

## Mobile Landing Platform (MLP) Core Capability Set (CCS) and Afloat Forward Staging Base (AFSB)

### Executive Summary

- In June 2014, the Navy commenced Post Delivery Test and Trials (PDT&T) on USNS *Montford Point* (MLP-1) Mobile Landing Platform (MLP) Core Capability Set (CCS). IOT&E took place August 25 through November 4, 2014. Initial results indicate the following:
  - MLP (CCS) is capable of transiting the required 9,500 nautical miles at 15 knots unrefueled.
  - MLP (CCS) can land and launch Landing Craft Air Cushion (LCAC) vehicles through Sea State 3.
  - MLP (CCS) can operate skin-to-skin, to include vehicle transfer through Sea State 3, with both the USNS *Bob Hope* (*Bob Hope* class) and USNS *Dahl* (*Watson* class) Large Medium Speed Roll-on roll-off (LMSR) ships.
  - Initial observations and assessment indicate deficiencies exist with MLP (CCS) skin-to-skin mooring operations with Joint High Speed Vessel (JHSV). During the first test, several mooring lines parted, precluding completion of the test event. During the second test, the mooring line issue was resolved but the JHSV ramp suffered a casualty, precluding completion of the test.
  - The Navy's Commander, Operational Test and Evaluation Force (COTF) conducted cybersecurity testing of MLP (CCS) and no significant vulnerabilities were noted. Initial evaluation suggests that even if a cyber-adversary gained access, overall ship's mission disruption would be minimal.
- The MLP program did not conduct any major live fire test events during FY14. The Navy plans to conduct the Total Ship Survivability Trial on the MLP Afloat Forward Staging Base (AFSB) variant in FY16, which will provide data for recoverability analysis. The Navy issued the Detailed Design Survivability Assessment Report in December 2013. The final Survivability Assessment Report is planned for FY17.

### System

- MLP is a modified heavy-lift ship the Navy procured that uses float-on/float-off technology. It is based on the British Petroleum *Alaska* class oil tanker.
- Thirty-four Military Sealift Command (MSC) contracted mariners will operate and maintain the MLP (CCS) vessels. Thirty-four MSC civilian mariners will operate and maintain the MLP (AFSB) vessels. MSC will serve as MLP Life Cycle Managers.
- The Navy plans to deliver the MLP with two different mission capabilities: a CCS on hulls 1 and 2, and an AFSB on hulls 3 and 4.



- The Navy intends for CCS to:
  - Support Mobile Prepositioning Force operations by facilitating at-sea transfer and delivery of pre-positioned assets to units ashore
  - Consist of a vehicle staging area (raised vehicle deck), vehicle transfer ramp, large mooring fenders, an emergency-only commercial helicopter operating spot, and three LCAC lanes/operating spots (barriers, catwalk, lighting, wash down, and fueling services)
  - Be equipped with a crane for placing of fenders used for skin-to-skin operations with an LMSR or JHSV
  - Interface with the LMSR ships and LCACs or the follow-on Ship-to-Shore Connectors to permit off-loading military vehicles ranging from High Mobility Multi-purpose Wheeled Vehicles to battle tanks (M1A2)
  - Be classified as a non-combatant with a limited self-protection capability

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- The Navy intends for AFSB to:
  - Support Airborne Mine Countermeasure (AMCM) operations
  - Host a squadron of four MH-53E helicopters
  - Include a two-spot flight deck, hangar facility, helicopter-fueling capability, ordnance storage, operation planning and work spaces, and berthing for 250 Navy personnel
  - Have a mission deck below the flight deck with a crane for storing and deploying the various mine-hunting and clearing equipment used with the MH-53E helicopters; explosive ordnance demolition boats and equipment may also be stored and handled on the mission deck
  - Support Special Forces in the future when funding is available to provide that capability
  - Be classified as a non-combatant with a limited self-protection capability
- Combatant Commanders will use MLP (CCS) as a surface interface between other Mobile Prepositioning Force (future) squadron ships and connectors and the sea base. They will also use it to transfer personnel and equipment from LMSR and JHSVs to the MLP (CCS), and then onto LCACs or Ship-to-Shore Connectors to facilitate delivery ashore of forces from the sea.
- Combatant Commanders will use MLP (AFSB) to provide AMCM capabilities during the AMCM mission to support the legacy MH-53E helicopters and host the various mine-detecting and clearing equipment used with the helicopters, along with explosive ordnance demolition boats and equipment.

## Major Contractors

- MLP base ship and MLP AFSB: General Dynamic's National Steel and Shipbuilding Company (NASSCO) – San Diego, California
- CCS arrangement : Vigor Marine (Limited Liability Company) Shipbuilding – Portland, Oregon

## Mission

- The Navy developed MLP to host multiple mission sets, operate from international waters, and persist for extended periods providing a capability unencumbered by geo-political constraints in order to meet strategic goals.

