



Overview of the 100th 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 its [technical leadership strategic goals](#). The remit of this committee covers issues relating to maritime safety and maritime security, which are significant to our membership, including updates to the SOLAS Convention and related codes, human element issues, amendments to the STCW Convention on training and certification of seafarers, and autonomous vessels and cyber security. The 100th session (MSC100) was held from 3-7th December 2018.

In this report we summarise the key discussions and outcomes and highlight IMarEST's engagement in the work of this Committee and will discuss:

1. Key discussions and outcomes, and IMarEST engagement
2. Ongoing work and future meetings at IMO

1 Key discussions and outcomes and IMarEST participation

At this session the key agenda items of interest to the IMarEST were the regulatory scoping exercise for maritime autonomous surface ships (MASS), and outcomes of the Human Element, Training and Watchkeeping sub-committee (HTW) on the development of fatigue guidelines to which IMarEST made significant contributions.

Supported by our [Maritime Autonomous Surface Ships Special Interest Group](#) (MASS-SIG) and [Human Element Working Group](#) (HEWG), the IMarEST delegation participated in the plenary and working group discussions. If you would like to keep up-to-date on our engagement in these activities or get more involved in the SIGs you can [sign up as a corresponding member](#).

MARITIME AUTONOMOUS SURFACE SHIPS

Autonomy is expected to have a profound impact on the marine industry, and especially shipping. It will be important people in the industry are equipped with the necessary skillsets to support these changes, and the IMarEST is closely monitoring both regulatory and technological advances. At the last MSC a Regulatory Scoping Exercise (RSE) was set up to consider how well MASS will fit in with existing IMO instruments and where requirements may need to be adapted to accommodate them.

RSE framework agreed: At MSC 99, it was agreed to carry out a scoping exercise for the development a regulatory framework and a correspondence group was established to start this work inter alia. The correspondence group was instructed to kick this work off by focusing on a few SOLAS regulations in order to test the framework and methodology for the bigger job that lies ahead. A working group at this session sought to finalise the framework for the RSE considering the report from the correspondence group and comment documents from member States and the Secretariat.

The Committee agreed on a proposed plan of work (and associated procedures), which is anticipated to run up to to MSC 102 (summer 2020).

Details of the framework are outlined below:

Defining levels of autonomy: It was agreed that the IMO should define a scale of autonomy that would support the development of appropriate regulatory instruments. At its last meeting the correspondence group had agreed on four degrees of autonomy, and although inter alia it gave consideration to expanding this number, in order to keep the RSE on track it ultimately decided to stick with the original definitions (enumerated below). In a nod to calls from several member States for adding more levels, it will revisit the question after the current work is completed.

- 1) **Ship with automated processes and decision support:** Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with a seafarer on board ready to take control.
- 2) **Remotely controlled ship with seafarers on board:** The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.
- 3) **Remotely controlled ship without seafarers on board:** The ship is controlled and operated from another location. There are no seafarers on board.
- 4) **Fully autonomous ship:** The operating system of the ship is able to make decisions and determine actions by itself.

It was pointed out that pluralisation of the term 'seafarer' in the above definitions might lead to confusion later on if only a single seafarer needs to act to take control of an automated vessel, although this might pre-empt the results of the regulatory scoping exercise. It was noted that the given list of degrees should not be treated as hierarchical, evolutionary ladder, as a MASS could operate at one or more degrees of autonomy in the course of a single voyage. It was advised that ISO are developing international standards for terminology and concepts for ship autonomy and the committee invited interested member States to participate in this effort.

Methodology agreed: The working group considered the two proposed steps from the correspondence group's report, namely a high-level review to determine whether existing instruments apply or do not apply to MASS and an analysis to work out appropriate means of addressing MASS operation when they aren't compatible with current regulations. The working group refined the text to clarify that these steps are sequential and that the analysis cannot begin until the review has been completed. The committee will be asked to sign-off the review when it's ready, and authorise the second stage to commence, whereby volunteering member States and collaborating NGOs will be invited to submit recommended actions to MSC102. The committee agreed that this methodology was fit-for-purpose.

Plan of work: The practicalities of conducting the RSE was also considered. The Secretariat will provide a web platform (bolted-on to the existing GISIS reporting platform) with review forms, a facility for accepting commenting, and version control between changes. Member States will have the opportunity to comment and vote in favour or against the conclusions reached on each rule/regulation. The votes will be considered alongside the comments and submitted to the Committee to approve and close.

Guiding principles for MASS trials: Considering the challenges for MASS and the respective role of the IMO with regards to these operations, a proposal was raised at the previous session to develop interim guidelines for MASS trials in international waters. Member States generally recognised the value of such trials for the ongoing development of new regulations. At MSC 100, proposals for interim guidelines and test areas prompted lengthy discussions relating to scope, process and safety and manning requirements. The Committee then tasked a working group to come up with some overarching principles that would be captured in and steer the development of official guidelines.

