

IACS

International Association
of Classification Societies

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DEDICATED TO MARITIME SAFETY AND TECHNICAL INNOVATION

IACS delivers a concrete platform for co-operation between classification societies

By Roberto P. Cazzulo, IACS Council Chair (2024-2025)





"IACS has maintained safety as its top priority, strengthening compliance with international regulations and improving classification rules for the benefit of all stakeholders."

Having completed my term as IACS Council Chair in December 2025, the time has come to review the achievements of IACS during my tenure. Once again, IACS has demonstrated the importance of working together in a rapidly evolving sector, characterised by numerous challenges and opportunities, all of which require a high level of commitment from everyone involved in IACS.

Co-operation within IACS has always been rooted in continuous improvement and technical excellence. In an era where technological innovation can sometimes lag and sometimes exceed regulations, IACS has maintained safety as its top priority, strengthening compliance with international regulations and improving classification rules for the benefit of all stakeholders.

Today, this focus extends well beyond traditional hull and machinery aspects and aligns with global environmental, social, and governance (ESG) principles, shaping the regulatory foundation for a safe, smart, and sustainable maritime industry. Striking a balance between these principles is essential as environmental challenges and technological advances are currently forcing the maritime industry to undergo one of its largest, fastest, and most profound transformations. IACS stands ready to support regulators and the industry, ensuring that progress toward decarbonisation and digitalisation is achieved safely, responsibly, and sustainably. Working together, we can deliver on the promise of truly green and smart maritime transport.

Environmental regulations have set the ambitious goal to reduce greenhouse gas emissions from international shipping to net zero by 2050, but there is not a single alternative which can replace traditional heavy fuel oil, diesel, liquified natural gas, or other fossil fuels in the quantities and distribution required for global shipping. Recognising these challenges, IACS' Safe Decarbonisation Panel is maintaining a neutral stance regarding the potential use of any type of alternative fuel, including methanol, hydrogen, ammonia and electric batteries, or LNG combined with carbon capture and storage. Looking to the future, IACS is also evaluating the significant potential of fourth-generation nuclear energy as a viable long-term option for decarbonising maritime transport.

IACS has presented several proposals supporting International Maritime Organization's (IMO) efforts to balance its decarbonisation agenda between environmental policy and safety, as well as providing its practical insight to the formulation of IMO's digitalisation strategy. These proposals have been co-sponsored by several flag States and industry organisations. Today, IMO's work program demonstrates a recognition of safety and the protection of environment in regulations currently under development, and the quick pace of technological advances in digitalisation.

KEY PRIORITIES

Meanwhile, IACS has continued its work on developing Unified Requirements, Recommendations and Guidelines on the safe use of alternative fuels to be incorporated into IMO regulations or classification rules adopted by each Member, avoiding any unnecessary duplication and possible inconsistencies. These include, for example, the IMO Guidelines on methanol and ammonia, the fuelling manifold for methanol/ethanol bunkering vessels, ammonia release mitigation systems, testing of tanks, piping,



valves and equipment for hydrogen fuel systems, stand-alone type C tanks for liquefied hydrogen storage, gas dispersion analysis and hazardous concentration criteria for ammonia detection alarms.

Digitalisation is also reshaping ships, offering significant potential for improving safety and efficiency. Through the new Safe Digital Transformation Panel, IACS has identified several priorities, including data quality, cybersecurity and predictive maintenance.

The application of onboard software systems relies heavily on the quality of the data collected; therefore, it is a priority to define standard criteria for data integrity, reliability and network latency. This opens the door to growing cyber threats, and it is why IACS has

developed Unified Requirements on cyber resilience of new ships and Guidelines for existing vessels, to establish a minimum set of cybersecurity controls as part of safety management systems. Both Resolutions must be widely implemented to prevent cyber risks.

Other priorities include the application of Artificial Intelligence, which can emulate intelligent tasks such as cognitive decision-making, but should not be a black box. IACS is also contributing to the development of the goal-based IMO Maritime Autonomous Surface Ship (MASS) Code. Adapting IMO conventions and national maritime laws to the MASS Code is a challenge and, although it is goal-based, some sections are highly prescriptive.

Considerable effort has also been invested in the multi-year project to modernise the IACS Common Structural Rules (CSR) for the construction of new oil tankers and bulk carriers, in accordance with the IMO Goal Based Standards. This project has included a thorough assessment of the implications of the proposed rule changes based on findings from satellite data, hindcast analyses and in-depth structural calculations. Thanks to these findings and by maintaining a close dialogue with industry, IACS hopes to be able to conclude this important task with unanimous support in the near future, ensuring that the IACS CSR continue to be consistently applied by all Members.

This Annual Review presents many other important insights, illustrating the most significant results of the excellent technical work carried out by IACS last year.

The human element is of paramount importance, and we have asked Working Groups to pay particular attention to that in developing new regulations, recommending the application of a human-centred approach from the earliest stages of the design process to prevent human error and risks to the safety of life at sea.

FINAL WORD

Looking back on my time in office, I would like to give my sincere thanks to the Chair and members of the General Policy Group, as well as to the members of all panels and working groups for their full commitment.

The Council plays a leading role in adopting high-level decisions, such as those relating to IACS' charter and membership criteria, as well as its strategy. The role of the Council Chair, assisted by the Secretary General, is to represent IACS in high-level relations with the industry and regulatory bodies, particularly the IMO, flag States and Port State Authorities, and the European Commission, as well as many other stakeholders, including insurers and international maritime industry associations. We have learnt much from them about the importance of continuously improving classification standards and supporting the development of international regulations.

In conclusion, IACS Members are supporters and leading advocates for continued investment in technical knowledge, skills, and capabilities that support a safer maritime industry in a transformative era shaped by the twin forces of digitalisation and decarbonisation. ■



About the author

Roberto Cazzulo graduated in civil engineering from the University of Genoa (Italy) in 1979. He joined RINA in 1981 within the R&D department then became manager of international affairs and deputy director of the Marine Division. In 2019 he retired from RINA and was then appointed Secretary General of Registro Italiano Navale, the RINA main shareholder. Since the '80s Roberto has represented IACS and the Italian Administration at the International Maritime Organization (IMO), chairing the joint MSC/MEPC working group on the Human Element and Formal Safety Assessment, and contributing to the development of the Goal Based Standards for new ship construction. He chaired the International Association of Classification Societies (IACS) in 2013-2014 when the Common Structural Rules for tankers and bulk carriers were adopted and submitted to the IMO for GBS verification. Roberto was elected IACS Council Chair for a two year term in July 2023.

MELDING TRADITION AND INNOVATION

IACS drives surveying excellence alongside support for the industry's transformation

By Robert Ashdown, IACS Secretary General



Despite the myriad changes and geopolitical developments in 2025, one constant remained: the accelerating drive for safety, sustainability and innovation across every facet of global shipping. This Annual Review captures a year in which the role of IACS has evolved. The Association now not only supports its Members in their traditional activities of design, construction and survey verification, but also assists them in their enhanced roles as active enablers of transformation in the face of digitalisation, decarbonisation and new technologies.

The overarching ethos of IACS remains clear: safer, cleaner shipping through robust, forward-looking technical standards, rigorous compliance verification and close engagement with our global partners. Over the past year, the collective work of the IACS membership has again illustrated how class can contribute uniquely to maritime safety and environmental protection, while embracing the opportunities and challenges presented by emerging technologies and fuels and helping the sector navigate the complexities that accompany rapid decarbonisation and digitalisation.

In 2025, IACS continued to advance its substantive and diverse work programme, keeping safety at its core while breaking new ground in areas ranging from digital surveys to a modernisation of the IACS Common Structural Rules (see pages 20-23). A landmark achievement this past year has been the consolidation of digital transformation as both a strategic priority and a practical reality for IACS and its Members. The tangible outputs emanating from IACS' newest panel on Safe Digital Transformation underline the Association's commitment to identifying and mitigating risks associated with digital technologies and to enabling utilisation, for example through the use of 3D models for the technical review of hull structural strength and integrity (see pages 38-41).

POWERING AHEAD

Meanwhile, technological change in propulsion and power systems continue to reshape the marine landscape. Alternative fuels and powertrains, including hydrogen, ammonia and advanced dual-fuel engines, carry enormous promise for reducing the carbon footprint of shipping, yet introduce new technical and safety considerations. IACS Members engaged extensively with industry and flag State Administrations to support the safe deployment of these technologies, contributing authoritative guidance and standards that aim to balance innovation with proven safety principles. The work of the IACS Safe Decarbonisation Panel on the use of ammonia and other innovative fuels on gas carriers and to resolve the 'one-ship, one-code' issue (see pages 32-34) is a microcosm of this broader challenge.

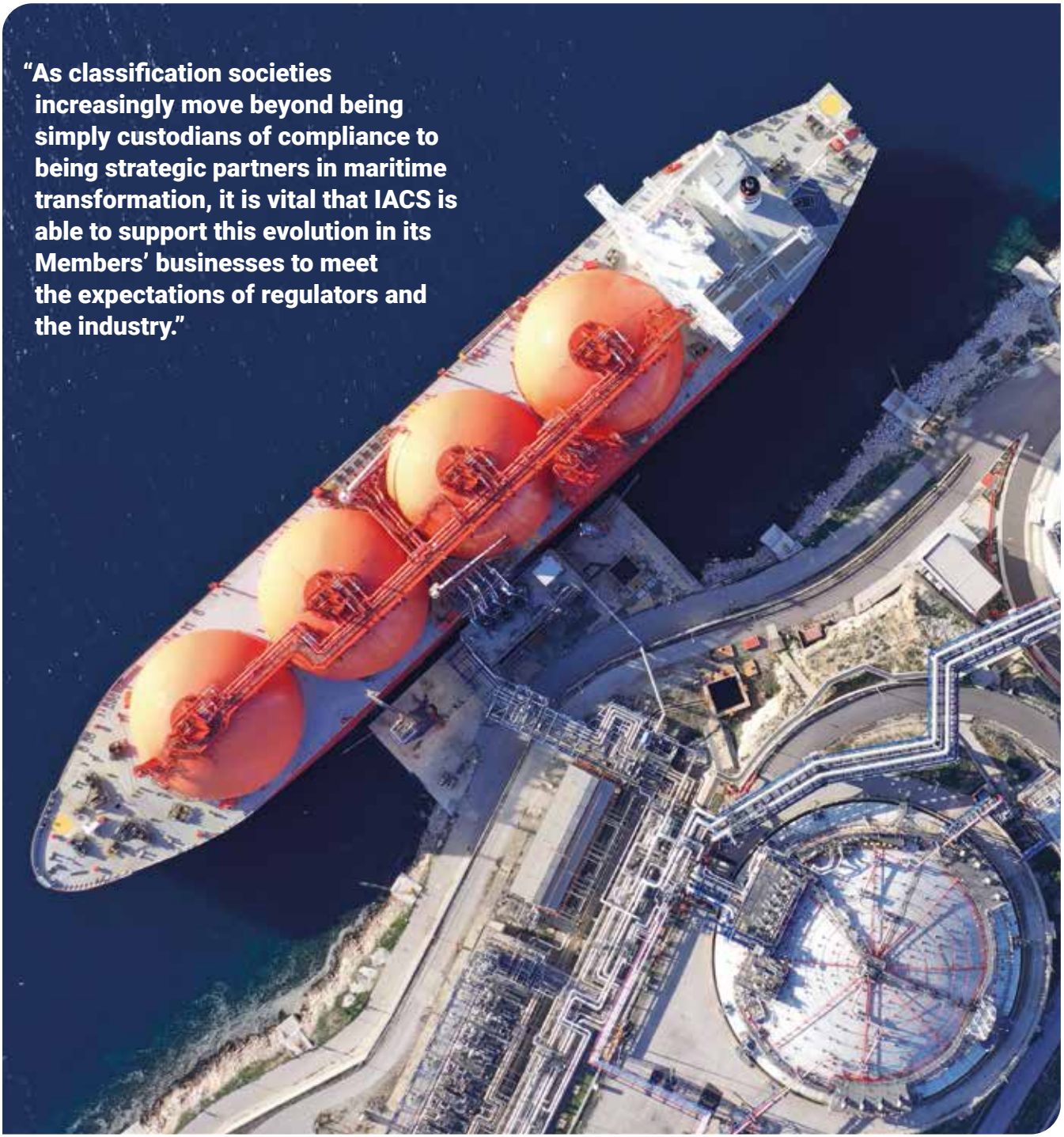
IACS' other Panels (its senior technical committees) are also actively responding to developments, such as the evolving balance between global and regional approaches to environmental governance in shipping (see pages 24-28) and the ongoing application of digital technologies in support of the survey regime.

Meanwhile, IACS is careful to maintain its focus on meeting the ongoing challenges that exist with conventional fuels, which will continue to power ships for years to come. Here, the Machinery Panel's work to address fires in ship machinery spaces by reinforcing fire safety standards is helping to safeguard lives, protect critical assets, and minimise environmental risks (see pages 29-31).

Yet even as the scope of classification expands, the human element remains central to IACS' work. Safety is not only about rules and technologies; it is about having well-trained, competent and committed people on board without whom the high standards set by IACS Members would be difficult to achieve. There is a complex interface between people and systems on board and IACS' core objective is to ensure that, starting with good design, people are not harmed, and that systems are not damaged by people or used in an unsafe, insecure or environmentally damaging way (see pages 52-53). In a similar vein, IACS Members place great importance on the safety of their surveyors. IACS' work in developing safety standards for their work and in developing a preventive culture where surveyors are empowered to exercise judgment and stop work when conditions are unsafe provides a helpful framework in this area (see pages 48-51).

As classification societies increasingly move beyond being simply custodians of compliance to being strategic partners in maritime transformation, it is vital that IACS, as the Association of the world's twelve leading classification societies, is able to support this evolution in its Members' businesses to meet the expectations of regulators and the industry. In doing so, IACS remains well placed to help shape the future of maritime transport while preserving the uncompromising safety standards on which the reputation of classification relies.

Another aspect vital to maintaining trust in IACS and its Members lies in our unstinting commitment to quality operations and to enforcing that through the IACS Quality System Certification Scheme (QSCS) – a comprehensive framework that ensures the


“As classification societies increasingly move beyond being simply custodians of compliance to being strategic partners in maritime transformation, it is vital that IACS is able to support this evolution in its Members’ businesses to meet the expectations of regulators and the industry.”

consistent application of quality standards across all Members. QSCS supports the effectiveness and continual improvement of Members' quality management systems, providing stakeholders with confidence that critical services are delivered in a controlled and reliable manner.

Alongside the independent auditing of IACS' Members by Accredited Certification Bodies and by the audits of flag State Administrations, IACS also welcomes the external holistic overview and assessment of the entire quality system (from the robustness of the standard to the effectiveness of the audits) that is undertaken by the International Quality Assessment Review Body (IQARB). IACS was pleased to see IQARB become a fully-functioning, legally constituted entity in 2025 and remains committed to its future growth and success.

WORKING TOGETHER

Partnership and engagement with the regulatory community remain fundamental to IACS' mission. IACS has maintained a strong presence at the International Maritime Organization (IMO), where we work collaboratively with Member States and stakeholders to support effective regulation and implementation. The scale of our commitment is reflected in the numbers, with IACS submitting 57 independent or joint submissions to IMO meetings held in 2025, and sending 231 experts to directly participate in IMO work. How IACS ensures this level of resource is leveraged efficiently and in the best interests of both IACS and the IMO is described in pages 60-63.

IACS also engages heavily with the European Union (see pages 64-67) and with other governments and flag State Administrations around the world, at both the political and technical levels, and remains willing to partner with any regulator of global shipping that is looking to advance maritime safety and the protection of the marine environment.

Looking forward, the work outlined in this Annual Review provides both a record of achievement and a roadmap for continued progress. The long-term nature of regulatory development combined with continual technical advancement means that many of IACS' major technical initiatives will carry into 2026 and beyond, alongside ongoing efforts to refine digital standards, strengthen quality performance, and support the transition to low- and zero-emission shipping.

In closing, I extend my sincere gratitude to the membership of IACS, our technical panels, the secretariat and all our partners for their dedication and collaboration. It is through these shared efforts that IACS continues to fulfil its mission — ensuring that classification meets the demands of a changing world while safeguarding the core principles of safety and environmental stewardship.

As we reflect on another year of progress, this Annual Review stands as a testament to our commitment to excellence and to the enduring value of classification in global maritime trade. ■



About the author

Robert Ashdown has been Secretary General of the International Association of Classification Societies (IACS) since May 2015. He directs the Association's activities and initiatives, including relationships with the IMO, Flag Administrations, the EU, other industry associations, and media.
Before joining IACS, Robert was Secretary General of the Cruise Lines International Association (CLIA) in Brussels, representing the cruise industry at the institutions of the European Union on all policy/regulatory issues and with responsibility for transitioning the traditional passenger ship representation model into the European Chapter of the global CLIA organisation.
Robert has also worked for the UK Chamber of Shipping; as Head of its Technical Division he recalibrated the importance of environmental issues and developed the Chamber policy on GHG emissions. He also led the British Rig Owners Association (BROA), representing owners with North Sea marine offshore units.
Additionally, Robert is a Governor of the World Maritime University, sits on the Board of the Green Award Foundation, and is a Trustee of Stella Maris UK, a seafarers welfare charity.



UPHOLDING SAFETY AT SEA

IACS' role in refining and redefining maritime safety and environmental standards

By Robert Ashdown, IACS Secretary General

The safety and environmental responsibility of 90% of the world's commercial fleet is underpinned by the rigorous technical standards of ship classification. Classification societies, as part of the International Association of Classification Societies (IACS), don't just set rules; they ensure the continuous refinement of these standards based on the entire lifecycle of a vessel. This ongoing cycle, which also informs and interprets international regulations like those from the International Maritime Organization (IMO) and the International Labour Organization (ILO), is vital for maintaining consistent safety and global trade.

The primary aim of ship classification is to ensure the structural strength and integrity of a vessel's hull and essential components, as well as the reliability of its propulsion, steering systems, power generation, and other critical systems necessary for safe operation.

Classification societies achieve this through their own Rules, developed from decades of research and industry experience, and through compliance checks with international and national statutory regulations on behalf of flag State Administrations. These standards apply to the majority of commercial vessels, with classification and statutory certification typically intertwined, especially for vessels governed by the International Convention on Load Lines and SOLAS (Safety of Life at Sea).

A classification certificate does not guarantee a vessel's safety, fitness, or seaworthiness. Rather, it serves as confirmation that the ship complies with the classification society's Rules at the time of the survey. It does not cover the vessel's operations or maintenance between inspections.

The onus for the safe operation of the vessel lies with the owners, operators, and the seafarers, who must ensure that proper maintenance is upheld to safeguard life at sea and protect the marine environment. Classification societies are not liable for ensuring a vessel's operational safety, nor do they control how a vessel is maintained outside their formal inspections. If any defects arise that could jeopardise a vessel's classification status, owners must promptly report them to the relevant society. On occasion, a Class Society may agree to impose a 'Condition of Class' (CoC) in order to control the deficiency for a specific period of time and to maintain the ship's classification status. CoC's are only agreed if it does not impair the safety of the vessel or if sufficient risk mitigation measures have been put in place. As such, CoCs provide a constructive contribution to the safety of shipping by allowing for operational contingencies to be considered whilst maintaining the safe operation of the ship. Where the conditions for the maintenance of class are not complied with, class may be suspended, withdrawn or revised to a different notation, as deemed appropriate by the society when it becomes aware of the condition.

RULES AND INTERNATIONAL STANDARDS

The foundation of effective classification lies in a thorough understanding of internationally accepted technical requirements for ships and other maritime structures. As part of IACS, the 12 Member societies are actively involved in shaping these standards, particularly through their advisory role to the International Maritime Organization (IMO). This partnership grants direct access to the development of international regulatory frameworks, enabling IACS Members to disseminate these standards and ensure uniform compliance across the maritime industry.

"IACS' role extends beyond mere rule-setting; it ensures the continuous refinement of classification systems based on feedback from the entire lifecycle of a vessel"

IACS' role extends beyond mere rule-setting; it ensures the continuous refinement of classification systems based on feedback from the entire lifecycle of a vessel – from design and construction to operational surveys. These insights help improve classification rules, making them more responsive to evolving safety and environmental standards. The process of gathering feedback during the design, construction, and in-service periods creates an invaluable cycle that continuously improves classification standards, fostering greater safety and environmental stewardship in the global shipping industry. Utilising the opportunities afforded by this 'class cycle' *(Figure 1)*, in support of the purposes and objectives of classification is a key element of IACS' work.

Statutory requirements, often developed by the IMO and the ILO, aim to harmonise global trade while ensuring the safety and environmental responsibility of ships. These rules are designed with a principle of 'no more favourable treatment', ensuring that a vessel compliant with one flag State Administration's regulations can freely trade worldwide without additional burdens. To assist with this global uniformity, IACS creates Unified Interpretations (UIs), which resolve ambiguities in the application of these standards, ensuring consistent interpretation across jurisdictions.

SUPPORTING SAFETY AND ENVIRONMENTAL PROTECTION

In its role, IACS not only sets technical standards but also assists international regulatory bodies in shaping statutory regulations that govern ship design, maintenance, and environmental protections. Its work ensures that safety standards are not only met but continually improved, providing a platform for innovative technologies and solutions that further advance the maritime industry's sustainability and safety.

The value IACS brings to the regulatory process is built upon four core principles:

- **Leadership:** IACS stays ahead of emerging trends, collaborating with regulators and industry stakeholders to promote safety, environmental protection, and sustainability.
- **Technical expertise:** The collective knowledge of IACS members drives the development of rules and standards that keep pace with technological advancements and changing societal needs.
- **Commitment to quality:** IACS is dedicated to upholding the highest global standards in maritime safety and operational performance.
- **Transparency:** IACS works to clarify and improve regulations, offering practical solutions and fostering trust between stakeholders and the classification process.

IACS also engages bilaterally with individual flag State Administrations and regulatory bodies as required. Regionally, IACS is active across all key maritime hubs and maintains continuous engagement with regulatory bodies, including the EU, where it contributes to technical regulatory discussions. ■

Scan this QR code to watch a video introduction to IACS
www.iacs.org.uk/about-us/introduction-to-iacs

Figure 1: The class cycle



TRUSTED TECHNICAL KNOW-HOW



IACS continues to call on its expertise to underpin a safe shipping industry

By Ajay Asok Kumar, Chair, General Policy Group

In 2025, IACS made significant progress in advancing its mission to improve safety at sea and to prevent marine pollution through several technical publications covering various work streams, including digitalisation, decarbonisation, materials and welding, machinery installations, safety and environmental.

Over the year IACS adopted 78 new or revised Resolutions and Recommendations for implementation and application by its Member classification societies. This comprised 42 Unified Requirements, 14 Unified Interpretations, 4 Procedural Requirements and 18 Recommendations.

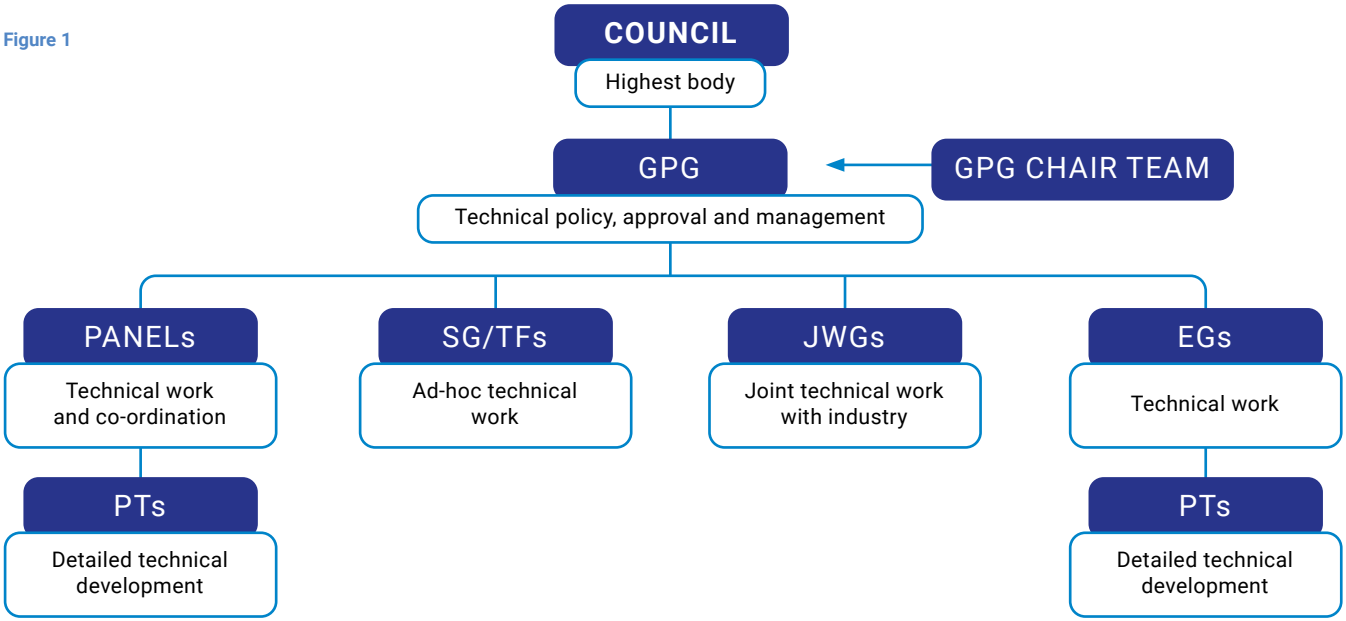
IACS publications in 2025 included UR M87 on Certification Scheme for Reciprocating Internal Combustion Engines, UR M88 on Shipboard Trials of Reciprocating Internal Combustion Engines, Rec.182 on Offshore Power Supply, Rec.183 on Ship Data Quality, Rec.184 on Guidelines on Safety Standards for Work, Rec.186 on Additively Manufactured Metallic Parts for Marine and Offshore Applications, Rec.192 on Guidelines to Address Human Element Issues, and Rec.194 on Cybersecurity Controls for Existing Ships. For more details, please see the *IACS Publications* section of this Annual Review. Other articles in this Annual Review provide a more detailed overview of some of the significant work carried out by various IACS working groups.

WELDING RULES UPDATE

In addition to the technical work items detailed in the *IACS Technical Work* section, IACS' work to update welding URs to align with high heat input welding requirements for marine and offshore structures – with feedback from steel manufacturers, shipyards, and classification society Members – was a significant achievement in 2025.

The updated UR W28 on Welding Procedure Qualification Tests of Steels for Hull Construction and Marine Structures aligns welding procedure qualification requirements with international standards such as ISO 15614-1 and AWS D1.1/D1.1M, ensuring global applicability and improved harmonisation with industry best practices.

Figure 1



Note: SG – Small Group, TF – Task Force, JWG – Joint Working Group, EG – Expert Group, PT – Project Team. All the above groups are supported by the Permanent Secretariat. For details, please refer to the IACS Organisation section of this Review.

The number of IACS papers submitted to IMO/IACS Representatives for its meetings held in 2025:				
IMO Event	Number of IACS Papers	Number of co-sponsored papers	Total number of IACS Papers	Number of IACS representatives
SDC 11	12	0	12	28
PPR 12	0	1	1	9
HTW 11	0	0	0	7
SSE 11	11	4	15	24
FAL 49	1	1	2	7
LEG 112	0	0	0	2
MEPC 83	1	0	1	36
NCSR 12	0	1	1	9
MSC 110	3	12	15	28
C 134	0	0	0	4
III 11	0	0	0	10
CCC 11	7	1	8	31
MEPC ES.2	2	0	2	25
C 135	0	0	0	3
A 34	0	0	0	5
C 136	0	0	0	3
Total	**37**	**20**	**57**	**231**

The revised document also ensures consistency with other IACS URs, including UR W11 (Normal and Higher Strength Hull Structural Steels), UR W16 (High Strength Steels for Welded Structures), UR W23 (Approval of Welding Consumables for High Strength Steels for Welded Structures), and UR W31 (YP47 Steels and Brittle Crack Arrest Steels). The new revision introduces an explicit definition of high heat input welding, expressed in terms of energy input per unit length (kJ/cm), ensuring better control over welding conditions.

The qualification range for welding procedures has been revised to provide clear guidance on applicable base metals, welding consumables, and welding positions. The revised UR also includes updated provisions for post-weld heat treatment, ensuring that procedures remain compatible with new steel grades and their mechanical properties.

