MISSILE DEFENSE AGENCY

Fact Sheet

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Ground-Based Midcourse Defense

The mission of the Ground-Based Midcourse Defense element of the Ballistic Missile Defense System is to defend the nation, our deployed military forces, and our friends and allies against a limited long-range ballistic missile attack.

Overview

- Uses an array of ground and sea-based sensors, radars, and ground-based interceptor missiles that are capable of detecting, tracking, and shooting down long-range ballistic missiles during the midcourse phase of flight
- Directly hits the incoming missile by ramming the warhead with a closing speed of approximately 15,000 miles per hour to destroy it. This is called "hit-to-kill" technology, uses no explosives, and has been proven in a number of flight tests.

Details

Ground-Based Midcourse Defense is composed of three main components: sensors, ground-based interceptors, and ground systems and communications.

- Sensors: Ground-Based Midcourse Defense uses a variety of highly-advanced sensors and radars in space, on land and on the sea to obtain information on missile launches and to track, discriminate, and target an incoming warhead. This information is provided to the Ground-Based Interceptor before launch and during flight to help it find the incoming ballistic missile so it can maneuver into the path of the target warhead and collide directly with it, using only the force of the collision to destroy the warhead high in space.
- Ground-Based Interceptor: A Ground-Based Interceptor is made up of three solid fuel boosters and an exoatmospheric kill vehicle (EKV). When launched, the booster missile carries the kill vehicle toward the target's predicted location in space. Once released from the booster, the 152-pound interceptor EKV uses data received in-flight from ground-based radars and its own on-board sensors to close with and destroy the target warhead well outside earth's atmosphere using only the force of the direct collision to destroy the warhead.
- Ground Systems: This is the backbone of the Ground-Based Midcourse Defense element. It provides the interceptor launch facilities and connects all of the hardware, software and communications systems necessary for planning, directing and controlling Ground-Based Midcourse Defense.

Development

- Interceptor missiles are currently emplaced at Fort Greely, Alaska and Vandenberg Air Force Base, Calif., and a total of 44 are planned for deployment by 2013. An additional ten interceptor missiles are also planned for deployment in Poland beginning in 2011 to defend both Europe and the United States against a long-range ballistic missile attack from the Middle East, and will also include planned X-band radar in the Czech Republic.
- Ground-Based Midcourse Defense fire control centers have been established in Colorado and Alaska.
- Several existing early warning radars located around the world, including radars in the Alaskan Aleutian chain, California and the United Kingdom have been modernized and upgraded to support both testing and defensive operations in the event of a hostile missile attack.