They came up with nine core ideas: the Guidelines should form a single document targeted at all relevant parties particularly Administrations and industry stakeholders; they should be generic, not overly technical or prescriptive, and goal-based. They should offer a reporting mechanism so that coastal States can warn ships in the vicinity that trials are happening; take a precautionary approach to minimise safety and environmental risks; satisfy mandatory instruments. They should request details about the trial's scope and formally encourage information sharing among stakeholders.

These provisional principles were agreed by the committee at this session, although there is still work to be done, particularly on processes, roles and responsibilities and reporting procedures. The committee called for submissions to the next session in June 2019 with regard to the Guidelines, taking into consideration the given principles, and intentions for submissions were noted by some member States.

HUMAN ELEMENT ISSUES

The IMarEST believes that seafarer welfare should be placed firmly at the heart of regulations and activity in the marine environment, and as such it has a long history of participation in related discussions at the IMO. At this session, the IMarEST delegation primarily followed discussions on the fatigue guidelines and training issues.

Fatigue guidelines approved: During the plenary, the committee was updated on developments at the previous HTW session (HTW5, May 2018). Among other items, the update highlighted the revised guidelines on fatigue to which the IMarEST made a significant contribution (see [HTW5 summary](#)). These guidelines were fully approved by MSC and will now supersede the MSC Circular 1014, which was issued in 2001, on mitigating and managing fatigue. Member States were encouraged to take consideration of these updated guidelines and disseminate to relevant stakeholders such as administrations, ship designers and training providers. This will facilitate the development of new informational materials encouraging shipping companies to take careful consideration of fatigue when developing, implementing and improving Safety Management Systems (SMS) under the International Safety Management (ISM) code.

Psychological toll: A proposal was put to the committee providing recommendations for dealing with the potential mental health and psychological issues associated with navigating in high risk waters where there is a heightened danger of piracy. The committee noted that mental health issues would fall under the remit of the HTW sub-committee. Nevertheless, member States and NGOs were invited to submit further comments and proposals to the next session.

Converting e-learning model courses: A member State raised a question on whether there are plans to create e-learning courses directly for seafarers. It was also noted that the Technical Cooperation Committee (TC) requested that the MSC (along with the Marine Environmental Protection Committee) to identify and prioritise model courses which could be considered for conversion into e-learning model courses. The committee instructed the HTW sub-committee to consider the matter at their next session (HTW6, May 2019).

Additionally, the committee approved amendments to the guidelines for development and review of model courses that will replace existing timetables for completion with suggested range of hours. This change was deemed necessary to cope with the growing workload of creating and updating an increasing range of courses.

2 Our ongoing work at MSC

The IMarEST will continue to follow and participate in IMO discussions relating both to human factors and autonomous ships. The RSE will be a substantial undertaking for the IMO, and could mark the

beginning of work on a vast array of new shipping regulations. By collating the expertise from both seafarers and technologists, the IMarEST is well-positioned to provide impartial, technically-rigorous advice throughout this process and keep the industry informed as this exercise progresses.

The IMarEST has a long history of involvement in MSC as it deliberates new developments in safety and the ongoing evolution of SOLAS and STCW Conventions. We continue to actively participate and contribute to these discussions going forward. As a sub-committee of MSC, HTW looks more closely at human factors and the IMarEST is involved in an ongoing project with an informal human element industry group at the request of the Secretariat to progress human element issues on the HTW agenda – work that is often fed back to MSC.

In a new development, from its next session MSC will consider the handling of fuel oil, a new item on its agenda. It should be noted that its remit is strictly limited to potential safety issues; the environmental side will still stay under the purview of MEPC. The IMarEST has been closely involved with emissions-related issues at MEPC, PPR and the Intersessional Working Groups (ISWG) on both air pollution and greenhouse gases. As such, the IMarEST will be following discussions on a new output entitled “Development of further measures to enhance ship safety relating to the use of fuel oil” and identifying areas of potential input.

Our involvement at MSC is led by the expertise represented in our Special Interest Groups (SIGs), to follow IMarEST activities in these areas you can [sign up as a corresponding member of the SIGs](#) or email technical@imarest.org to express an interest in the committee.

UPCOMING MEETINGS AT IMO

- Pollution Prevention and Response (PPR) sub-committee: 18-22 February 2019
- Human Element, Training and Watchkeeping (HTW) subcommittee: 29 April-3 May 2019
- Marine Environmental Protection Committee (MEPC): 13-17 May 2019