

Long Range Unmanned Surface Vessel (LRUSV)



In May 2024, DOT&E published a classified report on an Early Operational Assessment (EOA) of the Long Range Unmanned Surface Vessel (LRUSV). The Marine Corps terminated the LRUSV Middle Tier of Acquisition program subsequent to the EOA and intends to transition the LRUSV to the major capability acquisition pathway in FY27.

SYSTEM DESCRIPTION

The LRUSV prototype is an unmanned platform capable of traveling semi-autonomously to and from a designated patrol area, where it can then loiter indefinitely (dependent on fuel state) and

launch loitering munitions (LMs) and other payloads to strike maritime targets. The LRUSV rapid prototyping program consisted of the following five major sub-systems:

- Unmanned Surface Vessel (USV): powered vessel that can maneuver autonomously, or as directed by a pilot,

with capability to launch LMs or small unmanned surface vessels (sUSVs).

- LM System: organic precision fires-mounted loitering munition system with a munition control interface to launch an all-up round against designated maritime targets.

- sUSV: a small USV that can be carried on the rear deck of the LRUSV to provide extended reach to deliver kinetic and non-kinetic effects.
- Command, Control, Communications, and Computers System: integrates the functions of the other required subsystems, enabling USV autonomy and deployment of LMs or sUSVs.
- Contact Vessel: a manned version of the USV that provides sustainment.

MISSION

The Marine Corps and joint force commanders will employ the LRUSV to enhance maritime reconnaissance in support of sea denial and sea control operations. LRUSV supports implementation of the Littoral Operations in a Contested Environment concept, the Expeditionary Advanced Base Operations concept, and emerging doctrine defined by the Marine Corp's Force Design 2030.

PROGRAM

The LRUSV was established as a Middle Tier of Acquisition rapid prototyping program, designated by the Marine Corps in May 2021. The Marine Corps approved the LRUSV Master Test Strategy in November 2021, prior to the program being put on DOT&E oversight. In July 2023, the Marine Corps directed a capability requirement change to refine direction for the next phase of acquisition of the LRUSV. The

Marine Corps intends future development of the LRUSV to focus on multi-domain sensor collections in support of the Maritime Reconnaissance Company. In September 2023, the Marine Corps directed the termination of the LRUSV Middle Tier of Acquisition program. The Marine Corps intends to transition the LRUSV to the major capability acquisition pathway at Milestone B in 2QFY27. DOT&E removed the LRUSV program from oversight in March 2024 and expects to return it to oversight upon restoration of the program in FY27.

» MAJOR CONTRACTORS

- Metal Shark – Jeanerette, Louisiana (LRUSV)
- HII – Newport News, Virginia (autonomy systems)

TEST ADEQUACY

In FY23, the Marine Corps conducted an EOA with five prototype LRUSVs, as detailed in the FY23 Annual Report. The EOA was not intended to determine operational effectiveness, suitability, and survivability. The EOA was conducted, and adequate, to provide observation of the LRUSV prototype for future development or acquisition pathway transition. Testing was conducted in accordance with a Marine Corps Operational Test and Evaluation Activity-approved test plan. DOT&E reviewed the test plan, subsequently agreed with it, and observed the test events.

PERFORMANCE

» EFFECTIVENESS AND SUITABILITY

The EOA provided an operational demonstration of capability of the LRUSV prototype to direct itself to a designated patrol area and fire munitions against simulated maritime targets. The EOA also demonstrated LRUSV capability to autonomously maneuver safely in various navigational scenarios when encountering another surface vessel during transit operations.

Additional effectiveness and suitability observations were provided in the May 2024 classified EOA report.

» SURVIVABILITY

No data were collected during the EOA to determine cyber survivability of the LRUSV prototype.

RECOMMENDATION

The Marine Corps should:

1. Address all DOT&E recommendations provided in the May 2024 classified EOA report.