REPORT

On

Symposium on *"India's IMO Engagement"*

Theme *"India at the IMO: Policy, Partnership & Progress"*

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Introduction:

The Directorate General of Shipping, in association with **the Indian Register of Shipping** and **the Institute of Marine Engineers (India)**, organized the **NAVIC Cell 2024 Workshop on India's IMO Engagement** under the theme **"India at the IMO: Policy, Partnership & Progress."** The workshop was convened on 8th September 2025 at the Indian Register of Shipping, Mumbai, and witnessed the participation of leading shipping companies, key stakeholders, government dignitaries, and subject-matter experts. The event served as a significant platform to deliberate on **India's strategic engagement** with the **International Maritime Organization (IMO)** and to **foster dialogue on policy priorities, collaborative partnerships, and future directions in maritime governance**.

Welcome Address by Shri David Birwadkar, Chairman, IMEI (I):

The workshop commenced under the leadership of Shri David Birwadkar, Chairman of the Institute of Marine Engineers (India) [IME(I)], who formally welcomed all the delegates. The occasion was graced by the presence of eminent dignitaries including **Shri Shyam Jagannathan, IAS, Director General of Shipping; Shri Arun Sharma; Capt. S.I. Abul Kalam Azad, In-charge Nautical Advisor, Directorate General of Shipping (DGS); Shri Sushil Mansingh Khopde, Additional Director General, DGS; Shri P.K. Mishra, Managing Director, Indian Register of Shipping (IRS); and Shri Rajeev Nayyer, President, IME(I).**

As part of the ceremonial proceedings, each dignitary was warmly greeted with a floral bouquet as a gesture of respect and goodwill. This was followed by the traditional Lighting of the Lamp accompanied by the Saraswati Vandana, symbolizing wisdom, knowledge, and the auspicious commencement of the event. The opening ceremony thus set a dignified and reverent tone for the workshop, reinforcing its significance as a platform for meaningful deliberations on India's engagement with the IMO.

Lighting of the Lamp and Saraswati Vandana:

The inaugural ceremony of the Workshop on **India's Engagement at the International Maritime Organization (IMO)** commenced with the traditional **Lighting of the Lamp** and **Saraswati Vandana**, symbolizing the pursuit of wisdom and knowledge as guiding principles for the proceedings.

The occasion was graced by the presence of several eminent dignitaries, including **Shri Shyam Jagannathan, IAS, Director General of Shipping**; **Shri Arun Sharma**; **Capt. S.I. Abul Kalam Azad, In-charge Nautical Advisor, Directorate General of Shipping (DGS)**; **Shri Sushil Mansingh Khopde, Additional Director General, DGS**; **Shri P.K. Mishra, Managing Director,**

Indian Register of Shipping (IRS); and **Shri Rajeev Nayyer, President, Institute of Marine Engineers (India) [IME(I)]**. Their participation underscored the importance of the workshop as a collaborative platform for advancing India's maritime engagement at the global level.

Insights about today's IMO Workshop by Shri David Birwadkar, Chairman, IMEI (I):

Following the Lighting of the Lamp and the Saraswati Vandana, the workshop was formally commenced with the introduction of the eminent dignitaries. The names of the distinguished guests were announced, including **Shri Shyam Jagannathan, IAS, Director General of Shipping; Shri Arun Sharma; Capt. S.I. Abul Kalam Azad, In-charge Nautical Advisor, Directorate General of Shipping (DGS); Shri Sushil Mansingh Khopde, Additional Director General, DGS; Shri P.K. Mishra, Managing Director, Indian Register of Shipping (IRS); and Shri Rajeev Nayyer, President, Institute of Marine Engineers (India) [IME(I)]**. On behalf of the Institute of Marine Engineers, the Directorate General of Shipping, and the Indian Register of Shipping, all dignitaries and participants were warmly welcomed.

The workshop, centered on the theme **"India at IMO: Policy, Partnership & Progress,"** was described not merely as a theme but as a call to action. It was emphasized that the International Maritime Organization (IMO) represents the global stage for maritime governance, where India must assume the role of a principal actor. The address underscored that India's presence at the IMO cannot be passive; rather, it must be purposeful, proactive, and powerful in shaping international maritime policy.

The objectives for the workshop were clearly outlined in three parts.

- First, to **demystify policy** by fostering a deeper and more collective understanding of the intricate processes at the IMO.
- Second, shifting **from a reactive observer to a proactive architect** of maritime regulation that is safe, sustainable, and equitable, while simultaneously strengthening partnerships and serving as a bridge between stakeholders.
- Third, to **catalyze progress through debate and discussion**, ultimately enabling India to present a unified voice within the IMO.

Industry Engagement in IMO by IMEI by Shri Rajeev Nayyer, President IMEI (I):

Shri Rajeev Nayyer, President of the Institute of Marine Engineers (India), delivered an address on the theme of **Industry Engagement in IMO**. He began by extending a warm welcome to all delegates, including Shri Shyam Jaganathan, Director General of Shipping, Shri Sushil Mansingh Khopde, Additional DG, Shri Arun Sharma, Shri P. K. Mishra, Managing Director of IRS, Shri Capt. A. K. Azad, along with other distinguished participants, dignitaries, and members of the maritime fraternity.

In his remarks, Shri Nayyer emphasized the critical importance of active industry engagement in shaping maritime policies. Drawing on his experience, he highlighted the International

Maritime Organization (IMO), as a United Nations agency, plays a central role in ensuring the safety and security of shipping, preventing marine and atmospheric pollution, and advancing the United Nations Sustainable Development Goals (SDGs). He underlined that IMO's decisions and standards directly affect all stakeholders connected with the maritime and shipping industry, thereby making industry participation not only necessary but vital in the policy-making process.

He further elaborated that industry involvement is essential in contributing to national policy development, amendments, and the adoption of new technologies, particularly in areas such as green shipping and autonomous maritime operations. Shri Nayyer stressed that while such engagement requires considerable time, effort, and commitment, it ultimately leads to more effective solutions and ensures that industry perspectives are adequately represented at the IMO. He pointed out that constructive collaboration between industry stakeholders and policymakers would help develop policies that are both pragmatic and supportive of the maritime sector's operational realities.

Concluding his address, Shri Nayyer expressed gratitude to the gathering and reaffirmed that the Institute of Marine Engineers (India) would continue to extend full support and cooperation in future endeavors to strengthen India's representation and engagement at the IMO.

Key Insights by Shri P K Mishra, MD, IRS:

The session commenced with a warm greeting and welcome extended to all delegates and eminent dignitaries. It was highlighted that India has been a member of the International Maritime Organization (IMO) since its inception and currently holds a position in Category B, having recently secured re-election with a significant margin. A matter of pride for the nation is that India has given the IMO its longest-serving Secretary General, the late Dr. C. P. Srivastava, who served from 1974 to 1989. During his tenure, he established landmark institutions such as the **World Maritime University (WMU)** for higher maritime studies and the **International Maritime Law Institute (IMLI)** for maritime legal education and regulatory training.

India's active engagement with the IMO was further emphasized. The country participates in all committees and sub-committees of the IMO and has contributed through the submission of numerous technical and legal papers. A specific reference was made to the **2011 adoption of the Energy Efficiency Design Index (EEDI)** for new ships by the International Organization, as well as India's important contributions to the **Ballast Water Management Convention**, where India pioneered revisions particularly suited for muddy waters and other unique operating conditions. These initiatives underscore India's role in advancing practical and effective maritime regulation.

The address also stressed the importance of stakeholder engagement through seminars and workshops of this nature, which provide platforms to deliberate, develop, and submit stronger technical contributions at the IMO. It was noted that India must consider appointing a permanent representative to the IMO to build networks with like-minded nations and counter the influence of developed countries that often dominate decision-making. Additionally, it was emphasized that

India should be more vocal at the IMO and increase the number of technical submissions to influence the policy-making process more effectively. The speech concluded with gratitude extended to all participants.

Address by Shri Sushil Mansingh Khopde, DGS:

The workshop on **India's IMO Engagement** featured an address by the **Additional Director General of Shipping Shri Sushil Mansingh Khopde**, highlighting India's vision and strategic direction in global maritime governance. Emphasizing the interconnectedness of maritime safety,

sustainability, and trade, the address underscored that India is at a defining moment in shaping its global identity through proactive leadership and meaningful engagement at the International Maritime Organization (IMO).

