

## Cobra King (formerly Cobra Judy Replacement)

### Executive Summary

- The Air Force Operational Test and Evaluation Center and the Navy, Commander Operational Test and Evaluation Force conducted a Multi-Service Operational Test and Evaluation (MOT&E) of Cobra King from September 2013 through April 2014.
- Testing included data collection activities on balloon-borne calibration spheres, satellites, and two domestic intercontinental ballistic missile launches.
- On March 31, 2014, the Air Force accepted Cobra King as an Initial Operational Capability.
- In July 2014, DOT&E published a classified MOT&E report that assessed Cobra King as operationally effective and operationally suitable, matching or exceeding the legacy Cobra Judy performance.

### System

- Cobra King is a mobile radar suite installed on the USNS *Howard O. Lorenzen*.
- Cobra King replaces the original Cobra Judy system, which has been deployed since 1981 and has reached the end of its service life.
- The Cobra King radar suite consists of steerable S- and X-band phased arrays, which expand the data collection capability over the original system. The S-band radar primarily conducts large-volume searches and is capable of performing radar tracks and collections on a large number of radar targets. The X-band radar provides high-resolution data on specific radar objects of interest and also has a search capability.
- The ship's crew consists of civilian or contracted Military Sealift Command personnel responsible for the navigation,



operations, and maintenance of the ship; a small, specialized group of contractors are utilized for radar operations. An Air Force officer serves as the mission commander.

### Mission

The DOD uses Cobra King to conduct treaty monitoring and verification activities. Additionally, Cobra King can be used to provide data for comparison with other sources during domestic ballistic missile tests.

### Major Contractors

- Raytheon Integrated Defense Systems – Sudbury, Massachusetts
- Northrop Grumman Electronic Systems – Baltimore, Maryland
- VT Halter Marine – Pascagoula, Mississippi

### Activity

- From September 2013 through April 2014, the U.S. Air Force Operational Test and Evaluation Center and the Commander, Operational Test and Evaluation Force conducted an MOT&E for Cobra King.
- Testing included data collection activities on balloon-borne calibration spheres, satellites, and two domestic intercontinental ballistic missile launches. Testing was executed in accordance with a DOT&E-approved Test and Evaluation Master Plan and test plan.
- On March 31, 2014, the Air Force accepted Cobra King as an Initial Operational Capability.
- In July 2014, DOT&E published a classified MOT&E report that assessed Cobra King test adequacy, operational effectiveness, and suitability.

### Assessment

- The Cobra King test program achieved a successful balance between the use of modeling and simulation and the observation of balloon-borne spheres, satellites, and live ballistic missile targets. Testing was adequate to support an evaluation of operational effectiveness and operational suitability.

# FY14 NAVY PROGRAMS

- Cobra King is operationally effective to accomplish its mission, matching or exceeding the legacy Cobra Judy performance in relevant mission areas (i.e., preparation and transit, loiter, data collection, data analysis and exchange, storage and archiving, and cybersecurity) during MOT&E.
- Cobra King is operationally suitable to accomplish its mission. Based upon test performance during MOT&E, Cobra King is expected to match the legacy Cobra Judy system in reliability, availability, and interoperability.

## **Recommendations**

- Status of Previous Recommendations. There are no previous recommendations from the FY13 Cobra Judy Replacement Annual Report.
- FY14 Recommendation.
  1. The program should continue to address the deficiencies identified during MOT&E – and outlined in DOT&E’s classified report – to further improve the system’s operational effectiveness and suitability.