RESPONSE OF BMLA TO DEPARTMENT OF TRANSPORT FUTURE OF TRANSPORT REGULATORY REVIEW: MARITIME AUTONOMY AND REMOTE OPERATIONS.

This Response to the questionnaire is by the British Maritime Law Association (BMLA). The BMLA is a not-for-profit Association affiliated to the Comité Maritime International. Its members include the English based P and I Clubs, the Chamber of Shipping, maritime law firms, academic institutions, barristers, arbitrators and others interested in maritime law.

Questions

Definition of MASS

In your view, is our proposed definition of MASS appropriate? If not, please explain why and what alternative would you propose?

The BMLA considers that the proposed definition of MASS is logical, and describes the range of marine technologies properly under consideration and in its language clearly, and perhaps necessarily, strives for consistency with the s.313 definition of "ship" in MSA 1995. To that extent the proposed definition serves a commendable purpose.

However, a MASS definition is really only necessary to the extent the existing corpus of craft and vessels utilising autonomous technology are themselves a distinct type of ship. This may be doubted, particularly in view of the sliding scale of automated and autonomous functionality that may be exhibited from one ship to the next. Much of the consternation over a definition of MASS would arguably be addressed if the subject-matter scope of the new regulations applied to ships as presently defined *to the extent* they are controlled / navigated / operated remotely or otherwise employing any number of the types of autonomous technologies. The approach then tailors the regulatory approach to the specific functionality in question. The specifics of the regulation will need to draw distinctions between the many different ways in which the technology may be employed in any event, further illustrating the limited utility of a MASS concept.

The BMLA suggests that it is better to approach autonomy as a matter of ship functionality rather than a distinct class, although we must acknowledge the footing the MASS concept now has in international regulatory circles.

Definition of Remote Operations

In your view, is our proposed definition of Remote Operations appropriate? If not, please explain why and what alternative you would propose?

Subject to our views on the MASS definition stated previously, the definition of remote operations is uncontroversial.

Definition coverage

Is there any type of autonomous or remotely operated vessel that our definition would not cover? If so, please explain.

It is difficult to conceive of a type of ship which regulators are seeking to regulate in this context which would not be caught by such a broad definition, but this is as much a weakness as it is a strength for the reasons stated previously.

Craft types

In your opinion is it acceptable to apply this legislation to vessels and craft regardless of size, including those that currently fall outside the scope of The Merchant Shipping Act 1995? If not, please explain your reasoning.

The size, utility foreseeable operational deployment of a ship / vessel are each equally important considerations in the development of suitable regulation as the means of control or 'degree of autonomy'. Therefore, the regulation which addresses remote control and autonomous functionality will almost certainly need to draw distinctions based on size and the type of operations in much the same way as the present framework does for particular industry sub-sector needs.

Definition of MASS master

In your view should any of the responsibilities of a master be modified for a 'MASS master'?

In circumstances where the "MASS master" is performing his / her duties from the shore or some other location via remote control, the reality of the absence of the master's attendance on board the vessel over which he / she is purporting to exercise "command or charge" must be recognised in the regulatory framework. The key distinction as far as masters' duties are concerned is between regulations requiring the exercise of judgment or the assumption of overall responsibility for a process, on the one hand, and, on the other, those which require on board attendance. Many of the former kinds of provision are likely to be more readily transferred for the "MASS master" depending on the technology in question. Responsibility that can only be discharged practically with on board attendance clearly require modification so as to allow a remote operator, or the technology itself, to perform an equivalent function.

It should also be borne in mind that a "remote" MASS master may not be "at the helm" or "in command or charge" throughout a voyage. A remote Master will most likely hand over

command or charge to a colleague after a work shift, and will have no responsibility for the ship during his "off" time. Any definition of "MASS Master" will have to take this changing responsibility into account.

Definition of Remote Operator

In your view does our proposed definition of 'Remote Operator' cover the full range of remote manning roles for a MASS? If not, can you propose an alternative definition?

The definition proposed is a broad one. Specific provisions in certain regulatory contexts may, in due course, need to reflect a distinction between remote control from another vessel or from the shore.