The address placed particular focus on India's strategic priorities at the IMO. These include advocating for balanced regulations that protect seafarers while fostering growth in the shipping industry, advancing the transition to green shipping and decarbonization in alignment with climate commitments, and addressing critical challenges such as shadow fleets, unsafe manning, abandonment and criminalization of seafarers, and emergency repatriation. Equally important is India's effort to strengthen its global profile by showcasing national capabilities, building international partnerships, and ensuring its active participation in decision-making processes at the IMO.

To translate vision into action, India has operationalized the **NAVIC (Neel Arth Vision Implementation Cells)** under the Ministry of Ports, Shipping and Waterways. These 25 thematic cells, supported by **ViBhaS (Vision-Based Strategic Oversight Cells)**, serve as the core mechanism to implement **Maritime India Vision 2030** and **Amrit Kaal Vision 2047**. Each cell focuses on key areas such as port efficiency, shipbuilding, sustainability, tourism, and international diplomacy. Notable achievements include the Traffic & Cargo Cell's standardization of port processes, **the Green Initiatives** Cell's progress on clean energy adoption, and the Tourism Cell's efforts to position India on the global maritime tourism map.

Of particular importance are the NAVIC Cells dedicated to international cooperation and IMO matters. The **International Cooperation Cell** plays a central role in fostering bilateral and regional maritime partnerships with **ASEAN, EU, BIMSTEC**, and others, while the IMO Matters Cell ensures India's regulatory and safety priorities are effectively represented within IMO committees. Together, these cells reinforce India's commitment to integrating national development with global expectations, ensuring cohesive and impactful engagement in international maritime governance.

In conclusion, the address framed **India's IMO engagement** as more than diplomacy—it is a transformative journey of vision, collaboration, and operational excellence. Each initiative strengthens India's position as a proactive and responsible maritime nation, contributing to a safer, greener, and more equitable global maritime future.

Address by Nautical Advisor Shri Capt. A. K. Azad, NA, DGS:

Capt. S.I. Abul Kalam Azad, Nautical Adviser-cum-Additional Director General (Nautical) (In-charge), addressed the gathering with a focus on India's engagement at the International Maritime Organization (IMO). In his remarks, he highlighted pressing issues currently under consideration at the IMO and stressed the importance of India's active, strategic, and consistent participation in shaping global maritime deliberations.

Capt. Azad underscored the significance of positioning a **Technical Domain Representative at the IMO**, supported by the deployment of **Senior and Junior Professional Officers (SPOs and JPOs)**. He explained that such an arrangement would ensure India's continuous presence, strengthen institutional participation, and provide structured representation at the IMO's technical and policy forums. It also focused on the futuristic upcoming **Nuclear Energy** in the field of Marine.

At the same time, he candidly identified challenges that India continues to face in its IMO engagement, particularly those related to **capacity and coordination gaps**. These, he emphasized, must be effectively addressed if India is to project a stronger and more coherent voice on the international maritime stage.

Capt. Azad also placed strong emphasis on the need for **industry collaboration** in realizing India's maritime strategies and objectives. He noted that close cooperation between the government, industry stakeholders, and academia is essential to implement India's maritime vision effectively. Such collaboration, he observed, would not only elevate India's global standing but also accelerate the realization of the nation's broader maritime ambitions.

Address by the Chief Guest Shri Arun Sharma:

The Chief Guest began his address by thanking all delegates for the warm welcome and expressed his pleasure in sharing his thoughts and experiences. He extended congratulations to the Directorate General of Shipping on the completion of 75 years and reaffirmed the Indian Register of Shipping's (IRS) continued support as a recognized organization of the Directorate. He highlighted the role of the International Maritime Organization (IMO) as a cornerstone of global maritime governance, explaining that while the **Directorate General of Shipping regulates the Indian flag, the Indian Register of Shipping serves as the recognized organization responsible for classification and statutory registration**. The primary role of classification, he noted, is the protection of life, assets at sea, and the marine environment.

India, he emphasized, is a significant maritime nation with an extensive coastline, a large fleet of ships, and, most importantly, a rapidly growing number of seafarers serving both domestically and internationally. He traced the evolution of global shipping through three major cycles:

- the transition from sail to steam in the 1800s,
- the advent of containerization and bulk shipping in the late 20th century, and
- the current phase driven by complex technologies and cleaner maritime transport.

He noted that if the global fleet is renewed over the next two decades before 2050, radical new technologies will lead to the most significant transformation in shipping since its inception.

Turning to future prospects, he underscored the importance of enhanced engagement with the IMO as shipping becomes more complex. He pointed out that India currently interacts actively with IMO's main committees—the Maritime Safety Committee (MSC) and the Marine Environment Protection Committee (MEPC)—and their subcommittees. He also drew attention to nuclear energy as an emerging area of maritime innovation. With many countries now recognizing nuclear energy as a safe and clean option compared to earlier uranium-based systems, nuclear propulsion is likely to drive future vessels. The first prototype nuclear-powered vessel is expected to be tested in 2026, with commercial applications anticipated within four to five years thereafter.

Reflecting on India's international standing, he asserted that India is regarded as a strong and respected maritime nation on the global stage. He stressed that while India's voice is already visible at the **International Maritime Organization (IMO) through the Directorate General of Shipping (DGS), Institute of Maritime Engineering (India) [IME(I)]**, and Indian Register of Shipping (IRS), the next step must be to ensure that India is not only visible but also counted as a decisive actor. He emphasized the importance of building relationships, strengthening networks, and maintaining a consistent presence at the IMO. He recalled India's leadership role in **International Association of Classification Societies (IACS)**, an organization of 12 nations, where the IRS assumed the chairmanship in 2020 during a critical period. IRS successfully ensured smooth shipping operations while safeguarding against marine pollution, earning recognition and appreciation from IACS. He also noted that during the COVID-19 era, IRS successfully led a governance reform in IACS, winning a majority vote of 75% to implement structural changes.

The Chief Guest stressed that these examples illustrate the importance of standing strong, being visible, and building trust at international platforms like the IMO. He encouraged forming larger teams, engaging in consistent dialogue, and fostering trust among international partners. He further mentioned IRS's collaboration with Core Power UK in advancing nuclear maritime technologies and noted that Indian professionals and scientists are actively contributing to this field through training and research. Additionally, he emphasized the need for India to strengthen its representation not only at the IMO but also at the International Labour Organization (ILO), especially on matters related to seafarers.

He concluded his remarks by thanking the audience and expressing hope for the seminar's success in contributing to India's maritime vision and global engagement.

Address and Presentation by Directorate General of Shipping, Shri Shyam Jaganathan, DGS:

Shri **Shyam Jagannathan**, **Directorate General of Shipping (DGS)**, delivered a **comprehensive address** at the **workshop on IMO Matters**, emphasizing **India's growing maritime role in the global arena**. He began by acknowledging the **distinguished gathering** of **government officials, industry leaders, and maritime experts**, underlining the **shared purpose of strengthening India's role in shaping the global maritime agenda** through the **International Maritime Organization (IMO)**.

He highlighted **India's rapid economic growth**, noting that as of **August 2025**, the country has become the **world's fourth-largest economy**, **surpassing Japan**. With **GDP growth of 6.5% in FY 2025**, **strong exports, increasing foreign investment, and enhanced infrastructure**, India is poised to reach the **$5 trillion mark by 2027–28**. This **economic momentum**, he stressed, has direct implications for **India's maritime sector**, where **95% of trade by volume** and **70% by value is carried by sea**.

Turning to the **maritime domain**, Shri Jagannathan described **significant progress**: **port capacity has tripled over the past decade**; **inland waterways cargo movement has nearly tripled since 2014**; **cruise and lighthouse tourism are growing rapidly**; and **India has become the second-largest supplier of seafarers globally**. He highlighted **sustainability achievements**, with **60% of major ports adopting renewable energy** and **Alang's ship recycling practices aligning with the Hong Kong Convention**. These **domestic milestones**, he emphasized, also serve as **building blocks of India's credibility and contributions at the IMO**.

He further elaborated on **India's pivotal role in global maritime governance**. **India ranks among the top container ports globally**, **contributes one-third of the world's ship recycling**, and maintains a **strong presence on the World Bank's Logistics Performance Index**. **Strategically located at the crossroads of major global shipping routes**, India is advancing initiatives such as **SAGAR, MAHASAGAR, the INSTC, and the Chabahar Agreement** to **strengthen connectivity, security, and sustainability in regional and global trade**.

