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

Executive Summary

- The *Lewis & Clark* class of dry cargo ships (T-AKE) is operationally effective in conducting its primary mission under peacetime, benign conditions.
- T-AKE is operationally suitable.
- The Navy conducted FOT&E Part 1 during FY08. Testing included the following events:
  - Successful at-sea testing of the acoustic deception device (NIXIE)
  - Successful collection of reliability, maintainability, and availability data
  - Initial testing of Information Assurance (IA); a second test is scheduled to complete 2QFY09 after a proven Intrusion Detection System is installed
- FOT&E Part 2 is scheduled for FY09. Part 2 will include testing of the Advanced Degaussing System using the Advanced Mine Simulation System, and an assessment of the Shipboard Warehouse Management System.
- Testing of the Advanced Degaussing System is delayed until completion of the magnetic silencing facility upgrades in Norfolk, Virginia, and San Diego, California.

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. Eleven ships are planned for the Combat Logistics Force, and options for three additional ships for the Maritime Prepositioning Force (Future) have been negotiated. The T-AKE is:

- 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 and a small Navy military detachment
- Propelled with a single shaft and propeller; driven by electric motors powered by diesel generators
- Designed to employ a computerized cargo inventory management system for both ordnance and non-ordnance cargo

Mission

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

- Re-supply other ships while connected underway using Standard Tensioned Replenishment Alongside Method rigs and embarked helicopters
- Move cargo and ammunition between a port and a larger consolidating replenishment ship, which stays with the Carrier/Expeditionary Strike Group
- Be part of the hybrid combination of ships of the Maritime Prepositioning Force (Future)

Prime Contractor

- General Dynamics

Activity

The Navy conducted FOT&E Part 1 in accordance with the DOT&E-approved Test and Evaluation Master Plan (TEMP) and test plan during FY08 and included the following test events:

- At-sea testing of the acoustic deception torpedo countermeasure system AN/SLQ-25A (NIXIE)
- IA that had been omitted during the IOT&E
- Collection of reliability, maintainability, and availability data during the deployments of T-AKE 1 and T-AKE 2

Assessment

- The Navy completed IOT&E on T-AKE in February 2007 and found it operationally effective in conducting its primary mission under peacetime, benign conditions. However, performance in a hostile environment and the ability to withstand attempted intrusion into platform information technology systems was undetermined.
- T-AKE is operationally suitable, and correction of deficiencies is being accomplished.

- Follow-on IA testing on T-AKE 3 revealed that the ship was unable to detect network penetration by surrogate intruders. The ability to detect is a prerequisite to reaction and restoration of information technology network systems. IA testing is therefore considered incomplete until conducted with an installed Intrusion Detection System.
- The Navy is in the process of upgrading their infrastructure to conduct full testing and calibration of the Advanced Degaussing System. This system is intended to reduce the ship's magnetic signature and susceptibility to mines, but will not be available until FY09.
- T-AKE is in receipt of all detailed design and vulnerability assessment documentation required for LFT&E. The ship has limited survivability attributes, and at-sea risks can be mitigated with a combatant escort in hostile environments.

Recommendations

- Status of Previous Recommendations. The Navy still needs to address one of the two FY06 recommendations and three of the six FY07 recommendations.
- FY08 Recommendation.
  1. The Navy should install a proven Intrusion Detection System prior to re-evaluating IA controls.