REPUBLIC OF THE MARSHALL ISLANDS

Maritime Administrator

ANNUAL REPORT ON MARINE SAFETY INVESTIGATIONS

2022

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LIST OF ABBREVIATIONS AND ACRONYMS

Administrator	Republic of the Marshall Islands Maritime Administrator
BWM Convention	International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004
Casualty Investigation Code	Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea
COVID-19	Coronavirus Disease 2019
CTL	Constructive Total Loss
DWT	Deadweight Tons
FSS Code	International Code for Fire Safety Systems
GT	Gross Tons
IMO	International Maritime Organization
LSA	Life Saving Appliance
MG	Marine Guideline
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973
Maritime Act	Republic of the Marshall Islands Maritime Act 1990, as amended
Maritime Regulations	Republic of the Marshall Islands Maritime Regulations
MI-260	Republic of the Marshall Islands Rules for Marine Investigations
MOU	Mobile Offshore Unit
MSA	Marine Safety Advisory
MSC	Maritime Safety Committee
No.	Number
OSV	Offshore Support Vessel
PPE	Personal Protective Equipment
RMI	Republic of the Marshall Islands
RO/RO	Roll-on / Roll-off
SOLAS	International Convention for the Safety of Life at Sea, 1974
STCW Code	Seafarers Training, Certification and Watchkeeping Code
SMS	Safety Management System
STS	Ship-to-Ship

Message from the Republic of the Marshall Islands Maritime Administrator

Hans Molver
Deputy Commissioner of Maritime Affairs

In the previous year, the Administrator realized continued fleet growth and an assessed improvement in marine safety. As demonstrated in this report, the quality of marine casualty data collected over the course of the previous five years has improved significantly, affording the investigations team the ability to conduct beneficial analysis for industry stakeholders. Based on the data analyzed, this report explores key trends which may be utilized to raise the necessary awareness to ensure continuous improvement across the RMI fleet.

During 2022, the Administrator investigated 685 very serious marine casualties, marine casualties, marine incidents, and occurrences, a reduction of 15 reported cases compared to 2021. The dedication of owners, managers, and crewmembers of RMI-registered vessels to report and cooperate with the Administrator is a testament to the dedication of all those involved toward improving safety and protecting the marine environment.

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

Principles of Marine Safety Investigations

Marine safety investigations are conducted in accordance with the RMI Maritime Act, Maritime Regulations (Chapter 6), MI-260, and the Casualty Investigation Code.

Under the 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.

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

1. **Very serious marine casualties** are those involving loss of life, total loss of the ship, or significant environmental damage.
2. **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.
3. **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.
4. **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.

Accurate and timely reporting[2] by Masters, owners, and operators, in accordance with the Administrator's reporting requirements, is vital to ensure an appropriate response and 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 and other intentional acts by RMI-documented seafarers.

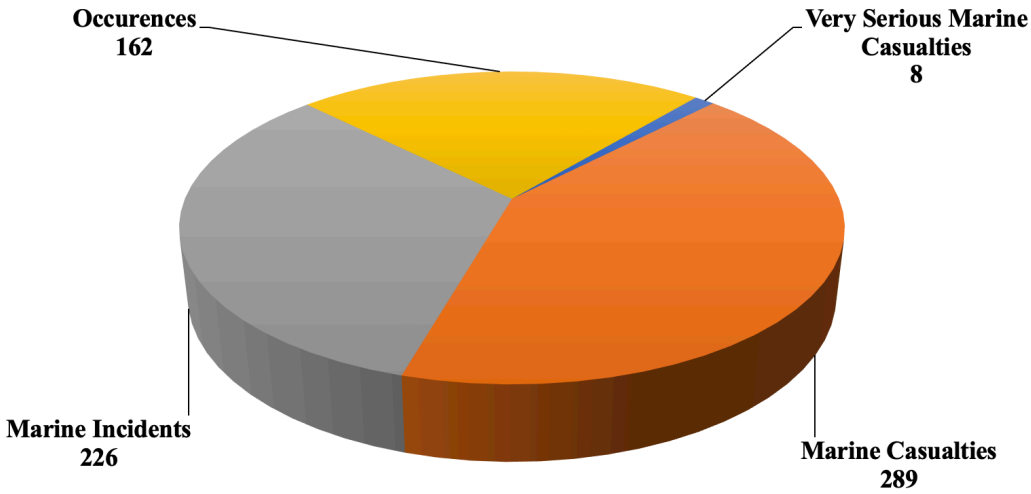
1 For complete definitions, refer to MI-260.

2 For additional information, *see* RMI MG 6-36-2.

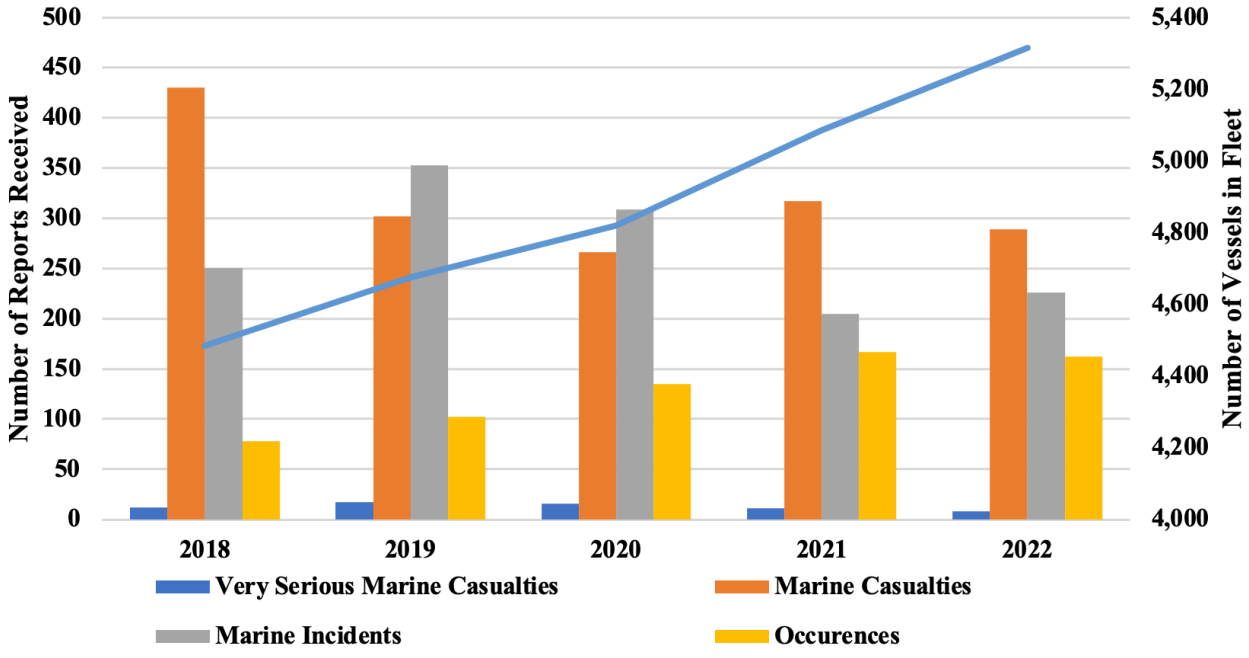
Section 1: 2022 Year in Review

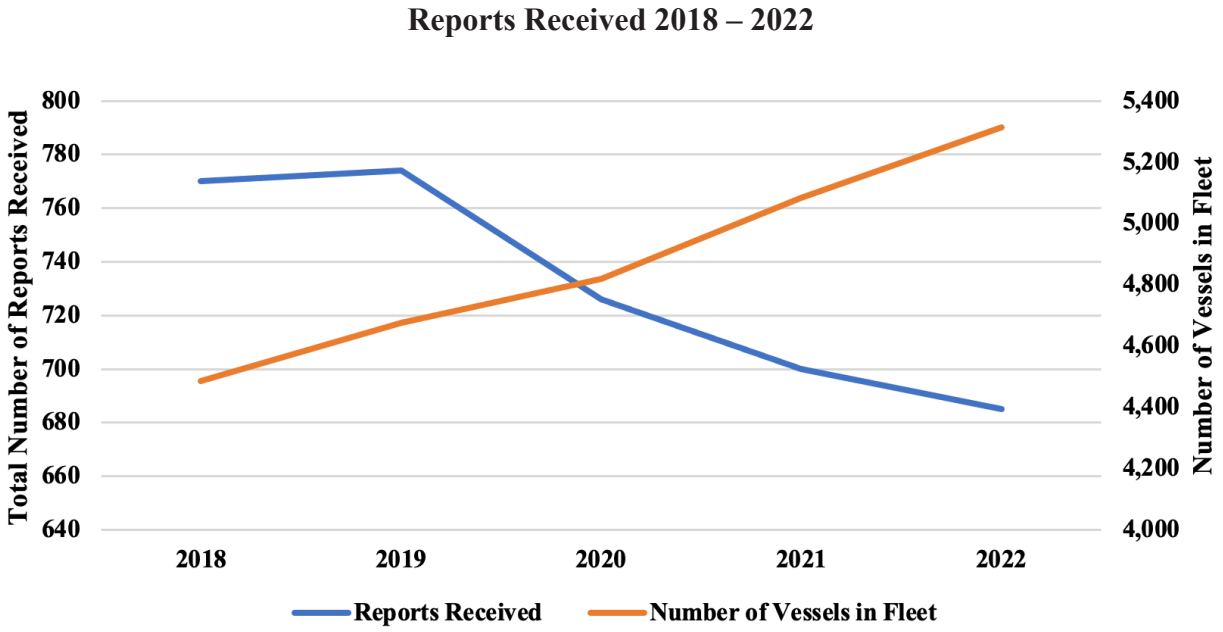
During 2022, there were 685 very serious marine casualties, marine casualties, marine incidents, and occurrences reported to the Administrator, 15 less than reported during 2021.

Reports to the Administrator 2022

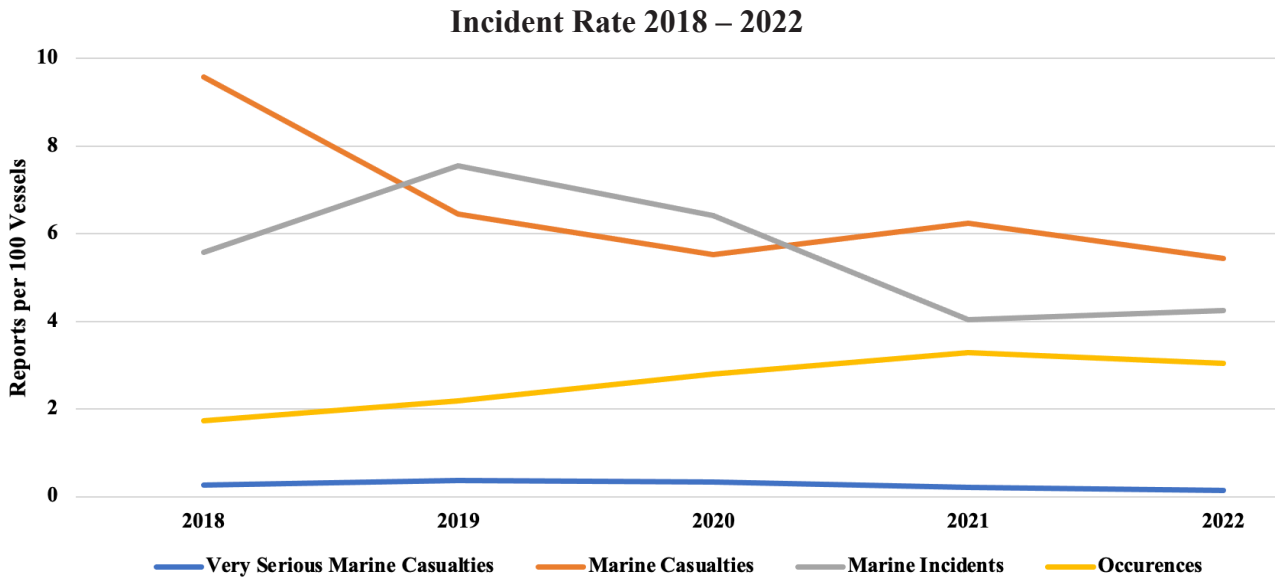


Reports to the Administrator 2018 – 2022





Since 2022, the data shows a consistent decline in the number of reports received, which is a strong indication that the commitment to safety and protection of the marine environment by Masters, crewmembers, owners, and operators remains high.

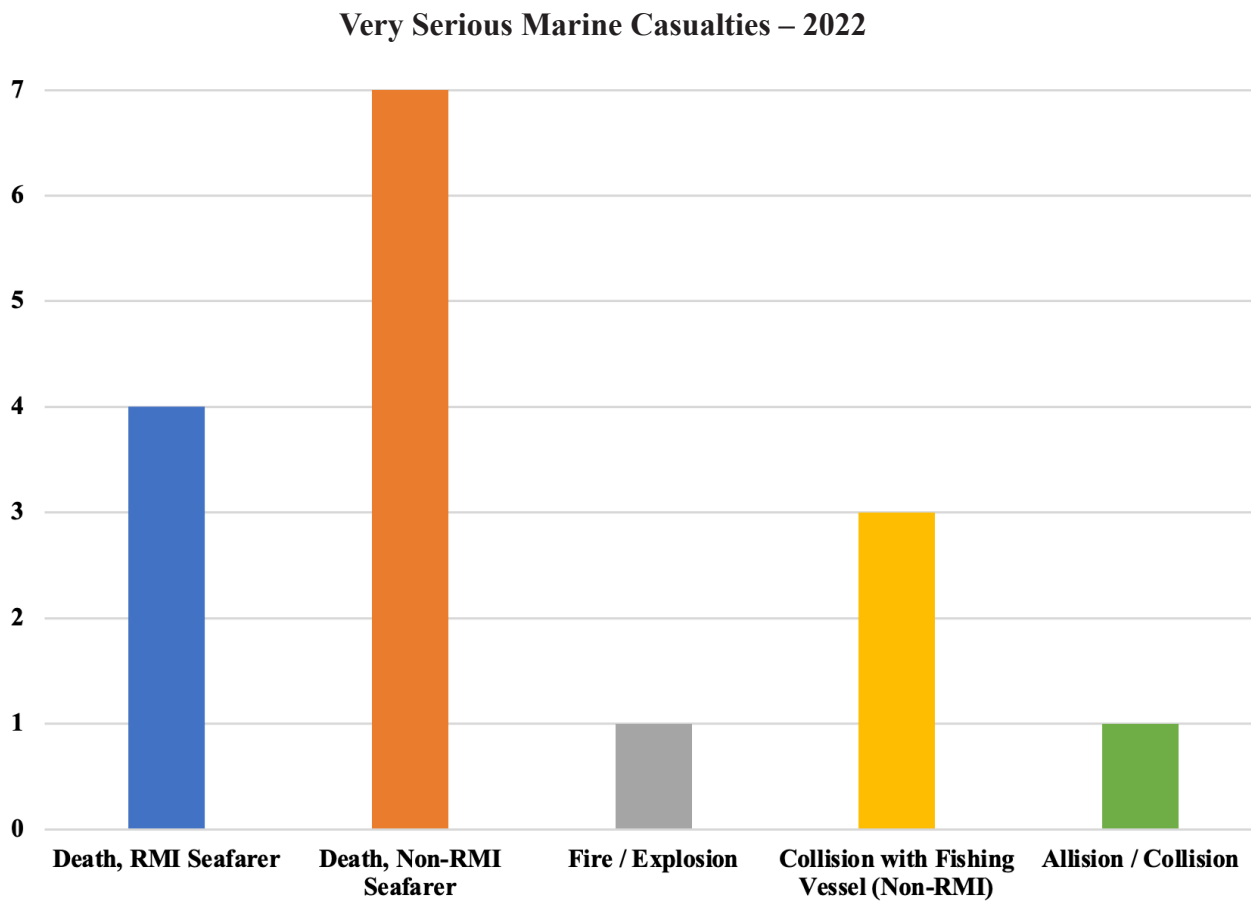


While the overall reduction in the number of reports received is positive, there has been an increase in the number of marine incidents. This in part can be attributed to an increase in the number of pollution incidents compared with the same period in 2021. A small increase can be seen in the majority of primary incident types throughout 2022.