## Activity

- On June 13, 2014, DOT&E approved the MLP (CCS) IOT&E test plan. The test plan adopts an integrated test approach where the Navy conducts developmental and operational testing concurrently, with each having its own set of metrics and data collection. All tests were conducted in accordance with the DOT&E-approved test plan.
- USNS *Montford Point* (MLP-1) launched November 2012, completed builders and acceptance trials, delivered in May 2013, and completed final contract trials in September 2013. The Navy and Vigor Marine completed installation of the CCS in April 2014, and PDT&T commenced in June 2014. USNS *Lewis B. Puller* (MLP-3 AFSB) is expected to deliver in 4QFY15. The following test events were conducted at sea off Camp Pendleton, in Long Beach Harbor, and in harbor in San Diego, California:
  - The Navy and Marine Corps attempted to conduct a day and night interface test mooring of the JHSV to the MLP (CCS) vessel during the week of June 23, 2014. USNS *Millinocket* (JHSV-3) moored skin-to-skin with USNS *Montford Point* (MLP-1 CCS) and Marine Corps vehicles transited back and forth during daylight. The vehicle transfer in daylight was completed successfully, but five mooring lines broke prompting cancellation of the night test.
  - The Navy and Marine Corps attempted the same evolution a second time on October 29, 2014. Although the mooring line problem was resolved, and both day and night moorings were completed, the JHSV ramp suffered a casualty, prompting cancellation of further vehicle transfers after recovering the first vehicle.
  - The Navy and Marine Corps conducted a portion of the primary timed vehicle transfer requirement during a fleet exercise the week of July 7, 2014. The primary timed requirement for MLP (CCS) is to enable the transfer ashore of all the vehicles for a Marine Corps reinforced rifle company in a 12-hour period from 25 nautical miles at sea with the exception of Amphibious Assault Vehicles (AAVs). AAVs are slower than LCACs in the water, and are best launched within five nautical miles from the beach. During this exercise, MLP-1 was positioned just inside 3 nautical miles from shore, and the United States Marine Corps transferred 15 AAVs ashore in 1 hour and 4 minutes.
  - The Navy and Marine Corps successfully completed the rest of the reinforced rifle company vehicle transfers via LCAC in a timed event on October 14, 2014. Although MLP-1 was not positioned 25 nautical miles from shore, the LCACs transited a route of 25 nautical miles both to shore and then back to MLP-1 for the next load.
  - The Navy conducted a 24-hour, 15-knot fuel economy trial as MLP-1 transited from the Seattle Washington area to Southern California waters. Preliminary analysis indicates the ship can easily achieve the 9,500 nautical miles, unrefueled, 15-knot transit requirement.
  - The Navy and Marine Corps successfully conducted skin-to-skin operations through Sea State 3 with both the USNS *Bob Hope* (*Bob Hope* class) and the USNS *Dahl*

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(*Watson* class) LMSRs, to include vehicle transfer and LCAC operations, in various tests during September and October 2014.

- The Navy and Marine Corps conducted a Critical System Maintenance Review with the ship's company to assist in evaluating suitability of both maintenance and logistics for the ship class.
- The Navy conducted a limited self-defense drill (no targets engaged) and a Structural Test Fire Event that verified fields of fire and 0.50 caliber machine gun mount structure suitability on November 3, 2014.
- COTF conducted a local cybersecurity evaluation of MLP-1 during the week of July 28, 2014. COTF conducted this evaluation to assess the ship's hosts and servers on the unclassified and classified networks.
- COTF conducted the remote reconnaissance and cyber-attack evaluation on MLP-1 on August 25 – 26, 2014. This evaluation focused on how initial footholds can be gained by an external attacker and how well they can be leveraged.
- The MLP program did not conduct any major live fire test events during FY14. The Navy plans to conduct the Total Ship Survivability Trial on the MLP AFSB variant in FY16, which will provide data for recoverability analysis. The Navy issued the Detailed Design Survivability Assessment Report in December 2013. The final Survivability Assessment Report is planned for FY17.

## Assessment

- This report provides only a preliminary assessment of the MLP (CCS) based on observations on USNS *Montford Point* (MLP-1). DOT&E will provide the final assessment in the 3QFY15 IOT&E report.
- Vehicle transfer at sea with JHSV moored skin-to-skin with MLP (CCS) is not advised (mooring with JHSV is a secondary mission for MLP.) Initial observations and assessment indicate deficiencies exist with MLP (CCS) skin-to-skin mooring

operations with JHSV. During the first test event, several mooring lines parted, precluding completion of the test event. During the second test event, the mooring line issue was resolved but the JHSV ramp suffered a casualty, precluding completion of the test. Analysis is in progress and final assessment will be provided in the IOT&E report.

- The primary timed vehicle transfer requirement is satisfied. The unrefueled range requirement is satisfied
- The Navy demonstrated skin-to-skin operations and vehicle transfer through Sea State 3 with both the USNS *Bob Hope* (*Bob Hope* class) and USNS *Dahl* (*Watson* class) LMSRs.
- The local cybersecurity test demonstrated that the network's Host-Based Security System stopped most of COTF's cyber-attacks against unclassified and classified networks. As the ship's networks are not connected to the ship's critical systems, the loss of either unclassified or classified networks during operations would be an inconvenience, but would not hinder the ship's ability to conduct its mission since it has communication backups, including radios and standalone satellite phones.
- During the remote reconnaissance and cyber-attack evaluation, COTF was unable to gain a foothold on the MLP-1 networks with the toolset used for these assessments. However, the test did not explore the vulnerability of the ship to very advanced cyber threats due to security restrictions in place during the time of the test.

## Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY14 Recommendation. IOT&E analysis is ongoing and DOT&E expects to issue a full assessment and recommendations in 3QFY15.
  1. The Navy should reevaluate the need for at sea skin-to-skin operations between MLP (CCS) and JHSV.

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