

## Strategic Sealift Program (SSP)

The Strategic Sealift Program (SSP) acquired nineteen large, medium-speed roll-on/roll-off (RO/RO) (LMSR) vessels in the following four classes: the National Steel Shipbuilding Company (NASSCO) conversions ships (2), Newport News Shipyard conversion ships (2), Avondale Industries new construction (7), and NASSCO new-construction ships (8). These ships provide surge transport or support afloat pre-positioned combat equipment for a projected military force. The notional cargo per ship is equipment for one-third of a heavy Army brigade task force and its supporting supplies.

The LMSRs are about 950 feet long and 106 feet wide (to enable transit through the Panama Canal), and have a displacement of about 55,000 long tons. The NASSCO new-construction ships are gas turbine powered and the other three classes are diesel-powered. All of the ships can operate at 24 knots. The sealift ships are capable of self-sustained RO/RO and lift-on/lift-off (LO/LO) operations at a pier and at anchorage. In addition, they must provide an in-the-stream (ITS) capability using their stern and side port ramps for delivery of RO/RO cargo to lighterage via a floating Discharge Facility in a sea state 3 environment. The LMSR ships are not armed and do not have a combat system. They do have a command, control, communication, and intelligence suite sufficient to perform their intended mission in conjunction with other naval vessels.

As authorized in the acquisition strategy, developmental testing has been limited, focusing on production assurance testing by government agents in conjunction with the builders. Navy, U.S. Coast Guard, and American Bureau of Shipping representatives witnessed systems and integration testing.

The Operational Test and Evaluation Force (OPTEVFOR) conducted the operational evaluation (OPEVAL) (Operational Test (OT)-IIA) for the NASSCO-conversion LMSR ships during September 1996 aboard *USNS Shugart* in Savannah, Georgia, at sea, and at anchorage in Hampton Roads, Virginia. A joint OPTEVFOR and Army Test and Evaluation Command test team conducted this test in conjunction with a planned Army sealift deployment exercise and the test involved over 1,000 pieces of Army equipment including tanks, trucks, and various helicopters. They also conducted limited ITS operations.

### TEST & EVALUATION ACTIVITY

OPTEVFOR conducted OT-IIB on the Avondale Industries-new construction LMSRs (*USNS Bob Hope* class) from October 2001 through January 2003. Because of deficiencies in the reliability of the main engine exhaust piping system of these ships, the testing occurred in several phases over a 16-month period. The joint test team conducted testing in the ports of Savannah, Georgia, and Beaumont, Texas; at anchor in the Southern California operating areas; and at sea off the east and west coasts of the United States. These events required approximately 1,500 pieces of equipment loaded and unloaded pierside, and over 1,000 pieces of equipment offloaded at anchor in the stream in sea conditions far less than the required sea state 3.

The Military Sealift Command deployed LMSR ships extensively for transport of Army equipment to support operations against Iraq in 2003. The performance of the ships in these actual operations provides additional support for the conclusions as to their effectiveness and suitability.



*The sealift ships are capable of self-sustained roll-on/roll-off and lift-on/lift-off operations at a pier and at anchorage.*

# NAVY PROGRAMS

## TEST & EVALUATION ASSESSMENT

The LMSRs are operationally effective and operationally suitable (in conventional environments that do not contain chemical, biological, and radiological (CBR) agents) based on their performance in operational testing conducted in the two OPEVAL events. The propulsion reliability of the seven *USNS Bob Hope* class ships is not yet fully determined because of the brief period of testing the improved main propulsion exhaust system. The intended capability to handle cargo in the stream in sea state 3 has not yet been demonstrated because the required supporting equipment (the RO/RO discharge facility) does not exist. Testers identified some additional deficiencies and the Program Office and the Military Sealift Command have instituted actions to correct them.

The 1996 OT-IIA found the NASSCO-conversion LMSR to be operationally effective and potentially operationally suitable. The joint test team observed no significant deficiencies from the operational testing. However, they conducted only limited ITS operations during this test. Its findings identified deficiencies in compatibility, interoperability, and training. The results of OT-IIB indicate that training deficiencies persist. The crews of the ships designated for surge transportation duties are not routinely trained in CBR procedures and developing a system to provide this training before exposing the crews to CBR threat conditions must be done. OPTEVFOR completed assessment of the performance of the remaining two ship classes not subjected to actual operational testing, and reported that those ships have no class-unique deficiencies. The OPEVALs are adequate to describe the demonstrated performance of all of the LMSRs.

After an improved exhaust system was installed in the *USNS Bob Hope* class ship *USNS Brittin*, a 28-hour high-speed trial (including 4 hours at full power) was conducted as the final phase of the test. OPTEVFOR, the lead operational test agency for the multi-Service test team, reported a satisfactory rating for all critical operational issues except reliability, interoperability, and training. Reliability was only partially resolved because of the short duration of the operational test of the improved main propulsion exhaust system. The Army operational test agency rated interoperability as unsatisfactory because no RO/RO discharge facility exists that can support operations in sea state 3. Training was rated as unsatisfactory because of deficiencies in training the ship's crew to fight fires correctly and to operate in CBR environments.

It is likely that existing deficiencies in the overall SSP will hinder LMSR ship mission performance. The existing lighterage system is not safe for cargo loading in sea states higher than two, and the RO/RO discharge facility equipment shares this limitation. This can adversely affect our ability to project power in a timely manner in situations where adequate port facilities are not available. Only a few ports in areas of expected deployment have sufficient depth of water and length of berth to allow pierside offload of an LMSR. Deployment through less-capable ports will require ITS operations. DOT&E is concerned that other aspects of ITS RO/RO operations in any sea state (training, expected offload flow rate, and stern ramp operations) and ITS LO/LO capabilities, including control of load pendulation, will present additional deficiencies that could not be tested operationally. Additional testing of LMSR ITS offload capability in sea state 3 must be performed when sea state 3-capable lighterage connectivity with RO/RO Discharge Facility equipment is developed. This testing should be performed during the operational test of the improved lighterage.