Section 2: Reports by Incident Classification – 2022

Very Serious Marine Casualties

During 2022, eight very serious marine casualties were reported to the Administrator, compared to 11 in 2021. Of these, four very serious marine casualties resulted in a cumulative loss of 11 lives,[3] of which four lives lost were as a result of occupational fatalities,[4] and seven lives were lost during a collision between an RMI-registered ship and a fishing vessel. Four very serious marine casualties with no loss of lives resulted from collisions with fishing vessels and one from an allision involving an anchored RMI-registered gas carrier.

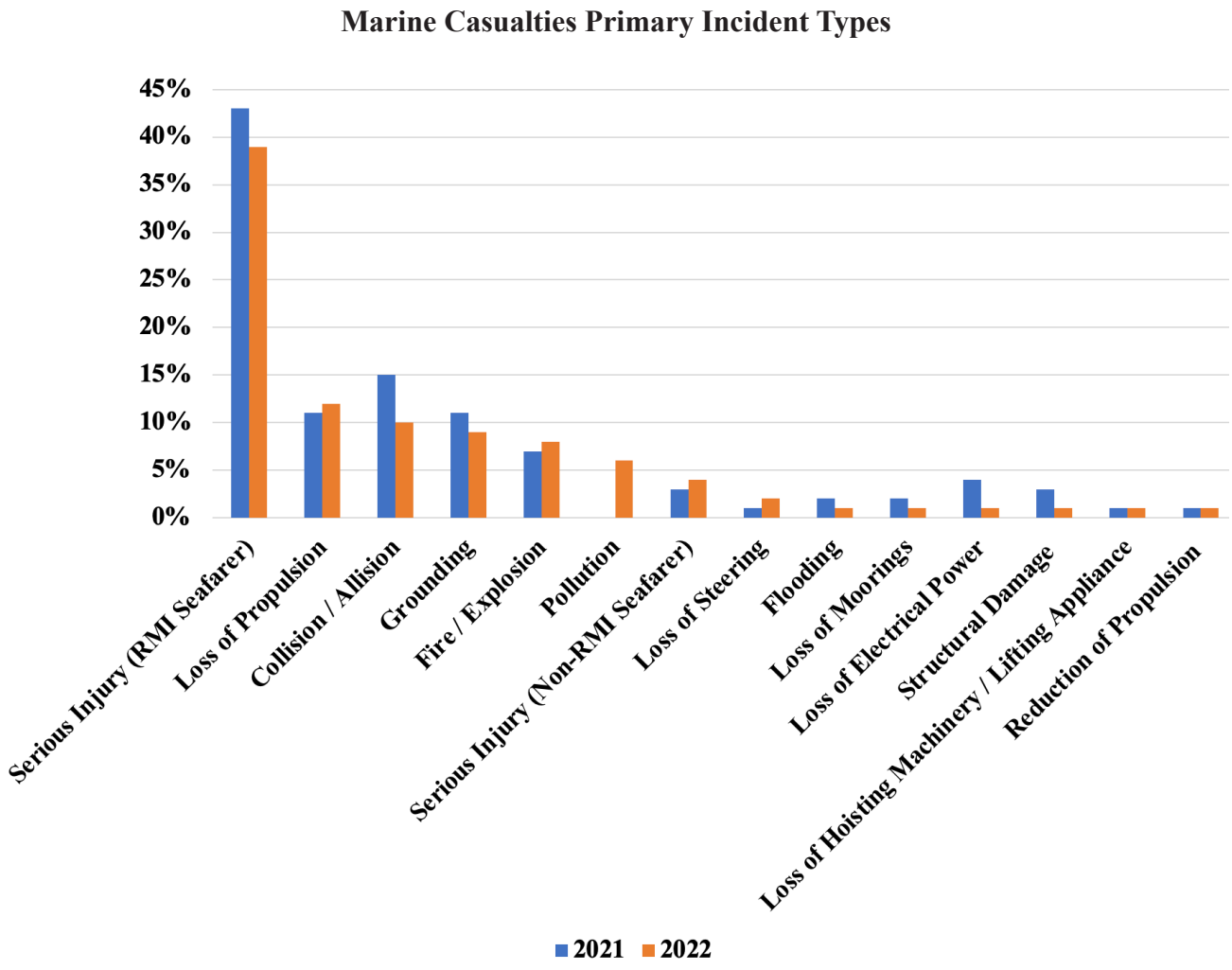


3 Seven fishermen and four RMI-documented seafarers.

4 Two enclosed space entry fatalities resulting in the loss of two lives, one loss of life due to being struck by a moving object, and one loss of life following an explosion.

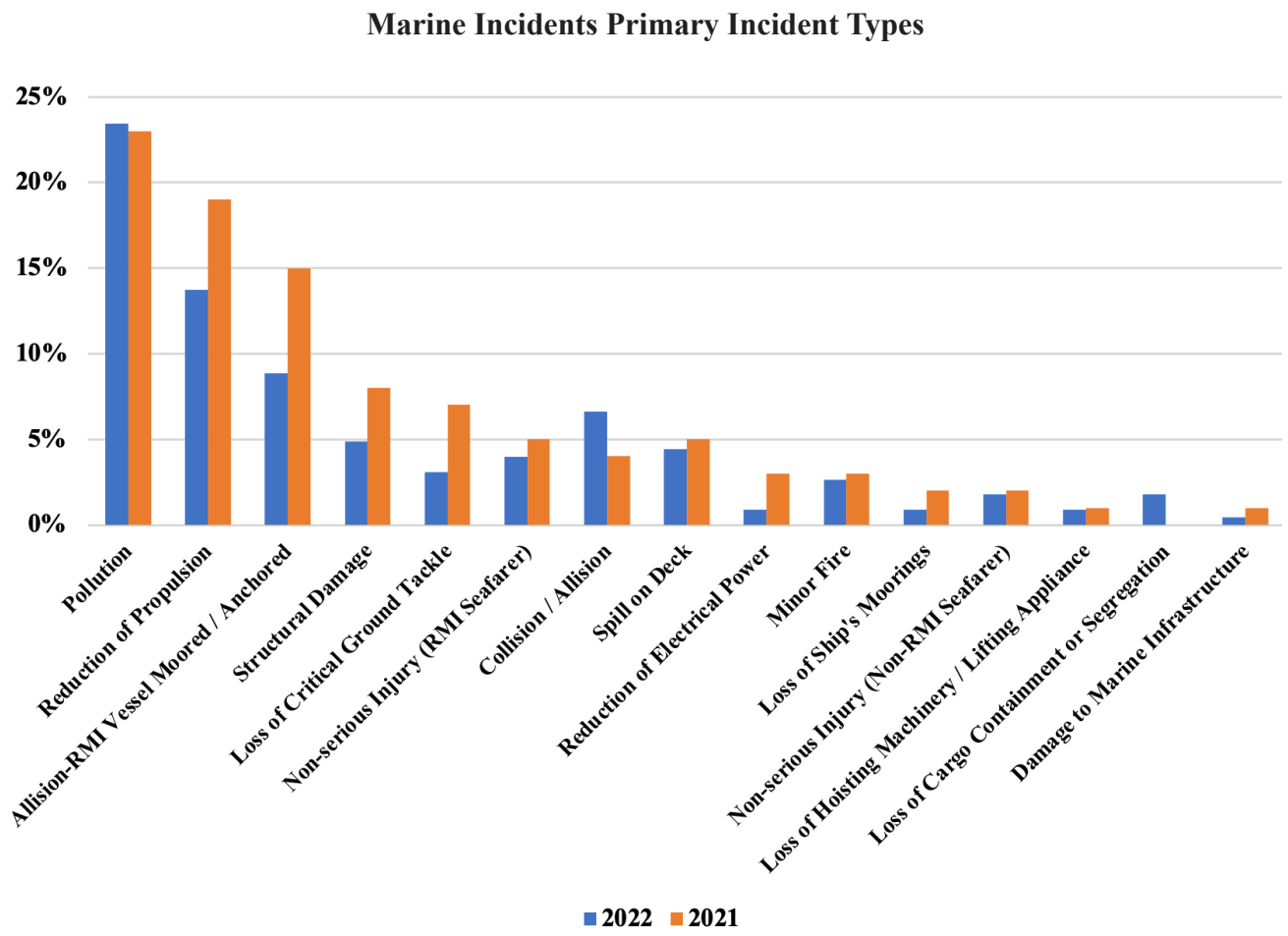
Marine Casualties

There were 289 marine casualties reported to the Administrator during 2022. 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 2022. Additional details pertaining to marine casualties, marine incidents, and occurrences reported during the previous years can be found in Appendix 2.



Marine Incidents

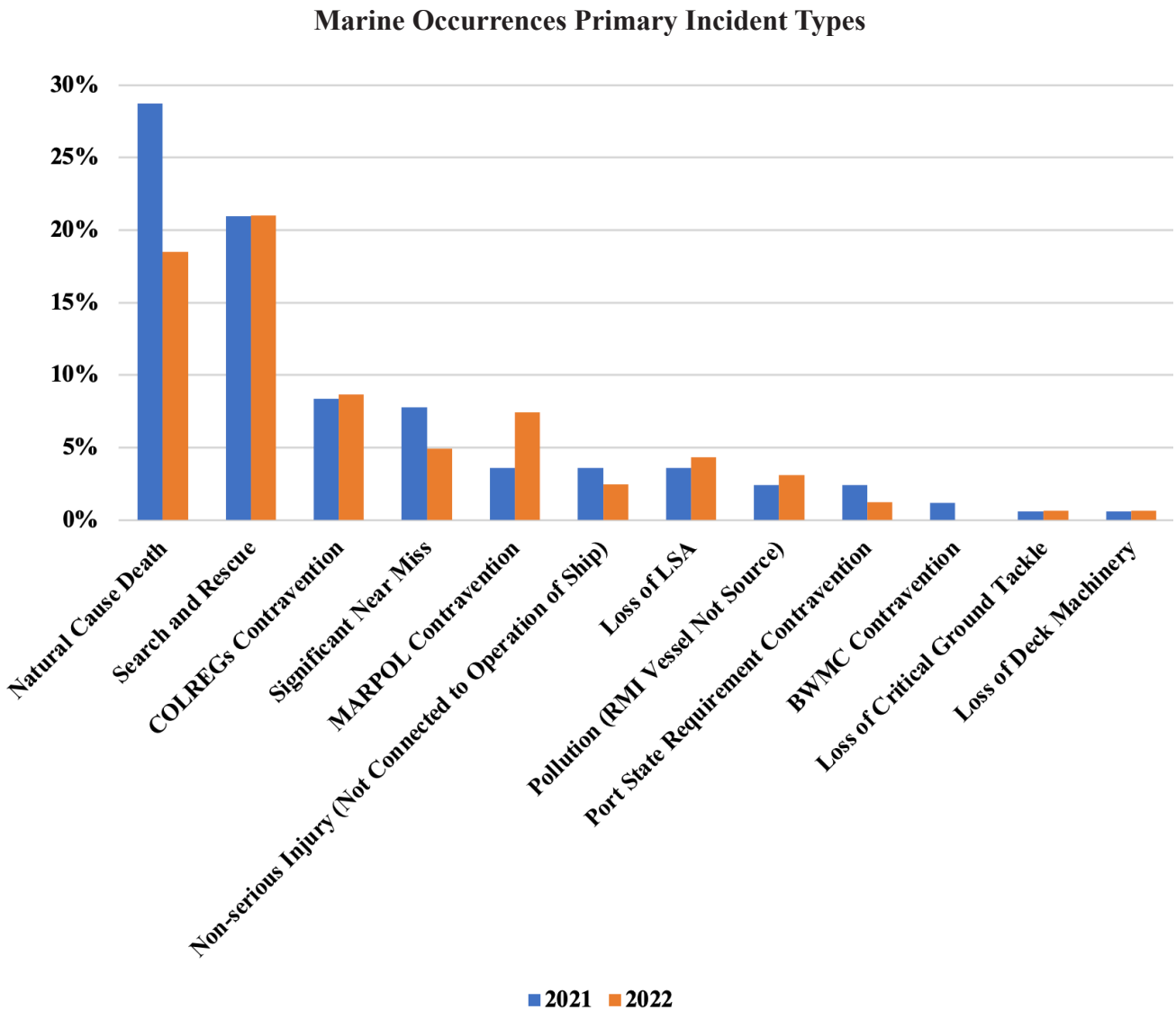
There were a total of 226 marine incidents reported to the Administrator during 2022. These have been classified by the primary incident type and are shown on the below chart as a percentage of the total marine incidents reported during 2022.[5]



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

Occurrences

There were 162 occurrences reported to the Administrator during 2022. These have been classified by the primary incident type and are shown on the below chart as a percentage of the total occurrences reported during 2022. 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.



Section 3: Highlighted Topics

COLREGs

The application of COLREGs over the last five years warrants evaluation to determine the common trends identified through the Administrator's analysis of available data. A failure in the application of COLREGs was determined to have been a causal factor for 142 of the 323 collisions and allisions[6] involving RMI-registered vessels that were reported to the Administrator between 2018 to 2022. Of these, 10 collisions were determined to be very serious marine casualties that resulted in the loss of life or disappearance at sea of 20 seafarers or fishing vessel crewmembers, the sinking of an 11,454 DWT RO/RO, the constructive total loss of an 18,957 DWT bulk carrier, and the sinking of seven fishing vessels.

Upon further analysis it was determined that the ineffective application of Rule 5 (proper lookout) was a causal factor for many, if not most, of the reported collisions. In several cases, the watchstander did not see the approaching vessel until collision was imminent and therefore took no action to avoid a collision. Additionally, the ineffective application of Rule 7 (risk of collision) and Rule 8 (action to avoid collision), regardless of the responsibilities between the vessels, were also causal factors for many of the collisions reported to the Administrator. In most of the cases, based on the information that was gathered during the Administrator's marine safety investigations, it was apparent that the watchstander deviated from the rules or took no action in entirety, resulting in a collision.

Rarely is COLREGs identified as not being sufficiently addressed within the SMS during the course of the Administrator's investigations. Often the SMS goes into great detail on the adherence and application of COLREGs.

The common trend in these cases was that watchstanders did not understand the rules, deliberately chose not to apply them, and in some cases both. This is despite compliance with COLREGs being a primary responsibility of navigation watchstanders.[7] Therefore, Masters must first ensure that each watchstander understands COLREGs, the responsibilities between vessels, and the actions required of them. Secondly, Masters must strictly enforce the application of COLREGs on board. Any deviance from these rules, or except as permitted by Rule 2, should not be tolerated. The Master must provide continuous training and assessment on board to ensure thorough understanding. Additionally, the Master must encourage open dialogue and provide support and guidance, without fear of reprisal against any watchstander.

Grounding

Between January and December 2022, a total of 29 groundings were reported, of which the majority occurred in rivers located in South America, Africa, Asia, and North America and involved either bulk carriers or tankers. Groundings in general terms occur within littoral waters and of the 29 reported casualties, 59% occurred with a Pilot on board the vessel.

