

# The future of maritime safety report 2024



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# Foreword

## Placing crew safety at the fore in times of change



**Peter Broadhurst**  
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a Viasat company

Shipping is increasing its automation and digitalisation, but we must not lose sight of technology's power to help or hinder safety. When designed with the end user in mind, new and innovative solutions can enhance safety, optimise ship performance, and of course, improve the industry's sustainability credentials. Technological advancements are also providing ever-expanding oceans of data, that if utilised smartly and shared more openly can be harnessed by industry and by regulators to benchmark and drastically improve the safety of our ships and crews. The moral and business imperatives are clear.

Much less in our control, global events continue to stress-test the resilience of the shipping industry and the global supply chain. While we have emerged from the chaos of the pandemic, the world is blighted by geopolitical instability and deep-rooted economic uncertainty. Such crises are always keenly felt by

the seafarer. As an industry reliant on this skilled workforce, we cannot overlook the impact on their wellbeing and ability to perform their jobs safely.

The international shipping community rightly condemns acts that put the lives of innocent seafarers at risk. However, 'silent' issues such as fatigue and mental health continue to put crew and vessel safety at risk. We can and should do more as an industry to prevent fatigue and support seafarer wellbeing. We must also use available tools to end the scourge of abandonment, which saw a record 142 new cases in 2023. Tackling abandonment will inevitably reduce safety incidents and by demonstrating commitment to seafarer welfare, it may also contribute to easing the seafarer recruitment and retention crisis.

In the midst of such challenges, we must not forget 2024 is a momentous year for shipping. "Navigating the Future: Safety first!", the International Maritime Organization's 2024 World Maritime Day theme, reflects the need to prioritise safety and environmental protection while encouraging innovation to propel shipping's transition to a greener future. We are also celebrating the 50th anniversary of adopting the International Convention for the Safety of Life at Sea (SOLAS), 1974.







SOLAS has profoundly impacted the safety of merchant ships. However, for the most part, SOLAS specifies minimum standards. While many do more than the minimum, it is time as an industry to move the bar higher. The breadth and ambition of the International Maritime Organization's (IMO) 2023 Strategy on Reduction of GHG Emissions from Ships is a testament to what can be achieved when shipping works toward a defined goal. Its adoption paves the way for a comprehensive work programme to reduce emissions. Is it time to develop a similar overarching goal for the industry to improve ship safety?

Such a goal must be based on an accurate and universal understanding of the problem. And here, shipping is failing in its duty to seafarers. Non-reporting, under-reporting or delayed reporting of marine safety incidents is endemic across many parts of the shipping industry. Despite IMO Member States being required to populate the Global Integrated Shipping Information System (GISIS), we know that many are not consistently doing so, often due to concerns about damaging the reputation of their Flags.

We need to flip the narrative. Ship casualty and near-miss data can provide the basis for change. By understanding the root causes and frequency of incidents, shipping can develop specific mitigation measures. With modern technology at our fingertips, we can and must do more.

I recognise that data is not a panacea. Without context, it can mislead and confound. However, when validated and used thoughtfully, it can empower decision-makers. By working together and sharing anonymised data, industry regulators, shipowners and operators, insurers, seafarer unions and others can benchmark performance and take proactive steps to improve safety.

In 2023 Inmarsat Maritime received 788 distress calls, reducing the rolling average from 810 (5-year average 2018-2022) to 799 (6-year average). While I fervently hope this is a positive indicator, the number remains stubbornly high.

Conversely, we continue to receive precious few urgency calls, which indicate that vessel or crew safety is threatened, and they require assistance but that the situation is not yet critical. Urgency calls are important as seafarers have more time to provide detailed safety-related information, which is valuable to persons ashore. Instead, we often receive incomplete distress calls sent at the last moment when the crew are in full emergency response mode. This not only complicates the search and rescue process, but also impacts data fidelity and the ability to share valuable lessons learned.

We have to change the mindset – forewarning is forearm. Early notification and transparency should be encouraged. We must embrace and embed an open safety culture, starting with access to safety data. We live in an increasingly digital world and have unparalleled access to data and sophisticated tools and models to analyse it. But we must develop the mechanisms to seamlessly share it with peers. Doing so will create a knowledge baseline and enable shipping to identify trends, prioritise risk treatments and track progress over time. Ultimately, we should be aiming to design a more proactive regulatory process.

The Future of Maritime Safety Report 2024 combines statistics, industry insights, opinions of maritime professionals and extensive research. As I invite you to read the report I'd like to leave you with one question; what more can we do as an industry to harness the power of anonymised safety data and proactively reduce ship and seafarer casualties?



# Executive summary

## Headline 2023 statistics at a glance:

- 788 GMDSS distress calls registered on Inmarsat networks in 2023 down from 853 in 2022 (7.6% decrease) and 794 in 2021.
- Tankers (159), bulk carriers (105) and other dry cargo (77) sent the most GMDSS distress calls (by count). Tankers top the list for the sixth successive year.
- The average rate of distress calls in 2023 was 45 per 10,000 registered vessels. Tankers (89), gas carriers (86) and container ships (85) sent the most GMDSS distress calls (by rate).
- Vessels between 1000 - <5,000GT were responsible for considerably more distress calls than any other class in 2023 (21.6% of such calls).
- 11-12-year-old vessels (all types) were responsible for sending the most GMDSS distress calls

The Future of Safety Report 2024 has been compiled by analysing GMDSS distress call data received by Inmarsat Maritime in 2023 and comparing it to equivalent 2022 and 2021 datasets. Industry experts and extensive research provide insights and nuance to the raw data.

Total losses of vessels over 100 gross tonnage (GT) fell to a record low of 26 in 2023, a decline of more than one third year-on-year and by 70% over the past decade<sup>1</sup>, whereas GMDSS distress calls average 799 per year (based on six years of data). The 7.6% year-on-year reduction in distress calls received in 2023 gives cause for optimism and it seems likely that the effects of the COVID-19 pandemic, including limited inspections and missed maintenance slots, are being addressed.

However, crew welfare, including fatigue and lack of shore leave, remains a concern and seafarer health needs must be addressed. While better connectivity has the potential to reduce the pain of separation from family, it must be used with care to protect social cohesion onboard.

Governments must continue to do what they can to protect seafarers from becoming unwitting victims of geopolitical events. They should also designate seafarers as ‘key workers’ and facilitate access ashore to help safeguard physical and mental health.

Per the UN Trade and Development's (UNCTAD) Review of Maritime Transport 2023<sup>2</sup>, the average age of commercial vessels was 22.2 years, up from 21.9 years in 2022; more than half of the global fleet is over 15 years of age. The strong second-hand market indicates that many shipowners are delaying commissioning new builds until there is greater clarity on the future-fuel mix.

Despite concerns over older vessels, properly maintained, operated and well crewed ‘vintage’ vessels can trade safely (although they might not necessarily be as fuel efficient as younger vessels). In fact, mid age vessels again had higher distress call rates in 2023 which could indicate maintenance is overlooked more in this age category.

Distress calls from fishing vessels decreased markedly in 2023 (from 55 in 2022 to 33) although this may be due to the increased use of mobile phones to make emergency calls. However, fishing remains a dangerous profession and under-reporting masks the true extent of the problem.

While passenger vessels are responsible for low numbers of distress calls, over-laden and poorly maintained vessels in the Global South continue to exact a heavy toll. Lithium-ion battery-related fire risks continue to be of concern, although some recent studies refute the belief that electric vehicles are more prone to spontaneously combust than their internal combustion engine equivalents. Misdeclared cargo remains a significant challenge for container shipping lines.

Shipping could consider developing a unifying safety goal to reduce accidents, similar to that adopted by IMO Member States on decarbonisation. Fundamental to such an agreement is establishing a knowledge baseline. The current siloed-working model does not leverage industry safety data. Adopting an anonymised “big data” model has the potential to enhance current regulations, guidelines, procedures and practices, and help reduce preventable safety incidents.

<sup>1</sup> [Safety and Shipping Review 2024 | Allianz Commercial](#)

<sup>2</sup> [rmt2023ch2\\_en.pdf \(unctad.org\)](#)



# Key takeaways

- Fewer total losses per year does not provide a full safety picture for shipping: GMDSS distress signals remain consistently high at 799 per year (over a six-year average).
- Data sharing mechanisms are required so stakeholders can pool data. Comparing and overlaying data will provide more nuance and greater confidence.
- Shipping should develop a list of standard data points to monitor and report. This could include: casualties and incidents, injuries or deaths at sea, and near misses. The future output of Inmarsat's SEA-SAFE Working Group could provide a blueprint for data sharing.
- Trend analysis can help prioritise the development of safety measures. A particular emphasis should be placed on developing risk treatments for well-known and recurring issues.
- Concerns about data confidentiality and reputational damage can be overcome by anonymising casualty and incident data. Greater visibility should not be punitive, it should be empowering for all those concerned with ship safety.
- The established international regulatory process may need to be reviewed to ensure it is proactive, agile and responsive. As we move forward the interdependency of the human element and technology must be at the forefront of regulators' and shipowners' minds.
- Addressing safety challenges associated with shipping's transition to alternative fuels and emissions reduction technologies is vital. Seafarer welfare remains paramount to enabling a successful transition. Crew must be suitably trained to handle new fuels and technologies confidently and safely.



# Introduction

In recent years the resilience of shipping and its seafarer workforce has been severely tested by a series of exceptional global events, including a pandemic, outbreak of war in Eastern Europe and escalating tension and conflict in the Middle East. These external stressors come at a time of great change for the industry as it moves towards its decarbonisation goals.

Confronted by such challenges, a key question is the impact on crew and vessel safety. While total losses fell to 26 (from 41 in 2022) and ship casualties by 3% to 2,951 in 2023 (from 3,036 in 2022), will the industry continue to see a downward trend on total losses (evident since 2016), as reported by the Allianz Global Corporate and Specialty (AGCS) Safety and Shipping Review 2024<sup>3</sup>?

The fourth edition of the Future of Maritime Safety Report analyses Inmarsat RescueNET and SafetyNET GMDSS data received between 2021 and 2023. Comparing multi-year data allows us to discern patterns and trends, for example the number of distress calls made annually, the kinds of vessels most impacted and where in the world incidents are occurring.

Unfortunately, the year-on-year pattern shows only marginal variation. Despite ever-more stringent regulations and improved ship design and technologies, the number of GMDSS distress calls has remained remarkably consistent since 2018 (averaging 799 calls per year between 2018 and 2023). Tracking these statistics over time, can help to build a more detailed safety picture that the steady decline in total losses may otherwise mask.

While the number of distress calls fell by 7.6% in 2023, compared to 2022, essentially, they returned to pre-COVID norms. The spike recorded in 2022 was likely the result of a combination of factors related to the COVID-19 pandemic, including missed maintenance slots and the cessation of Port State Control inspections.

Of course, some things are beyond shipping's control; 2023 saw increased market volatility due to deteriorating international relations and climate change risks, such as extreme weather events and drought in the Panama Canal.

In particular, vessels and their crews were caught in the crosshairs of escalating tension and conflict: the collapse of the Black Sea Grain Initiative leaving vessels at heightened risk of naval mines, the harassment and seizure of vessels in the Strait of Hormuz, and the Houthi militia targeting ships in the Bab Al Mandab Strait and Red Sea.

In response to the latter, many shipping companies opted for longer travel distances to avoid the area, impacting schedules and carrying capacity, and increasing emissions and seafarer fatigue.

Also on shipping's radar are security concerns arising from a potential resurgence of Somali piracy as naval forces deployed in the region are focussed on countering sustained Houthi attacks on shipping. Ratcheting tensions arising from territorial disputes in the South China Sea pose increasing risks to safe navigation.

Such challenges were compounded by economic uncertainties, including high inflation, energy prices and interest rates. In the face of these external factors, global shipping increased its capacity to transport goods over the course of 2023<sup>4</sup>. However, another key marker of shipping's health was less positive.

Seafarer morale remains fragile after the crew change crisis. Happiness indices, which reportedly improved in 2022, showed higher levels of dissatisfaction in 2023. Fatigue, often related to minimal crewing arrangements, long contracts and rapid turnarounds continue to impact wellbeing.

The prolonged absence of Ukrainian and Russian seafarers is exacerbating the shortage of trained personnel and recruitment challenges, adding more pressure on the current workforce. The crewing situation may soon become acute as companies compete for seafarers trained to safely handle and operate vessels transporting, and/or powered by alternative (and higher risk) green fuels. Seafarers too are voicing concerns over the development of necessary safety regulations and training programmes<sup>5</sup>.

With new fuels fast approaching, and geopolitical tension on the rise, industry should proactively seek to reduce risk. Common sense suggests that it starts by managing known and recurring causes of safety incidents. Not only will this enhance ship and crew safety, it will also improve industry resilience and facilitate the flow of global trade.

<sup>3</sup> [Safety and Shipping Review 2024 | Allianz Commercial](#)

<sup>4</sup> [Merchant fleet – UNCTAD Handbook of Statistics 2023](#)

<sup>5</sup> [ISWAN | Safeguarding seafarer welfare in an era of decarbonisation \(seafarerswelfare.org\)](#)



# “Navigating the future: safety first!”

“Day to day, as seafarers and ships deliver the goods the world needs, we all rely on the safety of shipping. The developments in shipping safety – including radio communications using satellites, which Inmarsat has long been associated with - have been of critical importance in ensuring the safety of life at sea.

As we move forward with shipping’s transition to a decarbonised future, we must consider safety issues relating to new fuels and technologies that will be needed. Safety matters in digitalisation and automation need advanced satellite technologies and systems.

Above all, the safety and wellbeing of the marine workforce, needing internet access everywhere on the sea, is critical today and in the future. We are at an exciting juncture in the evolution of maritime safety, and we must bring everyone on board to deliver and ensure we navigate the future – safety first. We need the collective expertise and partnership of IMO and its Member States, as well as intergovernmental and non-governmental organisations and industry.”

**Hiroyuki Yamama**  
Director Maritime Safety Division  
IMO



Overview of distress calls by vessel type

In January 2023, 105,493 vessels of 100 gross tons (GT) and above were engaged in maritime trade, with oil tankers, bulk carriers, and container ships accounting for 85% of the fleet’s total capacity<sup>6</sup>.

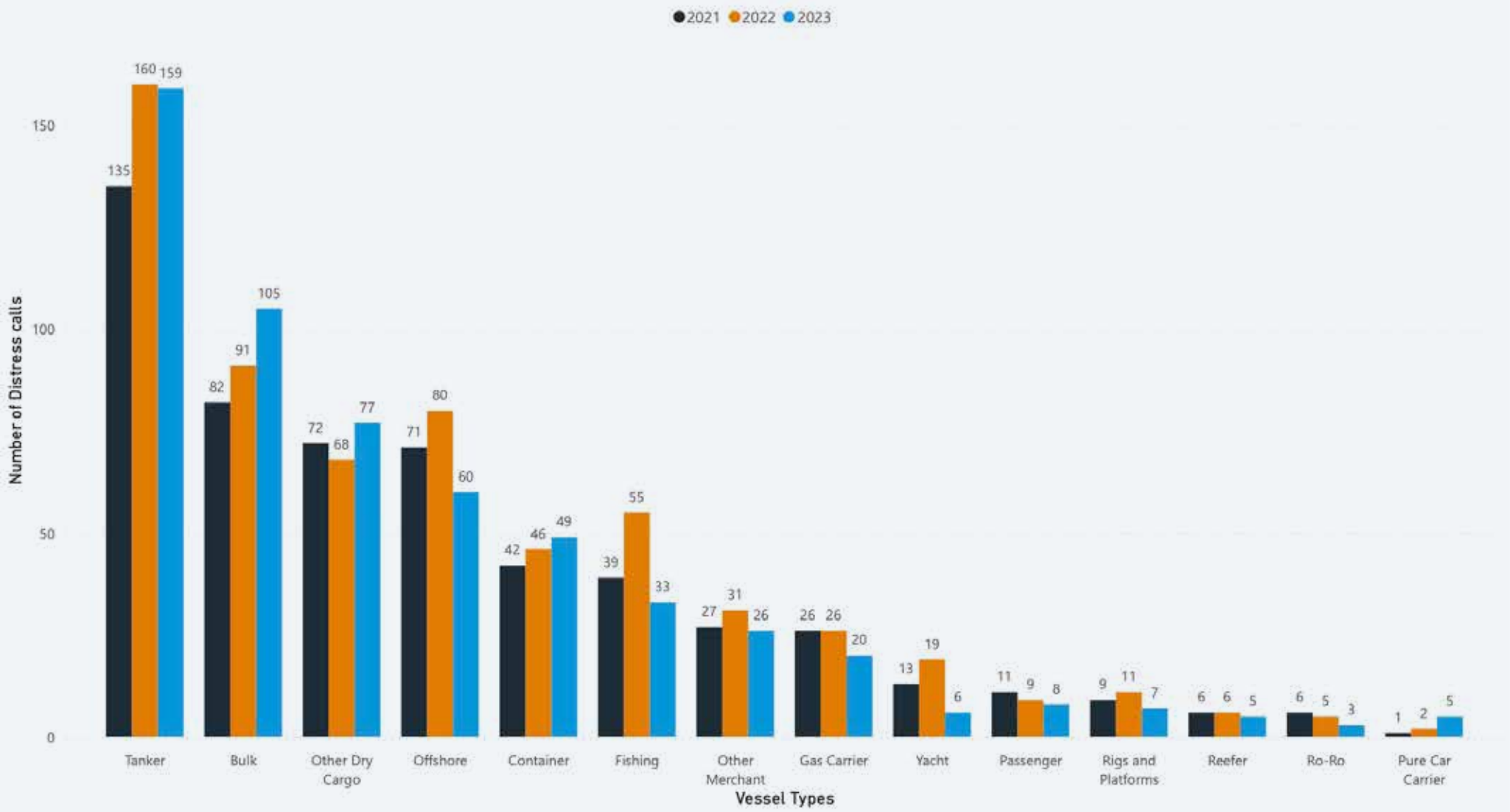
Contrary to the continued growth of global shipping, losses (over 100 gross tonnage (GT)) have fallen year-on-year over the last decade, reflecting efforts to improve safety. Foundered (sunk) was the main cause of total losses reported during 2023, accounting for 50% of the 26 vessels lost. Wrecked/stranded claimed 15% and fire/explosion another 12%<sup>7</sup>. Despite the downward trend, filing loss investigation reports with IMO remains haphazard and slow.

Each loss risks human tragedy and damage to the marine environment so shipping cannot afford to be complacent, and overall, casualty rates remain high. Machinery damage and failure accounted for over half (1,587) of all incidents globally in 2023. Collision, fire and explosion, grounding, mis-declared cargo, cargo shift and liquefaction continue to cause the majority of ship casualties, indicating that lessons are still not being learned. Considering the culture of under-reporting that pervades parts of the industry, the number of casualties is likely considerably higher.

Under-reporting of casualties is not the only safety and welfare challenge. The record number of abandonments reported in 2023<sup>8</sup> makes clear this is an issue that cannot be overlooked; it puts seafarer wellbeing at risk, as well as tarnishing shipping’s reputation in what is an increasingly competitive labour market. However, the open reporting of such incidents is important as it provides a more accurate picture of the scale of the problem. It also highlights the vital enforcement role performed by Flag States and Port State Control Officers to ensure shipowners that operate sub-standard vessels comply with international regulations related to safety, security, and environmental responsibility.

Over the course of 2023, Inmarsat Maritime received 788 Global Maritime Distress and Safety System (GMDSS) distress calls, compared to 853 received in 2022 (a 7.6% reduction) and 794 in 2021. Of the 14 vessel types analysed<sup>9</sup> for the Future of Maritime Safety Report 2024, tankers, bulk carriers and other dry cargo vessels together transmitted 60% of distress calls in 2023. Tankers feature at the top of the list for the sixth successive year (159 calls in 2023).

While the majority of vessel types sent less distress calls in 2023 than in 2022, Graph 1 illustrates that bulker, other dry cargo, container and pure car carriers were responsible for more distress calls in 2023. For example, pure car carriers sent three distress calls between 2021 and 2022, but five in 2023 alone.



