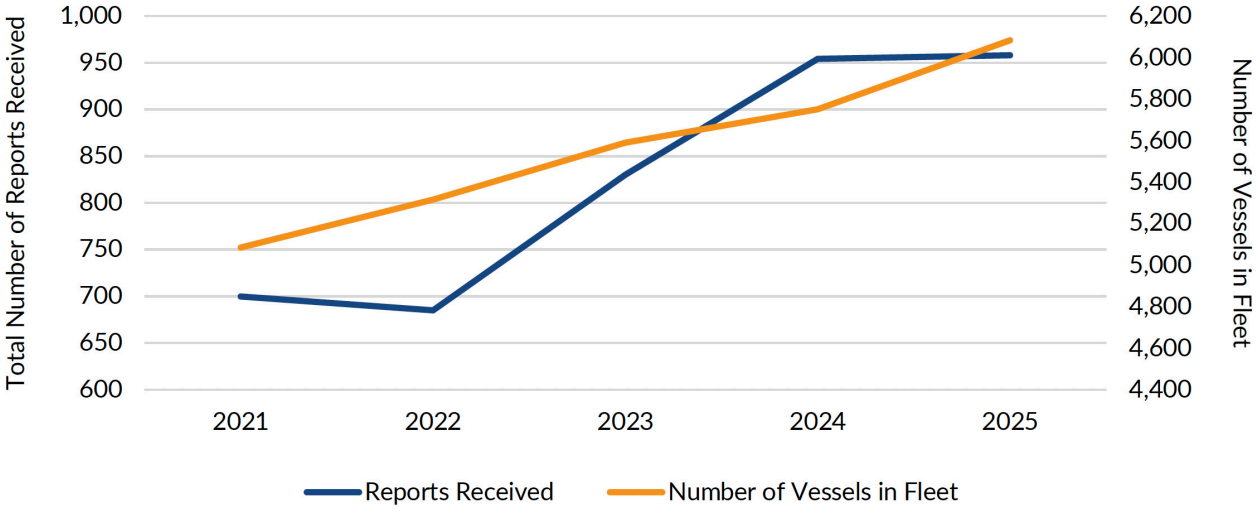
The total number of marine casualties has been relatively consistent over the preceding three years. Conversely, the number of marine incidents has fluctuated significantly year-on-year since 2023. The number of reported occurrences has increased markedly in 2025 and attributed primarily to an increase in the number of deaths by natural cause of both RMI seafarers and non-RMI seafarers.

There has been a significant decrease in reports compared to the average annual growth rate of 8% since 2021.

Reports to the Administrator — 2021 to 2025

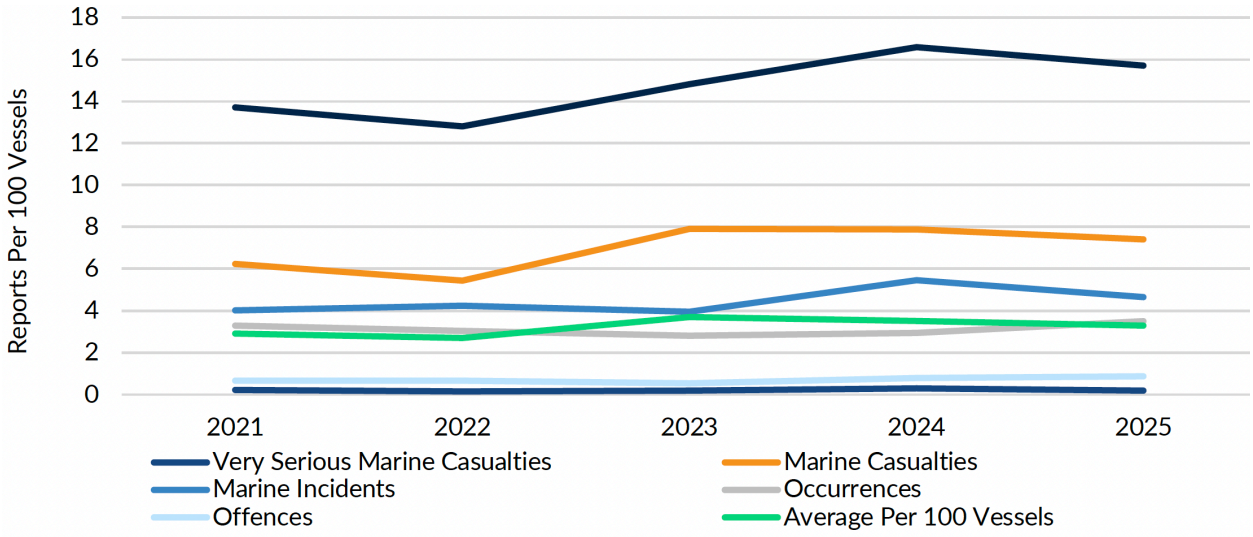


Reports Received — 2021 to 2025



Since 2022, analysis of the data shows an increase in the number of reports received. The mean number of total reports received compared to the size of the fleet was 3.9%[2] in 2025. This is a decrease of 0.2% compared to 2024 and an increase of 0.7% compared to 2022. Despite this increase over the preceding years, it has been recognized by the Administrator that owners and operators remain committed to safety of life and property at sea and the marine environment. This has been evidenced by an improvement in the quality of Company derived investigations and willingness to implement recommendations, observations, and lessons learned quickly across their respective vessels.

Incident Rate (per 100 vessels) — 2021 to 2025

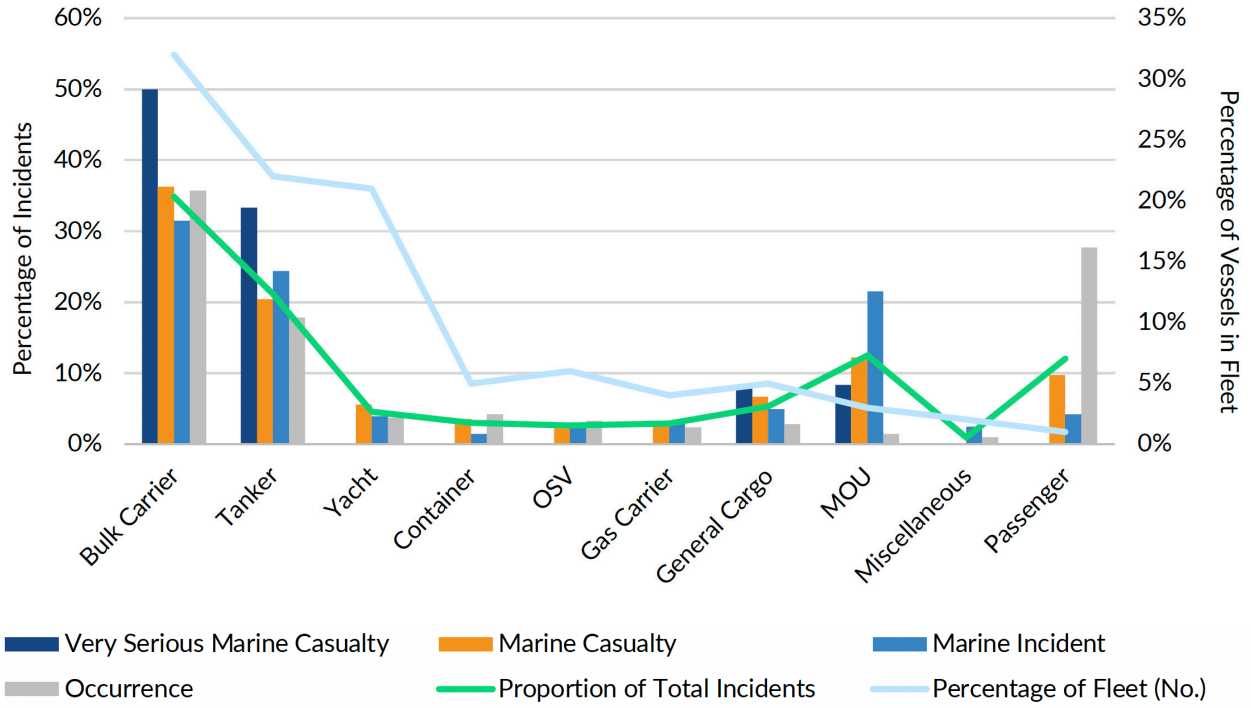


The incident rate per 100 vessels is a useful metric to determine how many incidents occur as a proportion of RMI-flagged vessels by incident categorization. The incident rate average per 100 vessels has decreased since 2024 on account of a reduction in the number of very serious marine casualties, marine casualties, and marine incidents during this period. The relative reduction in the number of reported very serious marine casualties, marine casualties, and marine incidents per 100 vessels is a positive trend and an indication that as the number of RMI-flagged vessels increases, the safety related performance of the RMI-fleet is not diminished.

Bulk carriers and tankers make up 54% of RMI-flagged vessels. Combined, bulk carriers and tankers account for 56% of all reported incidents. The average incident rate across all ship types is 15.7%. Although bulk carriers (35%) and tankers (21%) exceed the average incident rate of the RMI-flagged fleet, the incident rate is proportionate to the size of each of these vessel types within the RMI-flagged fleet. MOUs and passenger vessels make up 3% and 0.46% of the RMI-flagged fleet respectively, however MOUs account for 13% of all reports, closely followed by passenger vessels (12%). As a proportion of the number of incidents, bulk carriers, tankers, general cargo, MOUs, and passenger vessels have a higher-than-average incident rate compared to all other vessel types.

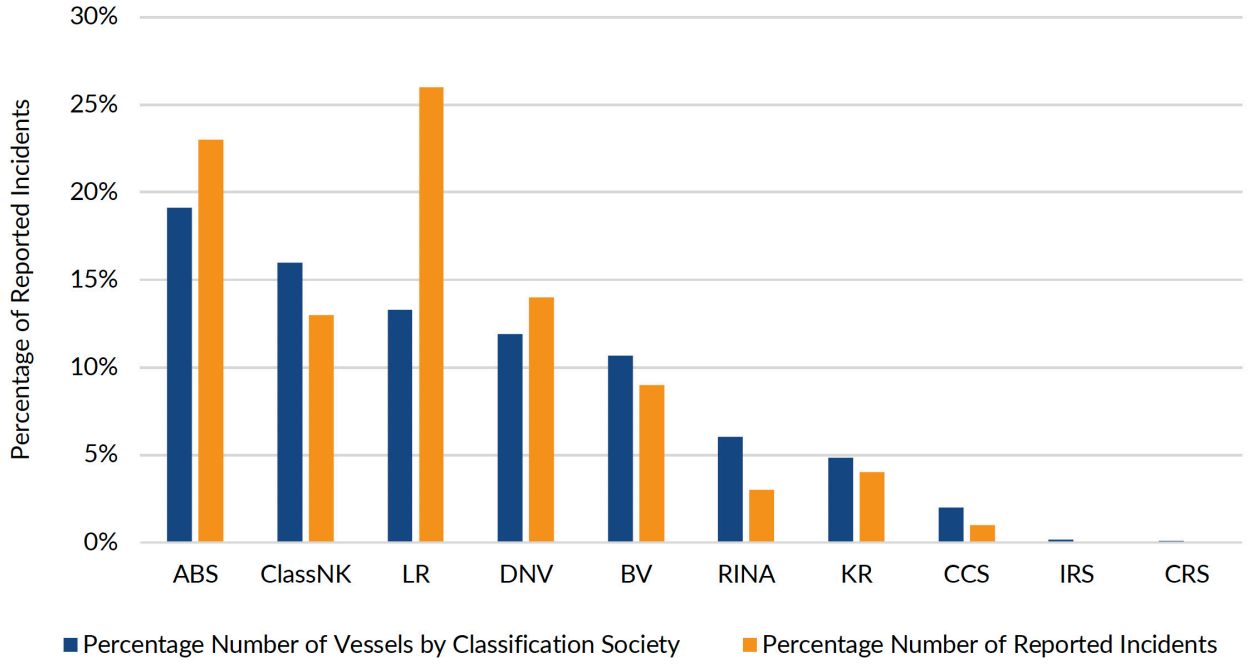
2 Average number of incidents per 100 vessels.

Percentage of Incidents by Ship Type — 2025



Recognized Organization oversight of the RMI-flagged fleet by IACS members relative to the percentage of reported incidents in 2025 is provided in the following chart. Only ABS, LR, and DNV have a higher percentage of reported incidents than number of RMI-flagged vessels.

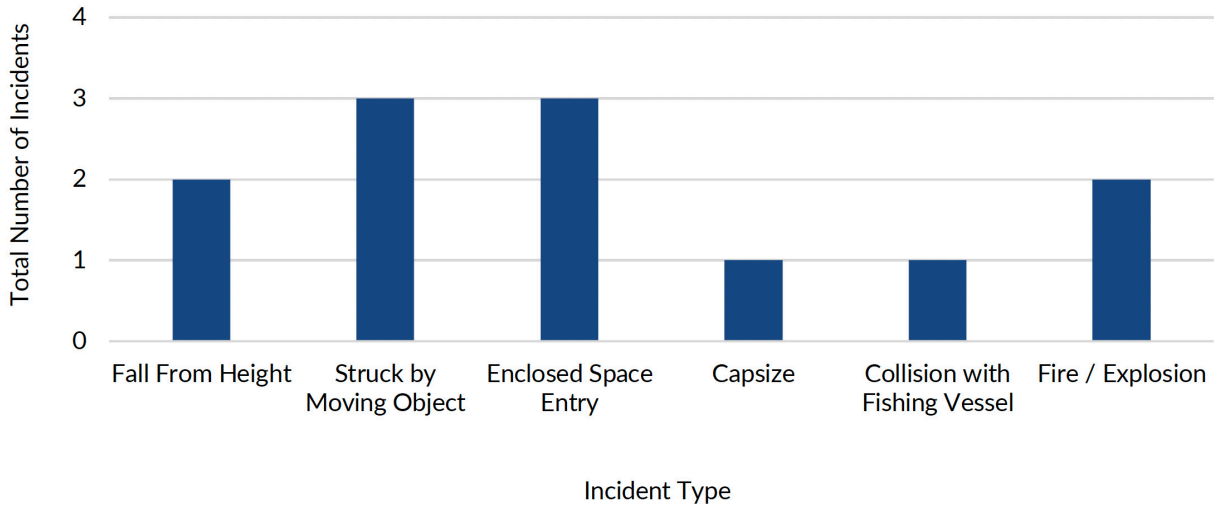
Percentage of Reported Incidents by Classification Society — 2025



Very Serious Marine Casualties

During 2025, 12 very serious marine casualties were reported to the Administrator, compared to 18 in 2024, a decrease of 33%. Two of these incidents were related to working at height and resulted in two fatalities,[3] which was the leading cause of death in the preceding year. Three separate incidents involving seafarers being struck by a moving object resulted in three fatalities.[4] Three separate enclosed space entry incidents resulted in the loss of three lives.[5] Three RMI-documented seafarers were fatally injured as a result of a fire / explosion.[6] Two further very serious marine casualties occurred, one as a result of a collision between an RMI-flagged bulk carrier and a fishing vessel resulting in the loss of five non-RMI seafarers. The second involving a crew launch vessel which capsized during transfer operations resulting in the loss of seven RMI-documented seafarers and two non-RMI documented seafarers.

Very Serious Marine Casualties by Incident Type — 2025



Lessons Learned by Incident Type

The following section contains lessons learned that have been identified and categorized by incident type and more generic observations from very serious marine casualties, which shall in no way create a presumption of blame or apportion liability.

3 Two RMI-documented seafarers.

4 Two RMI-documented seafarers and one non-RMI seafarer.

5 One RMI-documented seafarer within a COT, one RMI-documented seafarer within a Cargo Hold, and one RMI-documented seafarer within a Store Room.

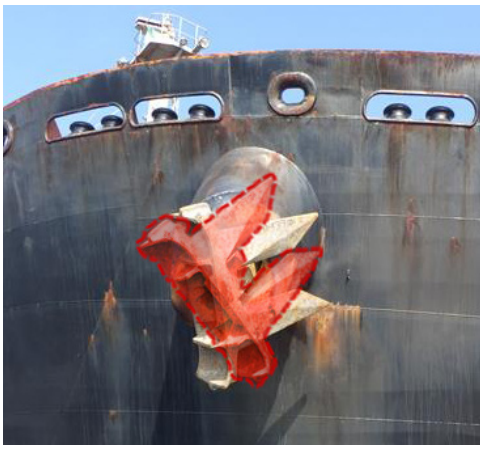
6 Two RMI-documented seafarers within a Cargo Hold, one RMI-documented seafarer within a Machinery Space.

Fall From Height



- Safe-work procedures are administrative controls that must be implemented consistently by all crewmembers to be an effective means of reducing exposure to hazards.
- Scaffolding, bosun's chairs, staging, portable ladders, etc. must be set up and used in accordance with the manufacturer's instructions.
- Lifelines connected to a safety harness must be secured to a strong point on the ship or a fall arrester connected to the ship and not scaffolding, staging, portable ladders, etc. to provide protection from falls.
- The SMS procedures, PTW, RAs, and PPE matrix must identify and provide sufficient direction and guidance regarding the conduct of work required to be performed as it relates to the risks associated with falls, both while working and while moving to and from the work location.
- Crewmembers should undertake regular training and understand that associated procedures need to be adhered to consistently to eliminate poor safety standards. The use of two safety lines and fall arresters should be included in the training.
- Work spaces should be engineered with protection measures, including an adequate number of appropriately arranged strong points for connecting lifelines or securing fall arresters, to prevent falling and to enable safe movement while fall protection remains connected.
- When working outboard, a personal flotation device (lifejacket, buoyancy aid, or working life vest) should be fitted with a light and a whistle in order to assist in the visual and audible identification of the wearer in the water.

Struck by a Moving Object



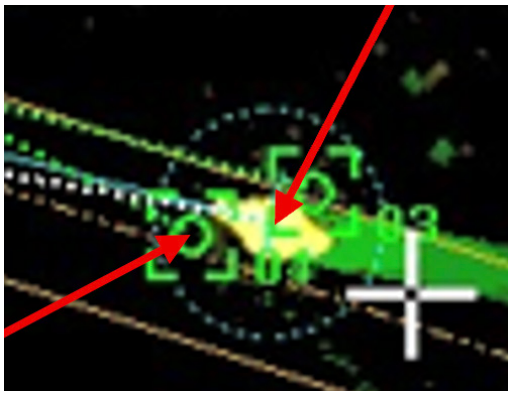
- Entering a hawse pipe containing an anchor or anchor chain for any reason is dangerous.
- Having an anchor stuck in the hawse pipe is a non-standard condition that even experienced seafarers may not encounter during their careers. Accordingly, freeing a stuck anchor is a non-routine task for which an established procedure likely does not exist.
- Non-routine shipboard tasks should not be undertaken without completing an assessment of all available alternative options, including waiting until arrival at port where appropriate shore-side support is available.

Enclosed Space Entry



- The atmosphere inside an enclosed space must be properly tested to determine if it is safe for entry.
- Gas detection equipment must be used in accordance with the manufacturer's instructions.
- Enclosed spaces should never be entered for any reason without completely implementing established shipboard procedures.
- Enclosed space rescue drills should be conducted as if it was an actual emergency, not as pre-scripted exercises.
- Deviations from established procedures increase the risk of accidents.
- Connected spaces should always be treated as enclosed spaces. Hazardous atmospheres in enclosed spaces can migrate to adjacent and connected spaces when the barrier between both spaces is no longer intact. Natural ventilation of a connected space might be insufficient and should not be relied upon.
- Entering a connected space without following established shipboard enclosed space entry and rescue procedures is extremely hazardous and should not be attempted.

Collision with Fishing Vessel





- Navigation watchstanders need to fully appraise the situation and the risk of collision, and other dangers to navigation in compliance with COLREGs.
- Navigation watchstanders need to use extra caution when navigating in the vicinity of fishing vessels, and small power-driven vessels.
- A proper lookout shall be maintained at all times, in compliance with COLREGs, for the purpose of maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment.
- Normalization of deviance through previous encounters with fishing vessels can affect judgment and lead to adverse consequences.
- Maintaining a proper lookout must be prioritized over shipboard maintenance tasks.
- Navigation watchstanders need to make effective use of all available means to assess the risk of collision and to take early and substantial action when it is determined that there is a risk of collision.

- Autopilot should not be used when large alterations of course are required to resolve a developing situation with another vessel. An additional watchstander should be called to the Bridge in ample time so that the changeover from autopilot to manual steering can be made before a close-quarters situation exists and so that the continuity of the lookout is maintained.
- Masters should ensure watchkeepers remain competent in the application of COLREGs. This should be verified on a monthly basis through routine training, tabletop exercises, and familiarization of the rules.