Many of the groundings reported to the Administrator have been attributed to either incorrect navigation or ship handling, inadequate identification and evaluation of exposure to loss,[8] and/or inadequate work planning or programming[9] as detailed

6 The other 181 collisions and allisions that were reported between 2018–2022 mostly occurred during mooring operations due to dragging anchors or STS operations.

7 *See* STCW Code, section A-VIII/2, part 4-1.

8 Inadequate assessment and control of risk and, as a consequence, insufficient identification of hazards.

9 Inadequate implementation of SMS and industry best practices.

within Appendix 2 of this report. Although the Administrator has chosen to highlight groundings within this section, the similarities between collisions and groundings in terms of causal factors are almost identical. Based on the data available many of the groundings and collisions did not occur as a result of mechanical failure or equipment defect. In fact, the majority have occurred through poor seamanship and ineffective coordination with and oversight of local Pilots.

It is therefore imperative that owners and operators of RMI-registered vessels ensure that bridge watchstanding personnel are competent to safely navigate their vessels. Demonstrating competency goes beyond a receipt of a qualification attained from a maritime educational institution. It includes how watchstanders conduct themselves, how they assess the information that is available to them, and the decisions that they make. Adequate oversight to reduce complacency, regular bridge team training and discussions to verify understanding, proper implementation and adherence to a sound navigational plan, and fundamental application of navigational techniques are some of the inherent practices that must be employed consistently. Open and honest dialogue between the Master and watchstanders should be second nature and when mistakes are made, they should be used as a learning experience.

Loss of Propulsion

At the conclusion of 2022, loss of propulsion casualties ranked as the second highest primary incident type, having seen a 38% increase compared to 2021, with the majority occurring within the United States. Of the 55 total cases reported to the Administrator in 2022, the majority occurred on vessels between 10–13 years of age. Additionally, there is a higher probability for vessels more than 13 years of age to suffer a loss of propulsion when compared to vessels less than 10 years of age.

Typical systems associated with the loss of propulsion ranged from control and automation failures, to fuel oil and lube oil system failures, although the latter only accounted for 13% of overall losses. As a proportion of vessel types, loss of propulsion casualties occurred more commonly on bulk carriers and tankers, with OSVs reporting the fewest loss of propulsion casualties.

One positive outcome determined from 2022 is that only five casualties resulted in a secondary incident, such as grounding or collision, which is consistent with the same number of secondary incidents in 2021. However, the consequences of a loss of propulsion to a vessel's schedule can be significant resulting in delays and exposing the vessel to greater scrutiny by local authorities.

The Administrator released MSA 16-22, *Propulsion Incidents on the Mississippi River* in July 2022. MSA 16-22 reminds owners, operators, and Masters of the importance of conducting proper pre-arrival and pre-departure testing. Whether operating in the Mississippi River or in any other region, it is of paramount importance that Masters have full confidence in their propulsion plant and that it can be relied upon for safety of navigation at all times.

Section 4: MSAs Issued by the Administrator

During 2022, the following MSAs were issued in response to incidents reported to the Administrator:[10]

MSA No.	Subject
16-22	Propulsion Incidents on the Mississippi River
15-22	China – Ship Machinery Failure in Shanghai Port
13-22	Fumigation of Dry Bulk Cargo

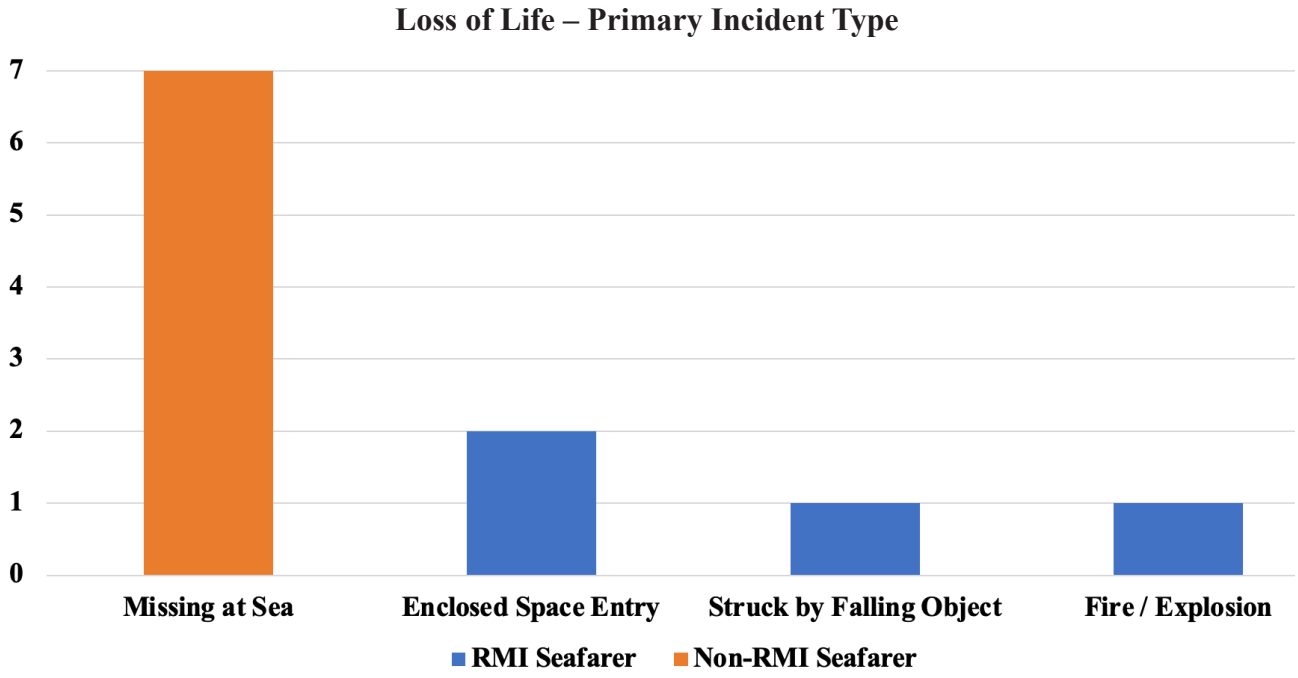
Section 5: Looking Forward

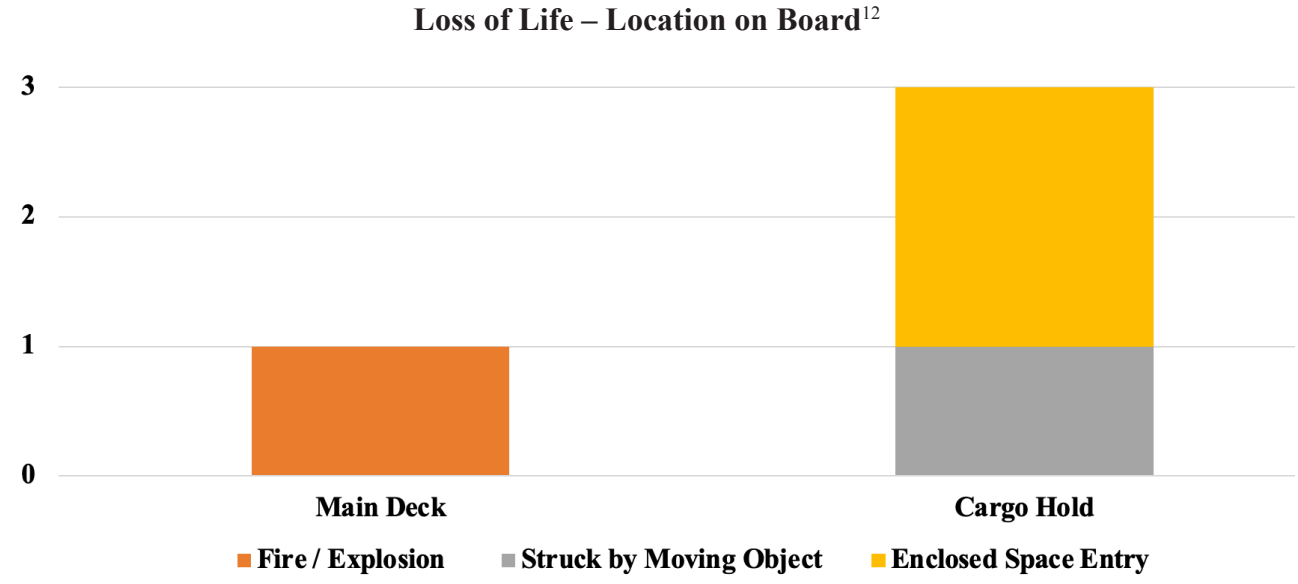
For consecutive years, the number of reported marine casualties, marine incidents, and occurrences continues to decline while the size of the RMI fleet continues to grow. In real terms, the reduction in the number of reports received is even more impressive and owners, managers, and crewmembers of RMI-registered vessels are commended on this achievement. In order to continue this trend, the Administrator endeavors to uphold its obligation to investigate all very serious marine casualties, marine casualties, marine incidents, and occurrences. The information learned from these investigations will enable the Administrator to proactively drive improvements across the industry. In recognizing the importance of engagement both locally and regionally to ensure the recommendations, lessons learned, and observations receive the widest audience possible, the Administrator welcomes the opportunity to discuss and share findings in any forum.

10 MSAs are valid for one year from publication. MSA 04-21 has been superseded by MSA 06-23 and MSAs 06-21, 08-21, 10-21, 14-21, and 17-21 were rescinded prior to publication of this report.

Appendix 1: Very Serious Marine Casualties

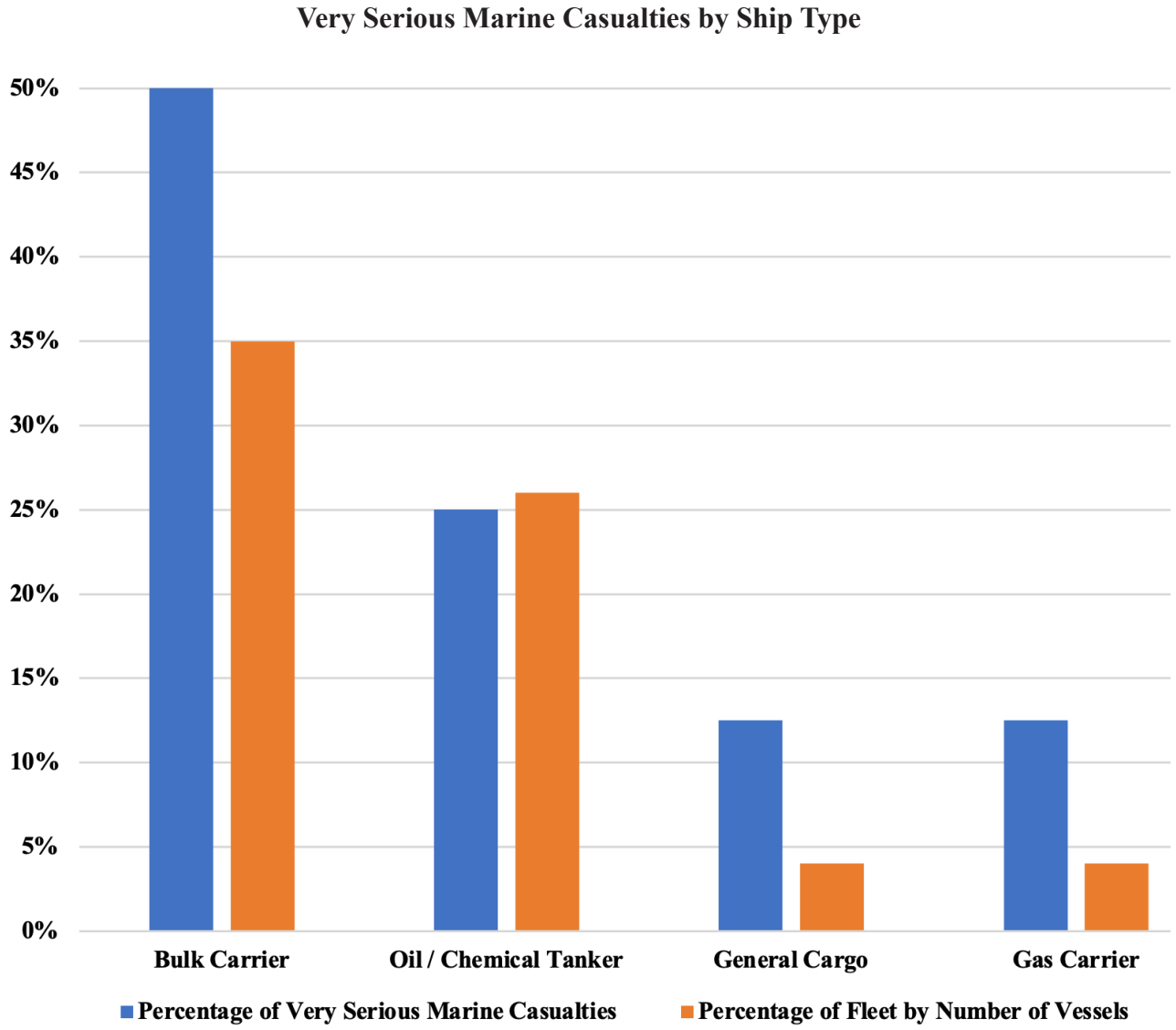
During 2022, very serious marine casualties involving RMI-registered vessels resulted in four fatalities and seven individuals missing at sea.[11]





11 Seven fishermen missing at sea following a collision with a non-RMI-registered fishing vessel.

12 Does not include location on board non-RMI-registered vessels.

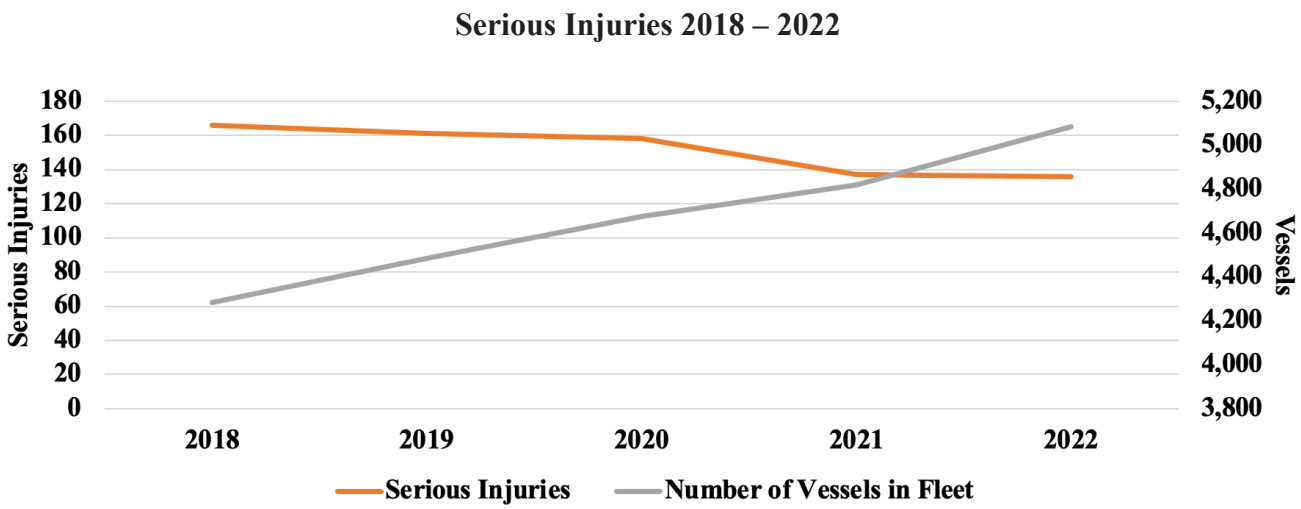

Very Serious Marine Casualties by Ship Type
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Bulk Carrier
Oil / Chemical Tanker
General Cargo
Gas Carrier
Percentage of Very Serious Marine Casualties
Percentage of Fleet by Number of Vessels

Appendix 2: Marine Casualties, Marine Incidents, and Occurrences

The following information includes data obtained during 2022 for marine casualties, marine incidents, and occurrences.

