



Overview of the 99th session of the IMO Maritime Safety Committee and IMarEST engagement

The IMarEST contributes to the work of the IMO Maritime Safety Committee (MSC) as part of the [technical leadership strategic goals](#). The remit of this committee covers various issues relating to maritime safety and maritime security which are significant to our membership, especially with regards to updates to the SOLAS Convention and related codes, human element issues including amendments to the STCW Convention on training and certification of seafarers and, autonomous vessels and cyber security.

This report provides a summary of the key discussions and outcomes of the latest session of the IMO Maritime Safety Committee (MSC 99) which was held from 16-25 May 2018, together with an overview of IMarEST's engagement in the work of this Committee and will discuss;

1. Key discussions and outcomes of the committee and IMarEST participation
2. Future IMO meetings

1. Key discussions and outcomes of the committee and IMarEST participation

The primary topic of interest for the IMarEST delegation at this session was an initial discussion on carrying out a regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS) and members actively contributed to the discussions and drafting exercise of the working group. The concept of autonomous vessels has ignited considerable debate across the industry. For its part, the IMarEST is keeping a close eye on the implications such craft (SOLAS level and up) will have on the marine engineer. These efforts are being steered by the expertise within the [MASS Special Interest Group](#) (SIG) and [Human Element SIG](#).

The IMarEST co-sponsored a submission (99/5/5) entitled "*Plan of approach for the scoping exercise*" to the working group which put forward a proposed plan for delivering the output of the regulatory scoping exercise by the target completion date of 2020.

Regulatory Scoping Exercise for the Use of MASS:

MSC 99 commenced work to look into how safe, secure and environmentally-sound MASS operations may be addressed in IMO instruments. A Working Group was established during the session and tasked with developing a framework and subsequent plan of work for the regulatory scoping exercise, with specific focus on its aims, objectives, methodology, instruments, type and size of ships, provisional definitions and different types and concepts of autonomy, automation, operation and manning. An overview of the working group sessions is given below.

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Notably, the goal of this scoping exercise is to understand the impact on existing regulations; it is not aimed at amending those regulations per se. Though the outcomes will likely inform that latter process. Line-by-line analysis of existing regulation is undoubtedly a non-trivial undertaking, and one necessitating a well-defined methodical and consistent approach.

A member State recommended that including interim guidelines on the plan of work was premature and should be removed. This reflected the generally cautious stance to the subject as well as a desire to get the regulations right. There was considerable discussion on preliminary definitions of MASS and degrees of autonomy, which is generally viewed as a prerequisite for more detailed work going forward. Key questions revolved around who makes the decisions and who implements those decisions. Inevitably this triggered a debate on the role of crew and shore-based personnel in operating or managing MASS.

Some co-sponsors of MSC 99/5/5 remarked that the staggered introduction of different technical solutions with different levels of autonomy will result in autonomous vessels sharing the seas with manned vessels, and that the risks posed by this 'shared seas' scenario should be considered fully. It could be that changes to safety requirements may need to be phased in gradually. To allow for a peaceful co-existence, guidance for non-manned vessels could, initially at least, be drawn up on a basis of equivalence rather committing permanent changes to proven existing codes and conventions.

While understanding of the desire to set up test zones for MASS in national waters, concerns were raised from a couple of member States that this might, in the long term, result in local variations in regulatory approach emerging, and by complicating matters impeding both MASS adoption and operation. This suggests a need for IMO to take timely action to avoid regional implementations taking root. Conversely, however, a proposal to prohibit MASS operation until a fully IMO-sanctioned regulatory environment is in place was rejected.

Although substantial uptake of autonomy within the commercial fleet is not anticipated any time soon, there is considerable R&D activity taking place with prototype technologies and demonstrators already being tested in confined waters. Notably these projects cover the range of levels of autonomy, from fully autonomous to partially automated, remote control vessels.

However, scepticism still exists among some member States and consulting bodies about whether or not autonomous systems are a practicable goal in the 'foreseeable future'. It was noted that the considerable excitement for autonomous systems displayed by manufacturers is not matched by equal enthusiasm from seafarers or even vessel operators, as, in the case of the latter group, the business case for autonomy or semi-autonomy remains unclear.

Other topics that will have to be tackled at some point include interface with ports; resilience and level of communication between MASS and shore-based operators or managers and vulnerability of systems to cyber risks; relationship with non-SOLAS craft; impact on environment and relevant regulations; and the blurred regulatory and legal status of shore-based infrastructure, such as control centres.

