Spider XM7 Network Command Munition

Executive Summary
- During FY06, the Spider program completed developmental testing, received OSD approval of a Test and Evaluation Master Plan, completed a Milestone C decision review, and entered the low-rate initial production phase of its acquisition program.
- Early test and evaluation identified reliability and hardware/software complexity problems, which moved the IOT&E to January - March 2007 and the full-rate production decision to 2QFY08.
- The Milestone C Test and Evaluation Master Plan provides an adequate strategy to support the rescheduled IOT&E and full-rate production decision schedules.

System
- Spider is a landmine alternative that 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 in 2008.
- A Spider munition field includes:
  - Up to 63 munition control units, each housing 6 miniature grenade launchers
  - A remote control station, allowing 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 other networked munition systems, to accomplish these missions:
  - 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
- A Limited User Test (LUT) occurred at Fort Leonard Wood, Missouri, in September 2005. The program completed pre-Milestone C developmental and operational testing at Cold Region Test Center in Fort Greely, Alaska, in January and February 2006.
- In early test and evaluation, the Army identified reliability and hardware/software complexity issues that the program must resolve prior to entering full-rate production.
- DOT&E approved an updated Test and Evaluation Master Plan in February 2006. This update rescheduled the IOT&E to January - March 2007 and moved the full-rate production decision to 2QFY08.
- The program completed an Army Milestone C review and awarded a low-rate initial production contract in June 2006.
- Government validation testing of fixes continued through the end of FY06.
- At the end of FY06, the Army was:
  - Continuing validation testing of system fixes
  - Completing preparations for a January 2007 Force Development Test in which soldiers will employ and fire tactical Spider systems in preparation for the IOT&E
  - Preparing an IOT&E test plan for DOT&E approval in December 2006

Assessment
- The February 2006 Milestone C Test and Evaluation Master Plan provides an adequate strategy to address system issues and test the resulting system prior to the full-rate production.

- Government testing during FY06 indicated that the Spider system should be ready to enter IOT&E in January 2007.
- The program made excellent use of early test and evaluation to identify and fix failure modes prior to IOT&E.

Recommendations

- Status of Previous Recommendations. The program addressed one of the two DOT&E recommendations from FY05, but the other recommendation remains valid.

  FY05 #2: DOT&E recommended that the Army 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 LUT.
- FY06 Recommendations. None.