CPI's Review of Shipping Safety Risks 2024

Introduction

In the context of global greenhouse gas (GHG) reduction strategies, the shipping industry is accelerating its green transformation. Leveraging accumulated knowledge, resources, technology, equipment, and management practices, the industry is exploring actionable methods to achieve decarbonization and actively pursuing green and low-carbon transformation.

The 81st session of the International Maritime Organization's (IMO) Marine Environment Protection Committee (MEPC 81) in March 2024 further discussed mid-term GHG reduction measures. While no consensus was reached, progress was made on the IMO's net-zero framework during the MEPC 82 session in October 2024, with member states moving closer to alignment.

Amidst geopolitical tensions, economic instability, and climate change, the shipping industry faces unprecedented challenges and opportunities. The industry needs to embrace innovation, strengthen collaboration, and lead with green, low-carbon, and intelligent solutions to ensure high-quality development and a sustainable maritime future.

I. Shipping Safety Industry Review

1. Geopolitical Risks Emerge as the Greatest Threat

According to Lloyd's List's December 2024 outlook survey, 47% of respondents identified geopolitical risks as the most significant threat to the shipping industry over the next two years (up from 30% in 2023). Additionally, 16% cited the growth of the "shadow fleet" as a major risk, tied with protectionism and tariff increases.

2. Focus on Maritime Passage Safety

The UNCTAD *2024 Maritime Review* (October 22, 2024) emphasized the importance of unimpeded passage through key maritime chokepoints. Drought-induced water level drops in the Panama Canal, and conflicts in the Red Sea have significantly impacted traffic through the Suez Canal. By mid-2024, traffic through these canals had declined by over 50% compared to peak levels, with tonnage through the Gulf of Aden and Suez Canal dropping by 76% and 70%, respectively, compared to late 2023.

3. The Role of Loss Prevention in Decarbonization

At the 150th annual conference of the International Union of Marine Insurance (IUMI) in Berlin (September 16, 2024), the importance of loss prevention in achieving decarbonization goals was highlighted. IUMI's Loss Prevention Committee Chair, Pascal Dubois, stressed that without robust loss prevention mechanisms to address climate change, the industry could face significant challenges, including increased capital investment and reduced policy support.

4. Surge in Marine Insurance Claims

The Nordic Association of Marine Insurers (Cefor) reported that 2023 saw the highest single hull insurance claims in over a decade, exceeding USD 50 million due to ship fires. Both the frequency and cost of claims have risen, with machinery damage claims over USD 500,000 increasing by approximately 20% in 2022 and 2023 compared to previous years.

5. Energy Transition in Shipping

DNV's *2024 Energy Transition Outlook* (October 2024) predicts a shift from oil-based fuels to low- and zero-carbon alternatives. By 2050, ammonia is expected to account for 24% of shipping fuels, e-methanol for 12%, and biofuels for 11%. LNG and LPG will grow until 2040 but decline thereafter due to limited decarbonization potential. Electric propulsion will remain limited to small, short-distance vessels, maintaining a 4% share. Commercial nuclear-powered ships are expected by 2045, reaching 6% by 2050.

6. Persistent Challenges in Ship Safety

Allianz's *2024 Safety and Shipping Review* (May 2024) highlighted ongoing challenges, including war, geopolitical events, climate change, and piracy.

7. Aging Global Fleet

UNCTAD's *2024 Maritime Review* also noted the aging global fleet, with significant implications for safety and efficiency.

II. Shipping Safety Risk Outlook

The IMO has set ambitious decarbonization targets: a 20-30% reduction in annual GHG emissions by 2030 (compared to 2008), a 70-80% reduction by 2040, and net-zero emissions around 2050. The industry is responding through innovation, international cooperation, and policy support, but faces uncertainties from geopolitics, aging fleets, new technologies, climate change, cybersecurity, and regulatory changes.

To navigate these challenges, the industry must develop a comprehensive understanding of safety risks, innovate continuously, and enhance resilience to ensure sustainable maritime operations.

III. Analysis of Incidents Involving Ships of 3000 GT and Above (2014-2024)

1. Machinery Damage Accidents

Over the past decade, machinery damage incidents have increased, accounting for 58% of all incidents in 2024. These incidents threaten propulsion, navigation, and communication systems, potentially leading to catastrophic outcomes such as fires, explosions, oil spills, or sinking.

2. Ship Fires

In 2024, 165 ship fires were reported globally, a 27% increase from the previous year and the highest in a decade. Container ship fires, in particular, have caused significant property damage and pose major safety risks.

3. Collisions and Groundings

While collision and grounding incidents have remained stable in frequency, they accounted for over 14% of all incidents in 2024. The risks and consequences of such incidents have grown with the increasing size and complexity of modern vessels.

IV. Focus on Shipping Safety Risks

1. Threats from Machinery and Electrical Failures

Machinery and electrical failures, such as the March 26, 2024 incident involving the Singapore-flagged *DALI*, which collided with Baltimore's Francis Scott Key Bridge, highlight the need for digital and intelligent systems to mitigate risks.

2. Container Ship Fire Risks

Container ship fires are particularly dangerous due to delayed detection and limited fire-fighting capabilities at sea. The rise in lithium battery and new energy vehicle shipments has further complicated fire risks.

3. Stable Cargo Claims Trend

IUMI's 2024 report noted a decline in cargo claims over USD 250,000, with 535 cases totalling 590 million in 2023. Fire remains the leading cause of cargo losses.

4. The Shadow Fleet's Growing Threat

The “shadow fleet” used to circumvent sanctions on Russian oil, has grown to 600-1,400 tankers since the Ukraine conflict. These vessels, often old and poorly insured, have been involved in at least 50 incidents, raising concerns about environmental disasters.

5. Rising Cybersecurity Threats

DNV’s *2024-2025 Maritime Cyber Priorities* report found that 61% of maritime professionals see cybersecurity as a critical challenge. The industry must manage digital risks to ensure innovation and resilience.

V. Embracing Change and Adapting to the New Normal

The shipping industry’s digital, intelligent, and green transformation is inevitable. Achieving net-zero emissions by 2050 will require a combination of sustainable fuels, technological innovation, and international cooperation.

Despite challenges such as geopolitical tensions, climate change, and fleet aging, the industry’s resilience and creativity will drive progress toward a green and intelligent future. By staying attuned to regulatory developments and embracing innovation, the industry can ensure its competitiveness and sustainability.

Conclusion

The shipping industry is in an unprecedented era of innovation, with new technologies and fuels being developed and tested. Despite economic and geopolitical challenges, the industry continues to evolve, driven by energy efficiency, vessel retrofitting, and alternative fuels. The future promises a comprehensive green revolution in shipping.