



LCS Mission Modules Program



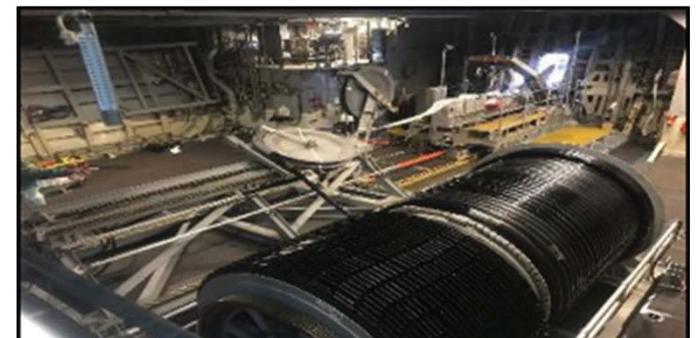
Transition from Development to Production



2019 Completed Milestones



- ❑ **SUW: Achieved SSMM IOC on FRE variant in Feb 2019 and commenced DT/OT on IND variant in Jul 2019**
 - Transitioned to production with first SSMM production asset to deliver in FY21
- ❑ **ASW: Commenced DT on FRE variant in Dec 2019**
 - Completed testing at AUTEC and install onboard USS FT Worth (LCS 3)
 - Commenced Developmental Testing Phase 1
- ❑ **MCM: All Aviation MCM (AMCM) Mission Modules (Near Surface Detection, Coastal Mine Reconnaissance, and Airborne Mine Neutralization) certified for deployment on the IND Variant**
 - Completed all FRE variant testing and on track to certify Aviation MCM for deployment in Q2FY20
 - Integration of MCM Systems on IND continues throughout 2020





Surface Warfare (SUW) Mission Package



- ❑ Surface-to-Surface Mission Module (SSMM) has executed 79 live-fire shots in formal STF/DT/IT/OT, achieving more than a 90% successful engagement rate
- ❑ Achieved IOC on FRE variant in Feb 2019
- ❑ Successful IT event on LCS 6 in Nov 2019
- ❑ SSMM transitioned to production in FY2019 and will deliver first production asset in FY21
 - On track to complete procurement of SSMMs in FY24
- ❑ SUW with SSMM deployed on LCS 7 in 2019



SSMM delivers the premier counter FAC/FIAC Capability to the Fleet



Integrated SUW MP Testing



Distribution Statement A:
Approved for public release,
distribution unlimited

(#2019-0691)



ASW MP Testing



Distribution A: Approved for Public Release;
Distribution Unlimited

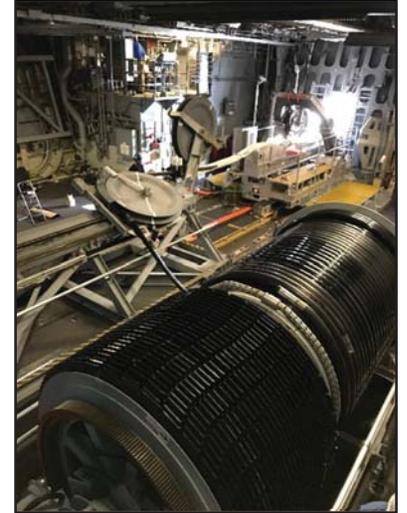


Anti-Submarine Warfare (ASW) Mission Package



- ❑ **ASW Began Testing in Sep 2019**
 - DT-B3 Phase 1 testing commenced in Dec2019
 - DT-B3 Phase 2 testing will begin Q2 FY20

- ❑ **On track to achieve ASW MP IOC in FY20**



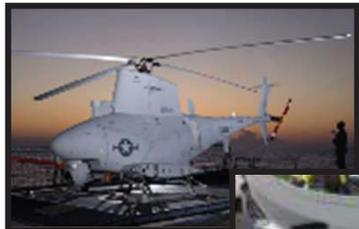
Provides a game-changing ASW capability not fielded on any other surface combatant



Mine Countermeasures (MCM) Mission Package



- ❑ All Aviation MCM (AMCM) Mission Modules certified for deployment on the IND Variant Ships
 - Completed FRE variant testing and on track to certify in Q2FY2020
- ❑ Phase I & II of MCM VOO feasibility demonstration conducted aboard USNS Hershel "Woody" William (T-ESB 4) in Sep 2019
 - Phase III to include aviation assets is planned for Apr 2020
- ❑ Plan to conduct MCM MP developmental/operational testing in FY21 and achieve IOC in FY22



MCM MPs is on the cutting edge of unmanned technology



MCM on Vessels of Opportunity (VOO)



- ❑ Provides increased MCM operational capability to the Joint Force Commander by operating MCM MP onboard non-LCS vessels and frees up LCS hulls for other missions
 - 2017 - 2018: CNO requested investigation into integration of MCM MP on Vessels of Opportunity (VOOs)
- ❑ **Demonstrations:**
 - ✓ 2018 - 2019: Royal Navy Auxiliary Mounts Bay Experiment
 - ✓ 2018 - 2019: EPF Feasibility and Integration Assessments
 - ✓ 2019: USNS Hershel Williams (T-ESB 4) Pierside and Underway Demo
- ❑ **2020: ESB Phase III feasibility demonstration planned**