Graph 1: GMDSS distress calls (count) by vessel type 2021-2023

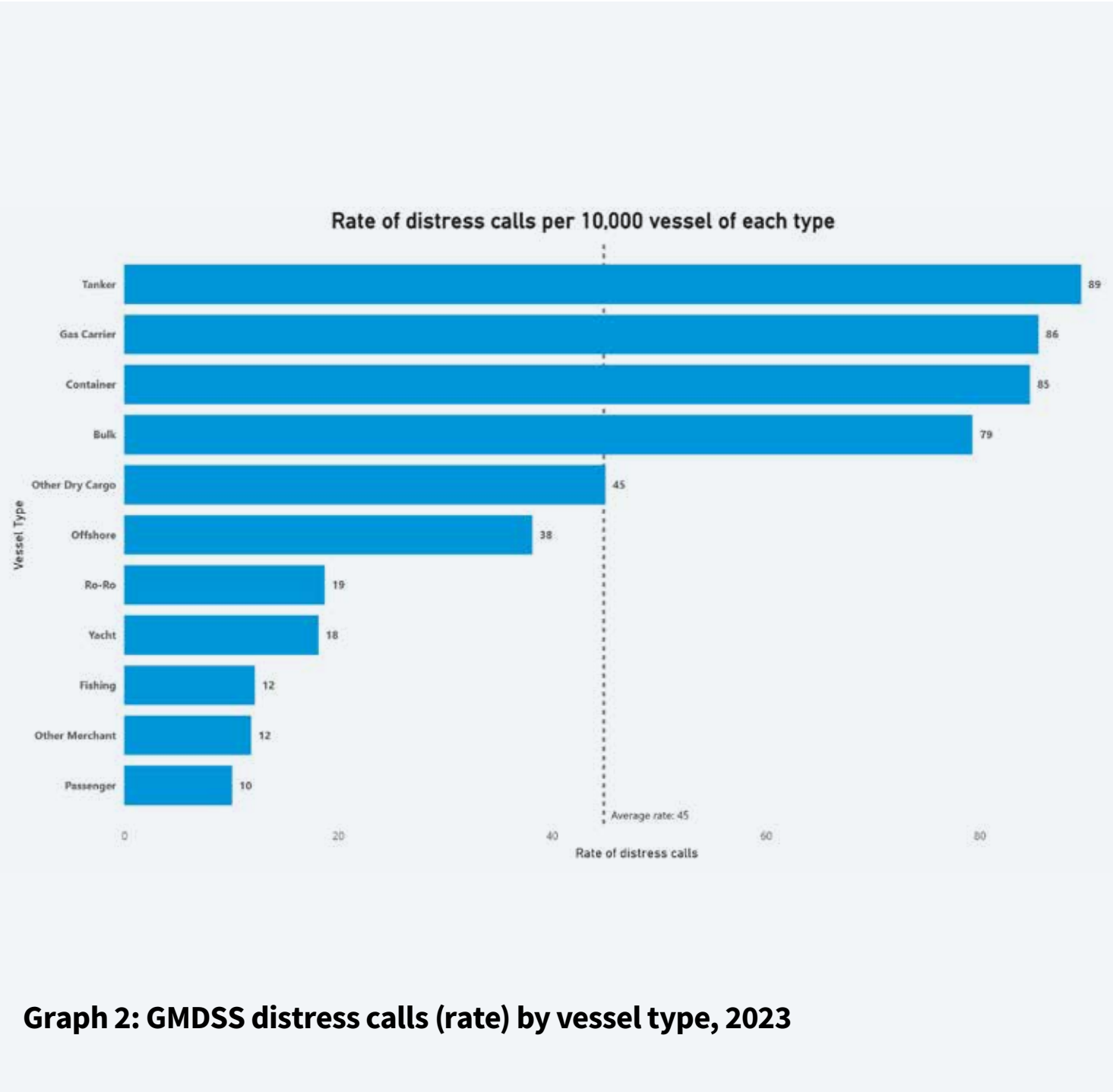
**Note: 28.05% (223) of the 788 GMDSS distress calls received in 2023 did not include vessel-type data and were excluded from the analysis. This represents a slight improvement on the 28.6% achieved in 2022 and 32% in 2021.**

To provide a more objective measure, the number (count) of calls was also considered against the number of registered vessels in each type (a notional figure was used to facilitate comparisons) to provide a call rate. When viewed by rate (number of distress calls received per 10,000 vessels) the picture changes<sup>10</sup>.

<sup>6</sup> [rmt2023ch2\\_en.pdf \(unctad.org\)](#)  
<sup>7</sup> [Commercial-Safety-Shipping-Review-2024.pdf \(allianz.com\)](#)  
<sup>8</sup> [Seafarer abandonment \(imo.org\)](#)  
<sup>9</sup> “Other Non-Cargo”, the 15th vessel type, was excluded from the report. As only 25 registered vessels were listed by Lloyd’s List Intelligence the market size is too small for the data to be statistically significant.

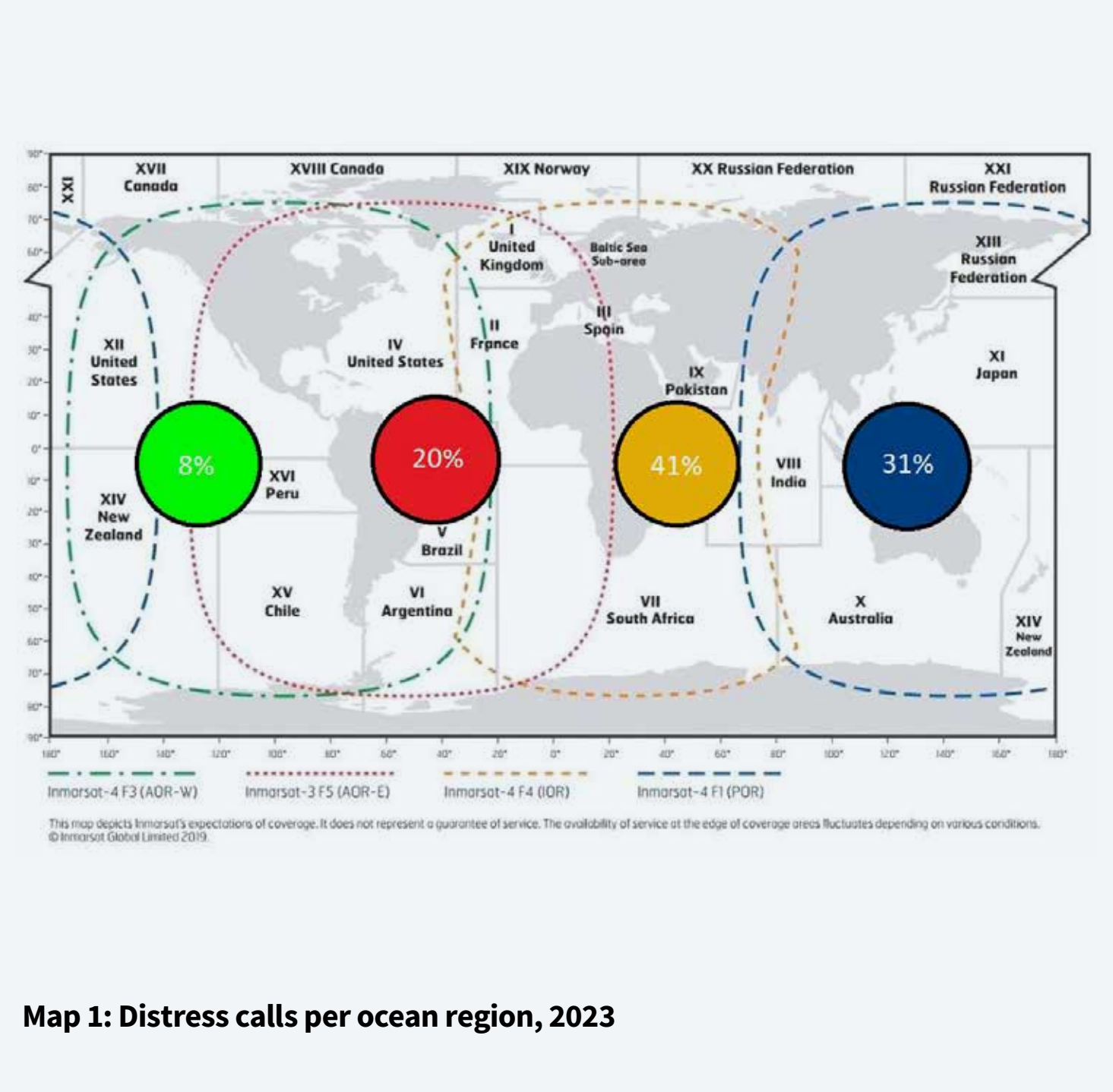
<sup>10</sup> To avoid skewing the results only vessel types with more than 1,000 vessels were analysed by rate. As a result, rigs and platforms, reefers and pure car carriers were excluded from rate analysis.





Using distress call rate analysis, gas carriers climb to second place and container ships to third, with bulk and other dry cargo completing the five vessel types most likely to send distress calls. Across the 11 vessel types analysed by call rate, the average rate per 10,000 vessels is 45. Tankers, gas carriers, container ships and bulkers were responsible for a higher-than-average number of calls. Conversely, passenger, other merchant and fishing vessels were the least likely to send distress calls in 2023, at 10, 12 and 12 distress calls per 10,000 vessels respectively.

In terms of distress call location, as shown in Map 1, 72% of GMDSS distress calls in 2023 originated from vessels operating in the Indian Ocean Region and Pacific Ocean Regions (in 2022, the regions generated 35% and 33% of distress calls respectively)<sup>11</sup>. The ongoing war in Ukraine, tension in the Persian Gulf and Strait of Hormuz, the outbreak of hostilities in the Middle East and, to a lesser extent piracy and armed robbery against ships, are likely the reason for the 6% increase in year-on-year distress calls from the GMDSS Indian Ocean Region.



### PIRACY AND ARMED ROBBERY AGAINST SHIPS 2023

The International Maritime Bureau’s (IMB) Piracy Reporting Centre (PRC) received 120 incident reports in 2023 (against 115 in 2022). 70% occurred in just five locations (Singapore Straits, Indonesia, Peru, Philippines and Ghana) and July was the peak month, with 19 recorded<sup>12</sup>.

The number of incidents reported in the Gulf of Guinea was largely consistent between 2023 and 2022 (22 and 19 respectively). However, three of the four globally reported hijackings, all fourteen kidnappings and 75% of crew hostage incidents occurred in the region.

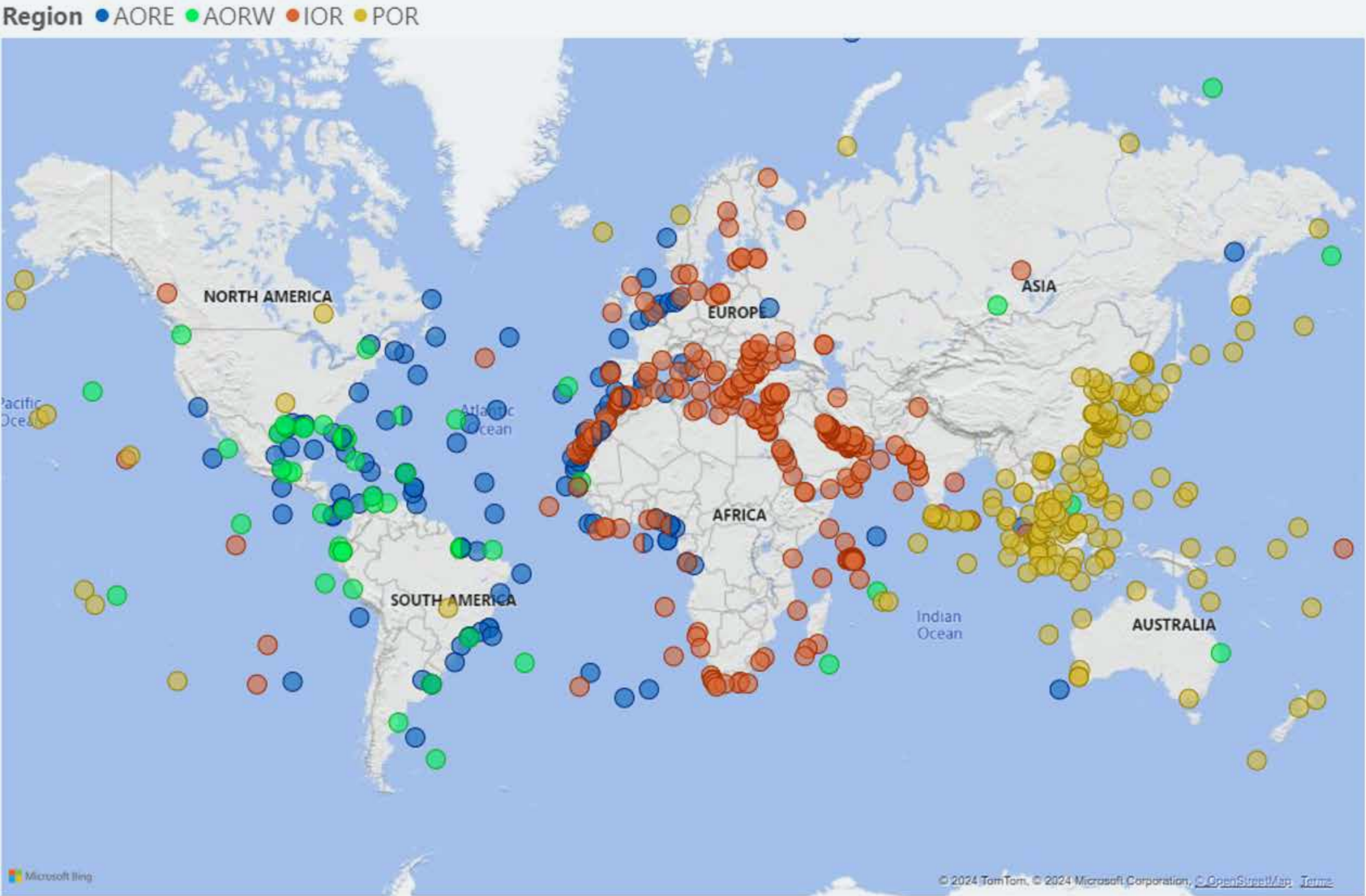
The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) reported 100 incidents in 2023 (a 19% increase over 2022)<sup>13</sup>. Q2 saw the highest number of per-quarter incidents (34) in five years. Engine spares were stolen on 27 occasions, which could indicate supply chain issues and rising costs are fuelling black market demand.

In contrast to the 100 incidents reported by ReCAAP, the aforementioned 2023 IMB report recorded 75 incidents across ReCAAP’s area. The discrepancy indicates that better mechanisms for sharing incident data are needed.

11 Inmarsat’s GMDSS SafetyNET services are managed through four primary Inmarsat-3 satellites, with each covering a defined region.  
12 [2023 Annual IMB Piracy and Armed Robbery Report live.pdf \(icc-ccs.org\)](#)  
13 [ReCAAP ISC Annual Report 2023.pdf](#)



The distribution of distress calls received during 2023 (shown in Map 2) reflects the main trading routes. It also illustrates the significance of geographical chokepoints, such as the Straits of Malacca and Singapore, Strait of Gibraltar, and the Suez Canal, and how shipping routes often intersect with sensitive coastal environments.



Map 2: Distress calls point map, by GDMSS region, 2023



# The voice of seafarers

While welcoming shipping's transition to alternative fuels and technologies, Chief Engineer Allan Dickson, a marine engineer with more than 25 years of experience, expressed concern that: "As the race to net zero really ramps up, regulation, training and safety technology is lagging behind significantly." Citing "Gas Fuel" training as a case in point, he found a recent course "extremely basic with little practical work on the course, and no practical tasks that must be completed during the required sea time." He also explained that trainees could complete their sea time on an LNG-fuelled vessel and then work on a methanol-fuelled vessel, "which has completely different hazards, systems and processes." Dickson suggested that training include "assessable practical tasks to be undertaken onboard ship during sea time, and specific modules and certification for different fuels."

While recognising that technology can be used to deliver training that supports different learning pathways and preferences, Captain James Foong also stressed the need for, "realistic training, not just lectures" to refresh perishable skills. He suggested that new company procedures and training be reviewed by experienced seafarers before being implemented, rather than relying solely on persons ashore who do not fully understand life onboard a ship. "They say it takes a cook to understand what life is like in the kitchen", he said.

On a similar theme of how to better utilise seafarers' knowledge, Dickson said he advocates for seafarers to be put at the centre of ship design rather than be an afterthought. "Poor design sets seafarers up to fail," he said, adding, "simple things like a poor control panel layout

can have disastrous consequences." To address crew fatigue "ship design needs to minimise Performance Influencing Factors and cabins need to be designed so seafarers can get quality sleep", he added.

Given the nature of the operating environment, risk cannot be completely eliminated and accidents will happen. However, Foong highlighted blame culture as a key factor in why seafarers may under-report them. He explained, "As a seafarer, company support is very important. There are many non-declared accident reports because of the blame game culture from shore - the blame always goes back to the ship." This highlights the importance of conducting thorough investigations and building trust to promote transparency.

Like many others, Dickson believes mental health is a major safety issue. However, he expressed concerns that while "many employers talk about health and mental wellbeing, this is often limited to a policy and little else. Few build this idea into the core of how they operate." He used the example of minimum crewing policy to underline his point.

Foong agreed that welfare affects performance. Focusing on everyday concerns, he pointed to "the high price of provisions coming to the ship when our crew have limited purchasing power." He also deplored the levying of "extra fees and extra paperwork in some countries for certain nationalities of seafarers to go ashore." He reiterated the importance of respecting seafarers as key workers and the need to make "travel hassle free."



## Distress calls by vessel type

### Tankers

Tankers continue to be indispensable to the global economy, transporting crude oil, refined oil products, chemicals and liquefied gas worldwide. Befitting this status, UNCTAD's Review of Maritime Transport 2023 assessed the oil tanker fleet to be 3.4% larger in deadweight tonnes (dwt) than 12 months prior. At over 651 million dwt, tankers accounted for almost 29% of the global fleet's capacity<sup>14</sup> and the Baltic and International Maritime Council (BIMCO) forecasts further growth in 2024, with the crude fleet expected to grow by 0.7% and product tanker fleet by 1.9%<sup>15</sup>.

Despite the continued growth of the tanker fleet, GMDSS distress call data shows tanker-related incidents decreased marginally from 160 in 2022 to 159 in 2023. However, tankers topped the list of distress calls by count for the sixth year in succession (almost double the 80 distress calls received in 2018). The 2023 distress call rate was also the highest across all vessel types (89 per 10,000 registered vessels, against the average of 45).

In 2023, tanker incidents again generally occurred close to coastlines, for example, the English Channel, West Africa, Eastern Mediterranean and the East China Sea, or within navigational chokepoints, such as the Strait of Hormuz and the Straits of Malacca and Singapore.

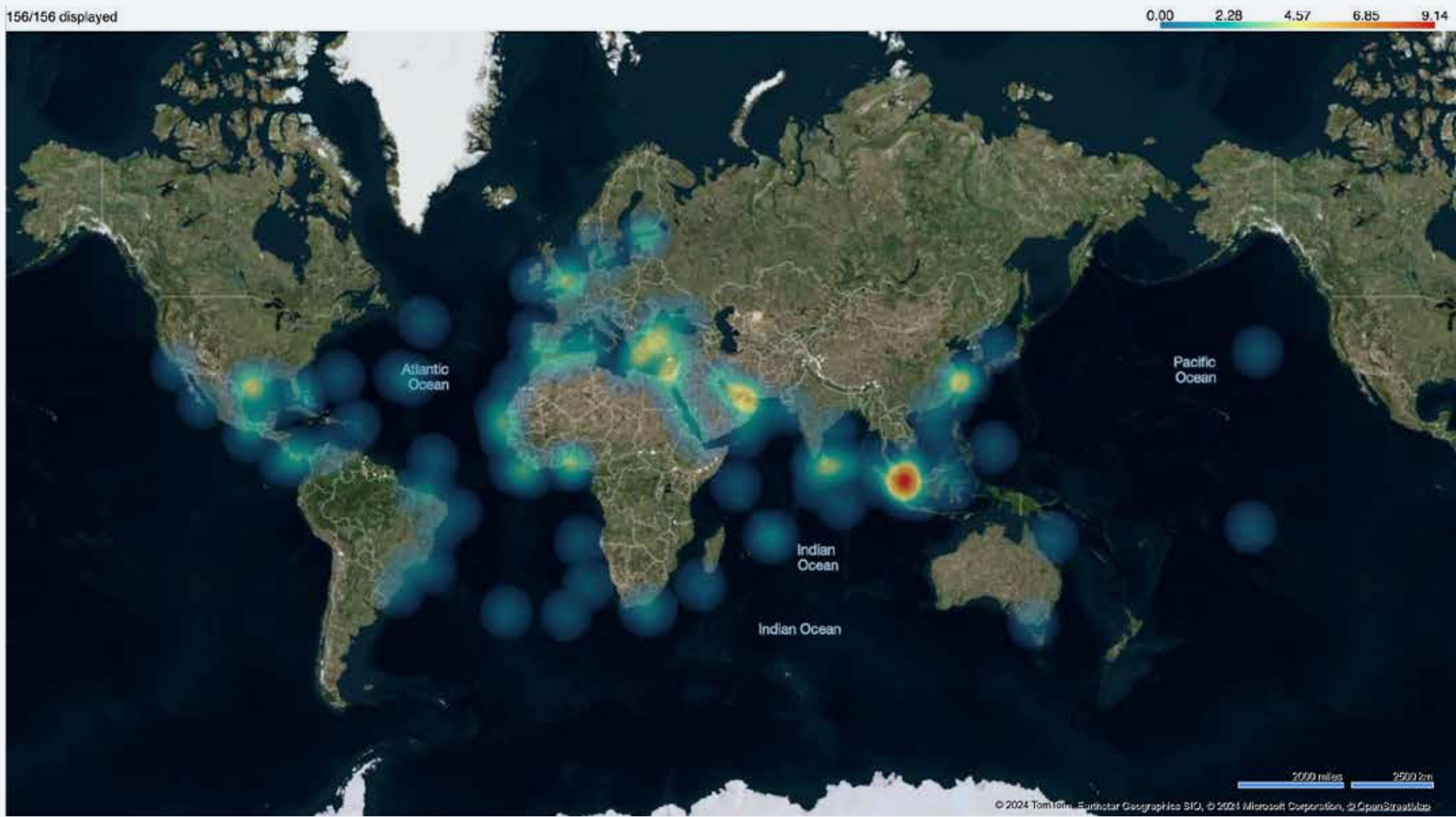
In addition to machinery breakdown, extreme weather, and human error, maritime security incidents are another likely cause of distress calls from tankers

in 2023. According to IMB statistics, 34 tankers were attacked in 2023 (22 were product tankers), and the ReCAAP report states 26% of incidents involved a tanker. In both reports, incidents involving tankers were second only to bulk carriers (by vessel type). Tankers also continue to be impacted by geopolitical events. For example, they are regularly targeted by Iran's Islamic Revolutionary Guard Corps (IRGC) in the Persian Gulf or as they transit the Strait of Hormuz<sup>16</sup>.

While not limited to tankers, the threat of Houthi attack in the Red Sea and Bab-el-Mandeb Strait is having a significant impact on seafarers. The Sailors' Society's Head of Wellness Johan Smith estimates that "around 1,000 seafarers a day are still passing through the crisis zone, resulting in a real rise in anxiety among crew." He explained that through its proactive Ship Connect service, "seafarers are telling us just how worried they are. They tell us that crewmates are not sleeping or eating." As Smith pointed out, "this level of fatigue and anxiety poses a real danger to the safe running of a ship and the safety of its whole crew."