Serious Injuries

Serious injuries (those resulting in incapacitation for 72 hours or more) continue to be the leading marine casualty primary incident type reported to the Administrator during 2022. However, it is noted that the total number of serious injuries reported continued to decline while the fleet size has continued to grow.

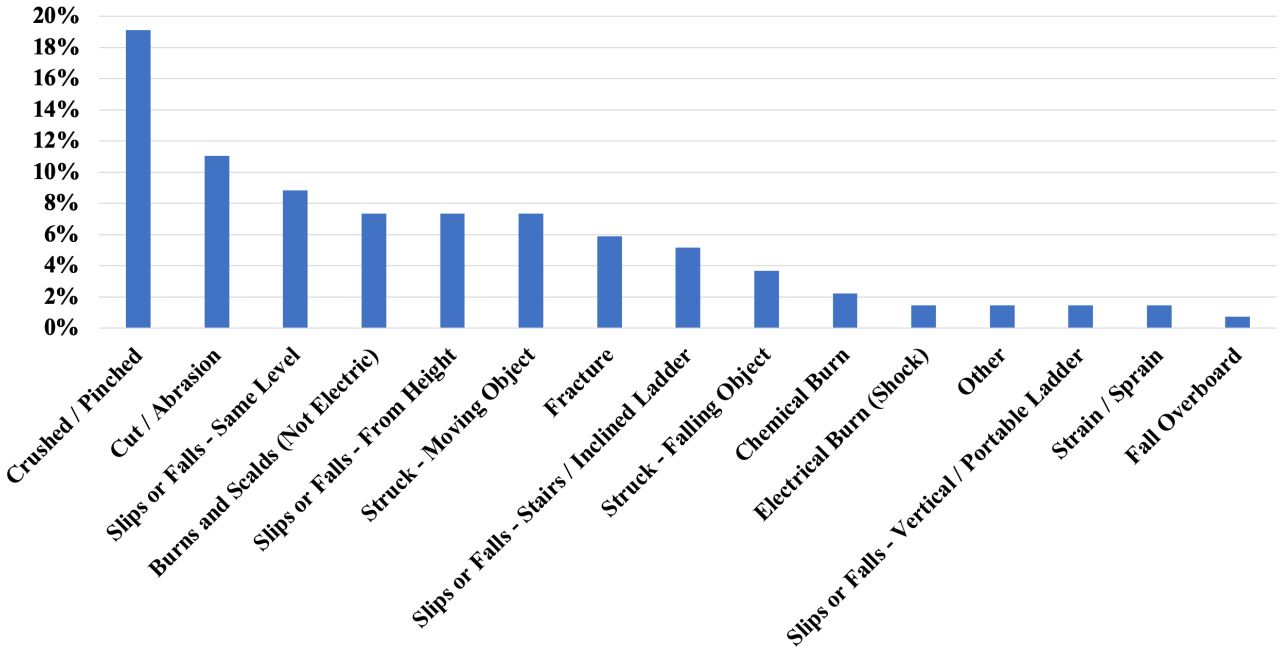


Top Ten Causal Factors of Serious Injuries – 2022

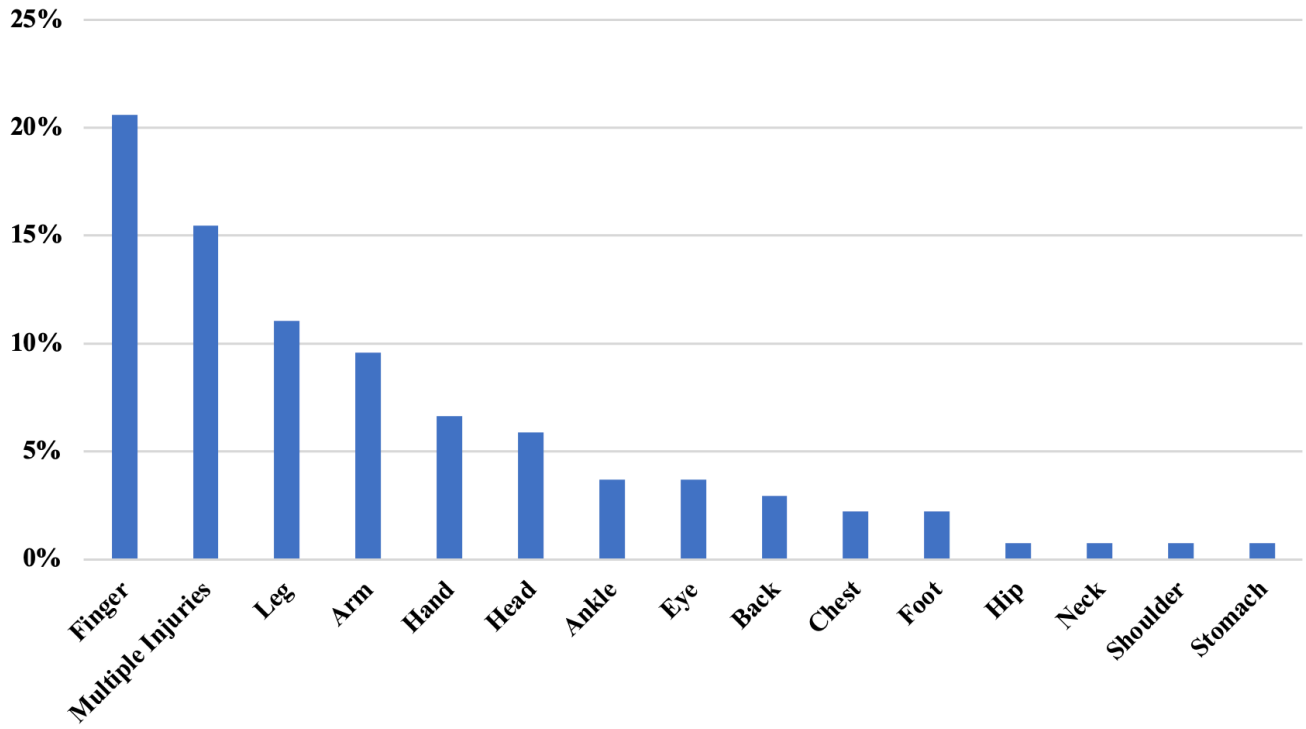
Causal Factor	Percentage of Incidents[13]
Improper position for the task	21%
Inadequate identification and/or evaluation of loss exposures	18%
Inadequate work planning or programming	15%
Failure to follow rules or regulations	13%
Failure to use PPE properly	13%
Improper lifting, handling, or storage	11%
Incorrect use of equipment, machinery, or tools	11%
Improper attempt to save time or effort	10%
Defective equipment, machinery, or tools	8%
Inadequate guards or barriers	7%

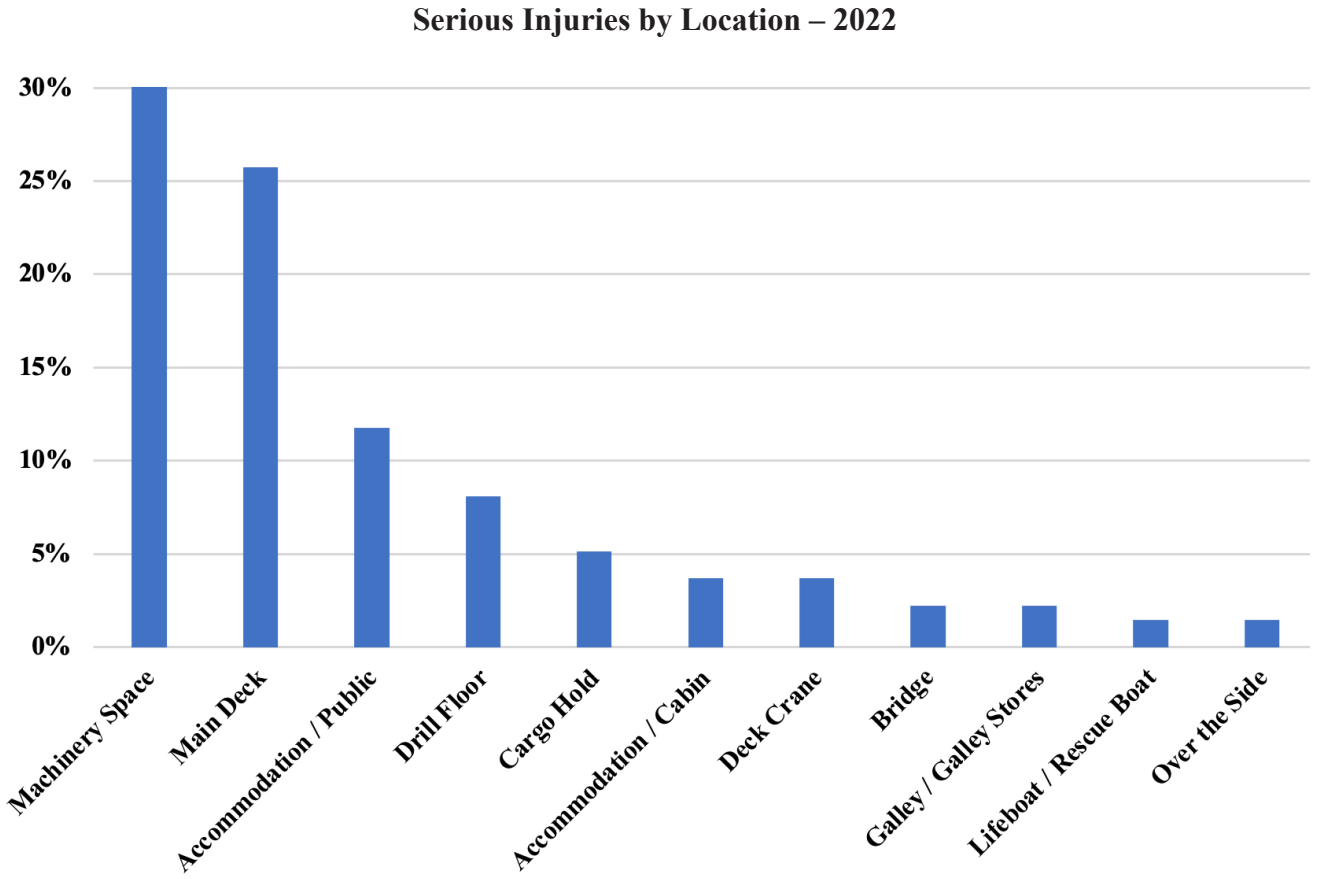
13 Multiple causal factors can be associated with the same incident.