“The Ability to Deploy MCM Capability from VOO is a True Force Multiplier”



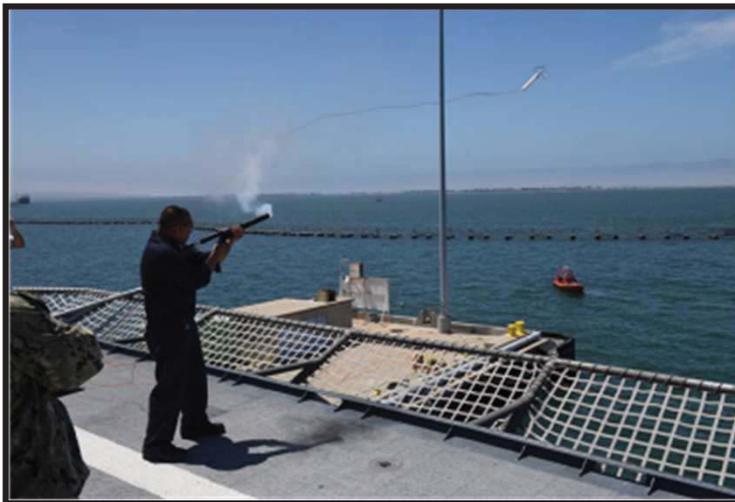
Knifefish At-Sea Integration on LCS 2



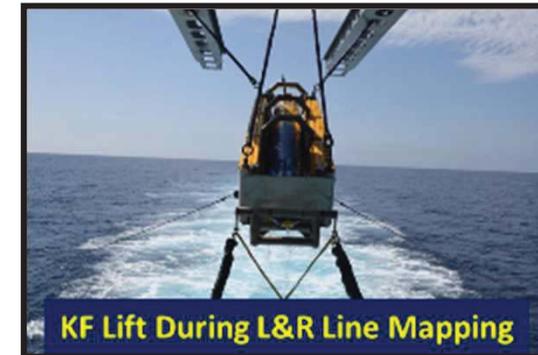
☐ Highly successful test event 15-26 Jul 2019

- 13 of 13 test cases completed
- Successful test of grapple launcher
- Zero mishaps
- Completed ahead of schedule

☐ Data captured, lessons learned & procedures redlined



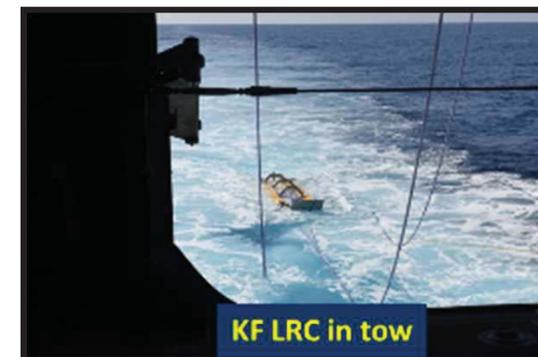
Successful Launch and Recovery of Knifefish vehicle Demonstrated At-Sea on LCS 2



KF Lift During L&R Line Mapping



EDM-1 Line Mapping



KF LRC in tow



UISS Launch & Recovery



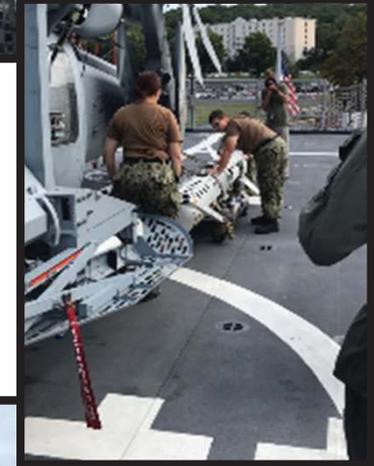
Successful Pierside Launch and Recovery of UISS



OAMCM Integration



- ❑ Conducted Integration and Evaluation of Organic Aviation and MCM Systems Onboard FRE Variant – LCS 11
- ❑ Tested both MQ-8B and MH-60S



Positive In-Port Demonstration of Capabilities Onboard an LCS



GARC/TALONs At-Sea Demo



- ❑ Greenough Advanced Rescue Craft (GARC) and Towed Airborne Life of Naval Systems (TALONS) – experiment to provide Beyond Line of Sight (BLOS) capability to MCM Unmanned Surface Vessel (USV)
- ❑ Completed week long demonstration in Oct 2019
- ❑ Excellent example of successful rapid acquisition and OTA Execution – initial concept to demonstration accomplished in 10 months!!!
- ❑ Plan to test again in May 2020 to build upon data capture



Signals Potential for Enhanced Future Capabilities in Unmanned Systems Across the Fleet



Summary

- ❑ Mission Packages deliver critical combat capability to LCS
- ❑ LCS MMs are in Test and Evaluation in preparation to transition to production and fielding



Continuing to Deliver Warfighting Capability

Distribution A: Approved for Public Release; Distribution Unlimited

A large offshore oil rig is illuminated at night, set against a dark blue sky and a dark sea. The rig's structure is complex, with various levels and a central tower. The lights on the rig create a stark contrast with the surrounding darkness.

QUESTIONS?