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Successful Missile Defense Test Shows Technology Not "Unproven"

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On December 5, the Missile Defense Agency (MDA) performed a successful intercept test of the Ground-based Midcourse Defense (GMD) missile defense interceptor.[1] The GMD interceptor destroyed an incoming ballistic missile launched out of Kodiak, Alaska, in space over the Pacific Ocean. President-elect Barack Obama has stated that he will cut investments in "unproven" missile defense systems.2 His statement implies that the missile defense program's interceptor systems rely on unproven technology. The December 5 test, along with other MDA tests, demonstrates that the implication behind this statement is inaccurate.

The GMD interceptor, launched from Vandenberg Air Force Base in California, was flown to a point in space in the path of the incoming missile and, by the force of collision, the interceptor's kill vehicle destroyed the missile reentry vehicle. This direct hit, absent an explosive warhead, is called a kinetic energy intercept. Further, a variety of sensor systems were used to track the incoming missile from different locations. These systems included a transportable AN/TPY-2 radar located in Juneau, Alaska; a Navy Aegis ship in the Pacific with its SPY-1 radar; an Upgraded Early Warning Radar at Beale Air Force Base in California; and a Sea-Based X-band radar, also in the Pacific. Finally, the broader missile defense system's command and control system permitted military operators to launch the California-based interceptor from Fort Greely, Alaska.

The kinetic energy intercept technology used in the December 5 test is the same used in most other interceptors now under development by MDA. These include the Patriot PAC-3 system, the Standard Missile-3 sea-based interceptor, the Terminal High Altitude Area Defense (THAAD) system, and the Multiple Kill Vehicle (MKV) system. The latter program seeks to reduce the size and weight of the kill vehicles so that each interceptor missile can carry more than one kill vehicle. Since 2001, MDA has run 47 intercept tests with kinetic energy technology, and 37 have been successful.

Missile Defense Critics. Missile defense critics are likely to dismiss the positive implications of this test for the overall missile defense program. While the results of a single test should not be used to justify either the continuation or termination of any defense technology program, the critics' likely arguments will lack merit.

For example, critics may argue that the GMD system can be defeated by easily incorporated countermeasures designed to confuse the defense. The December 5 test attempted to deploy a "threat representative" target that would have required the interceptor to discriminate between the real target and false targets generated by the incoming missile. The countermeasures on board the target missile, however, did not deploy.[3] Nevertheless, the GMD

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interceptor is designed to discriminate between real and false targets. The December 5 test raises the question of whether—contrary to the assertions of some critics—such countermeasures are easily accessible to relatively primitive missile powers like Iran and North Korea.

The critics may also argue that the December 5 test was not an operational test and therefore does not justify the fielding of GMD interceptors in Alaska and California. While this criticism is accurate, it fails to acknowledge an important fact: Traditional operational tests cannot be used in the development and fielding of the overall missile defense system because the overall system consists of integrated components that must be built and fielded in order to be tested. For instance, consider the wide variety of sensors and the elaborate command and control system used to support the December 5 test of the GMD interceptor.

Finally, the critics may contend that this GMD interceptor is different from the model that the U.S. is proposing be deployed in Poland and therefore should not be construed as justifying the fielding of the interceptors slated for Poland. The fact is that both the interceptor used in the December 5 test and the interceptors the U.S. is proposing for Poland are both GMD interceptors. The only significant difference between the two is that the interceptors for the site in Poland will include two stages, while the one used in the test has three stages.

Proven Technology. President-elect Obama has stated that fielded missile defense systems' technology must first be proven; the MDA's ballistic missile defense test regime is meeting that challenge. The MDA's technology—kinetic-energy kill vehicles—is being used in an array of interceptors and has been tested on numerous occasions with a 75 percent success rate. President-elect Obama should acknowledge the continuing progress on kinetic-energy missile defense technology and continue to invest in and field the missile defense interceptors that incorporate this technology.

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1. Press release, "Missile Defense Flight Test Results in Successful Intercept," Missile Defense Agency, December 5, 2008, at *www.mda.mil/mdalink/pdf/08news0090.pdf* (December 8, 2008).
2. Barack Obama, YouTube Video, December 8, 2008, at *www.youtube.com/watch?v=7o84PE871BE&feature=related* (December 8, 2008).
3. Department of Defense, "DOD News Briefing with Lt. Gen. O'Reilly From the Pentagon," at *www.defenselink.mil/transcripts/transcript.aspx?transcriptid=4327* (December 8, 2008).