Fire / Explosion

- Documented maintenance procedures must be adhered to, and deviation from those maintenance procedures avoided, especially when conducting unplanned defect rectification.
- Ensure adequate thermal insulation is maintained especially in the vicinity of flammable fluids and gases. Regular testing and assessment must be conducted to verify adequacy of thermal insulation within machinery spaces and adjacent compartments.



- Regular firefighting drills must be conducted to ensure crewmembers are familiar with firefighting techniques and practices and the use of firefighting protective equipment.
- When an accommodation space is used for a purpose other than that for which it was originally designed, its suitability should be verified. An RA, as part of a management of change process, could help to determine if any original installations needed to be adapted or decommissioned for the new purpose of the space.
- Immediate smoke containment by early shutdown of the ventilation and strict fire door control to avoid the rapid spread of fire and smoke will facilitate locating the source of the fire and potentially extend survivability within a space(s).
- Fire doors not fitted with self-closing devices should not be maintained open by use of ropes, wedges, or any other means, and should always remain closed when not in use.
- Self-closing devices should be tested regularly to ensure that they are operating properly.
- Fire and safety equipment on board that is in excess of the minimum required on the vessel's fire and safety plan should be included in shipboard contingency plans, monthly and weekly inspections, and incorporated within crewmember familiarization checklists.

Routine Work

- Work plans must prioritize watchstanding requirements (e.g., maintaining a proper lookout) and the rest-hour requirements in the STCW Code and MLC, 2006 over the course of the completion of routine shipboard tasks, such as preparing cargo holds for loading.

- Non-routine shipboard tasks should not be undertaken without completing an RA, which should include risks associated with access to and from the work location.
- Pre-task risk assessments can contribute to ensuring that routine and non-routine tasks can be conducted safely by providing a systematic means of identifying hazards associated with the planned task and controls for reducing the potential that a hazard will occur or the consequences if it does. To be effective, a pre-task risk assessment must address all reasonably foreseeable hazards associated with the task and the existing conditions for when it will be conducted. They also must not underestimate or downplay the potential consequences of the identified hazards or overestimate or exaggerate the potential effectiveness of the identified controls.



Supervision

- Activities that require supervision to control the risks related to the activity should not be executed without the appointed supervisor in place. Supervisors who are responsible for the supervision of a work activity should fulfill this responsibility.
- A positive safety culture both on shore and on board a ship is essential and requires that both shore-based personnel and seafarers place safety above all else.



Stop-work Authority *(see MSA 12-25)*



The use of **stop-work authority** can prevent marine casualties. For stop-work authority to be effective, crewmembers must not only be aware that they have this authority, but they must also have confidence that the authority is non-negotiable and can be exercised without fear of repercussion.

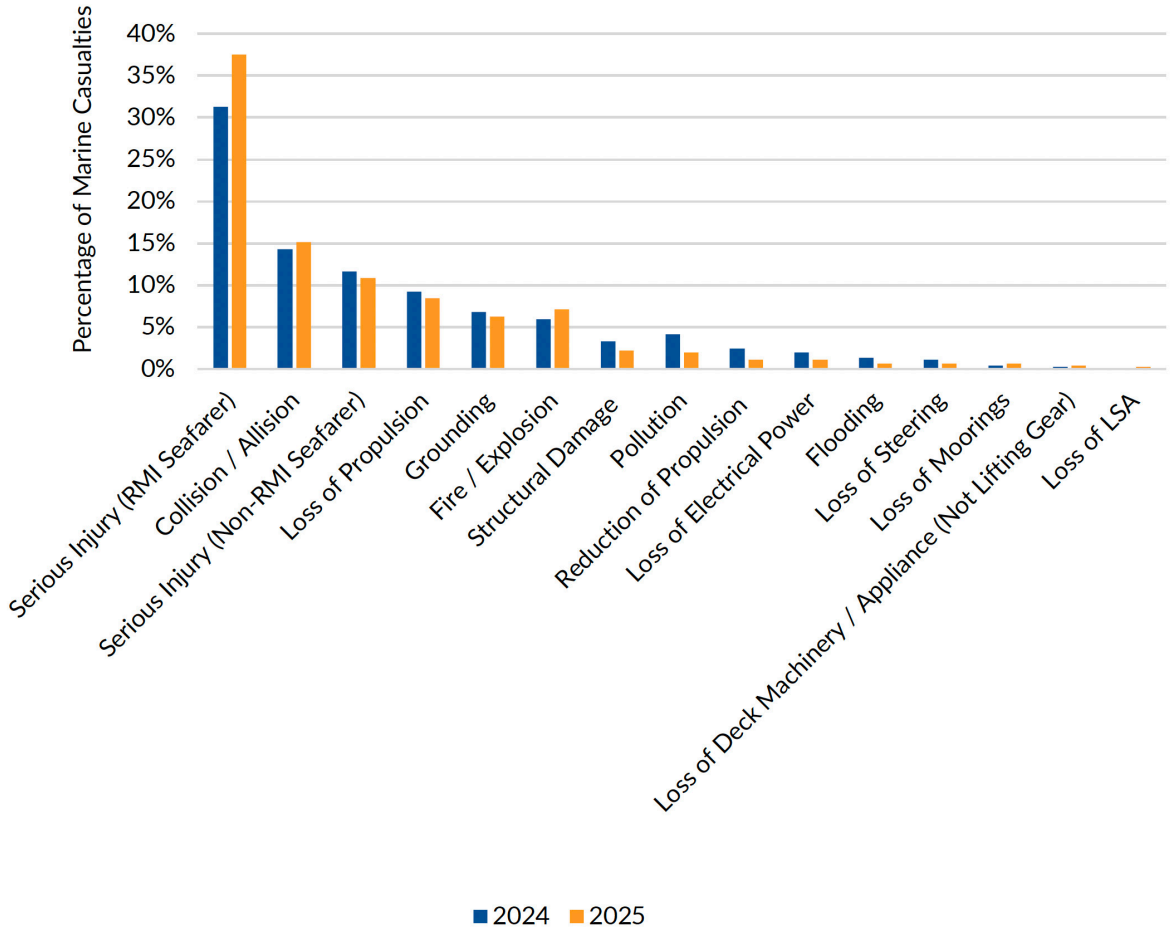
Crewmembers must also be as familiar with how to issue and respond to a stop-work action or instruction as they are with their other shipboard duties.

Marine Casualties

There were 450 marine casualties reported to the Administrator during 2025. These have been classified by the primary incident type and are shown on the chart below as a percentage of the total marine casualties reported during 2025.[7] Additional details pertaining to marine casualties, marine incidents, and occurrences reported during the previous years can be found in Appendix 2.

Comparing the data against 2024, there was a reduction in the number of marine casualties across all incident types except for serious injuries to RMI seafarers, collision / allision, and fire / explosion. Serious injuries sustained by RMI seafarers continue to dominate the number of reported marine casualties at 37%, a 6% increase compared to 2024.

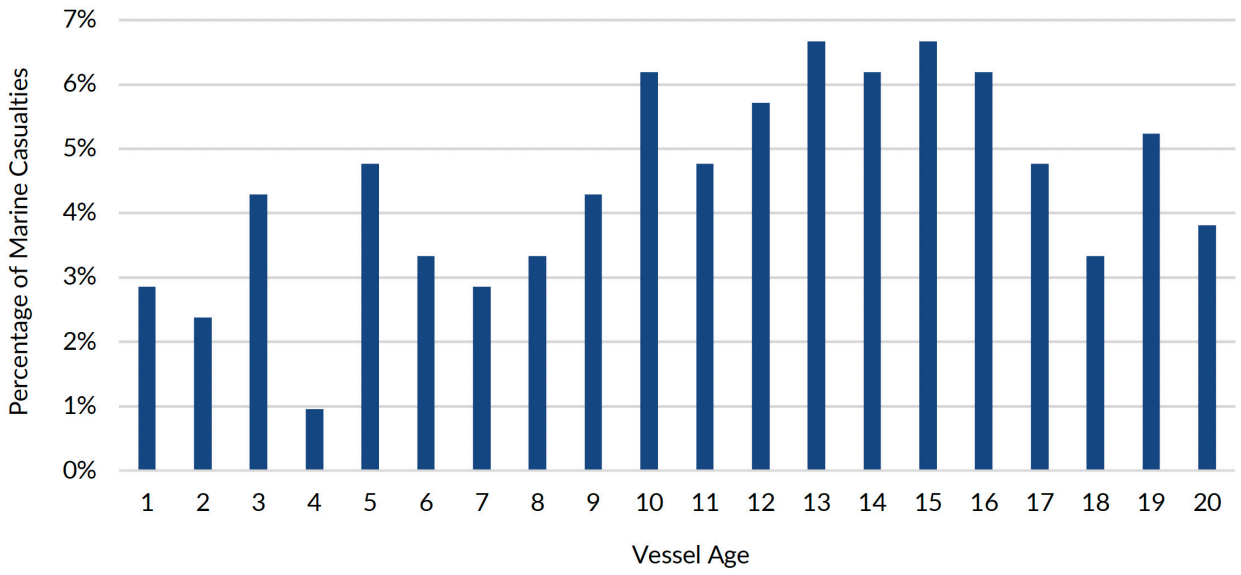
Marine Casualty by Primary Incident Types



7 Incident types which accounted for less than 1% of the reported marine casualties are excluded. Values are rounded to the nearest whole percent.

The data collected and displayed for the number of marine casualties by vessel age excludes serious injuries. The marine casualties reported are associated with property loss casualties and provide a broad overview of marine casualties related to vessel systems, material condition, and equipment over the course of a vessel's operation within the RMI-flagged fleet. The average age of the RMI-flagged fleet across all vessel types was 10.95 years.[8] As seen below, the majority (60%) of marine casualties occurred at, or after, the 10-year age period. A significant proportion of marine casualties occurred on vessels aged between 10 and 16 years, before decreasing up to 19 years of age.[9]

Percentage of Marine Casualties by Vessel Age — 2025



Marine Incidents

There were a total of 283 marine incidents reported to the Administrator during 2025. These have been classified by the primary incident type and are shown on the chart below as a percentage of the total marine incidents reported during 2025.[10]

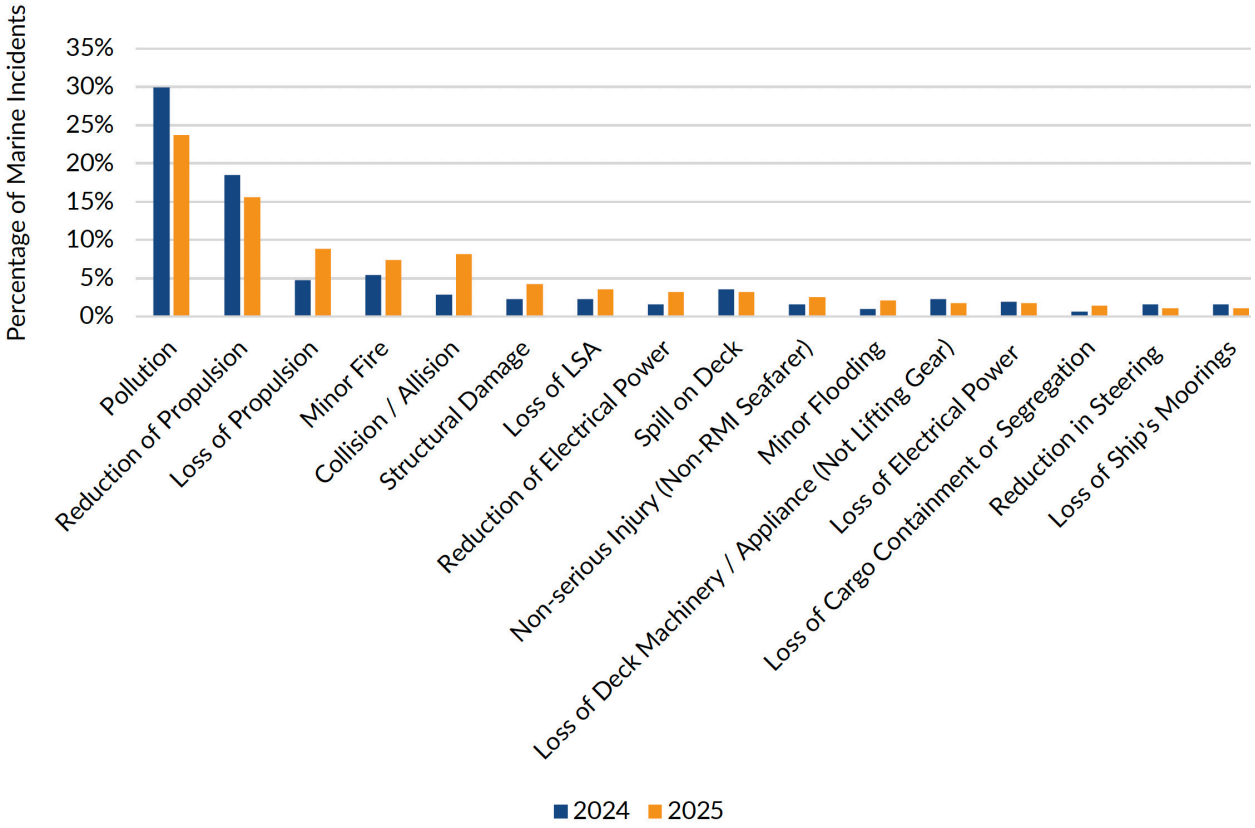
Marine incidents decreased by 9% in 2025 compared to 2024. A significant factor accounting for this reduction overall is attributed to a decrease in the number of pollution related incidents. In addition, the number of marine incidents related to a reduction of propulsion has also decreased over the same period. Conversely, loss of propulsion, minor fires, and collisions / allisions have all increased throughout this reporting period across varying vessel types.

8 As of 31 December 2025. MOUs have been excluded from this data.

9 Vessels older than 20 years have been excluded from the graph due to the percentage values being less than 1%.

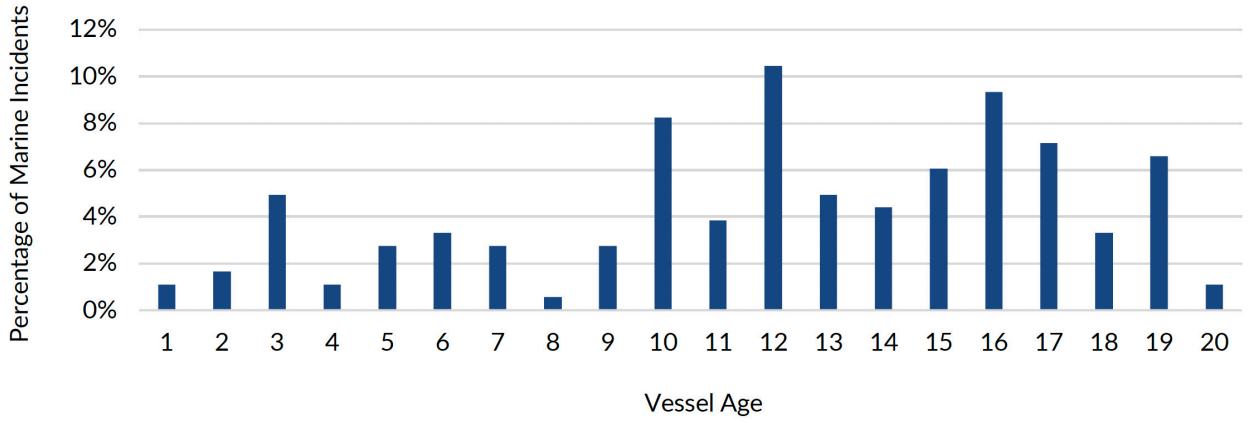
10 Incident types which accounted for less than 1% of the reported marine incidents are excluded. Values are rounded to the nearest whole percent.

Marine Incident by Primary Incident Type



The data collected and displayed for the number of marine incidents by vessel age excludes serious injuries. The majority of marine incidents (57%) occurred on, or after, the average age of an RMI-flagged vessel (10.95 years). Based on the data, marine incidents on vessels younger than 10.95 years of age are occurring less often, and are not as likely to have a property loss-related incident due to a material failure.

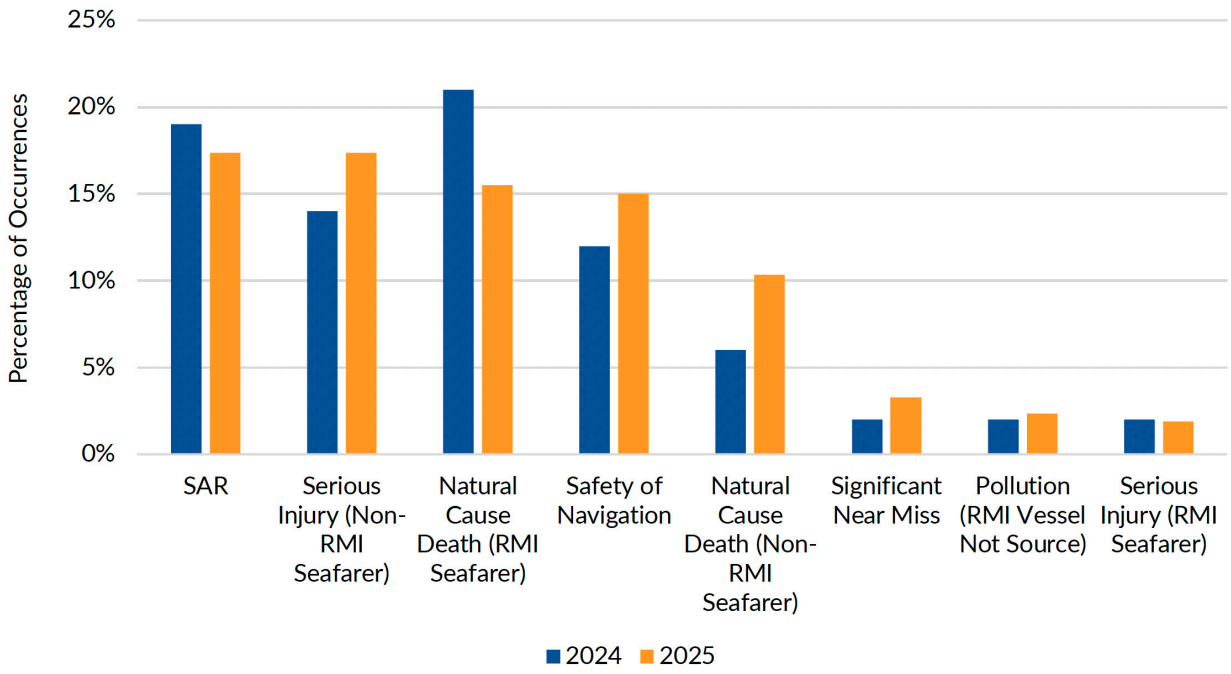
Percentage of Marine Incidents by Vessel Age — 2025



Occurrences

There were 213 occurrences reported to the Administrator during 2025. These have been classified by primary incident type and are shown on the chart below as a percentage of the total occurrences reported during 2025. These include primary incident types which would normally be classified as marine casualties or marine incidents but have been classified as occurrences due to their specific nature and circumstances.

Occurrences by Primary Incident Types



As can be seen in the chart above, there was a significant increase in 2025 in the number of serious injuries (non-RMI seafarer), safety of navigation related incidents, and natural cause death of non-RMI seafarers on board. Both serious injury and natural cause death of non-RMI seafarers can be attributed to the number of passenger vessels within the RMI-flagged fleet and includes serious injuries, which were not connected to the operation of the vessel, and did not involve an RMI-documented seafarer. The increase in the number of safety of navigation related cases can be attributed to instances whereby RMI-flagged vessels failed to abide, or conform, to internationally recognized recommended routing measures. SAR cases lead the number of reported occurrences. These rescues performed, often in challenging conditions, are a credit to the exemplary seamanship demonstrated on a regular basis by the officers and crews of the RMI-flagged fleet globally. Each notification and report of a SAR effort undertaken results in appropriate recognition by the Administrator for services rendered to those in peril, a maritime responsibility which is incumbent on all those serving at sea.

Section 3: Summary of Select Reports of Very Serious Marine Casualties

The following section provides a summary of selected very serious marine casualties published in 2025 and importantly, contains lessons learned which were identified during the course of each investigation. Of note, during 2025, 48 recommendations were issued to substantially interested parties, and one recommendation issued to the Administrator to address causation and ultimately prevent reoccurrence. It is highly recommended that the full reports, available on the Administrator's website,[11] are downloaded and incorporated into training both on board and ashore.