The working group emphasised that if you climb the ladder high enough unmanned ships are ultimately still managed by people. Thus, in addition to technological specifications, reducing the risk inherent in new modes of human-machine interaction will be necessary. A human-centric approach to automation, it was argued, has the potential to improve safety and quality of vessel operations. It was agreed that there will certainly be implications on seafarers and required competencies. Nevertheless, it was recommended that legal barriers to MASS operation are ironed out before practical matters progress too far.

Some argued that the proposed 2020 deadline for the scoping project is too ambitious and extending, perhaps to 2023, would give developing countries more opportunity to contribute. On

the other hand, moving too slowly puts the exercise in danger of being overtaken by technology, it was countered.

Following the report of the Working Group to the MSC plenary, the Committee endorsed the framework for a regulatory scoping exercise, which is expected to conclude in 2020. It was acknowledged this would be substantial piece of the work that would impinge on safety, security and interactions with ports, pilotage, incident response and the marine environment. Member States and international bodies are invited to submit proposals to the next MSC session related to the development of interim guidelines for MASS trials. A Correspondence Group was established in the meantime to prepare a report for MSC100 making suggestions on relevant SOLAS regulations including recovery of persons from water, shipborne navigational equipment and systems, and, firefighting.

Additional Key Outcomes of MSC99:

GMDSS unlocked: MSC99 adopted amendments to SOLAS Chapter IV to accommodate additional mobile satellite systems for the provision of Global Maritime Distress and Safety System (GMDSS). Until now, this service was provided unilaterally by Inmarsat. The change will allow other commercial satellite operators to facilitate emergency and distress communication, provided they can demonstrate they meet strict performance standards. Iridium is furthest along the application process, after it was deemed as meeting these criteria detailed in resolution A. 101(25) in an assessment carried out by watchdog organisation IMSO, which was presented at NCSR 5. Other satellite operators are understood to have expressed an interest, including Beidou, China's alternative to GPS.

Polar Code Phase II: MSC 99 begun to give consideration to safety measures for non-SOLAS vessels operating in polar waters marking the commencement of the second phase of the Polar Code. Focus vessel types include small cargo tonnage, yachts (>300gt) and fishing vessels (>24m in length). It agreed to develop both safety recommendations (delegated to the SDC sub-committee) and mandatory measures (to be followed up at MSC100).

ECDIS update window closed: MSC99 revoked an extension to a substantial software upgrade for mandatory Electronic Chart Display and Information Systems (ECDIS). The deadline for carrying out this upgrade was extended from 1 September 2016 to 1 September 2017 in a circular issued at III 4 telling port State Control to take a pragmatic approach to inspections so that ECDIS manufacturers had more time to prepare. The manufacturers encountered difficulty implementing new display and test standards (IHO S-52, S-57, S-63 and S-64) on older ECDIS models. It was reported in NCSR 5 that most manufacturers have resolved these issues. During the discussion, the long-term practical challenges related to the inspection of software updates was raised. It was concluded that this topic would be better addressed in a proposed new output.

2. Future IMO Meetings

ONGOING WORK WITH THE MSC

IMarEST participation in the MSC and its associated working groups is informed by the experts in our [Maritime Autonomous Surface Ships SIG](#) and [Human Element Working Group](#).

With rapid technological change pressuring an evolution in the roles and skills required by marine engineers specifically and seafarers more generally, the IMarEST will follow and contribute to MSC's deliberations on autonomous vessels as they continue to unfold and its regulatory scoping exercise.

It will also monitor issues on human factors raised on the agenda at related sub-committees, especially those relating to fatigue. In this connection, the IMarEST has carried out a significant piece of work, which will be presented to the HTW sub-committee in their upcoming session in July.

To keep track of these SIGs' activities, you can [sign up as a corresponding member](#). For those wishing to deepen their involvement with the committee of either group, in the first instance, please get in touch with the IMarEST Technical & Policy Department (technical@imarest.org) outlining your area of expertise together with CV.

UPCOMING MEETINGS

- Human Element, Training and Watchkeeping sub-committee (HTW5) – July 2018
- Marine Environmental Protection Committee (MEPC73) – October 2018
- Contracting Parties of the London Convention and Protocol (LC/LP) – November 2018
- Maritime Safety Committee (MSC100) – December 2018