Also, the new Annex E in UR W28 introduces specific provisions for welding procedure qualification tests using plates with approved high heat input grade notation, ensuring that welding procedures are tested under controlled and approved conditions. UR W11 and UR W16 also introduce an optional manufacturing approval scheme for steels intended for high heat input welding, providing manufacturers with the possibility to certify their steels specifically for such applications.

NEW REC SUPPORTS ONSHORE POWER SUPPLY SYSTEMS

Recognising the critical role of Onshore Power Supply (OPS) in achieving global decarbonisation targets, in early 2025, IACS published Recommendation 182, a comprehensive framework to support the effective adoption of OPS systems. This recommendation provides detailed guidance for ship designers, builders, operators, and owners on integrating OPS systems into both newbuilds and retrofits, while addressing the technical and operational challenges associated with its implementation. This initiative not only aligns with the industry's environmental and safety objectives but also supports the International Maritime Organization's (IMO)

MSC.1/Circ.1675 – Interim Guidelines on the Safe Operation of Onshore Power Supply (OPS) Service in Port for Ships Engaged on International Voyages. By emphasising interoperability, safety, and efficiency, it aims to ensure a seamless integration and adoption of this technology.

This Recommendation addresses a long-standing need for standardised guidance to support the adoption of OPS systems, as voiced by maritime stakeholders. By aligning with the industry's overarching goal of reducing ship-related pollution and enhancing operational safety, IACS aims to contribute to the development of sustainable ports and better shipping practices.

Available at **www.iacs.org.uk/**, this Recommendation serves as a critical resource for all stakeholders, including shipyards undertaking vessel retrofits, designers creating future-ready ships, and operators working to meet regulatory and environmental objectives.

IACS POSITION PAPERS

IACS issues and regularly reviews its Position Papers on key topics for the industry which provide background to subject matters, IACS' position on the subject and a summary of actions that IACS has taken. Last year, four IACS Position Papers were newly developed or revised, covering hot issues such as nuclear propulsion, developing and implementing technical measures to reduce GHG, container ship safety, and underwater noise pollution.

Meanwhile, to support IMO in its development, implementation and interpretation of statutory regulations, IACS also put considerable resources into



IACS Position Papers revised/developed in 2025:	
Position Papers	**New/Revision**
Developing and implementing technical measures to reduce GHG emissions from ships	Revision
Underwater Noise Pollution	Revision
Nuclear Propulsion	New

Note: Position Papers can be found on the IACS website at www.iacs.org.uk/about-us/position-papers

A selection of IACS papers submitted to IMO in 2024 and their outcomes		
IACS Paper	**IACS Paper**	**Outcome at IMO**
SDC 11/6/1	Proposed revision of MSC.1/Circ.1502 'Guidance on Pressure Testing of Boundaries of Cargo Oil Tanks under Direction of the Master' to reflect changes introduced in the 2011 ESP Code by Resolution MSC.525(106)	Agreed
SSE 11/10/5*	Draft unified interpretation on the factual statement for test and thorough examination of non-certified lifting appliances	Agreed
SSE 11/17/1*	Proposal to include the output "Revision of the Revised guidelines for the maintenance and inspections of fixed carbon dioxide fire-extinguishing systems (MSC.1/Circ.1318/Rev.1) to clarify the testing and inspection provisions for CO2 cylinders" in the provisional agenda for SSE 12	Agreed
MSC 110/3/5*	Comments on Amendments to mandatory safety instruments to be adopted by MSC 110.	Agreed
MSC 110/14/3	Comments on document MSC 110/14/1 (LSA Code application provisions)	Agreed with minor changes
CCC 11/9/3	Proposed revised interpretation of the IGC Code, related to the secondary barrier testing and effectiveness assessment	Agreed
**Joint submission*		

planning, discussing, drafting and submitting up to 57 independent or joint submissions to IMO meetings held in 2025, and sent 231 experts to attend IMO meetings as well as its Working Groups, Drafting Groups and Correspondence Groups.

Through regular policy and technical level meetings, joint working groups and liaisons, IACS also continues to be in close co-operation with other intergovernmental bodies, including ILO, EU, Paris MoU, Tokyo MoU, and IOMoU; international industry associations such as ICS, BIMCO, INTERTANKO, INTERCARGO, OCIMF, ASEF, and IUMI; and international standard bodies such as ISO.

At an EU level, IACS is actively engaged in and contributing to Expert Groups, including the European Sustainable Shipping Forum (ESSF), the Passenger Ship Safety Expert Group, the Marine Equipment Directive Expert Group and the Stakeholders Advisory Group on Maritime Security.

With industry, IACS leads several Joint Industry Working Groups, such as the JIWG on Future Proofing the Maritime Safety Regime which addresses the opportunities and risks associated with the deployment of complex novel technology on board ships in the context of the existing SOLAS survey and certification regime, and, as mentioned previously, the JIWGs on Safe Decarbonisation, Safe Digital Transformation and MASS. For more details, please see the *International and Inter-industry Relations* section of this Annual Review.

LARGE POOL OF TECHNICAL EXPERTS

To achieve all of the above, IACS calls on its seven dedicated Panels, seven Expert Groups, a couple of specialised ad-hoc small groups and 42 Project Teams, which form the foundation of IACS' technical achievements. Only the work of the Panel chairs, secretaries, and Project Team managers and members fall within IACS' technical budget; the work of all Panel members, Expert Group chairs and



"IACS put a considerable amount of resources into planning, discussing, drafting and submitting up to 57 independent or joint submissions to IMO meetings in 2025"

members, and other Small Groups, Task Forces and Joint Working Groups, as well as IACS representatives to external meetings and events, are not covered by IACS's technical budget. The following budgeted man-days – a small portion of the total technical labour involved – indicate the scale of IACS' technical work:

Budgeted Personnel	Working Days
Chairs and Secretaries of 7 Panels	2,892
Managers and Members of 42 Project Teams	3,905

In summary, last year IACS made strong progress in advancing its technical work programme, delivering practical and meaningful outcomes that respond to the evolving needs of its stakeholders and reaffirming IACS' role as a technical leader for the global maritime industry. Guided by the six-year long-term strategy adopted in 2022, centred on ship strength, safe decarbonisation, digitalisation and the human element, and supported by a robust governance and technical framework, IACS is well positioned to continue delivering relevant, high-quality technical outputs in 2026 and beyond. ■



About the author

Dr. Ajay Asok Kumar holds a Bachelor's Degree in Naval Architecture and Ship Building from Cochin University of Science and Technology, India and Master's and Doctoral Degrees in Environmental and Ocean Engineering from University of Tokyo, Japan. He has held various positions at ClassNK in Japan as Manager of External Affairs Department, Senior Ship Surveyor, Management Systems Auditor and Plan Approval Engineer. He was a member of General Policy Group (GPG) Chair Team in IACS Secretariat, London, before being elected as Chair of GPG from July 2024.

TECHNOLOGICAL ADVANCEMENTS THAT COMPLEMENT SAFETY

An update to the Common Structural Rules that blend technological progression with industry engagement

By Hyungmin Cho, IACS Hull Panel Chair



IACS has embarked on a modernisation of the Common Structural Rules for Bulk Carriers and Oil Tankers (CSR BC & OT) through the comprehensive update of IACS Recommendation No.34 (Rec.34), which defines the wave scatter diagram representing sea state statistics encountered by ships operating in the North Atlantic. This reflects IACS' commitment to integrating the latest scientific methodologies and ensuring that the structural requirements of a ship are at the forefront of safety and technical developments.

The revised Rec.34 Rev.2 was finalised and published in December 2022, marking a pivotal transition from the outdated 1970s visual observation data to advanced hindcast wave data combined with global ship AIS positioning data. This improvement represented one of the most significant technological leaps in the foundation of ship structural rules, ensuring that modern vessels are designed for the environmental conditions they actually encounter.

In November 2023, IACS submitted an extensive audit package for Rec.34 Rev.2 to the IMO, calling for an independent Goal Based Standards (GBS) audit to address the use of outdated wave data used in CSR BC & OT which had been identified in the previous IMO GBS audit in 2016. The resulting audit report, completed in September 2024, recommended further technical refinements with enhanced transparency and stakeholder engagement. Subsequently, in December 2024 the Maritime Safety Committee (MSC 109) endorsed the recommendations and invited IACS to address the remaining technical considerations through close co-operation with the industry.

CHAIN OF IMPROVEMENT

From 2023 to 2025, IACS has systematically advanced the revisions of CSR BC & OT, incorporating enhanced wave load formulations derived from Rec.34 Rev.2.

In 2023, IACS initiated the revisions in CSR BC & OT based on Rec.34 Rev.2 by forming two dedicated Project Teams – one for developing the new wave load methodology and another for conducting Consequence Assessment (CA). Industry understanding and the review of Rec.34 Rev.2 were strengthened through key technical workshops, including the 6th External Advisory Group (EAG) meeting, an extraordinary CSR Workshop and Tripartite in 2023.

In 2024, draft CSR BC & OT revisions applying Rec.34 Rev.2 were developed and preliminary CA results were shared with industry. Engagement was strengthened through key activities including a special session at MSC 109, an IACS/ Industry Technical Meeting, Tripartite 2024, and a CSR webinar, with feedback actively incorporated in preparation for the revision in CSR BC & OT.

These extensive industry consultations were conducted in 2025, with the draft CSR BC & OT Rule Change Proposals (RCPs) presented at the 7th EAG meeting to representatives from industries with IACS committed to transparent communication throughout the revision process.

The ongoing update of IACS CSR BC & OT represents an integration of cutting-edge technology with industry expertise, ensuring structural rules that are both scientifically advanced and practically implementable.

BUILDING TRUST THROUGH DIALOGUE

Recognising that successful implementation of advanced structural rules requires not only scientific accuracy but also industry understanding and acceptance, IACS conducted an unprecedented series of engagements throughout 2025. Each meeting was strategically co-ordinated to gather specific feedback, address targeted concerns, and ensure that industry experts were well informed of IACS' technical development process.

Key engagement activities included an EAG Meeting in January 2025 where the draft CSR BC & OT RCPs based on Rec.34 Rev.2 were presented alongside a detailed timeline for CSR BC & OT development. At that meeting, industry experts expressed concerns over the extension of the North Atlantic zone in Rec.34 Rev.2, and the anticipated substantial increase in hull girder wave loads, which could result in unnecessary increases and/ or decreases in scantling of the current design of CSR vessels. IACS responded with a proposal to update Rec.34 to provide more detailed technical background to explain the statistical modelling and the assumptions behind the AIS synchronisation. Further, IACS also clarified that vessels for CA will be selected from CSR BC & OT compliant vessels to evaluate the effects of new wave loads and the CA results would be shared with industry.

Another key engagement in 2025 were two meetings with the Union of Greek Shipowners in March and June 2025. The two meetings aimed to align industry perspectives with the ongoing CSR revision and the integration of wave loads from



7th EAG Meeting in Tokyo

Rec.34 Rev.2. IACS provided detailed explanations, highlighting that the new rule changes would substantially increase hull girder strength requirements compared with the current CSR BC & OT. While industry participants appreciated the transparent dialogue, they reiterated their need to review the finalised CA results.

A third key event in 2025, a panel debate at the IMAM 2025 Conference in October 2025, highlighted the technical superiority of Rec.34 Rev.2, driven by its foundation on modern, validated hindcast data replacing obsolete 1970s observations. A discussion there focused on the necessary removal of artificial calibration factors (e.g., the 0.85 operational factor in UR S11A) embedded in Rev.1, which are now obsolete and complicate direct rule transitions. While industry representatives acknowledged the superior quality of Rev.2 data, they emphasised that adoption should follow a transparent CA for representative ship types and urged full procedural updates and clarity before the publication of the revised CSR BC & OT. IACS addressed these concerns by committing to the comprehensive CA, thereby establishing transparent criteria for revising the rules.

WAY FORWARD

IACS' engagements with industry in 2025 demonstrate IACS' commitment to developing CSR BC & OT rules that seamlessly integrate technological advancement with industry expertise. Through systematic consultation and feedback incorporation, the revised RCPs will reflect both the latest scientific developments and wisdom on practical implementation from the maritime industry.

The ongoing CA work will provide the comprehensive validation that industry stakeholders have requested, ensuring that technological advancement complements safety enhancement rather than compromising established standards.

The 8th EAG meeting, due to be organised in June 2026, will serve as a crucial milestone, allowing industry representatives to review the updated RCPs as informed by a complete CA analysis before the final publication of RCPs is made. IACS will continue this collaborative approach as it moves forward with this project, including the revisiting of UR S11 incorporating Rec.34 Rev.2 for possible harmonisation work for all UR S11 related requirements, the revised CSR BC & OT and supporting technical documentation, and the full CA.

This integrated approach of technological advancement and industry engagement ensures that the revised CSR BC & OT will serve the maritime industry well, with enhanced technical accuracy, the ability to implement rule updates practically, and an unwavering commitment to structural safety, representing the collective achievements of scientific progress and industry collaboration. ■

“The ongoing update of IACS CSR BC & OT represents an integration of cutting-edge technology with industry expertise”



Webinar discussion on IACS Rec.34/Rev.2





About the author

Hyungmin Cho is a seasoned naval architect, boasting both a Bachelor of Science and a Master of Science in Naval Architecture and Ocean Engineering.

With a robust background, his proficiencies span across diverse domains, notably encompassing structural strength assessment utilising finite element analysis, spectral fatigue analysis, and the implementation of 3D model-based design approval systems. His significant contributions extend to the advancement of the IACS Common Structural Rules, evident through his active involvement in multiple IACS Project Teams dating back to 2008. Mr. Cho was elected Chair of IACS Hull Panel in 2023 and successfully fulfilled his three-year term through to 2025.

PIVOTAL YEAR FOR MARITIME ENVIRONMENTAL REGULATIONS

Three developments in 2025 will define the industry long into the future

By Eva Peño, IACS Environmental Panel Chair

In the maritime industry, where safety, environmental protection and regulatory compliance are paramount, trust is earned the hard way: through consistency, traceability and decisions that can be evidenced. Quality assurance is not just a process – it is a core value that protects life, property and the marine environment.

Last year marked a defining moment for maritime environmental regulation. Three major developments in 2025 are set to influence the industry's direction for years to come: the entry into force of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, the first year of EU maritime greenhouse gas compliance under the Emissions Trading System (ETS) and FuelEU, and the postponement of formal adoption of the IMO's Net-Zero Framework.

Together, these milestones illustrate the evolving balance between global and regional approaches to environmental governance in shipping.

HONG KONG CONVENTION: ENTRY INTO FORCE AND INDUSTRY IMPLICATIONS

On 26 June 2025, the Hong Kong Convention entered into force, establishing an international framework to ensure that ships are recycled in a safe and environmentally sound manner. The Convention applies to ships of 500 gross tonnage and above engaged in international trade, and to ship recycling facilities under the jurisdiction of its Parties.

Its requirements include:

- The preparation and maintenance of an Inventory of Hazardous Materials (IHM) throughout a ship's life.
- Certification and reporting obligations for both ships and recycling facilities.





“These milestones illustrate the evolving balance between global and regional approaches to environmental governance in shipping”

- Approval and authorisation of processes for ship recycling yards, supported by clear environmental and worker-safety standards.

For industry, this development brings a need for verification and maintenance of IHMs across the global fleet, certification and inspection of recycling facilities, and alignment of national legislation and industry procedures with the Convention's provisions.

The Convention's entry into force follows ratification by the necessary number of States representing both the global fleet and recycling capacity. Its implementation will provide a unified baseline for safe ship recycling worldwide, harmonising a patchwork of regional and national practices. It is expected to improve transparency and traceability across the recycling chain.

THE BROADER PICTURE

The entry into force of the Hong Kong Convention occurs within a broader and more complex regulatory landscape. In particular, it co-exists with both the EU Ship Recycling Regulation (EU SRR) and the Basel Convention, each of which continues to influence ship recycling practices.

The EU SRR remains fully in force and, in several areas, sets requirements that go beyond those of the Hong Kong Convention. Notably, the EU SRR obliges EU-flagged ships to be recycled only in facilities included on the European List of approved ship recycling yards, which is maintained through a dedicated, EU-specific approval process. As a result, even after the HKC entry into force, certain HKC-compliant yards may not qualify under the EU regime, and EU-flagged vessels will continue to operate under stricter regional requirements. This dual system may affect recycling options, capacity distribution, and operational planning for ships trading under the EU flag.

The interaction between the Hong Kong Convention and the Basel Convention also remains an important area of international discussion. The Basel Convention regulates the transboundary movement of hazardous waste, and many States consider end-of-life ships containing hazardous materials to fall under this definition. This interpretation places restrictions on the movement of ships – especially from OECD to non-OECD countries – and requires notification and consent procedures. While several States view the Hong Kong Convention as a *lex specialis* that should supersede Basel for ships destined for recycling, others maintain that Basel obligations will continue to apply in parallel. This divergence creates potential uncertainty for shipowners regarding transfer procedures, port State expectations, and the legality of recycling routes.

For shipowners, 2025 brings a renewed focus on maintaining verified IHMs, ensuring documentation is up to date, and planning end-of-life options in compliance with the Convention's requirements.

IACS and its Members are well positioned to support these activities through verification, survey, and training services, ensuring consistent implementation worldwide.

EU EMISSIONS REGULATIONS PROGRESS

At the same time, 2025 marked the first compliance year for several important European environmental measures. Under the EU ETS, shipping companies are now required to surrender emission allowances for verified CO2 emissions from maritime transport activities. This follows the inclusion of maritime transport in the EU ETS from 1 January 2024.

In parallel, FuelEU Maritime entered into force in 2025, creating a performance-based regulatory framework aimed at reducing the greenhouse gas intensity of energy used on board ships calling at EU ports. Unlike the ETS, which prices emissions, FuelEU Maritime directly mandates the use of lower-carbon fuels and technologies, with progressively tightening targets through 2050.

FuelEU Maritime is expected to influence fuel choice, ship design, and operational strategies significantly. Combined with the ETS, it represents one of the most ambitious regional decarbonisation frameworks in the maritime sector.

For operators, this means establishing robust system for monitoring, reporting and verification (MRV) of fuel consumption and emissions. IACS Members are supporting the process through independence verification, technical guidance on MRV data quality and co-operation with flag State Administrations and operators to promote consistent implementation.

IMO'S CONTINUED DELIBERATIONS

At the global level, discussions under the IMO regarding a comprehensive Net-Zero Framework continued throughout 2025. The framework, intended to translate the 2023 IMO Strategy on Reduction of GHG Emissions from Ships into legal binding regulatory instruments, includes proposals for a global GHG fuel intensity standard, an economic mechanism to support low-



and zero-carbon energy transition, and a structured timeline for aligning the sector with a net-zero trajectory by or around 2050.

While substantial progress has been made in developing technical and policy options, Member States agreed to defer discussion for adoption of the framework to allow for further analysis and consensus-building. Work will continue within the IMO's Marine Environment Protection Committee (MEPC) during 2026.

Given this postponement, IACS will undertake a detailed assessment of the implications of shifting the entry into force date and the potential implementation challenges or regulatory ambiguities created by the delay in the draft regulatory text.

This temporary delay does not affect existing IMO instruments, such as the Energy Efficiency Design Index (EEDI), Energy Efficiency Existing Ship Index (EEXI), and Carbon Intensity Indicator (CII), all of which remain in force.

In addition to new frameworks, 2025 is also a year of revision and refinement across several cornerstone IMO environmental instruments.

Revisions to MARPOL Annex IV – the annex dedicated to the prevention of pollution by sewage from ships – are under active discussion to enhance the standards governing sewage treatment systems and discharges, particularly in sensitive areas such as Special Areas and near-coastal waters. The review aims to modernise performance standards for sewage treatment

plants and align testing and approval procedures with current technology.

Updates are also being considered to improve port reception facilities, ensuring adequate infrastructure for ship waste management.

The Ballast Water Management Convention, meanwhile, continues to evolve as experience with its global implementation grows. In 2025, discussions focused on the revised approval procedures for ballast water management systems, including more stringent testing and type-approval conditions to ensure consistent performance in real-world conditions.

The IMO is also reviewing the experience-building phase outcomes and considering potential adjustments to the Ballast Water Record Book and compliance monitoring methods. The aim is to ensure that the Convention remains effective, implementable, and scientifically sound as data accumulates from fleets worldwide.

Finally, a major review of the CII framework is underway, following feedback collected since its entry into force in 2023. The review examines the calculation methodology, the rating system, and the treatment of specific ship types and operational profiles.

Industry experience has highlighted challenges, particularly for certain ship categories and voyage patterns. The review seeks to refine the metric's accuracy and ensure it provides a fair, technically robust measure of operational efficiency.

IACS continues to contribute technical expertise to this process, supporting improvements that enhance both environmental outcomes and practical feasibility.

IMPLICATIONS FOR INDUSTRY AND IACS

These parallel developments demonstrate the increasing complexity of the maritime environmental landscape. Compliance is now defined by multiple, interacting regimes – international, regional – each with distinct verification and reporting requirements.

IACS Members can contribute significantly to effective implementation by supporting consistent application of the Hong Kong Convention's requirements, providing verification and auditing expertise to help operators meet EU MRV, ETS and Fuel EU obligations, and assisting flag State Administrations and industry stakeholders in capacity building and knowledge exchange.

Given the above, 2025 will stand as a pivotal year in the evolution of maritime environmental regulation. The entry into force of the Hong Kong Convention establishes a long-awaited global standard for ship recycling. Making the EU climate measures operational integrates maritime transport more firmly into regional decarbonisation efforts. And continued IMO deliberations illustrate the ongoing challenge of achieving a harmonised global approach to emissions reduction.

In this context, IACS and its Members remain committed to their core role: providing the technical consistency, transparency, and expertise that help translate policy into safe, effective, and implementable regulations. ■



About the author

Eva Peño is the Chair of IACS' Environmental Panel. Eva initiated her career with Bureau Veritas in 2001, after earning her degree from the Escuela Technica Superior de Ingenieros Navales at the Politécnica in Madrid. Over the years, Eva has taken on various technical and project management responsibilities in both Madrid and Paris, diversifying her expertise and skills within the industry.

REINFORCING FIRE SAFETY STANDARDS IN MACHINERY SPACES

Conventional fuels continue to pose risks that IACS is addressing with a multi-prong strategy

By Amir Lotfolazadeh, IACS Machinery Panel Chair

The maritime industry is undergoing a profound transformation as alternative fuels gain traction in response to decarbonisation goals. Yet, conventional fuels such as heavy fuel oil (HFO) and marine diesel oil (MDO) will still be widely used for years to come. This reality underscores a critical truth: while we prepare for the future, we cannot neglect the present.

Fires in ship machinery spaces continue to pose severe risks to life, property, and the environment. These incidents often originate from low-pressure fuel and lubrication oil systems – areas where existing safeguards and protective measures can sometimes fall short.

IACS has taken decisive steps to address this challenge. Through its collaboration with IMO and industry stakeholders, IACS is spearheading efforts to 'break the chain' of fire propagation by reinforcing design standards, operational practices, and regulatory frameworks.

Fire safety in engine rooms has long been a priority for IMO and classification societies. At its seventy-ninth session, the IMO's Maritime Safety Committee (MSC) recognised the need for practical guidelines to minimise fire risks in engine rooms and cargo pump rooms. This led to the development of MSC.1/Circ.1321, which provides guidance on piping arrangements and protective measures.

Despite these efforts, incident data reveal persistent vulnerabilities. A study highlighted a troubling trend: an increasing number of fires caused by leakages from conventional low-pressure fuel and lubrication oil pipes. Unlike high-pressure systems – where double-wall piping and leak detection systems offer robust protection – low-pressure systems lack equivalent safeguards. When a leak occurs, oil continues to flow as long as pumps operate, creating a continuous supply of 'fuel to the fire'.

This issue gained prominence in March 2025 when IACS presented findings on fire risks associated with low-pressure systems.

Subsequent collaboration led by IACS resulted in a proposal to amend SOLAS regulation II-2/4 and update related guidelines.

WHY ACTION IS NEEDED

The case for action is compelling. From 2008 to Q1 2023, 137 engine-room fire incidents were reported, with repair costs exceeding $510 million. Approximately 60% of these fires began with oil spraying onto hot surfaces. Beyond financial losses, these incidents threaten crew safety, disrupt operations, and damage the industry's reputation.

While alternative fuels introduce new safety considerations, conventional fuels remain the backbone of global shipping. Improving fire safety in machinery spaces is therefore not optional – it is essential. Current SOLAS requirements and MSC.1/Circ.1321 guidelines, though valuable, are not consistently implemented. Design deficiencies, poor maintenance, and human factors continue to undermine fire prevention efforts.

Two categories of deficiencies stand out: Design and arrangement issues, and human element factors. The first category includes inadequate shielding and insulation of hot surfaces, poor piping arrangements vulnerable to mechanical damage, missing or

"Breaking the chain of fire propagation requires a multi-pronged approach combining design improvements, operational measures, and regulatory enhancements"

Table 1: Incident trend over time

Period	Number of Incidents
2008–2011	13
2012–2015	35
2016–2019	26
2020–Q1 2023	63

Q2 2023 to present, additional incidents have been recorded, indicating an upward trend. The exact figures are currently being compiled and will be released in due course.

Source: MSC 110/18/3

Table 2: Medium involved in engine-room fires

Medium	Number of Incidents
MDO/HFO	31
HFO	52
Lubricating oil	19
Thermal oil	8
Unknown	27

Source: MSC 110/18/3

Table 3: Root causes of fire incidents

Root Cause	Number of Incidents
Pipe connection failure – wrong tightening/torque	17
Loose flange/studs to HP pumps	10
Vibration – insufficient pipe support, fatigue	15
Loose pipe flange – burst sealing	11
Pipe welding crack	12
Modification of pipe system (crew)	11
Flexible hoses including connections	4
Overflow	2
Unknown	55

Source: MSC 110/18/3

damaged spray insulation tape, and limited space for inspection and maintenance.

The second category covers poor installation and maintenance practices, and crew fatigue and insufficient training.

These shortcomings create conditions where minor leaks can escalate into catastrophic fires.

MITIGATION STRATEGIES

Breaking the chain of fire propagation requires a multi-pronged approach combining design improvements, operational measures, and regulatory enhancements. Design improvements could include enhanced shielding and insulation using robust materials and designs, isolation valves for gauges and instruments to quickly stop leaks, improved joint spray shields and secure pipe supports, and strategic placement of filters and strainers for easier maintenance.

Operational measures could include rigorous installation procedures with correct torque specifications, daily inspections and preventive maintenance routines, and comprehensive crew training on fire risk awareness and emergency response.

While Regulatory enhancements could cover amendments to SOLAS regulation II-2/4 to introduce additional requirements for low-pressure fuel and lubrication oil systems, and updates to MSC.1/Circ.1321 could reflect best practices and lessons learned.

IACS has played a pivotal role in advancing this agenda. As a co-sponsor of MSC 110/18/3 and subsequent proposals, IACS advocates for practical, cost-effective

measures that leverage existing infrastructure while addressing critical safety gaps in low-pressure fuel and lubrication oil systems. The goal is to improve fire safety without imposing significant financial or administrative burdens on the industry.

Beyond its initial contribution, IACS has taken leadership in shaping the technical direction of this work. Its areas of concern focus on strengthening fire prevention and mitigation measures through:

- Isolation of fuel supply and spill lines in multi-engine installations, including remotely controlled valves operable from outside the machinery space to maintain propulsion safety during emergencies.
- Mandatory isolating valves for sensors and gauges to prevent leaks from instrumentation points.
- Improved shielding and insulation of high-temperature surfaces, including hard covers for exhaust gas piping and turbochargers to prevent oil impingement.
- Integration of thermal imaging technology for proactive inspection of insulation integrity, enabling early detection of deterioration and potential fire hazards.
- Enhanced design and installation practices to minimise vibration-induced fatigue and reduce the number of joints in piping systems.

These priorities reflect a systems-based approach combining design improvements, operational safeguards, and advanced inspection technologies.

The roadmap includes:

- SSE Sub-Committee to lead technical work over two sessions (2026–2028).
- Entry into force anticipated by 1 January 2028, aligned with the SOLAS amendment cycle.
- Integration of crew training requirements through the HTW Sub-Committee to ensure effective implementation.
- Harmonisation of guidelines in MSC.1/Circ.1321 to incorporate new provisions for leak mitigation and thermal imaging inspections.