Fatal Fall Overboard on a Gas Carrier

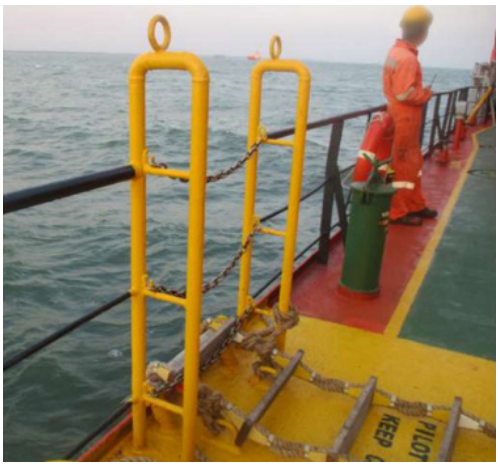


Figure 1: Starboard side (midship) pilot boarding area.

An RMI-flagged gas carrier picked up the Pilot at the designated pilot station. The ship was proceeding with a speed over ground of 8 kn and there was squally weather, reducing the visibility. The 3/O and ASD1 welcomed the Pilot at the boarding area and, after completing the boarding procedures, the 3/O began to escort the Pilot to the Bridge. When leaving the boarding area, the 3/O and the Pilot heard a scream and shouting for help. Simultaneously they both realized that the ASD1 had fallen overboard. The 3/O ran aft to throw a lifebuoy to the ASD1 and meanwhile alerted the Master on the Bridge by means of his hand-held radio. The ASD1, who was not wearing a life jacket, was not able to reach the lifebuoy. The pilot boat became aware of the situation and approached the ASD1 in the water. A crewmember on board the pilot boat grabbed a lifebuoy with light and jumped into the water to rescue the ASD1. Without having succeeded in aiding the ASD1, the pilot boat recovered its crewmember and sight of the ASD1 was lost. A short time later, during a SAR operation coordinated by the regional Maritime Rescue Sub-centre, the ASD1 was recovered deceased.

The Administrator's marine safety investigation determined that the ASD1 most probably fell overboard while securing the rail chains of the pilot access point. The investigation was not able to determine the cause of the ASD1's death.

Lessons Learned

The following lessons learned were identified.

- The decision to enact a rescue attempt without proper equipment or training carries a high degree of risk and using rescue cradles or similar equipment can help to successfully recover persons from the water.
- The importance of proper oversight of crewmembers while working on deck and during seamanship evolutions.
- Suitable PPE should be worn when the risk of falling overboard exists.

11 *See* https://www.register-iri.com/maritime/investigations/investigation-reports.

Enclosed Space Entry on a Drill Ship



Figure 2: The BWT access hatch and vertical ladder for accessing the tank top in the No.1 Aft Pump Room.

An RMI-flagged drill ship was alongside a shipyard undergoing maintenance prior to engaging in drilling operations. The BWT was required to be mechanically ventilated for at least 24 hours before it could be entered by a cleaning crew. In preparation for starting mechanical ventilation, the ship's 2/E and a Motorman opened the BWT starboard access hatch. The hatch was located on the tank top beneath the deck plates in the No. 1 Aft Pump Room and was accessed by climbing down a 1.5 m vertical ladder. After opening the access hatch, the Motorman climbed up the vertical ladder to the deck plates. The Motorman, who had stepped from the ladder onto the deck plates, saw that the 2/E had stopped climbing up the ladder and laid his chest on the deck plates. The Motorman grabbed hold of the 2/E's coveralls and yelled for help. A third-party Electrician who was working in the No. 1 Aft Pump Room responded. Within seconds of the third-party Electrician reaching the scene, both the 2/E and the Motorman, who was kneeling on the deck plates while holding onto the 2/E's coveralls, fell through the open access hatch into the BWT. The third-party Electrician immediately informed crewmembers who were in the Engine Control Room and the alarm was raised. Members of the ship's rescue team reported smelling what was described as a "strong smell of rotten eggs" when they entered the No. 1 Aft Pump Room to initiate an enclosed space rescue. Neither the 2/E nor the

Lessons Learned

The following lessons learned were identified.

- Administrative controls, such as PTWs and Work Instructions, must be implemented consistently and in accordance with established procedures to be an effective means of reducing exposure to hazards.
- The importance of identifying connected spaces and their hazards.
- The importance of identifying and addressing hazards associated with the location where the work will be conducted when planning a job.
- The importance of being aware that, when opening access hatches, tanks may contain higher concentrations of hydrogen sulfide, or other toxic gases, than might be expected.

Motorman were breathing or had a pulse when they were removed from the BWT by members of the ship's rescue team. Efforts to resuscitate the 2/E and the Motorman were unsuccessful, and they were determined to be deceased.

The Administrator's marine safety investigation determined that the PTW for opening the BWT access hatch was not issued in accordance with the Company's established procedures. Though portable gas detectors were available on board, one was not available on-site as required by the Company's relevant work instructions when the 2/E and Motorman opened the BWT access hatch. The Administrator's investigation also determined that physical access was restricted to the BWT access hatch, which increased the risk of exposure to any gases that were within the BWT ullage space after the hatch was opened and while climbing the ladder up to the deck plates. The investigation further identified that the crewmembers were aware that the atmosphere in the BWT ullage space contained hydrogen sulfide, but they may not have been aware that it could potentially contain high concentrations of hydrogen sulfide.

Fatal Fall from Height on a Bulk Carrier

An RMI-flagged bulk carrier was underway on a ballast voyage. Work being done on board during the day included washing the cargo holds. The hatch covers had been partially opened since that morning to ventilate all five of the cargo holds. In the early evening, the ASD2 and OS2 were tasked with starting to wash Cargo Hold No. 4 before stopping work for the day. It was planned for the ASD2, who was wearing a safety belt with a single lifeline, to work inside the cargo hold while the OS2 remained on deck next to the booby hatch to tend the hose and control the flow of water by opening and closing the fire hydrant to which the hose was connected. The ASD2 directed the OS2 to turn the water on a few minutes after he entered Cargo Hold No. 4. The OS2 heard a loud "bang" from inside the cargo hold as he was returning to the booby hatch after opening the fire hydrant. He climbed down the ladder leading from the booby hatch to the catwalk at the top of the cargo hold. From the catwalk he saw the ASD2 lying motionless on the tank top. The OS2 immediately exited the cargo hold and raised the alarm.



Figure 3: Safety belt with single lifeline and safety helmet worn by the ASD2.

Lessons Learned

The following lessons learned were identified.

- The importance of ensuring lifelines are connected to a strong point when climbing a vertical ladder and while on an elevated platform.
- The use of safety belts to protect against the consequences of a fall from height is contrary to the recommended best practice, which is to use a safety harness.
- To maintain continuous, positive fall prevention, it is necessary to use a safety harness with two lifelines and clips or a safety harness connected to a fall arrester.

A rescue was conducted per the ship's enclosed space entry rescue plan. Approximately 30 minutes after the OS2 first raised the alarm, the ASD2, whose head was bleeding, was removed without further incident from Cargo Hold No. 4 and transported to the ship's Hospital where he was administered first aid. The ship diverted toward the nearest port so the ASD2 could be disembarked for medical treatment. The ship rendezvoused with a rescue boat just after midnight and the ASD2 was safely disembarked a short time later. The ASD2 was reported to have died while on the rescue boat en route to shore. The safety belt and lifeline that the ASD2 had been wearing were both intact and the clip on the lifeline was operational when examined after the incident.

The Administrator determined that the lifeline on the ASD2's safety belt had not been connected to a strong point when he fell. This was due to either the fact that the safety harnesses and safety belts on board the ship were fitted with a single lifeline and clip, which required that the lifeline be disconnected when moving it from one strong point to another, or that the ASD2 had not connected the lifeline to a strong point. The Administrator's investigation also determined that the Company's SMS did not address the Company's expectations for securing lifelines when climbing vertical ladders or working on an elevated platform.

Fatal Fall Overboard on a Container Ship



Figure 4: The accommodation gangway platform where the OS1 fell.

During the evening, an RMI-flagged container ship departed the berth and proceeded to anchor to await orders. It was planned that the shipyard Pilot, who boarded the ship at the berth, would disembark via the starboard combination pilot ladder on completion of the anchoring evolution.

The 3/O, ASD1, and ASD3 were located on the Poop Deck. The Bosun, OS1, and Deck Cadet were located on the Forecastle when they received the order from the Master, via hand-held radio, to rig the combination pilot ladder on the starboard side. All six crewmembers met in vicinity of the accommodation block on the starboard side where they collected the pilot ladder and carried it to the starboard side pilot embarkation area in vicinity of Bay 38. The crewmembers divided into two teams of three and commenced rigging the accommodation ladder and pilot ladder. The OS1 and ASD1, wearing lifejackets, proceeded down the accommodation ladder, which was located outboard of the ship's structure, and commenced securing the temporary rope between the stanchions which were fixed to the accommodation ladder and adjusting the gangway platform to ensure it was horizontal to the Main Deck. The 3/O requested additional assistance with rigging the pilot ladder and called for the ASD1, who was located approximately half-way down the accommodation ladder. The ASD1 proceeded to the gangway position on the Main Deck when he witnessed the OS1 fall from the gangway platform of the accommodation ladder and into

the water below. The Master, who was on the Bridge, was alerted to the MOB and immediately initiated MOB procedures. The Pilot informed all vessels within the vicinity of the situation and commenced directing the adjacent mooring boat to proceed to the starboard side of the container ship in the approximate location of the OS1. The search for the OS1 continued into the night however the OS1 could not be located.

The Administrator's marine safety investigation identified that the OS1 was working in a location, which in accordance with Company's SMS, required a safety harness with lifeline to be worn and connected to a strong point or fall arrest equipment while working over the side. It was determined that the OS1, at the time of the fall, was not wearing a safety harness with lifeline or connected to fall arrest equipment. The Administrator's investigation also determined that the application of the Company's general safe work procedures on board did not meet the expected measures required to be implemented while working over the side.

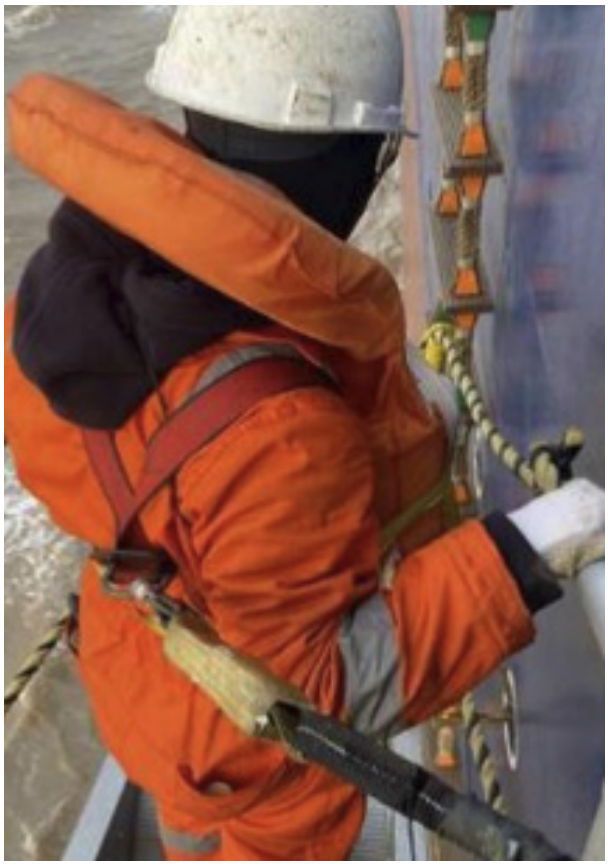


Figure 5: Photograph of a crewmember wearing PPE while working over the side in the same location on the accommodation ladder after the incident.

Lessons Learned

The following lessons learned were identified.

- The importance of wearing a harness with lifeline attached to a strong point when working over the side.
- The importance of adequate supervision to ensure appropriate PPE is properly worn prior to conducting a task.
- The importance of ensuring that all required procedures are adopted and implemented on board.
- The Stop Work Authority can be exercised by any crewmember, at any time, when deemed necessary to ensure tasks are executed safely.

Occupational Fatality on Board a Bulk Carrier

An RMI-flagged bulk carrier was loading nickel ore by means of the ship's cranes and grabs from barges that came alongside before commencing maintenance work on the hydraulic lines on grabs Nos. 1 and 2. To drain the hydraulic lines, a plastic drum was placed under the through-beam of the grabs. The plastic drum used to drain grab No. 1 did not fit under the fully opened grab and consequently, the grab was partially closed to lift the through-beam.

Lessons Learned

The following lessons learned were identified.

- Procedures to execute non-routine and unplanned jobs need to be followed, and that simultaneous operations impose additional risks that should be addressed.
- The importance of recognizing unsafe behavior and the use of the stop-work authority when an unsafe act is observed.
- The need for familiarization with the ship's equipment prior to executing maintenance jobs to the grab and associated components.

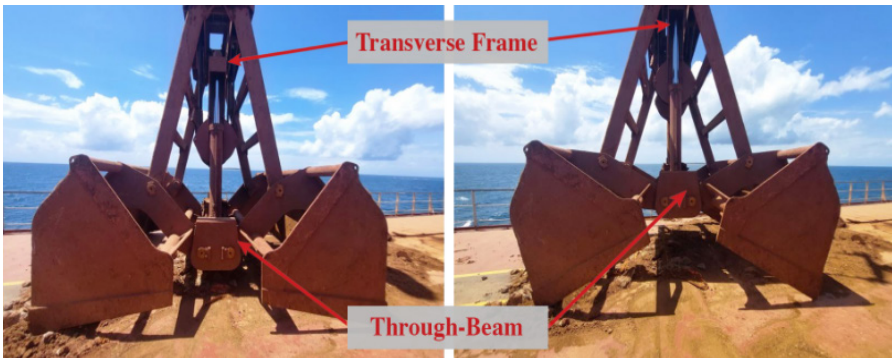


Figure 6: Grab No. 1 shown fully open on the left and partially closed on the right. The height from deck to the underside of the through-beam when the grab was fully open was 30 cm. The piston rods are extended in both pictures because the weight of the transverse frame is being supported by the deck crane's hoisting wire and the grab wires.

When the grab was parked on deck, the Bosun and the C/O noticed that the thimble of the grab wire of grab No. 1 was dislodged. It was decided to immediately replace the wire. An RA was completed and the C/O conducted a Toolbox Talk with the crewmembers involved in the task. To remove the grab wire, the dead end had to be removed from the wire socket. The crane hoisting wire and the grab wire were both slackened. As a result, the grab rested on the two partially opened scoops without hydraulic pressure in the lines or in the cylinder. A chain block was connected to the grab wire on one end, and to a D-ring on deck on the other end to pull the wire out of the wire socket. The ASD2 went under the grab to operate the chain block. When the chain block came under load, the grab opened unexpectedly to its fully open position, which reduced the space between the through-beam and the deck to approximately 30 cm and pushed the ASD2 down onto the deck. The ASD1 and ASD3 immediately ran to the crane cabin and lifted the grab to free the ASD2. The Master and other crewmembers were notified and subsequently, medical oxygen was administered. The Master contacted the ship's agent to arrange shoreside medical assistance, and telemedical advice was established. A shore rescue team boarded the ship and the ASD2 was transferred to the local hospital. The ASD2 arrived at the hospital and shortly thereafter was declared deceased due to internal hemorrhage and hypovolemic shock.

Enclosed Space Entry Fatality on Board an Oil/Chemical Tanker

An RMI-flagged oil/chemical tanker was underway while crewmembers conducted planned cleaning of the ship's cargo tanks. Mid-afternoon, either the Pumpman or OS2 reported by radio that the C/O had collapsed inside No. 6 S CT. The Master immediately directed the OOW to sound the general alarm and to make an announcement for crewmembers to proceed to No. 6 S CT for an enclosed space rescue. The Master and other crewmembers arrived at the No. 6 S CT dome shortly after hearing the general alarm. They found the access hatch open and saw the C/O lying on the upper platform and the Pumpman lying on the second platform inside the cargo tank. The OS2 could not be seen.

A rescue was conducted in accordance with the ship's enclosed space rescue plan. The C/O, Pumpman, and OS2, who had been found lying under the Pumpman on the second platform, had been removed from the cargo tank. When they were each removed from the cargo tank, all three were unconscious but were breathing and had a pulse, however the OS2's pulse was weak. Crewmembers started administering CPR and medical oxygen to the OS2 before moving him to the ship's Hospital, where crewmembers continued to administer CPR and medical oxygen. The C/O regained consciousness within a few minutes after being administered medical oxygen before being taken to the ship's Hospital. The Pumpman remained unconscious after being administered medical oxygen and was also moved to the ship's Hospital where crewmembers continued administering medical oxygen.

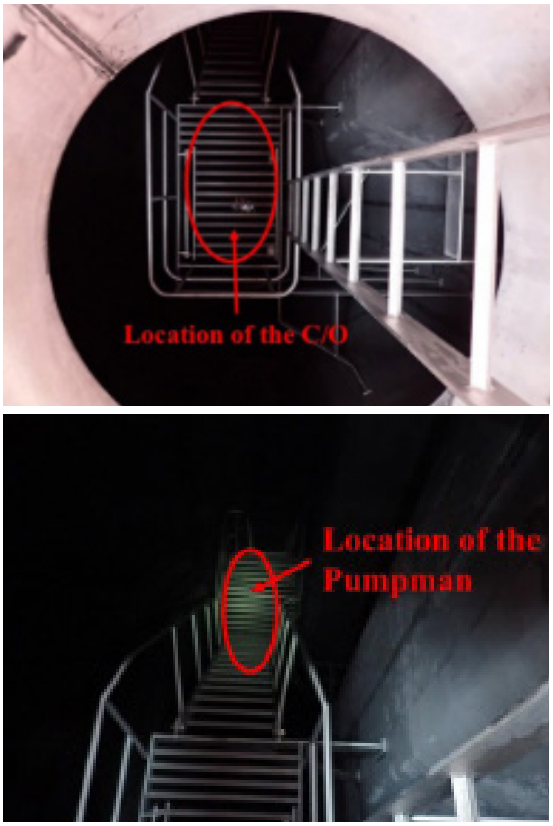


Figure 7: No. 6 S CT access ladder. The vertical ladder from the cargo tank dome to the upper platform is shown in the photograph on the top. The inclined ladder between the upper platform and the second platform is shown in the photograph on the bottom.

The Master sought shoreside medical advice and then diverted the ship toward the nearest port so that the C/O, Pumpman, and OS2 could be disembarked for medical treatment. By early evening, the Pumpman had regained consciousness but was continuing to have difficulty breathing and, by the early evening, the C/O was determined to be in stable condition. The OS2 remained unresponsive and a few hours later, crewmembers stopped administering CPR after the shoreside medical doctors determined he was deceased.

After the oil/chemical tanker rendezvoused with a SAR vessel, a rescue team embarked, which included a medical doctor and a police officer. The rescue team members examined the C/O, Pumpman, and OS2, and in the early hours the following morning confirmed that the OS2 was deceased. The

Lessons Learned

The following lessons learned were identified.

- Enclosed spaces should never be entered for any reason, including to assist a fellow crewmember, without implementing established shipboard procedures
- Masters and other senior officers must place safety above all else, and through both their words and actions, provide a positive example for junior officers and ratings.
- Deviations from established procedures increase the risk of accidents.

rescue team, along with the C/O and Pumpman, safely disembarked to the SAR vessel, which immediately proceeded to shore, where the Pumpman was admitted to the hospital for medical treatment.

The Administrator's marine safety investigation determined the C/O had entered the No. 6 S CT to take pictures required by the Charterer, and that the OS2 and Pumpman entered the cargo tank to aid the C/O after they saw him lying on the upper platform. The entry into the cargo tank by the three crewmembers was not conducted in accordance with the ship's enclosed space entry procedures and without taking any required precautions. It was also determined that the C/O had previously made multiple entries into the ship's cargo tanks, also to take pictures required by the Charterer, while cargo tank cleaning operations were conducted. Evidence of a lack of oversight by the Master, crewmember fatigue, and that records of work and rest hours were not being accurately maintained were also identified.