Looking ahead, Shri Jagannathan stressed the **dual priorities of sustainability and digitalization**. Through ambitious programs like the **Maritime India Vision 2030** and the **Maritime Amrit Kaal Vision 2047**, India aims to **transform its ports, expand coastal and inland shipping, boost shipbuilding and recycling**, and **position itself as a global hub for green and smart shipping**. He emphasized **investments in renewable energy, alternate fuels, and AI-driven maritime technologies**, alongside initiatives such as the **Green Tug Transition Programme** and the **establishment of a Digital Centre of Excellence**.

The DGS underscored the **critical importance of international cooperation in addressing safety and humanitarian challenges**. He referred to **recent incidents** such as **vessel fires and chemical spills**, as well as the growing **crisis of crew abandonment**, noting that with **India's vast seafaring workforce**, these issues are of **urgent concern**. He stressed the need for **stricter enforcement,**

faster insurance mechanisms, and **stronger collaboration between governments, shipowners, and unions**, positioning India as a **proactive advocate for seafarer welfare at the IMO**.

He also emphasized **India's enhanced engagement with IMO mechanisms**, including the **deployment of domain technical representatives, Senior and Junior Professional Officers**, **expansion of shadow committees**, **pursuit of leadership roles in IMO committees**, and the **development of digital shadow committee platforms**. **Academic initiatives** such as the **proposed C.P. Srivastava Chair and Fellowships at WMU and IMLI** and the **establishment of the Indian Ocean Centre of Excellence for Sustainable Maritime Transport (IOCE-SMarT)** were presented as **long-term investments in knowledge and capacity-building** to consolidate **India's global maritime leadership**.

Shri Shyam Jaganathan highlighted an **important upcoming initiative—the establishment of a Section 8 entity**. He emphasized the **significance of this venture** and extended a **call to action** to all **eminent dignitaries, delegates, and members of the audience** to **actively participate in its development**. He specifically urged **collective support by contributing funds to the entity**, underscoring that such involvement would be **critical to ensuring its successful foundation and long-term sustainability**.

In conclusion, Shri Jagannathan framed **India's path as one defined by policy, partnership, and progress**, reinforcing that **India's engagement at the IMO is not merely about participation but about leadership, responsibility, and vision**. Through **economic growth, sustainable practices, technological adoption, and international collaboration**, **India is positioning itself as both a regional anchor and a global maritime leader**.

<u>Presentation on IMO Processes, India's Engagement and NAVIC Cell 2024 Initiatives by Shri A. Chaki, Dy. Chief Surveyor:</u>

Shri Aniruddha Chaki, Deputy Chief Surveyor cum Senior Deputy Director General (Technical) and Officer in Charge of International Cooperation at the Directorate General of Shipping, delivered a comprehensive presentation that set the foundation for the subsequent sessions of the workshop. His address focused on India's evolving maritime governance framework and its structured approach to engagement with the International Maritime Organization (IMO).

At the outset, Shri Chaki outlined the initiatives undertaken by the Ministry of Ports, Shipping and Waterways (MoPSW) through the establishment of the **NAVIC Cell** and the **ViBhaS Cell**. He elaborated on their genesis, mandate, and strategic relevance, emphasizing that these mechanisms were specifically designed to advance the objectives of the **Maritime Amrit Kaal Vision (MAKV)** and the **Maritime India Vision (MIV)**. By situating the two cells within the broader spectrum of India's maritime ambitions, he underscored their role in shaping the country's future engagement with global maritime governance.

He then highlighted the significance of **NAVIC 24: International Cooperation (IMO Matters)**, under which the current event was being organized. NAVIC 24, he explained, has been conceptualized to streamline India's participation at the IMO, ensuring structured, consistent, and effective representation at the international level.

Shri Chaki outlined several key initiatives being undertaken within NAVIC 24, categorized across short-term, medium-term, and long-term horizons. These include the posting of a **dedicated Technical Domain Representative at the IMO**, supported by **Specialist Professional Officers (SPOs)** and **Junior Professional Officers (JPOs)**, to strengthen institutional capacity and maintain a continuous Indian presence at the organization. He further mentioned the preparation of an **annual report** documenting India's participation, contributions, and positions at the IMO, which would serve as both a reference and a roadmap for future policy engagement. Additionally, he announced the initiative to establish an **India-sponsored Chair at the World Maritime University (WMU)**, thereby expanding India's influence and thought leadership within the global maritime academic and policy ecosystem.

To reinforce India's engagement at the IMO, Shri Chaki also introduced the concept of **IMO Shadow Committees**. He explained that these committees, designed to mirror the functioning of official IMO committees, would serve as preparatory and consultative bodies within India. A pivotal element of this framework is the **Shadow Committees Engagement Platform**, a digital tool being developed by the Directorate General of Shipping to bring together stakeholders from government, industry, and academia. This platform is intended to facilitate collaborative drafting of technical submissions, consolidation of national perspectives, and structured preparation of positions prior to IMO deliberations. Shri Chaki stressed that the portal would allow India to present well-prepared, data-driven, and consensus-based positions, thereby enhancing its credibility and influence in international maritime fora.

Through this detailed presentation, Shri Chaki not only laid the groundwork for the technical sessions that followed but also articulated a clear vision of India's maritime diplomacy. His address emphasized the integration of institutional mechanisms, technology-driven platforms, and forward-looking initiatives as the foundation for strengthening India's role in shaping global maritime governance.

Session 1: Marine Environment Protection and its Sub Committee:

Shri Rajeev Nayyer, President, IMEI(I) – Moderator

Wishing all a good afternoon, everyone here is in the panels and have been a part of shadow committee have their own expertise in their particular field. Because of time crunch there was no major introduction for the panelist.

Shri I.N.Bose, Advisor, The Great Eastern Shipping Company Pvt. Ltd.

The Moderator asked the first question to Mr. Indra Natha Bose, who has been an active participant in the International Maritime Organization (IMO) for the past three decades. In April this year, MEPC approved the NET ZERO FRAMEWORK TO DECARBONIZE BY OR AROUND 2050. The Moderator asked: in your view, what has been India's contribution in the development of this framework, including the impact assessment which was conducted?

The speaker began by expressing gratitude to the moderator and reflected on India's long-standing and active participation in IMO matters, particularly in relation to **greenhouse gas (GHG) emissions since 2008**, when the first working group was established to draft legislation for emission reduction. He noted that the journey has been complex and politically sensitive, as the discussions affect not only technical issues but also global economies and social structures.

With specific reference to the **Net Zero Framework initiated in 2021 with the participation of 174 countries**, it was underlined that the negotiations were deeply political in nature. India has been an active contributor through **correspondence groups, working groups, and MEPC sessions**, and has consistently ensured that all proposals are supported by detailed **impact assessment studies**. These studies are required before the adoption of any regulation to determine their effects on trade, economy, food security, and politics. India was part of the **steering committee of 20–22 countries and industry associations**, ensuring that assessments were properly carried out.

The impact assessment was divided into four major tasks:

1. **Literature Review** – carried out primarily by maritime universities.
2. **Impact on Ships** – undertaken by DNV.
3. **Impact on Freight and Trade Charges** – studied by UNCTAD.
4. **Impact Assessment Testing on Selected States** – performed by a U.S.-based maritime consultancy to provide practical insights beyond theoretical assumptions.

This process extended over a year, involving weekly and fortnightly submissions, and **India played a pivotal role from the technical perspective.** The results were reviewed in inter-ministerial meetings in India, where all relevant ministries provided feedback that shaped India's position. Elements of India's national policy, such as the target that **at least 5% of shipping fuel should be renewable by 2030**, significantly influenced discussions at MEPC 83.

The address recalled that before MEPC 82 and MEPC 83, the member states were divided into two blocs:

- One bloc supported a **levy on every ton of CO_2 emitted by ships**.
- The other bloc supported a **benchmark system**, under which ships emitting below a set level would not be taxed, while those exceeding the benchmark would face penalties.