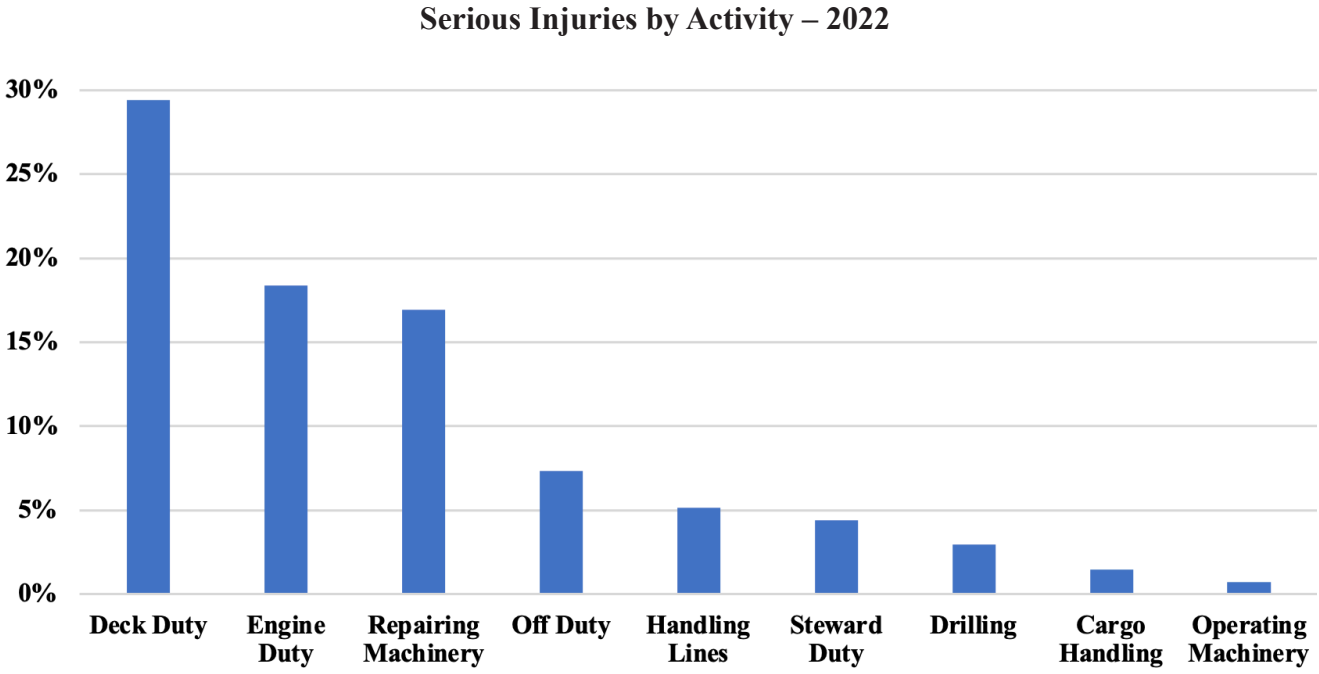
Serious Injuries by Injury Type – 2022

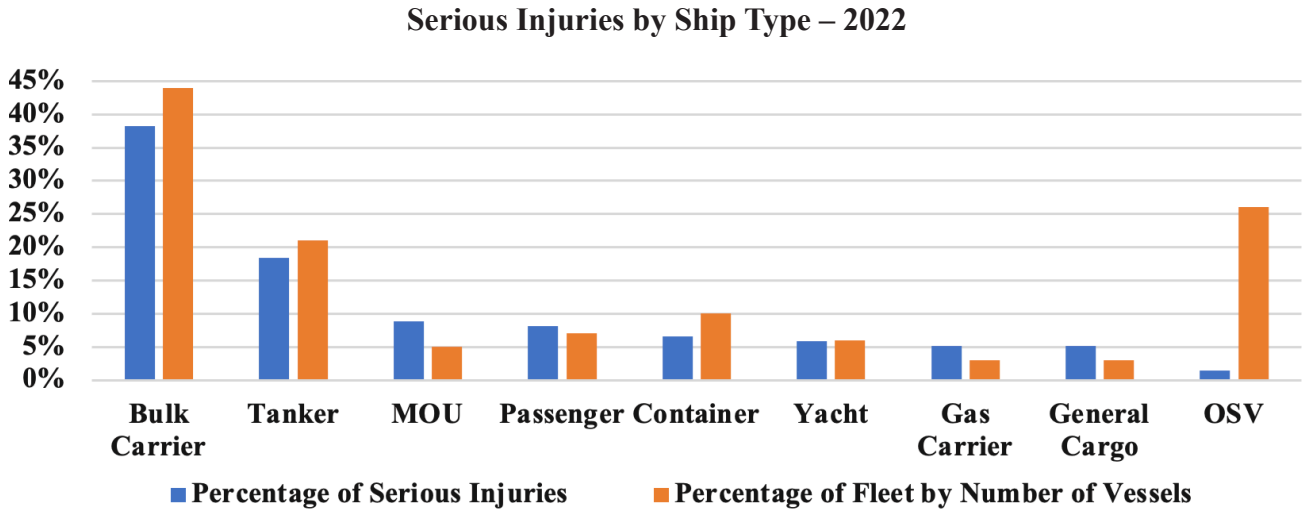


Serious Injuries by Body Part Injured – 2022



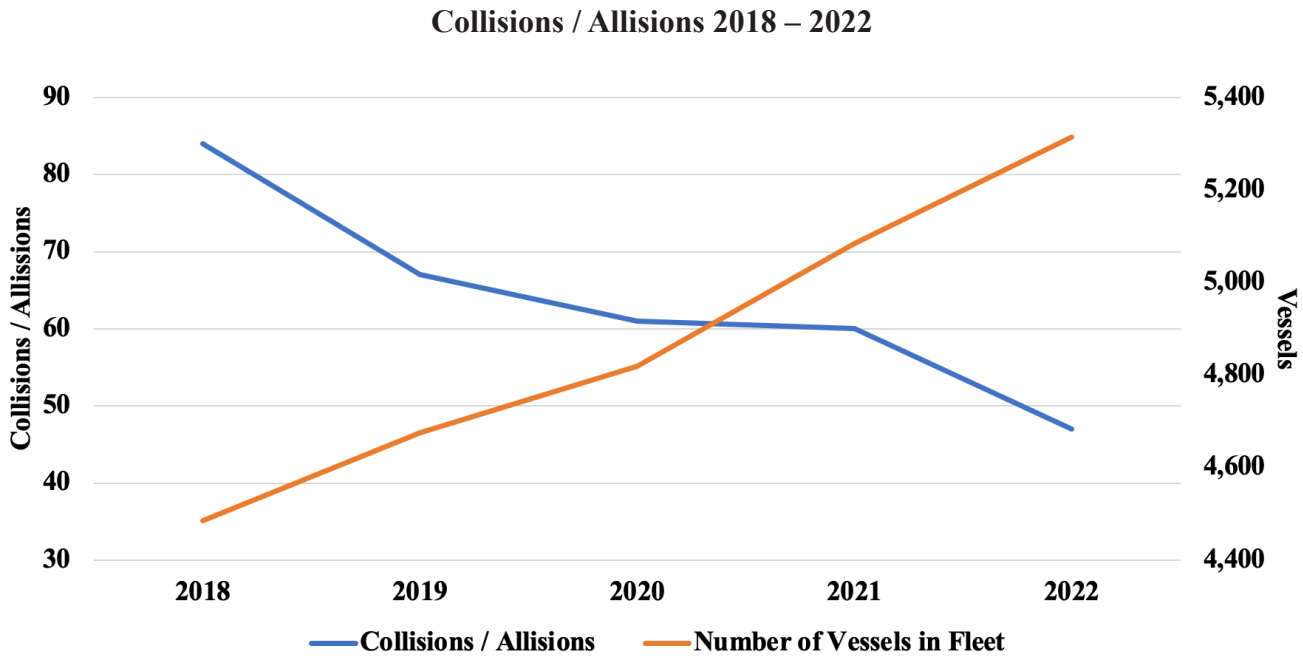

Serious Injuries by Location – 2022
30%
25%
20%
15%
10%
5%
0%
Machinery Space
Main Deck
Accommodation / Public
Drill Floor
Cargo Hold
Accommodation / Cabin
Deck Crane
Bridge
Galley / Galley Stores
Lifeboat / Rescue Boat
Over the Side


Serious Injuries by Activity – 2022
30%
25%
20%
15%
10%
5%
0%
Deck Duty
Engine Duty
Repairing Machinery
Off Duty
Handling Lines
Steward Duty
Drilling
Cargo Handling
Operating Machinery



Collisions and Allisions

During 2022, 46 collisions and allisions[14] were reported; 25 of these incidents occurred with a Pilot on board. The percentage of collisions and allisions that have occurred with a Pilot on board has remained similar over the past five years.

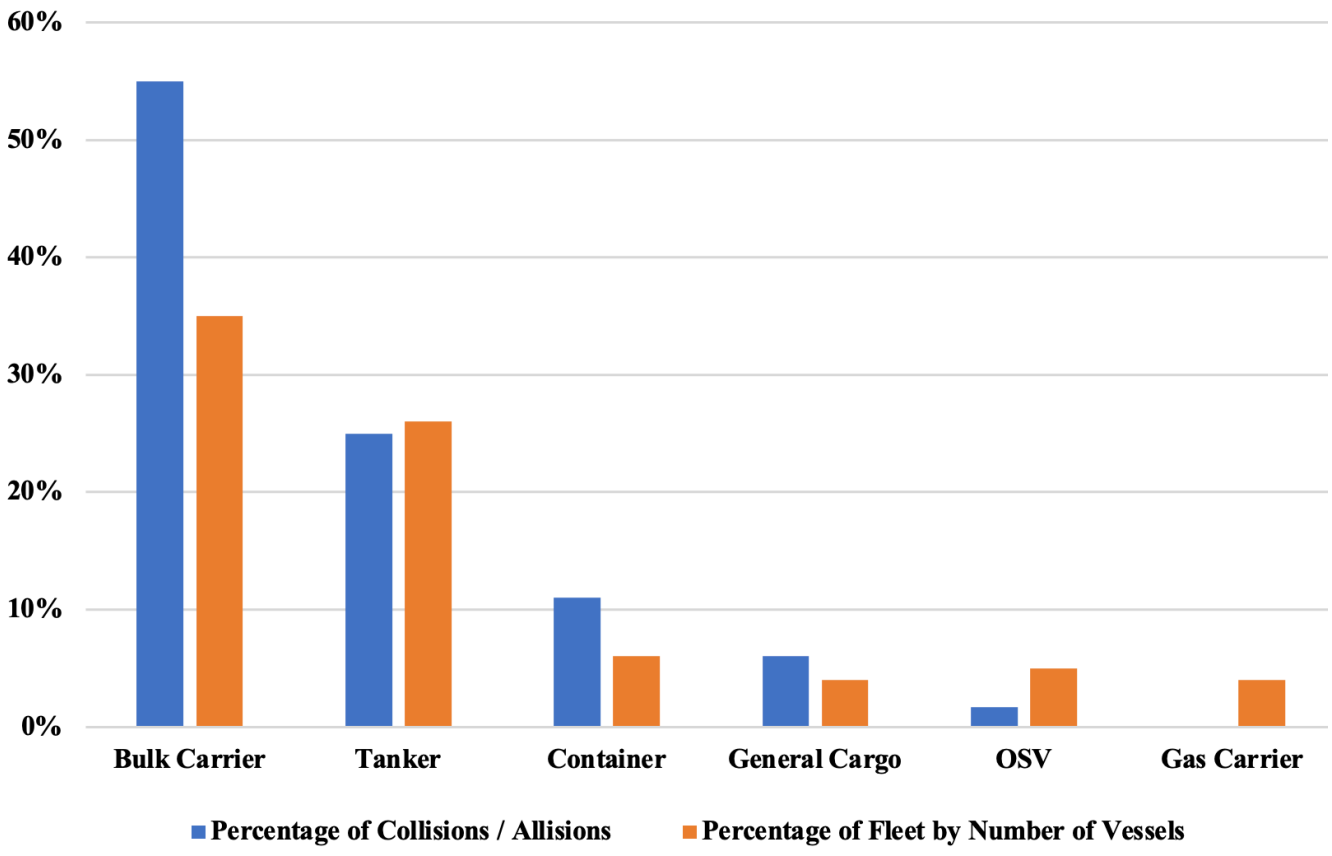


14 These do not include allisions where the RMI-registered vessel was anchored or moored.

Top Ten Causal Factors of Collisions / Allisions – 2022

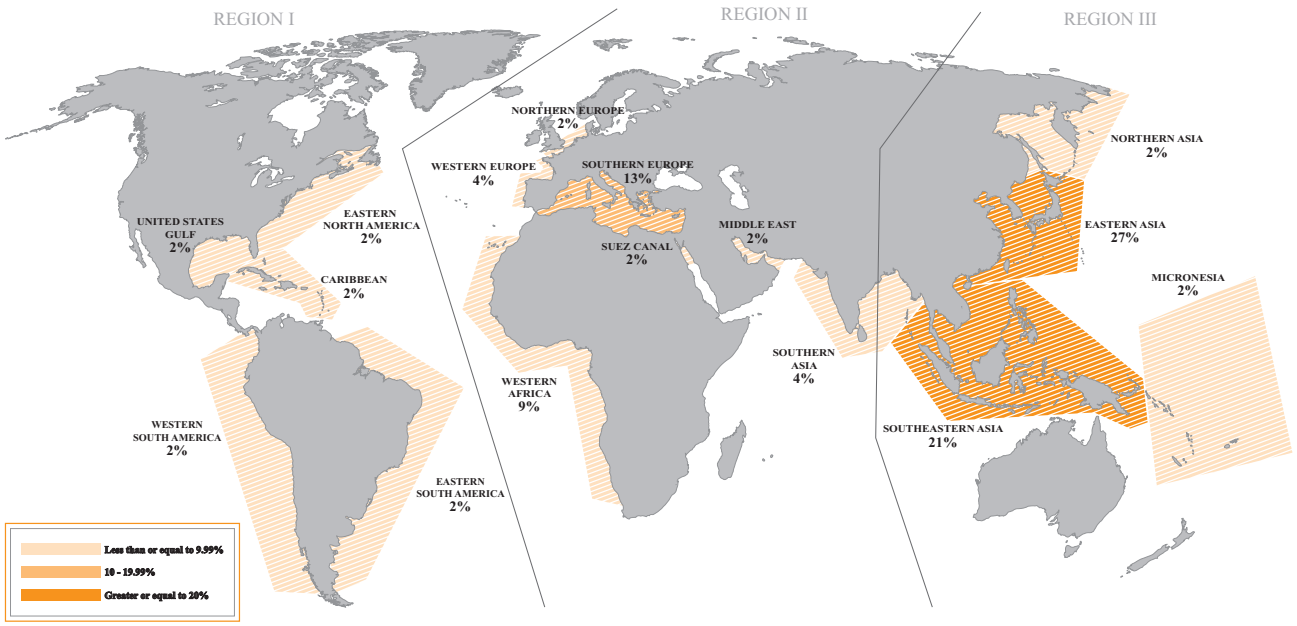
Causal Factor	Percentage of Incidents[15]
Incorrect navigation or ship handling	41%
Inadequate work planning or programming	24%
Inadequate identification and evaluation of loss exposures	22%
Failure to follow rules and regulations	17%
Inadequate or incorrect performance feedback	4%
Congestion or restricted action	4%
Adverse sea conditions	4%
Port and berthing facilities	4%
Failure to warn	2%
Adverse weather conditions	2%

Collisions / Allisions by Ship Type – 2022



15 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.

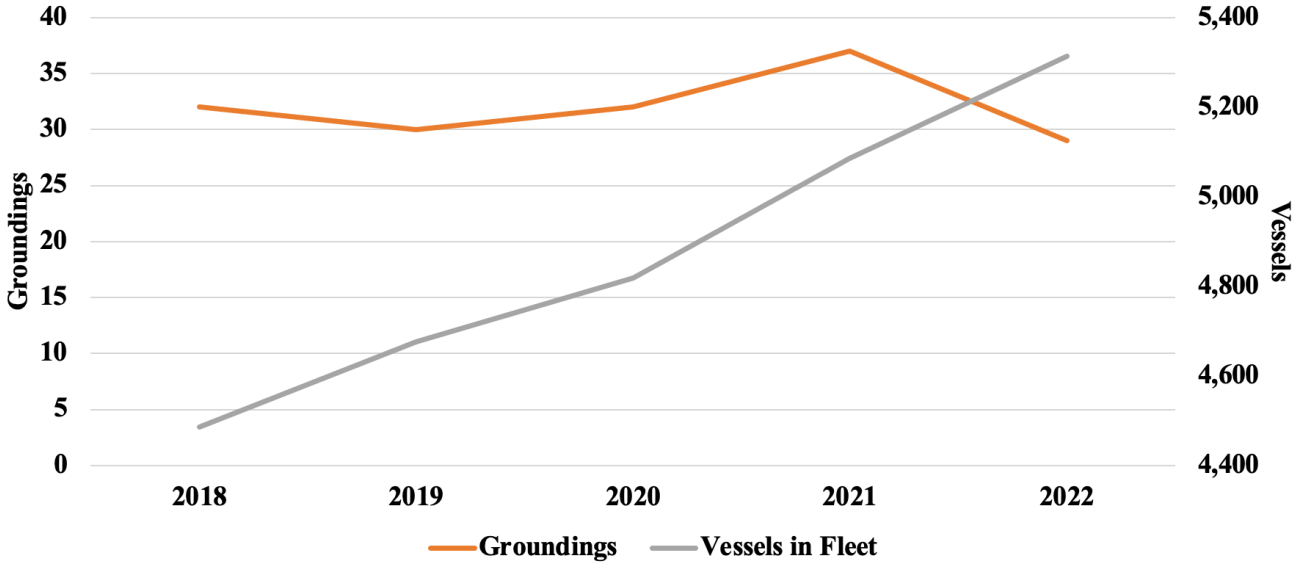
Collisions / Allisions by Region – 2022



Groundings

A total of 29 groundings were reported to the Administrator during 2022, with 17 of those occurring with a Pilot on board. One grounding was due to a loss of steering and another three groundings resulted in structural damage which rendered the ships unseaworthy.