Fatal Fall from Height on a Bulk Carrier

An RMI-flagged bulk carrier was loitering in international waters while a working party painted the cargo holds in preparation for loading cargo at the ship's next port. The Bosun, who was standing on scaffolding approximately 9.5 m above the tank top to paint the upper portions of frames located inside of CH No. 3, directed the ASD1 and ASD2 to move the scaffolding by 3 m. The Bosun remained on the scaffolding when it was moved. The scaffolding, along with the Bosun, fell as the two ASDs were putting the stabilizer arms in place. The OS2, who was on deck, heard a loud noise from CH No. 3 and looked down into the cargo hold. He saw that the scaffolding had fallen and immediately reported by radio that the scaffolding being used in CH No. 3 had collapsed. The ship's C/O, who had just gone out on deck, heard the radio call from the OS2 and immediately entered the cargo hold. While climbing down the Australian ladder, he observed that the scaffolding had fallen and that ASD1 and ASD2 were assisting the Bosun, who was lying on the tank top. The Bosun was wearing a safety harness with a lifeline. The clip on the lifeline was connected to the scaffolding. The C/O examined the Bosun and determined that he was unconscious, had labored breathing and a weak pulse, and that his eyes did not respond to light. The C/O informed the Master of the Bosun's condition and requested medical equipment be brought to CH No. 3. The C/O, with assistance from the 2/O and other crewmembers, began administering first aid to the Bosun.

The Master informed the Company and requested medical advice from the established remote medical service provider. Based on advice from the medical service provider, the Master directed the ship to proceed at full speed to the nearest port. The Master also made a PAN-PAN[12] broadcast

12 An international radio distress signal, of less urgency than a mayday signal.

on VHF Channel 16 requesting a MEDEVAC for the Bosun. The regional MRCC responded to the PAN-PAN broadcast and provided instructions for rendezvousing with a rescue helicopter and boat for MEDEVAC of the Bosun. Within a matter of hours, the C/O informed the Master that the Bosun was deceased. The Master informed MRCC, who then canceled the MEDEVAC.



Figure 8: The scaffolding lying on the tank top in CH No. 3 after it fell. The two stabilizer arms that had been removed are circled in red.

The Administrator's marine safety investigation ruled out either a material or structural failure of the scaffolding, but was otherwise not able to determine why the scaffolding fell. Factors identified by the Administrator's investigation that contributed to this very serious marine casualty included that: the Bosun had remained on the scaffolding when it was moved; the lifeline connected to the Bosun's safety harness was secured to the scaffolding; implementation of stop-work authority on board was ineffective; and there was ineffective supervision. Other factors that may have contributed to this incident included: ineffective implementation of the Company's PTW procedure; and that two of the scaffolding's four stabilizer arms had been removed.

Lessons Learned

The following lessons learned were identified.

- Safe-work procedures are administrative controls that must be implemented consistently by all crewmembers to be an effective means of reducing exposure to hazards.
- Scaffolding, bosun's chairs, staging, portable ladders, etc. must be set up and used in accordance with the manufacturer's instructions.
- Lifelines connected to a safety harness must be secured to a strong point on the ship or a fall arrester connected to the ship and not scaffolding, staging, portable ladders, etc. to provide protection from falls.
- The use of stop-work authority can prevent marine casualties. For stop-work authority to be effective, crewmembers must not only be aware that they have this authority, but they must also have confidence that the authority is non-negotiable and can be exercised without fear of repercussion. Crewmembers must also be as familiar with how to issue and respond to a stop-work action or instruction as they are with their other shipboard duties.
- Work plans must prioritize watchstanding requirements (e.g., maintaining a proper lookout) and the rest-hour requirements in the STCW Code and MLC, 2006 over the course of the completion of routine shipboard tasks, such as preparing cargo holds for loading.

Occupational Fatality on Board a Gas Carrier



Figure 9: Chafing sleeve on the outer fore spring where it passes through the fairlead.

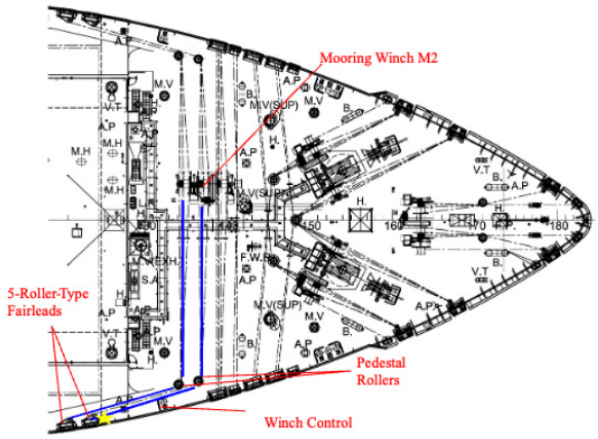


Figure 10: Forward mooring station. The blue lines show how the two fore springs were running. The yellow star represents the location where the ASD1 was standing.

An RMI-flagged gas carrier was berthing starboard side to alongside an LNG terminal. The final mooring arrangement, as agreed during the Master and Pilot information exchange, consisted of 17 synthetic mooring lines of which nine were forward and eight were aft, including two fore springs and two aft springs. To protect the mooring ropes from surface abrasion with steel surfaces of the fairlead rollers, chafe protection sleeves were wrapped around the mooring lines. The sleeves were installed around the mooring lines before lowering the lines from the ship to the mooring boat. The correct position of the sleeves could be adjusted upon completion of the mooring operation using the handling ropes connected to the sleeves. The fore springs were the first lines that were sent ashore, followed by the aft springs. The running ends of the mooring lines were paid out through the universal roller fairleads and then passed to mooring boats, which brought the lines to the jetty where they were secured around mooring hooks.

All the springs were secured on the mooring hooks. As the ship approached the jetty, the crew started heaving the lines by using the mooring winches to pick up the slack. It was observed that the winch being used to heave the aft springs was running slowly and could not catch up with the ship's movement. It was necessary to move the ship 20 m astern after it was alongside to align the manifold with the loading arms. The engines were put astern and the ship started moving slowly astern, bringing the aft springs under tension. Due to problems with the aft winch, the lines could not be slacked. The Bridge was informed about the tension in the lines and the snap-back area for the aft springs was cleared. Subsequently, the engines were put ahead to release the tension in the aft springs. The ship came to a stop and thereafter started moving forward, slacking the aft springs. The Master ordered the fore springs be paid out as the ship was moving forward. The ASD1 took the initiative to adjust the chafing sleeves on one of the fore springs and positioned himself adjacent to the

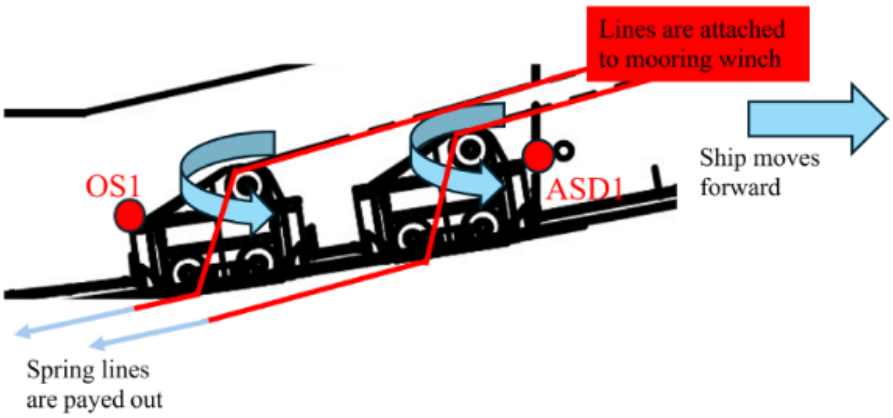


Figure 11: Movement of the vertical roller of the fairlead as the ship moves forward.

fairlead roller before the ship was moved forward. When the ship started to move forward, he got caught between the roller of the fairlead and the mooring line and was pulled through the fairlead into the water. The mooring boats which were assisting the ship immediately approached the ASD1 in the water, recovered him, and brought him ashore, whereafter he was transferred to the hospital by ambulance. Upon arrival in the hospital, the ASD1 was declared deceased.

Lessons Learned

The following lessons learned were identified.

- The need for clear communication between the Bridge and Supervisors of mooring stations and between Supervisors and the deck crew manning the mooring stations.
- The need for effective supervision on deck during mooring operations. Crewmembers must be aware of danger zones, including snap-back zones and rolling parts of mooring equipment.

It has been recognized by the Administrator that there has been an improvement in the quality of Company-derived investigations and willingness to implement recommendations, observations, and lessons learned quickly across their respective vessels.

Section 4: MSAs and MNs Issued by the Administrator

During 2025, the following MSAs and MNs were issued in response to incidents reported to the Administrator:

MSA 04-25

Propulsion Incidents on the Mississippi River

Propulsion incidents on the Mississippi River highlight the navigation and propulsion risks associated with vessels operating on the restricted waters of the Mississippi River. It reminds Masters and operators of the applicable regulated navigation area requirements and the importance of proper pre-arrival and pre-departure testing of propulsion and steering systems.

MSA 12-25

Stop-work Authority

Stop-work authority provides guidance on the importance of empowering seafarers to stop work when they identify an unsafe condition or practice, regardless of rank or position. It also emphasizes effective implementation of stop-work authority within the vessel's SMS as a means of preventing accidents and marine casualties.

MN 2-011-63

Requirements for the Reporting of the Loss of Freight Containers or the Observation of Freight Containers Drifting at Sea

This MN sets out the reporting obligations for operators of RMI-flagged vessels following the loss or sighting of drifting freight containers. It requires Masters to report relevant information without delay to vessels in the vicinity, the nearest coastal State, and, where applicable, the Administrator.

MN 2-011-62

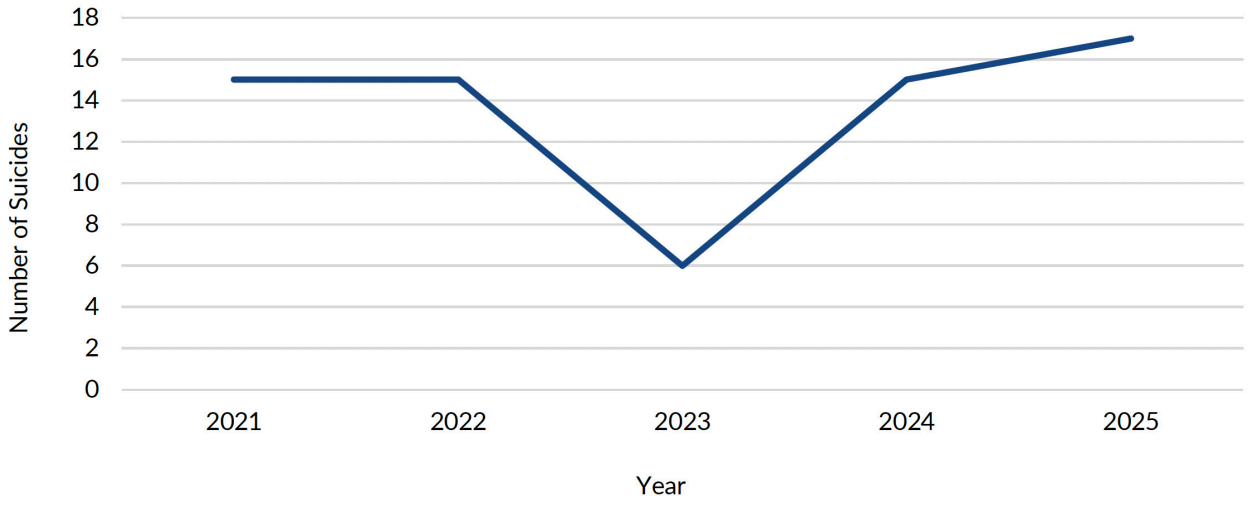
Lifting Appliances and Anchor Handling Winches

This MN on lifting appliances and anchor handling winches sets out the RMI requirements for the design, construction, installation, testing, examination, and certification of lifting appliances, anchor handling winches, and associated loose gear. It aims to ensure these systems are properly maintained and operated safely, with requirements aligned with SOLAS II-1/3-13 and applicable IMO guidance.

Seafarers are the backbone of the maritime industry, without which ships would not be able to operate. It is therefore vital that seafarers, no matter their nationality, position on board, age, or other characteristics, remain both physically and mentally healthy. The purpose of this section is to raise awareness of suicide on board by looking at the annual occurrence trends, timing in relation to months spent on board, age range, and distribution by seafarer position on board.

Since 2021, 68 seafarers have committed suicide on board RMI-flagged vessels with an average of 13 per year. Suicide numbers remained relatively stable in 2021 and 2022 at approximately 15 cases per year. A significant reduction occurred in 2023; reducing to six cases. The number of cases increased sharply in 2024 and reached the highest level in 2025 at 17 recorded cases.

Number of Suicides Between 2021–2025

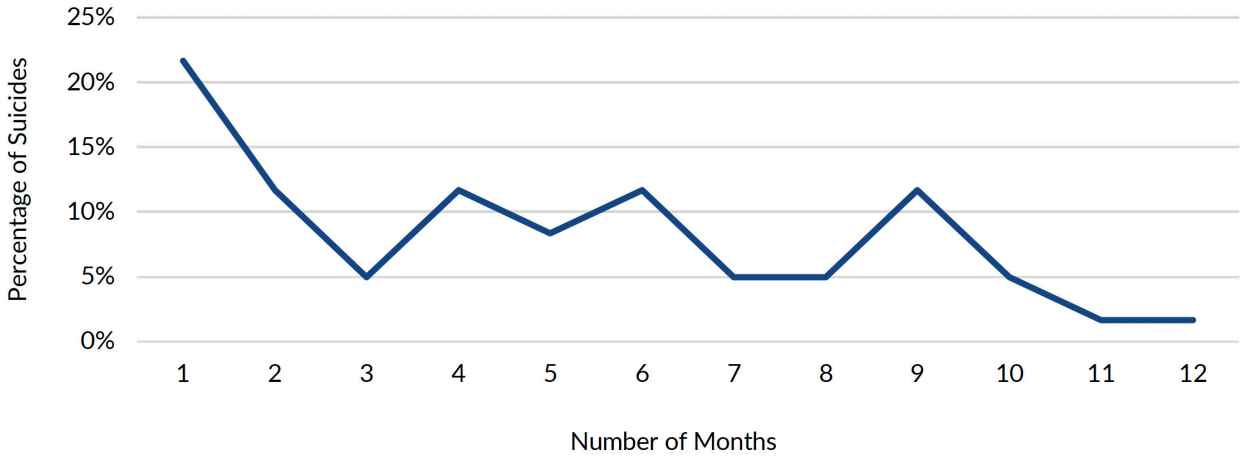


The fluctuation seen between 2021 and 2025 indicates that suicides are likely influenced by multiple external and organizational factors rather than a single specific cause. The increase seen in 2024 and 2025 is an indication of a reduction in seafarer mental, emotional, and social well-being on board from the significant reduction in 2023.

The Administrator's records indicate that since 2021, 33% of suicides occurred within the first two months of a seafarer stepping on board. After this period, the number of suicides by time on board reduces. Months four, six, and nine remain consistent at 12% before a decrease in the number of suicides after 10 months on board. The number of reported suicides occurring after 10 months is attributed to a reduction in the number of seafarers at sea after nine consecutive months.[13]

13 The average contract length of a seafarer is approximately nine months.

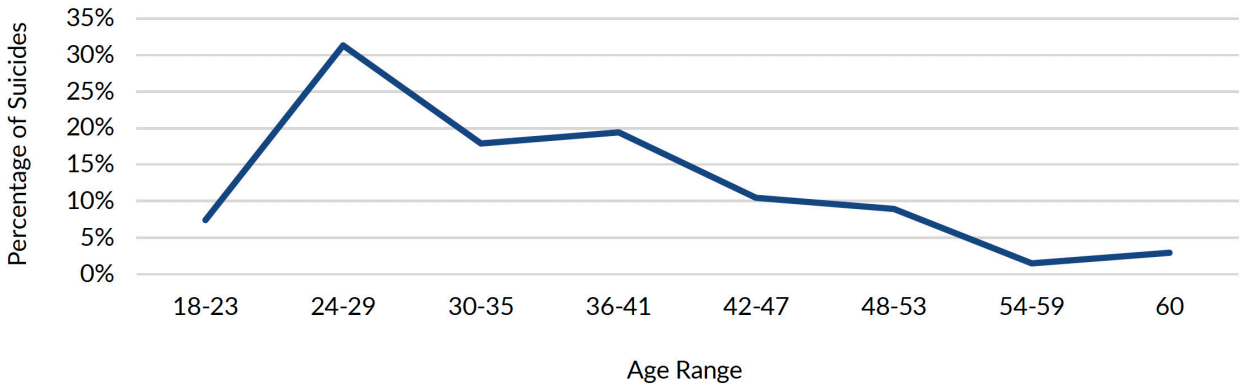
Suicide Occurrence by Number of Months on Board Between 2021–2025



The suicide rate in months one and two are likely attributed to, or associated with, an individual's adjustment to serving at sea, separation from family, anxiety associated with an unfamiliar environment, unaccustomed routine, or existing mental health vulnerabilities which become acute after an initial period on board. As time on board increases, associated factors resulting in suicide might include cumulative fatigue, chronic stress, sleep deprivation, interpersonal conflict, contract extension, a reduction in morale, increase in monotony, and increase in separation anxiety.

The following graph shows a distribution of suicide occurrences among seafarers by age. The 24-29 age group accounts for approximately 31% of all suicides, making it the most affected age category by a significant margin. The 30-35 and 36-41 age groups account for approximately 18% and 19% respectively. Combined with the 18-23 and 24-29 age group, seafarers aged between 18-41 represent nearly 77% of all suicide occurrences. After the age of 41, the proportion of suicide occurrences decreased steadily. This trend is likely indicative of several factors such as fewer seafarers remaining at sea, experienced coping mechanisms and support network, financially more stable, and a greater resilience which has been developed over time.

Suicide Occurrence by Seafarer Age



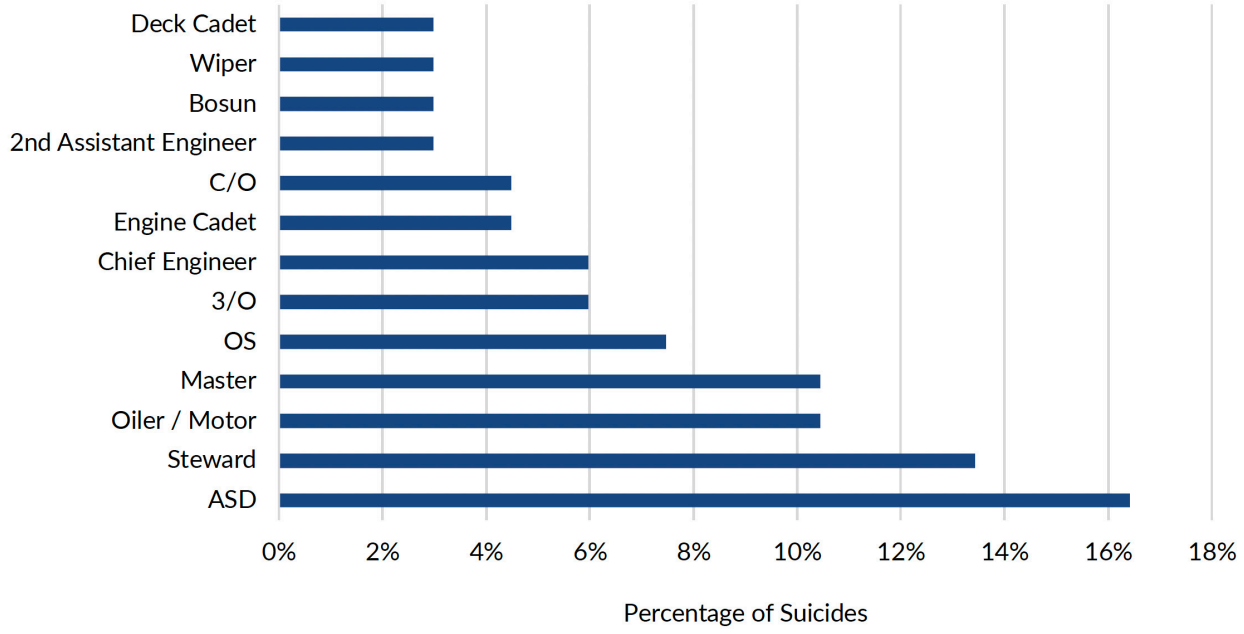
The following graph depicts the number of suicides by position on board between 2021 and 2025. The highest-risk positions were observed among ASDs (16%), Stewards (13%), Oiler / Motor (10%), and Masters (10%). Lower incidence positions include Cadets, Wipers, Bosuns, and 2nd Assistant Engineers.

When analyzing the data across departments, the number of suicides is approximately proportionate to the number of seafarers on board within each of the three departments: Deck (52%), Engine (31%), and Catering (16%). Similarly, incidents by officers (34%) compared to ratings (58%), and cadets (7%), is proportionate to the number of officers, ratings, and cadets on average on board.

