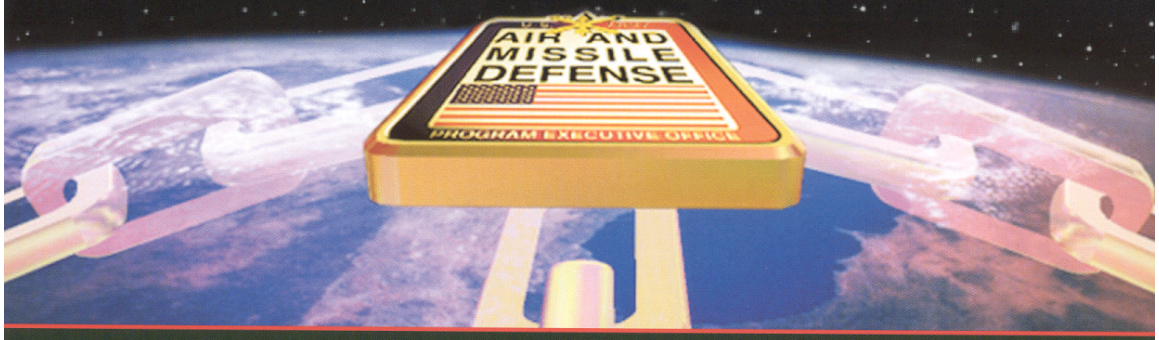
United States Army

Program Executive Office
Air and Missile Defense

Huntsville, Alabama



PATRIOT

- Battle Tested During Gulf War
- Demonstrated HTK Capability
- Only Fielded U.S. ATBM System
- Key Component of Future TBM Two-Tiered Defense

PATRIOT Provides the Only Combat-Proven Missile Defense System in the World

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Huntsville, Alabama February 2002

Theater Air and Missile Defense – PATRIOT

Introduction

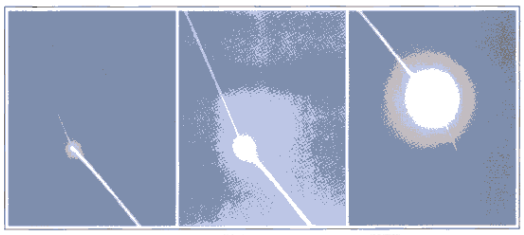
During the Gulf War, the PATRIOT air defense system made its now-famous battlefield debut against tactical ballistic missiles. However, the system originated years before it ever saw action in the Persian Gulf. In fact, the first PATRIOT was deployed in 1985. Initially, PATRIOT focused on air defense rather than missile defense, but the changing battlefield and the increasing threat from ballistic missiles spurred PATRIOT through a succession of improvements and modifications to refocus its mission on missile defense. This foresight paid off during the Gulf War, when the PATRIOT helped defend coalition forces and Israeli territory from Iraqi Scud missile attacks.

Today, the effort to improve the PATRIOT system and its ballistic missile defense capabilities continues as the latest version, called the PATRIOT Advanced Capability-3 (PAC-3), nears completion. PAC-3 has achieved nine successful intercepts, including five against Hera ballistic missile targets. The PAC-3 interceptor recently passed a critical technical milestone, demonstrating for the first time the successful "hit-to-kill" destruction of an "air-breathing" target drone configured as a cruise missile. The integrated PAC-3 system is undergoing operational testing this year. Full-rate production is scheduled to begin next year.

Mission

The PATRIOT system has always been an important part of U.S. air and missile defense. However, in recent years PATRIOT has become even more integral to our Theater Air and Missile Defense (TAMD) and is a priority development program.

PAC-3's mission is to defend the lower tier of the TAMD architecture. This includes defending troops and fixed assets from short- and medium-range ballistic missiles, cruise missiles, and other air-breathing threats such as fixed- or rotary-wing aircraft. To accomplish this mission, the PAC-3 system is designed to be a highly advanced missile defense system that can destroy enemy threats with hit-to-kill accuracy in the terminal phase of the threat missile's flight. The PAC-3 system is planned to be interoperable with other Army and Joint systems to provide a seamless missile defense in depth, and be air-transportable to support rapid deployments.



PAC-3 Intercept of a Ballistic Missile Target

Although the PAC-3 missile is a smaller interceptor than PAC-2, it yields increased fire power and improved lethality. The new interceptors, when combined with an enhanced radar, improved survivability, and a launch point determination capability will allow the PATRIOT air and missile defense system to increase battlespace and range.

System Description

All PAC-3 systems have four basic components: a radar set, an Engagement Control Station (ECS), a launching station, and interceptors.

The radar station provides warning and tracking of incoming threats. It also provides a continuous update link with in-flight interceptors. The ECS computes fire solutions for the interceptor, provides fire control, and is a communications link with other PATRIOT units. The ECS is the central nervous system of PAC-3 fire unit operations.

The launch station transports, protects, and launches the missiles. Each launch station can be equipped with four Guidance Enhanced Missiles (GEMs) or earlier version missiles; selected launchers will carry 16 PAC-3 missiles. The PAC-3 missile itself uses its high maneuverability and hit-to-kill accuracy to destroy its target in a catastrophic collision.

For more information, please contact:

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