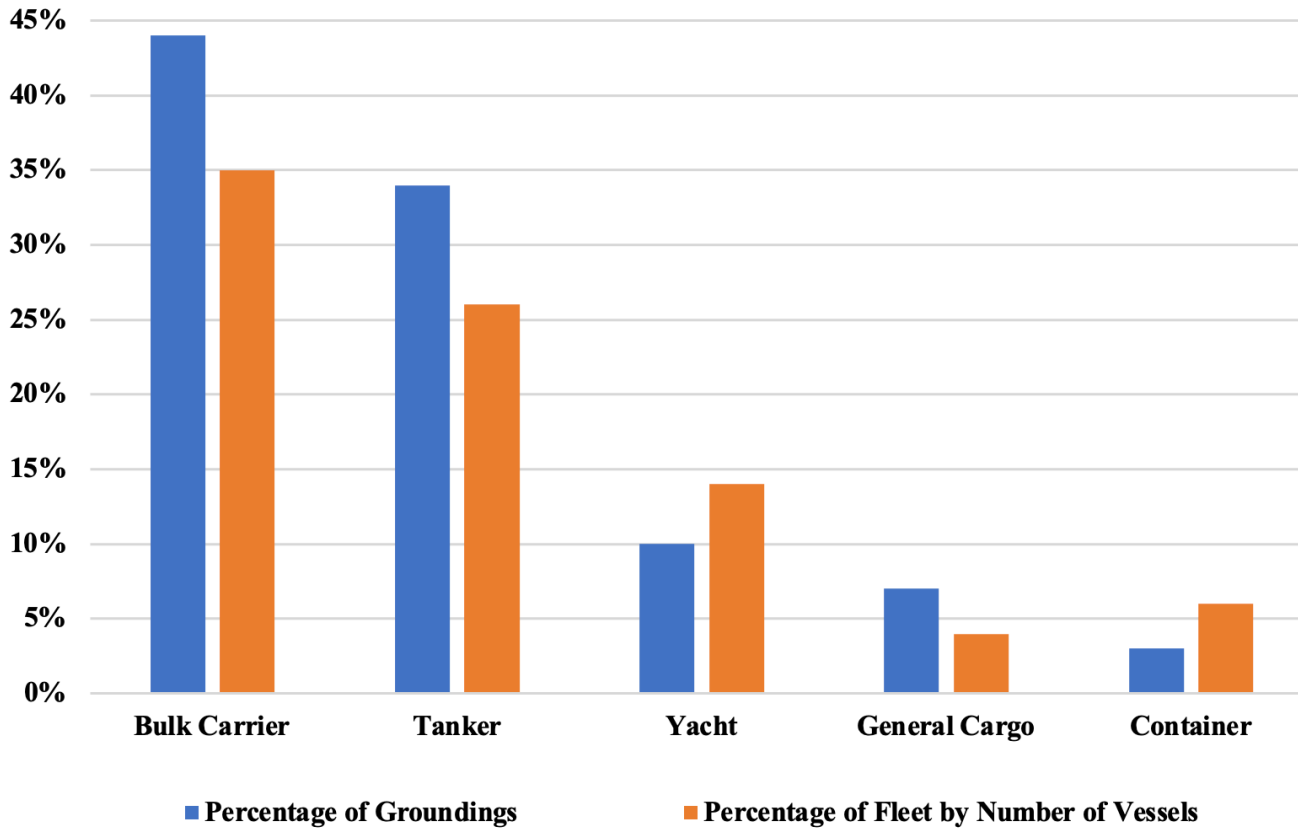
Groundings 2018 – 2022



Top Ten Causal Factors of Groundings – 2022

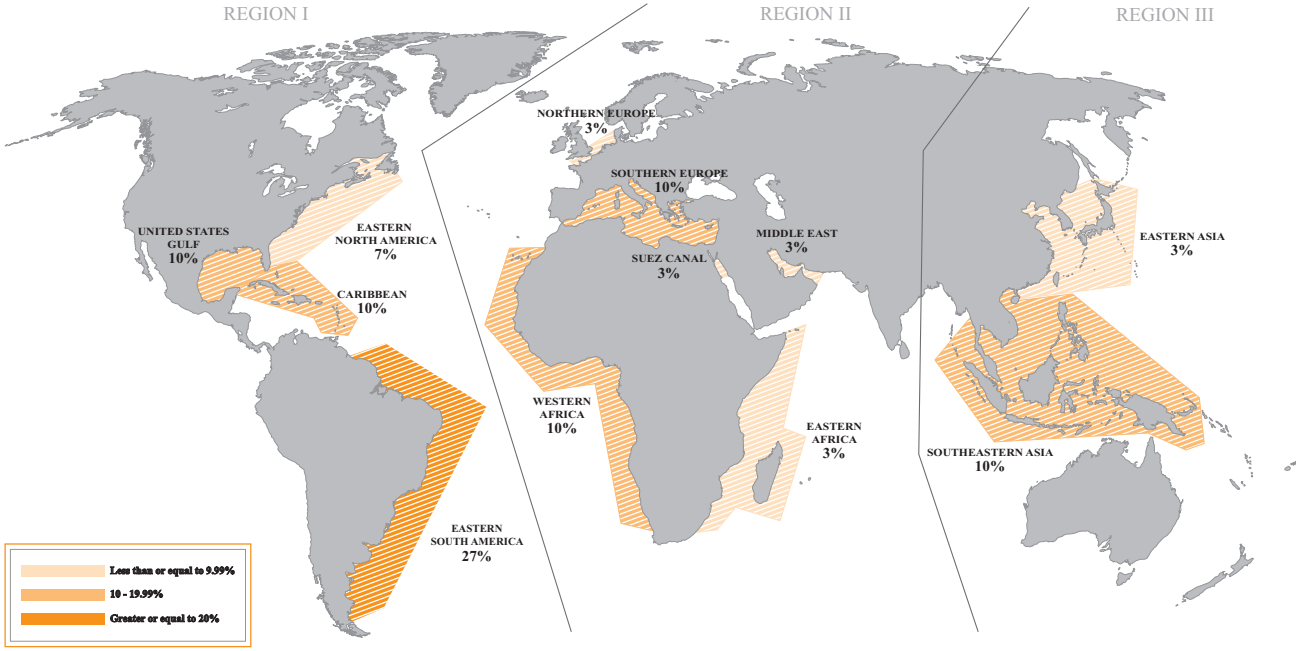
Causal Factor	Percentage of Incidents[16]
Incorrect navigation or ship handling	52%
Inadequate identification and evaluation of loss exposures	31%
Inadequate work planning or programming	28%
Outdated charts, publications, and other documentation	17%
Port and berthing facilities	14%
Unclear or conflicting assignment of responsibility	14%
Inadequate leadership and/or supervision	10%
Failure to follow rules and regulations	7%
Lack of skill	7%
Inadequate or incorrect performance feedback	7%

Groundings by Ship Type – 2022



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

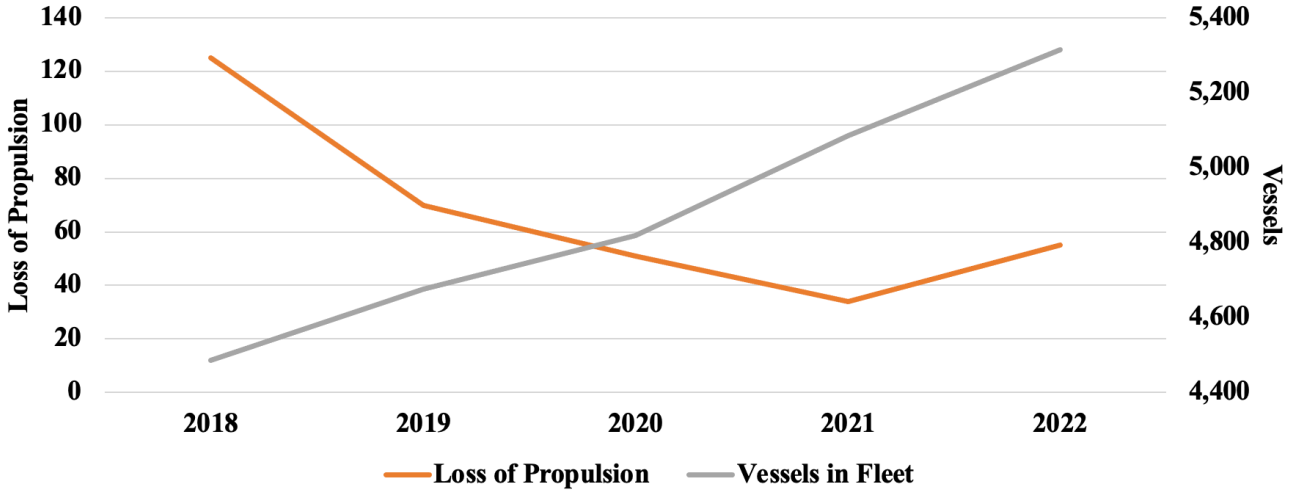
Groundings by Region – 2022



Loss of Propulsion

The Administrator received 55 reports of loss of propulsion during 2022, with 23 occurring in coastal seas or port approaches with a Pilot on board. The remaining 32 reports of the loss of propulsion occurred on the high seas. Additionally, 11 of the 55 loss of propulsion incidents required towing of the vessel to a repair facility.

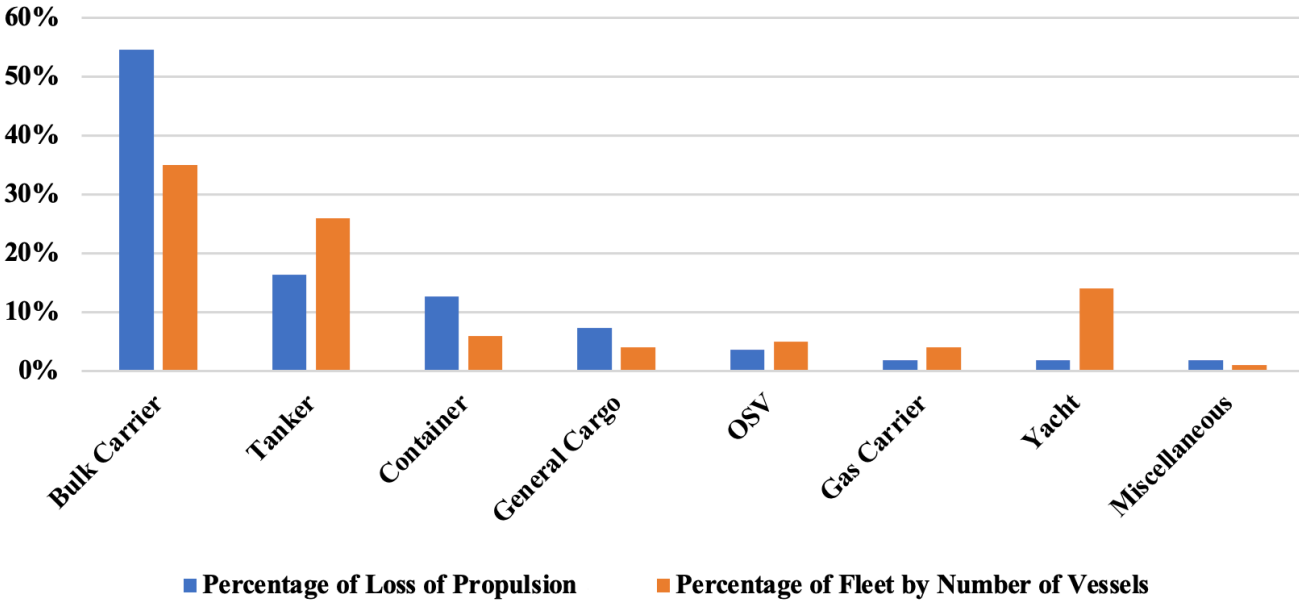
Loss of Propulsion 2018 – 2022



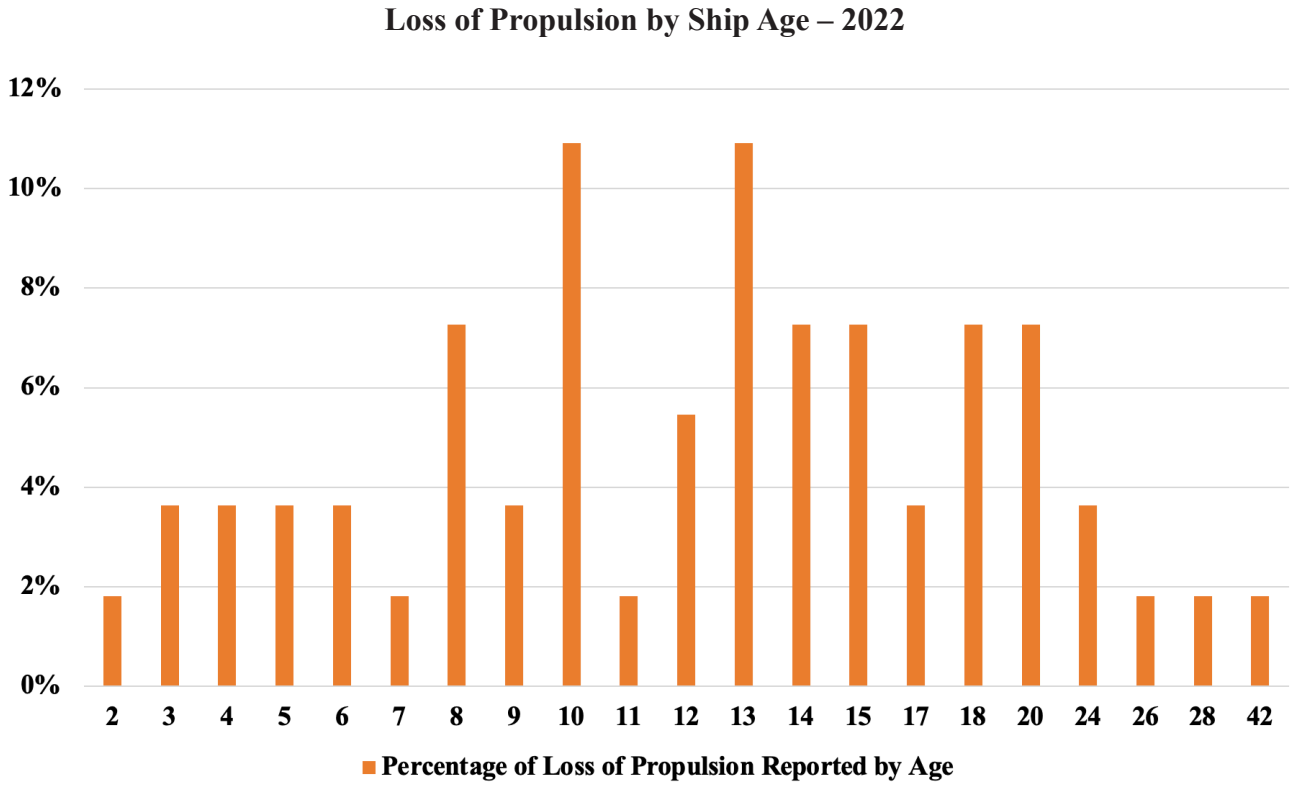
Top Ten Causal Factors of Loss of Propulsion - 2022

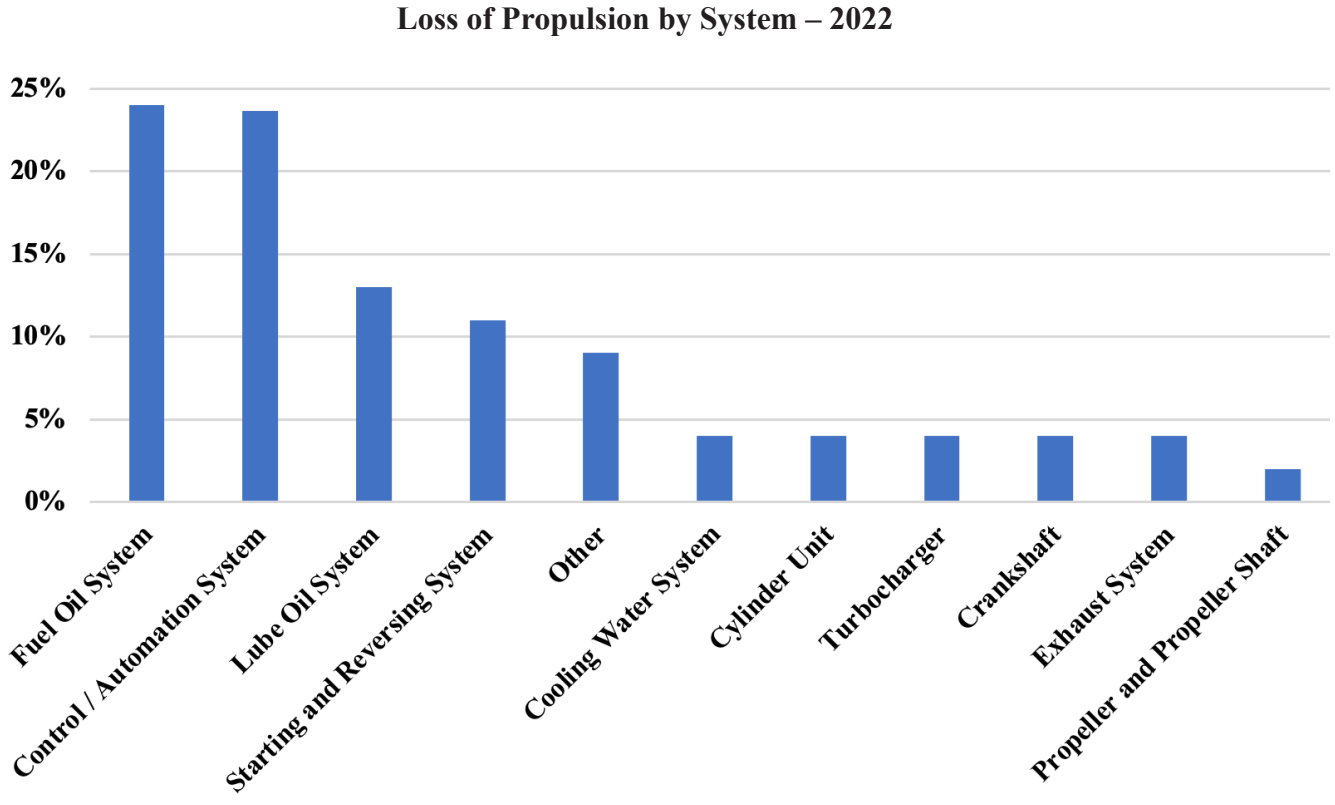
Causal Factor	Percentage of Incidents[17]
Defective equipment, machinery, or tools	35%
Inadequate identification and evaluation of loss exposures	13%
Inadequate inspection and/or monitoring	11%
Inadequate work planning or programming	9%
Failure to follow repair / maintenance instructions	7%
Failure to follow rules and regulations	7%
Bunkers and/or lube oil	5%
Inadequate preventative maintenance	5%
Scheduling of work	5%
Incorrect use of equipment or machinery	5%