Of the highest occurrence rates among all positions (ASD, Steward, and Oiler/Motor), there is commonality between their roles on board. For these positions, their work is often physically demanding with long working hours. The type of work can be repetitive and often heavily scrutinized. Further, these seafarers often find themselves in isolation when decisions are made on board, and have reduced autonomy compared to more senior, experienced positions.

The significance behind the number of incidents involving Masters is not unsurprising given the responsibilities carried by these seafarers. It is not uncommon for a Master to feel isolated from the crew, and finding a balance between maintaining operational readiness and building a rapport with other seafarers can be overwhelming.

Suicide by Position on Board Between 2021–2025



The broad spread of incidents across officers and ratings indicates that the mental health risk is not confined to rank or seniority on board. Further, the data suggests that different departments are likely to experience different stressors requiring targeted interventions.

Operational

- Consider enhanced psychological screening and assessment before seafarers embark.
- Structured, regular, welfare checks up and down the chain of command within a mechanism designed to provide continual support as necessary.
- A dynamic fatigue management system which identifies and recognizes those seafarers who exhibit signs of fatigue.
- Improved monitoring of seafarers who demonstrate changes in personality, loneliness, or isolation, with a robust mechanism to ensure adequate support is provided.

Leadership & Culture

- Mental health awareness training for all seafarers, in particular senior officers, to ensure early signs of poor mental health can be identified among individuals.
- Reduce the stigma surrounding mental health support and encourage seafarers to seek support both on board and ashore.
- Encourage peer-support on board through shared activities within communal spaces.

Welfare Support

- Increase access to confidential counseling solutions and shore-based facilities.
- Develop a cross-departmental mentorship program on board where confidential support can be provided for early identification of welfare issues.
- Assess access to family and friends through improved connectivity on board.

The data is not conclusive. However, when combined with information readily available in the industry, the following broad conclusions regarding seafarer suicides can be better understood by all stakeholders.

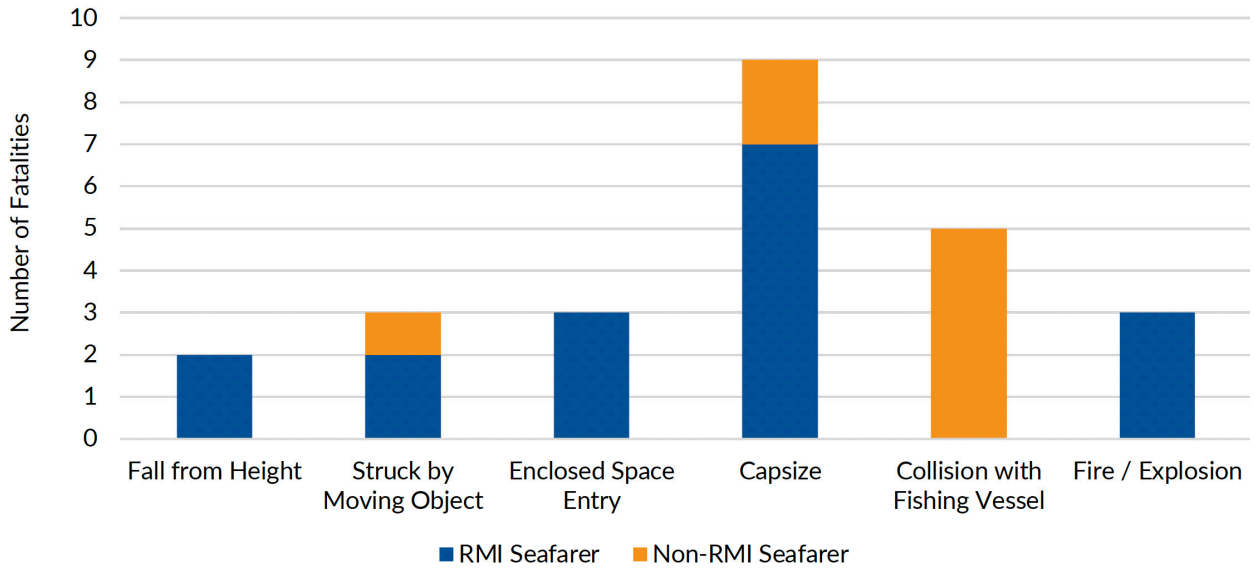
- Seafarers, particularly junior seafarers, experience anxiety derived from separation from family and friends.
- The impact of prolonged exposure to stress on board.
- The consequence of fatigue, particularly long working hours, and the presence of continual exposure to a hazardous environment.
- Recognizing isolation and changes among relationships on board and ashore.
- The burden of responsibility placed upon senior leaders on board.
- The impact on mental health through maintenance of a high operational tempo and state of continual readiness.

A number of measures can be adopted as safety recommendations and incorporated within the SMS. These recommendations fall within three principal categories; operational, leadership and culture, and welfare support.

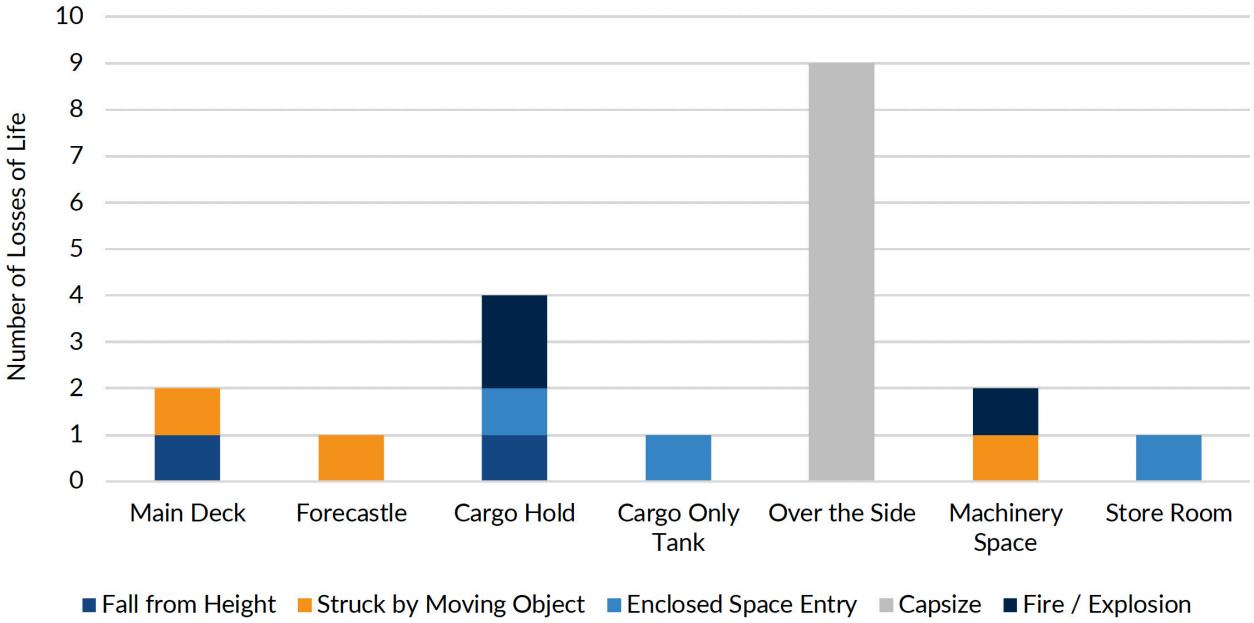
Appendix 1: Very Serious Marine Casualties

During 2025, very serious marine casualties involving RMI-flagged vessels resulted in 25 fatalities.

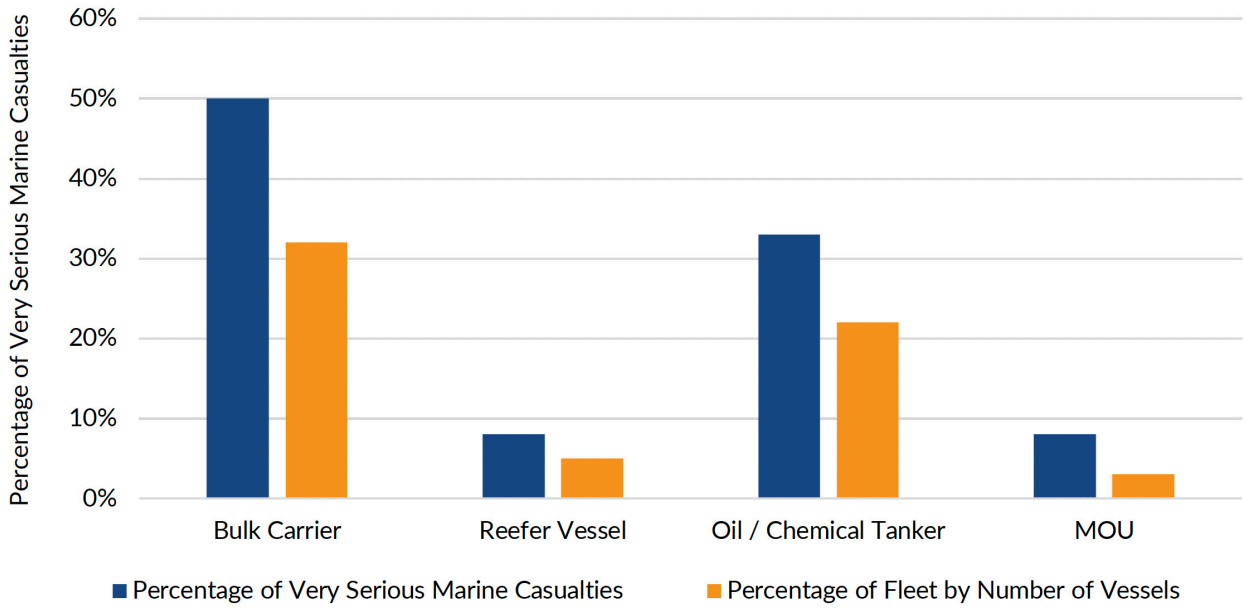
Loss of Life by Primary Incident Type — 2025



Loss of Life by Location on Board — 2025



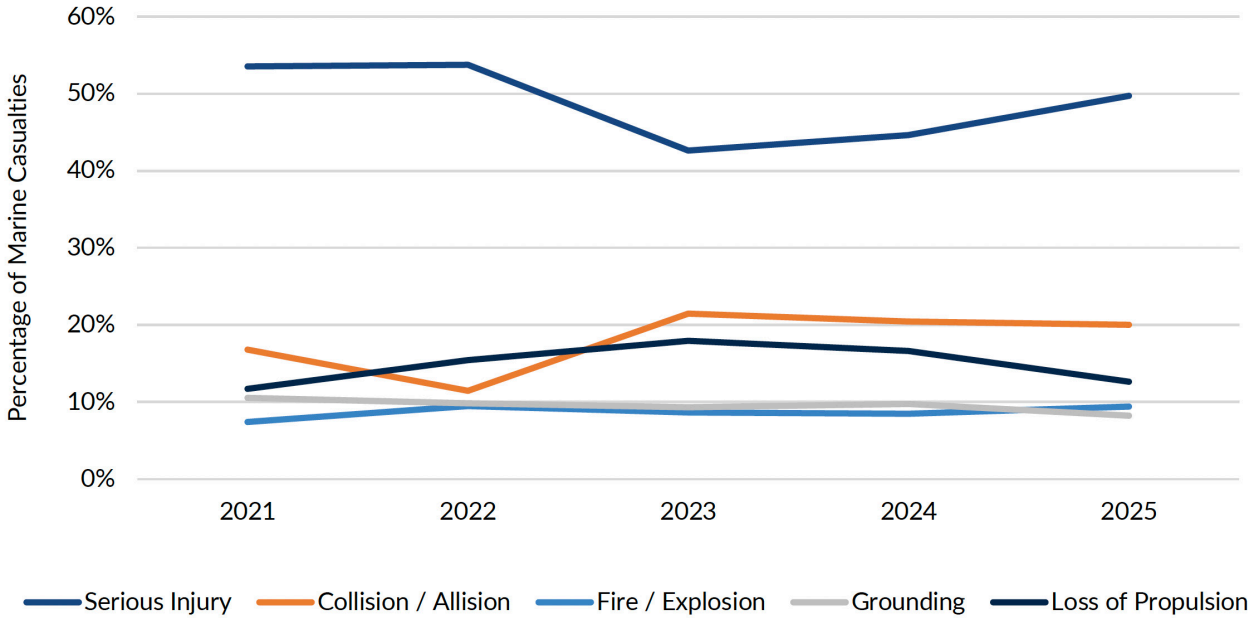
Very Serious Marine Casualties by Ship Type



Appendix 2: Marine Casualties

The following information includes data obtained during 2025 for marine casualties reported to the Administrator. The detailed analysis includes data obtained from marine casualties investigated by the Administrator into the five most common incidents by type over a five-year period.

Marine Casualty Top 5 Primary Incident Type Comparison — 2021 to 2025

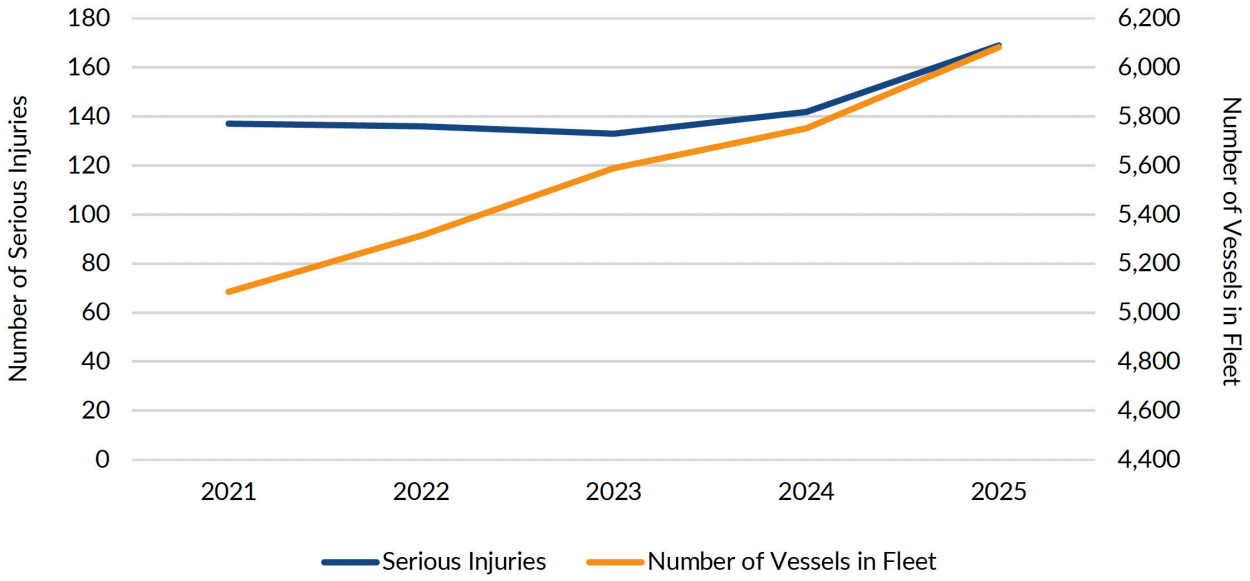


Serious injuries (those resulting in incapacitation for 72 hours or more) continue to be the leading primary incident type reported to the Administrator during 2025. However, as a proportion of the top five incident types, serious injuries are generally declining over the five-year period. Collision / allision cases remain relatively steady over a five-year period. Loss of propulsion decreased significantly between 2024 and 2025. Grounding and fire / explosion cases have remained steady over the five-year period, increasing proportionally with the growth of the fleet.

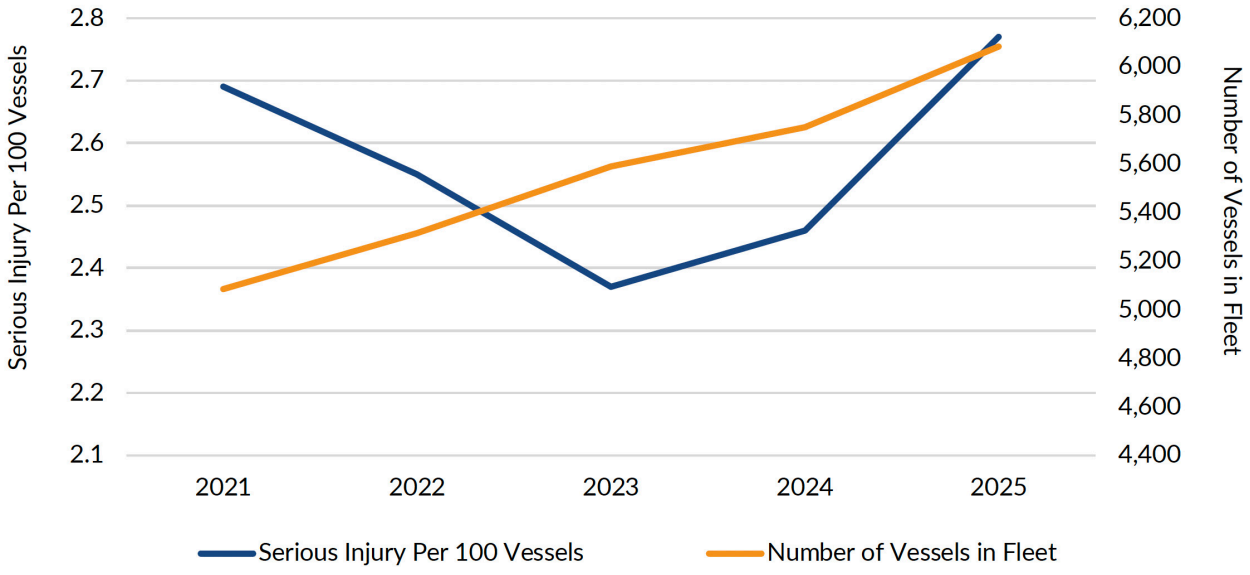
Serious Injuries

Serious injuries continue to be the leading marine casualty by primary incident type. However, it is noted that the total number of serious injuries reported continued to decline while the fleet size has continued to grow. On average, 2.8 serious injuries occurred for every 100 vessels in 2025, compared to 2.5 in 2024. This is an increase of 0.3 compared to 2024, and although the general average across the five-year period is 2.6, the number of serious injuries is increasing at a sharper rate in 2025 than in previous years.