Through these initiatives, IACS demonstrates its commitment to a holistic, future-ready approach to maritime safety – addressing both conventional and emerging fuel risks. By reinforcing fire safety standards today, IACS safeguards lives, protects critical assets, and minimises environmental risks while enabling innovation with confidence. This commitment is reflected in proactive engagement in regulatory development, harmonisation of technical requirements, and promotion of best practices that integrate design improvements, advanced detection technologies, and operational discipline. In doing so, IACS supports a safe and sustainable transition for global shipping, where resilience against fire hazards remains a cornerstone of operational integrity and environmental stewardship. ■



About the author

Amir Lotfolazadeh is a Mechanical Engineering graduate with more than 36 years of comprehensive experience spanning the marine, offshore, and large-scale industrial project sectors. His career reflects deep technical expertise and longstanding leadership within the maritime community.

For the past 27 years, Amir has been working for Bureau Veritas Marine & Offshore, where he has played a managerial role in classification and certification services. His work has consistently focused on technical excellence, innovation, and proactive engagement with international regulatory bodies to support the evolution of maritime standards.

Amir has served as Chairman of the IACS Machinery Panel from January 2023 through December 2025. In this capacity, he has led collaborative efforts across classification societies to enhance machinery rules, promote consistency, and ensure readiness for emerging technologies across the global IACS fleet.



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CLARIFYING THE 'ONE SHIP, ONE CODE' POLICY

Removing the confusion of overlapping regulations on fuels as cargoes

By Carlo Aiachini, IACS Safe Decarbonisation Panel Chairman

The 'one ship, one code' discussion started in 2014, when IMO's MSC 94 approved draft amendments to SOLAS, making the IGF code mandatory for ships using low flashpoint fuels, but excluding its application to gas carriers using their cargo as fuel and complying with the requirements of chapter 16 of the IGC Code.

'One ship, one code' is a principle which states that a single ship should be governed by only one primary safety code for handling gases or low-flashpoint liquids.

MSC 95, when it considered the adoption of the SOLAS amendments approved by MSC 94, took into account the IACS observation that it was still unclear whether or not the IGF Code should apply to IGC Code ships using dedicated low-flashpoint fuels that are not derived from the vapour or boil-off from their cargo, and it would be difficult to simultaneously apply both the IGC and the IGF Codes, due to differing requirements – for example on vessel tank location and Emergency Shutdown (ESD) protected spaces – and the requirement for dual certification of crews.

MSC 95 agreed to the policy decision that the IGF Code should not apply to ships subject to the IGC Code, even in the case of IGC Code ships using low-flashpoint fuels that are not cargo, and adopted SOLAS chapter II-1 Regulation 56 with a slightly different text, to reflect the above policy decision.

However, the wording used then and still in use now is unclear because the exemption from application of the IGF is 'conditional' to the arrangements being in compliance with IGC Code for gas as a cargo. That,

"One ship, one code policy issue related to this topic remains unclear and application guidelines, together with IGC-related guidelines for each and every fuel, are yet to be developed."

therefore, still requires/allows application of the IGF Code if the arrangements are not in full compliance with the IGC Code.

OVERCOMING THE PROHIBITION OF USING TOXIC FUELS

When developing the provisions of chapter 16 of the IGC Code in 2014, ammonia was not considered as a viable option and therefore IGC Chapter 16 includes a prohibition on the use of toxic products as fuel.

But thoughts on ammonia as an alternative fuel have evolved rapidly since then and recent studies have identified ammonia as one of the long-term fuels that will drive shipping's decarbonisation.

Interim guidelines for ammonia as a fuel were approved in December 2024, but those were not intended to be applicable to ships covered by the IGC Code.

Consequently, IGC ships would not have been authorised to use ammonia as fuel, irrespective of the fact that ammonia tankers have extensive experience in carrying and handling ammonia as a cargo, and their crews have the appropriate certificates to handle flammable and toxic gases.

Taking into account the exceptional circumstance, MSC 109 in December 2024 adopted some amendments to IGC Chapter 16, with an expected entry into force date of 1 July 2026, allowing the use of toxic products as fuel, taking into account the guidelines being developed by the IMO, in conjunction with Circular MSC.1/Circ.1681 which invites the SOLAS Contracting Governments to implement the amendments prior to the entry-into-force date.

FLASHPOINT ISSUES

When considering the SOLAS Amendment that made the IGF code mandatory, the IMO Committee realised, on IACS' input, that there was different wording in SOLAS and the IGF Code. SOLAS addressed 'low-flashpoint fuels' while the IGF Code addressed 'gases or other low-flashpoint fuels', with a further mismatch in definitions.

Also, it was noted that a technicality meant that the flashpoint of gaseous fuels cannot be determined, and it was therefore debated whether ammonia – being a gas that is difficult to ignite – is actually a low-flashpoint fuel.

MSC 109 agreed that the IGF is applicable to ships using ammonia as fuel, and in order to clarify the matter, it agreed to amend the text of SOLAS Chapter II-1 to include a definition of 'gaseous fuel' and apply regulations 56 and 57 (making the IGF code mandatory) to ships using gaseous fuels and low-flashpoint fuels.

Unfortunately, as the SOLAS amendment is contained in a larger work package with other amendments related to the one ship, one code issue, the draft amendments to SOLAS chapter II-1 and the IGF Code will only be considered with a view to approval at MSC 111 in 2026.

STILL ON THE AGENDA

The application of the IGC Code to gas carriers using gaseous or other low-flashpoint fuel was raised again at MSC 109 and MSC 110, highlighting inconsistencies and difficulties, and bringing use cases of gas carriers carrying CO2 as cargo but using LNG as fuel and gas carriers using methanol or hydrogen – gaseous or low-flashpoint fuels which are not IGC Code products – as fuel.

The intention was to modify the one ship, one code policy decision and allow application of the IGF Code selectively, when the gaseous or low-flashpoint fuel system is completely separate from the cargo system.

IACS raised the point that this change would allow storage of gaseous or low-flashpoint fuels, including toxic products, outside of the cargo area, and highlighted that an important safety feature of gas carriers is the segregation of hazardous products within the cargo area.

IACS also gave its view that this feature should not be compromised by allowing the storage of hazardous products outside of the cargo area, even if these are carried as fuel and not as cargo.

After extensive debate – and acknowledging that this would partially review the policy decision – the Committee established that SOLAS regulation 56 paragraph 4.1 should be further amended to specify:

- The IGF Code does not apply to ships covered by the IGC Code if using products listed in chapter 19 of the IGC Code.

- Gas carriers using gaseous or low-flashpoint fuels other than products listed

in chapter 19 of the IGC Code, would be subject simultaneously to relevant parts of the IGF Code and the IGC Code.

- The application of both Codes should be addressed through the IMO CCC Sub-Committee's development of two sets of guidelines: one concerning products listed in chapter 19 of the IGC Code used as fuel; and another concerning gaseous or low-flashpoint fuels other than products listed in chapter 19 of the IGC Code, used as fuel.

Thus, the one ship, one code policy issue related to this topic remains unclear and application guidelines, together with IGC-related guidelines for each and every fuel, are yet to be developed.

INTERIM GUIDELINES

In consideration of this clarification of the one ship, one code policy, it was determined that gas carriers using ammonia cargo as fuel would not have to apply IGF-related guidelines, and dedicated guidelines – as referred in the amended IGC Code – having EIF date 1 July 2026 – would be needed.

An IMO Correspondence Group was established in 2024, to draft the guidelines for the use of ammonia cargo as fuel, which the September 2025 CCC Sub-Committee agreed to, with a view to approval by MSC 111 in 2026.

As these Guidelines are specific for ammonia cargo used as fuel, a clarification is still needed concerning their application to ships carrying ammonia as fuel that is not cargo.

This may be clarified by considering the definitions in the IGC Code, where 'cargoes' are defined as 'products listed in chapter 19, that are carried in bulk by ships subject to the Code'. According to this definition, ammonia – as a product listed in Chapter 19 – should be considered as cargo, even if only intended to be used as fuel. IACS will continue to work with the IMO to clarify this aspect. ■



About the author

Carlo Aiachini is a mechanical engineer who has worked with RINA Services S.p.A. since 1991. His career developed from plan approval engineer in the Machinery department, to head of the Machinery and Automation Plan Approval Team. He now acts as Manager of the Marine Environmental and Safety Innovation unit of the RINA Marine Excellence Center. Carlo has participated in many IACS activities since 1998, as a member of the IACS Working Party on Engines, the Ad Hoc Group on Exhaust Emission Control, the Joint Working Group on Energy Efficiency Design Index (EEDI), the Machinery Panel – which he chaired from 2017 to 2019, different Project Teams and lately as Chair of the Safe Decarbonisation Panel.

NAVIGATING NEW SOLAS REQUIREMENTS FOR ONBOARD LIFTING APPLIANCES

Mitigating the risks of lifting equipment to improve safety and save lives

By Kathrine Ilje Nerland, IACS Safety Panel Chair

Lifting appliances – essential for cargo handling and ship operations – present inherent hazards to both crew and ship, mainly due to their limited structural redundancy in many components.

Recognising the risks, the IMO has recently incorporated requirements for the design, construction, installation, load testing, thorough examination, marking, maintenance, inspection, operation and operational testing of on board lifting appliances into the SOLAS Convention. Through consistent and uniform application of requirements, the objective is to enhance safety by preventing failures that have caused fatalities, injuries, equipment loss, and damage to ships. The new regulations entered into force on 1 January 2026.

At the time of writing IACS is finalising the development of a comprehensive Recommendation on Onboard Lifting Appliances to support the industry in the implementation of these new requirements, in addition to a new Unified Interpretation of the new regulations, IASC UI SC310 (July 2025) for non-certified existing lifting appliances.

In 2025, IACS also published a new Recommendation No. 191 on Lifting Appliances engaged in Personnel Handling Operations.

In 2023, at its 107th session, the IMO MSC adopted new regulations for shipboard lifting appliances and anchor handling winches (resolution MSC.532(107)), and approved the related Guidelines for lifting appliances (MSC.1/Circ.1663).

The new requirements apply to new equipment installed on or after 1 January 2026 and to existing lifting appliances and associated loose gear no later than the first renewal survey after that date.

The new SOLAS regulation II-1/3-13 requires new onboard lifting appliances to be designed, constructed and installed in accordance with classification rules or equivalent standards accepted by the flag State Administration.

The new regulation also introduced new requirements for load testing and thorough examinations, applicable to both new and existing on board lifting appliances.

IACS strongly supports the inclusion of lifting appliances in the SOLAS Convention, recognising the significant safety benefits for the maritime industry.

CREATING THE RECOMMENDATION

To promote consistent global implementation, the IACS Safety Panel established a Project Team to discuss the new regulations and agreed to share the outcome with the maritime industry through a new Recommendation.

The resultant Recommendation is intended to support the implementation of SOLAS regulation II-1/3-13, providing comprehensive guidance on lifting appliances and their associated loose gear.

Key recommendations include:

1) What's covered – and what's not
Covered equipment examples include cargo cranes, derrick systems, hatch cover gantry cranes, service cranes, movable decks moving with load, personnel handling cranes, and more.

Not covered examples include removable/portable cranes, lifting eyes, car ramps moving without load, survival craft appliances, offshore cranes, lifts/elevators, conveyor systems, life-saving launching appliances complying with the International Life-Saving Appliance (LSA) Code.

In case of ambiguity, the Recommendation advises seeking clarification from the relevant Administration.

2) Requirements for existing lifting appliances
By the first renewal survey after January 1, 2026, existing lifting appliances must undergo load testing and thorough examination as per MSC.1/Circ.1663; be permanently marked with their Safe Working Load (SWL); and be provided with documentary evidence of the SWL.

The recommendation offers advice on how to identify certified existing lifting appliances; and how to deal with non-certified existing lifting appliances.

3) Managing loose gear
Loose gear associated with lifting appliances must undergo a proof load test before their first use and be retested after major repairs or modifications. The recommendation provides examples of loose gear to be considered in-scope and out-of-scope. In-scope includes fixed load lifting attachments (hooks, hook blocks, etc.); and non-fixed devices (grabs, spreaders, lifting beams).

Out-of-scope includes sling gear (all loose gear between the hook and load, such as grommets, lifting belts, etc.).

Manufacturer's certificates may be sufficient for existing loose gear. For new loose gear, the verification of compliance by a Recognized Organization is recommended.

4) Dual use lifting appliances
Some appliances serve both as launching appliances for survival craft (or rescue boats) and as lifting appliances. These must fully comply with SOLAS Chapter III and the LSA



Code as life-saving appliances and SOLAS regulation II-1/3-13 as lifting appliances.

Importantly, dual functions should not be used simultaneously, and survival craft (or rescue boat) launching must always take priority.

5) Major modifications and certification
Major modifications require comprehensive documentation of the current state and the intended modifications and may trigger re-certification. The re-certification must follow the requirements of a classification society or standards acceptable to the flag State Administration.

6) Survey and testing regimes
IACS recommends that the lifting appliance surveys are aligned with other ship surveys taking advantage of the survey windows in accordance with the Harmonized System of Survey and Certification (HSSC).

Unlike SOLAS there are no survey windows for ILO C152 covered appliances, and owners are recommended to consult with their relevant flag State Administrations for compliance with ILO and SOLAS requirements, as applicable.

UI PUBLICATION

IACS' new Unified Interpretation, UI SC310 (July 2025), of SOLAS regulation II-1/3-13.2.4 introduces a template for a 'factual statement' to confirm that lifting appliances without valid certificates have been load tested and thoroughly examined according to the Guidelines for lifting appliances (MSC.1/Circ.1663).

IACS UI SC310 has also been published by the IMO as MSC.1/Circ.1696.

Meanwhile, IACS' new recommendation, Rec.191 for Lifting Appliances engaged in Personnel Handling Operations (July 2025) was developed by the IACS Machinery Panel. It offers comprehensive recommendations beyond the usual design requirements for cranes, in particular covering:

- Structure and systems
- Brakes
- Hydraulic cylinders
- Safety devices and safety features
- Ropes and hooks
- Emergency recovery system
- Mode selection
- Marking
- Testing and survey
- Records

As the maritime industry adapts to these new SOLAS requirements, proactive engagement among classification societies, flag State Administrations and industry stakeholders will be essential for consistent and safe implementation. IACS remains dedicated to promoting clear and practical guidance of the regulatory framework to enhance maritime safety – and IACS members are available to provide support. ■



About the author

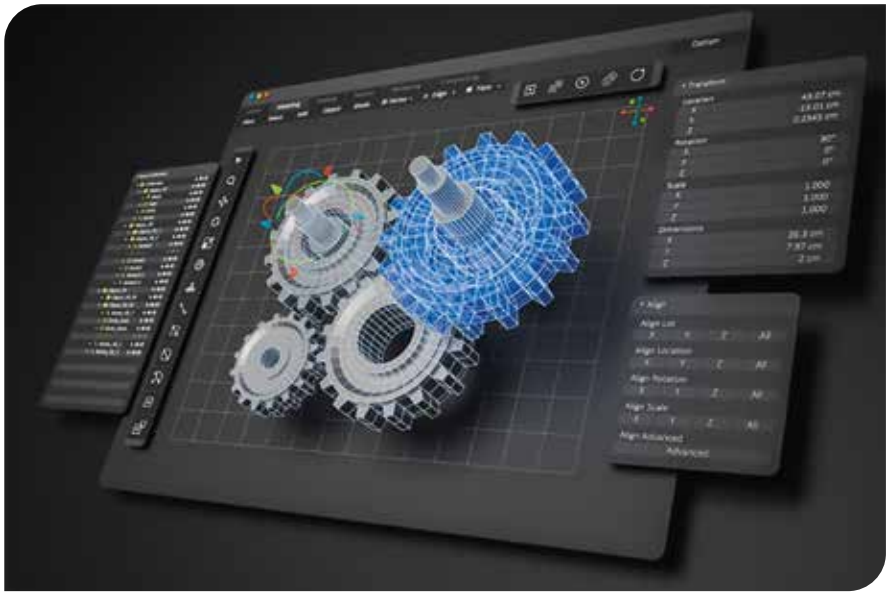
Kathrine Ilje Nerland, M.Sc, is Director Maritime Safety at DNV. She has extensive experience across technical safety, statutory compliance and international rule development, including nearly a decade working abroad in Europe, Asia and the Americas. Kathrine has long served as a key advisor to flag State Administrations and has been deeply engaged in shaping IMO safety regulations.

In her role as Chair of the IACS Safety Panel, Kathrine leads IACS' work on initiating and shaping the regulatory safety framework for the maritime industry. From 2026, she will undertake the role as Chair of the IACS Machinery Panel, guiding industry-wide technical and regulatory work on machinery systems.

READY FOR THE THIRD DIMENSION

IACS Recommendation lays the groundwork for cutting-edge model-based classification

By Angeliki Zisimatou, IACS Safe Digital Transformation Panel Chair



Over the last decade, shipyards and designers have increasingly moved to 3D-centric workflows. Hull structure, outfitting, systems, and production information are all developed and maintained in integrated 3D environments. Meanwhile, the technical information provided to classification societies for approval remains dominated by 2D drawings, static documents and manually compiled calculations.

This divergence creates challenges of inefficiency, risk of inconsistencies, and limited digitalisation.

For example, multiple drawing iterations must be generated from the 3D model solely for approval, adding effort but not value. Also, maintaining alignment between the 'true' 3D model and derivative drawings is non trivial, particularly under tight schedules. And lastly, as long as classification input remains drawing-based, the potential of automation, advanced analytics and seamless data reuse within classification societies is constrained.

To overcome these limitations, there is a clear need for an agreed approach to 3D model exchange for classification. This requires not only a technical format, but also a common understanding of what information a 3D model must contain and how that information will be used in the approval process. In this context, IACS is developing a Recommendation on the protocol for format definition and exchange of 3D models.

OBJECTIVE AND SCOPE

The Recommendation has two primary objectives:

1. To support digital class approval for newbuildings by enabling the use of 3D models (instead of or in addition to 2D plans) for the classification technical review of hull structural strength and integrity.

2. To facilitate Transfer of Class (ToC) by allowing, where agreed and permitted, 3D models to serve as equivalent technical data to certain traditional structural plans.

The scope is deliberately focused and aligned with existing Rule requirements. It covers the structural strength and integrity of essential parts of the hull and its appendages, and the 3D verification scope as defined by applicable Rules, and as represented by submitted 3D models and any agreed supplemental plans or documents.

The Recommendation assumes a hybrid review model: 3D models will replace or complement some plans, while others will continue to be provided in traditional formats, especially where the information is not yet practical to embed in 3D or not supported by the chosen protocol.

KEY CONCEPTS

The Recommendation covers three key concepts: Model-based definition (MBD), digital and 3D model protocols, and engineering data interoperability.

MBD is an engineering practice whereby the 3D model itself becomes the single source of truth for product information. Geometry, topology, materials, scantlings and other attributes are embedded in the model, minimising reliance on standalone 2D drawings.

In the context of this Recommendation, MBD answers the question: what information must be defined in the 3D model for classification purposes? The answer is derived pragmatically from existing plan requirements in the classification societies' Rules, which industry already understands and routinely fulfils.

A digital protocol, meanwhile, defines how data is structured, transmitted and interpreted between systems. A 3D model protocol specialises in the engineering 3D data: how geometry and topology are represented; how semantics and metadata (such as material, scantling or space purpose) are organised; and how models are serialised, exchanged and validated.

In simple terms, MBD defines the 'what'; the 3D protocol defines the 'how'. Effective 3D classification requires both a clear content definition and a robust protocol for exchange.

For the last concept, engineering data interoperability is the ability to create data once and re-use it reliably across multiple systems and organisations. For classification, this means that 3D models built in shipyard CAD tools can be used directly in classification society systems for assessment, without extensive manual rework.

The key characteristics include single-source creation and standards-based translation, preserved data integrity (geometry, units, metadata, key physical properties), and best practices and tools with no need for investment in multiple applications.

The Recommendation links interoperability explicitly to both the MBD content definition and the 3D protocol selected.

USE CASE

The Recommendation focuses on a clearly defined use case: Exchange of 3D models for the classification technical review of hull and appendage structural strength and integrity for new buildings (excluding ToC scenarios).

In practice, this use case could replace, partially or wholly, the traditional submission of hull structural plans with one or more 3D datasets. To ensure completeness, the required MBD content is derived from the list of documents normally submitted, such as midship section, shell expansion, decks and profiles, double bottom, framing plans, and related documentation.

The Recommendation identifies 72 distinct content requirements that are today satisfied through these plans and documents. For each item, it assesses whether the information is practical to represent in a 3D model and whether it can currently be represented in the OCX protocol.

Of the 72 content items, 57 are assessed as suitable for 3D representation and 42 can, at present, be captured using OCX.

This analysis provides a shared understanding of what a 'classification-ready' structural 3D model should contain.

EVALUATION CRITERIA

To determine which 3D protocol best supports this use case, the Recommendation defines two main evaluation criteria, each with sub criteria that are understandable to both technical and managerial stakeholders.

Criterion 1 is the Use Case Fulfilment criterion. This assesses how well a protocol supports the functional and content needs of the defined use case:

- Content coverage: Does the protocol represent the required engineering objects and attributes?
- Standardised content: Is the content structure defined in an internationally recognized or publicly governed schema?

- Human readability: Can the protocol output be inspected without proprietary software, supporting transparency and troubleshooting?

Criterion 2 homes in on interoperability. This criterion focuses on reliable use between real-world systems:

- Translator availability: Are import/export tools available for the prevalent shipbuilding CAD systems and Society applications?
- Data integrity validation: Does the protocol support built-in verification of geometry and key physical properties on receipt?
- Quality assurance through testing: Is the protocol subject to ongoing interoperability testing (e.g. OCX Interoperability Forum, CAx forums)?

These criteria form a reusable framework that can be applied to future use cases and evolving protocols.

ASSESSMENT OF COMMON 3D PROTOCOLS

The Recommendation reviews several commonly used 3D protocols, including:

- STEP AP242 (ISO 10303 242): A comprehensive standard for CAD data exchange, supporting B Rep, PMI and long-term archiving.
- IGES: A legacy geometry exchange format, widely supported but limited in semantics.
- Wavefront OBJ: A basic mesh-oriented format used mainly for visualisation.
- JT: A compressed format used in PLM environments, supporting both lightweight and high-fidelity geometry.
- 3D PDF (with U3D/PRC): Well-suited for communication and reporting, but not ideal as an engineering master format.
- Open Class 3D eXchange (OCX): A standardised engineering dataset designed to carry classification-relevant structural data and semantics.

Each has strengths, but from a classification perspective the central question is: Which protocol offers the best balance of content coverage, standardisation, interoperability and practical adoption for hull structural review?

PREFERRED PROTOCOL

The analysis concludes that no single protocol fully satisfies all criteria, but OCX currently offers the best fit for the defined use case.

OCX is both a 3D protocol and a model-based definition tailored to ship structure.

It standardises structural members, scantlings, openings, materials, compartments, frame systems and related metadata explicitly for classification needs.

Other protocols may represent geometry well but do not standardise this ship-specific engineering content.

OCX schemas are publicly available; the format is XML-based and fully human-readable. This supports transparency, auditing and long-term accessibility.

Also, translators exist for major shipbuilding CAD platforms (e.g. NAPA, Cadmatic, Siemens, Aveva, Hexagon, Dassault/AITAC, PROSTEP) and the OCX Interoperability Forum provides continuous testing and quality assurance across implementations.

Lastly, OCX is available under a public license, enabling broad adoption.

From detailed coverage analysis, OCX version 3.1.0 currently supports approximately 64% of the defined MBD content for the hull structural use case. This is sufficient to enable a meaningful 3D-based review, while clearly highlighting where supplemental documentation remains necessary.

HYBRID IMPLEMENTATION AND PRACTICAL USE

The Recommendation envisages a practical, hybrid implementation model:

For a significant subset of plans (e.g. midship section, transverse sections, shell expansion, decks and profiles, double bottom, framing plans), the 3D model in OCX format can replace much of the traditional 2D documentation, supplemented where needed by concise documents for residual data.

Other items, such as detailed welding documentation, certain corrosion protection details, stability documentation, and some machinery and outfitting information, will continue to be handled in traditional formats at this stage.

To operationalise this, classification societies and the contracted builder should explicitly agree with the list of 3D models to be submitted and use the content

mapping within the Recommendation to identify the required supplemental 2D plans/documents, based on what the chosen protocol does not yet carry.

This approach enables incremental digitalisation of the approval process, delivering efficiency and quality benefits while preserving completeness and robustness of classification review.

TRANSFER OF CLASS CONSIDERATIONS

The Recommendation also touches on the potential role of 3D models in Transfer of Class, with reference to IACS PR1A 'Procedure for Transfer of Class'. PR1A requires that the gaining classification society obtain plans or equivalent technical data showing main scantlings and arrangements.

Where a losing classification society or shipyard holds approved 3D models, these could, in principle, serve as equivalent technical data to certain listed steel plans (e.g. midship section, scantling plan, decks, shell expansion, transverse bulkheads), provided that the 3D model content is adequate for the intended purpose and Intellectual Property Rights (IPR) constraints are fully respected.

The Recommendation emphasises that no 3D model may be transferred to a gaining classification society without the consent of the IPR holder. Issues of ownership, licensing and rights of transfer are outside the technical scope of the Recommendation but are recognised as critical to ToC and appraisal processes. They should be addressed early in the vessel lifecycle, preferably during contract design, so that contractual arrangements support future sharing with one or more IACS Member classification societies.

TECHNOLOGICAL NEUTRALITY AND NEXT STEPS

The Recommendation therefore sets out two core positions. Firstly, for the 3D model exchange for classification technical review of hull structure OCX is recommended as the 3D protocol where the classification society and contracted builder agree to implement 3D-based review. Other native formats may be used by agreement, but the content requirements remain, and any gaps must be covered by supplemental documentation.

Secondly, for Transfer of Class 3D models may be used as alternative technical data where IPR allows but cannot be transferred without explicit consent of the IPR holder.

Importantly, the Recommendation clarifies that this use of 3D models is limited to classification technical review and does not replace as-carried-out drawings required by SOLAS II 1/3 7 or other lifecycle documentation.

Looking ahead, IACS is laying the foundation for the progressive adoption of model-based classification. As experience is gained through pilot projects and early implementations, IACS intends to refine the Recommendation, extend its scope to additional disciplines and use cases, and adjust it to reflect the continuing evolution of digital standards and tools in the maritime sector. ■



About the author

Angeliki Zisimatou is Director of Technology at ABS. With more than 20 years of experience, she leverages her expertise in cyber policy, operations management, site inspections, and customer relationship management to design and deliver effective, efficient programs, services, and products. She holds a Master's degree in Naval Architecture and Marine Engineering, a Master of Science in Maritime Economics and Logistics and a Master of Engineering in Cybersecurity, Policy and Compliance.

Since April 2024, she has been elected as the inaugural Chair of IACS' Safe Digital Transformation Panel, leading IACS's efforts in the areas of autonomy, cybersecurity, data, and systems complexity.



MARITIME CYBERSECURITY IN THE SPOTLIGHT

New IACS Recommendations address visibility and implementation challenges

By Angeliki Zisimatou, IACS Safe Digital Transformation Panel Chair



The complexity and interconnectivity of computer-based systems (CBS) on board ships demand stringent cybersecurity measures to safeguard operational integrity. Addressing these challenges, IACS has introduced two technically aligned Recommendations.

IACS Recommendation 190, published in June 2025, focuses on Vessel Asset Inventory for Comprehensive Cyber Risk Management, while Recommendation 194, published in December 2025, outlines Cybersecurity Controls for Existing Ships. Together, these establish a minimum technical framework for cyber resilience, securing vital operational technology (OT) systems while integrating these safeguards with legacy systems.

A Vessel Asset Inventory forms the foundation for managing vulnerabilities and achieving cybersecurity compliance. Unified Requirement (UR) E26 and UR E27 mandate the implementation of asset inventories to systematically record, track, and monitor OT systems.

Beyond documentation, inventories enable technical analysis of system criticality and interdependencies. Recommendation 190 provides a guidance framework for ship operators and stakeholders, enabling them to systematically identify and maintain an up-to-date inventory of all physical and digital systems on board.

Regarding the technical mechanisms, UR E26 requires continuous updating from design to operational phases. This includes dynamic tracking of OT systems, monitoring software modifications, and ensuring a precise record within controlled databases (UR E26 par. 4.1.1).



For standardised schema, Recommendation 190 provides templates and examples with embedded parameters, facilitating structured records of system attributes such as equipment types, firmware versions, IP ranges, and physical interfaces.

