

LPD-17 *San Antonio* Class Amphibious Transport Dock

Executive Summary

- The Navy has indicated that many deficiencies identified in IOT&E have been corrected, but they have yet to demonstrate these corrections in an operationally-realistic environment during FOT&E.
- The Navy's Board of Inspection and Survey assessed the material condition of LPD-21 as satisfactory.

System

LPD-17 is a diesel engine-powered ship designed to embark, transport, and deploy ground troops and equipment. Ship to shore movement is provided by Landing Craft Air Cushion (LCAC), Landing Craft Utility (LCU), Amphibious Assault Vehicles (AAVs), MV-22 tiltrotor aircraft, and/or helicopters. Key ship features and systems include the following:

- A floodable well deck for LCAC, LCU, and AAV operations
- A flight deck and hangar to support various Navy and Marine Corps aircraft
- Command, Control, Communications, Computers, and Intelligence facilities and equipment to support Marine Corps Landing Force operations
- A Ship Self-Defense System (SSDS) Mk 2 Mod 2 with Cooperative Engagement Capability equipped with Rolling Airframe Missiles (RAM), the SLQ-32B (V)2 (with Mk 53 Nulka electronic decoys) passive electronic warfare system, and radars (SPQ-9B horizon search radar and SPS-48E long-range air search radar) to provide air warfare ship self-defense
- Two Mk 46 30 mm gun systems and smaller caliber weapons to provide defense against small surface threats
- A Shipboard Wide Area Network that serves as the data backbone for all electronic systems. (LPD-17 is one of the first ships built with a fully integrated data network system.)



Mission

A Fleet Commander will employ LPD-17 class ships to conduct Amphibious Warfare. The ship will normally deploy with a notional three-ship Amphibious Ready Group (ARG) but can operate independently. In these roles, the ship will:

- Transport combat and support elements of a Marine Expeditionary Unit or Brigade
- Embark, launch, and recover LCACs, LCUs, and AAVs for amphibious assault missions
- Support aerial assaults by embarking, launching, and recovering Marine Corps aircraft
- Carry and discharge cargo to sustain the landing force
- Conduct non-combatant evacuation operations and other crisis response missions

Major Contractor

Huntington Ingalls – Pascagoula, Mississippi

Activity

The Total Ship Survivability Trial and Full Ship Shock Trial, completed in FY08, are the primary sources of data for DOT&E's survivability assessment. The Navy completed their final Vulnerability Assessment Report in FY11.

Assessment

- In the June 2010 DOT&E Combined Operational and Live Fire Test Report, LPD-17 was assessed as capable of conducting amphibious operations in a benign environment, but not operationally effective, suitable, or survivable in a hostile environment due to significant reliability deficiencies on major systems affecting communications, propulsion, and

self defense. The Navy still has several deferred test events to complete during FOT&E including: chemical/biological/radiological defense, information assurance, and vulnerability against enemy mines.

- The Navy has made progress in improving reliability and availability of critical ship systems affecting communications and propulsion; however, the Navy has not yet demonstrated the systems' performance in an operationally-realistic environment.
- Additionally, the LPD-17 self-defense system did not demonstrate adequate capability to defend the ship against the threats it is likely to encounter.

NAVY PROGRAMS

- The ship has not yet demonstrated an adequate command, control, communications, computers, and intelligence capability. The Navy still needs to validate critical Information Exchange Requirements and pursue a formal Information Support Plan to support a Joint Interoperability Certification, but was granted a six month interim Joint Certification that expires January 31, 2012.
- Probability of Raid Annihilation test bed events and the Self-Defense Test Ship events revealed 13 combat systems deficiencies and underscored 5 previously known deficiencies the details of which are classified. While some potential improvements have been made to RAM Block II; RAM Helicopter, Aircraft, Ship mode; SPS-48E and the Advanced Electronic Mast System; SPQ-9B and SSSDs Mk 2 software upgrades; the Navy has not conducted FOT&E to verify the effectiveness of these changes.
- Unlike the first four ships of the class, the Board of Inspection and Survey assessed the material condition of LPD-21 as satisfactory.

Recommendations

- Status of Previous Recommendations. The Navy has satisfactorily addressed the ship's interoperability with AV-8 aircraft and completed Probability of Raid

Annihilation modeling and simulation efforts. All additional recommendations made in FY07, FY08, FY09, and FY10 remain valid.

- The Navy has made reliability improvements to the Ship Wide Area Network, Interior Voice Communications System, Engineering Control System, Cargo Ammunition Magazine elevators, vehicle ramps, main propulsion diesel engines, and electrical distribution systems and steering systems consistent with previous year's recommendations, but they have yet to demonstrate these improvements in operationally-realistic environments during FOT&E.
- FY11 Recommendations. The Navy should:
 1. Complete deferred test events to include chemical/biological/radiological defense, information assurance, and Vulnerability against enemy mines using the Advanced Mine Simulation System.
 2. Correct deficiencies identified in the Naval Sea Systems Command Total Ship Survivability Trial and Full Ship Shock Trial reports.
 3. Incorporate FOT&E into the updated LPD-17 Test and Evaluation Master Plan to evaluate the efficacy of the corrective actions taken by the Navy to address DOT&E's recommendations.