He noted that human factors account for around 80% of all accidents at sea, and fatigue, stress and depression are often contributing factors. Thus, as Smith said, "Prioritising seafarer wellness and mental health is critical. By investing in good crew welfare, for example joining Sailor's Society's 'Wellness at Sea' programme, the industry can show a real commitment to improving safety and wellbeing on board ships."

The nature of the cargo carried requires crew to act swiftly in the event of a safety incident. As postulated



Map 3: Heatmap of Tanker GMDSS distress calls, 2023

<sup>14</sup> [rmt2023ch2\\_en.pdf \(unctad.org\)](#)

<sup>15</sup> [Tanker Shipping Market Overview & Outlook Q4 2023 \(bimco.org\)](#)

<sup>16</sup> [Iran's navy seizes two small tankers for alleged fuel smuggling | TradeWinds \(tradewindsnews.com\)](#)



in the Future of Maritime Safety Report 2023, it therefore seems likely that the established safety culture and reporting mechanisms in the tanker sector create a false impression that tankers are prone to significantly higher rates of distress incidents than other vessel types.

Tanker crews are expected to operate by stringent safety procedures and charterers are held accountable by oil majors who expect the highest ship safety standards. In addition, Port State Control Officers, Flag State and third-party inspectors undertake rigorous ship inspections to ensure compliance with international and national regulations.

The Ship Inspection Report Programme (SIRE), launched by industry and the Oil Companies International Marine Forum (OCIMF) in 1993, also remains integral to enhancing tanker safety standards. The risk assessment tool continues to be used by charterers, ship operators, financiers, terminal operators and regulators, and the digital SIRE 2.0 was launched in June 2023 to future-proof tanker inspections taking account of evolving risks, technology and expertise<sup>17</sup>.

Improved safety and operating standards are also evident in ITOPF's 2023 Oil Tanker Spill Statistics (of spills with confirmed volumes from tankers, floating production storage and offloading units and barges). According to ITOPF, approximately 2,000 tonnes (around 14,000 barrels) were spilled in 2023, including one large spill of heavy fuel oil (>700 tonnes). So far this decade spill frequency is 6.8 (>7 tonnes) incidents per year - in contrast, the average was around 79 in the 1970s<sup>18</sup>.

Notwithstanding safety standards and spill records, accidents still occur. In July 2023, four seafarers died, and 19 seafarers and emergency response personnel were injured when two explosions in two days rocked the *O.T. Shagor Nandini-2* in Bangladesh. The second explosion occurred while unloading cargo to contain the spill caused by the first<sup>19</sup>. In another incident, two southbound tankers collided in the Suez Canal on 23rd August 2023 and briefly

disrupted traffic. The oil product tanker *Burri* hit the liquefied natural gas tanker *BW Lesmes*, which had run aground after suffering mechanical problems<sup>20</sup>. No casualties were reported.

These incidents involved insured ships operating under international regulations. Of major concern is the continued growth of the “dark fleet” or “shadow fleet” transporting sanctioned oil from Russia, Iran and Venezuela. The fleet consists of older tankers and operates outside international norms. In February 2023 the fleet was assessed as around 600 vessels, comprising 10% of the world's crude tankers and 7% of its product tankers<sup>21</sup>, but by the end of the year some commentators estimated it to be around 675<sup>22</sup>. While the size of the fleet is still debated, what is not in doubt are the risks associated with sailing without safety certificates and insurance, and illicit ship-to-ship transfers so sanctioned oil can be rebadged as legitimate and then sold.

The risk posed by such vessels was laid bare on 1st May 2023, when the 26 year old Gabon-flagged *Pablo* exploded near Malaysia. Sadly, three crew were killed and four seriously injured<sup>23</sup>, although fortunately, the tanker had already unloaded its cargo in China, avoiding a major environmental incident. In another case, the *Liberty*, a Cameroon-flagged tanker, ran aground near Singapore on 3rd December laden with Venezuelan oil<sup>24</sup>. On this occasion, the crew were unharmed and environmental disaster was again averted but the risks are self-evident.

On 6th December 2023, IMO Assembly adopted resolution A, 1192(33), urging Member States and all relevant stakeholders to promote actions to prevent illegal operations in the maritime sector by the 'dark fleet' or 'shadow fleet'. However, some are now concerned that due to the size of the shadow tanker fleet any additional efforts to regulate it could cause a global economic shock<sup>25</sup>.

### Offshore

Offshore vessels were responsible for 60 distress calls in 2023, a 25% decrease in the number of distress calls received in 2022, and lower than the 71 recorded in 2021. This reduction bucked an upward trend observed since 2018. By rate analysis, offshore vessels sent 38 distress calls per 10,000 registered vessels, against the all-vessel-type average of 45.

While, as could be expected, the distress calls were in close proximity to oil fields, such as the Gulf of Mexico, the Gulf of Guinea and the North Sea, a distinct cluster of distress calls were received from the Persian Gulf, likely indicating the impact of geopolitical tension in the region.

Offshore exploration and production are generally conducted in accordance with regulations set by national governments. However, despite clear rules and strict compliance programmes, accidents continue to occur, including fire, falls and equipment malfunctions. In July 2023, a fire on an offshore oil platform in the Bay of Campeche killed two workers, injured eight others, and forced the evacuation of over 300 people. The fire was triggered by an explosion that spread to a compression complex<sup>26</sup>.

Spills from Floating Production Storage and Offloading (FPSO) units, continue to pose a hazard both to crew and the marine environment. On 15th November 2023, TotalEnergies operated *Egina FPSO*, situated off the coast of Nigeria, spilt around 3,000 barrels (100,000 gallons) of oil after a loading export hose failed. While no crew members were injured and dispersants were employed to break up the slick before it reached shore, the incident serves as a reminder of the risk<sup>27</sup>.

According to Statista<sup>28</sup> 56 FPSOs are expected to commence operations between 2022 and 2027, with Brazil accounting for 22 of them. Despite these additions to the global fleet, the age of many FPSOs continues to cause concern. In February 2022, Bloomberg reported that 30+ FPSOs were built before 1977<sup>29</sup> and, according to the American Bureau

17 [SIRE 2.0 \(ocimf.org\)](#)

18 [Oil Tanker Spill Statistics 2023](#) - ITOPF

19 [Four killed as tanker hit by two blasts two days apart in Bangladesh](#) | TradeWinds (tradewindsnews.com)

20 [Two tankers collided in Egypt's Suez Canal, briefly disrupting traffic in the vital waterway](#) | AP News

21 [Trafigura's Luckcock Says Shadow Russian Oil Fleet Is Now 600 Ships](#) - Bloomberg

22 [Targeting 'enormous' tanker shadow fleet with fresh sanctions could spark global economic shock](#) TradeWinds (tradewindsnews.com)

23 [Devastating Pablo tanker explosion exposes dangers of growing shadow fleet](#) Offshore Energy (offshore-energy.biz)

24 [Shadow-Fleet Tanker With Venezuela Oil Grounds Near Singapore](#) - Bloomberg

25 [Targeting 'enormous' tanker shadow fleet with fresh sanctions could spark global economic shock](#) | TradeWinds (tradewindsnews.com)

26 [2 dead, 700K barrels of output lost in Gulf offshore platform fire](#) (mexiconewsdaily.com)

27 [Nigeria Reports 3,000-Barrel Spill From Total's Egina FPSO](#) (maritime-executive.com)

28 [Global FPSO planned projects by country 2027](#) | Statista

29 [Trinity Spirit FPSO Blast Off Nigeria's Coast Leaves Oil-Spill Stretching Miles](#) - Bloomberg



of Shipping (ABS), 55 FPSOs will reach the end of their design life in the next four years. A further five have already been refitted to extend their lives and another 19 are being evaluated for life extension, even though maintenance requirements increase with age to ensure structural integrity and crew safety and to reduce unit downtime<sup>30</sup>.

However, there was also a notable success in August 2023 when a UN-led operation successfully removed the majority of the 1.14 million barrels of oil onboard the *Safer*. Situated off the coast of Yemen, the rusting *Safer*, which was built in 1976, posed a massive risk to the marine environment and the health and livelihoods of coastal communities. During Phase two of the operation, a mooring system will be installed to secure a replacement vessel, the *Yemen*, and the *Safer* will be towed to a shipyard and scrapped.

### Other dry cargo

The general cargo fleet grew by 2.7% between 2022 and 2023 and the average vessel age in January 2023 was 27.4 years, the highest average age of any vessel type<sup>31</sup>. It is likely that older vessels are being retained and operated for longer (or sold on to others) as companies consider the future fuel mix and emerging decarbonisation technologies.

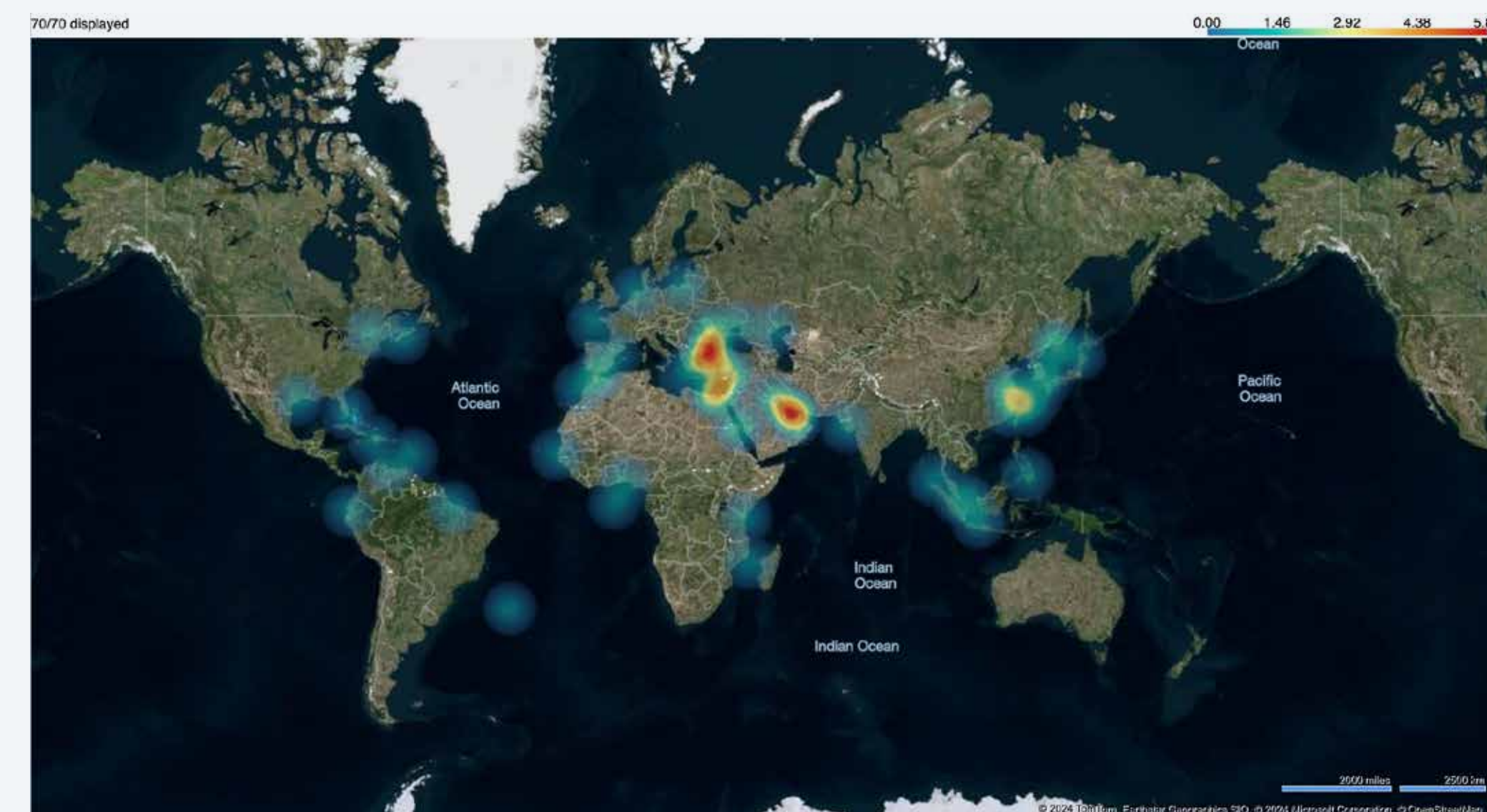
77 GMDSS distress calls were recorded from other dry cargo vessels in 2023, up from the 68 distress calls reported in 2022. This equates to the third highest number of calls per vessel type (by count). By rate of calls, other dry cargo vessels ranked fifth

at 45 per 10,000 registered vessels. According to Allianz, “cargo” ships were the only vessel type to suffer more total losses in 2023 (16) than 2022 (11)<sup>32</sup>.

As Map 4 shows, general cargo vessel operations continue to be affected by the ongoing war in Ukraine. In January 2023, the *Tuzla* was struck on the bridge by a missile while alongside in Kherson port<sup>33</sup>, the *Seama* is thought to have hit a mine on 20th September<sup>34</sup> (although investigations are ongoing) and on 5th October the *Kafkametler* was reportedly damaged by another mine. Fortunately, no crew were injured in the three incidents.

The impact of the ongoing tension in the Persian Gulf also seems evident. Weather also took its toll on dry cargo vessels in 2023. For example, the *Long Shun* which sank off the coast of Taiwan on 3rd January after being hit by a large wave. Four of the five crew were declared missing<sup>35</sup>.

On 26th November, another vessel, the *Raptor*, sank off the coast of Greece in Storm Oliver after the ship reported a mechanical failure. Of the fourteen crew, 12 are missing, one was rescued, and one body was recovered. The Comoros-flagged vessel had a history of inspection deficiencies, including 65 recorded during one detention in Romania in August 2023. The deficiencies included “holed” bulkheads and a “holed”<sup>36</sup> hull. This may indicate that Port State Control authorities require additional detention powers to prevent such vessels from operating, or that Port States may need to exercise their prerogatives to deny entry to ships more robustly.



Map 4: Heatmap of other dry cargo GMDSS distress calls. 2023

30 [Floating offshore production installations: From challenge to opportunity? \(worldoil.com\)](#)

31 [rmt2023ch2\\_en.pdf \(unctad.org\)](#)

32 [Commercial-Safety-Shipping-Review-2024.pdf \(allianz.com\)](#)

33 [Video: Two Turkish Cargo Ships Hit by Possible Missile in Ukraine \(maritime-executive.com\)](#)

34 [First ship hit by a mine in Black Sea - unconfirmed \(portseurope.com\)](#)

35 [Cargo ship sinks in strong winds in Taiwan, four crew members missing - Container News \(container-news.com\)](#)

36 [Sailors missing after gale-force winds sink freighter off Greece - Marine Industry News](#)





Map 5: Heatmap of fishing vessel GDMSS distress calls, 2023

Fishing vessels

The maritime fishing sector is a major food supplier. In 2020, global marine capture fisheries officially harvested 78.8 million tonnes from the oceans and seas (excluding aquatic mammals, crocodiles, alligators, caimans and algae)<sup>37</sup>.

Per the International Maritime Organization (IMO), there are around 4.6 million fishing vessels<sup>38</sup> in operation globally, of which more than 23,000 have an IMO Number<sup>39</sup>. From a distribution perspective, despite successive fleet reduction programmes (particularly in China), in 2020 approximately two-thirds of the world’s fishing vessel fleet was hosted in Asia. In comparison, Africa’s fleet grew relative to the rest of the world—comprising 23.5% of the global fleet by the end of 2020<sup>40</sup>.

During 2023, fishing vessels were responsible for the sixth-highest number of GMDSS distress calls with 33 incidents, a significant reduction from the 55 incidents recorded in 2022 and 39 in 2021. In terms of the rate of distress calls, fishing vessels made 12 calls per 10,000 vessels compared with the all-vessel-type average of 45 calls. However, this analysis is based solely on Inmarsat SafetyNET services data. It does not account for distress calls from fishing vessels operating solely in Sea Areas A1 and A2, which are likely to use VHF and mobile telephones to signal distress. Safety incidents are also under-reported, which also serves to mask the true extent of the problem. Illegal, unreported, and unregulated (IUU) fishing adds to the opacity.

Without reliable data and information, it is difficult to identify fishing safety deficiencies. However, to illustrate the potential scale of under-reporting, a report published by the FISH Safety Foundation in November 2022<sup>41</sup> estimated that more than 100,000 fishers die annually across the global fishing sector (marine and freshwater). In an attempt to reduce such losses, the Foundation established a voluntary and confidential accident reporting scheme - the Fishing Industry Safety Health Event Reporting (FISHER) project<sup>42</sup>.

2022 data analysis showed a distinct hotspot of GMDSS distress calls along the sea banks of Portugal, Morocco and Western Sahara. While these areas still showed GMDSS activity in 2023, the hotspots were more geographically spread, including the East China Sea, Sea of Japan, Bering Sea and the north-west coast of South America. However, it should be noted that seven of the 55 (12.7%) distress calls received from Morocco-flagged vessels had invalid longitude and latitude data, which led to a lower concentration off the coast of Morocco in 2023.

Despite the reduction in GMDSS distress calls, marine fishing remains a hazardous occupation with incidents occurring year-round. The loss of the *Lien Sheng Fa* and her 16 crew on 20 February 2023, in the Indian Ocean, is a stark reminder of the risks fishers face. The vessel capsized during Cyclone Freddy, a Category 5 storm with wind speeds exceeding 252kmh. On 10th January 2024, the Taiwan Transportation Safety Board (TTSB) released its accident report. It concluded that

37 [Global fisheries and aquaculture at a glance \(fao.org\)](#)  
38 [Enhancing fishing vessel safety to save lives \(imo.org\)](#)  
39 [Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels | Food and Agriculture Organization of the United Nations \(fao.org\)](#)

40 [Global fisheries and aquaculture at a glance \(fao.org\)](#)  
41 [More Than 100,000 Fishing-Related Deaths Occur Each Year, Study Finds](#) | The Pew Charitable Trusts (pewtrusts.org)  
42 [FISHER - FISH Safety Foundation Initiative \(fisherproject.org\)](#)



the Master was likely unaware of the predicted path of the approaching storm and that warnings from nearby vessels were received too late for the fishing vessel to escape. The report also confirmed there was no signal from the vessel’s Emergency Position Indicating Radio Beacon (EPIRB) and recommended a review of the installation and usage of such equipment onboard the Taiwanese fishing fleet<sup>43</sup>.

The loss of the *Linggar Petak 89* (with one crewmember confirmed dead, nine missing and five rescued) in the Indian Ocean on 28 February 2023, serves to reinforce the importance of carrying and using mandated safety equipment, including marine radio and life jackets<sup>44</sup>. Of course, weather-related incidents are not restricted to one area of the globe - on 16th December the *Miss Jordi* sank in a storm off the coast of Florida - one body was eventually recovered<sup>45</sup>.

And fishing vessels are not just vulnerable to extreme weather events. On 26 December 2023 an unknown fishing vessel was sunk in a collision with the *Pearl Kenzo*, off the coast of China with eight crew reported missing<sup>46</sup>. Maritime security is also a factor, for example one incident of armed robbery against ships in Asia reported by ReCAAP in 2023<sup>47</sup> involved a fishing vessel.

The IMO has worked to enhance fishing vessel safety for decades and has developed a series of non-mandatory instruments addressing design, construction and equipment on fishing vessels. Although the 2012 Cape Town Agreement has yet to be ratified, progress has been made. The IMO Sub-Committee on Human Element, Training

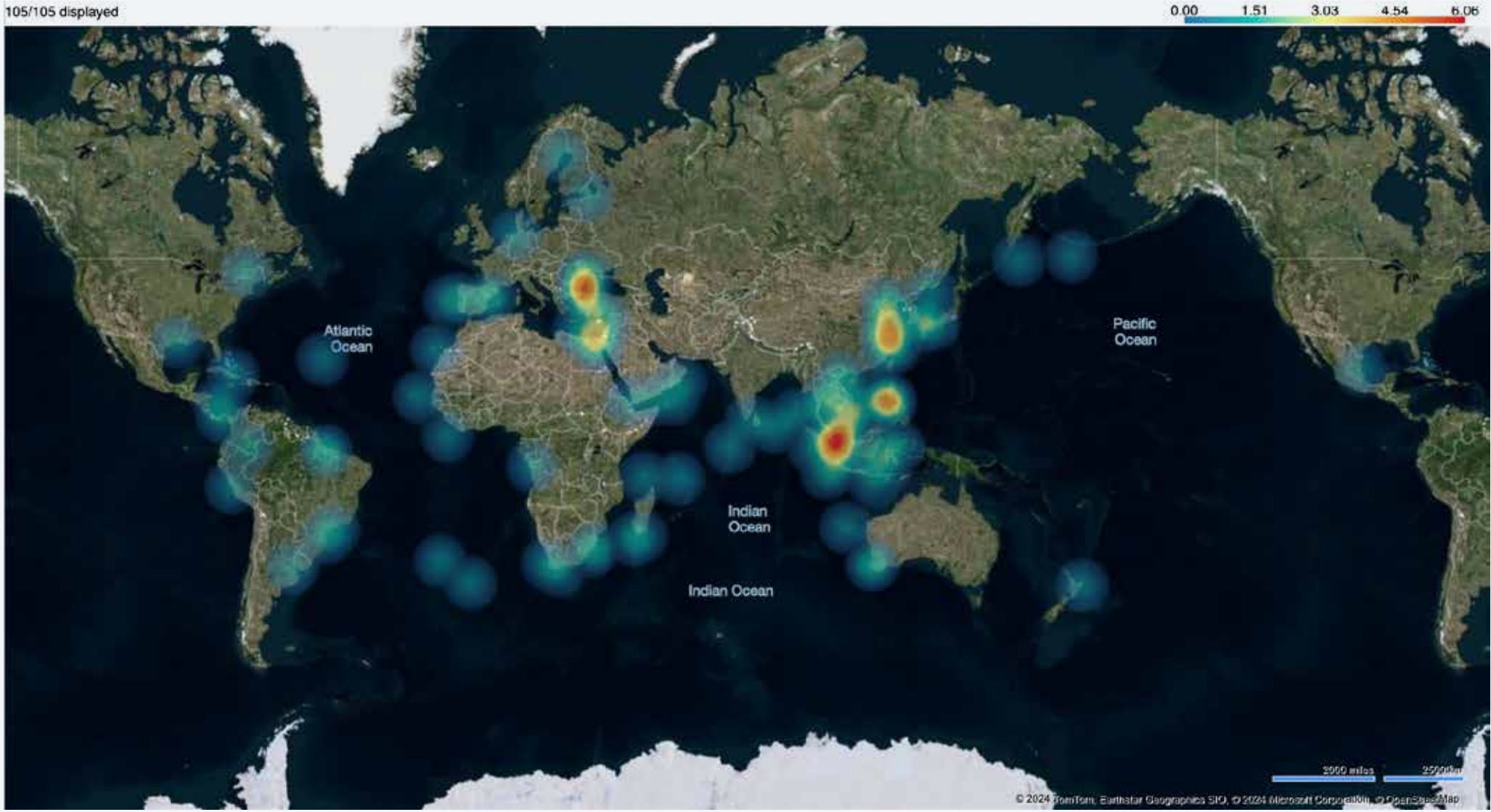
and Watchkeeping has revised the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (SCTW-F) 1995 and drafted a new mandatory STCW-F Code. Amendments include mandatory certification of officers and basic training for fishers to enhance safety at sea. Both were adopted by the Maritime Safety Committee (MSC) at MSC 108 in May 2024.