Loss of Propulsion by Ship Type – 2022



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

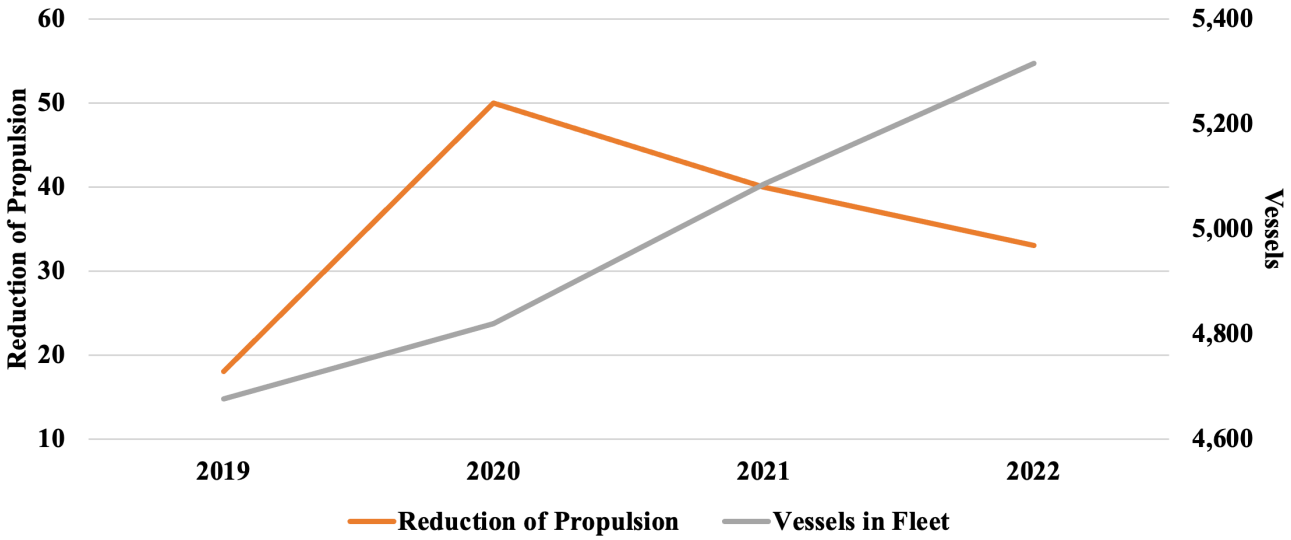

Loss of Propulsion by Ship Age – 2022
12%
10%
8%
6%
4%
2%
0%
2
3
4
5
6
7
8
9
10
11
12
13
14
15
17
18
20
24
26
28
42
Percentage of Loss of Propulsion Reported by Age


Loss of Propulsion by System – 2022
25%
20%
15%
10%
5%
0%
Fuel Oil System
Control / Automation System
Lube Oil System
Starting and Reversing System
Other
Cooling Water System
Cylinder Unit
Turbocharger
Crankshaft
Exhaust System
Propeller and Propeller Shaft

Reduction of Propulsion

The Administrator received 33 reports of reduction of propulsion during 2022, a decrease of seven reports compared to 2021. Of the 33 reports received, 48% occurred in waters of the United States, 13 of those occurred in coastal waters or port approaches.

Reduction of Propulsion 2019 – 2022[18]



‘

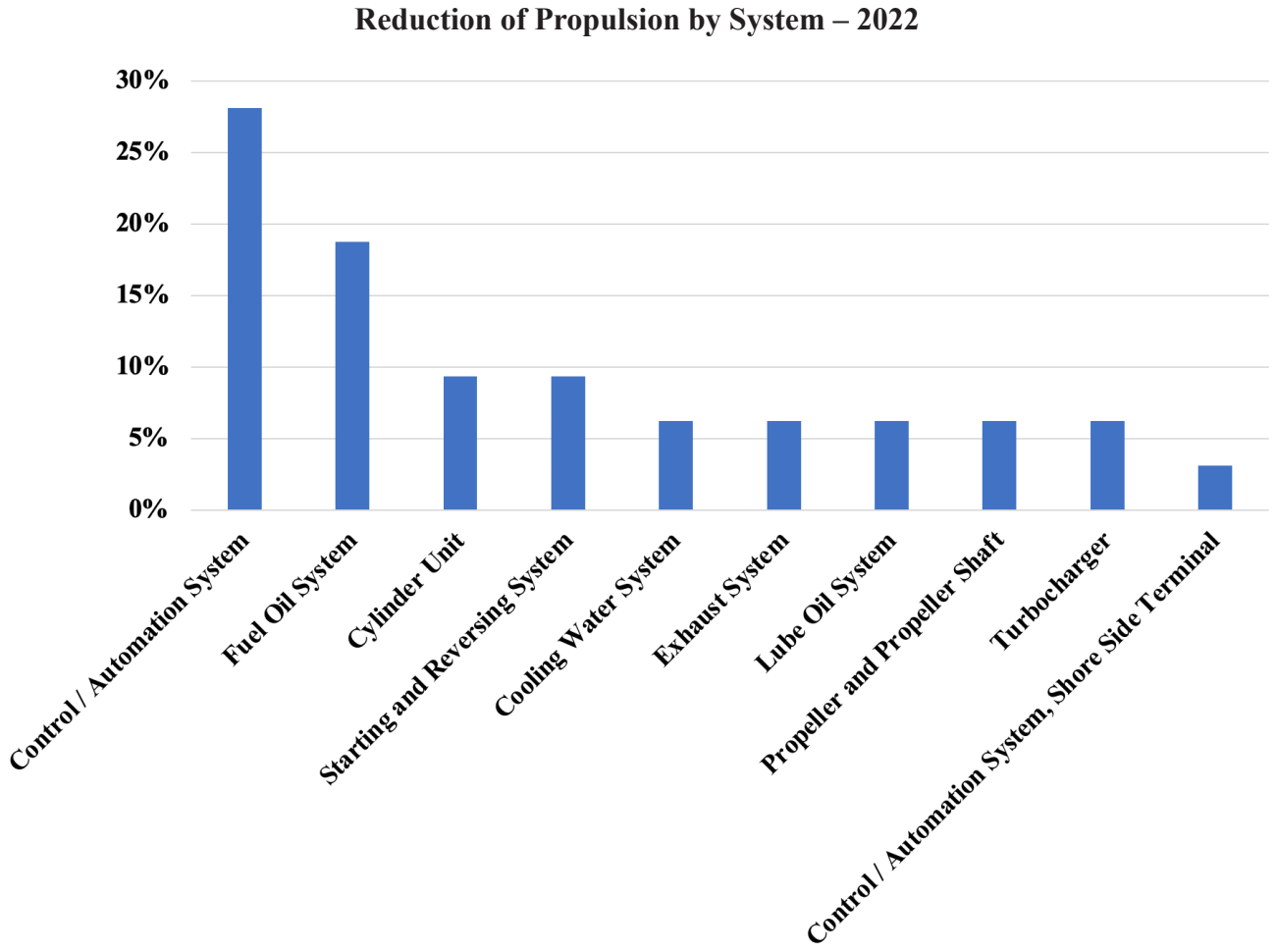
Top Ten Causal Factors of Reduction of Propulsion – 2022[19]

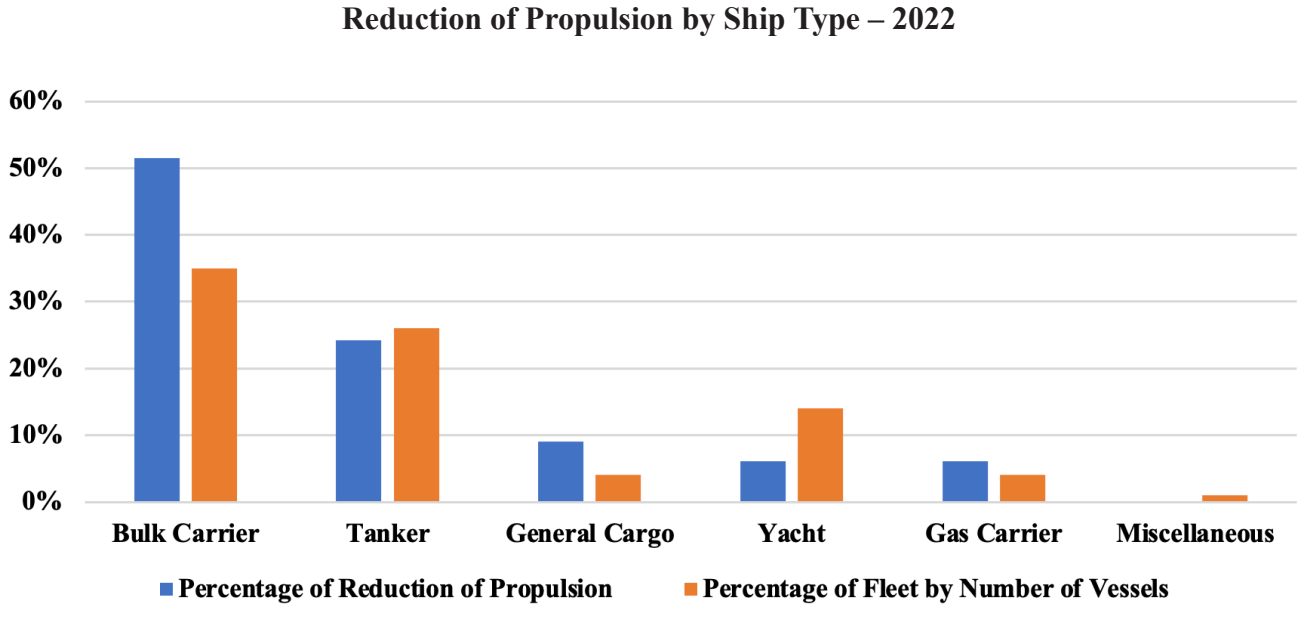
Causal Factor	Percentage of Incidents[20]
Defective equipment, machinery, or tools	33%
Inadequate identification and evaluation of loss exposures	9%
Inadequate work planning or programming	9%
Inadequate inspection and/or monitoring	9%
Inadequate maintenance	6%
Improper extension of service life	3%
Inadequate evaluation of changes	3%
Inadequate or improper controls	3%
Inadequate specifications to suppliers	3%
Failure to follow repair / maintenance instructions	3%

18 Collection of reduction of propulsion data commenced 15 April 2019, no data was collected for this incident type prior to this date.

19 Collection of reduction of propulsion data commenced 15 April 2019, no data was collected for this incident type prior to this date.

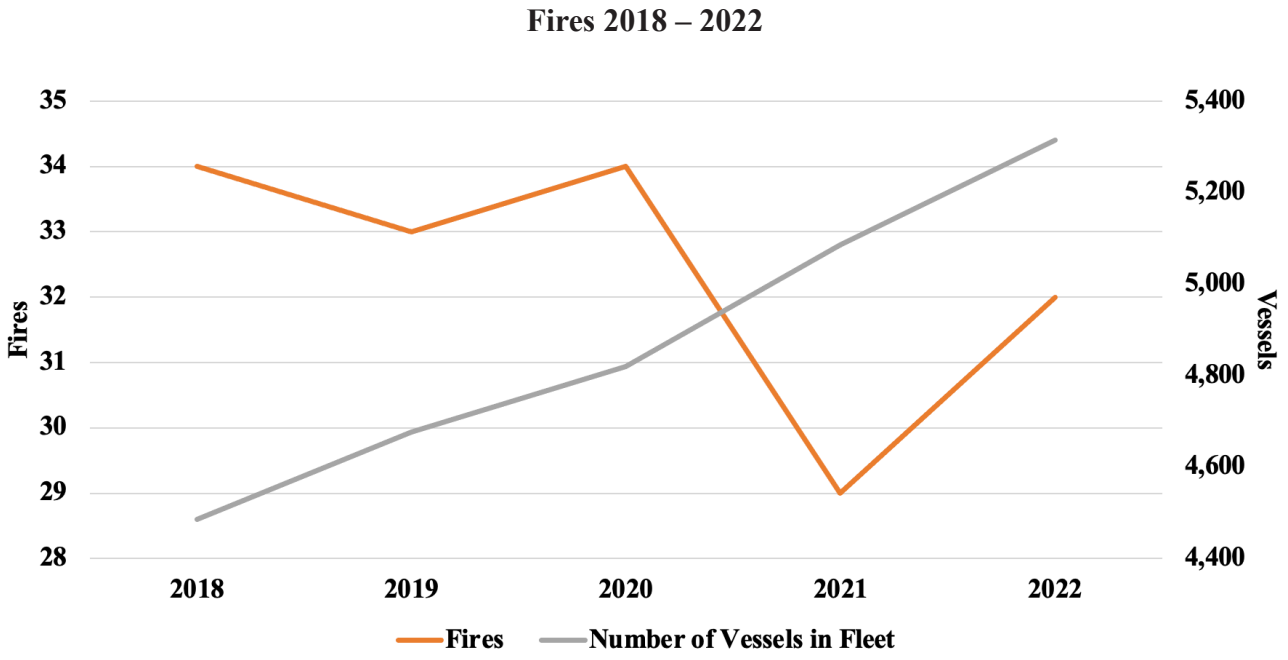
20 Multiple causal factors can be associated with the same incident.


