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CG-CVC Policy Letter 22-01
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COMDT (CG-CVC)

To: Distribution

Subj: GUIDELINES FOR HUMAN-SUPERVISED TESTING OF REMOTE CONTROLLED AND
AUTONOMOUS SYSTEMS ON VESSELS

Ref: (a) 46 United States Code § 8301
(b) 46 Code of Federal Regulation part 15
(c) Marine Safety Manual Vol. III, Marine Industry Personnel, COMDTINST M16000.8 (series)
(d) IMO MSC Circular.1/1638, Outcome of the Regulatory Scoping Exercise for the Use of
Maritime Autonomous Surface Ships (MASS)

1. **PURPOSE.** This policy letter provides guidelines for testing, under human supervision, of remote controlled and autonomous systems on vessels. These tests, which shall not reduce vessel manning below that prescribed by law or regulations, may be conducted in order to evaluate the effectiveness of remote controlled and autonomous vessel systems under human supervision.
2. **ACTION.** Captains of the Port (COTP) and Officers in Charge, Marine Inspection (OCMI) shall remain actively engaged with the maritime industry to ensure that testing of remote and autonomous vessel systems meets applicable laws and regulations. In many instances, the COTP/OCMI does not have the authority to permit remote control or autonomous testing or operations and the request must be forwarded to Commandant. COTPs and OCMI's shall forward industry requests, along with a recommendation for approval, to Commandant (CG-CVC). CG-CVC will coordinate review of the proposal with the appropriate Coast Guard Headquarters offices or units. This policy letter will expire January 1, 2024.
3. **BACKGROUND.** The maritime industry is rapidly adopting new technology that enhances remote and autonomous control of vessel systems. The implementation of new technology on vessels has the potential to increase efficiencies and reduce accidents on vessels and the greater Marine Transportation System (MTS), but also introduces new safety risks and security challenges in the MTS.

Current legal and regulatory frameworks support only limited remote and autonomous systems on board vessels, such as engine room automation and navigation controls that maintain a trackline. Artificial intelligence and computer controls potentially provide the maritime industry with new and innovative tools to expand remote and autonomous systems beyond that permitted under current legal and regulatory structures. The Coast Guard recognizes the value in

evaluating new technology that augments the human-machine interface to improve shipboard efficiency, while potentially decreasing marine casualties. Owners and operators may seek opportunities to incorporate these remote controlled and autonomous capabilities into vessel design, construction, and operations to gain an increased understanding of the benefits and limitations of the systems and to highlight any unforeseen or unintended consequences. The experience gained through human supervision of remote and autonomous systems will better position individual owners and operators, as well as the collective maritime industry, to adopt fully remote and autonomous systems when the legal and regulatory framework supports this expansion.

4. POLICY.

- a. COTPs and OCMIIs should evaluate proposals that increase the remote controlled and autonomous systems on board vessels as a means to potentially improve the human-machine interface and reduce casualties. This evaluation should, at a minimum, assess the risk of engineering, operational, and navigation failures and the potential consequence to people, property, and the environment.
- b. COTPs and OCMIIs shall forward requests to test or operate remote controlled or autonomous vessel systems under human supervision to Commandant (CG-CVC) via the applicable District, along with a recommendation for approval or disapproval of the plan.
- c. Vessel owners and operators that intend to make alterations to a vessel to incorporate remote or autonomous systems should follow the appropriate plan approval guidelines for the applicable subchapter. In most instances, the plans should be submitted to the Marine Safety Center for review.
- d. Reference (a) prescribes the minimum number of licensed individuals on certain vessel subject to inspection. The OCMI shall not establish manning that is less than the minimums in references (a) and (b). Further, as noted in reference (c), manning of special or unique vessels shall be coordinated with Commandant (CG-CVC). This includes a manning scheme that places watchstanders at a location other than control stations such as the bridge or engine room. Further, the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) requires that a vessel shall at all times maintain a proper look-out by sight and hearing.
- e. While a vessel's manning levels cannot be reduced below that specified under law or regulations, Commandant (CG-CVC) may consider reducing manning below that specified in reference (c) or permitting alternative watchstander locations aboard the vessel, provided such changes comply with the aforementioned law and regulations in accordance with Part B, Chapter 2, paragraph A.1 of reference (c).

- f. If approved by the Coast Guard to use remote and autonomous systems under human supervision, vessel owners and operators are encouraged to keep records that document, at minimum, the number of hours the system is used, alarms received, maintenance performed, efficiencies gained, and other information that may assist in the evaluation of the system effectiveness.
5. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. Environmental considerations were examined in the development of this policy letter and have been determined not to be applicable.
6. DISCLAIMER. This document provides operational guidance to Coast Guard personnel. It does not impose requirements on any person outside the Coast Guard. All inspection requirements discussed in this document are found in existing regulations specified in the references section.
7. QUESTIONS. Questions concerning this policy letter and guidance should be directed to Office of Commercial Vessel Compliance, COMDT (CG-CVC), Domestic Compliance Division at CG-CVC@uscg.mil. This policy letter and other Domestic Vessel Policy documents are posted on the CG-CVC website at http://www.uscg.mil/hq/cgcv/cvc/policy/policy_letters.asp.

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