Regional and national regulators are also taking steps to improve safety standards of marine fisheries. For example, the UK has introduced a Code of Practice for the Safety of Small Fishing Vessels of less than 15 metres overall length registered in the UK<sup>48</sup>. The Code sets out the standards to be met before a vessel can join the Register as a commercial fishing vessel, the surveys it must undergo and the requirements for obtaining a Small Fishing Vessel Certificate.

On a regional level, the European Commission is working with Member States of the European Union to amend the Port State Control Directive by introducing a voluntary inspection regime for larger fishing vessels (more than 24 metres in length). The investigation of Accidents Directive is also being amended to bring serious accidents (death of a crew member of loss of the vessel) involving fishing vessels less than 15 metres in the length) within the competence of Member States' accident investigation bodies<sup>49</sup>.

**Bulk carriers**

The global bulk carrier fleet increased by 2.8% between 2022 and 2023 to 973,743 thousand dwt (per the UNCTAD Review of



Map 6: Heatmap of bulk carriers GDMSS distress calls, 2023

43 [TTSB releases the final report of the Taiwan flag fishing boat " LIAN SHENG FA" capsized in the India Ocean occurrence investigation](#)-Taiwan Transportation Safety Board  
44 [The Sinking KM Linggar Petak 89 Not Equipped With Marine Radio, Search For Ship Is Difficult](#) (voi.id)  
45 [Coast Guard Responds to Vessel Distress and Fuel Spill](#) (usharbors.com)

46 [Collision between Singapore-flagged tanker and Chinese-flagged Fishing Vessel](#) | Maritime and Port Authority of Singapore (mpa.gov.sg)  
47 [recaap.org/resources/ck/files/reports/annual/ReCAAP ISC Annual Report 2023.pdf](#)  
48 [The Code of Practice for the Safety of Small Fishing Vessels of less than 15m Length Overall](#) - GOV.UK (www.gov.uk)  
49 [Maritime safety: Council adopts positions to support clean and modern shipping in the EU](#) - Consilium (europa.eu)



Maritime Transport 2023<sup>50</sup>) and the fleet’s average age was 11.6 years, the lowest average age of any vessel type.

The incremental growth rate and relative age of the fleet belies the abrupt rise of GMDSS distress calls received in 2023. Responsible for 105 calls, bulk carriers made the second-highest number of calls by vessel type in 2023, after tankers, and fourth highest by rate of distress calls (79 per 10,000 vessels) after tankers, gas carriers and container ships. This compares unfavourably with the 91 incidents recorded in 2022 and the 82 incidents in 2021 and is even starker when compared with the average of 46 calls made between 2018 and 2020.

Notwithstanding the number of distress calls, INTERCARGO’s Bulk Carrier Casualty Report 2014-2023<sup>51</sup> shows a trend of declining losses of bulk carriers over 10,000 dwt engaged in international trade. Although it should be noted that smaller bulkers and those on cabotage are not within the scope of the report. The report cites grounding as the cause of most bulk carrier losses (nine losses or 42.9% of the total lost over the past 10 years) and cargo liquefaction remains the greatest contributor to loss of life (55 lives over the past 10 years).

Shipping has taken positive steps to reduce the latter and amendments 06-21 of the International Maritime Solid Bulk Cargoes (IMSBC) Code<sup>52</sup> entered into force on 1 December 2023. While it is too early to discern impact, it is hoped that the requirement for more accurate cargo information and the inclusion of the term ‘dynamic separation’, concerning moisture-related cargo failure, will reduce the incidence of cargo liquefaction.

Incidents involving bulk carriers occur globally, but analysis of 2023 GMDSS data analysis suggests a distinct concentration of incidents between the East China and South China Seas, the Straits of Malacca and Singapore, the Black Sea and the Eastern Mediterranean.

The comparatively high count of GMDSS distress calls during 2023 suggests that potential safety issues around repurposing bulk carriers to transport containers, for example, stability, securing cargo and firefighting may still be a factor. Extreme weather and security incidents are also likely responsible.

Off the coast of China, Typhoon Saola reportedly sank the *Hua Hai 601* and *Zheng He 9* on 28th August 2023, with all crew members reported safe<sup>53</sup>. Another bulker, the *Yong Xing 56*, suffered a hull breach after colliding with an ice floe in the Tatar Strait. Despite salvors' efforts, the ship sank on 1st March but fortunately, all 21 crewmembers were rescued by a passenger ferry<sup>54</sup>.

Bulkers were disproportionately affected by piracy and armed robbery against ships in 2023. The trading patterns of bulk carriers in East and Southeast Asia appear to correspond with the increase in security incidents ReCAAP reported against such vessels (48% of incidents), and likely contributed to the overall increase in GMDSS distress calls. IMB also reported that 45 of the 120 incidents it recorded globally were against bulkers, one of which included the attack on the bulk carrier *Ruen* on 14th December by Somali pirates. The vessel remains off Somalia.

Piracy is not the only security threat. After Russia withdrew from the Black Sea Grain Initiative, Ukraine established a route along the western shores of the Black Sea. By 28th December 2023, 386 outbound ship voyages had carried approximately 12.5m tonnes of agricultural and iron ore products from three ports<sup>55</sup>, but such transits are not without risk. On 27th December 2023, the bulker *Vyssos* struck a naval mine in the Black Sea. Two crew members were injured, and the master intentionally grounded the vessel to prevent it sinking<sup>56</sup>.

## Container ships

At the end of November 2022, the global merchant fleet consisted of 5,589 container ships<sup>57</sup> and 340 container ships were expected to be delivered in 2023 (almost half of which were between 1,000 and 2,999 TEUs)<sup>58</sup>.

Inmarsat Maritime recorded 49 distress calls from container ships in 2023. This is largely consistent with the 46 distress calls recorded in 2022 and 42 distress calls in 2021, although there is a discernible upward trend since 2018 (29 calls). By rate, container vessels were responsible for 85 distress calls per 10,000 vessels, against an all-vessel average of 45 calls. This placed container ships third on the list, just below tankers (89) and gas carriers (86).

Per other vessel types, many safety incidents are well-known and repeated, such as hull and machinery damage, slips, trips and falls, fires and collisions. Claudio Abbate, MSC’s Group Vice President Maritime Policy and Government Affairs suggested a possible approach to managing the risk. “One step that could be taken is to render the lessons learned and safety issues identified from the analysis of marine safety investigations by the Sub-Committee on Implementation of IMO Instruments (IMO III) more useable in training and refreshing courses”, he said. Continuing, he added, “the format in which such information is disseminated could also probably be enhanced.”

Abbate also felt that mandating near-miss reporting, for example under the Casualty Investigation Code, might not necessarily lead to consistent reporting of such instances unless the reports could be submitted anonymously. He concluded that, “While it could be agreed that sharing near-miss data throughout the industry could be a tool for (possibly) reducing incidents, such data should not be used for evaluating companies, regardless the scope this evaluation might have.”

50 [Review of Maritime Transport 2023](#) | UNCTAD  
51 [Bulk Carrier Casualty Report 2014-2023](#) - Intercargo  
52 [Amendments \(06-21\) to IMSBC Code](#). ([irclass.org](#))

53 [Two Chinese Bulker Crews Rescued During Cyclone](#) (maritime-executive.com)  
54 [Flooded handysize bulker holed by ice sinks off Russia](#) | TradeWinds (tradewindsnews.com)  
55 [Two seafarers hurt as Greek-managed cargo ship hits Black Sea mine](#) | TradeWinds (tradewindsnews.com)

56 [Greek Bulker Hits Mine off Ukraine Injuring Captain and Crewmember](#) (maritime-executive.com)  
57 [Global number of containers ships 2022](#) | Statista  
58 [Number of container ships in global orderbook by size and year of delivery](#) | Statista





Map 7: Heatmap of container ship distress incidents for 2023

In 2023, the epicentre of distress calls was the East China Sea, with other clusters at strategic choke points, including the Straits of Malacca and Singapore (SOMS), Strait of Hormuz, the Bosphorus and the Panama Canal.

Congested ports and adverse weather are the likely causes of the call concentration in the East China Sea. Armed robbery in the SOMS (11% of reported incidents involved container ships), harassment of international shipping by Iran’s IRGC, congestion in the Eastern Mediterranean (and the outbreak of fighting in Gaza in November) and low water levels in the Panama Canal are likely causes of the other clusters. While many container liners have rerouted ships to avoid Houthi attacks, Abbate commented on the negative impact of geopolitical events, not only on the morale of seafarers but sometimes on interpersonal relationships onboard between different nationalities. In such instances, it is imperative that the “company evaluates these situations and makes all efforts to resolve them appropriately,” he said.

Misdeclaration of hazardous and combustible cargo, including lithium-ion batteries, remains a significant safety risk. It continues to be an important factor in many container fires which, according to Allianz<sup>59</sup>, is one of the biggest causes of general average claims on container vessels. While responsibility for container safety rests with stakeholders across the supply chain, shipping has not been idle. IMO’s

Sub-Committee on Ship Systems and Equipment is developing amendments to SOLAS chapter II-2 and the Fire Safety Systems (FSS) Code, to enhance measures to detect and control fires in cargo holds and the cargo deck of container ships.

However, like other vessel types, fires can also be traced back to the ship itself. For example, on 6th June 2023 the *MSC Rita* caught fire at anchorage after an explosion in the engine room. One crew member reportedly died<sup>60</sup> and the vessel itself was later scrapped<sup>61</sup>.

And fire is not the only hazard associated with container ships. In its Containers Lost at Sea Report 2023, the World Shipping Council (WSC)<sup>62</sup> reported 661 containers were lost overboard during 2022. While comparable data for 2023 has to be released at the time of writing, the maritime industry continues to push for improved safety measures. In a bid to resolve this issue, carriers, class societies, lashing manufacturers and national authorities are collaborating in the TopTier Joint Industry Project (JIP)-launched in 2021-to identify practical safety improvements<sup>63</sup>.

In the meantime, containers continue to be lost at sea. In July 2023, around 600 empty containers were reported lost after the *Angel*, a feeder container vessel, sank while anchored off Taiwan<sup>64</sup>. On 22 December 2023, up to 46 containers were lost overboard in the North Sea

59 [Hull and cargo risks continue to rise](#) | AGCS (allianz.com)  
60 [Report claims seafarer has died in fire on MSC container ship](#) | TradeWinds (tradewindsnews.com)  
61 [MSC consigns fire-damaged container ship to the scrap heap](#) | TradeWinds (tradewindsnews.com)  
62 [Container Lost at Sea 2023](#) (squarespace.com)  
63 [TopTier JIP aims to reduce container losses at sea](#) | MARIN  
64 [Ongoing operation to recover 600 boxes after ship sinks off Kaohsiung](#) - SHIPPING NEWS - SeaNews



after the *Mayview Maersk* encountered rough conditions during Storm Pia. On this occasion, the shipping line notified authorities so appropriate navigational safety warnings could be issued and hired a cleanup company to remove debris<sup>65</sup>. However, many container losses continue to go unreported and undocumented because there is currently no obligation for lost cargo to be declared unless it is hazardous and likely to pose a threat to the environment.

Recognising the deficiency, in June 2023 the IMO Maritime Safety Committee (MSC 107) approved draft amendments to SOLAS which will require the Master to report any lost containers without delay to ships in the vicinity, the nearest Coastal State and Flag State. The amendments are expected to enter into force on 1st January 2026. MSC 107 also agreed with a proposal to consider the prevention of lost containers at sea and assigned the workstream to the Sub-Committee on Carriage of Cargoes and Containers (CCC)<sup>66</sup>.

### Yachts

Despite ongoing supply chain issues, in December 2022, Boat International<sup>67</sup> reported a record number of 1,203 superyachts on order or in build, an increase of 17.5% over the year before (1,024)- although 95 were carried over from 2022 after missing their delivery year. The Global Order Book showed demand for superyachts between 24 and 27 metres was particularly strong, increasing by 25.6% over the previous year.

While the number of superyachts continues to grow, only six GMDSS distress calls were received from yachts in 2023 (a rate of 18 calls per 10,000 registered vessels), a significant reduction in the number of calls received in 2022 and 2021 (19 and 13 calls respectively). While it is difficult to offer a definitive reason for the reduced number of calls, increased use of safety devices such as anti-collision radar, man-

overboard alarms and personal locator beacons might have helped to reduce the number of distress incidents. In addition, more people are opting to avoid the busy European summer season and are sailing in late spring or the autumn. Such trends are likely reducing congestion in ports and waterways, thereby reducing the risk of collision.

An article published in April 2024<sup>68</sup> highlighted common risks associated with sailing, including unpredictable adverse weather conditions; collisions and allisions; equipment failures; and human error, such as overreliance on GPS and Map Plotters, misjudgements, or lapses in concentration. It concluded that a variety of factors, such as skill level, the condition of the vessel, and adherence to safety measures determine the level of risk and that failure to prepare, neglect or inexperience can significantly increase it.

### Passenger ships

Passenger ships sent eight GMDSS distress calls in 2023, down from nine recorded in 2022 and 11 during 2021. They were responsible for the lowest distress call rate of the 11 vessel types analysed, registering 10 calls per 10,000 registered vessels (against the all-type-average of 45 calls).

Given the potential for mass passenger and crew casualties in the event of a safety incident on board passenger vessels, cruise ships and ferries are built to exacting standards. They are also regularly inspected to monitor vessel condition and crew performance and ensure compliance with safety regulations. Operating on fixed ferry routes or established cruise itineraries means vessels are less likely to encounter unpredictable conditions. However, changeable weather can never be discounted and, on 6th November 2023, 100 passengers onboard the *Spirit of Discovery* sustained injuries when the ship's propulsion safety system activated, causing the vessel to

change course, while sailing through high seas in the Bay of Biscay<sup>69</sup>.

The low distress call incidence rate also belies local ferry services in the Global South. Such services are often subject to less regulatory enforcement and are less likely to comply with safety standards, including crew training, safety equipment and passenger capacity. The Baird Maritime Passenger Vessel Accident Database put the 2023 death toll of 1,308, with around 80% occurring in Africa<sup>70</sup>.

For example, the loss of the *Esther Miracle* off the coast of Gabon on 8th March, reportedly in calm seas, claimed 30 lives (of the 161 persons on board) and many survivors cited the lack of assistance from crew<sup>71</sup>.

In another tragedy, on 29th March, at least 31 people died after a fire on board the *Lady Joy 3*. While the cause of the fire is still unknown, investigating authorities in the Philippines quickly determined that around 250 persons were embarked despite only 205 being listed on its manifest<sup>72</sup>.

While compliance activity and enforcement remain the most likely mechanisms to inculcate safety practices, many local authorities lack the budget and expertise to conduct effective inspection and rectification programmes. This suggests more capacity-building engagement is required, specifically to help implement the Model Regulations on Domestic Ferry Safety (resolution MSC.518(105)) adopted by IMO in April 2022<sup>73</sup>.

This observation was given added credence in April 2024 when Nigeria's Chartered Institute of Logistics and Transport (CILT), disclosed that over 300 lives had been lost in ferry accidents in 2023. A former Director General of the Nigerian Maritime Administration and Safety Agency (NIMASA) highlighted that ferry disasters were caused by one or a combination of factors, including "overloading, non-use

65 [Updated: "Ocean of Shoes" Cleaned Up as Mayview Maersk Resumes Sailing](#) (maritime-executive.com)

66 [Policy Agenda](#) (iumi.com)

67 [2023 Global Order Book shows robust market](#) (boatinternational.com)

68 [Sailing risks: Yacht accidents and dangers unveiled](#) (yachting.com)

69 [100 passengers on SAGA's Spirit of Discovery injured during distressing incident in the Bay of Biscay](#) | Cruise News | CruiseMapper

70 [EDITORIAL | Ferry fatalities nearly double in 2023](#) - Baird Maritime

71 [Gabon calls off search mission for missing ferry passengers](#) | Africanews

72 [Death toll from Philippine ferry fire rises to 31](#) | Humanitarian Crises News | Al Jazeera

73 [MSC.518\(105\).pdf](#) (imo.org)



of lifejackets, adverse weather conditions, human error, substandard boats and ferries, mechanical failures like engine breakdowns, inadequate safety measures, absence of navigational aids, non-availability of search and rescue services and regulatory gaps”<sup>74</sup>.

### Gas carriers

Gas carriers were responsible for 20 GMDSS distress calls in 2023, ranking the eighth highest of 14 vessel types listed. However, when analysed by rate the results are very different. Against an all- vessel average of 45 calls per 10,000 registered vessels of each type, gas carriers recorded 86, second only to tankers.

Unlike other vessel types, there were no discernible distress call clusters, with calls spread east-west with the northernmost call received from the North Sea and the southernmost from the Indian Ocean (east of Mauritius). Only three mid-ocean distress calls were received with the remainder being closer to shore suggesting that loading/unloading operations may have caused some of the alerts. Others may have been in response to acts of armed robbery against ships, for example the boarding of the LNG carrier *Murex* in Callao Anchorage, Peru on 23 September 2023<sup>75</sup>.

Despite the high rate of distress calls, only one serious marine casualty incident involving a gas carrier occurred in 2023. On 24th October, the general cargo ship *Scot Explorer* collided with the gas carrier *Happy Falcon* about 12 nautical miles (nm), Denmark. Fortunately, no crew were injured nor was there any damage to the marine environment. A preliminary report published by the UK’s Marine Accident Investigation Branch (MAIB), identified serious safety failings on both vessels, including not keeping an effective lookout<sup>76</sup>.

As many countries continue to transition towards greener energy, gas carriers will play an increasingly important role in transporting

(and likely using) alternative fuels. The timely development and implementation of appropriate safety regulations is, therefore, of paramount importance. Retraining seafarers to safely handle such fuels and operate new technologies must keep pace as new shipping comes online. As a result, it appears likely that gas carrier safety will be in the spotlight over the coming years.

### Pure car carriers

Although pure car carriers (PCC) were excluded from call rate analysis due to the comparatively small number of such vessels (764 in November 2021<sup>77</sup>), they sent five GMDSS distress calls in 2023, up from two in 2022.

On 26th July, a fire broke out on board the *Fremantle Highway* while the ship was inbound to Egypt from Germany, claiming the life of one crew member. Carrying 3,783 cars, of which 498 were electric vehicles (EVs), the vessel burned for over a week before being towed to port in the Netherlands. Although early speculation pointed to an EV battery, the cause of the fire is still under investigation by the Dutch Safety Board<sup>78</sup>.

In another incident, two firefighters lost their lives and six more were injured when a fire broke out on board the *Grande Costa D’Aorio*, in the US, during vehicle loading. The vessel had 1,200 used vehicles embarked and the fire, which is believed to have originated in a vehicle used by stevedores, took five days to extinguish<sup>79</sup>.

Regardless of the causes, these incidents again highlighted the challenges of effective firefighting on PCCs. Outdated onboard extinguishing systems are exacerbated by low ceiling heights and tightly packed vehicles, which facilitates the spread of fire and hinders movement making it difficult for responders to attack it.

Recognising the need to address safety concerns, the IMO’s Sub-committee on Ship Systems and Equipment (SSE) began discussions

on the development of mandatory regulations for the safe transport of EVs in March 2024. This is timely as Clarksons Platou Securities estimates that between 100 and 200 new car carriers are required by 2030 to meet demand and replace ageing vessels<sup>80</sup>.

However, concerns about the international regulatory process (output expected to take effect before the end of 2027) and the proliferation of national and company guidelines have led to some organisations developing their own. For example, in August 2023 Nippon Kaiji Kyokai (ClassNK) issued ‘Guidelines for the Safe Transportation of Electric Vehicles’ on the characteristics of EV fires and additional safety measures that could be implemented to prevent them<sup>81</sup>.

To address the concerns voiced by shipowners, marine insurers and others, on 1st September 2023, the International Union of Marine Insurance (IUMI) also published recommendations on the safe carriage of EVs<sup>82</sup> to reduce onboard response times and enhance fire-fighting capabilities. Although its research concluded fires caused by EVs were no more common or intense than those caused by those powered by combustion engines, it recognised the need to address thermal runaway.

The recommendations include installing thermal imaging cameras to augment conventional monitoring/alert systems, doubling the capacity of CO2 extinguishing systems and deploying high-expansion foam fire extinguishing systems. Acknowledging that prevention is better than cure, IUMI also recommended that EVs should be screened, and used vehicles checked, before they are embarked.

