

T-AKE *Lewis & Clark* Class of Auxiliary Dry Cargo Ships

Executive Summary

- The first ship of the class launched May 2005. The Navy plans to build 12 ships.
- Commercial construction standards create survivability risks that the Navy has addressed with some design modifications.



System

T-AKE *Lewis & Clark* is a class of non-combatant ships designed to carry dry cargo, ammunition, and fuel (in limited amounts) for naval combat forces at sea.

- Constructed to commercial standards (American Bureau of Shipping) with some additional features to increase its survivability in hostile environments.
- Operated by civilian mariners from the Military Sealift Command.
- Propelled with a single shaft and propeller. The shaft will be turned with electric motors powered by diesel generators like many modern commercial cargo ships.
- Designed to employ a computerized cargo inventory management system for both ordnance and non-ordnance cargo.

Mission

The Maritime Component Commander will employ the T-AKE *Lewis & Clark* class of ships to:

- Re-supply other ships while connected underway using Standard Tensioned Replenishment Alongside Method rigs and by using embarked helicopters
- Serve as a shuttle ship to move cargo and ammunition between a port and a larger consolidating replenishment ship, which stays with the strike group

Activity

- The program completed Operational Test-IIB, an operational assessment, from June 2004 to March 2005. Testing was conducted in accordance with a DOT&E-approved test plan.
- The program completed two LFT&E survivability surrogate test events.

Assessment

- The operational assessment identified high-risk deficiencies in the areas of command, control, communications, computers, and intelligence; mobility systems, auxiliary systems, survivability, safety, and documentation. Of note, unanticipated network and server security issues with the computerized cargo management system are adding risk to meeting that system's operational availability metric. The program has addressed eight of nine major deficiencies.
- T-AKE is built to commercial construction standards with some modifications to address Navy requirements. Hence, LFT&E analysis to characterize vulnerabilities is critical. The detailed design Vulnerability Assessment Report and other surrogate testing are behind schedule.
- Testing has been integrated in order to collect operational testing data during previously scheduled contractor and

- developmental test events. The Operational Test Agency reports that time and resource savings have been substantial.
- Based on the Operational Requirements Document, operational testing of the cargo transfer rate key performance parameter would require the Navy to complete a full ammunition upload to an aircraft carrier and a cruiser for operational evaluation planned for early FY07. DOT&E, Commander, Operational Test and Evaluation Force, and the program office are working to formalize an appropriate alternative metric in order to use other platforms such as other combat logistics force ships and smaller combatants for risk reduction and operational evaluation of the load rate key performance parameter. Testing alongside an aircraft carrier and cruiser for a period of time will still be necessary.

Recommendations

1. Address the significant deficiencies so that they do not become IOT&E performance issues.
2. Ensure that essential but scarce test resources are made available for the IOT&E in FY06. Chief among these are an active Navy aircraft carrier and cruiser to receive replenishment during operational evaluation.

NAVY PROGRAMS