Reduction of Propulsion by System – 2022
30%
25%
20%
15%
10%
5%
0%
Control / Automation System
Fuel Oil System
Cylinder Unit
Starting and Reversing System
Cooling Water System
Exhaust System
Lube Oil System
Propeller and Propeller Shaft
Turbocharger
Control / Automation System, Shore Side Terminal


Reduction of Propulsion by Ship Type – 2022
60%
50%
40%
30%
20%
10%
0%
Bulk Carrier
Tanker
General Cargo
Yacht
Gas Carrier
Miscellaneous
Percentage of Reduction of Propulsion
Percentage of Fleet by Number of Vessels

Fires

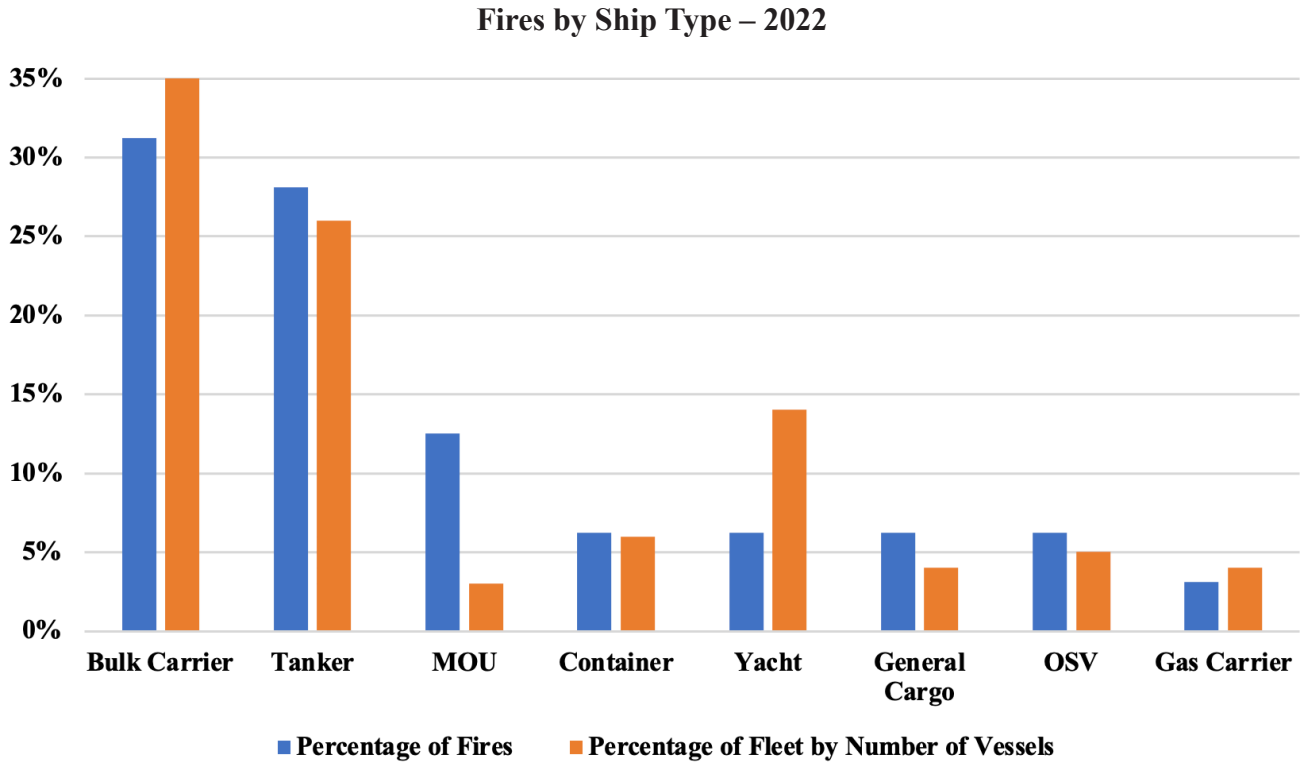
During 2022, the Administrator received 32 reports of fires occurring aboard RMI-registered vessels.

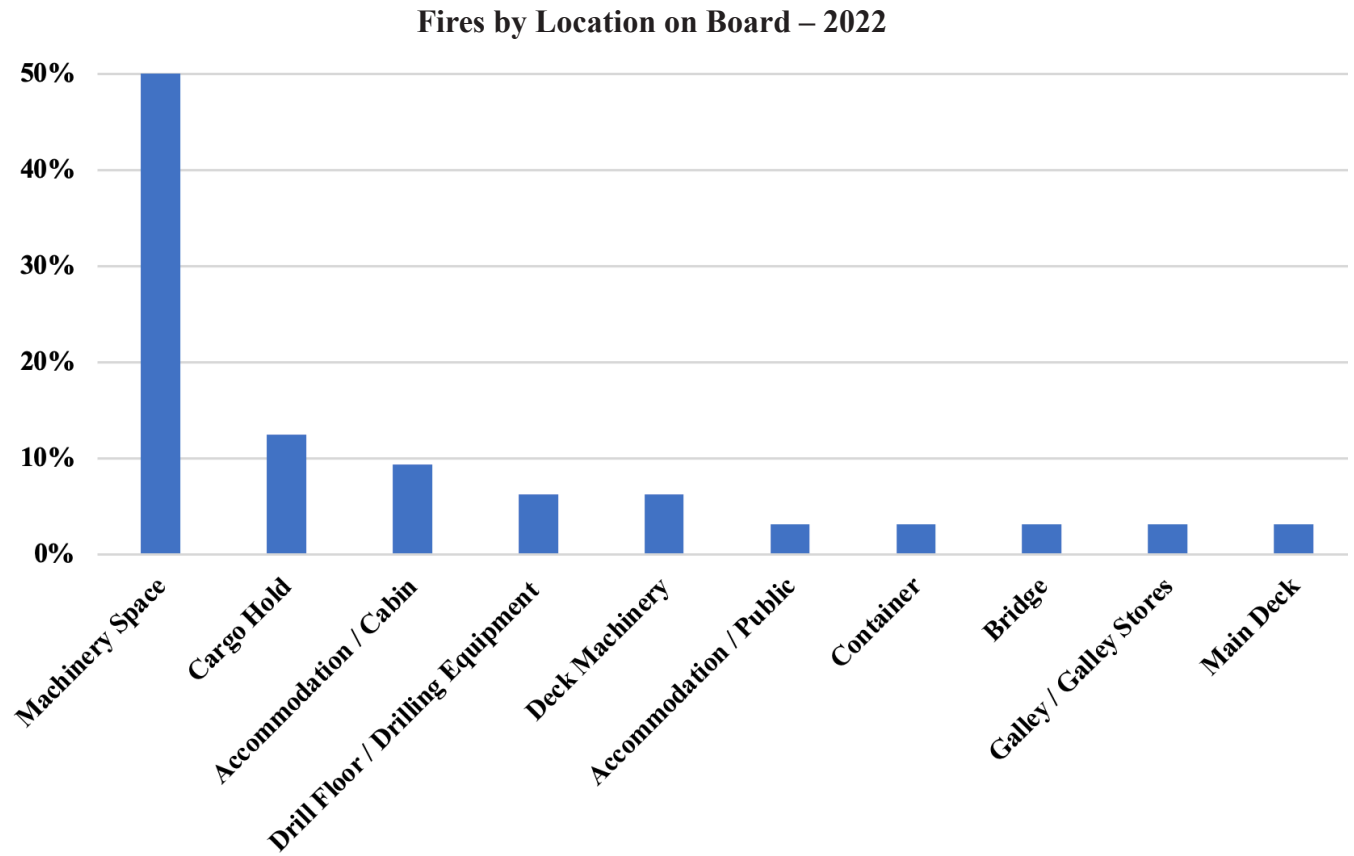


Top Ten Causal Factors of Fires – 2022

Causal Factor	Percentage of Incidents[21]
Defective equipment, machinery, or tools	19%
Inadequate identification and evaluation of loss exposures (including misdeclared or undeclared cargo)	16%
Fire and explosion hazards	13%
Failure to follow rules and regulations	13%
Giving inadequate policy, procedure, practices, or guidelines	9%
Inadequate inspection and/or monitoring	6%
Inadequate guards or barriers	6%
Incorrect use of equipment or machinery	6%
Inadequate work planning or programming	6%
Poor housekeeping	3%

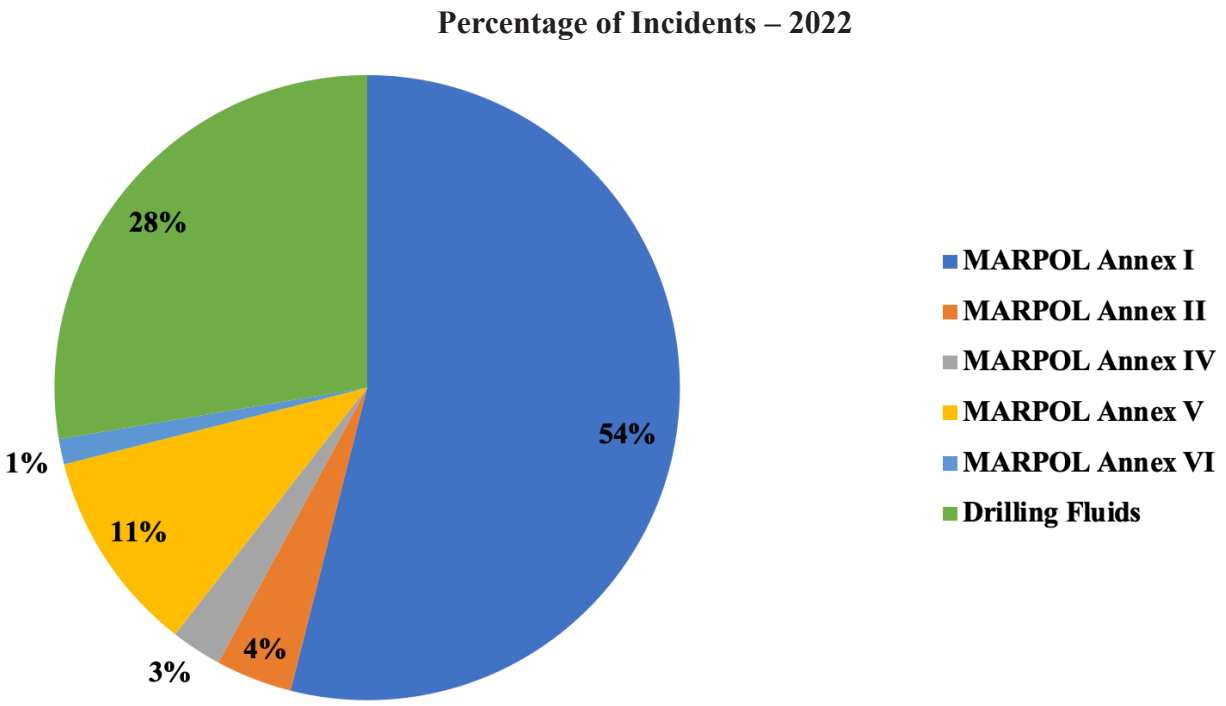
21 Multiple causal factors can be associated with the same incident.

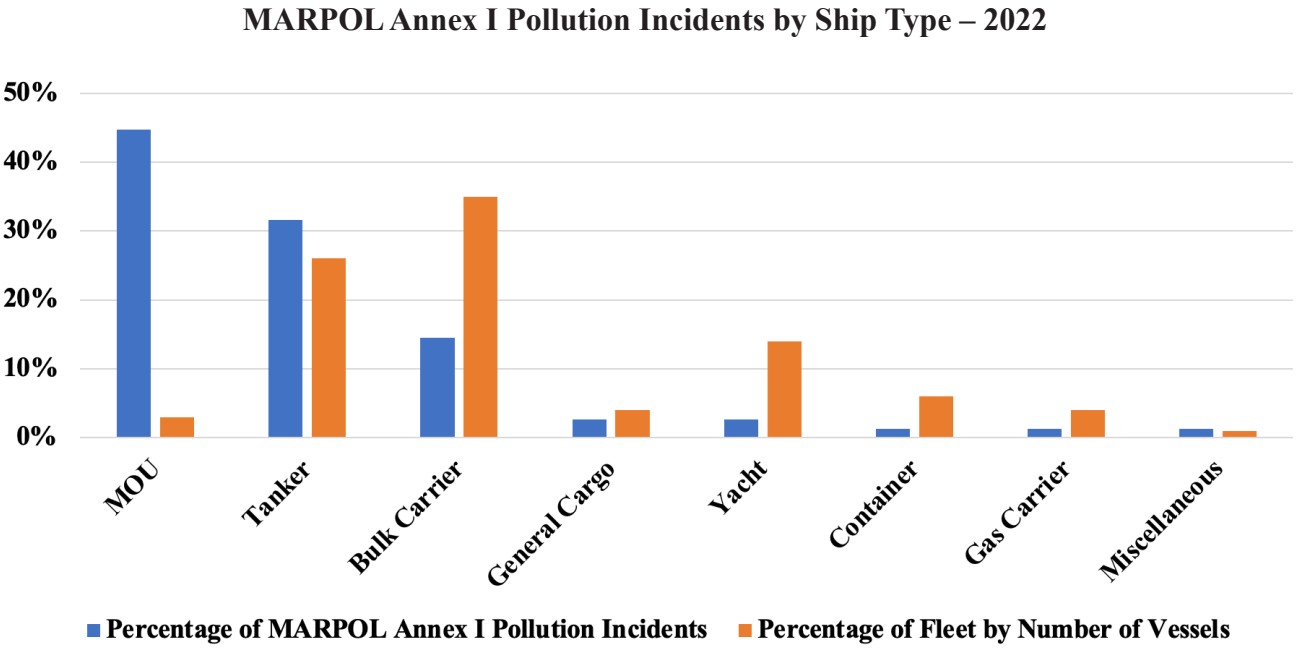

Fires by Ship Type – 2022
35%
30%
25%
20%
15%
10%
5%
0%
Bulk Carrier
Tanker
MOU
Container
Yacht
General Cargo
OSV
Gas Carrier
Percentage of Fires
Percentage of Fleet by Number of Vessels


Fires by Location on Board – 2022
50%
40%
30%
20%
10%
0%
Machinery Space
Cargo Hold
Accommodation / Cabin
Drill Floor / Drilling Equipment
Deck Machinery
Accommodation / Public
Container
Bridge
Galley / Galley Stores
Main Deck

Pollution

The Administrator received 76 reports of pollution during 2022. Additionally, the Administrator was notified of 14 spills occurring on deck with no discharge overboard, an increase of three spills on deck compared to 2021.





Top Ten Causal Factors of Pollution Incidents – 2022

Causal Factor	Percentage of Incidents[22]
Defective equipment, machinery, or tools	17%
Failure to follow rules and regulations	13%
Inadequate work planning or programming	13%
Environmental conditions	7%
Inadequate guards or barriers	7%
Inadequate identification and evaluation of loss exposure	7%
Adverse sea conditions	7%
Improper attempt to save time or effort	7%
Improper lifting, handling, or storage	3%
Inadequate leadership and/or supervision	3%

Top Ten Causal Factors of Spills on Deck – 2022

Causal Factor	Percentage of Incidents[23]
Defective equipment, machinery, or tools	24%
Inadequate identification and evaluation of loss exposures	19%
Inadequate work planning or programming	14%
Inadequate inspection and/or monitoring	10%
Inadequate guards or barriers	10%
Inadequate or incorrect performance feedback	5%
Using defective equipment or machinery	5%
Improper attempt to save time or effort	5%
Improper lifting, handling, or storage	5%
Inadequate performance measurement and evaluation	5%

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

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

Appendix 3: Most Common Marine Casualties by Ship Type

The below table lists, by ship type, the three most common incident types for all reports made to the Administrator in 2022.

Ship Type	First	Second	Third
Bulk Carrier	Serious Injury	Loss of Propulsion	Collision / Allision
Tanker	Serious Injury	Pollution	Collision / Allision
Container	Serious Injury	Loss of Propulsion	Collision / Allision
OSV	Serious Injury	Loss of Propulsion	Fire / Explosion
Gas Carrier	Serious Injury	Loss of Propulsion	Fire / Explosion
General Cargo	Serious Injury	Loss of Propulsion	Collision / Allision
MOU	Serious Injury	Pollution	Fire / Explosion
Miscellaneous	Pollution	Loss of Propulsion	Structural Damage
Passenger	Serious Injury	Loss of Critical Ground Tackle	Pollution
Yacht	Serious Injury	Grounding	Fire / Explosion