Fire was not the only hazard in 2023. On 19th November, the Bahamas-flagged *Galaxy Leader*, with 17 crew, was seized by Houthi militia and taken to the port of Hodeidah. Despite international condemnation, both the crew and the ship are still held captive and are being used as political pawns.

74 [CILT Nigeria says 300 lives lost to boat accidents in 2023](#) - Vanguard News (vanguardngr.com)

75 [2023 Annual IMB Piracy and Armed Robbery Report live.pdf \(icc-ccs.org\)](#)

76 [Collision between general cargo vessel Scot Explorer and gas carrier Happy Falcon](#) - GOV.UK (www.gov.uk)

77 [200 new car carriers needed to 2030 after years of underinvestment](#) | TradeWinds (tradewindsnews.com)

78 [Dutch Safety Board investigates fire Fremantle Highway](#) | SWZ (swzmaritime.nl)

79 [New allegations regarding cause of Grande Costa d’Aorio fire](#) – Professional Mariner

80 [200 new car carriers needed to 2030 after years of underinvestment](#) | TradeWinds (tradewindsnews.com)

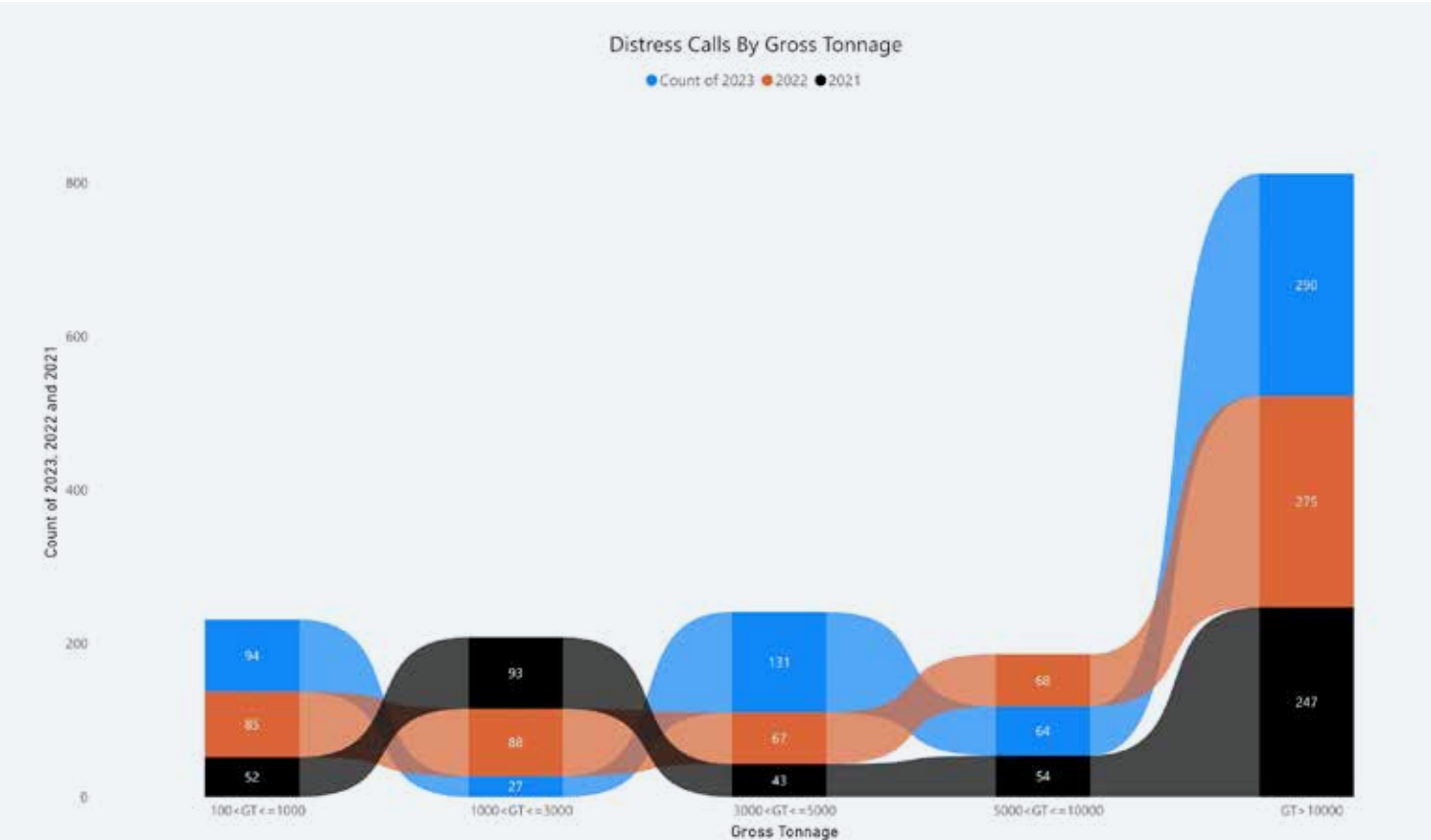
81 [Safety Measures for Maritime Transportation of Electric Vehicles](#) | ClassNK - English

82 [Position papers](#) (iumi.com)



Distress calls by gross tonnage

Over the three-year analysed period, the highest number of distress calls (by count) originated from vessels over 10,000 Gross Tonnage (GT), with 290 in 2023, 275 in 2022 and 247 in 2021.



Graph 3: Distress calls (count) by gross tonnage (GT)

**Note:** In 2023, 182 of the 788 distress calls (23%) did not include information on gross tonnage. This compares favourably with figures for 2022 and 2021 (31.5% and 38.3% respectively).

Graph 3 suggests a positive correlation between vessel size and number of distress calls, with larger vessels (>10,000GT) responsible for approximately four times more calls than smaller vessels over the three-year sample period. However, further analysis of 2023 data paints a different picture.

When divided into smaller class categories, it became evident that vessels between 1000 - <5,000GT were responsible for considerably more distress calls than any other class (21.6% of calls in 2023).

Rank	Gross Tonnage Class	% of Distress Calls
1	1,000 < GT ≤ 5,000	21.6
2	30,000 < GT ≤ 50,000	13.0
3	20,000 < GT ≤ 30,000	12.9
4	5,000 < GT ≤ 10,000	10.6
5	100 < GT ≤ 500	10.4
6	50,000 < GT ≤ 100,000	8.9
7	10,000 < GT ≤ 20,000	8.7
8	GT < 100	5.1
9	500 < GT ≤ 1,000	4.5
10	GT > 100,000	4.3

Table 1: Distress calls ranked by GT classes in 2023

And even within the 1000 - <5,000GT class, there were significant variations (as shown in Graph 3). According to data analysis, calls from vessels between 3000GT and <5000GT surged between 2022 and 2023 (from 67 to 131). This might reflect the impact of geopolitical tension in the Persian Gulf, and the threat of piracy and armed robbery in the Gulf of Guinea, on the offshore sector, in particular offshore supply vessels that would fit into this GT bracket. It could also reflect concerns about the carriage of containers on bulkers, for example on cabotage routes, relating to vessel stability and structural integrity and/or inexperienced crews struggling with stowage and lashings<sup>83</sup>. In contrast, calls from

vessels between 1000GT and <3000GT dropped significantly in 2023, from 88 recorded in 2022 to 27 in 2023. This may reflect the fall in distress calls received from fishing vessels and superyachts in 2023.

While Table 1 shows that vessels >100,000GT were responsible for the fewest distress calls in 2023 (4.3% of all calls), many commentators, particularly insurers, continue to focus on the ever-higher exposure associated with Ultra Large and MegaMax-24 container ships. The size of such vessels complicates onboard emergency response, especially firefighting, and reduces the chance of finding a port of refuge. This means manageable incidents can spiral out of control and salvage operations are exponentially more expensive for larger vessels.

Worryingly, in the event of a ship casualty, some Coastal States are still refusing to grant refuge to ships in distress regardless of the size of the vessel. For example, the *Rubymar* and the *True Confidence* (February and March 2024 respectively) were denied refuge by a succession of States, which led to the loss of the former. While the IMO Assembly adopted Resolution A.1184(33) ‘Guidelines on places of refuge for ships in need of assistance’, on 6 December 2023<sup>84</sup>, it appears that more needs to be done to balance the needs of the ship in distress and the prerogative of a Coastal State to protect its coastline.

Fire, often caused by misdeclared hazardous cargo, is one of the most feared emergencies at sea. It is responsible for oversized losses and general average is being invoked more frequently. But it is just one risk. In addition, as noted by IUMI, large beams and container stack heights make these behemoths ‘stiff’, which in rough weather can cause high rolling accelerations. When combined with strong winds on the on-deck container stacks and the impact of specific wave patterns - which can lead to parametric or synchronous rolling - such characteristics exert extreme loads on container lashings and cause containers to be lost<sup>85</sup>.

83 [Carrying containers on a bulker – what the experts say \(seatrade-maritime.com\)](#)

84 [IMO: Maritime refuge guidelines \(marineregulations.news\)](#)

85 [Policy Agenda \(iumi.com\)](#)



Concerns about the frequency of mega-ship groundings also prevail and the risk was highlighted in the Solent, UK, on 26 January 2023. After its main engine experienced a substantial drop in power, the *MOL Treasure* (capable of carrying more than 20,000 TEUs) was in danger of running aground. Disaster was only averted after pilots and tug operators worked for over 10 hours to prevent the ship from drifting and grounding<sup>86</sup>. Several vessels sailing through the Suez Canal were less fortunate in 2023, including the container ship *Glory* (in January)<sup>87</sup>, and the bulk carrier *Xin Hai Tong 23* (in May)<sup>88</sup>. Although, in each case, the vessels were quickly refloated thus avoiding the disruption to global trade caused by the *Ever Green* in 2021.

The debate about the relative merits of vessel size looks set to continue, but safety concerns of larger vessels should continue to receive due attention, particularly as the trend for bigger vessels appears not to be slowing down.

### Distress calls by year of build

The lifespan of a cargo vessel is typically between 25-30 years. According to UNCTAD’s Review of Maritime Transport 2023<sup>89</sup> commercial vessels averaged 22.2 years of age, up from 21.9 years in 2022, and more than half of the global fleet is over 15 years of age. At the start of 2023, the average age of a bulk carrier was 11.6 years (consistently the youngest vessel type since 2013), compared to 14.2 years for container ships, 20.1 for oil tankers, and 27.4 for general cargo vessels.

Lloyd’s List Intelligence’s database of 20,000+ live Class A cargo vessels recorded that 52% of them were 25 or older in 2022, with 110 listed as centenarians<sup>90</sup>. So why is the fleet ageing? In short, the composition and age profile of the global fleet continues to reflect macro-economic and market conditions. For example, Lloyd’s List Intelligence suggests high freight rates during and

immediately after the COVID-19 pandemic resulted in an 79% reduction of container ships scrapped between 2020 and 2021.

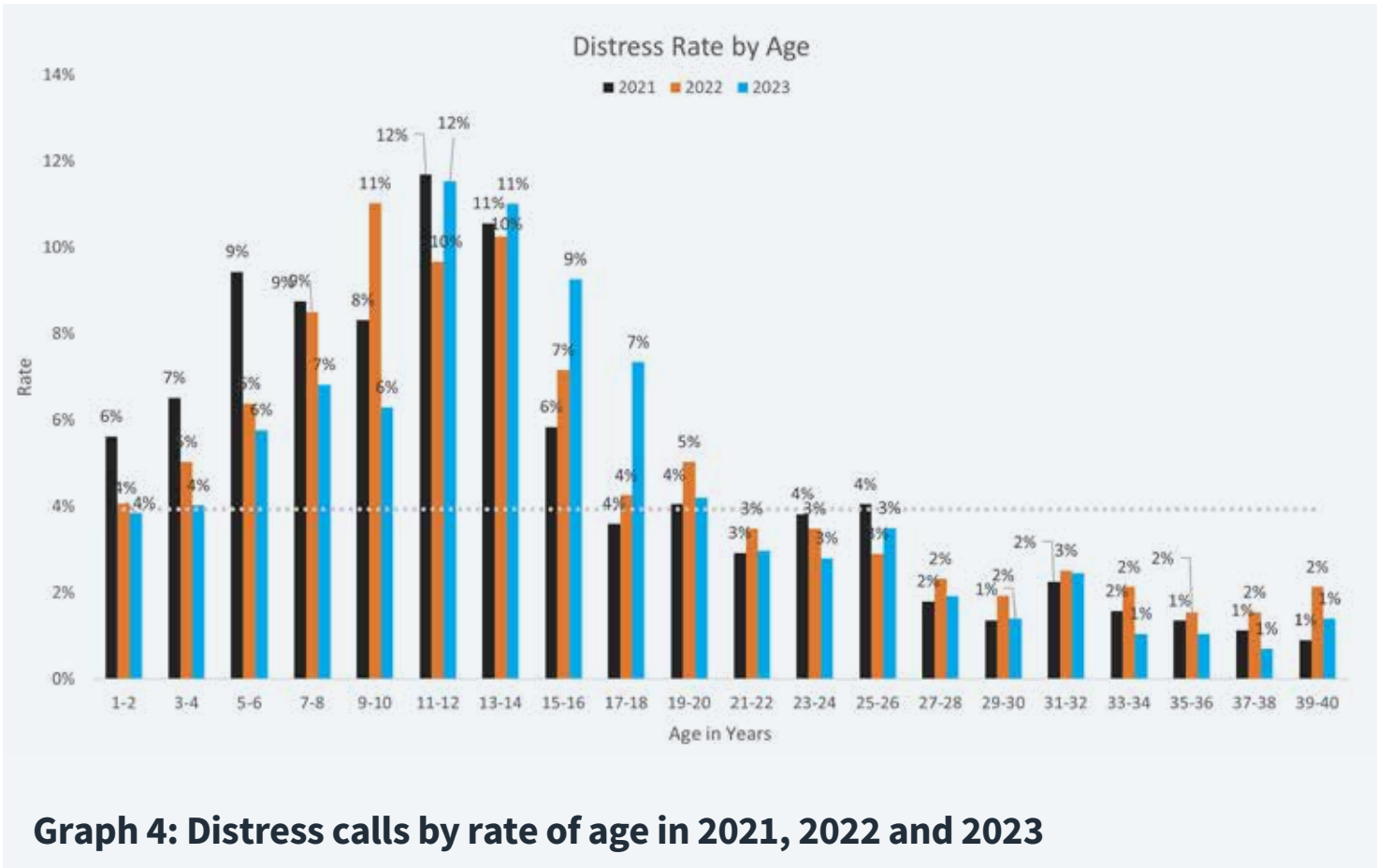
End of life tankers are also being reprieved from recycling as the ‘shadow fleet’ involved in illicit oil trading continues to grow. In addition to questionable safety standards, such vessels are often operated without protection and indemnity insurance, which is a major concern given the cargo carried and the hazardous nature of ship-to-ship transfers.

The current popularity - and price - of second-hand vessels is also likely being driven by ongoing uncertainties around decarbonisation, in particular the future-fuel mix, technologies and associated regulations. It appears that many shipowners and operators are continuing to delay investment and are operating vessels for longer, with responsible companies opting for mid-life upgrades.

However, increasingly strict international and regional regulations around emissions will eventually force shipping’s hand. Some national governments are also taking action to treat the risks posed by older vessels. For example, in February 2023, Mumbai’s Directorate General of Shipping (DGS) issued Order No. 6 to prevent the entry of older vessels into India’s Exclusive Economic Zone<sup>91</sup>. The age ban applies to both Indian-flagged and foreign-flagged vessels and varies by vessel type.

The ban was introduced to reduce the risk of shipping accidents and damage to the marine environment, and to promote the use of modern, more fuel efficient vessels. Perhaps incidentally, it also created opportunities for India’s ship recycling industry. However, the Order has proven controversial with both domestic and foreign shipowners and is likely to reduce short term domestic shipping capacity (as vessels are either taken out of service for upgrade or scrapped)<sup>92</sup>.

Although safe operations require both commitment and investment, the cost of maintaining and retrofitting pales in comparison with the cost of purchasing new vessels, while the cost of decommissioning can also be significant. So, from a fiscal perspective, operating well maintained older vessels can make sense in the short term (although older hull designs are less efficient). But what about safety? While the quality of construction materials and the operating conditions a vessel has been exposed to does impact service life, properly maintained and well operated and crewed, ‘vintage’ vessels can still be safe. And GMDSS distress call data received between 2021 and 2023 appears to support this position.



Graph 4: Distress calls by rate of age in 2021, 2022 and 2023

**Note: In 2023, 29% of GMDSS distress calls did not include age-related data (against 38% in 2022 and 44% in 2021).**

<sup>86</sup> [Pilots Praised for Preventing Megaship from Grounding in Southampton Waters \(gcaptain.com\)](#)  
<sup>87</sup> [Cargo vessel refloated after running aground in Suez Canal | News | Al Jazeera](#)  
<sup>88</sup> [Suez Canal: Bulk carrier refloated after running aground - BBC News](#)

<sup>89</sup> [rmt2023ch2\\_en.pdf \(unctad.org\)](#)  
<sup>90</sup> [The New Age of Old Ships | Lloyd's List Intelligence \(lloydslistintelligence.com\)](#)  
<sup>91</sup> [202302270557570370595DGSOrder06of2023onAgeNorms.pdf \(dgshipping.gov.in\)](#)

<sup>92</sup> [India - Ban on Vessels Over Certain Age Profiles \(westpandi.com\)](#)



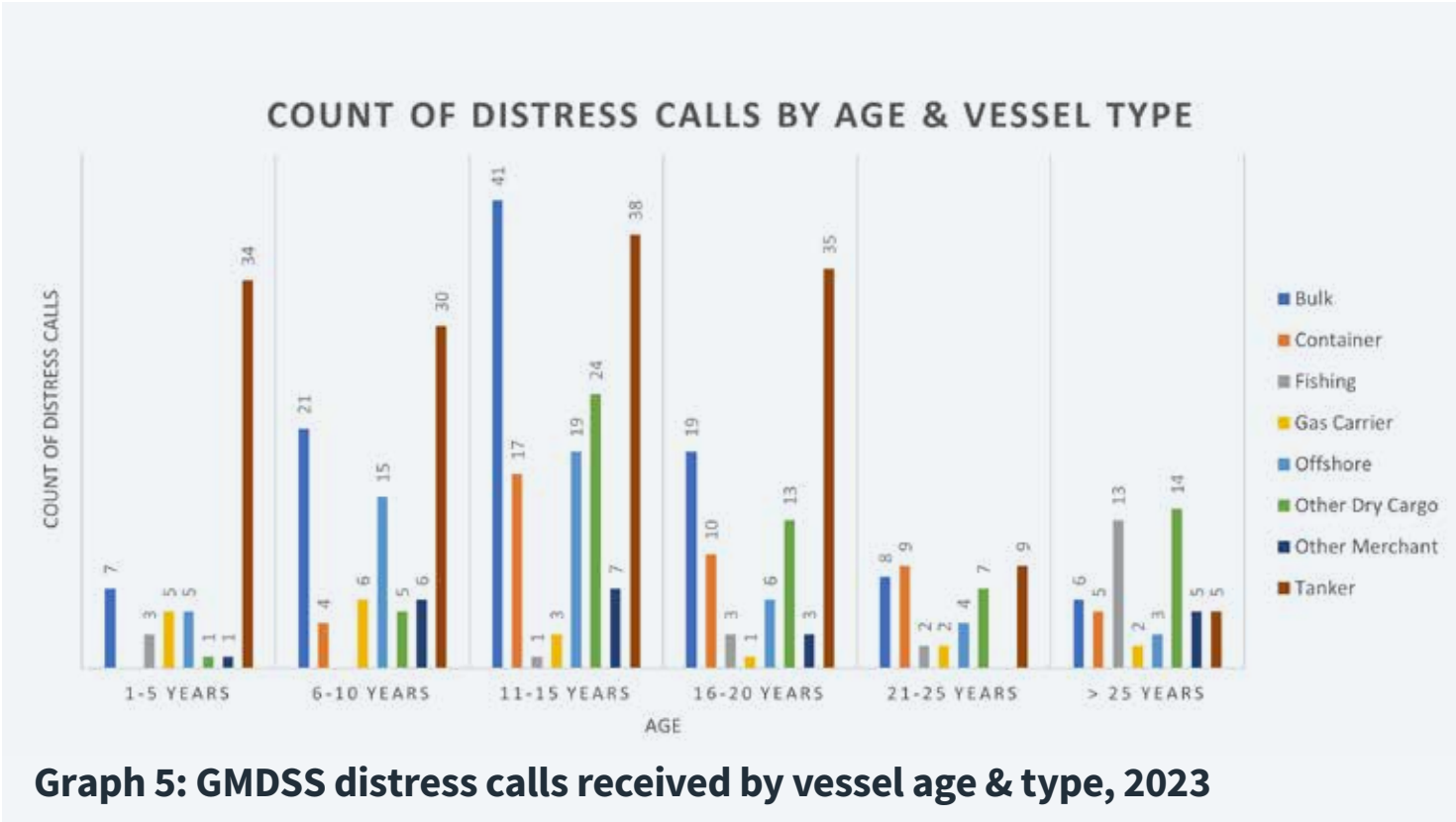
The median distress call rate across the age range presented in Graph 4<sup>93</sup> is 4%, meaning that vessels >21 years were consistently responsible for less calls than younger ships over the sample period. This appears significant when viewed against the fleet age information compiled by UNCTAD and Lloyd’s List Intelligence. Analysis of Graph 4 shows distress calls are more likely to be made in the first 18 years of a vessel’s service life, with years 11 to 14, in particular, being consistently high.

Insight	Age Group	Distress Calls
Most significant year of age with highest distress calls	11-12 years	11%
Most significant age for stable distress calls	21 years and above	1% - 3% range
Most significant year of age with highest increase in distress calls	17-18 years	Increase by 3%
Most significant age for volatility in distress calls	9-10 years	Rapid increase of 3% and rapid decline of 5%

Table 2: key insights from graph 4

Wear and tear is inevitable, and preventative maintenance becomes vital to reducing mechanical failures as components age. Allianz Global Corporate & Specialty’s Safety and Shipping Review 2024 notes that machinery damage accounted for over half of ship casualties in 2023 - up from a third in 2021<sup>94</sup>. Perhaps the four-year peak indicates that comprehensive preventative maintenance programmes are being overlooked for mid-life vessels, whereas owners and crew are more mindful of its importance for older vessels.

