

ARMY PROGRAMS

Non-Line-of-Sight Cannon (NLOS-C)

SUMMARY

- The Non-Line-of-Sight Cannon (NLOS-C) is part of the Future Combat System (FCS) program.
- The Army recently restructured the FCS program so that it will produce capabilities in four “spirals.”
- The Army intends to develop an NLOS-C prototype for testing in the first FCS spiral by FY08. It intends to begin fielding NLOS-C in the second FCS spiral by FY10.
- The Army is currently revising the FCS Milestone B Test and Evaluation Master Plan (TEMP) to accommodate program restructuring.



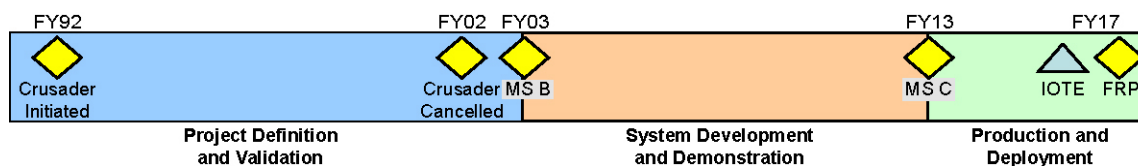
Between September 2003 and January 2004, the Army conducted live fire tests of the NLOS-C demonstrator at Yuma Proving Grounds, Arizona, to examine whether a lightweight chassis is stable enough to support a 155mm cannon during firing.

SYSTEM DESCRIPTION AND MISSION

NLOS-C will be a manned FCS platform that provides networked, extended-range fire support for combined arms units. NLOS-C will likely mount a 155mm cannon on an FCS common chassis. The Army intends for NLOS-C to weigh less than 20 tons and be transportable by C-130 aircraft.

A two-man crew will operate NLOS-C and process fire missions from all fielded and developmental target acquisition and command and control systems. NLOS-C will compute its own firing data and shoot 30 plus kilometers with a circular error probability (CEP) of no greater than 0.55 percent of the range. The Army intends to incorporate an automated ammunition handling system to maintain a 6 to 10 round-per-minute rate of fire with the entire suite of 155mm ammunition. NLOS-C will carry at least 24 rounds. It will respond to fire missions with the first round within 20 seconds when emplaced and 30 seconds when moving. The Army is requiring a reliability rating of 741 hours mean time between system aborts.

TEST AND EVALUATION ACTIVITY



Following the cancellation of the Crusader program in 2002, the Army awarded a contract to United Defense Limited Partnership to build a concept technology demonstrator for the NLOS-C. Building on its Crusader experience, the contractor mounted a 155mm cannon and armament from the Lightweight 155mm Howitzer program on an aluminum hull with 18-inch band tracks. The demonstrator uses hybrid electric drive, a 400 horsepower diesel engine, and the automated ammunition handling system from the Crusader program. United Defense Limited Partnership delivered the demonstrator to the Army in the summer of 2003.

ARMY PROGRAMS

Between September 2003 and January 2004, the Army conducted live fire tests of the NLOS-C demonstrator at Yuma Proving Grounds, Arizona, to examine whether a lightweight chassis is stable enough to support a 155mm cannon during firing.

Between January and February 2004, the Army conducted mobility assessments with the NLOS-C demonstrator at the contractor's test track in Santa Clara, California. This event assessed fuel economy, the ability to climb various grades, noise levels, steering, turning radius, pivot steering, acceleration, maximum speed, and braking.

In June, July, and August of 2004, the Army conducted testing with an M109A5 howitzer fitted with the NLOS-C breech and laser ignition system to examine why laser flash lamps failed when firing at high zones (charges).

TEST AND EVALUATION ASSESSMENT

During the September 2003 to January 2004 tests, the NLOS-C Demonstrator verified that the platform was sufficiently stable to fire a 155mm cannon with external stabilizers that the Army hopes to eliminate from the final design. The demonstrator fired 240 rounds during these tests, including an eight round mission at a six round-per-minute rate of fire. The 20-ton weight limit and C-130 deployability will be difficult to achieve without sacrificing effectiveness, survivability, or sustainability.

The reliability requirement for 741 hours mean time between system aborts is more than a ten-fold increase over the Crusader requirement. It will be a challenge to meet this requirement, as NLOS-C will be equipped with an automated ammunition handling system.

The Army is revising the FCS Milestone B TEMP to accommodate recent acquisition strategy changes and provide additional definition to the test strategy. The latest draft does not provide enough detail to assess test program adequacy. DOT&E will work with the Army to develop an adequate test strategy.