Remote Operation Centres and Remote Operator

Do you have any views on the following propositions?

- *the ROC should be located within the territory of the Flag State Administration*

The regulatory convenience of such a requirement is apparent, particularly in view of the absence, currently, of a uniform regulatory framework. It would also circumvent, to a certain extent, the legally anomalous situation that derives from the separation of the ship's hull from her means of control and / or the personnel navigating her. This is a considerable advantage of such an approach.

However, in the longer term, this expedient will probably become a significant impediment to the full commercial utilisation of the technology and the questions of jurisdiction over the MASS and their ROCs as a whole will need to be confronted and addressed properly at some stage if the advantages of the new technology is to realise its true potential.

- *the ROC should be considered an integral part of a MASS (as an alternative version of the bridge of a vessel)*

Many, but not all, of the provisions within the current regulatory frramework relating to the ship's bridge have a goal that may transcend to the ROC. Regarding the ROC as a new form of the ship's bridge and that the former is an integral part of the latter will make for the simplest regulatory solution in at least some instances.

However, in reality, although *a* ROC may be an integral part of the relevant ship, it may not always be the same ROC, which may feasibly change throughout a ship's voyage, particularly as the technology and its operational deployment continues to develop. The prospect of multiple ROCs interchanging control over a ship throughout her voyage is not

an unrealistic one, and this reality will present a far more formidable legal and regulatory challenge in due course.

- *the ROC should be safely manned in the same way safe manning is applied to conventional vessels*

The regulatory intent of the current provisions regarding safe manning holds true to a large extent in the ROC context. The relevant ROC will need to have the benefit of the requisite number of sufficiently qualified personnel to make sure that the "MASS" can function / navigate / operate safely, securely and in an environmentally safe manner. The difficulty is that, at the time of writing, the MASS sector does not have the advantage of a settled and internationally standardised system of qualification and certification for many of the new roles created by the new technology. Furthermore, with the technology developing rapidly, the training and certification required is a moving target.

- *Remote Operators should not be considered seafarers as they are not on board the ship they are operating but they will require agreed training and certification.*

This is correct. In this instance there is a recurrence of the distinction between attendance on board and responsibility. In instances where the vessel is remotely operated and entirely unmanned, a the newly defined / recognised shore-based personnel must be given comparable responsibilities so as to enable the ships employing the technology to be operated safely, and must be suitably trained and qualified to discharge those responsibilities.

Proposed legislative change

In your view is our proposal to take powers to regulate all MASS the best option for the UK maritime sector? If not, what alternative do you suggest?

There is no reason in principle why the regulatory remit of the entities within the maritime domain in the UK should change as between conventional ships and those employing the technology.

The UK and other jurisdictions is faced with the dilemma that IMO is working on an internationally unified approach to the regulation of MASS which realistically will not be in place for several years whereas the introduction of some form of MASS in UK waters is likely to take place before then.

While the UK will need to regulate MASS which operate within its waters, it will not wish to introduce a regulatory framework which will require much unravelling once the IMO approach is approved. The UK must be careful to approach the issue bearing this in mind.

In your view should we create powers to:

- *define terms and roles for the operation of MASS*
- *regulate ROCs to ensure the safe operation of MASS in UK waters?*

It would certainly be useful to ensure that the Merchant Shipping Act 1995 and other important items of primary legislation allow for the appropriate responsible bodies to regulate the use of the new technology, to the extent such power does not already exist. This may well extend to the definition of terms and roles, among other matters. The regulatory need for which such powers may be employed is beyond doubt.

Maritime Autonomy and Remote Operations Impact Assessment

Do you have any comments on the accompanying Maritime Autonomy and Remote Operations Impact Assessment?

Ports and harbours

In your view, do harbour authorities and ports already have sufficient powers or do they need any additional powers in relation to MASS?

Autonomous and unmanned submersible apparatus

In your view, should we create powers to regulate autonomous submersible apparatus in a manner consistent with manned submersible apparatus? Should we create powers to regulate unmanned submersible apparatus in a manner consistent with manned submersible apparatus? If answering no, please explain why.