At MEPC 82, **India submitted a compromise proposal**, which was later joined by Singapore with a similar solution. Singapore's proposal, however, generated more support as it benefited both blocs, and was consequently adopted, while India's was not. Nevertheless, at MEPC 83, India resubmitted its proposal, which, although not accepted, was **acknowledged at the global level as proof of India's constructive engagement.**

The legislative process at IMO was explained: once legislation is proposed, governments have six months to accept or reject it. Once accepted, it comes into force after a further 15 months. However, even after adoption, opposition from some countries often remains. In India, **inter-ministerial meetings are convened to evaluate whether a particular legislation benefits or disadvantages national interests.** While acknowledging that some solutions may not be perfect, the speaker emphasized India's pragmatic approach—supporting adoption where feasible and pursuing amendments when challenges arise. The final recommendation was that **India must continue to classify, analyse, and justify its stance at the inter-ministerial level before committing to international legislation.**

Inference: The intervention demonstrates that India's role at the IMO has moved from passive participation to **strategic influence**, particularly in shaping the GHG emission reduction framework. By playing a central role in technical assessments, submitting compromise proposals, and aligning national policies with global regulations, India is not only safeguarding its maritime and economic interests but also reinforcing its reputation as a **credible negotiator and policy influencer**. The repeated emphasis on inter-ministerial evaluation highlights India's commitment to ensuring that international obligations remain aligned with national priorities while balancing the demands of both developed and developing nations.

Shri N. Girish, Technical Export, IRS

The Moderator asked the second question to Shri N. Girish, inquiring: "What does this imply for fuels? Now that emissions will be taken into account, could you elaborate on the current status of the LCA guidelines?"

In response to a query regarding the implications for fuels and the status of the **Lifecycle Assessment (LCA) guidelines**, it was explained that the International Maritime Organization (IMO), under its GHG reduction strategy, has adopted a **lifecycle approach (Well-to-Wake)** for

fuel emissions. This approach accounts for all emissions from the stage of oil extraction and fuel production (Well-to-Tank) to the use of fuels onboard vessels (Tank-to-Wake). The lifecycle methodology ensures that both upstream and operational emissions are considered in evaluating the environmental footprint of maritime fuels.

The IMO adopted **LCA Guidelines in 2023**, in which India actively participated by providing inputs and feedback during the drafting process. Further refinements to these guidelines were initiated in 2024; however, the revised framework is still under development. These guidelines are expected to play a critical role in accurately calculating lifecycle emissions, assessing sustainability, and promoting transparency in reporting. **Fuel lifecycle labels** are also being introduced to provide complete information about each fuel's emission profile. At present, default values are being used as interim reference points, and a set of amended guidelines with more precise provisions is anticipated to be finalized by next year.

A key element of the framework is the requirement for **sustainability certification of fuels**. When procuring fuels, suppliers must provide certification—at least up to the bunkering stage—verifying their lifecycle compliance. While the Well-to-Tank portion of certification is to be carried out by recognized certification bodies, the Tank-to-Wake assessment will be guided by the IMO framework. International sustainability schemes such as **ISCC certification** are expected to serve as benchmarks for verifying compliance. This system will help vessels obtain credible certification, thereby ensuring accountability and promoting sustainable fuel usage in the maritime sector.

Inference: From these developments, it can be inferred that the future of maritime fuels will be increasingly dependent on **transparent certification schemes and robust lifecycle analysis**. By making sustainability certification mandatory, the IMO is signalling a decisive shift towards stricter monitoring of upstream and downstream emissions. This will not only compel fuel producers to adopt greener practices but will also empower ship operators to make informed decisions, thereby aligning industry practices with global decarbonization goals. For India, active participation in shaping and implementing these guidelines offers both an opportunity to influence global standards and a responsibility to prepare its fuel supply chain for the transition to certified sustainable fuels.

Shri Capt. B. Venkat, GM Environmental Compliance, Anglo Eastern Marine Services

The Moderator asked the third question: "What are the short-term measures currently being implemented as substitutes for the future measures mentioned by Shri N. Girish?"

The discussion addressed the **short-term measures on greenhouse gas (GHG) emissions**, which came into effect on **1 January 2023**. It was noted that the **first phase of the review** has just been completed. These measures include the **Energy Efficiency Existing Ship Index (EEXI)** for design, the **Carbon Intensity Indicator (CII)** for operations, and **CIP 3** (an enhanced index). Collectively, these frameworks have had a significant impact on the shipping industry.

During Phase 1, India undertook a detailed analysis of the impact of these measures on vessels and

submitted papers highlighting concerns. It was observed that the CII framework had certain flaws, particularly related to the operational efficiency index, necessitating corrections. These corrections were incorporated and assessed during the first phase, with reporting aligned to real-world operational data. Importantly, the **first verified dataset will only become available in 2027, under Phase 2**, when additional corrective measures are expected. At present, the CII is not fully applicable.

A key expectation is that moving forward, there will be **two distinct legislations**: one addressing the **GHG intensity of fuels**, and another dealing with the **operational energy efficiency of vessels**. This would allow the CII to evolve into a **purely energy-based index**. In Phase 1, correction factors—such as fuel consumed during port stays and manoeuvring—were reviewed, and future frameworks may exclude these from calculations, focusing solely on **voyage-related emissions at sea**. While no substantial changes are expected immediately after Phase 1, **Phase 2 is anticipated to bring significant reforms, possibly eliminating benefits that certain vessels enjoyed under Phase 1.** By 2030, the sector is expected to face much **stricter enforcement measures** with stronger global compliance obligations.

The discussion also touched upon the **expansion of Emission Control Areas (ECAs)**. The **Mediterranean ECA came into force on 1 May 2025**, while the **Norwegian and Canadian ECAs are scheduled to be implemented from 1 March 2026**. Additionally, a **North-East Atlantic ECA** is in preparation. These expansions will significantly increase the areas of global maritime activity subject to stricter sulphur and emission controls.

With regard to **Exhaust Gas Cleaning Systems (scrubbers)**, it was noted that the IMO's Pollution Prevention and Response (PPR) Sub-Committee has actively debated the matter, particularly at **PPR 12**. The discussions have centred around two main aspects:

1. **Risk assessment** of scrubber operations.
2. **Disposal of residues** generated by scrubbers.

Two additional issues—potential legislation and the development of a global database of substances—are still under discussion, as diverging views among member states have prevented consensus.

Inference: The review of short-term measures and the ongoing expansion of ECAs suggest that the maritime industry is on a clear trajectory towards **tighter environmental regulations and higher compliance standards**. The anticipated bifurcation of legislation into fuel-related GHG intensity and vessel operational efficiency represents a major structural shift in IMO's regulatory approach. For India, the active participation in reviews, submission of technical papers, and advocacy for realistic correction factors demonstrate its role as a proactive voice in shaping future frameworks. This forward-looking approach also indicates that by 2030, compliance will not only demand technological adaptation but also strategic alignment of operations, pushing the global industry towards cleaner, more accountable shipping practices.

Shri Kunal Sharma, Senior Surveyor, IRS

The Moderator asked the fourth question to Kunal Sharma: "Managers today would like to understand how to comply with the new SEEMP and IMO DCS. Could you share your insights on this?"

On **1 August 2025**, the IMO adopted amendments to **MARPOL**, which introduce stricter requirements for **granular data reporting** by vessels. Earlier, ships were required to submit only aggregate fuel consumption data; however, under the revised framework, vessels must now report **fuel consumption per consumer category**. To achieve this, ships will be equipped with **dedicated flow meters** or use **bunker fuel tank monitoring systems**. If these primary methods are not available, vessels may rely on **secondary estimation methods**, such as calculation through subtraction, to meet compliance requirements.

Another significant change is that vessels must now report fuel consumption **even when not underway**, covering the period between the end of one sea passage and the start of the next. Additionally, ships are required to report on **annual shore power usage**, **transport work performed**, and **laden distance travelled**. All these requirements are consolidated in the **revised SEEMP (Ship Energy Efficiency Management Plan) Part II**. Consequently, by **1 January 2026**, all shipowners and managers must revise their **SEEMP Parts II and III** and submit them to their recognized organizations for approval.

In response to a query regarding pollution aspects beyond GHG emissions, it was noted that while the **MEPC is primarily focused on CO_2 and GHG measures**, considerable background work is being undertaken by the **Pollution Prevention and Response (PPR) Sub-Committee**. A key area of progress is in addressing **marine plastics**. At MEPC 2025, action was initiated to tackle this issue, beginning with short-term measures such as **mandatory reporting from all nations**. Medium-term actions include proposed **amendments to MARPOL Annex V** and the development of modules to identify and reduce marine plastics. Furthermore, discussions are underway on new guidelines to mitigate other forms of marine pollution, including **underwater radiated noise**.

