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Patriot PAC-3 Operational Test

The Missile Defense Agency and the U.S. Army conducted an operational test of the Patriot Advanced Capability-3 (PAC-3) system at White Sands Missile Range, N.M., today. A PAC-2 missile successfully intercepted and destroyed a QF-4 full-scale drone aircraft. However a second PAC-2 missile and a PAC-3 missile missed their assigned sub-scale targets. The causes of the two intercept failures are currently under investigation.

The test was conducted as a simultaneous engagement in which one PAC-3 missile was to engage and intercept a cruise missile target, while two PAC-2 missiles were to engage and intercept a full-scale aircraft emitting radar-jamming signals and a sub-scale aircraft. The mission was designed to replicate as closely as possible an actual battlefield scenario, with three targets and three missiles in the air at one time. Patriot's sophisticated system logic selects the most efficient missile for each engagement. In this case a combination of Raytheon's PAC-2 and Lockheed Martin's PAC-3 missiles were used. The Army's objective mix of missiles will be comprised of both PAC-3 and an upgraded PAC-2 missile, called GEM+, which is currently in production.

In addition to the target intercepts, test objectives included demonstrating successful operation and interaction of all system elements, including radar, command and control equipment and target identification systems. Soldiers of the 2nd of the 43rd Air Defense Artillery Battalion, Fort Bliss, Texas, demonstrated their ability to conduct a tactical firing mission during this test.

This completes the first of four operational flight tests planned during Initial Operational Test and Evaluation (IOTE) for the PAC-3 system. IOTE is scheduled to conclude in May 2002.

The Army Test and Evaluation Command (ATEC) is conducting the IOTE. Formed in 1999 when the Army consolidated developmental and operational testing and evaluation into a single command, ATEC has been deeply involved in the PAC-3 program. ATEC's Developmental Test Command conducted extensive developmental tests on the PAC-3 system. Now ATEC's Operational Test Command is conducting the user field tests.

ATEC's final system evaluation report will be prepared by its Army Evaluation Center and then provided to MDA and Army senior leadership and decision-makers.

The PAC-3 missile is a high velocity, hit-to-kill missile and is the next generation Patriot missile being developed to provide increased defense capability against advanced tactical ballistic missiles, cruise missiles, and hostile aircraft. Unlike earlier Patriot missile explosive warheads, the PAC-3 missile literally collides with its target in mid-air at extremely high speed, destroying the target and neutralizing its payload. Other system upgrades include improved radar performance, allowing enhanced target discrimination; and new system software that improves determination of target launch and impact points and provides an interface with the Theater High Altitude Area Defense (THAAD) system.

Prior to today's test, the PAC-3 system had completed two controlled test flights, five tactical ballistic missile body-to-body intercepts, three cruise missile kills, and one aircraft kill resulting in 11 successful developmental flight tests. The first two PAC-3 developmental test (DT) missions did not involve targets but were structured to verify critical systems and missile performance prior to conducting target intercept flight tests. A seeker characterization flight (SCF) mission was conducted March 15, 1999, to test a PAC-3 missile with a seeker.

Although not a primary objective of the SCF, an intercept of the tactical ballistic missile target was achieved. On September 16, 1999, a second intercept of a tactical ballistic missile target was achieved. DT-5, conducted Feb. 5, 2000, was the third successful intercept of a tactical ballistic missile target. DT-7, conducted July 22, 2000, was the first successful intercept of a cruise missile target. On July 28, 2000 during a test not included in the developmental test program, a second cruise missile target was intercepted and destroyed. DT-6, conducted Oct. 14, 2000, was the first simultaneous engagement test and resulted in the fourth successful intercept of a tactical ballistic missile target by a PAC-3 missile and an engagement of a sub-scale aircraft by a PAC-2 missile. DT-8, conducted March 31, 2001, was the most complex flight test mission. It involved a simultaneous engagement utilizing two PAC-3 missiles against a tactical ballistic missile target, and a PAC-2 missile against a Patriot missile configured as a tactical ballistic missile target. There were five missiles (two targets and three interceptors) in the air at one time and both targets were destroyed. Developmental Test/Operational Test-9 (DT/OT-9), conducted July 9, 2001, was the third simultaneous engagement and utilized one PAC-3 missile against a tactical ballistic missile target while a second PAC-3 missile was fired against a full-scale jet aircraft. The aircraft was intercepted and destroyed, but the missile intercept attempt was a miss. The anomaly experienced during the DT/OT-9 tactical ballistic missile engagement was identified and robust modifications were incorporated into the DT/OT-10 flight test software. The final developmental flight test, Developmental Test/Operational Test-10 (DT/OT-10), conducted October 19, 2001, was a successful engagement and intercept of a very low altitude cruise missile with a PAC-3 missile, and a successful engagement and intercept of a small aircraft with a PAC-2 missile.

The Patriot PAC-3 program is managed by the Missile Defense Agency in Washington, DC, and executed by the Army Program Executive Office for Air and Missile Defense and the Army Lower Tier Air and Missile Defense Project Office in Huntsville, Ala. Lockheed Martin Missiles and Fire Control, Dallas, Texas, is the prime contractor responsible for the PAC-3 missile segment. Raytheon Company is the prime contractor responsible for the Patriot air and missile defense system and the system integrator for the PAC-3 program. Raytheon 's work on the PAC-3 system includes configuration three ground equipment hardware and software upgrades and remote launch modifications.