For criticality tagging, the Recommendation assigns technical significance to systems based on their roles in essential services (as defined under UR E26 and E27) and guides the segmentation of systems to prioritise risk mitigation efforts for primary essential services like propulsion and steering.

CYBERSECURITY CONTROLS

Building on asset visibility, cybersecurity controls focus on protecting OT systems through layered defences and operational safeguards. Digital systems such as AIS, AMS, BWMS, ECDIS, and IBS are integral to vessel operations across all ages – supporting navigation, propulsion, steering, ballast operations, alarm monitoring, and cargo handling. While technologies on board vary depending on the vessel, vulnerabilities exist at all levels, making it essential to address cybersecurity for older vessels. The Recommendation encompasses the 'Identify, Protect, Detect,

Respond, Recover' framework, supporting essential considerations for OT and IT connected systems while prioritising protection for legacy vessels that may lack inherent cyber safeguards (see box).

Together, the Vessel Asset Inventory and Cybersecurity Controls Recommendation documents represent a baseline strategy for addressing maritime cyber risks. By combining detailed visibility into on board systems with actionable controls for protection and recovery, these Recommendations ensure seamless risk management across a vessel's operational lifecycle.

A FOCUS ON LEGACY SYSTEMS

While newer systems integrate cybersecurity features by design, existing vessels pose unique challenges due to their reliance on legacy OT systems, many of which were not constructed with digital protection in mind. Both Recommendations emphasise measures to bridge this gap, including network segmentation and enhanced security protocols.

Acknowledging the evolving nature of cyber threats, both Recommendations advocate for periodic review of controls and inventories to adapt to emerging risks and technologies. Proactive evaluation ensures alignment with industry standards while maintaining resilience amid digital advancements.

The IACS Recommendations on Vessel Asset Inventory and Cybersecurity Controls for Existing Ships underscore the critical role of strategic planning and technological safeguards in modern maritime operations. By addressing visibility challenges and implementing robust defences, shipowners, operators, and industry stakeholders can secure their assets against cyber threats while ensuring vessel safety and operational continuity.

For more detailed guidance on implementing these Recommendations, stakeholders are encouraged to access the full documentation via the IACS website. ■

CYBERSECURITY CONTROLS

IDENTIFY

Asset and system awareness: Establish a complete inventory of OT systems on board, detailing key attributes such as equipment type, manufacturer, versions, and patch levels.

PROTECT

Network segmentation: Use firewalls to isolate OT systems from IT zones and crew networks, ensuring critical systems are less exposed to cyber threats originating from non-trusted or external zones.

Remote access controls: Implement multi-factor authentication for shore-side connections, enforce session activity logs, and utilise encryption to guarantee transmission integrity.

USB port protection: Disable unused ports using physical seals and scan portable devices before ship-floor integration to prevent malware intrusions.

DETECT

Monitoring and logging: Enable network diagnostics and real-time anomaly detection capabilities to identify cybersecurity threats early.

Training: Equip crew members with the tools and knowledge necessary to recognise and respond to cyber risk scenarios impacting OT systems.

RESPOND

Incident response plans: Define detailed procedures for incident reporting, response, and communication protocols with designated shore-side points of contact (PoC).

RECOVER

Backup and restore protocols: Employ redundant systems or digital backup solutions that meet class requirements and statutory regulations to recover essential services quickly.

ENRICHING THE IMO REGULATORY PROCESS

Application of a Formal Safety Assessment supports a proactive approach to regulation development

By Karan Doshi, IACS EG/FSA Chair

Over the years, the development of maritime regulations has transitioned generally from a reactive to a more proactive approach, which has led to the increasing application of risk-based methods for developing rules. The Formal Safety Assessment is such a process, one that has been instrumental in the development and improvement of several IMO regulations.

A strong safety record is undeniably one of the most important pillars of the maritime industry. To maintain this requires robust regulations which have to be adequate to ensure an acceptable level of risk while not leading to disproportionate costs.

As the industry progresses, it must continue with this proactive approach to regulation development. This calls for development of regulations which identify risks and the incorporation of appropriate measures to address such risks which are performance rather than technology based (i.e. technology agnostic).

The need for a proactive approach was recognised early at the IMO. The UK submitted the concept of Formal Safety Assessment (FSA) to MSC 62 back in 1993. This was followed by submission of an actual application of FSA by the UK pertaining to the safety of high-speed craft in 1997 (MSC 68/14/2). Subsequent to that, the first ever guidelines for application of FSA to the IMO rulemaking process were available from 2002 after having been approved by MSC 74 and MEPC 47. The guidelines have since been revised four times with the latest revision approved concurrently by MSC 109 and MEPC 83 in 2025 (MSC-MEPC.2/Circ.12/Rev.3).

These guidelines provide a systematic and structured approach to performing, documenting and reviewing FSAs at IMO. The Assessment covers five principal steps: hazard identification, risk analysis, identification of risk control options, cost benefit analysis, and recommendations for decision making. These are to be performed once a problem definition for the study has been developed.

Technical reviews of FSA studies submitted to IMO are performed by a group of experts who confirm that such studies are appropriate to support further development of IMO regulations. FSA methodology provides a foolproof approach to ensure that regulations developed are cost efficient while ensuring an acceptable level of risk.

To date about 20 FSA studies have been submitted to IMO on various topics. Almost all of these have had a positive impact on safety by amendments to or development of IMO regulations. Prominent among these are the FSA study for bulk carrier safety which helped to reduce the losses of bulk carriers in the 2000s, and the study on passenger ship damage stability (GOALDS, EMSA III (MSC 95/6/2)), which formed the basis for SOLAS 2020 damage stability requirements. Among more recent studies are CARGOSAFE (MSC 107/10 in 2023) and FIRESAFE (MSC 101/17, 2019), both of which have been influential in contributing to amendments to SOLAS and associated codes/guidelines and ultimately improving safety.

IACS CONTRIBUTIONS

IACS has always supported the use of FSA as a tool for developing regulations at IMO, either directly or through its Members' participation in FSA studies. IACS undertook and submitted the FSA study which contributed to the improvement in bulk carrier safety in the 2000s. The success of these FSAs can also be seen by the manifestation of risk reduction.



IACS also submitted an FSA study in 2010 targeted at improving the safety of general cargo ships and contributed to the development of the IMO FSA Guidelines as well as their subsequent revision.

More recently, IACS made significant contributions to the revision of the IMO FSA Guidelines at MSC 109 through the submissions of MSC 109/11/1 and MSC 109/11/2 which were based on the experience gained by IACS Members through their participation in FSA studies.

IACS co-sponsored MSC 110/INF.15 which provided an update on the safety of bulk carriers in the aftermath of the recommendations from the submitted FSA studies, including the IACS study (MSC 74/5/4) which was agreed by MSC 76. This update confirmed that these recommendations were impacting as intended and highlight the reliability of the FSA in the IMO rule-making process. From the inception of FSA at IMO to date, more than 30 papers have been authored or co-sponsored by IACS to the IMO with a view to supporting the FSA process. This has been supplemented by IACS experts participating within Correspondence and Working Groups at IMO.

Additionally, IACS Members in their individual capacities have also made significant contributions to performing FSA studies at IMO, including FIRESAFE, CARGOSAFE, EMSA III, and SAFEDOR.

There is potential and great advantage to be gained through the use of the FSA approach to IMO rulemaking, in particular with respect to transparency and justification. The FSA process at IMO already has a proven track record of over two decades; IACS expects that there will continue to be value in a proactive approach to regulation development, underpinned by the application of FSA. It is expected to also play a significant role when developing functional requirements and related expected performances for IMO GBS, e.g. calibrating availability/reliability requirements as well as providing input to the alternative design or risk-based design process. In summary, FSA will continue to enrich the IMO regulatory process. ■



About the author

Karan Doshi is a Senior Surveyor and is in charge of Formal Safety Assessment and Alternative Design Evaluation at IRS. He is a civil and structural engineer by background. He joined IRS in 2009 and has worked across a spectrum of topics during his career at IRS which span from performing various types of advanced structural and computational analyses to risk analyses, alternative fuels and class rules development. His core expertise relates to Liquefied Gas Carriers, Containerships and FPSOs. He has represented IACS and India at the IMO within various sub-committee and committee meetings which also includes participating as an IACS nominated expert at sessions of the IMO FSA Experts Group.

NEW MILESTONE IN OCCUPATIONAL HEALTH AND SAFETY

Enhancing surveyor safety across the industry

By Ajay Gokhale, EG SoS Chair





Aiming to strengthen protection for classification society surveyors worldwide, in January 2025 IACS released two key documents developed through the Expert Group on Safety of Surveyors (EG SoS). The first – Recommendation No. 184 – Guidelines on Safety Standards for Work (Rec.184) – is a comprehensive document consolidating do's and don'ts from relevant safety related IACS Recommendations, supplemented with additional contextual information.

The second – Recommendation No. 72 (Rev.4 – Jan 2025) – Confined Space Safe Practice (Rec.72) – is an update to clarify the application of confined space requirements on various areas on ships, atmosphere testing requirements, plus the inclusion of Naturally Occurring Radioactive Material (NORM) and ammonia related hazards.

Together, the Recommendations present a consolidated industry approach to surveyor safety and align IACS guidance with ISO 45001 principles, IMO instruments and industry best practices.

SAFETY STANDARDS FOR WORK

Developed as a new Recommendation, Rec.184's objective is to prevent accidents, incidents, and occupational ill-health through a clear set of do's and don'ts for each risk area contained in a single reference for surveyors.

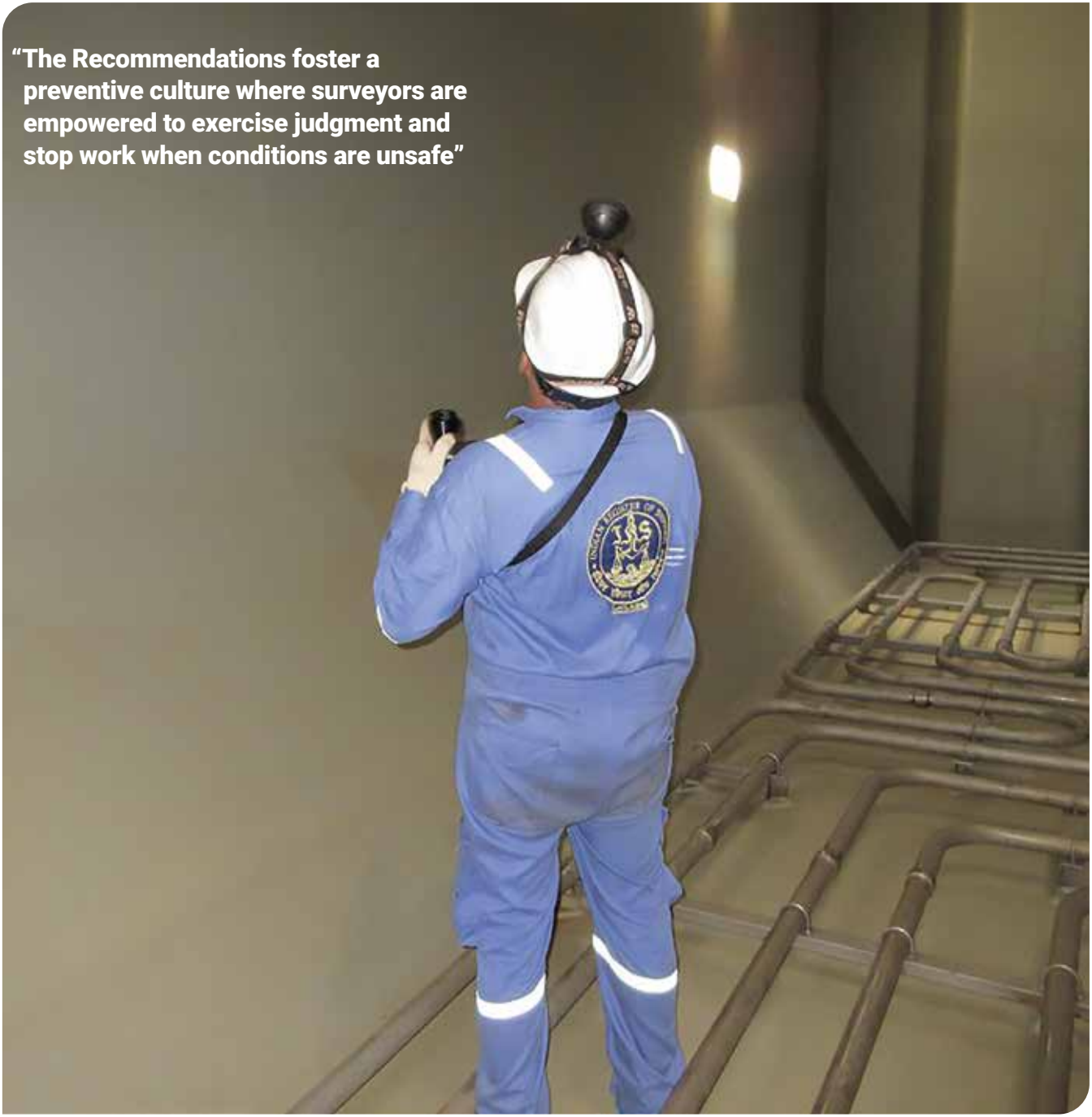
The key content introduced in the Recommendation includes:

- Structured risk controls: Sections define hazard, risk, and unsafe act/condition, establishing a common terminology for all IACS Members.
- Surveyor responsibilities: Responsibility to follow safe practices is emphasised.
- STOP-Work authority: Formal recognition of a surveyors' right to refuse unsafe work and halt activities until conditions are made safe.
- Gender-inclusive facilities: Ensuring equal access to sanitary and changing facilities at work sites.
- Mandatory use and maintenance of PPE: Comprehensive specifications for provision, inspection and training in personal protective equipment.
- Activity-specific best practices: Twelve distinct categories identified along with associated hazards and relevant precautionary guidance. These are working at height, boat transfer, confined space entry, surveys by using rafts or boats, pressure testing, stored energy hazards, sea trials, travelling for work, travel safety and security, work done by others in near proximity, exposure to hazardous materials and natural environment.

Rec.184 establishes a unified occupational health and safety baseline for classification societies, promoting the consistent application of safe work practices. Its implementation will offer marine surveyors a convenient safety reference tool and promote a stronger culture of safety awareness.

CONFINED SPACE SAFETY

Originally issued in 2000, Recommendation 72 has served as the benchmark document for confined space entry by surveyors. The 2025 revision (Rev. 4) represents a significant technical update developed by EG SoS to address emerging risks and align the guidance with IMO standards.


“The Recommendations foster a preventive culture where surveyors are empowered to exercise judgment and stop work when conditions are unsafe”

The major revisions and additions include:

- Expanded definitions and terminology: Updated definitions for 'competent person', 'responsible person', 'attendant', and 'marine chemist', improving clarity of roles and accountability.
- Permit-to-enter validity: Update of the validity of permit to not exceed eight hours.
- Enhanced entry procedures: Supplementing the requirements covering when surveyors should refuse to enter a confined space (or should exit the space) with inclusion of requirements for ballast tank entry.
- Updated Atmospheric Testing and Acceptable Limits: Oxygen 20.6–22%, combustible gases < 1% LFL, toxic vapours < 50% OEL.
- NORM hazards: Recognising that NORM hazards are known to be present in varying concentrations in hydrocarbon reservoirs in a number of areas of the world, guidance has been detailed regarding pre-entry checks, additional PPE requirements and post survey decontamination.
- Ammonia hazards: Noting the expected adoption of ammonia as an alternative fuel, the health effect and consequences of ammonia exposure for varying concentrations have been included.

The revised Recommendation emphasises risk assessment, planning and competency before entry rather than reliance on personal protection alone. It fosters a preventive culture where surveyors are empowered to exercise judgment and stop work when conditions are unsafe.

ADVANCING THE SAFETY CULTURE

The publication of Rec.184 and Rec.72 (Rev.4) marks a significant step in the EG SoS' initiative to embed a proactive safety mindset throughout classification activities. Both documents complement existing IACS Procedural Requirements (PR) & Recommendations (PR 37 on Confined Space Safe Entry, Rec.39 on Safe Use of Rafts or Boats for Survey, Rec.78 on Safe Use of Portable Ladders for Close-up Surveys, Rec.134 on Boat Transfers Safe Practice, Rec.136 Guidelines for Working at Height, Rec.140 for Safe Precautions during Survey and Testing of Pressurized Systems and Rec.141 Guidelines for the Assessment of Safety Aspects at Workplace). Together, these address the topics enumerated in the activity-specific best practices outlined above and are fully aligned with the IACS Joint Safety Statement on the Safety of Surveyors.

Key anticipated benefits include a reduction in confined space and field survey accidents through standardised controls; greater transparency and accountability of survey operations; and reinforcement of the global reputation of IACS Members for professionalism and safety leadership.

The EG SoS will continue to monitor feedback from member societies, field surveyors and industry to refine these documents and develop further guidance on emerging safety topics such as dual-fuel ships. These efforts demonstrate IACS' continuing commitment to its core objective – protecting life, property and the environment through safe surveyor practice. ■



About the author

Ajay Gokhale is the Chair of the IACS Expert Group on Safety of Surveyors (EG/SoS) and a seasoned maritime professional with nearly two decades of seagoing experience, having progressed to Chief Engineer on merchant vessels with leading shipping companies including BW Group, AESM, NYK, and Eurasia. A Marine Engineering graduate from DMET, Kolkata, he began his shore-based career with IRCLASS, gaining two years of experience in Rule Development, before serving as a Senior Technical Superintendent with several ship management companies. He is presently a Senior Surveyor in the Training Department at IRCLASS and also holds an MBA in Finance from ICFAI, combining strong technical depth with managerial and financial acumen.

HUMANS AT THE HEART OF SAFETY AT SEA

Stressing the importance of human element aspects in design

By Dr Jonathan Earthy, Chair, Small Group Human Element



The human element in the maritime industry is an intrinsic part of safety at sea. Without a competent and supported workforce, the high standards set by IACS Members would be difficult to achieve. IACS aims to raise awareness within the shipping industry about the complex interface between people and systems on board. The key objective is to ensure that people are not harmed, and that systems are not damaged by people or used in an unsafe, insecure or environmentally damaging way.

IACS seeks to highlight and emphasise the importance of properly addressing human element aspects when developing new IACS Requirements applicable to the ship and ship systems within the scope of class, and when developing new IACS instruments. The IACS High Level Position Paper (IACS-Position-Paper-on-Human-Element-Rev0.pdf) on the human element presents IACS' position and summarises the initiatives undertaken and documents produced.

The IACS Small Group Human Element advises on the effect of people on systems, the effect of systems on people, and training in and review of checklists for project teams and working groups. It works closely with the Expert Group Management Systems.

A NEW RECOMMENDATION

IACS Guidelines to address human element issues in all IACS Working Groups were developed to help those involved in IACS projects to identify and consider the possible impacts of and impacts to the human element when developing new IACS Resolutions. The Guidelines describe the human-centred approach (work out what you want people to do then design to utilise the best of their abilities and compensate for any limitations), how to address human-system issues (both effect on the people by the system and effect of people on the system), and include a development of the IMO Human Element checklist (IMO MSC-MEPC.1/Circ.5/Rev.4, Annex 5)

The assessment approach has three steps:

1. Identify the main hazards that the output is to address.

2. Use the hierarchy of controls to identify possible measures to remove or reduce the identified hazards.

3. Make the treatment of the hazards better and more precise with respect to human element issues using the checklist.

In 2025 IACS extended the application of the Guidelines from Unified Requirements to most of its outputs (URs, Unified Interpretations and Recommendations). These Guidelines received interest from outside of IACS and as a result IACS has converted the Guidelines into a public document, Rec.192 Guidelines to Address Human Element Issues (Safer and Cleaner Shipping – IACS). The guidance has been generalised so that other organisations that develop maritime safety documentation can use our approach to apply the IMO checklist and encourage its wider use.

INDUSTRY COLLABORATION

IACS co-operates with industry, regulators and other stakeholders in support of approaches that place humans at the heart of the design process, considering people as part of a system, understanding their needs, behaviour and required experiences, considering what should be expected from them, and promoting the need for competence in these approaches.

Last year the Danish Maritime Administration extended participation in its annual Regulators Forum to classification. The topic of the event was Human Factors in Maritime Systems. Human Factors experts from many societies participated in the event, including presentations on Human-Centred Design and alarm management. ■



About the author

Dr Jonathan Earthy has worked for Lloyd's Register for more than 30 years. He is technical authority for human factors (HF) in LR Marine & Offshore, including the R&D programme and the introduction of Ergonomics into classification. His technical speciality is the assurance of the quality of Human Factors Integration and human-centred design, with special reference to advanced ICT. His other research interests are the introduction of human factors into the marine industry, standardisation of human factors, human-centred artificial intelligence, sociotechnical systems, and system resilience.

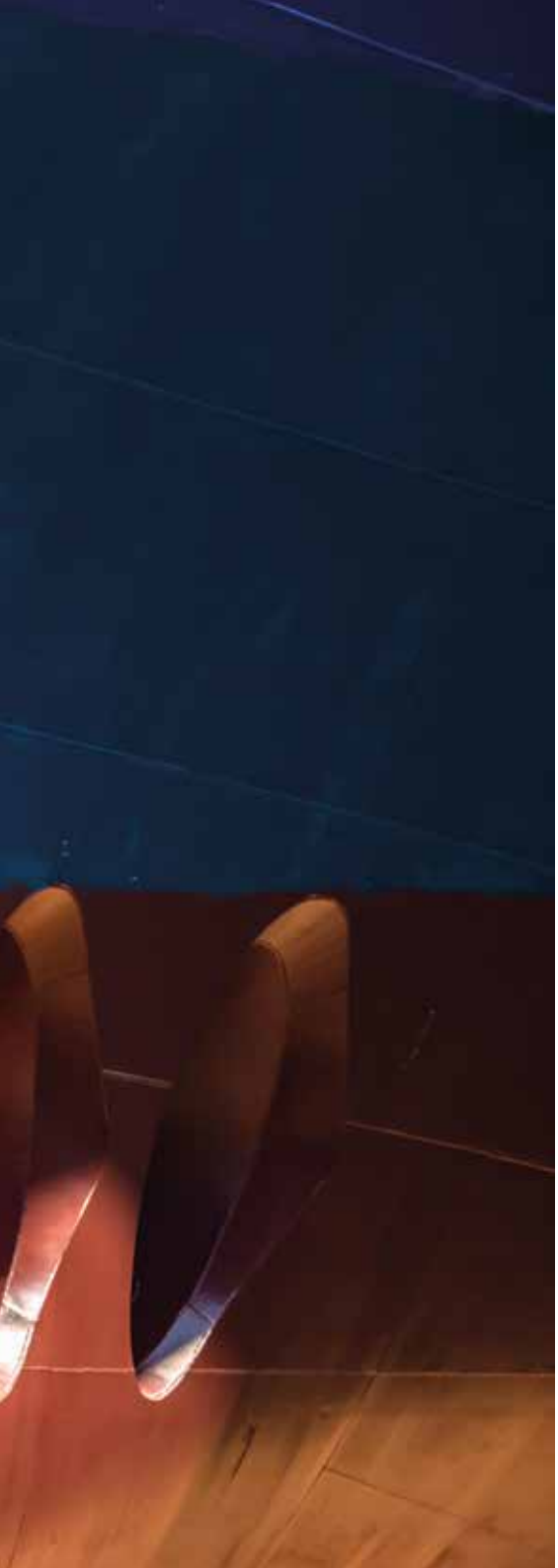
Jonathan has a BSc from Durham and a PhD from Aston. He is founding secretary of the LR Rules Human Factors Panel and was technical supervisor of the award-winning LRF Alert! human element awareness-raising initiative. He is a member of the SIGTTO Human Element Focus Group, Maritime CHIRP Advisory Board, IMarEST Human Element Working Group and IMO MASS Correspondence Group. He is a professor II at the University of Western Norway.

A QUALITY APPROACH TO THE INDUSTRY'S CHALLENGES

Maintaining high standards helps to ensure that new requirements are applied effectively

By Jonathan Spremulli, Quality Secretary





The shipping and marine industries are no strangers to challenge. But the sheer volume and significance of challenges increased in 2025 and there is no sign that they will abate in 2026. These include but are not limited to challenges associated with decarbonisation, sanctions, digitalisation, cyber security, introduction of new technologies, and new methods of working. IACS and its Members are deeply involved in work relating to successfully addressing these challenges and any impacts they may have on safety.

Compliance with IACS' Quality System and Certification Scheme (QSCS) and the incorporated Quality Management System Requirements (QMSR) ensure that all the work carried out by IACS Members – who are required to be audited and certified in accordance with QSCS – is carried out to the internationally recognised highest quality standards applicable to classification societies and Recognized Organisations (ROs).

In 2025, Accredited Certification Bodies (ACBs) recognised by IACS to audit its member classification societies in accordance with QSCS and the incorporated QMSR successfully conducted all required audits, including Vertical Contract Audits (VCAs) relating to surveys of ships in service, ships under construction and surveys of machinery and equipment.

For audits conducted in 2025 ACBs were given four specific audit Focus Areas to consider during their audits. These were: 1) Safety (including compliance with IACS PR 37 entry into confined space requirements); 2) Remote classification surveys (compliance with IACS UR Z29); 3) Cyber security (IACS URs E26 and E27); and 4) Auditing against the latest Shipboard Energy Efficiency Management Plan (SEEMP) requirements contained in the MARPOL Convention.

There is clear alignment between the 2025 audit Focus Areas and new IACS and statutory requirements addressing those challenges highlighted above. It is essential from a quality perspective that new requirements are applied effectively across the IACS membership and thorough auditing by the ACBs during QSCS audits helps to ensure this. Of course, thorough auditing does not occur by chance and it is the selection, training and qualification of ACB auditors in accordance with QSCS procedures that ensures this.

Training of auditors must be continuous to ensure they are up to date with the latest requirements, including those selected to form part of an annual audit Focus Area. To facilitate ongoing training, IACS organises an Annual Auditors Seminar which all QSCS auditors are required to attend. The seminars last three days and include technical presentations by the IACS Member hosting the seminar. The 2025 Seminar took place in the DNV Hamburg office 21-23 January and in 2026 IRS will host the Seminar in Mumbai 20-22 January.

YEAR IN FOCUS

In 2025, there was a change of chair of IACS' important Quality Advisory Committee (AVC). At the AVC's 56th meeting in September, John Hannon of the US Coast Guard stepped down as chairman and Ashok Srinivasan of BIMCO took over the position. Mr Hannon will continue as a member of the AVC, but I would take this opportunity to thank him on behalf of IACS for his commitment and valuable contributions to the work of the AVC over many years.



The annual QSCS End User Workshop (EUW) was held in Hong Kong

The AVC is a long established IACS committee. Its purpose is to advise the IACS Quality Committee on the effectiveness of QSCS and its further evolution and improvement. The AVC represents the interests of external stakeholders that have an interest in the services provided by IACS Member classification societies within the scope of QSCS and is comprised of senior industry figures that have deep knowledge and understanding of the work of classification societies and the principles of quality management.

In November 2025, the annual QSCS End User Workshop (EUW) was held in Hong Kong. Stakeholders interested in and involved with QSCS and the quality standards applied to classification societies attended the workshop. Attendees included representatives of IMO Member States, classification societies, ACBs, IMO, and the International Quality Assessment Review Body (IQARB) which merged with the Quality Assessment and Certification Entity (QACE) at the end of 2024.

At the event, the ACBs recognised by IACS provided their feedback on their experiences over the audit year in applying QSCS and auditing the classification societies they certify. The EUW was this year chaired by the new chair of the IACS AVC and presentations were given by representatives of the China Maritime Safety Administration, the Hong Kong China Marine Department and the Liberian Registry relating to their Member States' oversight of their ROs.

Once again, the benefit of the in-person nature of the workshop was evident from the level of discussion both in session and in the margins and from the positive feedback received. I look forward to the 2026 workshop which is now in planning and will take place at a venue in Europe.

Finally, having completed its merger with QACE, IQARB currently assesses and certifies IACS Members in their capacity as classification societies and ROs and in future IQARB plans to extend its assessment and certification to non-IACS Members acting as ROs.