Serious Injuries — 2021 to 2025

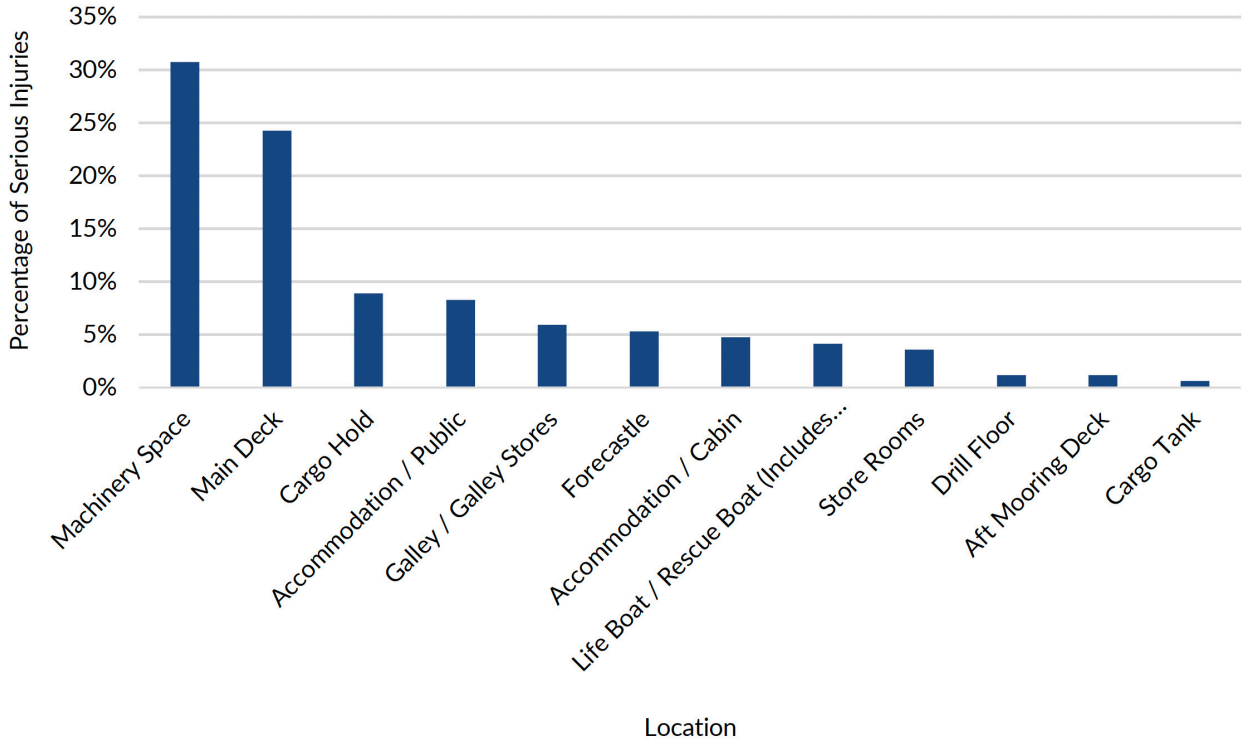


Number of Serious Injuries per 100 Vessels — 2021 to 2025



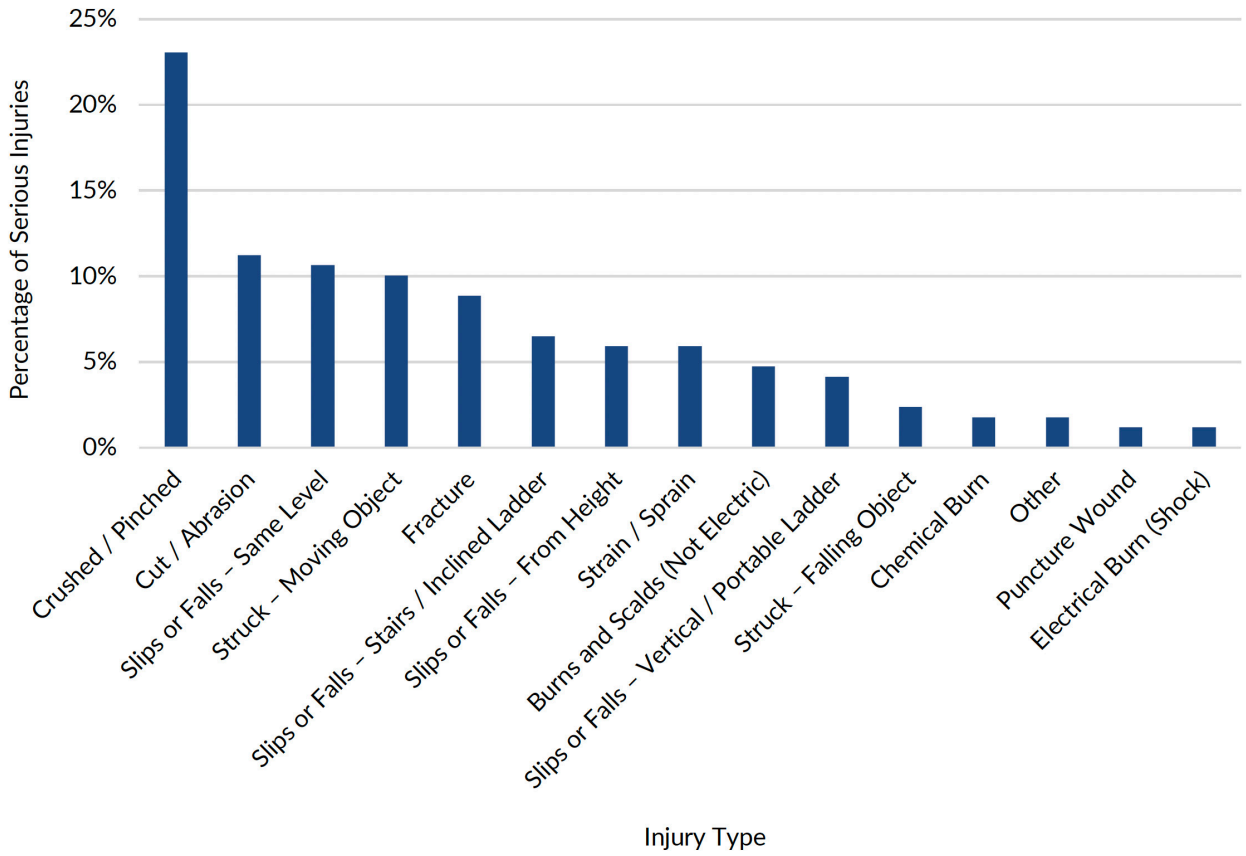
Top 10 Causal Factors of Serious Injuries — 2025	
CAUSAL FACTOR	PERCENTAGE OF INCIDENTS[14]
Poor judgment	8%
Improper position for task	7%
Improper lifting, handling, or storage	7%
Inadequate work planning or programming	7%
Failure to secure	6%
Routine, monotony, demand for uneventful vigilance	6%
Inadequate identification and evaluation of hazards	5%
Poor human coordination	4%
Inadequate instructions, orientation, and/or training	3%
Inadequate guards or barriers	3%

Serious Injury by Location — 2025

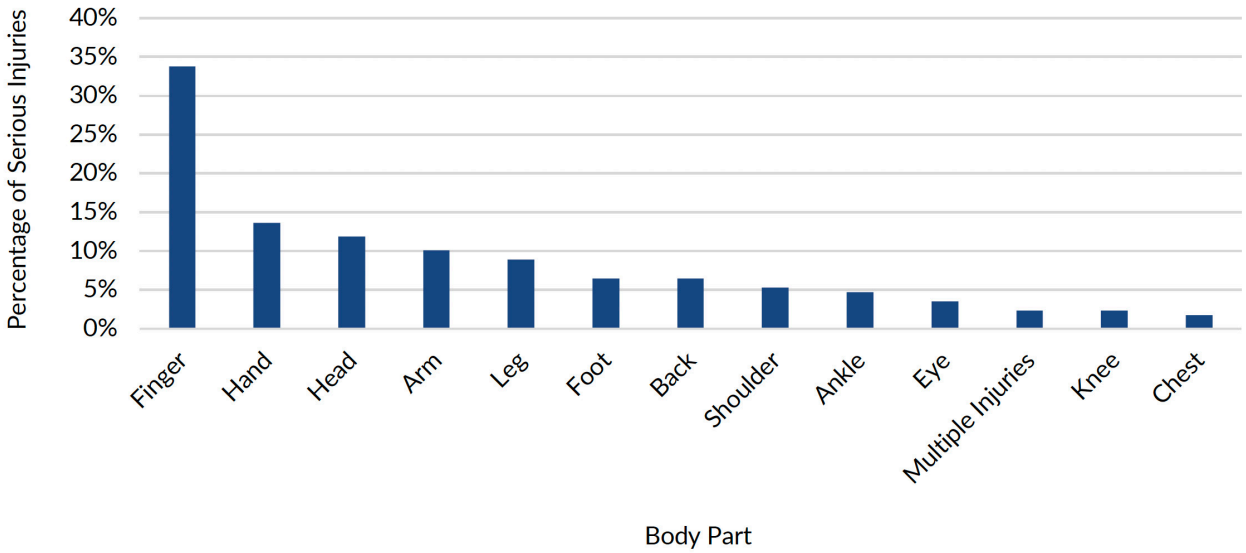


14 Multiple causal factors can be associated with the same incident.

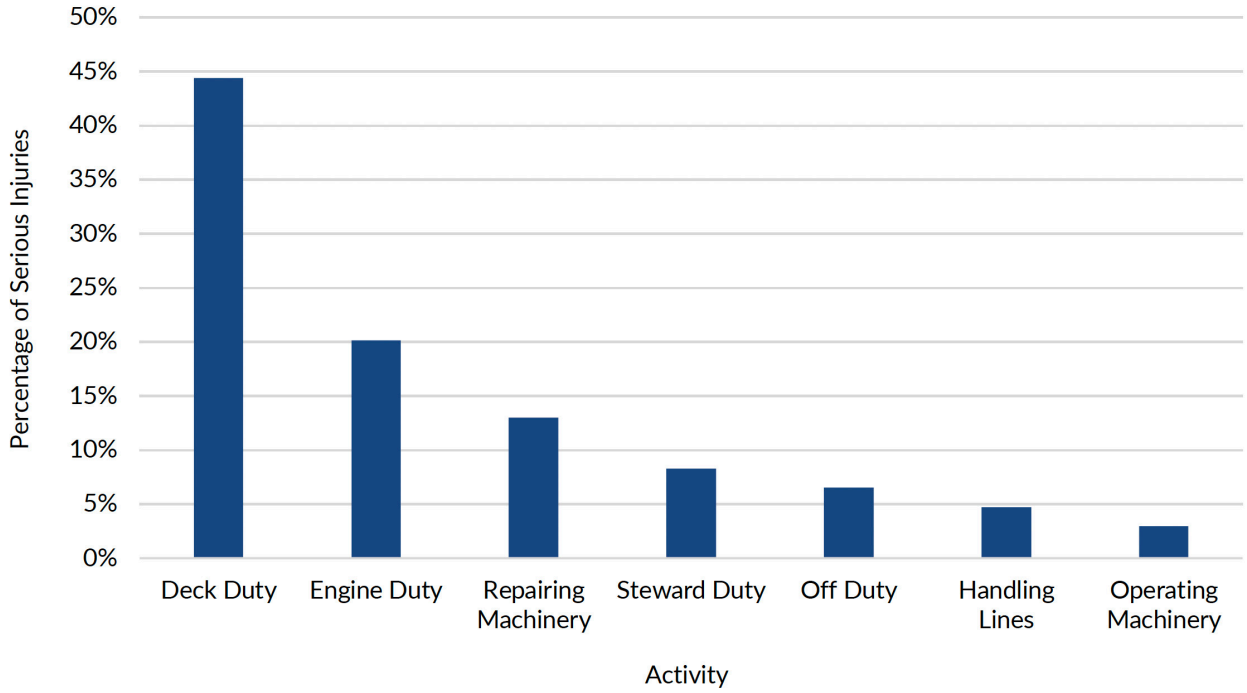
Serious Injury by Injury Type — 2025



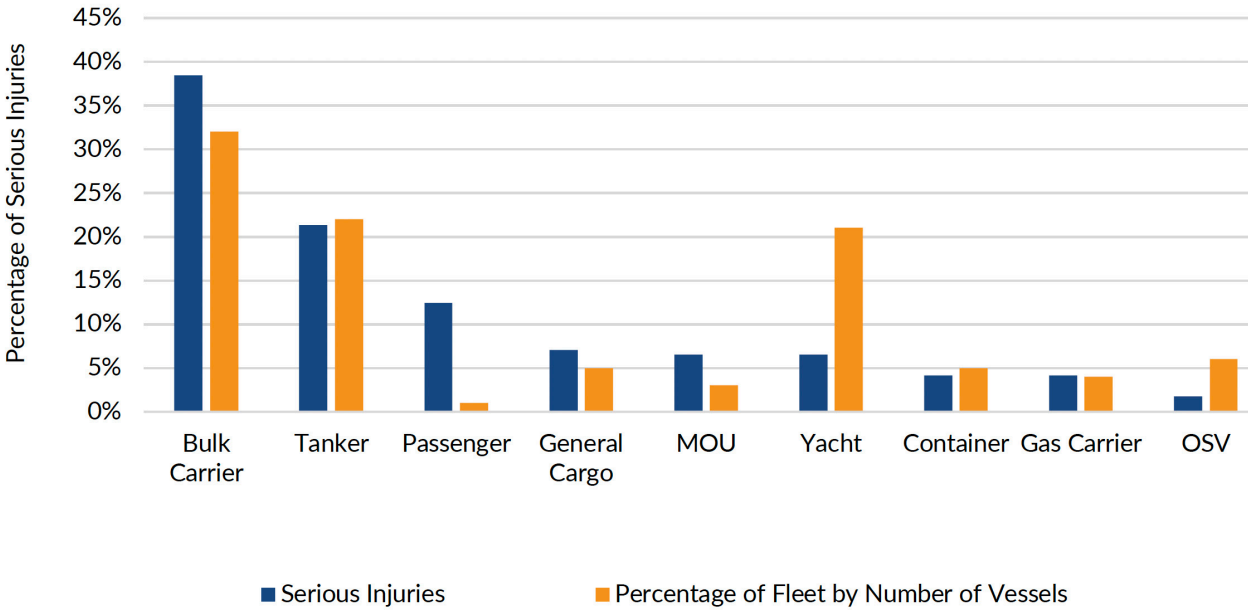
Serious Injury by Body Part Injured — 2025



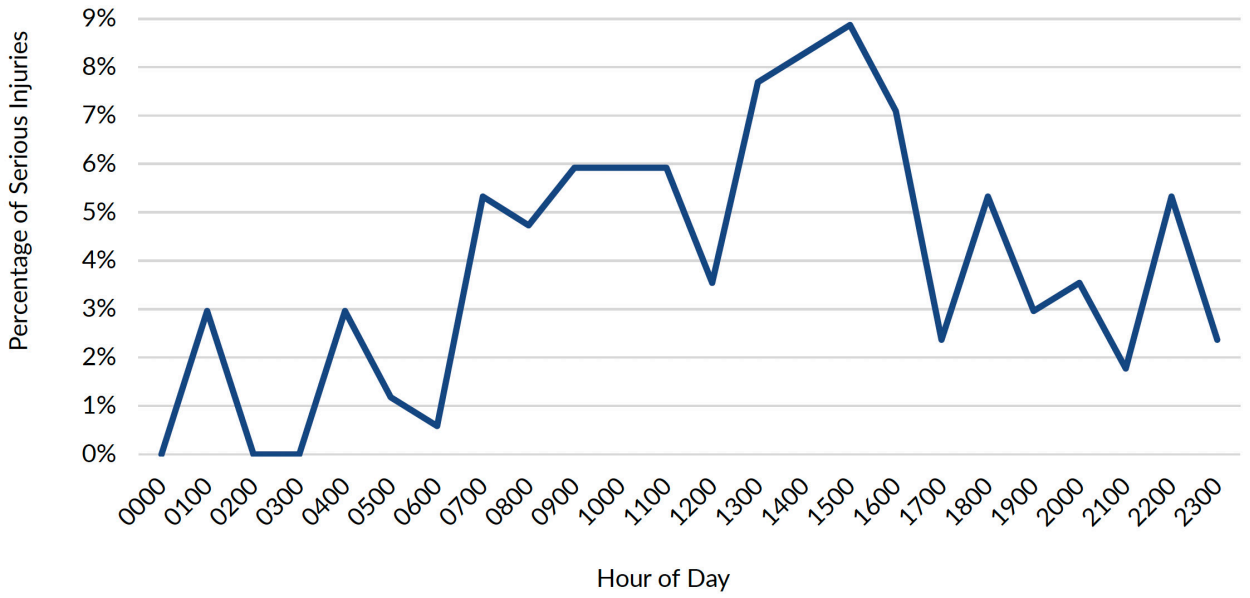
Serious Injury by Activity — 2025



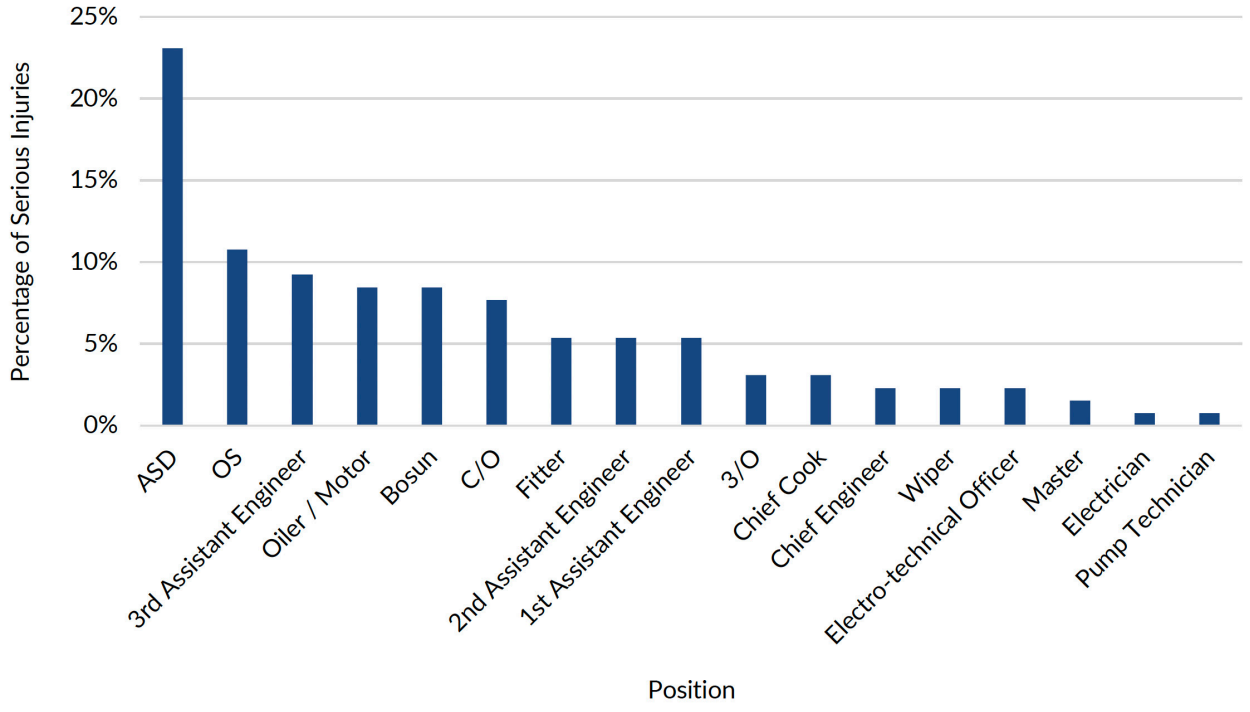
Serious Injury by Ship Type — 2025



Serious Injury by Time of Incident — 2025



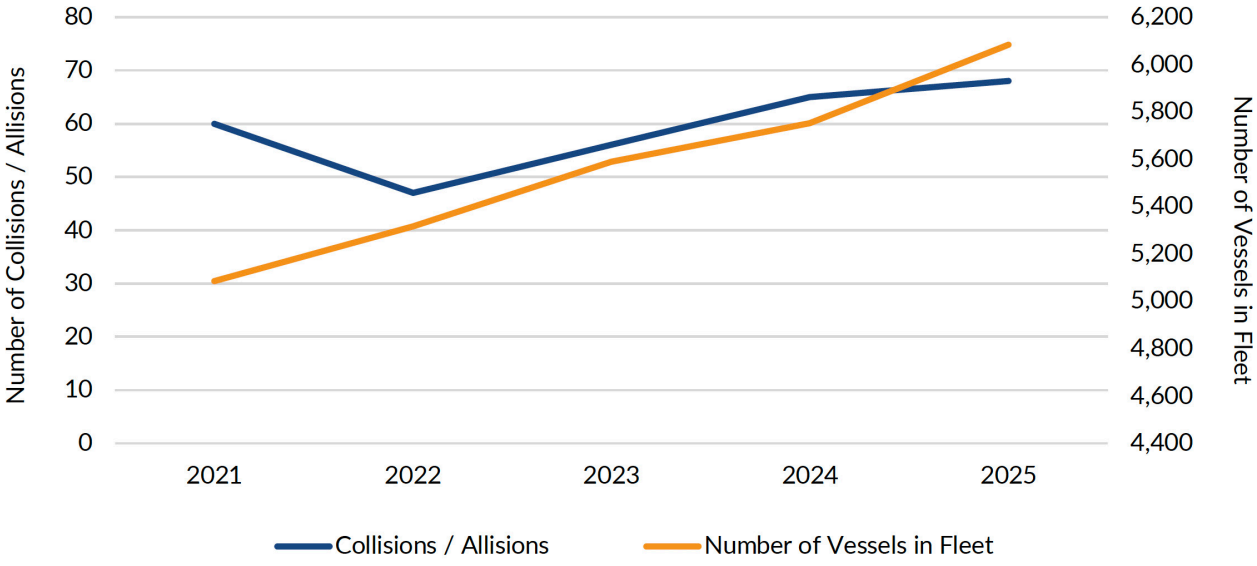
Serious Injury by Position — 2025



Collisions / Allisions

During 2025, 68 collisions / allisions[15] were reported, compared to 65 in 2024; 34% of these incidents occurred with a pilot on board. The percentage of collisions / allisions that have occurred with a pilot on board has remained consistent over the past five years.

