Surface Electronic Warfare Improvement Program (SEWIP) Block 2

Executive Summary
- The Navy's Commander, Operational Test and Evaluation Force (COTF) conducted IOT&E in March and June 2016, on USS *Bainbridge* (DDG 96) in the Virginia Capes operating area in accordance with a DOT&E-approved test plan.
- DOT&E submitted a classified IOT&E report in September 2016 to Congress on the results 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 analysis showed that the SEWIP Block 2 upgrade was operationally effective but not operationally suitable or survivable.

System
- SEWIP is an incremental development program that is intended to improve the electronic warfare capability on all Navy surface combatants.
- The SEWIP Block 2 upgrade incorporates a new antenna system and enhanced processing capabilities into the AN/SLQ-32 EWS, which are intended to improve the AN/SLQ-32's passive electronic support capabilities.
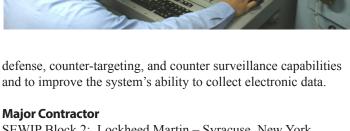
Mission
Commanders employ Navy surface ships equipped with SEWIP Block 2 to enhance the AN/SLQ-32 EWS anti-ship missile

defense, counter-targeting, and counter surveillance capabilities and to improve the system's ability to collect electronic data.

Major Contractor
SEWIP Block 2: Lockheed Martin – Syracuse, New York

Activity
- COTF conducted the IOT&E in March and June 2016, on USS *Bainbridge* (DDG 96) in the Virginia Capes operating area.
- DOT&E submitted a classified IOT&E report in September 2016 to Congress on the results of the IOT&E for the AN/SLQ-32 EWS equipped with the SEWIP Block 2 upgrade.

Assessment
- Analysis of the IOT&E data showed the SEWIP Block 2 to be operationally effective.
- Analysis of the IOT&E data showed the SEWIP Block 2 to be not operationally suitable due to:
  - Poor software reliability.
  - Insufficient data were collected during the IOT&E to fully assess the SEWIP Block 2 hardware reliability.
  - Fleet operators were not being adequately trained to operate and maintain the system.

  - Although the Mean Time to Reboot met the requirement of 18 minutes, it took 8 minutes on average, which is a significant amount of time if a reboot occurs during an anti-ship cruise missile attack.
- Analysis of the IOT&E data showed that the SEWIP Block 2 to be not survivable due to cybersecurity deficiencies.

Recommendations
- Status of Previous Recommendations. The Navy has not resolved the following SEWIP FY06 and FY08 previous recommendations to:
  1. Continue to review and modify the SEWIP software to improve its reliability.
  2. Develop threat representative aerial target/threat seeker combinations and/or procure actual threat anti-ship cruise missiles for more realistic operational testing of future SEWIP block upgrades and other EWSs.
- FY16 Recommendations. The Navy should:

1. Review and modify the SEWIP Block 2 software to improve its reliability and test the modifications in a phase of FOT&E.
2. Improve the SEWIP Block 2 training so fleet operators can effectively operate and maintain the system.
3. Improve the SEWIP Block 2 Mean Time to Reboot times and test those improvements in a phase of FOT&E.
4. Gather hardware reliability data from fleet units equipped with SEWIP Block 2 to enable a full assessment of hardware reliability.
5. Take action on the recommendations contained in the classified September 2016 DOT&E IOT&E report.
6. Correct the cybersecurity deficiencies and test those corrections in an FOT&E phase.