

Surface Electronic Warfare Improvement Program (SEWIP) Block 2

Executive Summary

- In December 2015, DOT&E submitted an Early Fielding Report to Congress on the results of the first phase of the IOT&E for the AN/SLQ-32 Electronic Warfare System (EWS) equipped with the Surface Electronic Warfare Improvement Program (SEWIP) Block 2 upgrade. The Navy conducted a portion of the IOT&E from August 22 through November 7, 2014, on USS *Bainbridge* (DDG 96) in the Virginia Capes operating area.
- Analysis of the available IOT&E data showed that, while the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade provides more capability in detecting and classifying threat emitters than the legacy AN/SLQ-32 EWS, the system has problems in creating multiple tracks from a single emitter source, in addition to incorrectly categorizing emitter tracks and an inability to hold them after initial detection. These deficiencies overwhelm and desensitize the operator to potential threats. Other deficiencies include numerous software reliability problems and a lack of documentation in addition to inadequate crew training and proficiency causing the Commander, Operational Test and Evaluation Force (COTF) test team to provide operationally unrealistic assistance to the crew, which unduly influenced some test results. Until these deficiencies are corrected, the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade will not have operational utility.
- The Navy is correcting these deficiencies and is scheduling another phase of IOT&E for mid-2016.

System

- SEWIP is an incremental development program that is intended to improve the electronic warfare capability on all Navy surface combatants.
- The SEWIP Block 1 upgrade focused on replacing obsolete parts in the AN/SLQ-32 and incorporating a new operator

Activity

- COTF conducted the first phase of IOT&E from August 22 through November 7, 2014, on USS *Bainbridge* (DDG 96) in the Virginia Capes operating area.
- In December 2015, DOT&E submitted a classified Early Fielding Report to Congress on the results of the first phase of IOT&E of the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade.
- The severity of the identified deficiencies during this first phase caused the Navy to schedule another phase of IOT&E for mid-2016.



console, a specific emitter identification capability, and an embedded trainer.

- The SEWIP Block 2 upgrade incorporates a new antenna system and enhanced processing capabilities, which are intended to improve the AN/SLQ-32's passive electronic support capabilities.
- The SEWIP Block 3 upgrade, which is in early development, will incorporate improvements to the AN/SLQ-32 active electronic attack to improve ships self-defense capabilities.

Mission

Navy surface ship crews will use SEWIP to enhance the AN/SLQ-32 EWS anti-ship missile defense, counter targeting, and counter-surveillance capabilities and to improve the system's ability to collect electronic data.

Major Contractor

Lockheed-Martin – Syracuse, New York

Assessment

- Analysis of the available IOT&E data showed that, while the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade provides more capability in detecting and classifying threat emitters than the legacy AN/SLQ-32 EWS, the system generates multiple tracks from a single emitter source in addition to incorrectly categorizing emitter tracks and an inability to hold them after initial detection. These deficiencies overwhelm and desensitize the operator to potential threats. Other deficiencies included a lack of

FY15 NAVY PROGRAMS

documentation and numerous software reliability problems that included display freezes, system crashes, and unscheduled warm and cold starts. Until these deficiencies are corrected, the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade will not have operational utility

- Inadequate crew training and proficiency caused the COTF test team to provide operationally unrealistic assistance to the crew, which unduly influenced some test results. These included providing assistance in setting up displays to make threat detection easier to recognize, showing operators which threats needed identification, helping operators identify extraneous emitter contacts, calibrating the system when the operators failed to perform the calibration the system required, and resetting the system in the form of unscheduled warm and cold starts.
- The Navy plans to correct these deficiencies and demonstrate the fixes in another phase of IOT&E in mid-2016.

Recommendations

- Status of Previous Recommendations. The Navy has not resolved the following SEWIP Block 1 FY06 and FY08 previous recommendations to:
 1. Review and modify the SEWIP detection and classification algorithms to correct deficiencies discovered while

operating in dense pulse and emitter environments. Verify the correction of these deficiencies during future SEWIP OT&E.

2. Continue to collect in-service SEWIP hardware reliability data to gain a higher degree of confidence regarding achievement of this requirement.
 3. Continue to review and modify the SEWIP software to improve its reliability.
 4. Develop threat representative aerial target/threat seeker combinations and/or procure actual threat anti-ship cruise missiles for more realistic testing of future SEWIP block upgrades and other EWSs.
- FY15 Recommendation.
 1. The Navy should conduct the next IOT&E phase of the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade once the deficiencies identified in the first IOT&E phase are corrected.