Inference: The amendments to MARPOL signify a decisive shift towards **greater transparency and accountability in vessel operations**, reinforcing IMO's commitment to environmental sustainability. By mandating granular reporting, shore power usage, and SEEMP revisions, the new measures ensure that emissions and energy usage are closely monitored across all operational phases of a vessel's life cycle. Simultaneously, the focus on marine plastics and underwater noise indicates that the IMO is broadening its pollution-control agenda beyond GHG emissions. For India and other maritime nations, this dual focus underscores the need for both **technological readiness and proactive compliance** to remain aligned with evolving international standards.

Shri Mahesh Subramanian, Group Head, ESG and Projects, Anglo Eastern Marine Services

The Moderator asked the fifth question to Mahesh: "Could you provide your insights on Annex IV?"

The discussion first addressed the ongoing work of the **correspondence group on amendments to MARPOL Annex IV (sewage pollution)**. New rules and regulations are expected to be finalized by 2026 and formally adopted by 2028. One of the **major amendments** is the introduction of a **Sewage Management Plan** for vessels, along with the development of a **sewage record book**. India has been assigned the responsibility of coordinating this effort, based on its earlier contributions, and is actively leading the development of the record book template and related guidance documents. Approximately **80% of the technical work has been completed**, with only drafting and editing pending.

The amendments will also introduce a **responsible officer requirement** on vessels and aim to ensure compliance with **discharge standards**, which do not exist under the present regulations. Provisions are being designed for **onboard monitoring processes** and **testing of sewage systems once every five years** as part of ISPP certificate renewal. The regulations will clarify the applicability of these requirements to both new and existing ships. Additionally, the amendments emphasize **maintenance and proper record-keeping**, with logbooks and electronic record books expected to play an important role. These requirements will be subject to **Port State Control inspections**, ensuring uniform compliance.

It was stressed that **human factors and seafarer workload** must be taken into account during implementation. The input of industry stakeholders has proven valuable in ensuring that the requirements are practical and do not impose undue administrative burdens on crew members. The promotion of **electronic record books** was cited as an example of a practical measure to reduce workload and improve compliance.

The discussion then turned to the **Ballast Water Management Convention**. India has played an active role in shaping its evolution. Drawing from data under the **Paris MoU**, India submitted a **new format for ballast water record keeping**, identifying deficiencies in existing systems. This submission, supported by countries such as Australia and Canada, resulted in a **consolidated proposal for a new record book** and contributed to the development of guidance documents on **storage of treated sewage and grey water**.

India has also been proactive in addressing the issue of **challenging water qualities**, which directly affect the operability of ballast water treatment systems. A key objective has been to **prevent criminalization of seafarers** by shifting responsibility for non-compliance away from crews and onto system design and manufacturers. India has advocated for **transparent disclosure of system design limitations** on type-approval certificates, ensuring owners make informed choices and seafarers are not unfairly penalized when systems fail under certain conditions. These efforts continue under the current correspondence group and are expected to result in clearer safeguards and improved international guidance.

Inference: From the discussions, it is clear that India is playing a **leading and proactive role** in advancing both MARPOL Annex IV and the Ballast Water Management Convention. By combining technical contributions with strong advocacy for **human-centric and practical compliance measures**, India is shaping a regulatory environment that balances environmental protection with operational feasibility. The emphasis on **transparent system design limitations and safeguards against crew liability** highlights India's commitment not only to sustainability but also to protecting seafarers and ensuring fairness in international maritime regulation.

Shri J. Senthil Kumar, Engineer and Ship Surveyor, MMD Cochin

The Moderator asked the sixth question to Mr. Senthil: "Given that GHG is related to policy, do you think it should now be a sub-committee instead of an Inter-Session Working Group? What are your views on this?"

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Key Takeaways on Session 1:

India's engagement at the IMO has transitioned from passive participation to **strategic influence**, particularly in shaping the GHG emission reduction framework. Through active involvement in technical assessments, compromise proposals, and policy alignment, India has established itself as a **credible negotiator and policy influencer**. Inter-ministerial evaluations underscore its commitment to ensuring international obligations remain aligned with national priorities.

The future of maritime fuels is being shaped by **transparent certification schemes and lifecycle analysis**, with sustainability certification becoming central to IMO's decarbonization strategy. India's active role in these developments not only influences global standards but also prepares its fuel supply chain for the transition to certified sustainable fuels. The review of **short-term measures**, anticipated bifurcation of regulations into **fuel-related GHG intensity and vessel efficiency**, and the expansion of **Emission Control Areas (ECAs)** highlight a clear trajectory toward tighter compliance and cleaner shipping.

Further, **amendments to MARPOL** requiring granular fuel-use reporting, shore power monitoring, and SEEMP revisions reinforce transparency and accountability. Alongside, the IMO's attention to **marine plastics and underwater noise** expands the environmental agenda beyond GHG emissions. India's leadership in advancing **MARPOL Annex IV** and the **Ballast Water**

Management Convention demonstrates its dual commitment to environmental protection and operational feasibility, with strong advocacy for safeguards that protect seafarers and ensure fairness.

Conclusions on Session 1:

The discussions reaffirm that **India's proactive engagement in MEPC and its sub-committees** reflects a deliberate strategy to balance **environmental sustainability with practical implementation**. By shaping frameworks on GHG reduction, sustainable fuels, ballast water, and MARPOL amendments, India is contributing not only to regulatory innovation but also to protecting seafarers, ensuring compliance feasibility, and strengthening its global maritime leadership. This approach positions India as a forward-looking nation that seeks to institutionalize its influence at the IMO while championing both national interests and global environmental goals.

Session 2: Maritime Safety Committee and its Sub Committee:

Shri Sunil Kumar, GESCO – Moderator

Wishing all a good afternoon, everyone here is in the panels have been a part of shadow committee have their own expertise in their particular field. Because of time crunch there was no major introduction for the panelist.

Shri Capt. S. I. A. K. Azad, PO, DGS

The Moderator asked the first question to Capt. A K Azad: "The MSC discussed several critical issues, including safety measures, alternative fuels, the MASS code, and cyber security. From your perspective, how do these issues align with India's priorities, and what follow-up measures should be considered?"

The speaker began by clarifying his role as leader of the delegation, noting that much of the substantive work at IMO sessions is carried out by the core panel members who attend the full intersessional meetings. He acknowledged the extensive preparation undertaken by the delegation, which typically begins at least three months in advance, with papers compiled and coordinated to reflect India's position effectively.

Turning to current priorities, it was highlighted that **maritime security has gained heightened importance**, particularly in light of the **Red Sea crisis and geopolitical tensions involving Russia**. Another emerging area of focus is **cybersecurity risk management**, specifically addressing vulnerabilities in onboard systems and operations. In addition, the development of **safety standards for ships using alternative fuels and new technologies** has become a central concern, with work progressing through the IMO's subcommittees.

India has also been an **active participant in the development of the Code for Maritime Autonomous Surface Ships (MASS)**. The speaker expressed appreciation for the opportunity to contribute expert comments and emphasized India's role in shaping key aspects such as **remote operator certification**, which is expected to become a crucial regulatory element for autonomous ship operations.

Attention was also drawn to recent **major maritime incidents involving container ships**, where India made an important statement on the floor of the IMO. Despite the fact that most of the affected vessels were foreign-flagged and had few Indian seafarers onboard, India detailed the emergency assistance provided and stressed the need to improve **safety in the carriage of cargo, especially containers**. India committed to submitting a technical paper to the **Maritime Safety Committee (MSC)** based on ongoing investigations into these incidents, with one of the key inquiries led by an Indian investigator. The forthcoming paper is expected to address matters such as **firefighting mechanisms, disposal practices, and the safe handling of plastic pellets (nurdles)**, which present an increasing environmental and operational risk.

The speaker further noted that the IMO has designated the **Indian Navy's IFC-IOR (Information Fusion Centre – Indian Ocean Region)** as a contact point for maritime security matters,

reflecting India's active role in regional and global security coordination. While acknowledging India's strong contributions, he emphasized that there is **still considerable work ahead**, particularly as IMO discussions span a wide spectrum of technical, operational, and regulatory areas. He invited industry partners and volunteers to participate more actively in shadow committee meetings, thereby strengthening India's capacity to make substantive and impactful submissions in forthcoming IMO sessions.