Collisions / Allisions — 2021 to 2025

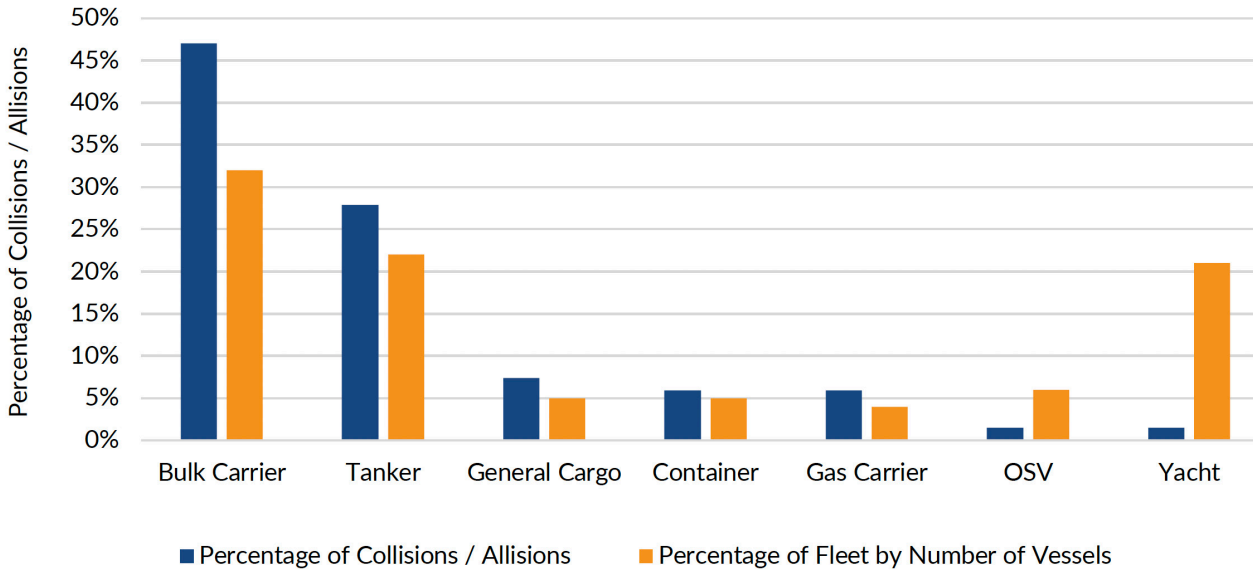


Top 10 Causal Factors of Collisions / Allisions — 2025	
CAUSAL FACTOR	**PERCENTAGE OF INCIDENTS[16]**
Incorrect navigation or ship handling	28%
Inadequate work planning or programming	6%
Failure to follow rules and regulations	6%
Adverse weather conditions	5%
Port and berthing facilities	4%
Inadequate identification and evaluation of hazards	4%
Environmental conditions	4%
Poor judgment	4%
Unclear or conflicting reporting relationships	3%
Failure to warn	2%

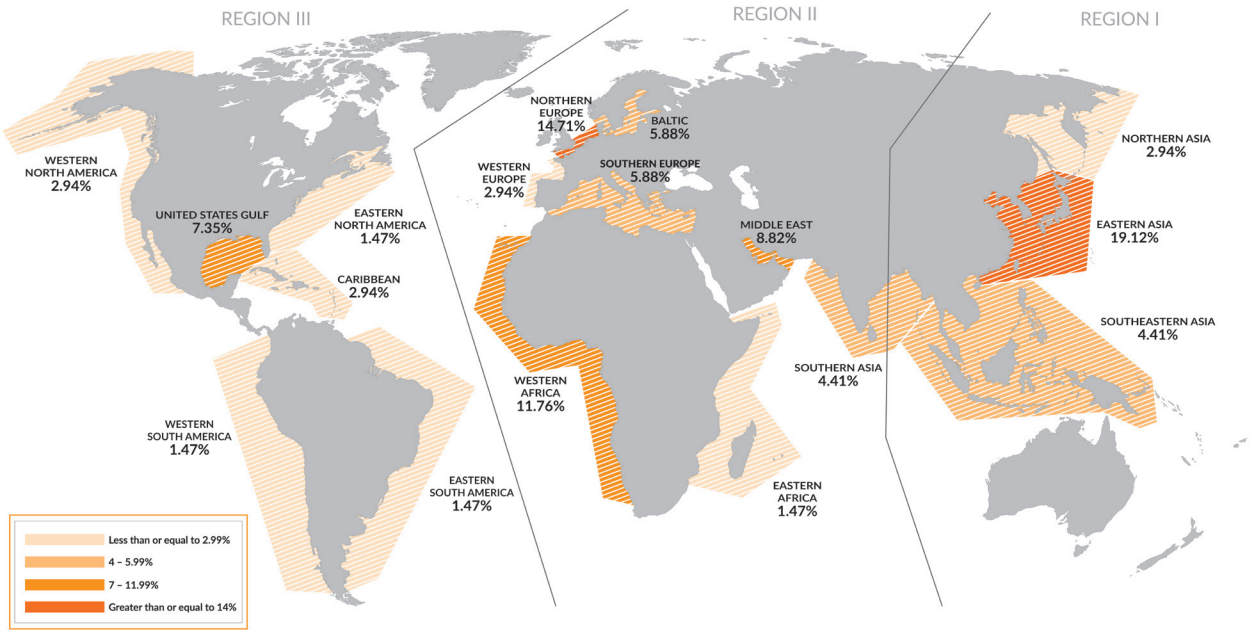
15 These do not include allisions where the RMI-flagged vessel was anchored or moored.

16 Multiple causal factors can be associated with the same incident. Improper or ineffective application of COLREGs is addressed by several of the identified causal factors.

Collisions / Allisions by Ship Type — 2025



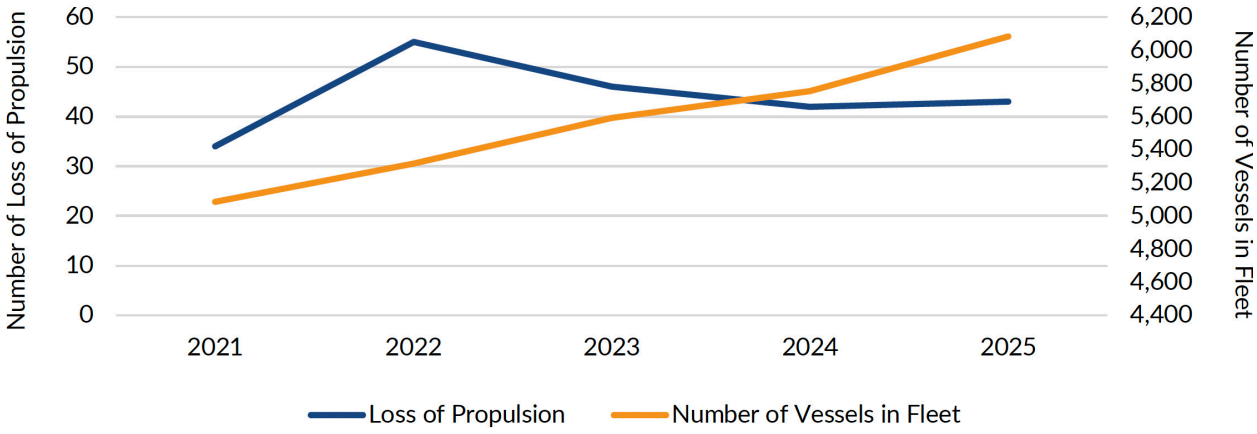
Collisions / Allisions by Geographic Region — 2025



Loss of Propulsion

The Administrator received 43 reports of loss of propulsion during 2025, with 65% occurring in coastal seas, narrow and restricted waters, and port approaches with a pilot on board. The remaining incidents occurred on the high seas, TSS, at anchor, or alongside. Of the 43 loss of propulsions incidents reported, one resulted in a collision, two resulted in grounding, and one resulted in a safety of navigation incident in coastal waters. A pilot was on board for one of the groundings and the collision.

Loss of Propulsion — 2021 to 2025

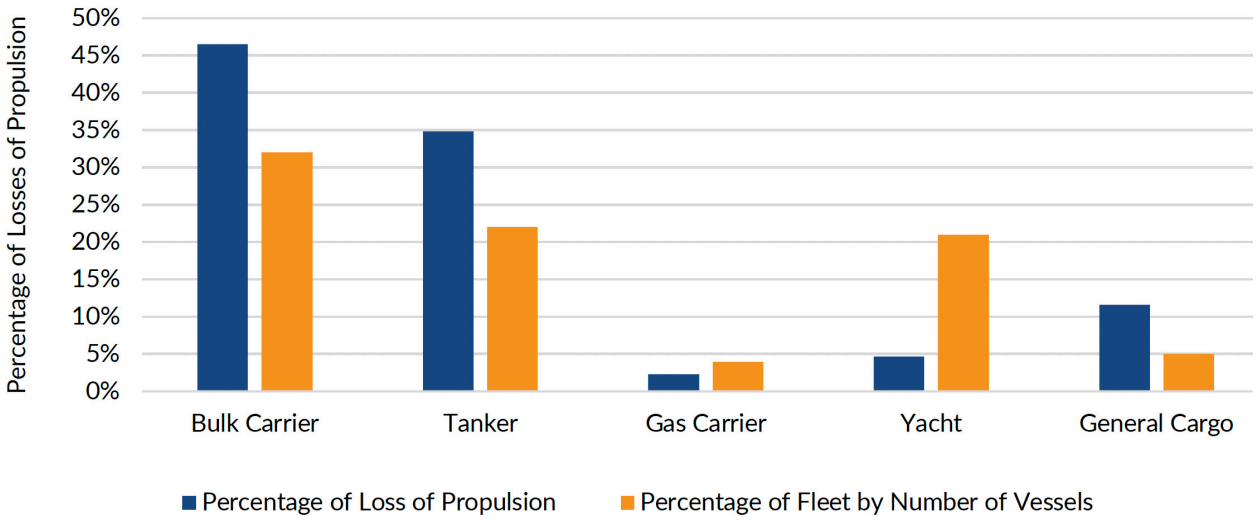


Top 10 Causal Factors of Loss of Propulsion — 2025	
CAUSAL FACTOR	**PERCENTAGE OF INCIDENTS[17]**
Defective equipment, machinery, or tools	34%
Inadequate inspection and monitoring	9%
Poor housekeeping	5%
Inadequate examination of units	5%
Bunkers and/or lube oils	4%
Inadequate work planning or programming	4%
Inadequate identification and evaluation of hazards	4%
Incorrect use of equipment or machinery	4%
Improper adjustment or assembly of equipment	3%
Failure to follow repair and maintenance instructions	3%

17 Multiple causal factors can be associated with the same incident.

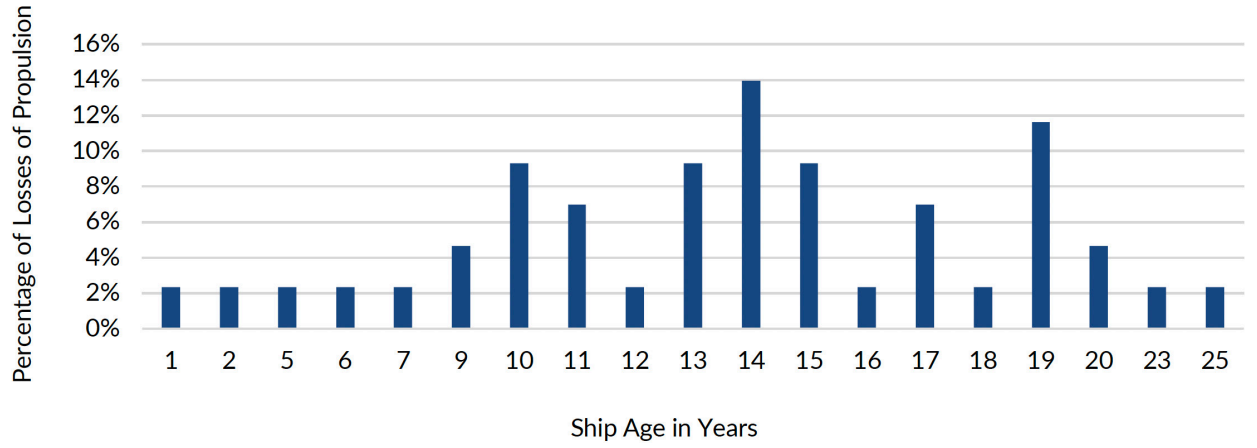
Bulk carriers[18] accounted for 47% of all loss of propulsion incidents followed closely by tankers (35%), and general cargo ships (12%). Compared to 2024, a significant decrease in the number of reported loss of propulsion incidents on yachts occurred, marking a significant improvement in 2025. Gas carriers remained relatively stable in the number of loss of propulsion incidents in 2025, compared to 2024.

Loss of Propulsion by Ship Type — 2025



As of the end of December 2025, the average age of the fleet[19] was 10.95 years. The majority of the RMI fleet was between 0–14 years of age, accounting for 71% of RMI-flagged vessels. While 24% of the fleet was aged between 0–4 years, 22% of vessels were between 5–9 years of age, 25% between the ages of 10–14 years, and 21% of vessels were between 15–19 years of age. Vessels older than 20 years accounted for 8% of the RMI-flagged fleet.

Loss of Propulsion by Ship Age — 2025

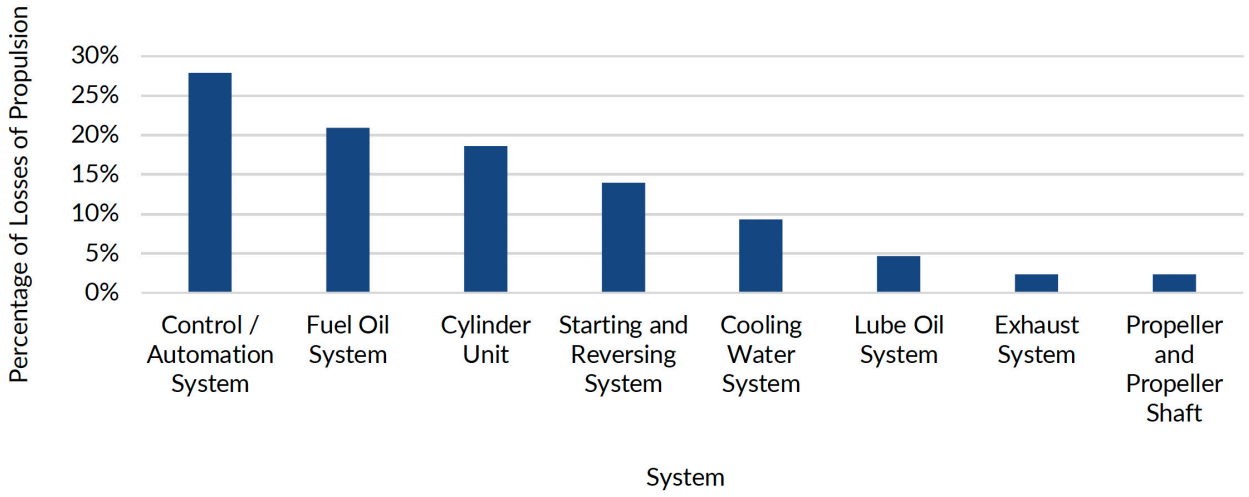


18 The average age of RMI-flagged bulk carriers was 10.23 years as of 31 December 2025.

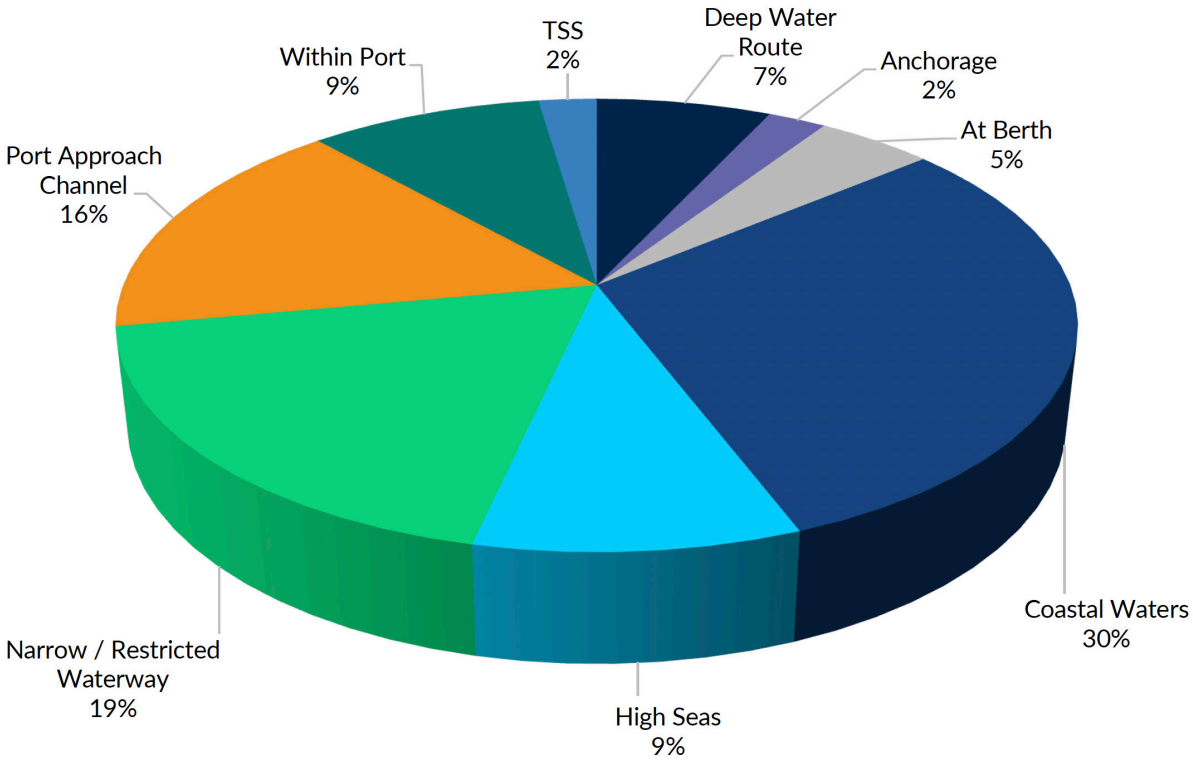
19 As of 31 December 2025. MOUs have been excluded from this data.

While 71% of the RMI-flagged vessels were between 0–14 years, only 59% of loss of propulsion incidents reported have occurred on vessels within this age range. However, 75% of all loss of propulsion incidents occurred between the range of 10–19 years. This is a significantly greater proportion than that of the fleet, indicating that the vast majority of loss of propulsion incidents occurred between a vessel's second and third renewal survey.

Loss of Propulsion by System — 2025



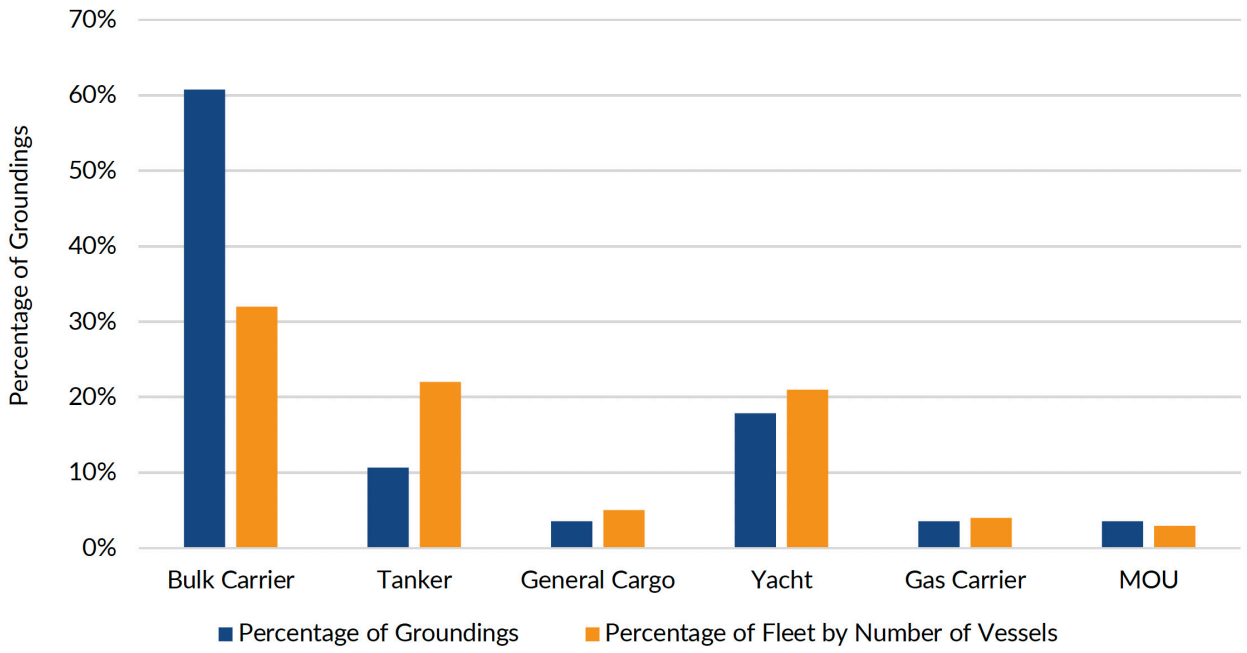
Loss of Propulsion by Activity — 2025



Groundings

The Administrator received 28 reports of groundings during 2025, 39% of these occurred while a pilot was on board. In total, 10 causal factors were identified during the interrogation of grounding incidents in 2025. With the exception of inadequate port and berthing facilities, attributing 14% of all incidents, the two most prominent causal factors were attributed toward incorrect navigation and ship handling, and environmental conditions. The causal factors provide evidence that inadequate passage planning was the main cause and that selection of the berth, weather forecasting, under keel clearance, monitoring a vessel's position relative to available depth and breadth or navigable water, and management of bridge resources such as the pilot, should be regularly discussed, reinforced, and exercised among bridge teams.

