



25 August 2014

MEMORANDUM FOR: Captain Anne Lynch, NOAA
Commanding Officer, Marine Operations Center – Atlantic

FROM: Jeffrey Ferguson
Chief, Hydrographic Surveys Division

SUBJECT: Project Instruction for FH-14-03
OPR-D304-FH-14, Approaches to Chesapeake Bay, VA
Addition of AUV Operational Testing

Please see below for change information for FH-14-03 Hydrographic Project Instructions. This change was precipitated by the request for AUV Concept of Operational (CON-OPS) testing.

Brief Summary

AUV Operational Testing to support CON-OPS for the REMUS 600 AUV while aboard NOAA Ship *Ferdinand R. Hassler* during OPR-D304-FH-14, Approaches to Chesapeake Bay, VA. The AUV Operational Team will work in ‘survey mode’ to document manpower requirements and efficiency metrics to determine the capabilities and possible benefits of the REMUS 600 aboard the *Hassler* during ship operations.

During the operational deployment, the AUV Team will operate in multiple operational modes varying from an 8 hour daylight survey to a 16+ hour overnight survey in an effort to quantify the potential for survey gains. Specific objectives for the AUV testing include:

- Does bathymetric data collected by AUVs meet NOAA’s nautical charting standards?
- How can bathymetric data collected by AUVs be integrated into NOAA’s data processing pipeline?
- What resources, including personnel, shipboard infrastructure, and handling systems, are necessary to safely operate a large AUV from a hydrographic survey vessel?
- What are the Standard Operating Procedures (SOPs) necessary to safely operate a large AUV from a hydrographic survey vessel?
- Under what concept of operations will Bathymetric AUVs provide a benefit to NOAA hydrographic survey operations?
- What is the expected cost-benefit ratio for using AUVs aboard a NOAA hydrographic survey vessel, where cost includes the manpower required to maintain and operate an AUV and the benefit is increased survey efficiency?

Personnel/Science Party: name, title, gender, affiliation, and nationality

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Downs, Rob	Project Manager / PS	9/2/2014	9/12/2014	M	NOAA	USA

Project Itinerary

Itinerary will be based upon the ship's schedule and executed under the direction of the Commanding Officer. Every effort shall be made by the Commanding Officer to maximize the operational efficiency of assigned projects.

Staging and Destaging

AUV and associated equipment will be mobilized on the ship during the scheduled 8/9/14 – 8/12/14 inport in New Castle, NH.

AUV and associated equipment will be demobilized and off-loaded concluding operations in Norfolk, VA after 9/12/14.

Underway Operations

Hydrographic survey operations per the appended project instructions using the ability to run concurrent 24 hr ship survey operations.

AUV deployment, recovery, and operations to support testing and hydrographic survey operations during the day and/or night. AUV will acquire multibeam bathymetry and backscatter data.

AUV Launch & Recovery

The AUV will be launched and recovered by the *Hassler's* deck department using the vessel's A-Frame and winch. The *Hassler's* deck department and crew will direct the AUV Launch and Recovery operations.

AUV Survey Operations and Monitoring

The AUV Team will be responsible for programming AUV missions, monitoring the AUV's status, and pausing or halting the mission if necessary due to weather, vessel traffic, or under the direction of the *Hassler* crew.

AUV missions will initially be planned for durations of 1-4 hours during initial testing of shipboard operations. As testing progresses and concepts of operations are evaluated the mission durations will increase up to 16 hours. All planned AUV launch and recovery operations will occur during daylight.

cc:
Commanding Officer, NOAA Ship *Ferdinand R. Hassler*