Inference: The remarks highlight India's **strategic transition from being a participant to a proactive leader in maritime safety and security at the IMO**. By addressing issues ranging from cyber threats and alternative fuels to autonomous shipping and cargo safety, India is positioning itself at the forefront of shaping future regulatory frameworks. The repeated call for **greater industry involvement** underscores the recognition that effective international representation requires a **whole-of-industry approach**, combining technical expertise, operational experience, and regulatory advocacy. This inclusive strategy will allow India to broaden its influence and ensure that its submissions carry both technical depth and practical relevance in the evolving maritime landscape.

Shri Nebu Omen, Dy. CSS, DGS

The Moderator asked the second question to Nebu Ommen: "India's shadow committees bring together diverse stakeholders to prepare inputs for the IMO and for committees like III SSC, aiding in implementation. How do you see these committees becoming more active participants at the IMO?"

The speaker began by thanking the moderator and explained how **feedback is incorporated through shadow committee deliberations** in preparation for IMO's Maritime Safety Committee (MSC) meetings. He cited an example of a workshop conducted on **13 September 2023** in the same hall, held to prepare for MSC 109. That workshop focused on four key agenda items:

1. Development of the **Maritime Autonomous Surface Ships (MASS) Code**.
2. **Safety standards for alternative fuels** and their carriage on board.
3. **Cybersecurity risk management**.
4. **Piracy and armed robbery** at sea.

The purpose of the earlier workshop was to familiarize stakeholders with these key agenda areas and to invite broader participation in shadow committee discussions. It was emphasized that the **shadow committee mechanism is vital**, as it ensures that India's positions are informed by technical expertise and stakeholder perspectives.

India has been an **active participant in the development of the MASS Code**. Beginning with the scoping exercise, India contributed to evaluating how automation intersects with conventions such as the Load Line Convention. Subsequently, shipyards and research institutions also became

involved, exemplified by the participation of **Cochin Shipyard Limited and KPIT Technologies**, which developed a **hydrogen fuel cell ferry** as part of an R&D project. India submitted an **information paper** on this initiative and delivered a presentation at the IMO, highlighting its potential and lessons learned. This case demonstrated how **technological advancements can be translated into regulatory discussions** through active stakeholder input.

The speaker underscored that **information papers and data submissions form the foundation of regulatory development** at IMO, and that the pace of regulatory progress must align with technological innovation. Stakeholder engagement—including inputs from ship designers, shipyards, government agencies, and defense organizations—is essential for India to influence IMO's regulatory outcomes. He noted the valuable contributions of agencies such as the Ministry of Defence, particularly in areas related to automation, cybersecurity, and piracy prevention.

Looking ahead, it was highlighted that the **MASS Code is expected to be finalized by next year**. Initially, it will undergo a **three-year implementation phase**, after which it is projected to become **mandatory by 2032**. The speaker emphasized that India must prepare now to accommodate autonomous vessels, requiring close coordination between industry, regulators, and technology developers.

Important Point: The success of India's participation at the IMO relies heavily on **active stakeholder involvement in shadow committees**, ensuring that regulatory submissions are backed by data, expertise, and real-world experience.

Inference: From these remarks, it can be inferred that India recognizes the **strategic importance of aligning technological innovation with international regulation**. By emphasizing stakeholder participation and showcasing domestic innovation, India aims to position itself not just as a rule-taker but as a **rule-shaper at the IMO**. The forward-looking focus on MASS, cybersecurity, piracy, and alternative fuels highlights a vision where India's maritime sector is both technologically prepared and globally influential in defining the future of maritime safety and governance.

The Moderator asked the sixth question to Shri Nebu Ommen: "In your view, should the shadow committee focus more on reviewing papers or on building India's preparedness for the future? What practices do you think can help in shaping India's position?"

In response to the question, the speaker emphasized that while India has traditionally been a follower of international maritime regulations, it is now essential to remain **at par with technological advancements** and align regulatory participation with the pace of innovation. He

stressed the need to provide **data-driven inputs** to the IMO, particularly through the submission of information papers showcasing national initiatives in areas such as **autonomous ships, fuel safety, and automation technologies**.

As an example, he cited the **Cochin Shipyard hydrogen fuel cell ferry project**, which was presented at the IMO and subsequently drew considerable global attention and inquiries. He noted that several Indian institutions are already working on automation and related technologies, and

their work should be documented and submitted in the form of technical papers. Such submissions are crucial, as **regulatory development at the IMO begins with information papers**, which then progress into working groups, correspondence groups, and eventually result in the formulation of guidelines. Furthermore, submissions can also be used to propose **new outputs** for subcommittee consideration, thereby enabling India to directly influence regulatory development.

The speaker also highlighted India's growing **engagement with the IMO at multiple levels**. He referred to the leadership of past Indian representatives, including those who chaired significant bodies, and proudly noted recent achievements. India successfully chaired a **drafting group** in a recent session, and representatives such as **Commander Sandeep** have taken on key responsibilities, including serving as the coordinator of the **Ship Systems and Equipment (SSE) Sub-Committee Correspondence Group**. These roles demonstrate India's increasing recognition within the IMO framework.

Looking ahead, the speaker expressed the aspiration for India to secure even greater leadership roles within IMO bodies. With the establishment of a **Permanent Representative at the IMO**, India is targeting to **chair at least one IMO subcommittee within the next two years**, a milestone that would significantly enhance India's visibility and influence in global maritime governance.

Important Point: The submission of **data-backed information papers and active participation in shadow committees** are critical for India's ability to transition from a follower to a **leader in international regulatory development**.

Inference: The remarks make it clear that India's strategy is evolving towards **active leadership at the IMO**. By leveraging domestic technological advancements and showcasing them on the international stage, India seeks to position itself as a rule-shaper rather than a rule-taker. The focus on securing chairmanship roles within IMO subcommittees reflects a long-term vision to establish India as a central actor in global maritime policymaking. This shift highlights not only the country's technical capacity but also its ambition to play a decisive role in shaping the future regulatory framework of international shipping.

Capt. Mahesh Yadav, FOSMA

The Moderator asked the third question to Capt. Mahesh Yadav: "As you were closely involved with the Manila Amendments 2010, could you share your experience with the process, highlight the key changes, and explain how India contributed?"

The speaker began by recalling the background of the **STCW Convention (Standards of Training, Certification and Watchkeeping for Seafarers)**, first adopted in 1978. Prior to this, international conventions dealt extensively with ship safety and pollution, such as **SOLAS (1914)**, the **Collision Regulations**, the **Load Line Convention**, and the **OILPOL 1954 Convention** addressing oil pollution. However, there was no global convention addressing the **training, competence, and certification of seafarers**—the people operating these ships. The process of

developing the STCW Convention began under the leadership of India's own **Dr. C.P. Srivastava**, then Secretary-General of the IMO, marking a historic contribution from India to international maritime governance.

The **1978 STCW Convention**, a relatively short document of about 80 pages, was the first international framework to regulate seafarer training and competence. India played a direct role, with its **Nautical Advisor serving as Chairman of the working group on Chapter II (Nautical Department)**. This laid the foundation for a structured global system of seafarer competence.

A major **comprehensive revision took place in 1995**, expanding the convention to nearly 300 pages. This revision introduced the **goal-based approach**, requiring seafarers to demonstrate competence in performing specific tasks, supported by assessments and underpinning knowledge. India's participation in the 1995 process was strong, and the convention was adopted on **7 July 1995 in London**. At the time, there were widespread concerns in India about whether the country could comply with the new requirements and make it to the IMO "**white list**." Non-compliance would have jeopardized the employment of nearly 75% of Indian seafarers serving on foreign vessels. However, India rose to the challenge and became the **fourth country in the world** to submit its compliance documentation, securing its place on the white list and safeguarding the international acceptance of Indian seafarer certification.

The **2010 Manila Amendments** were less exhaustive than the 1995 revision but still introduced several significant changes. Preparatory work began in 2007, and the process continued through the **diplomatic conference in Manila from 21–25 June 2010**. Even in the final three months before the conference, new proposals were actively considered and resolved. The resulting amendments were formally adopted on 25 June 2010, ensuring that training and certification standards evolved in line with the changing requirements of the global maritime industry.

Important Point: India's leadership in the drafting of STCW 1978, its timely compliance with STCW 1995, and its continued alignment with the Manila Amendments of 2010 demonstrate its

long-standing commitment to global maritime standards and safeguarding the employability of Indian seafarers.