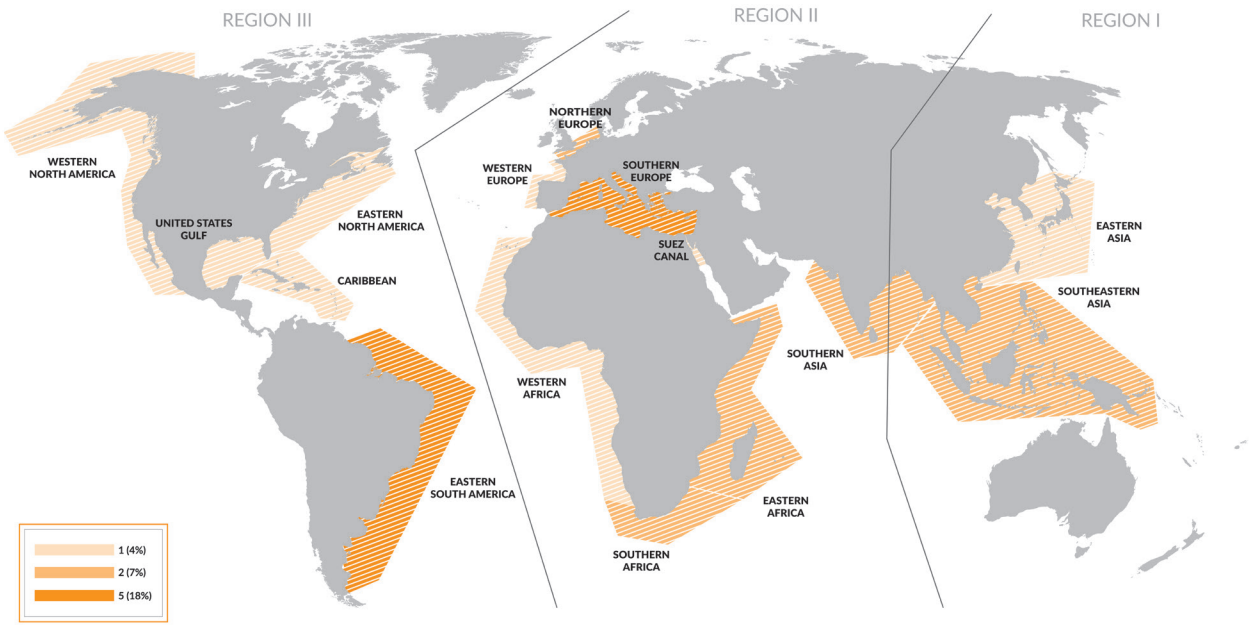
Groundings by Ship Type — 2025



It has been recognized by the Administrator that owners and operators remain committed to safety of life and property at sea and the marine environment.

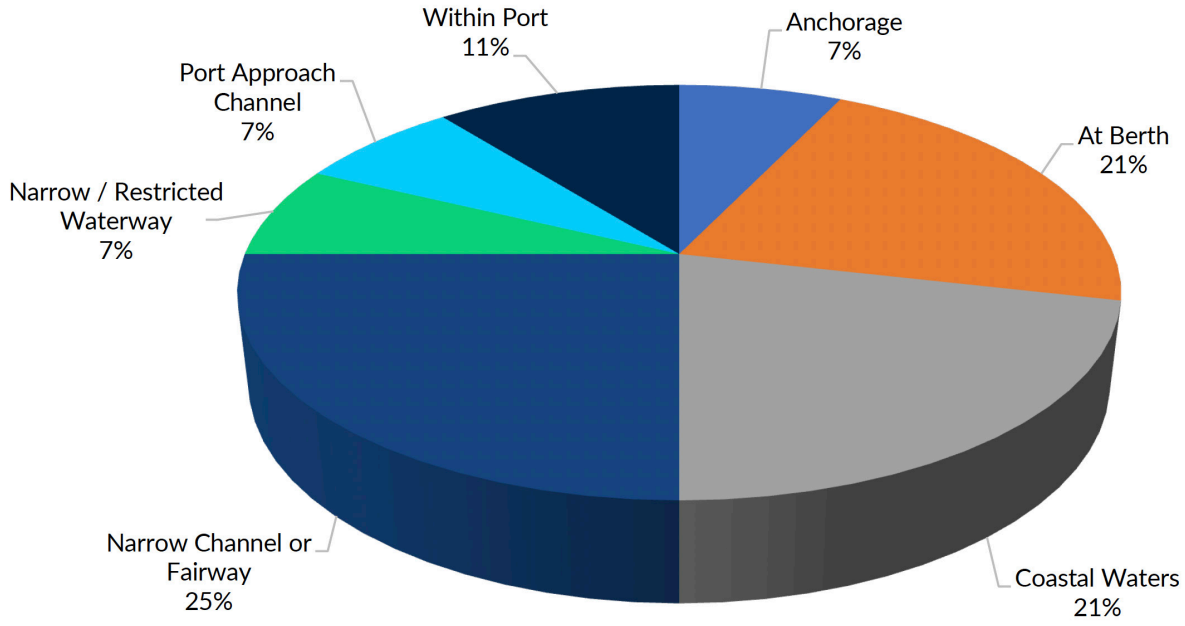
Top 10 Causal Factors of Groundings — 2025	
CAUSAL FACTOR	**PERCENTAGE OF INCIDENTS[20]**
Inadequate port and berthing facilities	14%
Incorrect navigation or ship handling	14%
Environmental conditions	14%
Inadequate work planning or programming	7%
Outdated charts, publications, and other documentation	7%
Improper or insufficient delegation	6%
Inadequate work standards	4%
Inadequate identification and evaluation of hazards	3%
Inadequate instructions, orientation, or training	3%
Giving inadequate policy, procedure, practices, or guidelines	1%

Groundings by Geographic Regions — 2025



20 Multiple causal factors can be associated with the same incident.

Percentage of Groundings by Activity — 2025



Fire and Explosion



Figure 12: Noxious cloud as a result of scrap cargo fire (top) and infrared picture of cargo fire (bottom).[21]

In 2025, the Administrator received 32 reports of fires and explosions, an increase compared to the number that was received in 2024. More specifically, in 2025, an increase in the number of fires within machinery spaces, laundry, and the main deck has been observed. Machinery space fires continue to be the leading location at 44%. The root cause of fires and explosions were principally attributed to fuel oil, electrical wiring, and equipment malfunction.

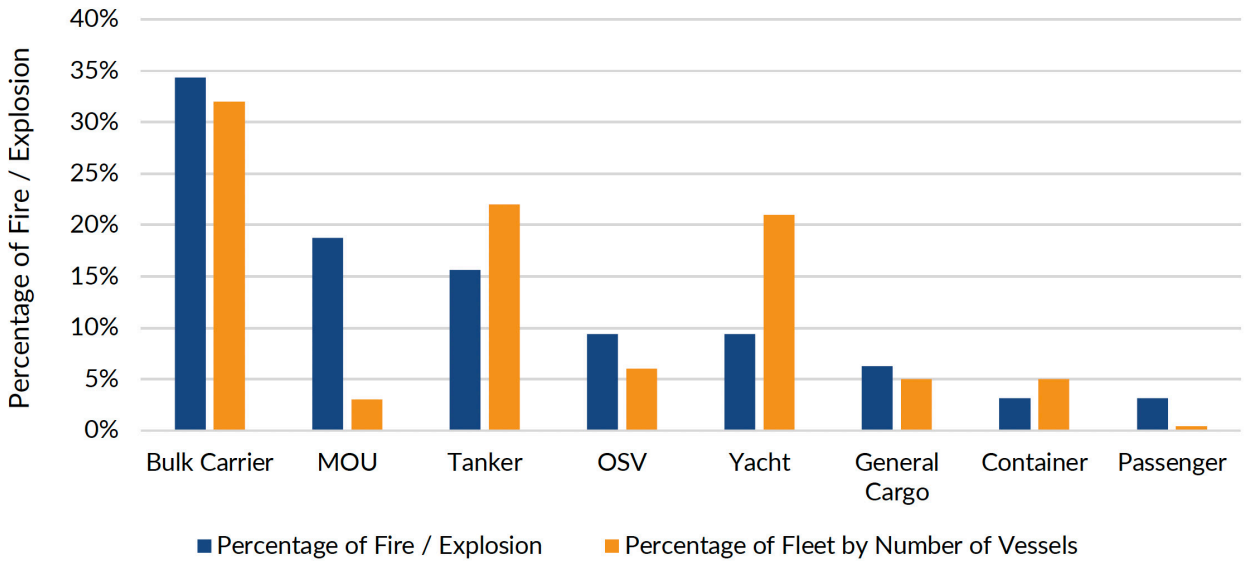
Fires related to the carriage of scrap cargo containing Li-ion batteries and other ignition sources increased in 2025, particularly within northern European ports of loading. Carriage of scrap metal, which, due to its condition on loading (i.e., wet), can lead to the generation of a combustible atmosphere, resulting in a hazardous environment and increased potential for ignition. It was found that in many cases the cargo was not properly screened by the shipper, which is commonly understood to be a major contributory factor, resulting in the contents of the

21 Images courtesy of Humberside Fire & Rescue Service.

contaminated cargo[22] being loaded to be unknown. Analysis of the remnants of cargo post fire(s) established that the contents of the scrap cargo contained large quantities of combustible materials which should not have been present within the cargo.

In the majority of cases, a fire was identified while the vessel was alongside the loading terminal, with access to local area firefighting support to assist in containing and extinguishing the fire. The physical, material damage sustained post incident was in most cases relatively minor. However, the potential consequences increase significantly if the vessel is outside of port limits and without access to local area firefighting infrastructure. Reliance on fixed-firefighting systems and boundary cooling techniques to contain and extinguish the fire should be exercised in planned emergency response procedures taking into consideration port of refuge suitability and availability of offshore firefighting assets.

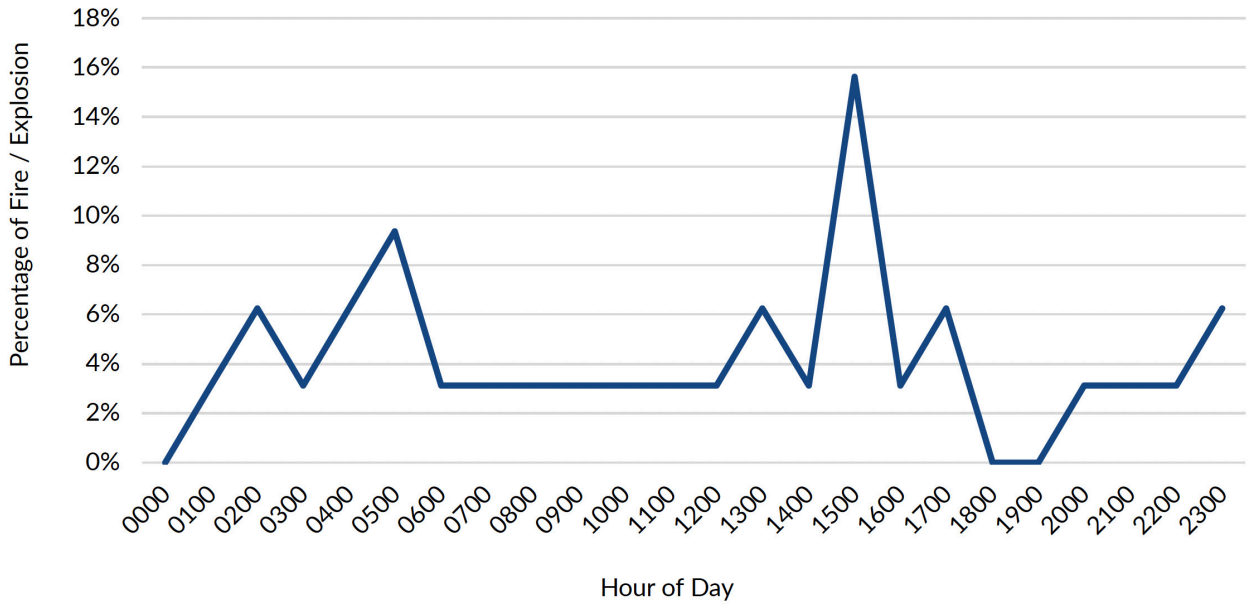
Percentage of Fire / Explosion by Ship Type — 2025



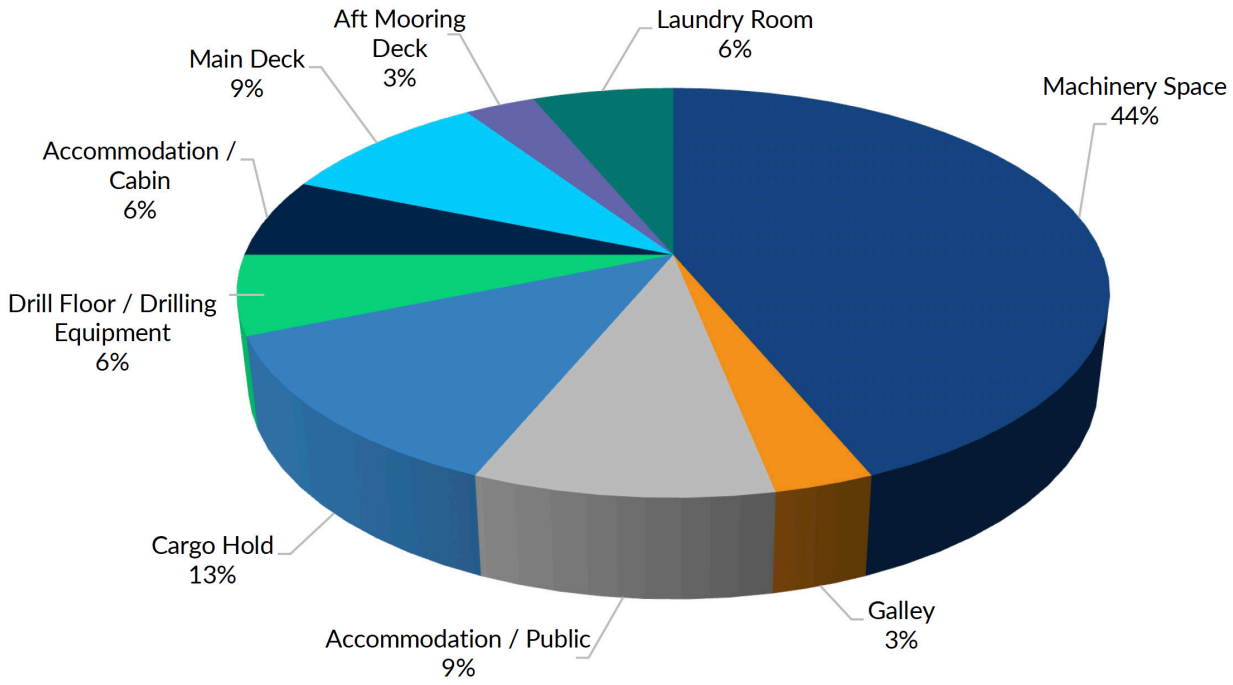
The most common extinguishing method used was a portable fire extinguisher (25%) with fixed gas, and water-mist systems used to good effect on 13% of all fires. Further analysis indicated that 41% of all fires and explosions occurred most frequently between 0400–0600 and 1400–1600. Within the accommodation spaces, fires most frequently occurred between 1400–1500 and 2200–0200. Within the machinery spaces, fires were reported to have occurred most frequently between 0300–0600, during the morning watch changeover and the commencement of the working day.

22 Cargo containing swarf, batteries, rags, wood, rubber, and other hazardous and combustible material.

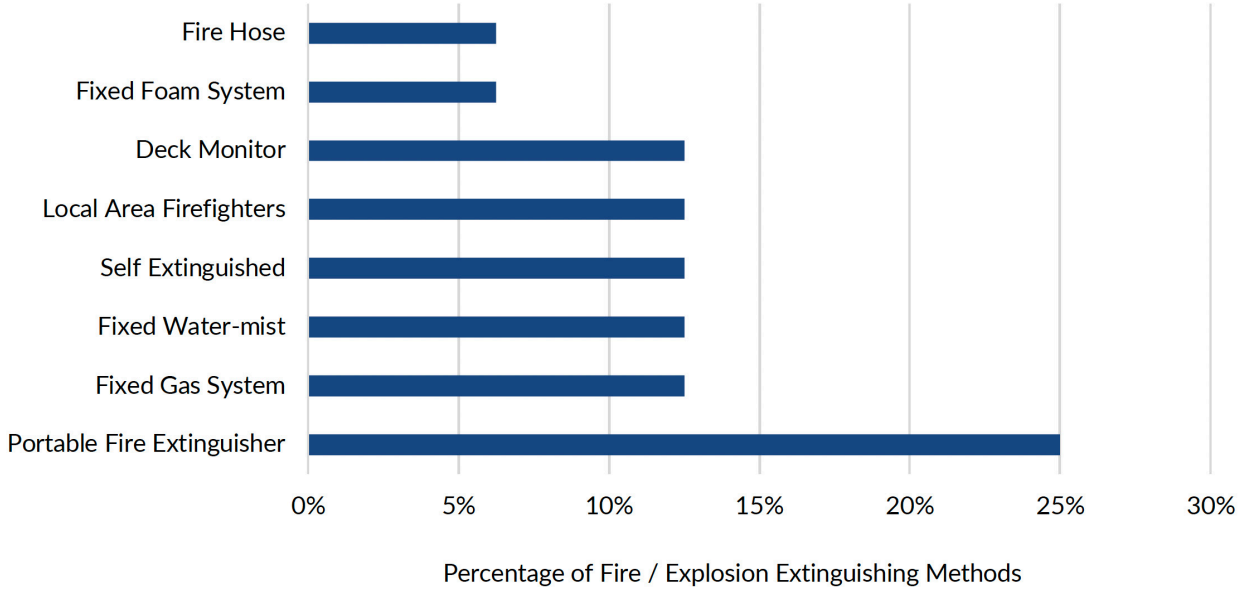
Fire / Explosion by Time of Incident — 2025



Percentage of Fire / Explosion — 2025



Percentage of Fire / Explosion Extinguishing Methods — 2025



Top 10 Causal Factors of Fires and Explosions — 2025	
CAUSAL FACTOR	**PERCENTAGE OF INCIDENTS[23]**
Defective equipment, machinery, or tools	14%
Fire and explosion hazards	10%
Inadequate work planning or programming	6%
Inadequate inspection and/or monitoring	5%
Inadequate identification and evaluation of hazards	5%
Poor housekeeping	4%
Inadequate guards or barriers	4%
Failure to follow repair and maintenance instructions	4%
Inadequate policy, procedure, practices, or guidelines	3%
Inadequate instructions, orientation, and/or training	3%

23 Multiple causal factors can be associated with the same incident.

Appendix 3: Most Common Marine Casualties by Ship Type

The table below lists, by ship type, the three most common incident types for all reports made to the Administrator in 2025.

SHIP TYPE	FIRST	SECOND	THIRD
Bulk Carrier	Serious Injury	Collision / Allision	Grounding
Tanker	Serious Injury	Collision / Allision	Loss of Propulsion
Container	Serious Injury	Collision / Allision	Loss of Electrical Power
OSV	Serious Injury	Fire / Explosion	Pollution
Gas Carrier	Serious Injury	Collision / Allision	Reduction of Propulsion
General Cargo	Serious Injury	Collision / Allision	Loss of Propulsion
MOU	Serious Injury (Non-RMI Seafarer)	Serious Injury	Fire / Explosion
Passenger	Serious Injury	Serious Injury (Non-RMI Seafarer)	Collision / Allision
Yacht	Serious Injury	Grounding	Fire / Explosion

The Administrator remains unwavering in its commitment to safeguarding lives at sea, protecting the marine environment, and promoting a culture of continuous improvement in maritime safety.