As the special member of IQARB and a member of its Technical Committee (TC), IACS is looking forward to participating in the related work of the TC, ensuring that it is clear to all external stakeholders in any certification issued what quality standards are being applied by IACS and non-IACS ROs. ■



About the author

Jonathan Spremulli is the current IACS Quality Secretary, having been appointed in April 2022. He is a Chartered Engineer and Member of the IMarEST and is qualified in marine engineering and naval architecture. Jonathan has over 42 years of experience in the marine industry. Prior to joining IACS he most recently held positions including marine director at the International Chamber of Shipping and general manager for the Liberian Registry's London office. Jonathan has worked for over 20 years in classification, including for Lloyd's Register and RINA SpA. Jonathan started his career as a sea-going engineer for Canadian Pacific.

THE GOLD STANDARD THAT SAFEGUARDS TRUST IN CLASSIFICATION

QSCS framework delivers consistency, independent verification and continual quality improvement

By Przemysław Gałka, Chair, IACS Quality Committee

In the maritime industry, where safety, environmental protection and regulatory compliance are paramount, trust is earned the hard way: through consistency, traceability and decisions that can be evidenced. Quality assurance is not just a process – it is a core value that protects life, property and the marine environment.

At the centre of IACS' commitment to quality is the Quality System Certification Scheme (QSCS) – a comprehensive framework that ensures the consistent application of quality standards across all Members. QSCS supports the effectiveness and continual improvement of Members' quality management systems, providing stakeholders with confidence that critical services are delivered in a controlled and reliable manner.

QSCS – widely recognised as a 'gold standard' within the maritime industry – is designed to ensure that IACS Members not only meet but continually strengthen their performance against international quality expectations.

Each Member undergoes independent audits by Accredited Certification Bodies (ACBs), evaluating compliance with ISO 9001 and applicable elements of ISO/IEC 17020 integrated within the Quality Management System Requirements (QMSR) that form part of QSCS.

WHAT MAKES QSCS DIFFERENT

Many management systems can look strong on paper. QSCS stands out because it is built to demonstrate that quality works in practice, and to drive improvement when it does not.

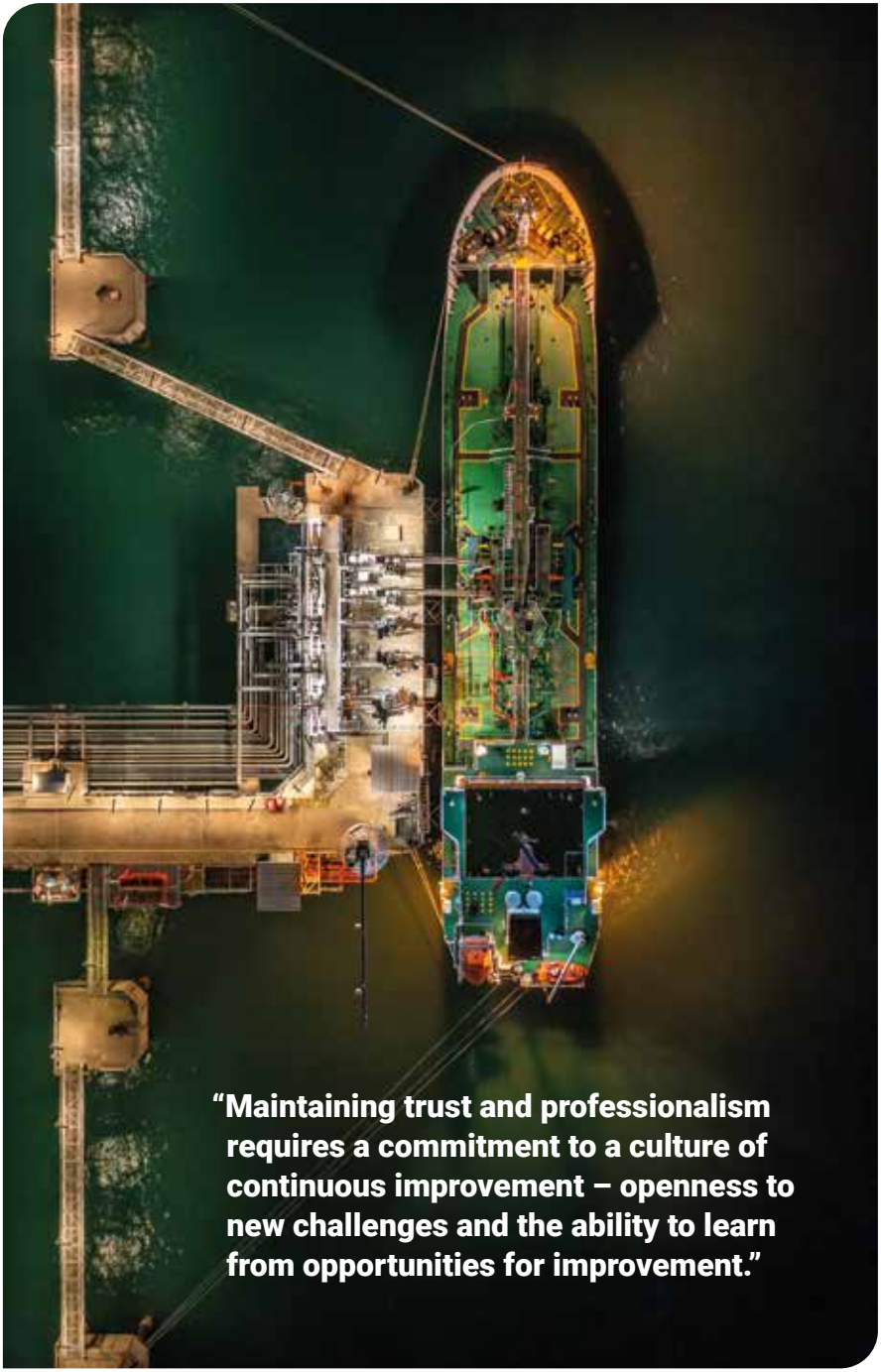
- **One common baseline:** Members are assessed against the harmonised QMSR, implemented and verified under the QSCS framework, aligned with globally recognised standards and expectations.
- **Independent verification:** ACB audits provide credible external assurance that the system is effective, not merely documented.
- **Focus on service delivery:** Beyond standard office audits, Members undergo Vertical Contract Audits (VCA) – a more in-depth form of audit assessing the effectiveness of specific services delivered by classification societies and Recognized Organizations.

VCAs examine the delivery of core services (for ships in operation, new buildings, safety management certification and equipment certification). The approach combines process audits and product/contract evidence to identify systemic strengths and improvement opportunities – helping to ensure that work from initial design assessment to long-term ship maintenance is carried out to the highest quality standards.

WHY THE 'GOLD STANDARD' MATTERS NOW

The operating environment for Recognized Organizations is becoming more demanding and more visible. Stakeholders expect not only compliance, but also clarity, predictability and demonstrable integrity. In this context, the value of QSCS is straightforward: it provides a shared benchmark that supports confidence in the services delivered by IACS Members.

"Over the years, the robust and independently audited QSCS has proven to be a globally recognised maritime quality benchmark – one which even non-IACS classification societies aspire to comply with."



IACS Members’ adherence to QSCS demonstrates their commitment to transparency, consistency and competence. It shows that Members are not only qualified, but are also continually improving their processes to keep pace with evolving industry needs, technology and stakeholder expectations.

THE CHALLENGES THAT WILL TEST THE ‘GOLD STANDARD’

These are not ‘annual actions’. They are the key pressures shaping expectations of IACS and QSCS in the coming years:

- **Evolving requirements and oversight expectations**
  International standards, regulatory approaches and stakeholder expectations continue to develop. QSCS must remain aligned with globally recognised references, while keeping requirements clear, auditable and consistently interpreted across the membership.

- **External readability: transparency and traceability**
  Quality systems must be understandable beyond the organisation itself. Stakeholders increasingly expect decisions and outcomes to be traceable to evidence and supported by consistent reasoning, not local interpretation.

- **Using data as an early signal for improvement**
  Quality is assessed not only by audits, but also by performance signals and trends. The expectation is a mature ‘learning loop’: identifying patterns, understanding systemic causes and converting insights into targeted improvements.



63th QC Meeting in Gdańsk

- **Digitalisation and new working methods – without compromising assurance**
  New tools can increase efficiency, but they also raise questions about control, integrity and equivalence of evidence. The principle is simple: techniques must be used in a controlled, risk-based and consistent manner, so that assurance is not weakened by changing methods.

- **Competence in a rapidly changing technical landscape**
  As technology and operating profiles evolve, competence requirements rise. Strengthening consistency in training, qualification and authorisation frameworks supports reliable outcomes – ensuring that quality depends on the system, not on individuals.

QSCS AS A RESILIENCE MECHANISM

QSCS is often described as a 'gold standard' because it acts as a quality resilience mechanism: it maintains common requirements, ensures independent verification, and strengthens the ability to learn and improve.

That is why the QSCS improvement cycle matters. It is increasingly built around structured review and benchmarking QMSR and the overall QSCS framework against relevant international requirements and guidance (ISO, IEC, IAF, ILAC) and leading accreditation/certification schemes – to keep the framework effective, credible and future-ready.

Ultimately, commitment to quality is central to IACS' mission to enhance maritime safety, protect the marine environment and support the overall integrity of global shipping. As the maritime industry continues to evolve, IACS' and its Members' unwavering commitment to quality will remain a cornerstone of success – maintaining the confidence of regulators, shipowners and the public. ■



About the author

Przemysław Gałka, MBA, graduated from the Maritime University of Gdynia with an M.Sc. Eng. degree in Maritime Transport and Navigation in 2003 and completed an MBA for Engineers at Kozminski University in 2022. He is a senior executive and conformity assessment professional specialising in the certification of products, processes, personnel, and management systems. He currently serves as Director of the Certification Division at the Polish Register of Shipping (PRS), leading strategic development and implementation activities in certification services, reporting directly to the Management Board, and managing a team of over 100 professionals. In parallel, he is Chair of the IACS Quality Committee (elected in 2025) and a lecturer in postgraduate studies at Gdańsk University of Technology, teaching ISO standards and Total Quality Management (TQM). His professional background also includes long-term expert work for the Trade Inspection and technical auditing for the Polish Centre for Accreditation in the scope of Regulation (EU) 2016/425 on personal protective equipment.

TRANSFORMATIONAL PROGRAMME OF IACS INPUT TO IMO



Training and overhaul of process sets IACS in good stead for future IMO engagement

By Konstantin Petrov, IACS Accredited Representative to IMO

There are many eye-catching quotes by famous businesspeople about the importance of investing in people and their training. Regardless of the weight of the opinion of these individuals, this is an obvious observation; one does not need to be a business leader to realise one's dependence on knowledgeable and experienced people, especially in human centric activities.

With IACS' representatives to the IMO in mind, the Association took the timely decision to re-examine how its experts contribute to the work of IMO to see where there might be room for improvement. IACS Members are uniquely positioned to understand the performance of IMO's regulations in practice. The practical application of regulations to different designs under different circumstances can create questions which, if left unmanaged internally in IACS, can overfill IMO's work programme and risk blocking the progress on regulations in development. Add to this that IMO works on the basis of submitted documents, there is a risk that the necessarily technical nature and complexity of documents submitted by IACS risk losing the IMO audience if not presented in an understandable form or content. There is also IMO's time and processes to consider.

General submission and engagement trends led IMO's MSC 110 to assess its approach to managing the Committee's workload through the tightening of the process governing presentation and consideration of new output proposals, plus control of attempts to use the 'Any Other Business' agenda item to circumvent that process.

That focus by MSC 110 aligned well with the Association's initiatives to support broader awareness and understanding of IMO processes. Complexity arises when solutions need to be put in place by organisations involving many experts across multiple organisations with different backgrounds, languages and time zones, and who are understandably preoccupied by their 'day' job. That calls for an approach that creates new norms of behaviour, standards of communication, tailored (relevant) reference material, training material and coaching, monitoring and continuous adjustment. Creating and sustaining an environment in which all those who contribute to the IMO can thrive is time well spent.

CHANGE MANAGEMENT

Three years ago, a transformational programme was initiated to reinforce IACS reputation as IMO's principal technical advisor. While some benefits were immediate – such as improvement in the quality of IACS documents going to IMO and their focus – others took time to mature. Understanding that IACS needs to be selective in respect of the issues it brings to IMO was an important step forward.

Today, at the end of the three-year journey, we have a transformational programme in place, based on the contribution of all IACS Members. The programme – created with the strong support of the Chairs of the Safety and Environmental Panels – is supported by material to define the purpose of IACS at IMO and strengthened by the continuation of leadership as those two chairs move on to lead the Machinery and Safe Decarbonisation Panels, which are other equally important working groups for IACS' work at IMO. They leave a strong foundation for others coming into their roles for the next three years to build on.

Knowledge sharing material has been created that summarises classification and statutory regimes, their interdependence, and IACS and IMO as organisations, and describes the work at IMO that can only be understood from experience. It offers guidance on drafting different categories of documents, representing IACS in meetings, putting forward positions, reading reports of meetings, supporting decisions and more.

In addition to that, three best practice summaries have been prepared, specifically tailored to the three challenges of preparation of submission documents, preparation of IACS briefs and participation in IMO Correspondence Groups. The focus of those best practices is the quality of IACS' 'cradle to grave' contribution to IMO. These are used to guide IACS colleagues when they are undertaking specific related activities.

Support is also on offer from those who are experienced in the process and who will 'hold the hand' of colleagues participating in that work, be it in Correspondence Groups or in meetings.

The targeted audience is IACS Working Group members and those representing IACS at IMO through groups, committees and sub-committees.

STREAMLINING PROCESSES

Preparing colleagues to confidently represent IACS at IMO or to develop documents is significantly important. However, putting in place a confident person who spends time on developing well-argued documents only to constrain them individually or collectively with bureaucracy and internal outdated procedures will set them up to fail. Therefore, another strand of this work is the removal of



A familiarisation course for the Panamanian cadets at IACS

“Creating and sustaining an environment in which all those who contribute to the IMO can thrive is time well spent “

internal procedural hurdles, putting in place steps in the process which directly contribute to a positive result. As in all organisations, embedded bureaucracy is hard to remove, but this work continues with a dedicated IACS group looking at streamlining processes.

One example of early improvement has been in the relaxation of the oversight of technical work by IACS' governance body, allowing IACS Working Groups comprised of experts, with a wide perspective, to decide on the content of IACS documents and briefs to IMO technical sub-committees. The benefit of this is that those groups get more time to develop quality documents and positions, especially against strict IMO deadlines.

Going one step further, and given limited resources to address a steady stream of topics, IACS is trialling justification of an issue warranting action beyond discussion.

MOVES AT IMO

While those improvement actions are being put in place, IACS' work at IMO continues. On the topic of competence, the co-ordination of a couple of IMO Correspondence Groups were entrusted to IACS in 2025. Further, the issues which IACS raised as new outputs are now increasingly finding their way on to the agendas of sub-committees, rather than sitting on the shelf of post-biennial agendas of committees. IACS has made this possible by taking on the development of the actual text of the regulations in question and then putting them on the table of sub-committees as drafts for discussion.

I cannot finish this article without mentioning Unified Interpretations (UIs). With the change from unanimous decision to a consensus based one, IMO has introduced safeguards which have to be considered. At the same time, MSC 110 determined that only draft interpretations proposed for consideration by IMO should be subjected to safeguards. Practically, this means that IACS-adopted UIs forwarded to IMO as information documents are not required by IMO to undergo safeguards consideration.

Nevertheless, IACS Members understand that UIs are IACS decisions on mandatory instruments owned by IMO Member States and those States would want to be assured that safeguards have been considered even for IACS UIs. Therefore, IACS has adopted IMO safeguards into its internal process of development and adoption of its interpretations. ■



About the author

Konstantin (Kosta) Petrov graduated from Saint Petersburg State Marine Technical University with a master's degree in Naval Architecture in 1996. Before joining IACS as its Accredited Representative to IMO in 2019, he worked for two classification societies. In both organisations he was responsible for international policy towards regulators (IMO, IACS, EU, Governments) and industry, later switching to leading business development with postings to Helsinki and Hamburg. With 30 years in classification, he has chaired various international groups/committees in IACS, IMO, and industry, and promoted classification and statutory regime as ways to deliver safe, secure and environmentally friendly shipping.

TACKLING THE TWIN TRANSITION CHALLENGES TOGETHER





Fast-changing issues require steadfast commitment with the EU

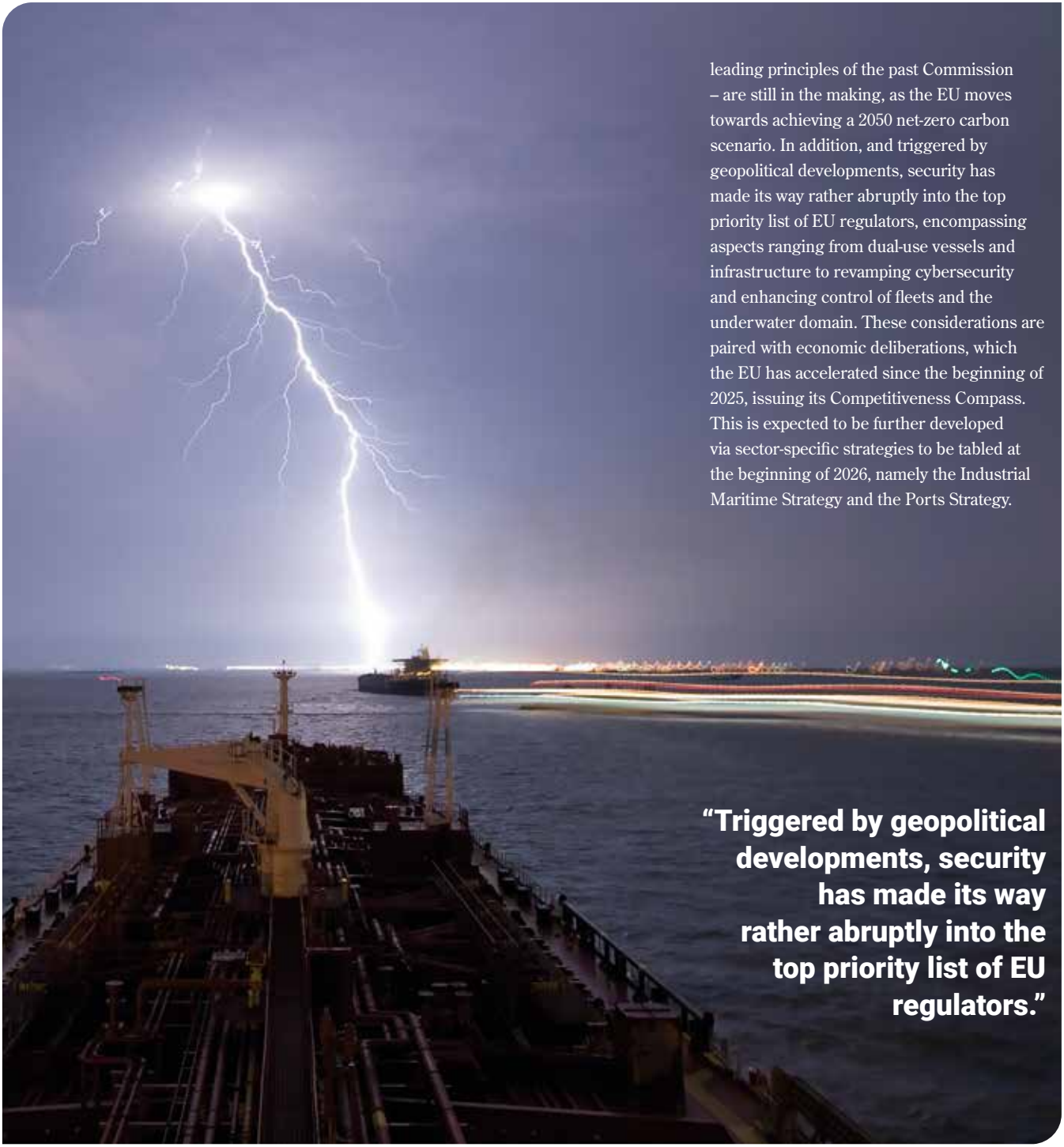
By Astrid Silvia Grunert, IACS Representative to the EU

"Nothing is as constant as change", Greek philosopher Heraclitus stated over 2,000 years ago. While the political construct that we usually call by its abbreviation the EU has existed for many decades, its outer appearance and internal functioning has changed much over time. This does not contradict the continuity of its existence, but rather this represents the driving force behind its success.

That said, there have been periods marked by an accelerated pace, and those that are markedly slower. And, while the European Union has not sat idle since the EEC was founded in 1957, it has been dealing with an accumulation of challenges over recent years. These challenges have come to a head in 2025, the entry year of a new Commission which has a demanding five-year term ahead. As those familiar with EU policymaking will know, the EU's response to challenges, broadly identified as 'priority themes', is as diverse as the Union's membership, ranging from non-binding communications to actual regulations and guidelines supporting enforcement.

In this regulatory landscape and as it relates to the maritime sector, much has happened lately in an attempt to set the course not only for the coming five years, but also for related mid- and long-term regulatory trends and perspectives, the strategies of which need to be planned well in advance. And, while every Commission's mandate is special in its own way, this one is of particular relevance due to the broader horizon it is attempting to approach.

Priorities remain with the so-called 'twin transition': decarbonisation and digitalisation, which – despite having been proclaimed the



leading principles of the past Commission – are still in the making, as the EU moves towards achieving a 2050 net-zero carbon scenario. In addition, and triggered by geopolitical developments, security has made its way rather abruptly into the top priority list of EU regulators, encompassing aspects ranging from dual-use vessels and infrastructure to revamping cybersecurity and enhancing control of fleets and the underwater domain. These considerations are paired with economic deliberations, which the EU has accelerated since the beginning of 2025, issuing its Competitiveness Compass. This is expected to be further developed via sector-specific strategies to be tabled at the beginning of 2026, namely the Industrial Maritime Strategy and the Ports Strategy.

“Triggered by geopolitical developments, security has made its way rather abruptly into the top priority list of EU regulators.”

COMMITMENT TO SAFETY

With a view to the above, one could ask whether safety deliberations have fallen by the wayside, given all the other high-level pressing priorities. However, just because it is not always explicitly mentioned does not mean that safety considerations are absent from the current lawmaking preparations. On the contrary, they are omnipresent.

Over the years, through our close co-operation with the European Commission's DG MOVE (Directorate for Mobility and Transport) IACS has witnessed that the EU never compromises on safety. The best proof of this is the existence of a unit dedicated exclusively to maritime safety.

The safety regime in maritime transport has grown not over decades, but over centuries and has matured into a very robust and soundly regulated system. IACS, as an association and through its Members in their roles as classification societies and as Recognized Organizations, has been contributing to the success of this equilibrium since the creation of modern shipping. Being a technical standard-setting body, IACS takes safety challenges seriously. But even more than that, IACS tries to anticipate developments and by providing guidance to the industry, bridges an important gap between the introduction of binding regulatory measures and their implementation.

In doing so, IACS and its Members are always one or two steps ahead – exploring, discussing and drafting the rules of tomorrow, together with industry and regulators. This is why we remain strongly committed to our work feeding into EU Expert Groups, ranging from the European Sustainable Shipping Forum to groups dedicated to passenger ship safety, security and marine equipment. Through these technical channels, anticipatory work is being done and fundamental decisions are being prepared at EU and IMO levels.

LOOKING AHEAD

When we look at regulatory hurdles, such as those related to the safety of alternative fuels, safe data handling, and underwater radiated noise – to quote just a few – IACS plays an instrumental role in identifying obstacles, providing interim guidance to address those, and outlining long-term solutions to make the safety regime futureproof in a sector marked by traditions, but in constant evolution.

We look forward to continuing to address these challenges – big and small – together with our regulatory partners at the EU level, including the European Commission and all its directorates and units overseeing maritime transport, the European Maritime Safety Agency (EMSA), as well as European Member States and the European Parliament in their role as co-legislators. And, of course, together with the industry.

In addition to the EU expert groups, IACS also relies on well-established meetings with DG MOVE, a newly introduced yearly technical exchange with EMSA, as well as roundtables with shipping attachés and the shipping industry's representatives in Brussels.

We remain confident that, despite the many changes ahead of us, we will be able to manoeuvre together in safe, innovative and consensus-driven waters. ■

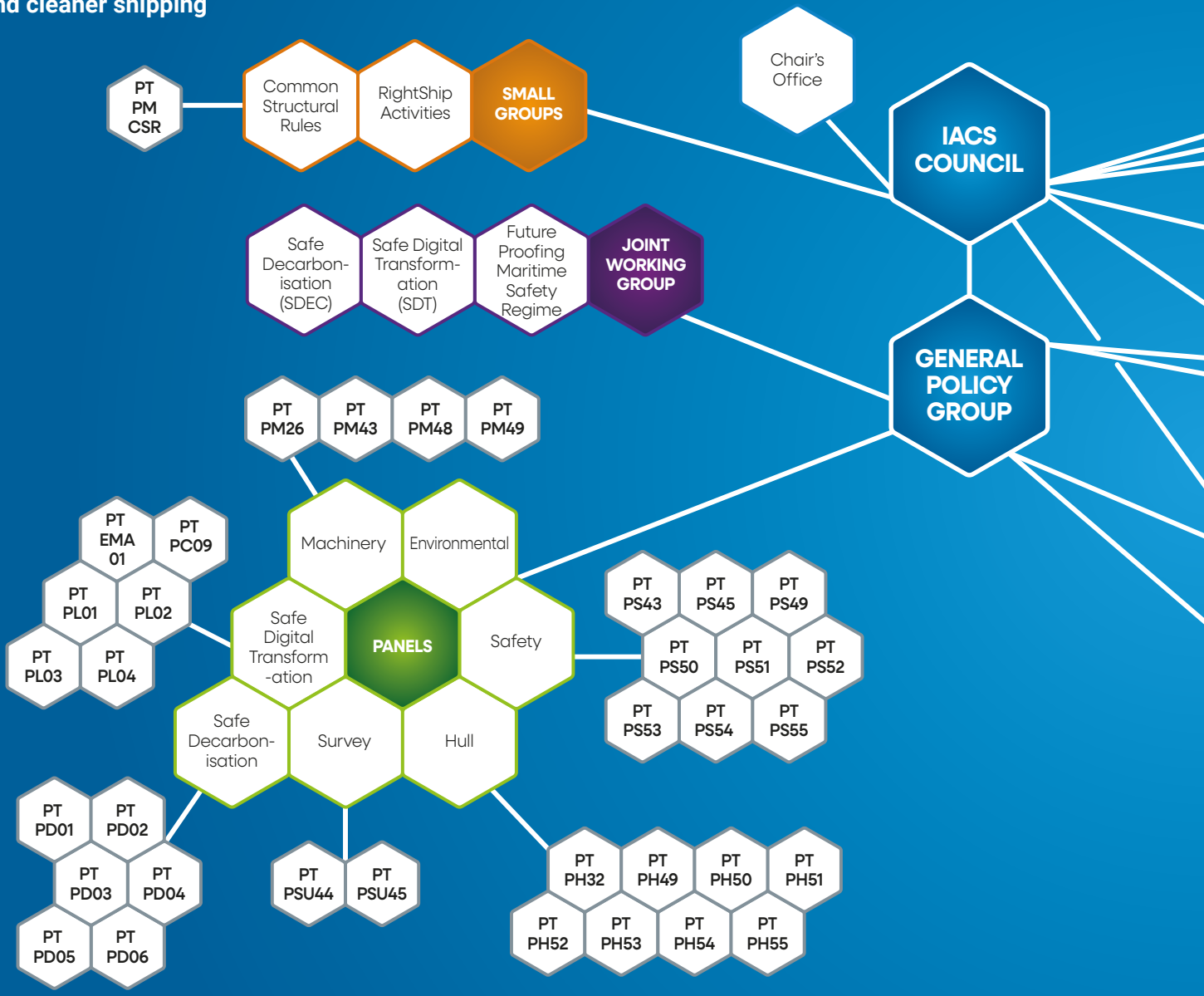


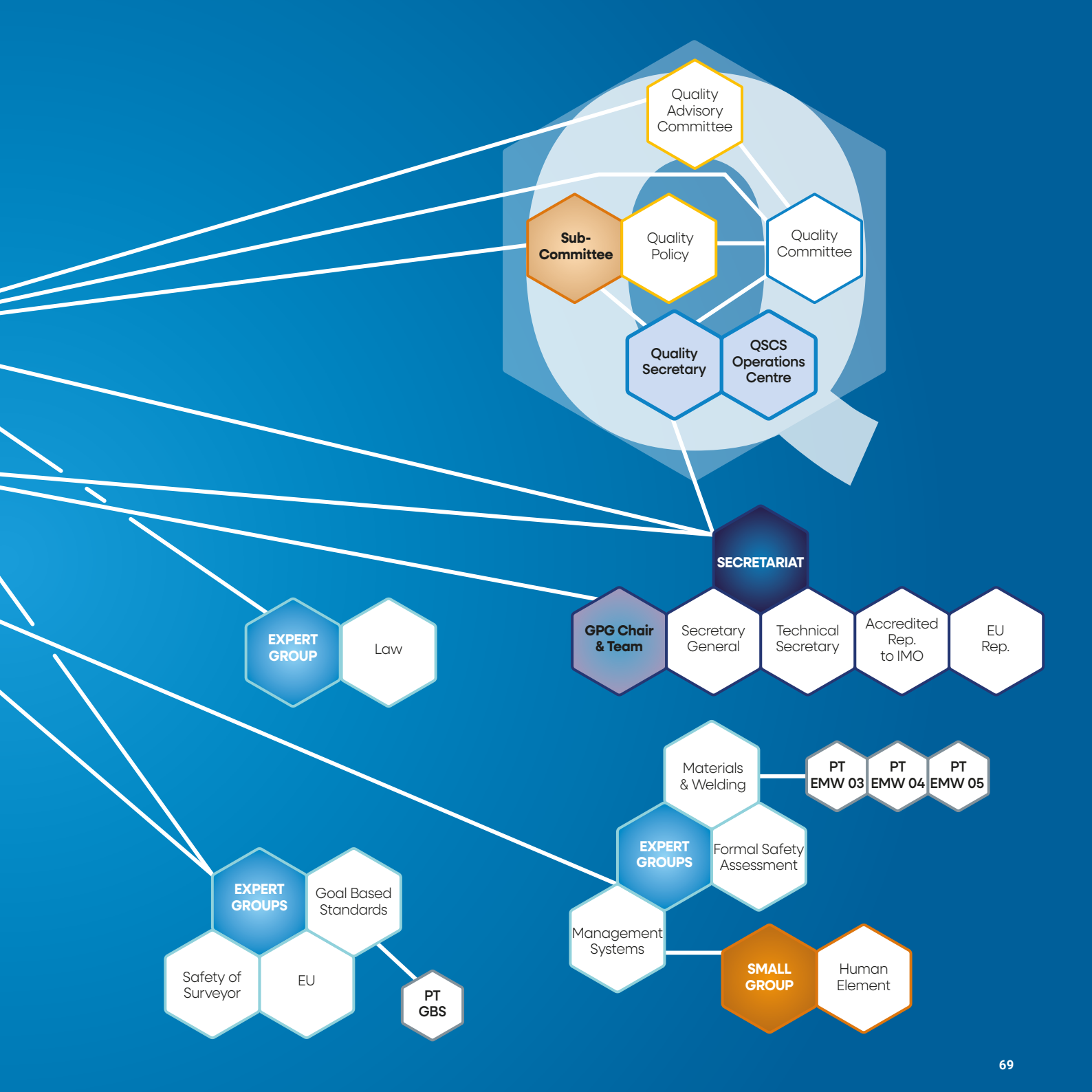
About the author

Astrid Silvia Grunert has represented IACS at the EU since 2011. Before that, from 2002, she held various positions in Brussels, including at CEOC (now the TIC Council), and the German Embassy. Astrid holds Masters degrees in International Relations, and Romance Studies. Prior to moving to Brussels and specialising in EU affairs, Astrid worked and studied in France, Austria and Germany.