Inference: From these remarks, it can be inferred that India's engagement with the STCW framework has been both **historic and strategic**. Beginning with Dr. C.P. Srivastava's leadership at IMO, India has consistently ensured that its seafarers remain globally competitive and employable by aligning national systems with international standards. The emphasis on early compliance and active participation highlights India's foresight in recognizing that **human capital is as critical to maritime governance as ships and technology.** This legacy positions India not only as a contributor to past reforms but also as a trusted partner in shaping the future of global seafarer training and certification.

Commander Sandeep Kumar, (Retd.), Sr. Principal Surveyor, IRS

The Moderator asked the fourth question to Commander Sandeep Kumar (Retd.): "The IMO is developing a non-mandatory MASS Code, with a mandatory version expected in the future. How do you see this discussion shaping the future of training, operations, and overall maritime practices from India's perspective? What is your thought process?"

Commander Sandeep Kumar addressed the question regarding the development of the IMO's **non-mandatory MASS (Maritime Autonomous Surface Ships) Code**, with the prospect of transitioning towards a **mandatory code in the future**. He outlined India's participation and perspectives in two parts: India's role in the development process, and its national approach to future implementation.

India has been actively engaged in the **regulatory scoping exercise**, which was designed to identify gaps between existing international conventions and the requirements of autonomous ships. This exercise, completed by **MSC 105**, initially considered the development of a mandatory MASS Code but later decided to introduce a **non-mandatory code under an "experience-building phase"**. This phase would allow real-world application on live vessels before transitioning into a mandatory framework.

Following this, India participated in both the **intersessional correspondence groups** and the **joint MSC–Legal Committee working groups on MASS**, ensuring that both technical safety and legal/facilitation aspects were concurrently addressed. Representation from India has been broad, including the Directorate General of Shipping, **design agencies such as Cochin Shipyard and Beta Shipyards**, academia, and classification societies such as **IRS**. This reflects a multi-stakeholder approach and underlines India's comprehensive engagement in shaping the regulatory environment.

At **MSC 109**, India made a significant contribution by proposing the reintroduction of the **concept of safety equivalence** between conventional ships and MASS. This proposal was well received and is expected to be further considered during the experience-building phase. At **MSC 110**,

substantial progress was made, with the finalisation of most chapters of the MASS Code. The draft currently comprises around **26 chapters**, structured into three main parts:

(i) Introduction,
(ii) General Principles, and
(iii) Goal-Based Requirements. Importantly, the MASS Code has been designed as a **goal-based, technology-agnostic framework**, providing flexibility for future innovations.

Looking ahead, the **roadmap for the MASS Code** foresees its adoption as a **non-mandatory instrument at MSC 111 in 2026**, followed by an **experience-building phase from 2026 to 2028**. Based on lessons learned, work on a **mandatory MASS Code is expected to begin in 2028** and continue for four years, with full implementation projected by **2032**.

Important Point: India's sustained participation in the scoping, drafting, and intersessional discussions highlights its **commitment to shaping the future of autonomous shipping**. Its proactive submissions, including the safety equivalence proposal, have positioned the country as a **key stakeholder in IMO's regulatory development process**.

Inference: From Commander Kumar's remarks, it can be inferred that India is strategically aligning itself not only with current regulatory processes but also with the **future trajectory of autonomous shipping governance**. By engaging early and contributing substantively, India is ensuring that its **maritime industry, training systems, and technological stakeholders are prepared for the era of MASS**. This foresight will be vital in safeguarding national interests, influencing international standards, and positioning India as a global leader in autonomous maritime operations.

Loknath Tripathi, Head Offshore Logistic Limited, Great ship India Limited

The Moderator asked the fifth question to Loknath Tripathy: "Cybersecurity has been evolving since its first discussion in 2017. How have these developments progressed over the years, and how has India responded to them?"

The speaker began by expressing gratitude for the opportunity to contribute to the discussion on **cybersecurity in the maritime domain**. He outlined the progression of IMO's work on cybersecurity, noting that the first guidelines were issued through **MSC Circular 428 in 2017**, which required integration of cybersecurity into the Safety Management Systems. At that stage, the emphasis was limited and did not gain substantial traction.

Subsequently, during **MSC 108**, a dedicated working group was established to refine and expand the earlier guidelines. The scope was widened to incorporate **functional elements, industry guidelines, international standards, and the concept of Unique Vessel Identification (UVI)**. India actively contributed to this drafting process, particularly in strengthening the resilience goals. The draft circular, refined between 2026 and 2027, is expected to be adopted in **2026**, establishing a more comprehensive framework.

The speaker emphasized that with the increasing reliance on digitalisation, **cybersecurity has become a critical enabler of trust**. Without robust cyber resilience, the benefits of digitalisation in shipping would be undermined. Several countries, including Brazil, Malaysia, and India, have submitted papers with recommendations. A significant point raised was the inclusion of **port facilities** within the cybersecurity framework, recognizing their integral role in overall maritime safety.

At **MSC 110**, discussions further evolved. The United States proposed the development of a **non-mandatory cybersecurity code**, while Turkey argued against embedding cybersecurity elements within ISPS Code section 3.19, instead recommending a **separate, dedicated framework** requiring specialized expertise. Given the divergence of views and limited participation, a final decision was deferred, with the matter referred to future sessions.

The deliberations concluded with a decision to establish a **goal-based, risk-assessment-driven cybersecurity code**, to be followed by an **experience-building phase** before any consideration of making it mandatory under SOLAS. India has been actively engaged in these developments, participating in drafting groups, preparing interventions, and drawing upon wide-ranging industry and stakeholder consultations.

Important Point: Cybersecurity is no longer peripheral but a **central component of maritime safety and security**, especially in the context of **Maritime Autonomous Surface Ships (MASS)** where operational data transmission and remote control are highly vulnerable to cyber threats.

Inference: From the discussion, it can be inferred that India views cybersecurity as a **strategic pillar of maritime governance**, linking it not only to vessel safety but also to port operations, trade facilitation, and emerging technologies. By ensuring active participation in IMO deliberations and engaging with industry stakeholders at home, India is preparing to shape the global regulatory landscape. This proactive stance demonstrates recognition that **cyber resilience is fundamental for the credibility, safety, and sustainability of future shipping operations**.

<u>Key Takeaways on Session 2:</u>

The discussions highlighted India's **strategic transition from participant to proactive leader** in maritime safety and security at the IMO. Key focus areas included **cybersecurity, MASS (Maritime Autonomous Surface Ships), alternative fuels, piracy, and cargo safety**, reflecting India's role in shaping future regulatory frameworks. The emphasis on **industry-wide involvement** underscored that effective international representation requires a whole-of-industry approach combining technical expertise, operational experience, and policy advocacy.

India's engagement with the **STCW framework** demonstrated a long-standing commitment to seafarer training and global employability, building on the legacy of Dr. C.P. Srivastava's leadership at the IMO. By ensuring early compliance and active participation, India reaffirmed that

human capital is central to maritime governance. Similarly, its proactive role in **cybersecurity and MASS governance** reflects a vision of aligning technological innovation with regulatory processes, preparing domestic industry and training systems for future operational realities.

Conclusions on Session 2:

The deliberations reaffirmed that **India's engagement at the MSC is evolving from compliance to leadership**. By contributing substantively to emerging areas like MASS and cybersecurity, showcasing domestic innovations, and advocating for human-centric frameworks under STCW, India is positioning itself as a **rule-shaper rather than a rule-taker**. This forward-looking approach not only safeguards national interests but also strengthens India's credibility as a global voice in maritime safety governance. The focus on securing **leadership and chairmanship roles in IMO sub-committees** reflects India's long-term ambition to institutionalize its influence and establish itself as a **central actor in shaping international maritime safety regulations**.

Session 3: Indian Port Association Session on India Maritime Week 2025:

The **Indian maritime sector** forms a **vital pillar** of the **nation's economic and strategic landscape**. It comprises **12 major ports** and **over 200 non-major ports**, with a **cumulative capacity of 2,762 MTPA** and **traffic of 1,594 MTPA**. **Coastal cargo movements** account for **165 MTPA**, while **more than 200 lighthouses**, including **75 being developed for tourism**, contribute to **maritime safety** and **cultural promotion**. The sector supports **over 18 lakh tourists annually** through **lighthouse tourism**. India also maintains **62 shipbuilding yards**, a **ship carrying capacity exceeding 16 million GRT**, and a **workforce of more than 3.2 lakh seafarers**. With **nearly 33% of the global ship recycling market** and **111 declared national waterways (29 operational)**, India has witnessed a **five-fold growth in cargo movement via inland waterways in the last decade**.

