

# LHA 6 Flight 1 (LHA 8) Amphibious Assault Ship

The LHA 6 Flight 1 (LHA 8) operational assessment, conducted from October 20 through November 19, 2020, indicated that the LHA 8 well deck adds needed capability to launch and recover surface connectors. The LHA 8 design, however, includes several design features that could negatively affect operational effectiveness of the LHA Flight 1 ships if not mitigated prior to ship delivery expected in FY25. The survivability of the LHA 8 to air-delivered and underwater threats will remain unknown unless the Navy plans, funds, and executes an adequate LFT&E strategy.



## System Description

The USS *America* LHA 6 class are large-deck amphibious assault ships intended to provide transportation and operational support for deployed Marine Corps forces, to include the F-35B Joint Strike Fighter, the AV-8B, the MV-22, the CH-53, the AH-1, the UH-1, and the H-60 squadrons, as well as the Marine Air Ground Task Force (MAGTF). The LHA 6 Flight 1 variant, LHA 8 and beyond, adds a well deck capable of deploying two Landing Craft Air Cushion hovercraft. The LHA 8 will serve as the primary command ship and aviation platform for an Amphibious Ready Group equipped with the Ship Self-Defense System, the primary control and decision system that integrates air search radars, trackers, an electronic warfare system, and hard-kill and soft-kill weapons to provide self-defense against anti-ship cruise missiles (ASCMs).

## Program

The LHA 6 program (formerly the LHA (R) program) is an Acquisition Category IC program. The Navy completed the LHA 6 Flight 0 IOT&E in December 2017. From October to November 2020, the Navy and Marine Corps conducted an operational assessment intended to solicit fleet operator feedback on the LHA 6 Flight 1 design and its potential effect on operational effectiveness and suitability of the delivered ship. The Navy expects to deliver a Test and Evaluation Master Plan revision for DOT&E approval in FY22, detailing the OT&E and LFT&E requirements for the LHA 6 Flight 1. The first LHA 6 Flight 1 ship, USS *Bougainville* (LHA 8), is expected to be delivered in FY25. The LHA 6 Flight 1 FOT&E will begin following ship delivery.

The Navy agrees an unmanned test asset is required to adequately and safely test the self-defense capability of LHA 8 against ASCM surrogates. The Navy committed to providing the resources required to retain this capability via a planned maintenance availability of the Self-Defense Test Ship (e.g., *Paul F. Foster*), as well as the procurement and installation of the necessary LHA 8 combat system elements on this test ship.

## Major Contractors

- LHA 8: Huntington Ingalls Industries, Ingalls Shipbuilding Division – Pascagoula, Mississippi.
- Ship Self-Defense System: Lockheed Martin – Moorestown, New Jersey.
- Enterprise Air Surveillance Radar (EASR): Raytheon Missiles and Defense – Marlborough, Massachusetts.
- RAM Block 2A and ESSM Block 1 missiles: Raytheon Missiles and Defense – Tucson, Arizona.
- Cooperative Engagement Capability (CEC): Raytheon – St. Petersburg, Florida.
- Surface Electronic Warfare Improvement Program Block 2 (SEWIP Block 2): Lockheed Martin – Syracuse, New York.

## Test Adequacy

The Navy and Marine Corps conducted an operational assessment of the LHA 8 ship design between October 20 and November 19, 2020 in accordance with DOT&E-approved test plans. During the three, 3-day events, subject matter experts in operations and maintenance reviewed the LHA 8 design to identify risks that could affect operational effectiveness and suitability. The operational assessment also informed operational testers on the required FOT&E scope and design.

The Navy does not yet have a well-defined LFT&E plan required to evaluate the survivability of the LHA 8 to air delivered or underwater kinetic threats.

## Performance

### Effectiveness

Not enough data are yet available to provide a preliminary assessment of the LHA 8 operational effectiveness due to the ship's stage of development. Operational assessment of the LHA 8 design indicated that the well deck adds needed capability to launch and recover surface connectors, but several design features could negatively affect operational effectiveness of the LHA Flight 1 ships. Additional details are summarized in the classified DOT&E LHA 6 Flight 1 Operational Assessment report published in September 2021.

## Suitability

Not enough data are yet available to provide a preliminary assessment of the LHA 8 operational suitability due to the ship's stage of development. The LHA 8 operational assessment could not measure reliability, maintainability, or availability of LHA 8. Final assessment of LHA 8 operational suitability will be published after the completion of the LHA 8 FOT&E.

## Survivability

The Navy has initiated the vulnerability modeling of the LHA Flight 1 design, but no relevant data are yet available to assess ship survivability either against kinetic or cyber threats.

## Recommendations

The Navy should:

1. Validate the sufficiency of modified ship-space following operational assessment to support Marine Corps Tier-2 equipment.
2. Conduct land-based operational testing of the LHA 8 combat system to ensure the system is mature enough for at-sea operational test of the platform, and test EASR's electronic protection capability.
3. Continue to fund the maintenance availability for the current Self-Defense Test Ship (e.g., *Paul F. Foster*) to ensure its readiness to support LHA 8 combat system testing.
4. Continue to fund the procurement and installation of the necessary LHA 8 combat system elements on Self-Defense Test Ship.
5. Develop FOT&E test plans informed by the LHA 8 operational assessment.
6. Evaluate all recommendations in the DOT&E Operational Assessment report published in September 2021.
7. Develop an adequate LFT&E strategy to assess ship survivability of the LHA 6 Flight 1 ships, including the survivability of the ship to lethal, underwater threat-induced shock effects.