And the findings are remarkably similar across vessel types, as illustrated in Graph 5:



Graph 5: GMDSS distress calls received by vessel age & type, 2023

The comparatively high rate of calls for vessels between the ages of six and 20 years, particularly bulk carriers and tankers is clearly discernible in 2023 (which is in keeping with the findings in the vessel type section of this report). However, even here, the number of distress calls drastically falls after the age of 20 which appears contrary to what many people may assume would be a more dangerous stage of their service lives.

Interestingly, according to 2023 data, other dry cargo and fishing vessels are responsible for the highest number of calls from 26 years, perhaps indicating that they typically have longer service lives than other vessel types. For fishing vessels, frequent exposure to adverse weather conditions might impact structural integrity, and small operating budgets may limit essential maintenance and equipment upgrades. Many other dry cargo vessels may, at this stage of their lives, be operated on cabotage routes in countries where safety compliance programmes are less stringent and budgetary constraints again impact upkeep of the vessel.

Corrosion, mechanical failures and outdated ships’ equipment can clearly impact safety, but a vessel’s age does not necessarily correlate to its safety record. GMDSS distress data appears to disprove the notion that older vessels are intrinsically less reliable and less safe than newer ones. Perhaps a better barometer of safety is how well a vessel is maintained, crewed, insured and operated.

Distress calls by season

The National Oceanic and Atmospheric Administration’s (NOAA) Annual 2023 Tropical Cyclones Report, reported 78 named storms across the globe in 2023 - ten less than 2022, and almost ten less than the 1991-2020 average. However, 30 reached major tropical cyclone strength (≥111 mph) -against 17 in 2022 - and seven of these reached Saffir-Simpson hurricane wind scale category 5 (≥157 mph) - against two in 2022. As a result, in 2023, the annual global accumulated cyclone energy (ACE), an integrated metric of the strength, frequency, and duration of tropical storms, was around 8% above the ten-year average, whereas 2022 saw the lowest ACE since 2010.

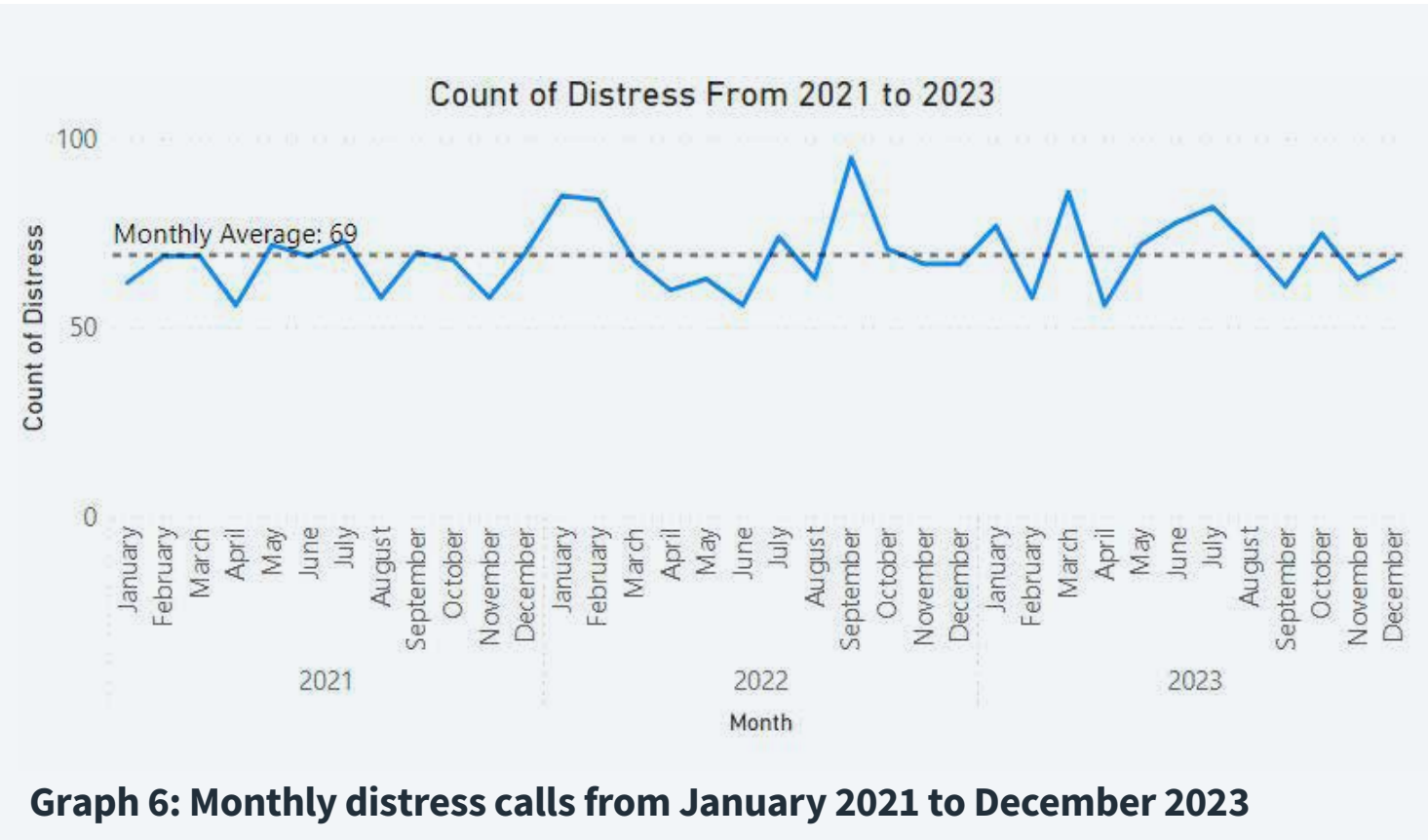
More intense storms pose a threat to ships and port infrastructure globally, as well as wider supply chain resilience. A report by the University of Oxford’s Environmental Change Institute in January 2023<sup>95</sup> noted that climate risk totals \$7.6 billion per year, with the majority attributed to tropical cyclones and river flooding of ports. The report concludes that port adaptation is urgently needed. Many port operators are already aware of the risks and are beginning major investments in greater flood defences, remote IT infrastructure and back-up generators for critical port systems.

Typically, risks tend to increase for ships close to port. To compound risk factors such as congestion and narrow waterways, about 38% of all the global container port activity occurs in areas subject to high hurricane risk, with Coastal China, South Korea, Japan, and the American Eastern

93 Vessels of 40 years and over have been omitted as the number of distress signals received was comparatively small against the rest of the dataset.  
94 [Commercial-Safety-Shipping-Review-2024.pdf \(allianz.com\)](#)  
95 [International trade and world economies exposed to multi-billion-dollar climate risk to ports - Oxford study | University of Oxford](#)



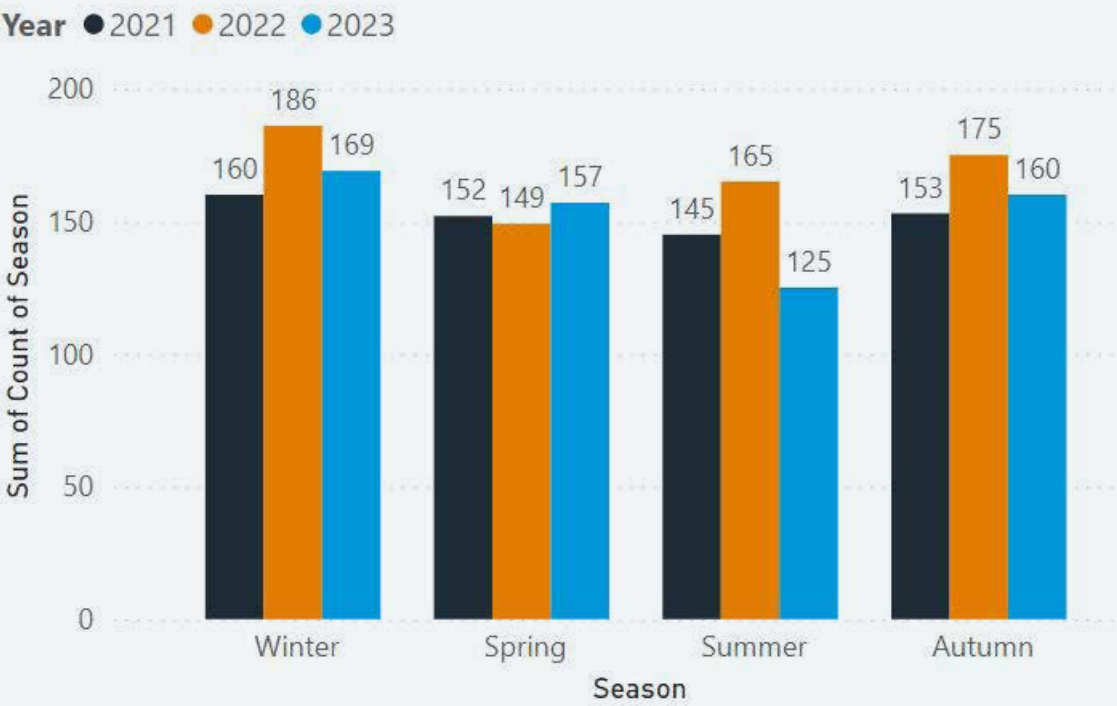
Seaboard particularly at risk of disruption<sup>96</sup>. And extreme weather does not only increase risk to a vessel. Disrupted schedules and missed port calls can also increase commercial pressures on crew, which could lead to unsafe operations and impact negatively on mental health.



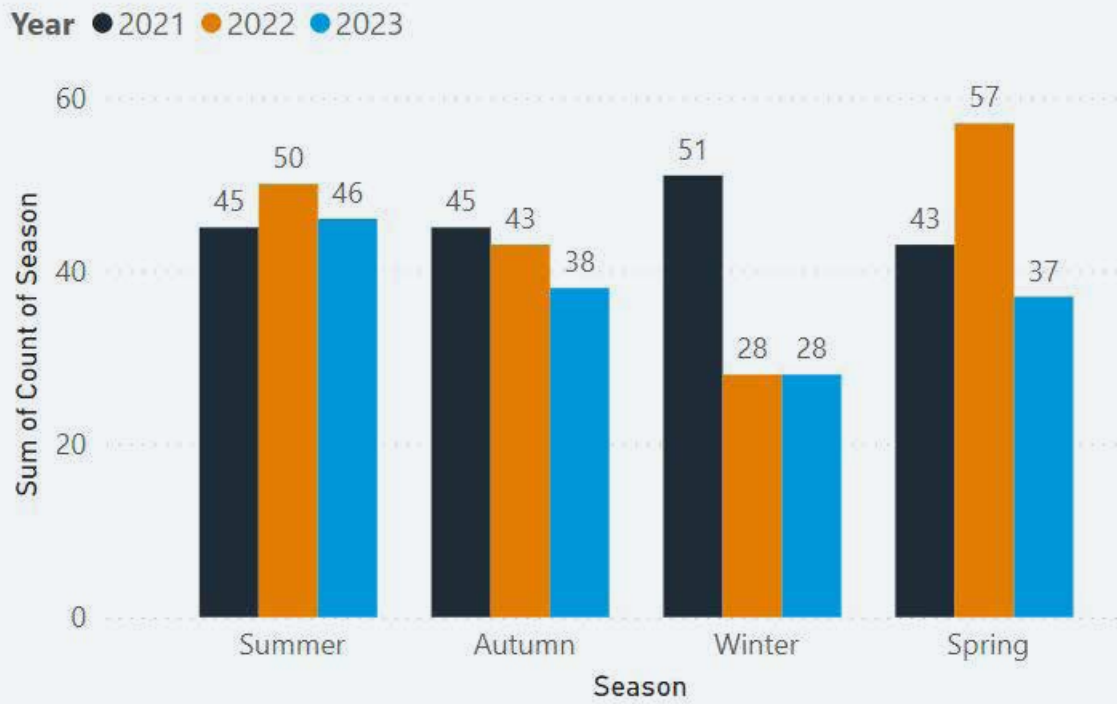
Over the three years of data analysed for this report, an average of 69 distress calls were received each month, with the most recorded in September 2022. There are also notable spikes in January and February 2022, and March and July 2023. Focusing on the storm patterns recorded in September 2022 and July 2023, there appears to be a correlation between weather and distress calls.

Twenty named storms occurred across the globe in September 2022. According to NOAA data this was the third highest on record<sup>97</sup> and six reached major tropical cyclone strength ( $\geq 111$  mph) - above the 1991-2020 average for September. In July 2023, eight named storms

Count of Distress in Northern Hemisphere by Season



Count of Distress in Southern Hemisphere by Season



Graph 7: Distress calls by hemisphere and season 2021-2023

occurred across the globe. While this was slightly below the 1991-2020 July average, three reached major tropical cyclone strength ( $\geq 111$  mph) which was above average<sup>98</sup>. Typhoon Doksuri, which hit China, the Philippines and Taiwan, was particularly powerful with maximum sustained winds of 145mph. In Europe severe convective storms occurred in July<sup>99</sup>, coinciding with the holiday and peak boating season.

As shown in Graph 7, vessels operating in the northern hemisphere consistently registered more distress calls than those in the southern between 2021 and 2023. This reflects the predominant east-west flow of global trade and the concentration of large commercial ports north of the equator, for example, the top 10 container ports by TEU are all located above the equator<sup>100</sup>.

Distress calls per season/per hemisphere were largely consistent throughout 2023 with minimal variation between seasons, except for a notable decrease during the summer months in the northern hemisphere (compared to three other seasons) and an increase during the summer months in the southern hemisphere. The fall in distress calls recorded in the northern hemisphere summer (125) compared to 2021 (145) and 2022 (165), perhaps reflects the decrease in the calls received from yachts in 2023.

**Note: 28 distress calls (3.55% of the total received in 2023) did not include location data and these were excluded from analysis.**

Extreme weather was reported as being a factor in at least eight losses of vessels over 100GT during 2023<sup>101</sup>, but this is likely a conservative estimate. Hurricane Otis alone (a Category 5 storm) is thought to have sunk at least 33 vessels on 25th October when it hit Acapulco Bay<sup>102</sup>. Vessel losses included the *Litos*, a motor yacht, which is thought to have sunk with the loss of its four crew, and the *Arca Ray*, a merchant vessel that reportedly sank with the loss of its 20 crewmembers<sup>103</sup>.

<sup>96</sup> Risk of Hurricanes for Global Container Ports, 2019 | Port Economics, Management and Policy (porteconomicsmanagement.org)  
<sup>97</sup> September 2022 Tropical Cyclones Report | National Centers for Environmental Information (NCEI) (noaa.gov)  
<sup>98</sup> July 2023 Tropical Cyclones Report | National Centers for Environmental Information (NCEI) (noaa.gov)  
<sup>99</sup> A record 63 billion-dollar weather disasters hit Earth in 2023 » Yale Climate Connections

<sup>100</sup> World's Major Container Ports, 2020 | The Geography of Transport Systems (transportgeography.org)  
<sup>101</sup> Commercial-Safety-Shipping-Review-2024.pdf (allianz.com)  
<sup>102</sup> 4 more sunken boats in Acapulco bay after Hurricane Otis - Los Angeles Times (latimes.com)  
<sup>103</sup> Hurricane Otis Sank at Least 33 Boats, Including Many That Were Crewed (maritime-executive.com)



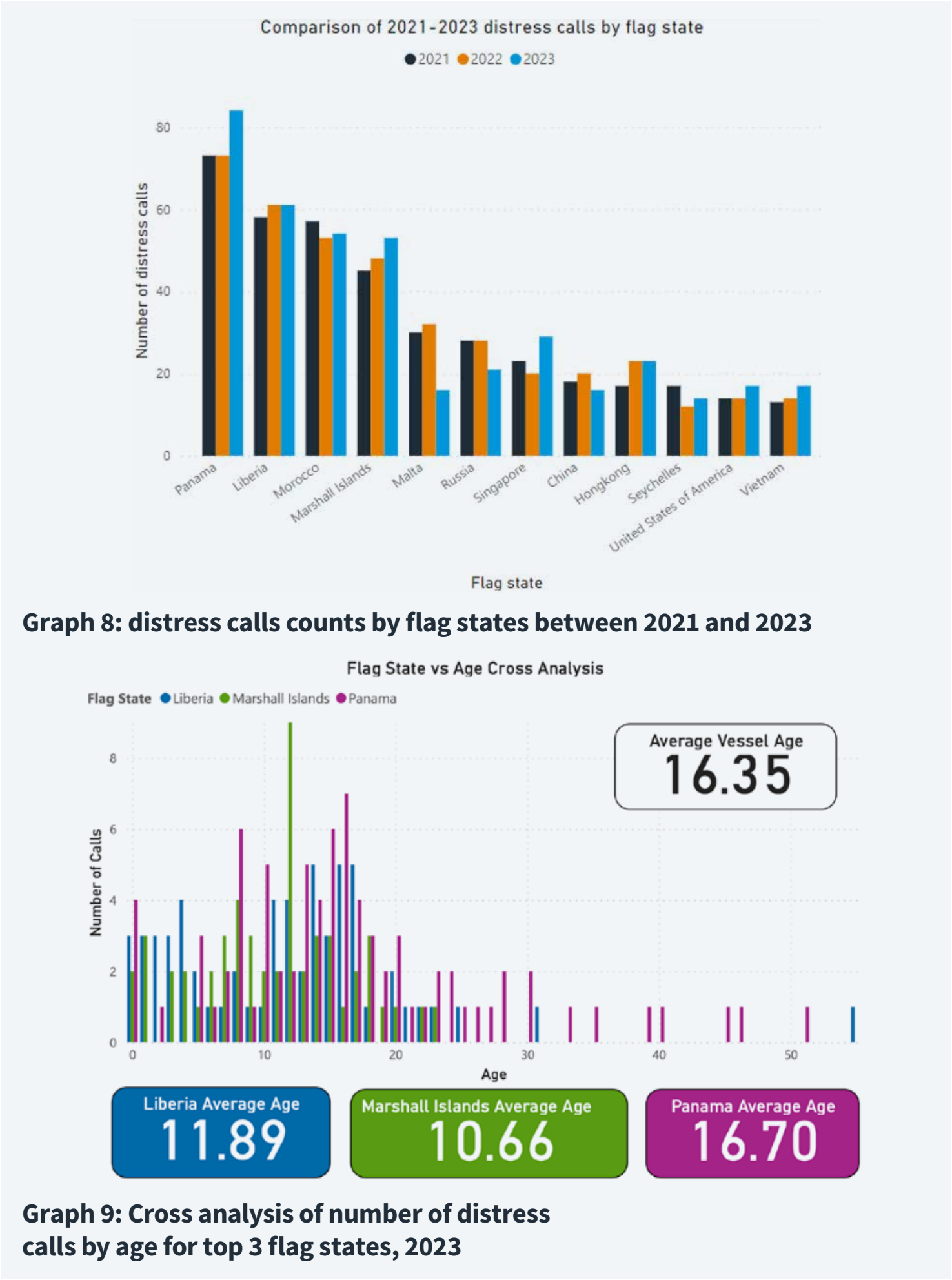
Even with modern technology, adverse weather at sea can be difficult to predict but the risk could be reduced by better utilisation of maritime weather forecasting to inform dynamic weather routing. Such systems compute routes to maximise vessel safety and also optimise efficiency by balancing transit times and fuel consumption, while minimising cargo losses.

However, ultimately safety is a collective responsibility. Shipowners should maintain seaworthy vessels and work with masters to plan routes and make operational decisions, including whether a vessel should put to sea, return to port, or seek refuge. Masters should take appropriate actions to protect their vessels and crew at sea. This includes factoring meteorological event warnings, broadcast as Maritime Safety Information via GMDSS’ enhanced group call (EGC) service, into decision making, and ensuring that their crew is adequately trained and wearing suitable personal protective equipment whenever they are required to go on deck. And finally, crewmembers should adhere to company procedures and best practices to minimise the likelihood of safety-related incidents.

Distress calls by flag state

Panama and Liberia accounted for the highest number of distress calls during 2023, at 84 and 61 respectively. For comparison, Panamanian vessels were responsible for 73 distress calls in 2022 and those flying the Liberian flag were responsible for 61.

Merchant Marine Notice 04/2024, published by the Panama Maritime Authority in March 2024, analysed fleet marine incidents and casualties between 2020 and 2023. It concluded that the top three accident causal factors - inadequate maintenance, risk assessment and bridge management - indicated deficiencies in Safety Management System implementation on board its fleet. While such issues are of concern,



the decision to publish its findings demonstrates transparency and suggests that the registry is seeking to address them.

While previously noting that older vessels did not send more distress alerts than younger vessels between 2021 and 2023, analysis of the three largest Flag states against the age of their fleets showed an interesting result. The average age of the fleets correlated to their ranking by the number of distress calls received in 2023. The average age for Panama-flagged vessels is significantly higher than those flagged to Liberia and Marshall Islands, and its fleet has more vessels between the ages of 20 and 50.

Notwithstanding this finding, the high number of distress calls originating from vessels flagged to Panama, Liberia and Marshall Island can be attributed, in large part, to the size of their active vessel fleets. For example, 8,691 vessels sailed under the flag of Panama in 2023, 5,176 were Liberian-flagged and 4,483 sailed under the flag of the Marshall Islands (Liberia is the largest flag, by tonnage).