In the past decade, India's **maritime sector** has achieved **remarkable progress**. **Major port capacity** has expanded by **93%, from 873 MTPA to 1,681 MTPA**. The **ship carrying capacity** has increased by **28%**, while **Indian seafarer numbers** have risen by **152%**. **Cargo handled by national waterways** has grown by **403%**, and the **value of Public-Private Partnership (PPP) projects awarded** has **more than doubled**. Additionally, there has been a **1,300% increase in wind and solar power capacity at ports**, alongside a **57% growth in lighthouse tourism**. These figures collectively reflect **India's growing global maritime competitiveness** and **commitment to sustainable development**.

The sector's growth is reinforced by **flagship programs** and **transformative reforms**. Initiatives such as the **Sagarmala Program (port-led development)**, **Harit Sagar – Green Port Guidelines 2023**, and **Jal Marg Vikas Project (capacity augmentation of NW-1)** are central to enhancing **efficiency, sustainability, and connectivity**. **Digitization** through platforms like **NLP-Marine** and **ONOP** has streamlined **operational processes**. At the **policy level**, reforms include the **Major Port Authorities Act 2021**, **Marine Aids to Navigation Act 2021**, and the **Inland Vessels Act 2021**, replacing **colonial-era laws**. Further, **Parliament** has enacted the **Merchant Shipping Act 2025**, **Coastal Shipping Act 2025**, and **Indian Ports Act 2025**, providing a **modernized legal framework**. **Financial facilitation** has been bolstered through the **Maritime Development Fund**, **revised tariff guidelines**, and **incentives for shipbuilding under the Atmanirbhar Bharat initiative**.

Looking ahead, the sector is poised for **exponential growth over the next decade**. India's **vision** includes **quadrupling port capacity**, **transitioning to automated terminal operations**, **positioning itself among global leaders in shipping and shipbuilding**, and **becoming a hub for clean energy fuels such as hydrogen**. It also aims to **emerge as a leading cruise destination in the Asia-Pacific region**, achieve **12% modal share in coastal and inland water transport**, **expand ship recycling leadership**, and **develop a 5,000 km regional waterway grid**.

The **India Maritime Summit series** has illustrated the sector's **increasing scale of global engagement**. From the **inaugural edition in 2016**, through the **pandemic-era virtual summit in 2021**, to the **record-breaking 2023 edition**, India has attracted **significant international**

participation and **investment commitments**. The **cumulative investment value** has grown from **₹83,000 crore in 2016 to ₹8.36 lakh crore in 2023**, with **high conversion rates for MoUs into active projects**. The upcoming **India Maritime Week 2025**, envisioned as the **largest maritime event globally**, will feature **12 strategically designed events**, including **conferences on maritime decarbonization, women in maritime leadership, ports of the future, and maritime heritage**, thereby cementing **India's role as a central player in global maritime cooperation**.

Inference: The **overall trajectory** of the **Indian maritime sector** reflects a **dual focus on economic growth and sustainability**. The **government's emphasis** on **modern legal frameworks, digitalization, renewable energy, and skill development for seafarers** indicates a **forward-looking approach** that **balances competitiveness with environmental responsibility**. These **efforts collectively** suggest that **India is positioning itself not merely as a participant, but as a leader in shaping the global maritime order** in the **coming decades**.

Key Takeaways/ Highlights of the Workshop:

The workshop on **India's Engagement at the IMO** reflected a **collective vision of proactive and strategic leadership** in global maritime governance. Shri Rajeev Nayyer emphasized the **industry's role as a strategic partner**, aligning sustainability, innovation, and policy; Shri P.K. Mishra highlighted the **need for a permanent representative at IMO** and greater submission of technical papers to shift from reactive participation to **proactive influence**; Shri Sushil Mansingh Khopde stressed **structured mechanisms and international cooperation** through NAVIC and ViBhaS to institutionalize leadership; Capt. Azad called for **capacity-building, technical representation, and stakeholder integration** to strengthen maritime diplomacy. The Chief Guest outlined **nuclear propulsion as the next frontier**, urging India to combine technological strength, institutional capacity, and diplomacy to move from visibility to **influence at the IMO**. Shri Shyam Jagannathan linked maritime growth with **global leadership aspirations**, embedding **sustainability, digitalization, and inclusivity** while championing the Global South, and proposed a **Section 8 entity** for collaborative industry engagement. Shri Anirrudha Chaki presented forward-looking initiatives like **NAVIC 24** and the **Shadow Committees Engagement Platform**, reflecting a structured and digitally enabled approach.

The discussions underscored India's growing influence in **GHG emission reduction frameworks**, where through **technical assessments, compromise proposals, and inter-ministerial evaluations**, India has positioned itself as a **credible policy influencer** while ensuring international obligations align with national priorities. The future of maritime fuels was highlighted with a focus on **transparent certification schemes and lifecycle analysis**, placing **sustainability certification at the core of IMO's decarbonization strategy**, preparing India's fuel supply chain for certified green fuels. The review of **short-term measures**, anticipated bifurcation of regulations into **fuel-related GHG intensity and vessel efficiency**, and expansion of **Emission Control Areas (ECAs)** marked a clear trajectory toward **cleaner shipping and tighter compliance**.

Further, **amendments to MARPOL** mandating **granular fuel-use reporting, shore power monitoring, and SEEMP revisions** reinforced transparency and accountability, while the IMO's expanding agenda on **marine plastics and underwater noise** signaled a broad-based environmental focus. India's leadership in advancing **MARPOL Annex IV** and the **Ballast Water Management Convention** demonstrated its commitment to balance **environmental protection with operational feasibility**, with strong advocacy for **safeguards to protect seafarers**. On maritime safety, India has emerged as a proactive leader in **cybersecurity, MASS (Maritime Autonomous Surface Ships), alternative fuels, piracy, and cargo safety**, emphasizing that effective international representation requires a **whole-of-industry approach**.

India's long-standing engagement with the **STCW framework**, rooted in Dr. C.P. Srivastava's legacy, reaffirmed that **human capital remains central to maritime governance**, with early compliance ensuring global employability of Indian seafarers. By aligning **technological innovation with regulatory processes** and preparing training systems for future realities like

MASS and cybersecurity, India is shaping itself into a **rule-shaper rather than a rule-taker**. Overall, the workshop highlighted India's **dual focus on economic growth and sustainability**, driven by modern legal frameworks, digitalization, renewable energy, and **seafarer skill development**. Collectively, these efforts position India not merely as a participant but as a **leader in shaping the future global maritime order**, with a vision anchored in sustainability, inclusivity, innovation, and global influence at the IMO.

Conclusion/ End note of the Workshop:

In conclusion, the workshop reaffirmed that **India's engagement at the IMO is steadily evolving from participation to leadership**, with a strong resolve to transition into a **policy-shaping nation** in international maritime governance. By integrating **industry, government, and stakeholders** through structured mechanisms and long-term platforms such as **NAVIC and ViBhaS**, India seeks to establish itself as a **consistent and influential voice** at the global stage. In the **Marine Environment Protection Committee (MEPC)**, India demonstrated its commitment to balancing **environmental sustainability with practical implementation** by actively shaping frameworks on **GHG reduction, sustainable fuels, ballast water management, and MARPOL amendments**, while also ensuring **seafarer protection and compliance feasibility**. Simultaneously, at the **Maritime Safety Committee (MSC)**, India has moved beyond compliance to assume leadership in **MASS (Maritime Autonomous Surface Ships), cybersecurity, piracy, alternative fuels, and STCW frameworks**, reflecting its ambition to become a **rule-shaper rather than a rule-taker**. The emphasis on **technological innovation, inter-ministerial coordination, and industry participation** underscores India's strategy to align national priorities with international obligations while also championing the cause of the **Global South**. With a dual focus on **economic growth and sustainability**, supported by **modern legal frameworks, digitalization, renewable energy adoption, and skill development for seafarers**, India is positioning itself not merely as a participant but as a **credible, balanced, and forward-looking leader shaping the future of the global maritime order**.