IACS ORGANISATION 2025

IACS deals with multiple tasks to advance the goal of safer and cleaner shipping




Quality Advisory Committee
Sub-Committee
Quality Policy
Quality Committee
Quality Secretary
QSCS Operations Centre
SECRETARIAT
GPG Chair & Team
Secretary General
Technical Secretary
Accredited Rep. to IMO
EU Rep.
EXPERT GROUP
Law
Materials & Welding
PT EMW 03
PT EMW 04
PT EMW 05
EXPERT GROUPS
Formal Safety Assessment
Management Systems
SMALL GROUP
Human Element
EXPERT GROUPS
Goal Based Standards
Safety of Surveyor
EU
PT GBS

Project teams in detail

Survey Panel – 2 Project teams

PT PSU44	Location of survey requirements
PT PSU45	Revision of Model Course 3.06

EG-Goal Based Standards – 1 Project team

PT GBS	GBS Maintenance

SG-CSR – 1 Project team

PT PM CSR	CSR Revision

Safe Digital Transformation Panel – 6 Project teams

PT PC09	Cyber security controls
PT EMA01	MASS Code
PT PL01	Complex systems
PT PL02	3D Model
PT PL03	Risk assessment for MASS
PT PL04	Communications and remote Connectivity for MASS

Hull Panel – 8 Project teams

PT PH32	CSR Maintenance Team
PT PH49	Wave loads
PT PH50	New corrosion additions and CA
PT PH51	Securing of Containers at deck
PT PH52	CSR buckling of curved panels
PT PH53	Wind propulsion systems (Rec.10)
PT PH54	Mooring and anchoring equipment
PT PH55	Safe design of passenger ship windows

Machinery Panel – 4 Project teams

PT PM26	IGF development
PT PM43	Revision of UR M78
PT PM48	Anchor windlass, bow anchor winch
PT PM49	Revision of UR M46

Safe Decarbonisation Panel – 6 Project teams

PT PD01	Ammonia as fuel
PT PD02	Hydrogen as fuel
PT PD03	Carbon capture & storage technologies
PT PD04	Use of novel batteries
PT PD05	Gas dispersion analysis
PT PD06	Nuclear power

Safety Panel – 9 Project teams

PT PS43	Underwater Noise
PT PS45	Develop text for SOLAS II-2/9
PT PS49	Intact stability with WAPS (Wind Assisted Propulsion Systems)
PT PS50	Mitigating fire risk on containerships
PT PS51	Revision of IACS Rec 99
PT PS52	Safe Return to Port concept
PT PS53	GBS requirements for LSA
PT PS54	Use of FRP gratings
PT PS55	Onboard lifting appliances

EG-M&W – 3 Project teams

PT EMW03	Recommendation for ECA procedure
PT EMW04	Offshore mooring chain
PT EMW05	Revision of Rec.169



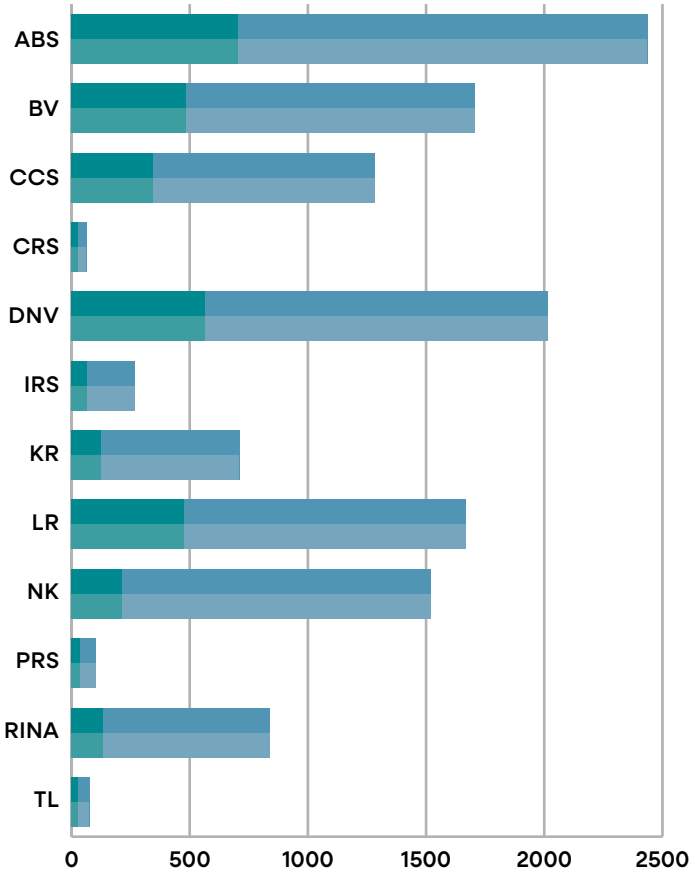
IACS CLASS REPORT 2025

Classed fleet figures include ocean-going self-propelled ships of 100 GT and over, excluding fishing vessels, military vessels and pleasure craft, with dual classed ships counted at 100%

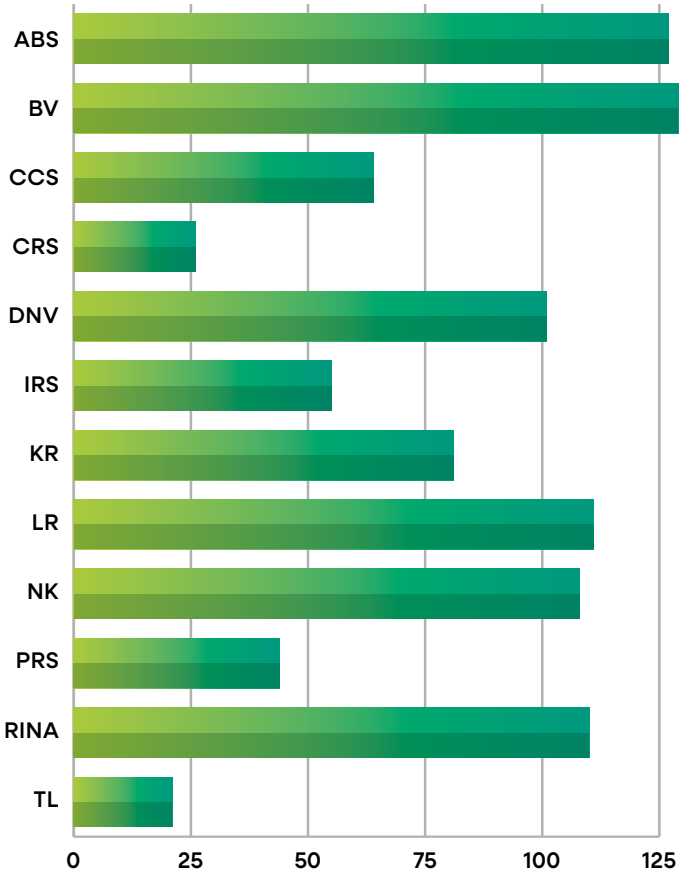
Number of surveyors[1]

Exclusive plan approval engineers

Exclusive surveyors involved in surveys on ships



Number of recognising flag State authorities[2]



Notes

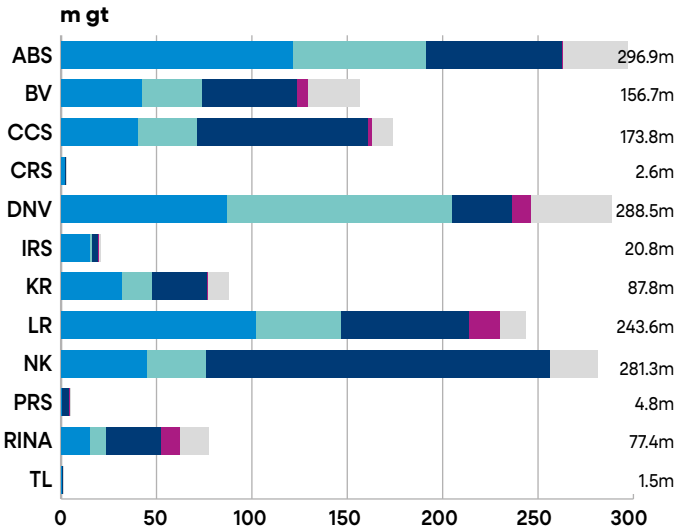
1 Combined total number of surveyors, consisting of the number of exclusive plan approval engineers (RO Code A1.1.2 Plan approval staff are the personnel authorised to carry out design assessment and to conclude whether compliance has been achieved), and the number of exclusive surveyors involved in surveys on ships (RO Code A1.1.1 Survey staff are the personnel authorised to carry out surveys (in operation and under construction), and to conclude whether or not compliance has been achieved).

2 Number of recognising flag State authorities means number of RO agreements with flag States, with general or standing authorisation to act on their behalf for any statutory certificate.

3 The total of IACS Members' figures is in excess of the Lloyd's List Intelligence global figure as each IACS Member counts dual classed ships at 100%.

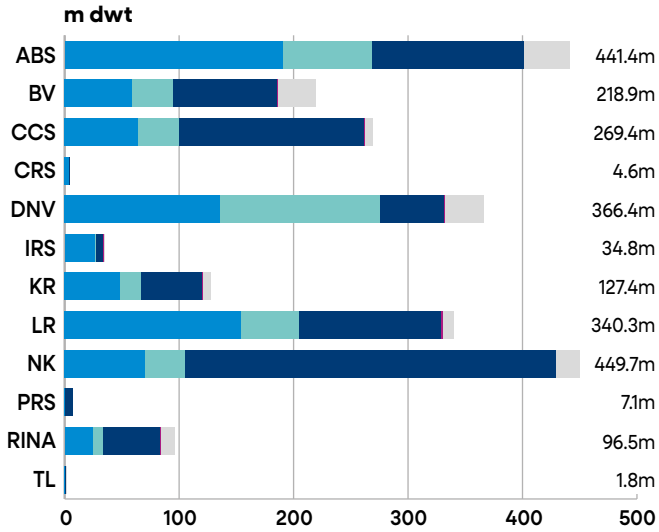
Total gross tonnage by type[3]

Tankers (crude, product & gas) # Container vessels
Dry bulk # Passenger vessels (over 12 pax) # Other ship types



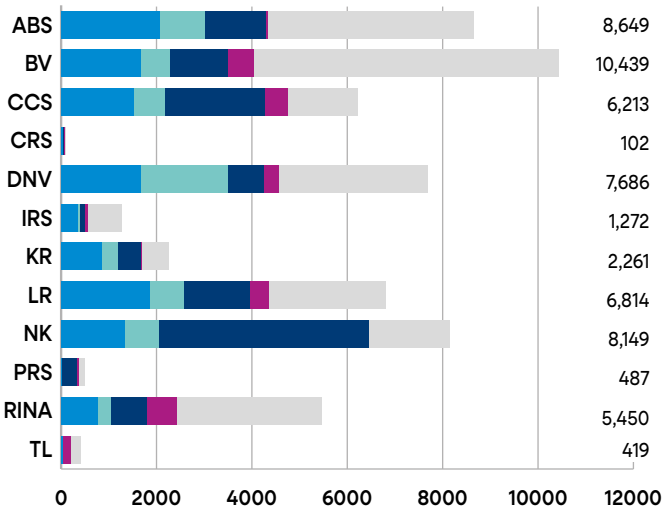
Total deadweight by type[3]

Tankers (crude, product & gas) # Container vessels
Dry bulk # Passenger vessels (over 12 pax) # Other ship types



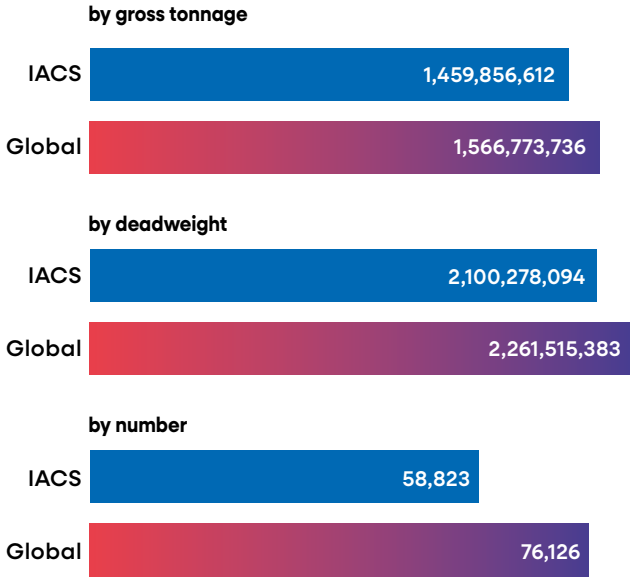
Total number of vessels by type[3]

Tankers (crude, product & gas) # Container vessels
Dry bulk # Passenger vessels (over 12 pax) # Other ship types



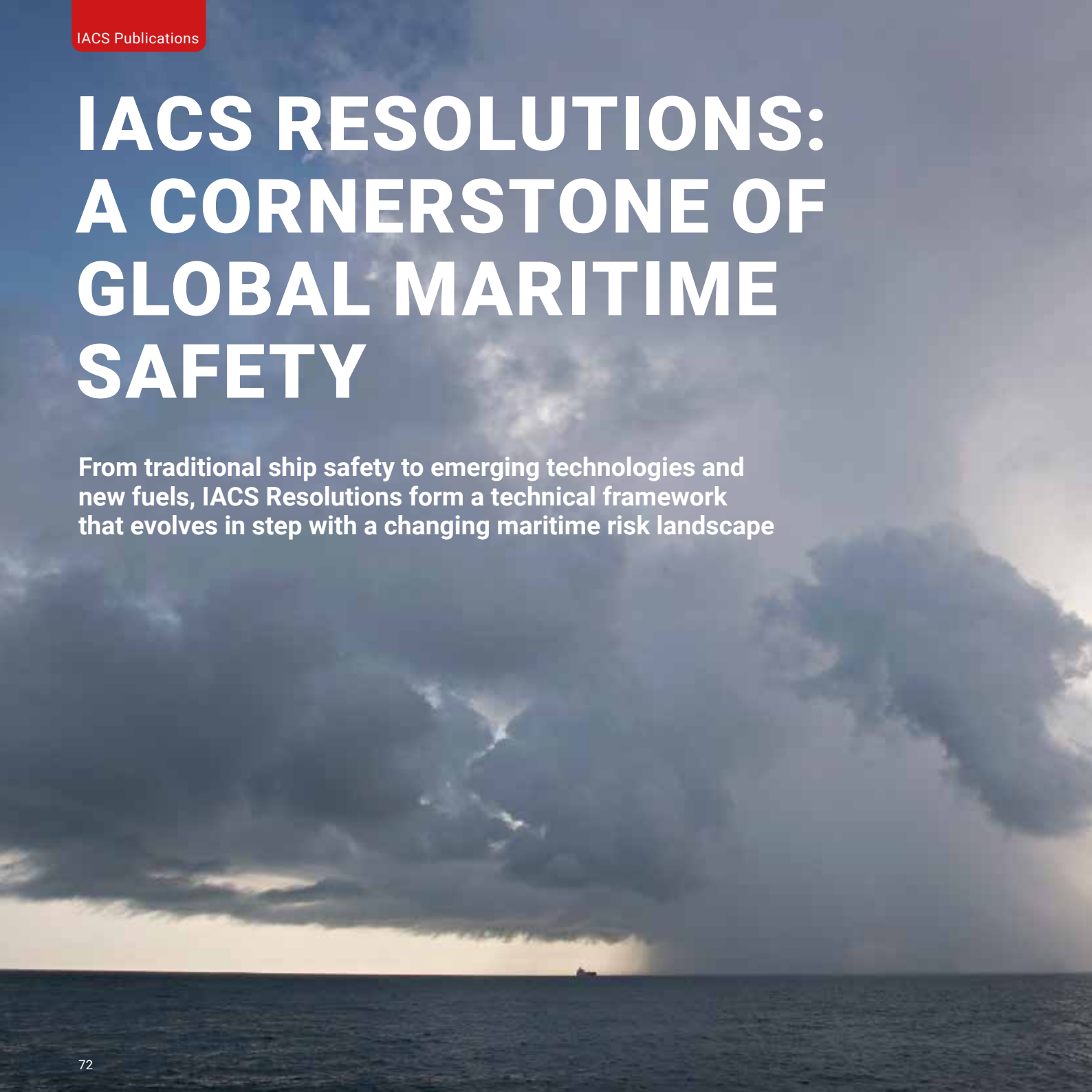
IACS fleet compared to global fleet

*Source: Lloyd's List Intelligence



IACS RESOLUTIONS: A CORNERSTONE OF GLOBAL MARITIME SAFETY

From traditional ship safety to emerging technologies and new fuels, IACS Resolutions form a technical framework that evolves in step with a changing maritime risk landscape



For more than five decades, IACS has played a central role in the global maritime safety architecture. Acting as the collective technical body of the world's leading classification societies, the Association provides consistency, technical rigour, operational insight, and coherence that underpin ship safety, environmental protection, and the effective implementation of international regulation across a highly complex and global industry.

Today, IACS Members class more than 90 per cent of the world's seagoing cargo-carrying tonnage. This extensive coverage means that IACS's principal technical outputs – IACS Resolutions – exert a profound influence on the design, construction, maintenance, and survey of ships worldwide. However, IACS's respected position is not due to the scale of its Membership, but rather its ability to transform a broad collective of international expertise into a unified, impartial, and technically justifiable safety framework. In other words, the scale of tonnage classed by IACS Members is the result of this technical authority, not its cause.

IACS RESOLUTIONS: THE TECHNICAL FOUNDATION OF SAFETY

At the heart of the Association's safety framework is its system of IACS Resolutions, which formalise agreement among IACS Members on technical and procedural matters, as well as the interpretation of specific elements of International Maritime Organization instruments. These Resolutions constitute a structured and authoritative body of content that promotes consistent standards of safety across vessels, irrespective of size, type, flag State, or operational profile.

IACS Resolutions comprise:

- **Unified Requirements (URs)**, which establish minimum technical standards on matters directly connected to, or covered by, specific Rule requirements and classification practices
- **Unified Interpretations (UIs)**, which harmonise the application of interpretations of Convention and IMO Regulation requirements where additional clarification or definition is required
- **Procedural Requirements (PRs)**, which define consistent approaches to the delivery of classification and statutory services; and
- **Recommendations**, which are not necessarily related to matters of class, but support best practice and provide guidance to the marine industry across a wide range of technical and operational topics, from fuels to the integration of the human element.

Together, these instruments provide a common technical reference point for the maritime industry, mitigating technical fragmentation within a global sector characterised by diverse regulatory regimes and operating environments.

It is also important to recognise that many IACS Resolutions inform the development of IMO instruments, embedding technical consensus into the international regulatory framework and supporting IMO Member States in achieving consistent global implementation.

Ultimately, IACS Resolutions ensure that ships classed by different IACS Members are subject to unified baseline standards. This reinforces confidence among flag State Administrations, shipowners, insurers, shipyards, and regulators, strengthening trust in the classification system as a cornerstone of maritime self-regulation and supporting the industry's shared objective of safe ships and clean seas.

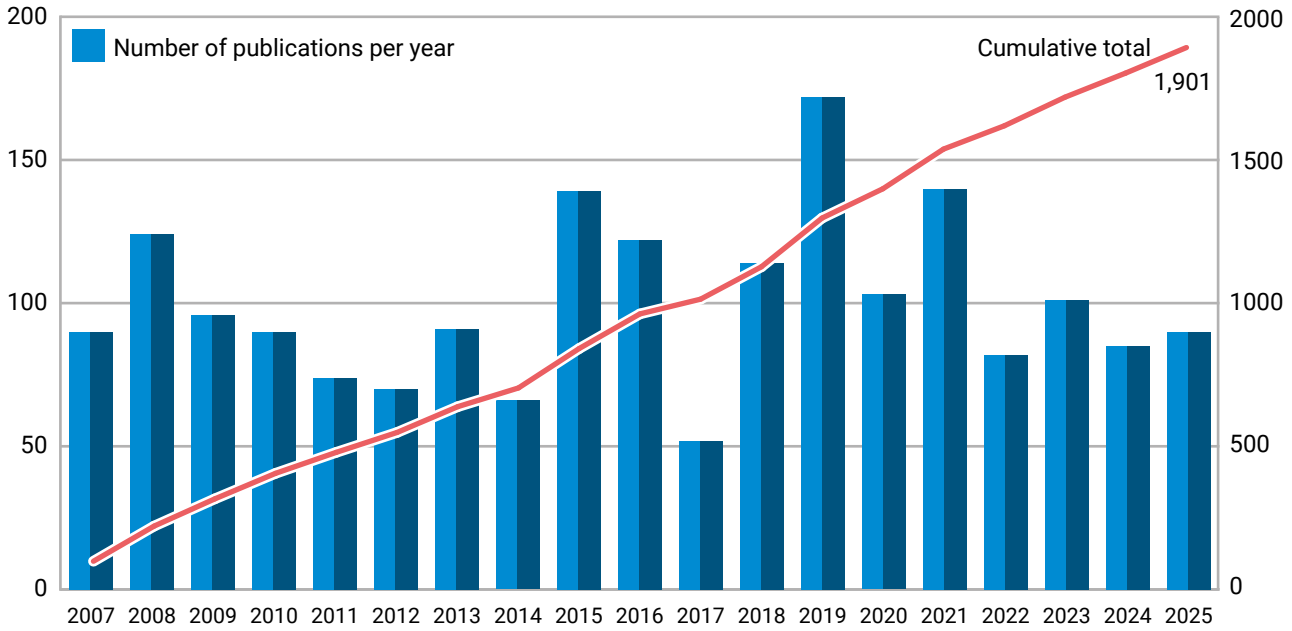
EXPANDING SCOPE IN A CHANGING MARITIME RISK ENVIRONMENT

While IACS's early work focused on traditional disciplines such as hull structure, machinery, and fire protection, the Association's technical scope has expanded significantly in response to the increasing complexity of ships, evolving operational profiles, and the emergence of new and interconnected risks.

Modern vessels incorporate advanced automation, complex digital systems, alternative fuels, and increasingly integrated technologies. In parallel, regulatory expectations relating to environmental performance, cyber safety, and operational integrity have intensified.

In response, IACS has broadened its technical focus to address areas including digitalisation and cyber safety; remote and technology-enabled survey techniques; alternative fuels and new propulsion technologies; human–system interaction; and environmental protection and sustainability. This widening scope reinforces the importance of a disciplined, engineering-led approach to safety management, ensuring that innovation is underpinned by robust technical governance.

Annual and Cumulative Output of IACS Resolutions (2007–2025)



This broader focus is reflected in both the growing number of specialised IACS Panels and Project Teams, and the increasing number of IACS Resolutions in force.

INCREASING TECHNICAL OUTPUTS TO KEEP PACE WITH A CHANGING WORLD

As the maritime sector has evolved, so too has the volume and breadth of IACS's technical output. The number of IACS Resolutions developed or revised each year reflects an active and expanding programme of work across the Association's working groups. This is evidenced by the consistent annual output documented between 2007 and 2025, which has resulted in a cumulative total of 1,901 resolutions.

This sustained output is driven by operational experience; lessons learned from survey and inspection; advances in calculation methods and materials; and the need to address emerging technologies and novel ship designs.

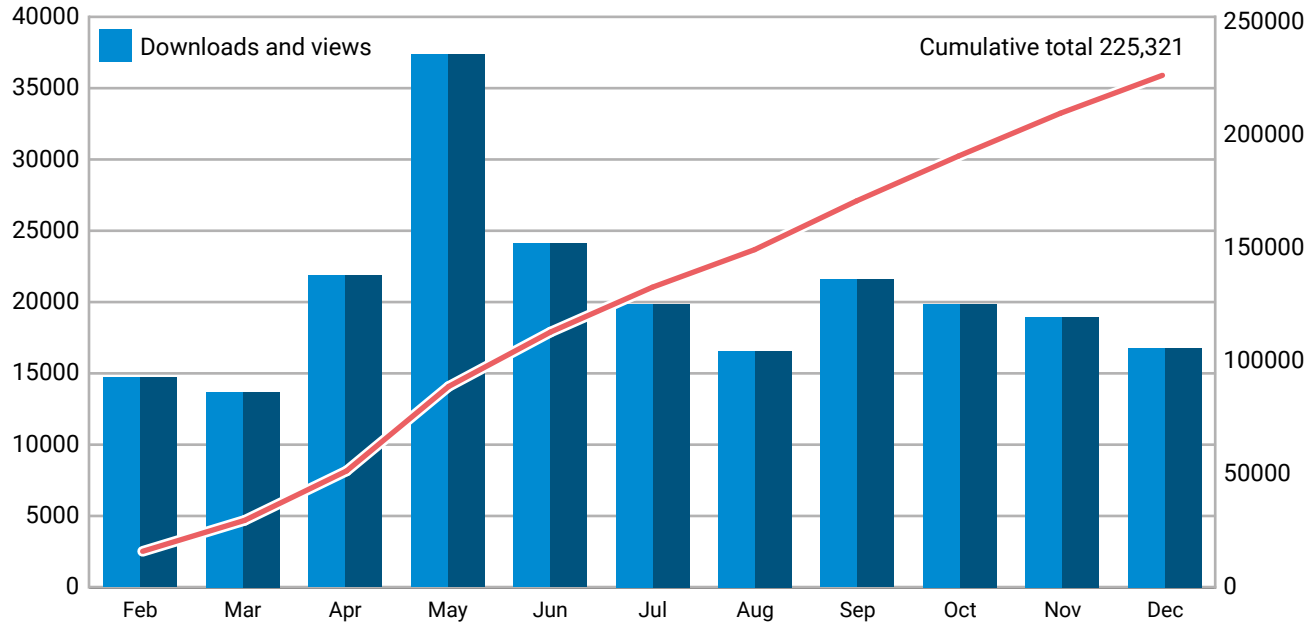
Crucially, IACS Resolutions are living instruments, subject to continuous review to ensure that criteria remain aligned with operational experience, technological maturity, and regulatory developments. This dynamic framework enables IACS to anticipate and manage safety proactively, rather than responding solely after incidents occur.