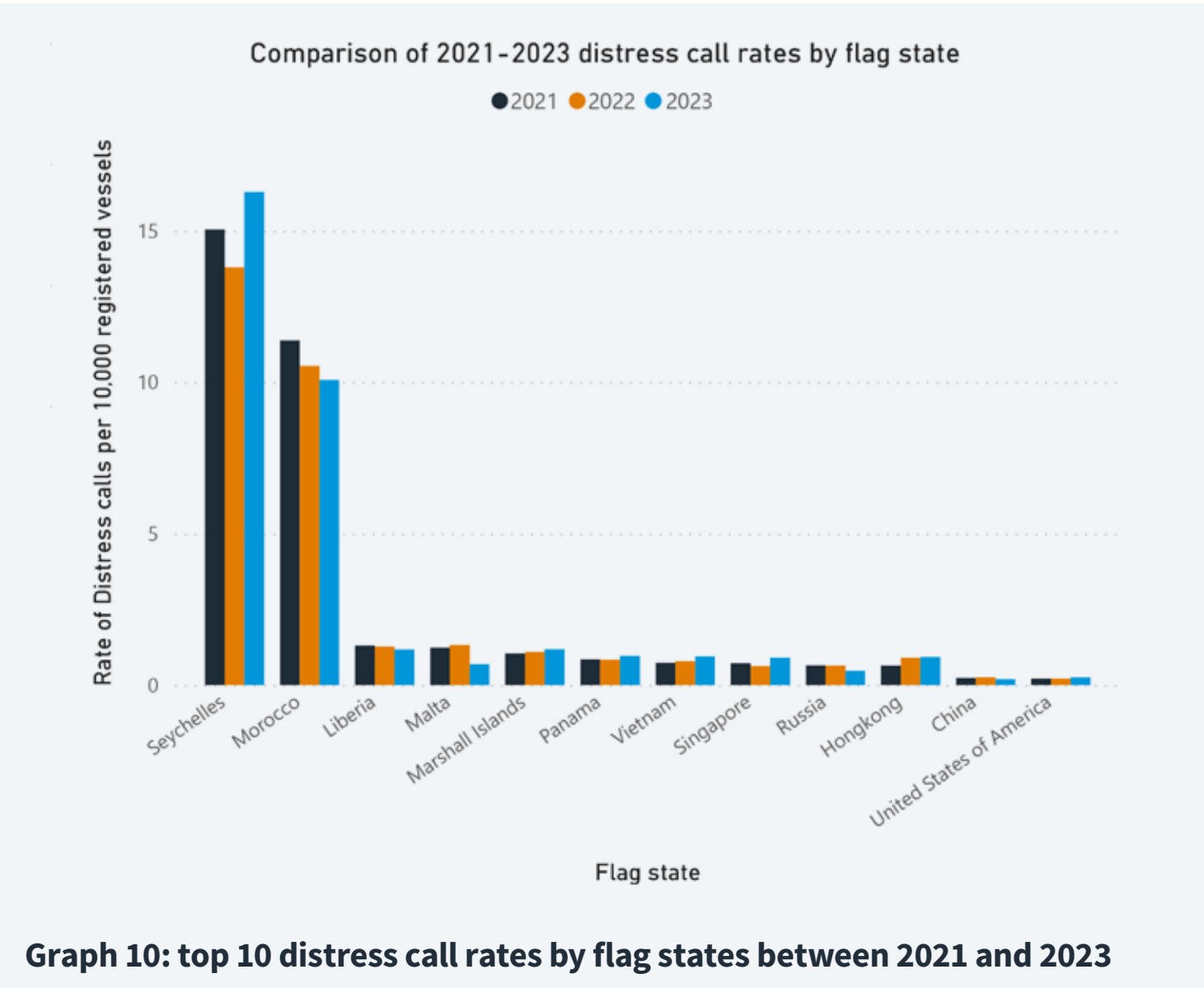
The situation for Morocco (54 recorded distress calls in 2023 from 534 registered vessels) is markedly different. The consistently high rate of distress calls over three years suggests a more rigorous vessel inspection and enforcement programme is required, particularly targeting its fishing fleet.

Analysis of distress rates (the number of distress calls per flag divided by 10,000 vessels) is a better barometer of Flag State performance and, by this metric, the ranking looks very different. In 2023, Seychelles-flagged vessels again made the most distress calls, followed by Morocco. By comparison, Panama (ranked first by count) ranks sixth by rate.

Both Seychelles and Morocco have a high proportion of fishing vessels in their registries, which is likely leading to comparatively high call rates.



As noted by the World Health Organization, “Commercial fisheries are a hazardous occupation. Every day, hundreds of fishers are injured and more than 80 fishers die while involved in fishing operations”<sup>104</sup> and some of these casualties are likely to result in GMDSS distress calls from fishing vessels.



The Seychelles registry does not appear on the International Chamber of Shipping (ICS) Shipping Industry Flag State Performance Table 2023/2024, as it does not feature on the Paris and Tokyo MOUs’ whitelists, nor has it fully qualified for the USCG’s Qualship 21 programme. Its fleet primarily consists of fishing vessels or vessels sailing inter-island cabotage routes. Morocco is listed as demonstrating

potentially negative performance—two against PSC criteria and one against Ratification of Conventions<sup>105</sup>.

**Port state control activities**

In July 2023 Panama, the world’s largest ship registry was included in the Paris Memorandum of Understanding (MoU) on Port State Control’s ‘Grey List’ for the first time in 12 years.

At the time of publishing this report, only the United States Coast Guard (USCG) Port State Control Annual Report 2023<sup>106</sup> was available for reference. However, it noted that the increased detention ratio recorded in the U.S. is consistent with the experience of other Port State Control (PSC) regimes, indicating the possible longer-term impacts of the COVID-19 pandemic during which PSC activity was severely curtailed and scheduled vessel maintenance was deferred.

According to the U.S. report, 8,278 inspections were conducted in 2023, resulting in 4,169 deficiencies and 101 detained vessels (up from 78 in 2022). As fewer inspections were conducted in 2023—8,706 were undertaken in 2022—the annual detention rate increased significantly from 0.89% to 1.22%, increasing the three-year rolling average detention ratio from 0.80% to 0.94%.

Per the report, the top three vessel types detained in the U.S. in 2023 were: general dry cargo (2.4%), refrigerated cargo (2.29%) and container ships (1.94%). Across all vessel types, the three most frequently recorded detention deficiencies in 2023 were: Fire Safety (30%); Safety Management Systems (26%); and Life Saving Systems (7%). Looking at the 2023 detention deficiencies in more detail, oil accumulation in the engine room accounted for 38% of Fire Safety deficiencies; maintenance of Ship & Equipment accounted for 50% of Safety Management System deficiencies; and Rescue Boats and Lifeboats accounted for 46% of Life Saving Systems deficiencies.

The number of Recognized Organizations (ROs) associated with detentions increased from nine in 2022 to fifteen in 2023. The report also identified six ROs with a detention ratio greater than 2.00%, designating them Priority 1 (approval requirements) for classification societies that wish to review, examine, survey, or certify the construction, repair, or alteration of vessels in the United States<sup>107</sup>.

The report’s indication of a global increase in detention ratios highlights the importance of robust PSC activities to uphold ship safety, protect the marine environment and ensure safe working and living conditions onboard. Recognising this need, in December 2023, the European Council adopted ‘general approaches’ on a proposal to amend four maritime safety directives, including the directive on PSC to align it with international rules and procedures as set out in the Paris MoU and IMO conventions, better protect fishing vessels, their crews and the environment and to harmonise PSC inspection activity.

In 2023, there were also encouraging signs of increased coordination and cooperation between the nine regional MoU for PSC regimes. For example, between 1st September and 30th November 2023, the Member States of five<sup>108</sup> regional regimes launched a joint Concentrated Inspection Campaign (CIC) for Fire Safety onboard ships.

Fire remains one of the most serious onboard emergencies and the purpose of the CIC was to raise awareness of fire safety and to evaluate compliance with IMO requirements. The CIC was undertaken in parallel with regular PSC inspections, but Port State Control Officers followed an additional 10-point CIC checklist. Across the five regimes cited by Safety4Sea the average rate of CIC deficiency—as a percentage of all identified deficiencies—was 22.2%<sup>109</sup>. The highest—30%—was reported by the Tokyo MoU and the lowest—14%—was reported by the Black Sea MoU. The deficiency rates reported by the USCG and CIC demonstrate that concerted action is required to improve compliance.

104 [Preventing drowning in the fishing industry \(who.int\)](#)  
105 [Shipping Industry Flag State Performance Table 2023/2024 | International Chamber of Shipping \(ics-shipping.org\)](#)  
106 [2023 Port State Control Annual Report Posted > United States Coast Guard News > Maritime Commons \(uscg.mil\)](#)  
107 [46 CFR § 2.45-15 - Approval requirements. | Electronic Code of Federal Regulations \(e-CFR\) | US Law | LII / Legal Information Institute \(cornell.edu\)](#)

108 According to RiSK4SEA and Safety4Sea, Paris Mou, Tokyo MoU, Black Sea MoU, Caribbean MoU and Indian Ocean MoU participated. However, on its website, Med MoU (see footnote 106) also reports that 84% of the 1,479 PSC inspections conducted by its Member States during the campaign included the CIC Fire Safety questionnaire and that 16 detentions were as a direct result of it.  
109 [RiSK4SEA announces CIC Final Results on fire safety \(September - November\) - SAFETY4SEA](#)



There are also greater levels of collaboration between PSC MoUs. In May 2023, the Med MoU accepted a European Maritime Safety Agency (EMSA) proposal to develop a new information system, THETIS-Med<sup>110</sup>, to support PSC inspections. Derived from THETIS, as used by members of the Paris MoU, THETIS-Med will assist with vessel targeting for PSC purposes, provide inspection statistics and provide a direct link to RuleCheck (an EMSA repository of maritime legislation). By facilitating information sharing and simplifying the report process, the initiative will also enhance transparency and improve situational awareness. The agreement demonstrates what can be achieved when interests align and perhaps offers a model for increased collaboration between PSC MoUs.

### ENHANCING SEARCH AND RESCUE CAPABILITIES

Sharing data and information can help maritime stakeholders identify safety trends and prioritise risk treatments; it can also help to optimise search and rescue (SAR) missions and promote safety at sea for SAR personnel.

In September 2023, the International Maritime Rescue Federation (IMRF) launched the #SaferSAR initiative to improve safety at sea and foster collaboration and knowledge-sharing among SAR professionals worldwide. As Caroline Jupe, IMRF's Chief Executive Officer explains: "The IMRF and wider SAR community is dedicated to playing its part in raising awareness and safety at sea, and collaboration is central to our organisational functions."

The first 12 months of the #SaferSAR initiative will see the IMRF conduct a feasibility study into developing a platform

to share lessons learned and best practices, identified in SAR response, incidents, accidents, and exercises. "Our goal is to determine the sharing culture within the maritime SAR community, identify key barriers and potential value of sharing information, and explore potential design options for a global information-sharing system," Jupe added.

To further strengthen existing PSC arrangements, on 6th December 2023, IMO Assembly adopted resolution A.1185(33) on Procedures for Port State Control<sup>111</sup>, which includes guidelines for the detention of ships under Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL). The resolution entered into force on 1st January 2024.

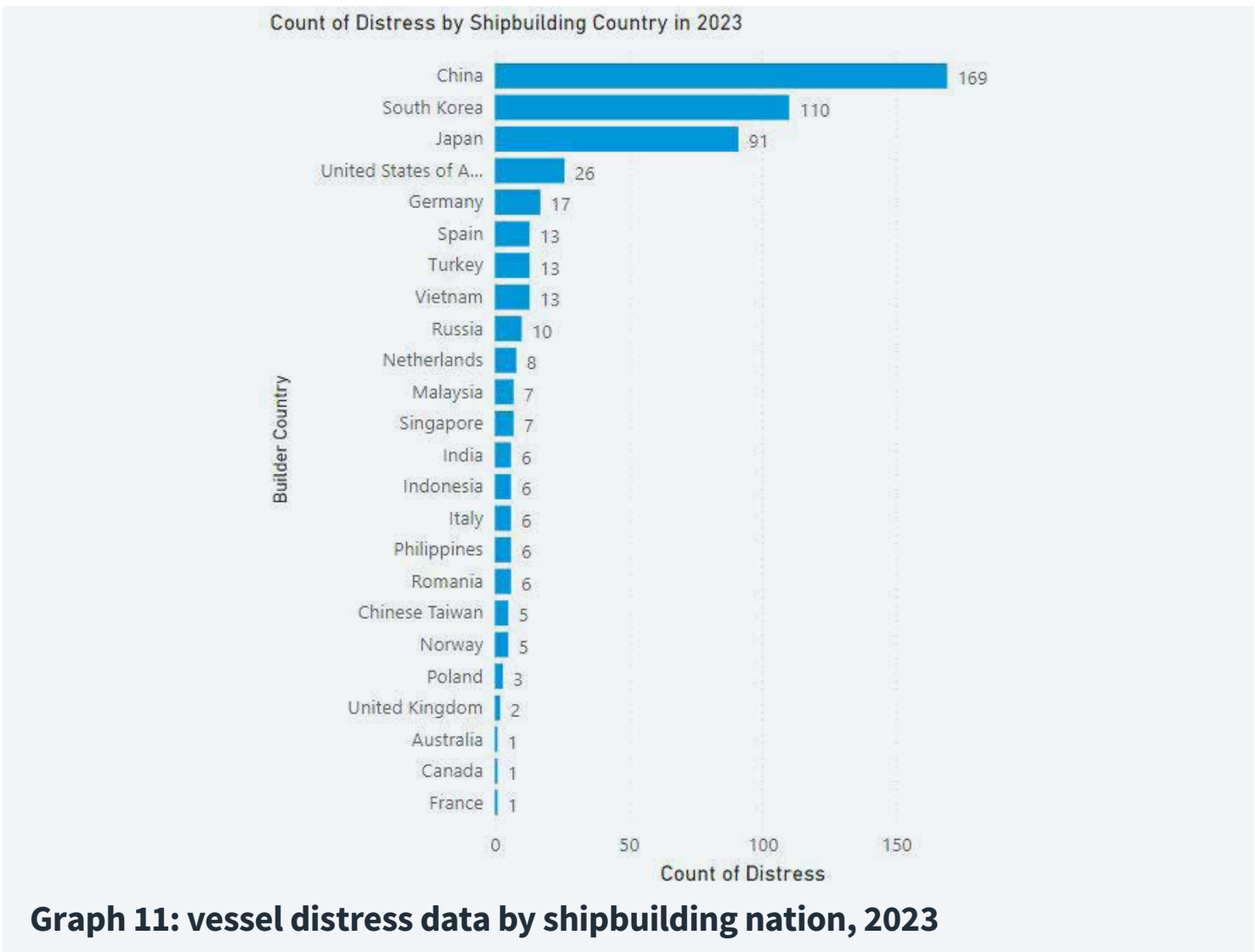
### Distress calls by shipbuilding country

The Danish Ship Finance's Shipping Market Review<sup>112</sup> published in May 2024, found that global yard capacity was distributed among 314 yards building vessels larger than 2,000 dwt, compared to 290 yards in 2022. Of these, 278 yards delivered 1,500 vessels in 2023 and the global yard utilisation rate increased to 60%.

However, the current order book reflects the ongoing consolidation of shipyard capacity, as 231 yards (40% of current yard capacity) could deliver their last orders before the end of 2025—including 63 second-tier yards (representing 12% of global yard capacity) that delivered their last orders in 2023. Illustrating their dominant market position, around 85% of the newbuild orders placed in 2023 were won by either Chinese or South Korean shipyards.

Despite the imperative to decarbonise shipping, the November 2023 Ship Finance Review found that only one-third of the vessels on order are dual-fuelled (two-thirds of which have LNG as the alternative fuel and 16% have methanol). The remaining two-thirds are conventionally

fuelled and 88% of these single-fuel vessels are not thought ready for future fuel upgrades<sup>113</sup>. This imbalance is a fair reflection of the shipowners' dilemma: should they invest in fleet renewal and additional capacity while uncertainty persists about the optimum future fuel and green technology mix, or wait until the pathways become clearer? The ageing of the global fleet (average vessel was 22.2 years old in 2023) suggests that many shipowners are choosing to wait and to operate their vessels longer. Irrespective of the reasoning, the ability to renew the global fleet to meet climate targets will be further impacted if 40% of current yard capacity is lost this decade.



The Ship Finance Review once again found that first-tier yards dominated the orderbook during 2023 and utilisation ran at 79%, with China and South Korea the primary beneficiaries. Conversely, it found

<sup>110</sup> [Med MoU on PSC](#)

<sup>111</sup> [A.118533.pdf \(register-iri.com\)](#)

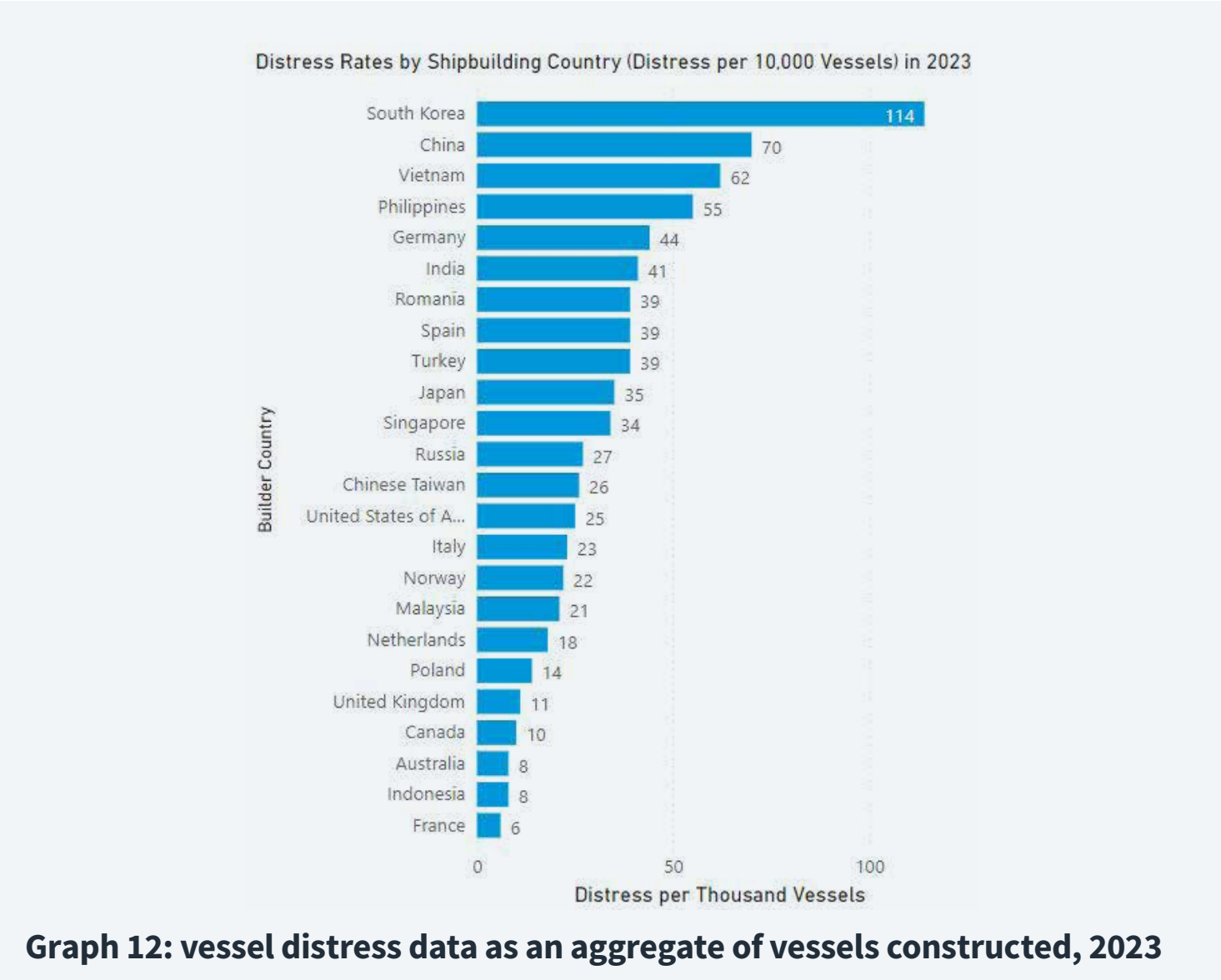
<sup>112</sup> [shipping-market-review-may-2024.pdf \(shipfinance.dk\)](#)

<sup>113</sup> [shipping-market-review-november-2023.pdf \(shipfinance.dk\)](#)



that average yard utilisation outside the 100 first-tier yards dropped to 36% in 2023, and projected a further fall to 13% in 2024.

Unsurprisingly, the number (count) of distress calls per shipbuilding country in 2023 corresponds to where most vessels were built. Chinese, South Korean, and Japanese builders again topped the rankings of distress calls by shipbuilding country. The number of calls from vessels constructed in each of these countries increased between 2022 (147, 97 and 70 respectively) and 2023 (see Graph 11), potentially illustrating the increasingly dominant market share of the three countries over their competitors, and the impact of consolidating shipyard construction-according to UNCTAD the three countries accounted for 93% of the total tonnage delivered<sup>114</sup>.



**Note: Around 29% of the GMDSS distress calls received by Inmarsat during 2023 did not include the shipbuilding country. This continues the positive trend evident since 2021 when over 41% of messages did not include it.**

Although vessels constructed in Chinese shipyards recorded the highest number of distress calls, analysing the rate of calls (number of calls / shipbuilding country) affects the rankings.

