MISSILE DEFENSE AGENCY

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http://www.mda.mil
mda.info@mda.mil

7100 Defense Pentagon
Washington, DC 20301-7100

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# PAC-3 Test Conducted, Targets Intercepted

The Missile Defense Agency (MDA) and the Army conducted an operational test of the Patriot Advanced Capability-3 (PAC-3) system at White Sands Missile Range, N.M. today at 7:15 a.m. Mountain Standard Time. Preliminary data indicates that the missiles hit their targets. While all test objectives weren't met, a final determination will be made when the test data review is complete.

The test was a tactical simultaneous engagement using PAC-3 missiles against a Hera ballistic missile target and a tactical shoot-look-shoot engagement using PAC-2 missiles against an MQM-107 subscale drone aircraft. The Hera target was engaged and destroyed by a PAC-3 missile and a PAC-2 engaged and destroyed the subscale drone target. This test tactically represented an aircraft raid during an engagement of a TBM where the TBM is the primary target. 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 was comprised of both PAC-3 and PAC-2 missiles.

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 from the 2nd of the 43rd Air Defense Artillery Battalion of Fort Bliss, Texas conducted this firing mission in a tactical scenario.

This was the second 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.

Simulating real world missile threats, Hera is a theater ballistic missile target typically used for test and evaluation of Ballistic Missile Defense System (BMDS) Element interceptor systems. The target flown for this test was the Block IIB non-separating (unitary) configuration with a Modified Ballistic Reentry Vehicle 3 (MBRV-3) front end carrying a ballast payload. It was launched from Launch Complex 96 at Fort Wingate, N.M. and flew a northwest to southeast trajectory to White Sands Missile Range reaching an altitude of 114 kilometers and flying 318 kilometers down range in 361 seconds.

Formed in 1999 when the Army integrated 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, and now ATEC's Operational Test Command is conducting the user field tests.

ATEC will prepare an independent final system evaluation report in support of the full rate production decision scheduled for September 2002. The report will be provided to the MDA and Army senior leadership and decision-makers in support of the decision.

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 designs that use an explosive warhead to destroy its target, 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.

The PAC-3 system has 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 Sep. 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 Oct. 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.

Prior to today's test, the system has completed one operational flight test, OT-3, conducted Feb. 16, 2002. This test involved one PAC-3 missile fired against a subscale drone configured as a cruise missile and two PAC-2 missiles, one fired against a full-scale QF-4 Phantom jet drone and the other against a subscale drone aircraft. One PAC-2 missile intercepted and destroyed the full-scale drone, while the other two missiles missed their targets.

The PAC-3 missile engaged but failed to intercept its intended target due to an inaccurate cue from the missile's ground system computer. This anomaly is under investigation. The PAC-2 missile engaged but failed to intercept its intended target as a result of a ground system radar fault that occurred during the last critical second of the missile engagement. The radar was able to recover and enabled the other PAC-2 missile engagement against the QF4 to be successful. Data analysis is still ongoing to resolve these issues.

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 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 Electronic Systems Company of Bedford, Mass., the Patriot system prime contractor, is the system integrator for the PAC-3 missile segment. Managed by MDA's Target Office, the prime contractor for the Hera target is Coleman Aerospace Company.