The industry's continued reliance on these standards is clearly evidenced by a high volume of engagement. In 2025, the interest in IACS publications remained consistently strong, with downloads and views averaging 20,000 per month. This steady stream of traffic showcases a profound and active interest in the technical Resolutions provided by IACS.

LOOKING AHEAD

As shipping navigates a period of accelerated technological, environmental, and regulatory change, the demand for consistent, technically sound standards continues to grow. The expanding scope of IACS's work and the increasing scale of its technical output reflect both the complexity

Monthly and Cumulative Downloads and Views (2025)



of modern shipping and the Association's central role in managing that complexity.

Through its IACS Resolutions and the collaborative expertise of its Members, IACS will continue to provide the technical leadership, consistency, and foresight needed to support safe, efficient, and sustainable global shipping.

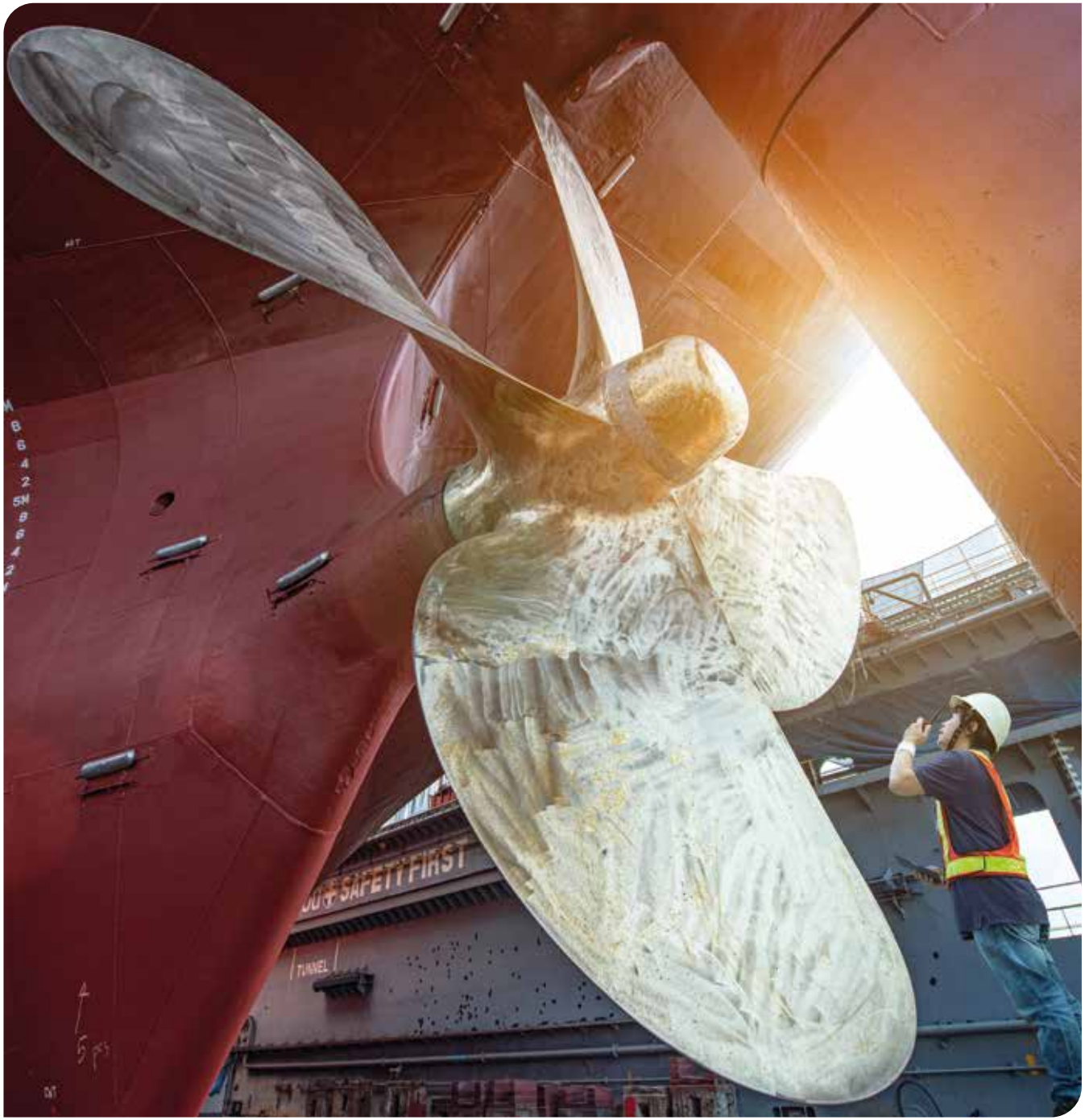
Against this backdrop, the following section highlights some of the most significant IACS Resolutions adopted or advanced during the past year.

Rec.186: New Recommendation on 3D Printing for Marine and Offshore Applications

With additive manufacturing (AM) emerging as a transformative technology for shipbuilding and offshore operations, Rec.186 establishes a structured framework for the qualification, approval, and certification of metallic parts produced via 3D printing. Titled *'Additively Manufactured Metallic Parts for Marine and Offshore Applications'*, the Recommendation provides guidance across all key stages of the AM process, including part design, feedstock qualification, manufacturing, post-processing, and inspection/testing. It addresses major AM techniques such as Powder Bed Fusion, Directed Energy Deposition, and Binder Jetting, and introduces tiered testing levels according to component criticality. By aligning with recognised international standards and existing Unified Requirements, Rec.186 ensures safety and reliability while enabling innovation, reinforcing IACS's commitment to the responsible adoption of emerging technologies and continued collaboration with industry stakeholders across shipbuilding and offshore engineering.

UR W28 Rev.3: Updated welding rules for marine and offshore structures

IACS adopted UR W28 Rev.3, together with coordinated revisions to UR W11 and UR W16, updating welding requirements for marine and offshore structures. The


SAFETY FIRST
TUNNEL

revisions harmonise high heat input welding requirements across the Unified Requirements, strengthen welding procedure qualification standards, and improve consistency with recognised international standards, including ISO 15614-1 and AWS D1.1/D1.1M. The updated rules also ensure alignment with related IACS requirements covering hull structural steels, high-strength steels, welding consumables, and brittle crack arrest steels. Thus supporting a coherent and globally applicable regulatory framework.

UR W28 Rev.3 introduces clearer definitions and qualification ranges for welding procedures, including an explicit definition of high heat input welding, updated provisions for post-weld heat treatment, and clarified timing requirements for non-destructive testing based on steel yield strength. An optional approval scheme is introduced for high heat input welding procedures through a new Annex E, while UR W11 and UR W16 establish a voluntary manufacturing approval scheme for steels intended for high heat input applications. Together, these changes provide greater transparency, flexibility, and consistency for manufacturers, shipyards, and classification societies, while reinforcing IACS's commitment to safe, reliable, and internationally aligned welding practices for marine and offshore structures.

UR M78 Rev.4: An update to drive zero-carbon shipping

As the maritime sector accelerates its transition toward zero-carbon fuels, UR M78 Rev.4 introduces a dedicated safety framework for the use of ammonia in marine engines. The revision expands the scope of the Unified Requirement to include anhydrous ammonia as an approved fuel for reciprocating internal combustion engines, alongside other alternative fuels. This milestone supports the safe adoption of innovative propulsion technologies while maintaining robust safety standards that complement and extend existing IMO requirements.

UR M78 Rev.4 strengthens risk assessment and mitigation through enhanced provisions addressing toxic and explosion hazards, including requirements for ammonia release mitigation systems, gas return and recovery arrangements, and upgraded design standards for piping systems, flexible hoses, and crankcase ventilation. The revision also introduces comprehensive monitoring, automatic safety actions, and expanded documentation and approval requirements for manufacturers. Applicable to engines with type approval applications dated on or after 1 July 2027, the revised UR provides regulatory clarity and confidence for shipowners, designers, and engine manufacturers, reinforcing the role of IACS in enabling the safe and consistent transition toward zero-carbon shipping.

UI SC310: Use of Factual Statements for Non-Certified Lifting Appliances

To support consistent interpretation of SOLAS regulations, IACS issued UI SC310 to clarify the use of a 'factual statement' for existing lifting appliances without valid certificates of test and thorough examination. The factual statement, issued by a competent person approved by the Administration or a Recognized Organization, confirms that the appliance has been load tested and thoroughly examined in accordance with SOLAS regulation II-1/3-13.2.4. It must specify the test load and criteria applied, confirm compliance only with paragraph 13.2.4, and clearly distinguish it from certificates covering other SOLAS provisions. Where the safe working load (SWL) is nominated by the Company, the statement should note that the test load is based on this SWL, without certifying the SWL itself. The interpretation also provides guidance on documentation, allowing the statement to be attached to the 'Register of Lifting Appliances and Cargo Handling Gear' while maintaining clarity that it does not replace other compliance certificates. This guidance ensures a uniform, safe, and practical approach to verifying non-certified lifting appliances across the maritime industry.

Rec 182: Onshore Power Supply

IACS Rec.182 provides a unified technical framework for the safe design, installation, and operation of ship-side elements of Onshore Power Supply (OPS) systems, enabling ships to connect to shore-based electricity while at berth (so called 'cold ironing'), an important factor in facilitating zero-emission berthing for ships The recommendation complements IMO guidelines by providing provisions for ship side requirements – including receptacles, switchgear, protective devices, and connection protocols – alongside best practices for verification, testing, and maintenance procedures. It emphasises risk mitigation through clear operational procedures, personal protective equipment, 'lock out/tag out' measures, and pre connection checklists. Rec.182 also sets documentation standards covering circuit diagrams, emergency shutdowns, and compatibility assessments, to support the safe and reliable operation of shipboard systems when connected to the shore-side interface.

Notable IACS Publications 2024-2025

Procedural Requirements

PR 1B
Procedure for Adding, Assigning, Maintaining or Withdrawing Double or Dual Class

PR 9
Procedural Requirements for ISM Code Certification

PR 1A
Procedure for Transfer of Class

Unified Requirements

UR M71
Type Testing of Reciprocating Internal Combustion Engines

UR Z17
Procedural Requirements for Service Suppliers

UR W28
Welding Procedure Qualification Tests of Steels for Hull Construction and Marine Structures

Unified Interpretations

UI SC309
Fire-Extinguishing Media Restrictions

UI SC310
Unified Interpretations of SOLAS Regulation II-1/3-13.2.4 With Respect to a Factual Statement for Test and Thorough Examination of Non-Certified Lifting Appliances

UI GC12
Secondary Barrier Testing and Effectiveness Assessment

Recommendations

Rec.182
Onshore Power Supply

Rec.186
Additively Manufactured Metallic Parts for Marine and Offshore Applications

Rec.194
Cybersecurity Controls for Existing Ships

By providing consistent technical and operational guidance, the recommendation supports shipowners, designers, and operators in adopting OPS systems, reducing auxiliary engine emissions, and advancing decarbonisation goals while maintaining robust safety and performance standards aligned with existing IMO regulations.

UI Rec.184: Guidelines on safety standards for work

IACS adopted Rec.184 to enhance occupational health and safety (OHS) and harmonise safe work practices, not just for IACS Members, but all those professionals involved in ship survey, inspection and associated activities. It focuses on strengthening risk assessments and highlights mitigation protocols while promoting consistency with recognised OHS principles. Rec.184 places core emphasis on applying proactive risk management and situational awareness before and during all survey and inspection activities, and reinforces requirements for fitness and fatigue management – highlighting the need for physical and mental readiness and adequate rest. The recommendation also supports the use of 'Stop Work Authority' to halt operations if unsafe conditions are identified, seeking to empower those that may be exposed to that risk.

Furthermore, Rec.184 outlines best practices for the use, inspection, and maintenance of personal protective equipment (PPE) and provides detailed guidance for high-risk tasks – including working at height, confined space entry, boat transfers, pressure testing, and the control of stored energy. By standardising safety procedures and facilitating shared learning, Rec.184 supports a consistent and safer working environment for surveyors and maritime personnel. ■



IACS Technical Secretary:
Andrew Gibbins



IACS Technical Officer:
Kyungmo Lee



IACS Technical Officer:
Puxing Liu

The IACS Secretariat technical team

The IACS Secretariat technical team – comprising the Technical Secretary and Technical Officers – supports the work of the various IACS Working Groups by coordinating meetings, maintaining technical documentation, and assisting with the administration and consistency of IACS resolutions. The team facilitates information exchange and internal procedural standards among Member societies and provides practical support to the Members, the General Policy Group and the IACS Council.

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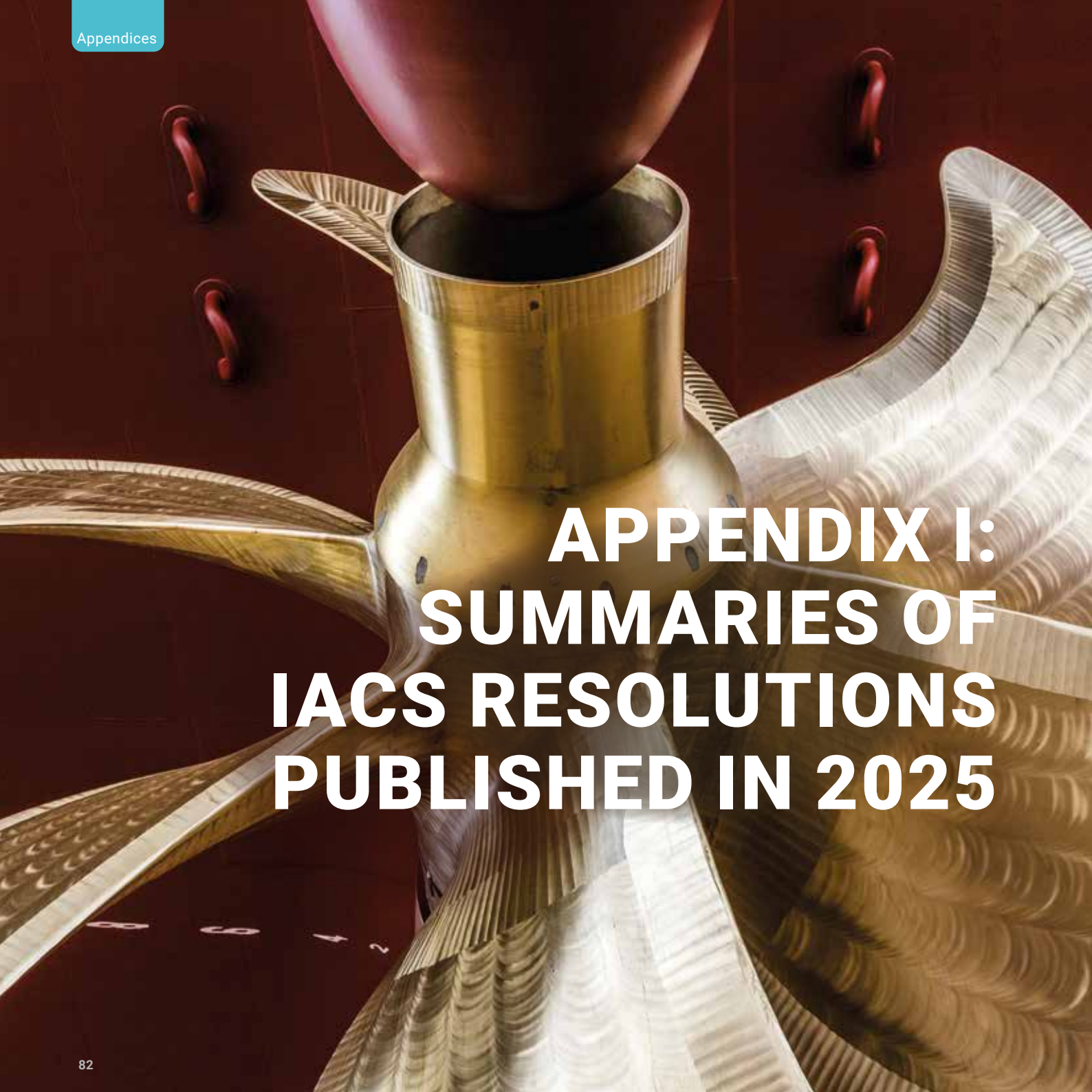
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APPENDIX I: SUMMARIES OF IACS RESOLUTIONS PUBLISHED IN 2025

Summary of New/Revisions to IACS Unified Requirements published in 2025

New Revised Corrigenda Deleted/Withdrawn

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
1	UR I3	Rev.2 Corr.1	14 Dec 24	Machinery requirements for Polar Class ships	-
2	UR M25	Rev.5	21 Dec 24	Astern power for main propulsion	01 Jan 26
3	UR Z15	Rev.4	06 Jan 25	Hull, structure, equipment and machinery surveys of Mobile Offshore Units	01 Jul 26
4	UR Z17	Rev.21	20 Jan 25	Procedural requirements for service suppliers	01 Jul 26
5	UR E15	Rev.5	31 Jan 25	Electrical services required to be operable under fire conditions and fire resistant cables	01 Jul 26
6	UR F43	Deleted	31 Jan 25	Installation requirements for analysing units for continuous monitoring of flammable vapours	-
7	UR W10	Rev.3	03 Feb 25	Spheroidal graphite iron castings or ductile iron castings	01 Jan 27
8	UR W9	Rev.3	04 Feb 25	Grey iron castings or flake graphite iron castings	01 Jan 27
9	UR W35	Rev.2	09 Feb 25	Requirements for NDT Service Suppliers	01 Jan 27
10	UR Z11	Rev.7	13 Feb 25	Mandatory ship type and Enhanced Survey Programme (ESP) notations	01 Jan 27
11	UR W7	Rev.5	28 Feb 25	Hull and machinery steel forgings	01 Jan 27
12	CSR	Corr.1	-	Corrigenda 1 to 01 Jan 2025 CSR	01 Jul 24
13	UR F45	Rev.1	03 Mar 25	Installation of BWMS on board ships	01 Jan 27
14	UR M74	Rev.3	03 Mar 25	Ballast Water Management Systems	01 Jan 27
15	UR F44	Rev.3 Corr.1	04 Mar 25	Fore peak ballast tanks and space arrangements on oil & chemical tankers	-
16	UR M44	Rev.11	20 Apr 25	Documents for the approval of reciprocating internal combustion engines	01 Jan 27
17	UR M51	Rev.5	20 Apr 25	Factory acceptance test of reciprocating internal combustion engines	01 Jan 27
18	UR M53	Rev.6	20 Apr 25	Calculations for I.C. engine crankshafts	01 Jan 27

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
19	UR M71	Rev.1	20 Apr 25	Type testing of reciprocating internal combustion engines	01 Jan 27
20	UR M78	Rev.3	20 Apr 25	Reciprocating internal combustion engines fuelled by gases or low-flashpoint fuels	01 Jan 27
21	UR M87	New	20 Apr 25	Certification scheme for reciprocating internal combustion engines	01 Jan 27
22	UR M88	New	20 Apr 25	Shipboard trials of reciprocating internal combustion engines	01 Jan 27
23	UR I2	Rev.5	08 Jun 25	Structural requirements for Polar Class ships	01 Jan 27
24	UR E18	Rev.2	10 Jun 25	Recording of the type, location and maintenance cycle of batteries	01 Jul 26
25	UR P1	Rev.6	23 Jun 25	Rule for pipes	01 Jul 26
26	UR W8	Rev.5	14 Jul 25	Hull and machinery steel castings	01 Jan 27
27	UR M77	Rev.5	21 Jul 25	Storage and use of SCR reductants	01 Jan 27
28	UR M85	New Corr.1	22 Jul 25	Type approval testing of synthetic materials for aftmost propeller shaft bearings	-
29	UR M35	Rev.8 Corr.1	29 Jul 25	Alarms, remote indications and safeguards for main reciprocating I.C. engines installed in unattended machinery spaces	01 Jan 20
30	UR M67	Rev.3	04 Aug 25	Type testing procedure for crankcase oil mist detection and alarm equipment	01 Jan 27
31	UR Z17	Rev.22	29 Aug 25	Procedural requirements for service suppliers	01 Jan 27
32	UR S10	Rev.8	04 Sep 25	Rudders, sole pieces and rudder horns	01 Jan 27
33	UR M56	Rev.4 Corr.3	18 Sep 25	Marine gears – load capacity of involute parallel axis spur and helical gears	-
34	UR W10	Rev.3 Corr.1	18 Sep 25	Spheroidal graphite iron castings or ductile iron castings	-
35	UR W11	Rev.10	18 Sep 25	Normal and higher strength hull structural steels	01 Jan 27
36	UR W16	Rev.4	18 Sep 25	High strength steels for welded structures	01 Jan 27
37	UR W28	Rev.3	18 Sep 25	Welding procedure qualification tests of steels for hull construction and marine structures	01 Jan 27

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
38	UR C6	Rev.1	19 Sep 25	Requirements for lashing software	01 Jan 27
39	UR W23	Rev.3	19 Sep 25	Approval of welding consumables for high strength steels for welded structures	01 Jan 27
40	UR E22	Rev.3 Corr.1	28 Sep 25	Computer-based systems	-
41	UR E25	Rev.3	05 Nov 25	Failure detection and response of all types of steering control systems	01 Jan 27
42	UR M42	Rev.7	05 Nov 25	Steering gear	01 Jan 27
43	UR E15	Rev.6	16 Dec 25	Electrical services required to be operable under fire conditions and fire resistant cables	01 Jan 27
44	UR E7	Rev.6	16 Dec 25	Cables	01 Jan 27
45	UR M78	Rev.4	24 Dec 25	Reciprocating internal combustion engines fuelled by gases or low-flashpoint fuels	01 Jul 27

1. UR I3 (Rev.2 Corr.1 Dec 2024)

In Corr.1, Identification of typographical errors with formulae, parameters and paragraph numbering where clarifications were needed.

2. UR M25 (Rev.5 Dec 2024)

UR M25 provides unified requirement for astern power for main propulsion. Rev.5 was issued to resolve the inconsistency between UR M25.1 and UR S10.2.

3. UR Z15 (Rev.4 Jan 2025)

UR Z15 provides unified requirements for hull, structure, equipment and machinery surveys of Mobile Offshore Units. This revision is to allow application of this UR also to ‘other similar units’ in a similar manner to UR D1, D1.1.2.

4. UR Z17 (Rev.21 Jan 2025)

UR Z17 provides the procedural requirements for service suppliers. In this revision, the requirements for firms engaged in measurements of noise level on board ships have been updated based on MSC.1/Circ.1509/Rev.1.

5. UR E15 (Rev.5 Jan 2025)

UR E15 provides unified requirements for electrical services required to be operable under fire conditions and fire resistant cables. In Rev.5 of this Requirement, updates include the definition of ‘high fire risk areas’ in Notes for routing electrical cables, as well as the relevant edition of applicable standards.

6. UR F43 (Del Jan 2025)

UR F43 is deleted because all the requirements have been included into FSS Code Chapter 16 Fixed Hydrocarbon Gas Detection Systems, as amended by resolution MSC.292(87), and relating SOLAS provisions.

7. UR W10 (Rev.3 Feb 2025)

This latest revision (revision 3) of IACS UR W10 seeks to align and harmonise the requirements for specifying the properties of spheroidal graphite or ductile cast irons with international standards consistent with industry practice.

8. UR W9 (Rev.3 Feb 2025)

This latest revision (revision 3) of IACS UR W9 seeks to align and harmonise the requirements for specifying the properties of unalloyed and low-alloyed grey cast irons with international standards consistent with industry practice.

9. UR W35 (Rev.2 Feb 2025)

UR W35 provides unified requirements for NDT Service Suppliers. This latest revision (Revision 2) of IACS UR W35 addresses issues of VT qualification requirement and definition.

10. UR Z11 (Rev.7 Feb 2025)

In Rev.7 of this UR, an update was made to exclude chemical tankers constructed with independent cargo tanks only from ships to which the 'ESP' notation shall be assigned.

11. UR W7 (Rev.5 Feb 2025)

In revision 5, due to feedback from manufacturers indicating that the sampling requirements for ring and disc forgings may cause confusion in understanding, the requirement regarding the sampling position for ring and disc forgings has been clarified. Furthermore, the requirements for Charpy V-notch impact tests have been reconsidered based on their intended purpose, which is to verify the quality control of the heat treatment process.

12. CSR (Corrigenda 1 to 01 Jan 2025 CSR)

Common Structural Rules (CSR) consist of two parts. Part One provides requirements common to both double hull oil tankers and bulk carriers and Part Two provides additional requirements applied to either double hull oil tankers or bulk carriers. The Corrigenda 1 to 01 Jan 2025 CSR came into force on 1 July 2024.

13. UR F45 (Rev.1 Mar 2025)

This UR details relevant safety measures for the installation of BWMS on board ships. This UR comes as a complement to UR M74 and focuses on the fire safety and personnel protection issues.

14. UR M74 (Rev.3 Mar 2025)

In Rev.3 of this Resolution, a new section gathering ventilation requirements from UR F45 and the previous revision of M74 is added.

15. UR F44 (Rev.3 Corr.1 Mar 2025)

UR F44 contains requirements for fore peak ballast tanks and forward space arrangements for oil tankers and chemical tankers. In Rev.3 amendments were made to extend the application of UR F44 to chemical tankers and Corrigenda.1 corrected an error in the operational requirements in all sample figures in relation to the required air exchange rate.

16. UR M44 (Rev.11 Apr 2025)

This UR provides requirements for the approval of drawings and specifications for engines and their sub-systems. Revision 11 of this resolution has been restructured to align with the new UR, 'Certification Scheme for Reciprocating Internal Combustion Engines,' and certification requirements previously contained in M44 have now been merged into M87 accordingly.

17. UR M51 (Rev.5 Apr 2025)

This UR provides requirements for factory acceptance tests of engines in general. Revision 5 of this resolution has been restructured and is now associated with the new UR 'Certification Scheme for Reciprocating Internal Combustion Engines'. The existing UR M51 has been divided to focus specifically on the factory acceptance test on the test bed, while requirements relating to shipboard trials have been relocated to a new UR, designated M88.

18. UR M53 (Rev.6 Apr 2025)

The Revision 6 of this UR provides amendments to clause 2.2 Calculation of alternating torsional stress to cover when some type of engines operate on gases or low-flashpoint fuels.

19. UR M71 (Rev.1 Apr 2025)

This UR provides requirements for type testing of reciprocating internal combustion engines. Revision 1 is associated with UR M87, 'Certification Scheme for Reciprocating Internal Combustion Engines,' is restructured accordingly, and provides clarification of the requirements.

20. UR M78 (Rev.3 Apr 2025)

The scope of application of UR M78 has been revised in accordance with agreed scope to cover additional gases or low-flashpoint fuels, and now covering methane, ethane, LPG and methyl/ethyl alcohol fuels. The UR has also been amended to clarify the content of the safety concept required to be submitted by the engine designer.

21. UR M87 (New Apr 2025)

This UR provides the Engine Certification Scheme based on engine type approval, including the requirements for issuing a type approval certificate, design evaluation certificate, and product certificate for individual engines. It outlines the process and associated URs for engine certification, intended for shipboard applications such as propulsion, electrical power generation, or other auxiliary purposes.

22. UR M88 (New Apr 2025)

This UR is derived from UR M51 and provides requirements for the shipboard tests of reciprocating internal combustion engines to be conducted upon installation on board.

23. UR I2 (Rev.5 Jun 2025)

This revision introduces the actual net effective shear area include portion of attached shell plating.

