

Spider XM7 Network Command Munition

Executive Summary

- During FY05, the program completed contractor system qualification testing, governmental developmental testing, and lethality testing.
- The Army conducted a limited user test with Spider in September 2005.
- The Army currently plans to conduct the Spider Milestone C/ low-rate initial production decision review in January 2006 and the initial operational test in January 2007.

System

- Spider satisfies the anti-personnel munition requirements of the 2004 National Landmine Policy. That policy directs the DoD to:
 - End use of all persistent landmines after 2010
 - Incorporate self-destructing/self-deactivating technologies to develop alternatives to current persistent landmines
- The Army intends to achieve an initial operational capability with Spider by 2010.
- A Spider munition field includes:
 - Up to 63 munition control units. Each mission control unit houses six miniature grenades.
 - A remote control unit that allows the operator to direct the munitions to act autonomously in response to intruders or maintain “man-in-the-loop” control.
 - A communications relay device or “repeater” for use in difficult terrain or at extended ranges.

Mission

- Maneuver or engineer units will employ Spider, by itself or in conjunction with anti-tank mines, to accomplish the same missions performed by current mine fields:



- Force protection
- Battlefield shaping
- Early warning
- Delay enemy forces
- Attrite enemy forces
- Soldiers can employ Spider in all environments and in all terrains.
- Spider incorporates self-destructing and self-deactivating technologies to reduce residual risks to non-combatants after hostilities cease.

Activity

- DOT&E approved the Spider Test and Evaluation Master Plan on March 4, 2005.
- During FY05, the program completed contractor system qualification testing and governmental developmental testing. The developmental testing included hot environmental testing at Yuma, Arizona; Electromagnetic Environmental Effect (E3) testing at White Sands Missile Range, New Mexico; software validation at Aberdeen Proving Grounds, Maryland; and tropics environmental testing in Panama.
- The Army completed lethality testing in accordance with the DOT&E-approved LFT&E strategy.
 - Testers launched 48 grenades from mission control units arranged in a hasty-protective minefield formation against a target array consisting of plywood ballistic mannequins.
 - Data collected included location and height of burst of the air-bursting grenade, and the number, location, and depth of penetration of fragments on the mannequins.
 - Ongoing analysis of this data will yield personnel incapacitation levels versus range from point of burst of the grenade.
- The Army conducted a limited user test in accordance with the DOT&E-approved test plan in September 2005.
- The Army currently plans to conduct the Spider Milestone C/ low-rate initial production decision review in January 2006 and the initial operational test in January 2007. The full-rate production decision is currently scheduled for November 2007.

ARMY PROGRAMS

Assessment

- The contractor testing and government developmental testing demonstrated that Spider performance was sufficient to enter operational testing.
 - The limited user test conducted in September 2005 demonstrated that Spider requires some hardware and software modification prior to further operational testing.
2. Ensure Spider meets all relevant criteria for entrance into the initial operational testing, to include validation of all hardware and software changes made since the limited user test.

Recommendations

The Army should:

1. Analyze the results of developmental testing, lethality testing, and the limited user test prior to conducting the Milestone C decision review.