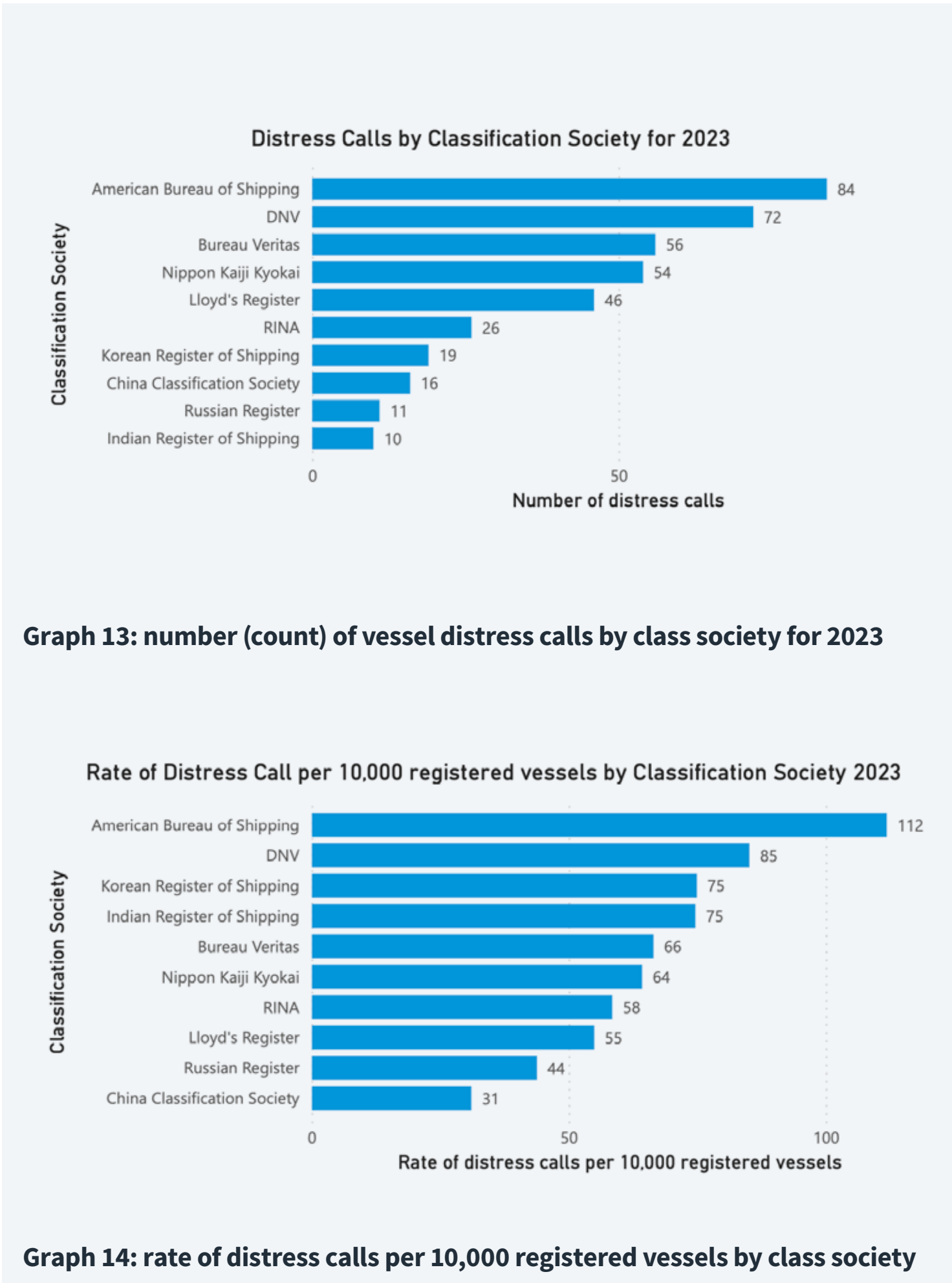
By rate, vessels constructed in Korea were responsible for the most distress calls. However, it is irresponsible to suggest any causal links between shipbuilding country and the distress call count/rate. Many factors affect a vessel’s safety record throughout its service life, including the capability of Masters and crews, weather encountered, cargo, onboard systems and maintenance.

### Distress calls by class society

As with the information on shipbuilding countries, it is difficult to determine any causal link between classification societies and the number of distress calls, as numerous factors impact the safe operation of a ship. Reflecting the fall in total distress calls recorded in 2023, most class societies shown in graph 14 experienced lower call counts than in 2022, with only DNV (72 up from 65), ClassNK (54 up from 51) and the Korean Register of Shipping (19 up from 15) bucking the general trend. The Indian Register of Shipping replaced the Phoenix Register of Shipping in tenth place, but its vessels were responsible for the same number of calls in 2023 and 2022 (10).

During 2023, vessels classed by the American Bureau of Shipping (ABS) made the highest number of GMDSS calls (84 - down from 87 in 2022). The top five ranking is similar to 2022, with only DNV and BV swapping places (DNV moved up to second).

**Note: 40% of the GMDSS distress calls received by Inmarsat during 2023 did not include class information, against 47% in 2022.**

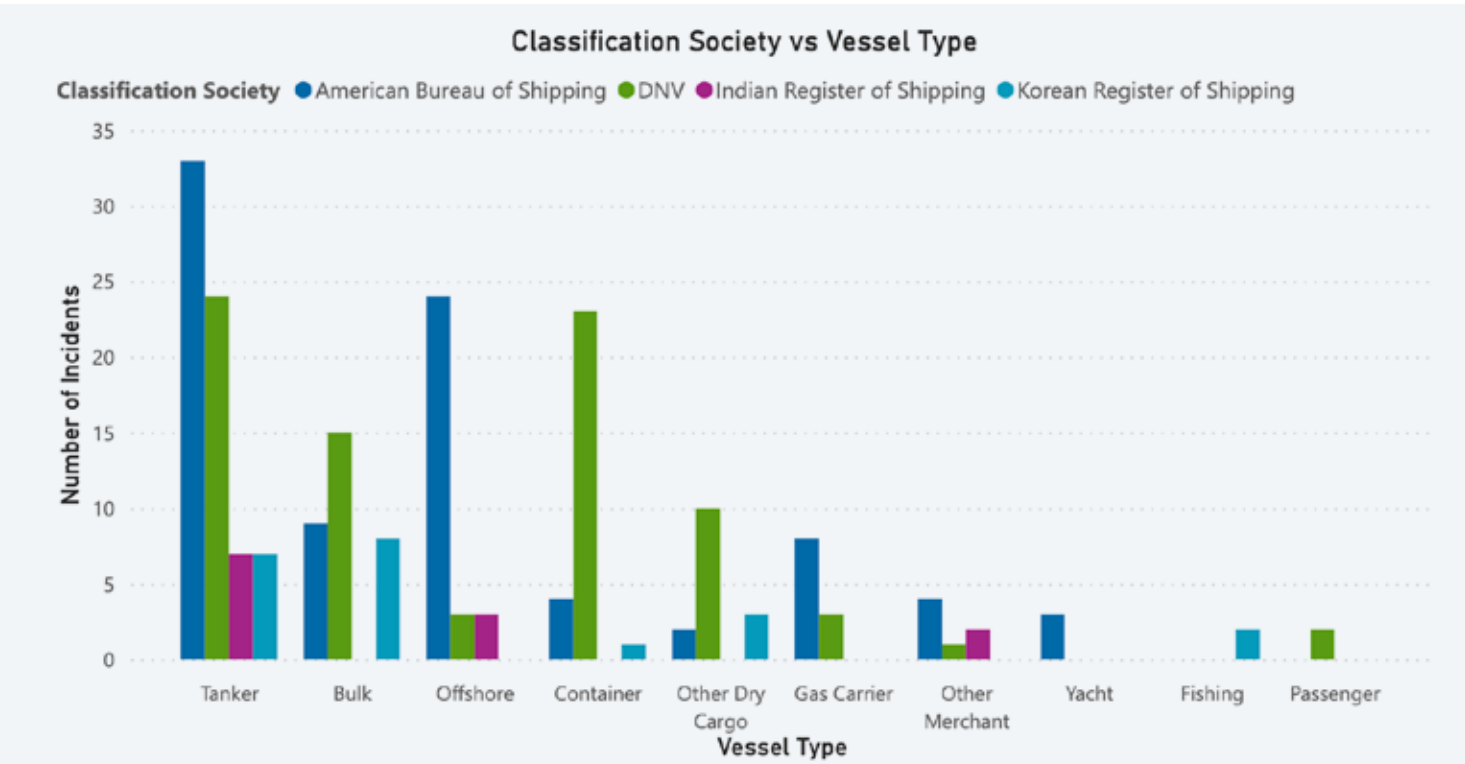


114 [rmt2023ch2\\_en.pdf \(unctad.org\)](#)



The largest classification societies amassed the highest number of GMDSS calls primarily due to the size of the fleets they class. Using rate analysis—distress calls per 10,000 registered vessels—the classification society rankings change; the most notable being that the Indian Register of Shipping moves from tenth by count to joint third (with the Korean register of Shipping).

However, as per the analysis of shipbuilding countries, it is irresponsible to suggest any causal links between Classification Society and the distress call count/rate. Classification Societies may be more closely associated with certain vessel types, and this can skew the rankings. For example, ABS holds the largest proportion of the world's tanker fleet. It is therefore not surprising that it sits at the top of the 2023 rankings by count and rate analysis given the number of distress calls received from tankers and offshore vessels (159 and 60 respectively). The impact on Class ranking is illustrated in Graph 15, which divides the four highest ranked Class Societies (by rate) into 10 vessel types.



Graph 15: distress calls per vessel type for top four classification societies after rate analysis, 2023

MINING DATA TO IMPROVE MARINE SAFETY

On 25th April 2024, Inmarsat launched its SEA-CARE Working Group, bringing together senior representatives from various stakeholder groups, including regulators, insurers, classification societies, marine charities and unions.

The working group gathered at Inmarsat Maritime’s headquarters to discuss shipping safety, in the context of distress, ship casualty and incident data. To promote open discussion the meeting was held under Chatham House Rule.

Attendees stressed the need for a proactive rather than reactive approach to safety. A core part of this, they agreed, is sharing quality data, something they noted is currently lacking. Blockers to this, they said, include under reporting of ship casualties, incident and near-misses (often due to fear of reputational damage or constraints over data ownership), as well as data being siloed in companies and organisations. Delayed or scant accident investigation reports were also highlighted. Importantly, participants agreed to explore how their own organisations’ safety-related data can be shared to create a more holistic and actionable picture of shipping safety that the whole industry can benefit from.

Attendees proposed the following potential solutions for proactively improving safety in maritime:

- Maritime stakeholders can improve the integration of available data to create a more detailed and insightful safety picture. The introduction of GHG reporting illustrates that sharing data in this way may bring significant commercial advantages for those willing and able to do so.
- Submitting safety data to IMO should be augmented by more engagement with Member States, for example, through presentations to Sub-Committees and Working Groups. Flag State support is crucial to improve safety standards.
- Industry should supply more complete data to facilitate trend analysis, inform the development of measures and help prioritise capacity-building programmes to aid implementation and enforcement.
- Greater transparency of incidents should be encouraged not punished to advance safety culture in companies and industry-wide.

The SEA-CARE Working Group will continue to convene at regular points annually to review Inmarsat’s GMDSS data and seek proactive ways to improve industry-wide safety standards. To provide further insights, shipowners and compliance officers will be added to the group.



# Conclusion

The Future of Maritime Safety Report 2024 offers a snapshot of the safety of international shipping, captured through the lens of Inmarsat GMDSS distress calls. It demonstrates the power that anonymised safety data can have in driving understanding and signposting where proactive measures are most needed. Combining it with other safety data on casualties, incidents and accidents can reveal a more nuanced and detailed picture of the challenges faced by our industry.

Ultimately, the intention is to encourage companies and individuals to share more data to improve situational awareness and facilitate group-learning. Importantly, we publish this GMDSS data report to promote transparency. This is vital to help organisations shift away from blame culture and fear of the perceived negative impacts of talking more openly about safety incidents. However, while such concerns remain at the company level, seafarer reporting mechanisms such as the Confidential Human Factors Incident Reporting Programme (CHIRP) and FISHER remain vital outlets for seafarers.

Shipping collects a wealth of operational data to help optimise routes and efficiencies. It also gathers streams of safety data. However, as an industry, we are not extracting maximum benefit from it as analysis is undertaken in isolation and learnings are not shared across all stakeholders. Triangulation has long been used in navigation to infer a vessel's position. Today, the same principle can be applied to navigating the industry to a safer tomorrow. We can triangulate disparate data points to increase fidelity and heighten data analysis confidence. Pooling data will allow us to build a more holistic and objective picture of maritime safety to shape performance improvements.



A key first step is for shipping to develop a list of standard data points to monitor and report, including casualties and incidents, injuries and near misses. The decision, in April 2022, to amend the Code of the Maritime Labour Convention, 2006 (MLC 2006), demonstrates that shipping can develop mechanisms to improve data sharing. The amendment requires all deaths of seafarers employed, engaged or working on board ships to be adequately investigated and recorded, and reported on an annual basis to the International Labour Office<sup>115</sup>.

However, improving safety goes beyond sharing data. Data is only meaningful if used to inform decision-making. Seven years ago, the UK Maritime and Coastguard Agency published MGN 520(M) “The Deadly Dozen - 12 Significant People Factors in Maritime Safety”<sup>116</sup>. The Note was designed to raise awareness of the most common people-related factors affecting maritime safety and how companies, masters and seafarers can mitigate them. Yet the same factors consistently lie at the heart of many ship casualties and near-misses, suggesting shipping needs more innovative solutions.

High-bandwidth connectivity at sea opens the door to more engaging onboard training. Internet access can enhance telemedicine services by facilitating video calls and help to overcome isolation by creating a virtual bridge to loved ones ashore. Just as importantly, it can also provide more reliable access to welfare networks, such as the Sailor’s Society’s Peer-to-Peer Support Groups where seafarers can chat with others in the same boat but not on the same ship.

This is not to suggest that technological developments alone are the answer. As end-users, seafarers should be afforded greater say in the design of ships and onboard equipment. Harnessing seafarers’ insights can enhance ship safety, crew well-being, operational efficiency and protect the marine environment. However, this requires a fundamental shift towards human-centred design principles.

Notwithstanding the initiatives launched by many forward-leaning companies, seafarers also continue to call for open and non-punitive

safety cultures, to encourage accident and near-miss reporting. Such data can then be used to inform the procurement of safety equipment and refine procedures. In the context of using GMDSS, rather than waiting until the vessel or crew are in grave and imminent danger before sending a distress call, companies should encourage crews to send an urgency call requesting assistance, or for it to standby, as part of the initial incident response. Such calls should be seen as a leading indicator in safety management, to help foster a proactive safety culture.

Embedding a safety culture requires transparency and a willingness to absorb and learn from lessons. It also requires commitment and accountability across all hierarchical levels - from ship owners, ship operators and managers to seafarers onboard. Every part of the command chain must invest in prioritising safety and accept an appropriate level of personal responsibility for their actions. Ultimately, safety must be seen as a performance indicator of success and not just a ledger of costs.

Flag States must act responsibly, as the majority do, and be accountable for enforcing safety standards per their requirements. But they can also go further. They can use safety data to proactively treat known risks and reduce the likelihood of recurring accidents. They can advocate for companies to establish robust preventative maintenance and inspection programmes, using data to inform both. They can improve regulatory compliance to help arrest the growing number of PSC detentions. They can also ensure smaller vessels - in particular fishing vessels and those sailing cabotage - install, register, use and maintain appropriate safety distress systems and adhere to onboard safety procedures.

Governments must also explore how to reduce incidence of misdeclared cargo, that can endanger life, property and the marine environment, and do more to protect seafarer rights, as befits their status as key workers. In this regard, the significant amendments to MLC, 2006, adopted alongside amendments to the Code in 2022, are timely. In particular, revised regulations on repatriation, onboard

recreational facilities, medical care onboard and ashore, health and safety protection and accident prevention strengthen the rights of seafarers and will, if they are adhered to, ensure a safer and more equitable work environment.

Responsibility also resides at the inter-governmental level. We are already witnessing a move from prescriptive minimum standards to goal-based standards, such as those adopted for bulk carrier and oil tanker construction, which should drive performance and encourage innovation. However, there is an increasing lag between policy and operational requirements and new regulations coming into force.

As highlighted in this report, safety remains a key priority for the IMO. The Organization adopted some important safety-related resolutions in 2023 and this vital work will continue in 2024 and beyond. However, the international regulatory process, which has served us well for over 70 years, is now struggling to match the pace of technological change.

Is it time to review the Organization’s working arrangements to ensure it better reflects the diversity and needs of its members? For example, the growth of the shadow fleet suggests that the time is right to address the proliferation of fraudulent flags, and also, perhaps, stop the practice of flagging-hopping between ‘flags of convenience’. However, regulations are only effective if enforced. Ultimately concerted action by Port States, Flag States and insurers is required to address shipowners and vessels that operate outside of the regulatory framework.

Shipping has traditionally been seen as a somewhat conservative and slow-evolving industry. Yet, driven largely by the imperative to transition to greener propulsion and the pace of technological advances, it is now changing rapidly. The 2024 World Maritime Day theme “Navigating the Future: Safety first!” places safety front and centre of the debate. However, shipping must first understand the safety trends before it can act. Access to reliable, anonymised, data is the key. The establishment of the SEA-CARE Working Group, to consider how data could be integrated and analysed is an important step in the right direction.

<sup>115</sup> The amendment is expected to enter into force on 23rd December 2024 and data will be published in a global register.

<sup>116</sup> [MGN\\_520\\_Final.pdf \(publishing.service.gov.uk\)](#)



# Methodology: data analysis

This report draws on satellite distress signal data received by Inmarsat Maritime between January and December 2023, and a review of 2021 and 2022 data<sup>117</sup>. It maps annual incidents, identifies trends, assesses safety issues of concern to the shipping industry and makes assumptions based on this data, where possible.

## Gathering data for analysis

Chapter IV of the Safety of Life at Sea (SOLAS) convention established the Global Maritime Distress and Safety System (GMDSS) in 1988. It requires cargo ships of 300 gross tonnage (GT) and over and all passenger ships on international voyages to be equipped with satellite and radio equipment that conforms to international standards.

Inmarsat receives, processes and archives GMDSS data from its network data and RescueNET services. While carriage requirements for such terminals are extensive, vessels operating solely in Sea Areas A1, A2, and A4 are exempt from requiring satellite communications, and those operating in Sea Area A3 can fit either MF/HF or Inmarsat C terminals. That said, Inmarsat has over 130,000 terminals installed across all sectors where safety is mandatory and where the flag or owner has considered it part of their requirement i.e. non-mandatory such as fishing, yachts, military, and others.

This report does not purport to assess all marine casualties and incidents recorded during 2023. Rather it focuses solely on shipping

safety incidents which resulted in the use of GMDSS Inmarsat Safety services to send a distress call. Inmarsat treats all distress calls as if they are real but recognises that some may be false, either being a different priority - “Safety” or “Urgency” - or have been sent by mistake. Inmarsat works with training organisations and seafarers across all sectors and understands that variable training levels can also lead to false distress calls. However, GMDSS requires training and competent equipment operators so this report is predicated on the assumption that the majority of distress calls were genuine calls for immediate assistance.

## Data analysis

Analysis of Inmarsat’s raw GMDSS data was conducted by SeaFocus International (SeaFocus).<sup>118</sup> To inform the report, SeaFocus divided the raw data into eight distress call variables:

- Vessel type - matched against Inmarsat records and publicly available vessel data
- Gross tonnage
- Year of build
- Flag State
- Location information (such as ocean region, latitude and longitude)
- Seasonal data
- Country of build
- Classification Society

SeaFocus analysed the data within each variable to establish distress call counts (the total number of distress calls per variable) and distress call rates (the number of calls as a percentage of registered vessels of that type). Whereas analysis of counts provides an overview of each variable, analysis of rates offers more objective metrics by accounting for the size of the analysed category.

Due to the limitations of rates analysis, variables with less than 10 recorded distress calls were excluded to avoid extremely small categories distorting the rates. Of the fifteen identified vessel types, SeaFocus removed “Other non-cargo” from the dataset, as Lloyd’s List Intelligence only listed 25 registered vessels - deemed too small a market size to be considered a separate group. For the same reason, the rate analysis throughout the report only considers vessel types with more than 1,000 registered vessels. As a result, rigs and platforms, reefers and pure car carriers were excluded from rate analysis.

<sup>117</sup> SeaFocus undertook the statistical analysis for the 2023 and 2024 editions of the Future of Maritime Safety Report. The methodology uses different datasets to those used in 2021 and 2022.

<sup>118</sup> Inmarsat removed duplicate GMDSS calls from the same vessels to present a cleaner dataset as, in some cases, it received multiple GMDSS alerts per single incident.



# Methodology: report analysis

The editorial structure and narrative of the Future of Maritime Safety Report 2024 were compiled by maritime consultancy Intent Communications (Intent), drawing on SeaFocus data analysis, industry commentary, and independent research.

In addition to supplying industry context and insights into the findings and trends, Intent observed an expert working group meeting on 25 April 2024. Hosted by Inmarsat Maritime, and facilitated by Maritime London, the session encouraged participants to exchange opinions and appreciation of pressing safety issues and how they could be addressed. The meeting was attended by senior representatives from across the maritime sector, including international and national regulators, trade associations, classification societies, unions, insurers and charities. Discussion themes and anonymised comments are captured in the ‘Working Group’ boxout.

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In support of future maritime talent, the analysis of Inmarsat RescueNET and network data for the report was undertaken by PhD students working under the auspices of SeaFocus.

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**Disclaimer**

As described in the methodology section, the report is based on Inmarsat’s internal GMDSS data which is correct to the best of its knowledge. The report also contains certain assumptions based on this data. These assumptions are made in good faith but are statements of opinion only. The report also contains opinions provided by third parties which may not reflect the views of Inmarsat. While the information in this document has been prepared in good faith, no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability (howsoever arising) is or will be accepted by the Inmarsat Maritime, or any group company or any of its officers, employees or agents in relation to the adequacy, accuracy, completeness, reasonableness or fitness for purpose of the information in this document. All and any such responsibility and liability is expressly disclaimed and excluded to the maximum extent permitted by applicable law.

Thank you for reading the Future of Maritime Safety Report 2024. If there is anything you would like to see included in future reports please contact [maritime@inmarsat.com](mailto:maritime@inmarsat.com)



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