24. UR E18 (Rev.2 Jun 2025)

Revision 2 of this UR outlines the ventilation and location requirements for various types of batteries and UPS systems and elaborates on relevant standards for reference within the UR.

25. UR P1 (Rev.6 Jun 2025)

Revision 6 of UR P1 updates the scope of application and includes editorial improvements.

26. UR W8 (Rev.5 Jul 2025)

The current UR W8 has been revised with the following changes: New definitions and clarifications regarding test blocks; Revised requirements for special consideration of Charpy V-notch acceptance criteria.

27. UR M77 (Rev.5 Jul 2025)

This revision 5 updates the requirements use of aqueous ammonia or anhydrous ammonia for reductant of SCR.

28. UR M85 (New Corr.1 Jul 2025)

The UR specifies the technical requirements for the type approval of synthetic materials used in aftmost propeller shaft bearings. This corrigendum addresses an editorial typographical error.

29. UR M35 (Rev.8 Corr.1 Jul 2025)

This UR provides requirements for alarms, remote indications and safeguards for main reciprocating I.C. engines installed in unattended machinery spaces.

30. UR M67 (Rev.3 Aug 2025)

This UR provides requirements for Type testing procedure and crankcase oil mist detection and alarm equipment. This revision develops requirements for use of alternative fuels.

31. UR Z17 (Rev.22 Aug 2025)

UR Z17 provides the procedural requirements for service suppliers. In this revision, the requirements for firms carrying out an in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV) (Section 3) and firms engaged in survey using Remote Inspection Techniques (RIT) as an alternative means for Close-up Survey of the structure of ships and mobile offshore units (Section 16), have been updated given the identified difficulties faced by companies conducting RIT internally by ROV only to comply with the all the requirements set out in Section 3. Reference to MSC.1/Circ.1040/Rev.1 in Para. 6.2 was also updated.

32. UR S10 (Rev.8 Sep 2025)

The Rev.8 of UR S10 has been prepared to clarify 1) the meaning of deepest load waterline in the 1st sentence of clause 1.2.3, and 2) descriptions for section areas of rudder horn in clause 9.2.1 and Annex S10.5.

33. UR M56 (Rev.4 Corr.3 Sep 2025)

In Rev.4 Corr.3 of this Resolution, limits concerning the results of the formula for the calculation of the equivalent roughness RZH have been added.

34. UR W10 (Rev.3 Corr.1 Sep 2025)

The corrigenda was made to correct the references to Figure 1, 2 and 3 provided in Article 6.2.

35. UR W11 (Rev.10 Sep 2025)

Revision of IACS UR W11 to align and harmonise the requirements of high-heat input welding between this UR W11 and UR W16 and UR W28.

36. UR W16 (Rev.4 Sep 2025)

Revision of IACS UR W16 to align and harmonise the requirements of high-heat input welding between this UR and UR W11 and UR W28.

37. UR W28 (Rev.3 Sep 2025)

Revision of IACS UR W28 to align and harmonise the requirements of high-heat input welding between this UR and UR W11 and UR W16.

38. UR C6 (Rev.1 Sep 2025)

UR C6 provides harmonised performance standards and requirements to facilitate consistent approval of lashing software.

39. UR W23 (Rev.3 Sep 2025)

The UR was amended to relocate current requirements for situations involving undermatched welds (concerning grades Y89 and Y96) and direct the user of this IACS Resolution to UR W28 for such cases, as this is considered the more appropriate IACS Resolution for these requirements.

40. UR E22 (Rev.3 Corr.1 Sep 2025)

This UR provides requirements for Computer-based Systems. This revision is intended to improve and clarify the requirements for computer-based systems during design, construction, commissioning and maintenance, including better clarification of the system integrator. The objective of this revision is to ensure that UR E22 provides a minimum set of requirements to suppliers and system integrators of software-based automation that ensures that both individual systems and the total integrated functionality is of high quality and safe for use.

41. UR E25 (Rev.3 Nov 2025)

Rev.3 of this UR, the clarification regarding response of steering system upon hydraulic locking due to mechanical failure, is deleted from this UR and included in UR M42.

42. UR M42 (Rev.7 Nov 2025)

In Rev.7 of this UR, the explanation regarding steering system response after hydraulic locking due to mechanical failures, previously contained in UR E 25, has been incorporated into this UR.

43. UR E15 (Rev.6 Dec 2025)

In Rev.6 of this Resolution, substantial amendment to the referenced IEC standards for fire resistant type cables has been reflected.

44. UR E7 (Rev.6 Dec 2025)

In Rev.6 of this Resolution, substantial amendment to the referenced IEC standards for type approval certification of shipboard electric cables has been reflected.

45. UR M78 (Rev.4 Dec 2025)

In Rev.4 of UR M78 on 'Internal Combustion Engine Fuelled by Gases or Low-flashpoint Fuels', the scope of application of UR M78 has been revised in accordance with agreed scope to cover additional gases or low-flashpoint fuels, and now covers ammonia as fuel.

Summary of New/Revisions to IACS Procedural Requirements published in 2025

New Revised Corrigenda Deleted/Withdrawn

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
1	PR 39	Rev.1	20 Jan 25	Procedure for fleet quality monitoring	01 Jan 26
2	PR 1B	Rev.9	05 Nov 25	Procedure for adding, assigning, maintaining or withdrawing double or dual Class	01 Jan 27
3	PR 42	Rev.2	05 Nov 25	Assigning Class for a new building project when the design is already approved by an initial society (based on the classification rules and a memorandum of understanding (MOU) between a Class society, a shipyard and, if applicable, a ship owner)	01 Jan 27
4	PR 9	Rev.6	16 Dec 25	Procedural requirements for ISM Code Certification	01 Feb 26
5	PR 1A	Rev.12	23 Dec 25	Procedure for Transfer of Class	01 Jan 27

1. PR 39 (Rev.1 Jan 2025)

The revision was made to delete the unnecessary sentence referring to the QSCS, as this PR is equally useable by IACS members and non-IACS members.

2. PR 1B (Rev.9 Nov 2025)

In this revision, Section G specifying the minimum mandatory list of the drawings for the second society's approval was amended to add three popular ship types.

3. PR 42 (Rev.2 Nov 2025)

In Rev.2, Section B specifying the minimum mandatory list of the drawings for the society's approval was amended to add three popular ship types.

4. PR 9 (Rev.6 Dec 2025)

Reference to applicable requirements of IMO Res. A.1188(33) related to performance of remote ISM audits and addition of requirements related to mandatory additional company audit to be performed following major non-conformity raised during DOC audit.

5. PR 1A (Rev.12 Dec 2025)

PR1A provides the procedure for the Transfer of Class. This revision is for IACS members to have transparency on the condition of the secondary barrier of the ship in accordance with the result of PT PSU36 (Rev.3 of UI GC 12), in case of TOC of the ship.

Summary of New/Revisions to IACS Unified Interpretations published in 2025

New Revised Corrigenda Deleted/Withdrawn

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
1	UI SC89	Withdrawn	13 Dec 24	Ventilation of cargo spaces	-
2	UI GF22	New	14 Mar 25	Gas fuel vent pipes – single walled construction in machinery spaces	01 Jul 26
3	UI SC308	New	09 May 25	Ventilation systems of cargo spaces	01 Jan 27
4	UI HSC11	New	29 May 25	Fire-extinguishing media restrictions	01 Jan 26
5	UI SC309	New	29 May 25	Fire-extinguishing media restrictions	01 Jan 26
6	UI SC271	New Corr.1	08 Jun 25	Additional indicating unit in the cargo control room in accordance with amended FSS Code Chapter 9.2.5.1.6	-
7	UI GF19	Rev.1	23 Jun 25	Fuel supply to consumers – single common flanges	01 Jul 26
8	UI SC76	Rev.1	24 Jun 25	Engine bearing temperature monitors or equivalent	01 Jan 27
9	UI SC310	New	24 Jul 25	Unified Interpretations of SOLAS Regulation II-1/3-13.2.4 with respect to a factual statement for test and thorough examination of non-certified lifting appliances	01 Jan 26
10	UI SC140	Rev.4	04 Sep 25	Secondary means of venting cargo tanks	01 Jan 26
11	UI SC140	Rev.4 Corr.1	17 Nov 25	Secondary means of venting cargo tanks	-
12	UI SC308	Rev.1	19 Nov 25	Ventilation systems of cargo spaces	01 Jul 27
13	UI MPC51	Deleted	27 Nov 25	Technical Code on control of emission of nitrogen oxides from marine diesel engines (NOx Technical Code 2008, Chapter 3, Paragraph 3.2.1)	-
14	UI SC180	Rev.5	27 Nov 25	Hold, ballast and dry space water level detectors and performance standards for water level detectors on ships subject to SOLAS Regulations II-1/25, II-1/25-1 and XII/12 (Resolution MSC.188(79)/Rev.2)	01 Jan 27
15	UI SC76	Deleted	28 Nov 25	Engine bearing temperature monitors or equivalent	-

16	UI MPC131	Withdrawn	01 Dec 25	Unified Interpretation on the application of the amendments to Appendix IX of MARPOL Annex VI adopted by MEPC.385(81)	31 Dec 25
17	UI SC160	Rev.2	08 Dec 25	Method IIIC Construction	01 Jul 26
18	UI SC73	Rev.3	08 Dec 25	Fire protection of weather decks	01 Jul 26
19	UI GC12	Rev.3	23 Dec 25	Secondary barrier testing and effectiveness assessment	01 Jan 27

1. UI SC89 (Rev.5 Withdrawn Dec 2024)

During CCC 10 and subsequent E&T 41 discussions, concerns were raised that UI SC89 Revision 5 could be misinterpreted as classifying all listed cargoes as dangerous goods and that it did not correctly reflect IMSBC Code requirements, including the inclusion of DRI (D). As these concerns could not be resolved, IACS decided to withdraw Revision 5 and reinstate Revision 4, which has been in use since 1 January 2018.

2. UI GF22 (New Mar 2025)

This UI provides interpretation for gas fuel vent piping when applying paragraph 9.6.1 of part A-1 of the IGF Code.

3. UI GF308 (New May 2025)

UI SC301 has been developed with a view to provide clarity on the application of the SOLAS Ch II-2 regulations 9.7.2 and 9.7.5.1 regarding separation of ducts from spaces, after it was raised in the industry for causing concerns with ambiguous applicability.

4. UI HSC11 (New May 2025)

This UI provides interpretations for implementation of the 1994 and 2000 HSC Codes, regulation 7.9.4, prohibiting the use or storage of fire-extinguishing media containing perfluorooctane sulfonic acid (PFOS).

5. UI SC309 (New May 2025)

This UI provides implementation requirements for SOLAS regulation II-2/10.11, prohibiting the use or storage of fire-extinguishing media containing perfluorooctane sulfonic acid (PFOS).

6. UI SC271 (New Corr.1 Jun 2025)

The corrigenda was made in accordance with amendments to the Resolution MSC.555(108).

7. UI GF19 (Rev.1 Jun 2025)

Revision of UI GF19 was updated to improve the readability of the requirements and clarifies what should be confirmed when single common flanges are used.

8. UI SC76 (Rev.1 Jun 2025)

Revision 1 of UI SC76 was updated for consistent implementation regarding engine bearing temperature monitors mentioned in SOLAS regulation II-1/47.2.

9. UI SC310 (New Jul 2025)

New requirements on lifting appliances and anchor handling winches (OLAW) also consider existing lifting appliances that were installed before the effective date of 1 January 2026 and do not have valid certificates of test and thorough examination. This UI provides a factual statement that can be used as a proof of compliance with the requirements for the register of lifting appliances.

10. UI SC140 (Rev.4 Sep 2025)

The Revision 4 of UI has been aligned with the decision taken under SSE 10 and conforms to the framework outlined in document SSE 10/12/5.

11. UI SC140 (Rev.4 Corr.1 Nov 2025)

Corr.1 to Rev.4 of this Resolution, the main text of SOLAS regulations used in the UI has been updated with insertion of the text of SOLAS amendment that was editorially missed.

12. UI SC308 (Rev.1 Nov 2025)

This UI serves to interpret the requirements of SOLAS Reg. II-2/5.2.1.1 and IMSBC Code requirements with regard to the permanent availability of mechanical surface ventilation.

13. UI MPC51 (Del Nov 2025)

This UI is deleted as the UI is not aligned with the amended Nox technical Code adopted in Resolution MEPC.397(83) – IMO approach of 3.2 and Appendix IX.

14. UI SC180 (Rev.5 Nov 2025)

This UI provides interpretation on MSC.337(91) Code regarding noise levels on board ships – calibration of sound instruments. Calibration of sound level meter and accompanying field calibrator shall be made in a uniform way by laboratories worldwide, documenting that the same instruments continue to satisfy the accuracy requirements of MSC.337(91).

15. UI SC76 (Del Nov 2025)

This UI SC76 (Rev.1) has been deleted because its interpretation is already covered under clause M10.9 of UR M10 (Rev.5), which will take effect on 01 January 2026, thereby avoiding duplication of content.

16. UI MPC131 (Withdrawn Dec 2025)

This UI was further withdrawn considering that UI MPC131 was created solely to support the temporary transitional period associated with the implementation of the amendments to Appendix IX of MARPOL Annex VI adopted by MEPC.385(81). After 31 December 2025, the transitional issues addressed by the UI will no longer arise, and the IMO has already issued additional guidance through MEPC.1/Circ.913, which further clarifies the application of these amendments. Therefore, the UI is no longer necessary beyond the end of 2025.

17. UI SC160 (Rev.2 Dec 2025)

This revision was made to update the amendments to SOLAS regulation II-2/7.5.5.3, as adopted by resolution MSC.550(108).

18. UI SC73 (Rev.3 Dec 2025)

This revision was made to update the amended requirements for fire safety on ro-ro passenger ships, including the introduction of specific fire safety provisions for weather decks, as adopted by resolution MSC.550(108).

19. UI GC12 (Rev.3 Dec 2025)

Secondary Barriers on membrane type tanks installed using gluing technology have suffered bonding and installation defects that are only developed once the tank has been in operation and therefore it is required to carry out additional tests to the secondary barrier after cooldown, after new building.

Summary of New/Revisions to IACS Recommendations published in 2025

New Revised Corrigenda Deleted/Withdrawn

Index	Resolution no.	Revision	Adoption	Title	Implementation Date
1	Rec.182	New	19 Dec 24	Onshore power supply	-
2	Rec.183	New	19 Dec 24	Ship data quality	-
3	Rec.184	New	07 Jan 25	Guidelines on safety standards for work	-
4	Rec.72	Rev.4	08 Jan 25	Confined space safe practice	-
5	Rec.176	Withdrawn	30 Jan 25	Measurement of underwater radiated noise	-
6	Rec.185	New	24 Feb 25	Guidelines on main propulsion shafting alignment	-
7	Rec.186	New	21 Mar 25	Additively manufactured metallic parts for marine and offshore applications	-
8	Rec.187	New	13 May 25	Internal communication equipment required in an emergency	-
9	Rec.188	New	21 May 25	Engine fuel oil systems supplied by positive displacement fuel oil pumps	-
10	Rec.189	New	15 Jun 25	Recommendation for determining the equivalent level of safety required by the Polar Code	-
11	Rec.172	Rev.2	23 Jun 25	EEXI implementation guidelines	-
12	Rec.175	Rev.1	23 Jun 25	SEEMP/CII implementation guidelines	-
13	Rec.190	New	26 Jun 25	Recommendation for vessel asset inventory for computer-based systems	-
14	Rec.191	New	03 Jul 25	Lifting appliances engaged in personnel handling operations	-
15	Rec.192	New	02 Sep 25	Guidelines to address human element issues	-
16	Rec.47	Rev.10 Corr.1	09 Oct 25	Shipbuilding and repair quality standard	-
17	Rec.128	Rev.1	24 Oct 25	Record of approved ship safety equipment	-
18	Rec.193	New	08 Dec 25	Use of portable tanks for containment of hydrogen fuel onboard ships	-
19	Rec.194	New	12 Dec 25	Cybersecurity controls for existing ships	-
20	Rec.195	New	23 Dec 25	Radio communication equipment on ships engaged on voyages in sea areas A2 and A3	-

1. Rec.182 (New Dec 2024)

In this Recommendation, the provisions for OPS (Onshore Power Supply) are provided to facilitate uniform and global implementation of the IMO interim guidelines, international standards and members Rules/Guides, covering constructional as well as operational aspects.

2. Rec.183 (New Dec 2024)

The aim of this recommendation is to develop a recommendation for a generic method on how to determine the data quality required for applications used on board.

3. Rec.184 (New Jan 2025)

This recommendation provides the guidelines on safety standards and the precautions to be taken (DO's) and unsafe acts/conditions to be avoided (DON'T's) for performing surveys, inspections, audits etc. in a safe and efficient manner.

4. Rec.72 (Rev.4 Jan 2025)

This Recommendation is revised aligning with IACS PR 37, with the main texts being re-structured as Part One, and the guidelines annexed to this Recommendation being restructured as Part Two.

5. Rec.176 (Withdrawn Jan 2025)

The recommendation was originally issued as an interim solution while the discussions on URN measurements continued. Following the expert workshop on URN, it was agreed to use relevant ISO standards as the basis for IACS' harmonisation work on URN measurements.

6. Rec.185 (New Feb 2025)

The objective of this new Recommendation is to provide guidance for the propulsion shafting alignment design, installation and verification in order to achieve a satisfactory shaft alignment condition.

7. Rec.186 (New Mar 2025)

This Recommendation has been developed to standardise the Class Society processes associated with additive manufacturing specification, qualification, and certification of additively manufactured parts or repairing for marine and offshore applications, as well as relevant guidance for the designer and end user.

8. Rec.187 (New May 2025)

SOLAS regulations II-1/42.2 and II-1/43.2 require that the emergency source of electrical power shall be capable of supplying simultaneously the emergency services. Among the emergency services listed are 'all internal communication equipment required in an emergency'. This recommendation provides guidance regarding internal communication equipment that should be considered as required in an emergency.

9. Rec.188 (New May 2025)

This Recommendation addresses the over-pressurisation prevention in fuel oil return lines of engine fuel oil systems supplied by positive displacement pumps.

10. Rec.189 (New Jun 2025)

This recommendation provides simplified procedures and criteria for determining the equivalent level of safety required by the Polar Code for assigning a Ship Category to ships not assigned with an IACS Polar Class but ice-strengthened in compliance with another standard. The procedure identifies equivalency for the hull structure strength and materials, the propeller blades and the propulsion line strength.

11. Rec.172 (Rev.2 Jun 2025)

Rev.2 introduces the amendments to the '2021 Guidelines on the shaft/engine power limitation systems to comply with EEDI requirements and use of power reserve' adopted by MEPC.390(81).

12. Rec.175 (Rev.1 Jun 2025)

IACS developed the SEEMP/CII Implementation Guidelines containing a set of recommendations for supporting the implementation of IMO SEEMP/CII framework (MARPOL Annex VI regulations and supporting guidelines). The Rev.1 was undertaken to enhance the clarity and consistency of Section 8, which outlines the requirements to audits to be carried out under regulation 26 of MARPOL Annex VI. Additionally, this revision includes updates of references to relevant MEPC resolutions.

13. Rec.190 (New Jun 2025)

This Recommendation provides additional information concerning the Vessel Asset Inventory for Computer Based Systems (CBS).

14. Rec.191 (New Jun 2025)

This document provides guidelines on personnel handling for ship-to-ship transfer operations.

15. Rec.192 (New Sep 2025)

These guidelines provide a framework for systematically addressing the human element in maritime standards by promoting a human-centred approach, early assessment of human impacts, and application of the Hierarchy of Controls.

16. Rec.47 (Rev.10 Corr.1 Oct 2025)

In Corr.1 of this Rec, the expression and reference in Fig 6.1 to Fig 6.6 about the material have been corrected so that references are made to Section 4 'Materials' in a consistent manner.

17. Rec.128 (Rev.1 Oct 2025)

This recommendation provides a standardised format and guidance for recording ship safety equipment approved and carried on board ships. Rev.1 reflects SOLAS amendment MSC.496(105), which moved radiocommunication equipment requirements from Chapter III (Life-Saving Appliances) to Chapter IV (Radiocommunications).

18. Rec.193 (New Dec 2025)

Rec.193 provides Recommendation for safety of use of Portable Tanks when such tanks are used for containment of Hydrogen Fuel to be used on board the Ship.

19. Rec.194 (New Dec 2025)

This IACS Recommendation provides Cybersecurity Controls for existing ships (contracted for construction prior to 1st July 2024). The decision to develop the document was taken by the SDTP (former Cyber Systems Panel) during the 15th Panel meeting (28-30 Mar 2023, Mumbai/India).

20. Rec.195 (New Dec 2025)

This recommendation covers how the Records of Equipment Forms covering radio communication equipment should be completed where a MF/HF radio installation serves as a MF radio installation.

APPENDIX II: SUMMARIES OF IACS MEMBERS' CLASS REPORT DATA 2025



ABS

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**8,649**	**441,429,263**	**296,886,522**	**2,435**	704	1,731	**127**
Tankers (crude, product & gas)	2,064	190,377,215	121,413,711				
Container vessels	953	77,838,047	69,554,897				
Dry bulk	1,276	132,725,733	71,513,814				
Passenger vessels (over 12 pax)	45	322,340	590,157				
Other ship types	4,311	40,165,928	33,813,943				

BV

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**10,439**	**218,958,156**	**156,655,734**	**1,708**	486	1,222	**129**
Tankers (crude, product & gas)	1,664	58,709,915	41,969,569				
Container vessels	628	35,609,508	31,571,044				
Dry bulk	1,199	91,125,487	50,271,037				
Passenger vessels (over 12 pax)	541	737,869	5,328,921				
Other ship types	6,407	32,775,377	27,515,163				

CCS

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**6,213**	**269,431,995**	**173,794,986**	**1,282**	343	939	**64**
Tankers (crude, product & gas)	1,521	63,852,380	39,896,456				
Container vessels	653	35,793,244	30,954,918				
Dry bulk	2,085	161,931,406	89,730,229				
Passenger vessels (over 12 pax)	492	486,526	2,097,421				
Other ship types	1,462	7,368,439	11,115,962				

CRS

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**102**	**4,601,709**	**2,631,994**	**65**	26	39	**26**
Tankers (crude, product & gas)	35	3,548,355	1,916,966				
Container vessels	3	18,176	16,127				
Dry bulk	17	943,842	548,842				
Passenger vessels (over 12 pax)	12	7,018	32,405				
Other ship types	35	84,318	117,654				

DNV

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**7,686**	**366,407,231**	**288,525,655**	**2,016**	565	1,451	**101**
Tankers (crude, product & gas)	1,663	135,429,866	86,776,435				
Container vessels	1,825	139,831,145	118,106,945				
Dry bulk	771	55,750,517	31,216,086				
Passenger vessels (over 12 pax)	310	999,044	10,407,069				
Other ship types	3,117	34,396,659	42,019,120				

IRS

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**1,272**	**34,802,673**	**20,759,526**	**267**	65	202	**55**
Tankers (crude, product & gas)	347	25,925,788	15,085,212				
Container vessels	36	1,088,709	854,509				
Dry bulk	111	6,567,189	3,554,150				
Passenger vessels (over 12 pax)	62	26,846	99,854				
Other ship types	716	1,194,141	1,165,801				

KR

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**2,261**	**127,414,704**	**87,815,717**	**709**	125	584	**81**
Tankers (crude, product & gas)	840	48,398,100	31,800,310				
Container vessels	347	17,903,192	15,809,039				
Dry bulk	487	53,791,250	28,867,122				
Passenger vessels (over 12 pax)	18	65,244	246,593				
Other ship types	569	7,256,919	11,092,653				

LR

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**6,814**	**340,344,371**	**243,596,282**	**1,668**	477	1,191	**111**
Tankers (crude, product & gas)	1,864	153,794,102	101,723,858				
Container vessels	696	50,850,618	44,765,339				
Dry bulk	1,402	123,695,044	67,450,269				
Passenger vessels (over 12 pax)	382	1,901,138	16,244,921				
Other ship types	2,470	10,103,470	13,411,895				

NK

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**8,149**	**449,741,758**	**281,269,785**	**1,520**	215	1,305	**108**
Tankers (crude, product & gas)	1,338	70,123,233	44,800,681				
Container vessels	706	34,301,438	31,219,369				
Dry bulk	4,405	324,714,160	180,092,405				
Passenger vessels (over 12 pax)	5	14,316	80,267				
Other ship types	1,695	20,588,609	25,077,063				

PRS

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**487**	**7,144,447**	**4,763,419**	**103**	35	68	**44**
Tankers (crude, product & gas)	13	115,215	80,668				
Container vessels	6	51,321	40,668				
Dry bulk	295	6,782,928	4,082,804				
Passenger vessels (over 12 pax)	61	91,228	423,609				
Other ship types	112	103,754	135,670				

RINA

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**5,450**	**96,458,748**	**77,361,026**	**840**	134	706	**110**
Tankers (crude, product & gas)	772	24,401,411	14,795,249				
Container vessels	270	8,895,590	8,702,489				
Dry bulk	760	49,701,871	28,539,396				
Passenger vessels (over 12 pax)	628	1,340,521	10,094,223				
Other ship types	3,020	12,119,355	15,229,669				

TL

	No. of vessels	Deadweight	Gross Tonnes	Total no. of surveyors	Plan approval engineers	Exclusive ship surveyors	No. of recognising flag authorities
Total Size of classed fleet	**419**	**1,832,493**	**1,480,310**	**75**	27	48	**21**
Tankers (crude, product & gas)	25	236,388	206,253				
Container vessels	1	20,631	15,988				
Dry bulk	20	832,422	485,473				
Passenger vessels (over 12 pax)	151	60,735	166,748				
Other ship types	222	682,317	605,848				

Classed fleet figures include ocean-going self-propelled ships of 100 GT and over, excluding fishing vessels, military vessels and pleasure craft, with dual classed ships counted at 100%.

Number of surveyors includes combined total number of surveyors, consisting of the number of exclusive plan approval engineers (RO Code A1.1.2 Plan approval staff are the personnel authorised to carry out design assessment and to conclude whether compliance has been achieved), and the number of exclusive surveyors involved in surveys of ships (RO Code A1.1.1 Survey staff are the personnel authorised to carry out surveys (in operation and under construction), and to conclude whether or not compliance has been achieved).

Number of recognising flag authorities means number of RO agreements with flags, with general or standing authorisation to act on their behalf for any statutory certificate.

APPENDIX III: IACS MEMBERSHIP CRITERIA



IACS Membership Criteria

Criterion 1
Evidence that the organisation is a Classification Society as defined in Annex 4 to the IACS Charter and that it meets the requirements as detailed in the guidance for this criterion in section C I-4 of Volume 2 of the IACS Procedures.

Criterion 2
Compliance with QSCS.

Criterion 3
Demonstrated ability to develop, apply, maintain, regularly update and publish its own set of classification rules in the English language covering all aspects of the ship classification process (design appraisal, construction survey and ships-in-service periodical survey).

Criterion 4
4(a) Demonstrated ability to provide surveys of the ships under construction in accordance with the Applicant's rules and in accordance with IMO, ILO and flag State requirements.

4(b) Demonstrated ability to provide periodic surveys of ships-in-service, in accordance with the Applicant's rules and in accordance with IMO, ILO and flag State requirements.

Criterion 5
Sufficient international coverage by exclusive surveyors relative to the size of the Applicant's support of construction programmes and classed fleet in service.

Criterion 6
Documented experience that provides evidence of an Applicant's capability to assess designs for construction and/or major modification and/or ships-in-service of various types subject to any applicable IMO and ILO Convention.

Criterion 7
Significant in-house managerial, technical, support and research staff commensurate with the size of the Applicant's classed fleet and its involvement in the classification of ships under construction.

Criterion 8
Technical ability to contribute with its own staff to the work of IACS in developing minimum rules and requirements for the enhancement of maritime safety.

Criterion 9
Contribution to IACS work by the Applicant, on an ongoing basis with its own staff as described in Criterion 8 above.

Criterion 10
Compliance of classed ships with all IACS Resolutions as defined in Annex 4 to the IACS Charter.

Criterion 11
Evidence that the IMO's Maritime Safety Committee has advised in writing that the Applicant's Rules and Procedures conform to the functional requirements of the International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (SOLAS Reg.II-1/3-10, IMO Resolution MSC.287(87)).

Interpretative guidance in respect of the above criteria is contained in the document IACS Procedures Volume 2 – Procedures Concerning Requirements for Membership of IACS, which is published and kept updated on the IACS website.





IACS

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