KING'S HARBOUR MASTER PORTSMOUTH

LNTM No 17/22

AUTONOMOUS VESSEL OPERATIONS IN THE DOCKYARD PORT OF PORTSMOUTH

1. **NOTICE IS HEREBY GIVEN** by the Queen's Harbour Master Portsmouth (QHM(P)) that the owner or operator of an Autonomous Surface Vessel (ASV), Unmanned Surface Vessel (USV), Autonomous Underwater Vehicle (AUV) or any other similar vessel is not permitted to be operated in a remotely controlled or autonomous mode in the Dockyard Port of Portsmouth unless the owner/operator has first satisfied the requirements of this notice and received approval in writing from QHM(P).

2. The Port Marine Safety Code (PMSC) requires a harbour authority to ensure that appropriate safety risk control measures are in place for all activities undertaken within its jurisdiction. There is an ever-growing range of autonomous and unmanned vessels in development, and the trialling and operation of such vessels, while becoming more common, represent relatively new activity which must be conducted in a safe and carefully considered manner.

3. The International Maritime Organization (IMO) has established four "degrees" to describe different classes of marine autonomy and will be used in this Local Notice to Mariners (LNTM):

Degree One: 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 seafarers on board ready to take control.

Degree Two: 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.

Degree Three: Remotely controlled ship without seafarers on board: The ship is controlled and operated from another location. There are no seafarers on board.

Degree Four: Fully autonomous ship: The operating system of the ship is able to make decisions and determine actions by itself.

4. Risk control measures must be tailored to the degree of autonomy, the vessel(s) and the specific trials or operations proposed as well as to the nature of the geographical area requested for the activity, including traffic density, available water space and the presence of navigational hazards. For example, autonomous activities at Degree Three or above within the busiest parts of Portsmouth Harbour will require the most strict and robust safety controls to prevent hazardous interactions with non-participant vessels.

5. To enable a full assessment of the proposed activity, QHM(P) requires that operators apply in writing at least 14 days before the activity is planned to commence. This application should include:

• Full details of all vessel(s) involved.
• Timings and area(s) of operation requested.
• A method statement or detailed trials plan covering all aspects of the proposed activity.
• A risk assessment for the planned activity covering the operation of the vessel(s) itself and careful consideration of the risks to all other water users that can reasonably be expected to be encountered in the proposed operating area.
• Proposed risk control measures.
• Details of the qualifications of the persons who will be, at various times, considered to be the "master" of an autonomous or unmanned vessel.

• Details of how the vessel will comply with the requirements of the International Rules for the Prevention of Collisions at Sea (IRPCS). In particular, the operator must make clear how the vessel and its associated control systems will comply with the IRCPS requirements to keep a proper lookout by sight and by hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

6. The owner or operator of an ASV, USV or AUV that has had previous trials or operations approved may, after discussion with QHM(P), have this minimum notice period reduced, provided that there are no substantial changes in the vessel(s), risk controls or nature and area of the trials/operations proposed. The minimum notice period that will be considered for such “repeat” activities will be three working days.

7. In general, for the higher degrees of autonomy, more robust risk assessments and associated control measures will be required to assure QHM(P) that safety risks to other water users as well as to personnel involved in the trials/operations are mitigated to an agreed As Low As Reasonably Practicable (ALARP) level. For more complex activity, approval may be an iterative process and allowance should be made for this when submitting an application.

8. The level of detail in risk assessments and method statements required to achieve approval for operations within the Dockyard Port of Portsmouth will depend on the following factors:

• Degree of autonomous operations proposed.
• Whether surface, sub-surface or both.
• Anticipated traffic density in proposed trials/operating area, available water space and presence of navigational hazards.
• Size, speed and mass of autonomous vessel(s) involved to enable an assessment of the level of risk to other vessels.
• Ability to fully comply with the IRPCS in the area proposed for trials/operations.
• Guard vessel deployment and control capability (for Degree Two and higher).
• Technology Readiness Level (TRL) to enable an assessment of the trial/operation’s development level and likely reliability of responses.

All of the above must be made clear in the documentation supplied, together with a clear statement of how the platform will be controlled for each stage of the proposed activity including non-autonomous transits, together with a clear description of all acronyms used.

9. QHM will normally publish a Local Notice to Mariners (LNTM) for such activity. Submission of a draft LNTM in Microsoft Word format, including vessel details (with photographs), proposed area(s) of operation (including a suitable chartlet) and vessel callsign(s) is encouraged and can speed up processing times.

10. ASV, USV or AUV owners or operators requiring permission to operate such a vessel within the Dockyard Port of Portsmouth should contact the QHM department at Portsmouth@qhm.mod.uk.

Friday 07 Jan 2022

N J RANDALL
Queen's Harbour Master

Owners, Agents, Charterers, Marinas, Yacht Clubs and Recreational Sailing Organisations should ensure that the contents of this Notice are made known to the masters or persons in charge of their vessels or craft.