

Spider XM-7 Network Command Munition

Executive Summary

- The Army uses Spider instead of persistent landmines to comply with the requirements of the 2004 National Landmine Policy.
- The Army fielded Spider Low-Rate Initial Production (LRIP) systems to deployed and non-deployed units during 2012.
- At the request of the Army, DOT&E published a Beyond Low-Rate Initial Production (BLRIP) report in February 2012 to support a Full-Rate Production (FRP) decision in 2012. Following publication of this report, the Army postponed the Spider FRP decision until 3QFY13.
- The Army continued corrective actions to address Spider deficiencies with system reliability, complexity, and training reported in the February 2012 DOT&E Spider BLRIP Report.
- DOT&E will report on the operational effectiveness, suitability, and survivability of the Spider system early in 2013 following a third FOT&E. Based on analysis conducted to date, Spider has demonstrated effectiveness and lethality with poorly demonstrated suitability.

System

- The Army intends to use Spider as a landmine alternative to satisfy the anti-personnel munition requirements outlined in the 2004 National Landmine Policy that directs the DoD to:
 - End use of persistent landmines after 2010
 - Incorporate self-destructing and self-deactivating technologies in alternatives to current persistent landmines
- A Spider munition field includes:
 - Up to 63 Munition Control Units, each housing up to 6 miniature grenade launchers or munition adapter modules for remote electrical and non-electrical firing capabilities
 - A remote control station, used by the operator to maintain “man-in-the-loop” control of all munitions in a field
 - A communications relay device known as a “repeater” for use in difficult terrain or at extended ranges
- Spider incorporates self-destructing and self-deactivating technologies to reduce residual risks to non-combatants.



Mission

Maneuver or engineer units employ Spider to establish a force protection obstacle or as a stand-alone force protection system in all environments and in all terrains in order to accomplish the following missions:

- Protect the Force
- Shape the Battlefield
- Provide Early Warning
- Delay and Attrite Enemy Forces

Major Contractors

- Command and Control hardware and software: Textron Defense Systems – Wilmington, Massachusetts
- Munition Control Unit and Miniature Grenade Launcher: Alliant-Techsystems, Advanced Weapons Division – Plymouth, Minnesota

Activity

- The Army continued fielding Spider LRIP systems to deployed and non-deployed units. Home Station, Combat Training Center, and in-theater training were provided by the materiel and combat developers as part of the fielding package. In January 2012, the Army Milestone Decision Authority approved the production of additional LRIP systems to support continued fielding prior to an FRP decision.
- Based on demonstrated performance in the May 2010 Spider FOT&E and the June 2011 Spider Limited User Test,

- the Army requested DOT&E publish a BLRIP report in February 2012. Following publication of the report, the Army postponed the Spider FRP decision until 3QFY13.
- The Army continued corrective actions to address Spider deficiencies with system reliability, complexity, and training reported in the February 2012 DOT&E Spider BLRIP Report.
- The Army and DOT&E finalized planning for the third FOT&E in October 2012 to demonstrate corrective actions in an operationally realistic environment.

ARMY PROGRAMS

- In October 2012, DOT&E approved an updated Test and Evaluation Master Plan. The update addressed the scope and execution of a comprehensive FOT&E to demonstrate Spider operational effectiveness and suitability in support of an Army FRP decision.

Assessment

- The Army conducted the Spider XM7 Limited User Test in accordance with the DOT&E-approved test plan in June 2011 at White Sands Missile Range, New Mexico.
- DOT&E intends to publish an updated evaluation on Spider XM7 early in FY13 based on the October 2012 FOT&E.
- DOT&E made the following assessment based on the BLRIP report in February 2012:
 - Spider provides the following enhanced capabilities not previously available with anti-personnel land munition systems:
 - “Man-in-the-loop” positive control of both lethal and non-lethal munitions
 - Remote electrical and non-electrical firing capabilities for munitions and demolitions to a range of 4 kilometers
 - Capability to fire a single munition or multiple munitions simultaneously
 - Capability to collect situational awareness information through tripline activation by threat personnel
 - Spider has demonstrated effectiveness and lethality.
 - A properly trained unit can successfully emplace and operate a Spider munition field in order to provide doctrinal protective obstacle effects – warn of threat activity and mitigate or prevent threat actions.

- Units employing Spider can utilize both non-lethal and lethal munitions to achieve desired force escalation capabilities.
- Spider has demonstrated poor suitability.
 - Spider is more complex than its predecessor system and requires Soldiers to receive extensive initial and sustainment training to maintain proficiency.
 - The Spider system’s Munition Control Unit has not demonstrated the required reliability in a comprehensive operationally realistic environment.
 - Extensive battery management requirements and increased unit transportation requirements create a logistics planning challenge for units employing Spider.
- The Spider program demonstrated in contractor and government testing corrective actions to address reliability, complexity, and training deficiencies reported in the February 2012 DOT&E Spider BLRIP Report. These corrective actions are ready for further testing in an operationally realistic environment.

Recommendations

- Status of Previous Recommendations. The Army initiated actions to address the previous recommendations.
- FY12 Recommendation.
 1. The Army should closely monitor the results of the October 2012 FOT&E and be prepared to address shortcomings and deficiencies as necessary to support a 3QFY13 FRP decision.