To the extent such powers do not already exist, there is no reason why submersible apparatus employing the autonomous technology under consideration should exist in a vacuum of codified regulation. At least some of the regulatory goals will be similar in the manned and unmanned context and, of course, risks or features particular to remote controlled or autonomous operability in submersible apparatus will require distinct provisions as appropriate.

Marine equipment

In your view, if they are extended to include ROCs, are existing type approval mechanisms sufficient to assess equipment located in or associated with ROCs? If you answered no, what alternatives do you suggest?

Is the existing type approval approach suitable for approving software programs or algorithms independently of hardware? If you answered no, what alternatives do you suggest?

Maritime security

In your view, are there any additional changes to primary legislation, beyond those mentioned, which are required to maritime security legislation to support our proposed approach to regulating MASS?

The current framework for maritime security, including but not limited to the ISPS Code and legislation transposing same or similar requirements, does not comprehensively address the reality of the navigation / operation of vessels taking place from the shore (or otherwise remotely) or autonomously by a computer system / software. As such, security measures relating to the physical protection of the shore-based ROC and also cyber security more broadly must be addressed at the domestic and international level.

Insurance and liability

In your view are there any challenges the insurance industry would face to implement our proposed approach? If yes, please explain these challenges.

One conspicuous issue is the prospect of legal action being brought against the developers / producers of the autonomous systems under consideration. As a matter of English law, in the event of casualties at sea, third party liability is generally funnelled to the relevant ship's owners through a range of different liability regimes. Importantly, third party shipowner liability is generally limited, under either the conventions prescribing the liability themselves or by distinct conventions addressing limitation of shipowner liability. Such limited liability is more readily insurable and, in fact, for certain the liabilities enshrined in IMO Conventions, liability insurance is compulsory. The prospect of unlimited MASS producer liability may be a prospect the maritime / insurance industry has to grapple with if such claims become more commonplace and succeed in the courts. It is, however, by no means clear, and, in fact, may be doubted, whether the use of the technology will have the effect of shifting liability away from shipowners and on to the developers of the autonomous systems.

Designated test areas for MASS

What views do you have on our proposal not to designate test areas, to support the development of MASS in UK waters?

In your view, are there any additional aspects of primary legislation (acts of Parliament) you think need to be considered in relation to MASS? If yes, please explain your response.

The key is to make sure that the reality of shore-based and autonomous operation is recognised in primary legislation, especially such legislation addressing safety and security and that which makes provision for subordinate powers to regulate. In particular, new personnel types, modified and transferred duties and responsibilities, amongst many other things, must be addressed expressly in such legislation, rather than straining the existing language of the current framework which was employed by drafters whom most likely did not have MASS in mind. Furthermore, sufficient clarity on the separation between land-based regulation (e.g. health and safety requirements) and, on the other hand, maritime regulation, will be important in the context of the ROC, remote controllers and shore-based supporting personnel.

Are there any environmental impacts from MASS that may not exist with conventional shipping?

In your view, is there anything that government can do to promote any environmental benefits or limit any environmental impacts from MASS, as distinct from conventional shipping?

In both of the above regards we would note the apparent trend in at least some quarters for autonomy in the marine space to be accompanied by carbon-neutral, electric power systems. This is a beneficial coincidence of interests for both technological aspects from an engineering / operational perspective, as well as a PR standpoint. Opportunities to integrate these two aspects should be explored further.

We also invite you to look at the additional 10 questions in the Maritime Autonomy and Remote Operations Impact Assessment.

Do you have data or evidence about whether any of the proposals would positively or negatively impact individuals with protected characteristics (as defined in section 4 of the Equality Act 2010)?

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Public Sector Equality Duty

Do you have data or evidence about whether any of the proposals would positively or negatively impact individuals with protected characteristics (as defined in section 4 of the Equality Act 2010)?

Final comments

Are there any final comments you would like to make?

If further feedback is required from the BMLA please contact at the first instance Tom Birch Reynardson at tbr@birchreynardson.com.