U.S. Navy Achieves Significant Engine Testing Milestones for LUSV Program

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WASHINGTON – The U.S. Navy's Large Unmanned Surface Vessel (LUSV) program reached pivotal milestones earlier this year after several industry teams successfully completed extended reliability demonstrations of four different engine configurations, officials announced today.

The four 720-hour tests demonstrated the capability and durability of different engine plants to operate for extended periods without human intervention – a critical enabler for advancing unmanned maritime operations and the Navy's manned-unmanned Hybrid Fleet concept.

Mandated by a congressional requirement in the 2021 National Defense Authorization Act, the engine testing milestones must be completed before the LUSV can proceed into a formal development phase. An engine system only qualifies for use in the program after successful demonstration events.

Demonstrations of each engine configuration took place over 720 continuous hours. No human intervention or preventative/corrective maintenance on the equipment was permitted during this time. Successfully completing the demonstration meant that an engine system could not exhibit any failures or issues that would require maintenance of any kind during operations on an unmanned ship for 30 days.

Four teams have successfully completed their separate 720-hour testing milestones. The successful teams include:

· Bollinger and Carter Machinery on behalf of Caterpillar in Chesapeake, Virginia was the first team to achieve this milestone in December of 2023. They demonstrated sufficient mechanical reliability of the 1550 kw Caterpillar 3512C model engine.

· Fincantieri Marinette Marine (FMM) and Carter Machinery on behalf of Caterpillar in Chesapeake, VA demonstrated mechanical durability of the Caterpillar 2300 kW rated 3516 main propulsion diesel, lube oil and fuel system.

· Gibbs & Cox and Southwest Research Institute in San Antonio, Texas on behalf of Cummins also validated the reliability of the QSK95 diesel engine paired with an ABB AMG 0560M04 LAE generator.

· Huntington Ingalls Incorporated (HII), in partnership with the U.S. Coast Guard, conducted a successful 720-hour demonstration on behalf of MTU of the MTU 20V 4000 M93L, a Main Propulsion Diesel Engine configuration.

Each of these respective engine configurations are all now eligible for use on the LUSV program.

“These successful test events mark a significant milestone for our team and brings us one step closer to delivering the Large Unmanned Surface Vessel to the Navy,” said Capt. Scot Searles, program manager of the Unmanned Maritime Systems (PMS 406) program office. “The completion of these rigorous engine tests is a testament to the hard work and collective expertise of both our Navy team and our industry partners. We are pleased with the results and look forward to continuing our work with industry to forge the future Hybrid Fleet.”

LUSVs will supplement the Fleet’s missile magazine capacity as part of the Navy’s Distributed Maritime Operations (DMO) concept. Currently, the LUSV is envisioned as a vessel greater than 200 ft. in length with a full load displacement of approximately 1,500 tons. LUSVs are intended to be low cost,

high endurance, modular USVs that can employ a variety of payloads.

The Navy in 2020 awarded six LUSV conceptual design contracts to industry teams to refine program requirements and to provide informed feedback on the Navy’s LUSV requirements. As part of these contracts, each of these teams have been pursuing propulsion plant efforts, culminating in these engine test demonstrations.

PEO Unmanned and Small Combatants leads the Navy’s efforts to develop, deliver and sustain capable and affordable unmanned maritime systems to meet Fleet requirements.