Proliferation and Theater Missile Defense:

The Middle East

Jul 13, 1995

Brief Analysis

On July 13, 1995, Lt. General Malcolm R. O'Neill, director of the Ballistic Missile Defense Organization, addressed a session of the The Washington Institute's Policy Forum on U.S. theater missile defense and missile proliferation in the Middle East. The following is a rapporteur's summary of his remarks.

The Threat of Ballistic Missiles

Today, more than fifteen nations possess ballistic missiles and by the year 2000, an estimated twenty nations will have them. The mounting of chemical, biological, and even nuclear warheads on these missiles increases the risk posed by missile proliferation and necessitates the development of commensurate defensive capabilities.

In the past two decades, hundreds of ballistic missiles have been fired in anger, nearly all of them in the Middle East. During the 1973 Arab-Israeli war, Egypt fired a handful of SCUD B missiles against Israeli forces in the Sinai. Between 1980 and 1988, Iran and Iraq fired between 600 and 1,000 missiles at each other and in 1988, during the "War of the Cities," Iraqi missiles killed about 2,000 Iranians and caused life in Tehran to come to a virtual standstill. During the Gulf War, Iraq launched a total of 88 SCUD missiles and American lives were lost. Ballistic missiles will likely be used again.

U.S. Response

Ballistic missile defense (BMD) plays a critical role in U.S. strategy by strengthening deterrence, supporting U.S. counter-proliferation objectives, and enabling the U.S. to maintain a credible overseas presence in case of a major regional conflict.

The United States Department of Defense's BMD program consists of three components: 1) theater missile defense, 2) national missile defense, and 3) advanced BMD technology research and development efforts. Theater missile defense receives the lion's share of the BMD budget -- $2.3 billion, or 80 percent of the total -- since protection of U.S. forces and allies overseas is the current priority. Because a missile attack by the states of the former Soviet Union or China on the continental U.S. is currently deemed unlikely, national missile defense is given second priority and is allotted $397 million, or 14 percent of the BMD budget. Advanced BMD technology research and development on high risk, high payoff technologies like space-based sensors and lasers, is third priority, receiving $184 million, or 6 percent of the budget (a reversal of past trends; under Reagan's Star Wars program such research received 90% of the budget).

Theater Missile Defense (TMD) Systems

The U.S. military is pursuing several theater missile defense (TMD) initiatives to provide American land and naval forces and population centers of friendly countries with a multi-layered defense against a range of potential missile threats, including ballistic and cruise missiles armed with weapons of mass destruction.

These include:

TMD Hardware in the Field

â€¢Patriot PAC-2 -- The PAC-2 Patriot missile is a point or limited area defense system originally built to intercept aircraft but modified to intercept missiles. It had its "baptism of fire" during the Gulf War, and since then, improvements have been incorporated to enhance its performance.

â€¢Patriot PAC-2 GEM -- This is the "guidance enhanced missile" version of the PAC-2, incorporating additional improvements to enhance the effectiveness and lethality of the Patriot PAC-2 against SCUD-class missiles, based on the lessons of the Gulf War. With production underway since earlier this year, the U.S. military plans to deploy a total of approximately 350 Patriot PAC-2 GEMs.

â€¢USMC Hawk Air Defense System -- Upgrades to the Hawk surface-to-air missile will protect U.S. Marine Corps maneuver forces overseas against attack from SCUD-type missiles. Over one third of the active Marine Corps Hawk missiles have already been modified and the entire inventory will be upgraded by the end of fiscal year 1996.

TMD Systems Currently Being Acquired

â€¢Patriot PAC-3 -- This improved Patriot system is built around the existing Patriot PAC-2 radar, battle management system, and launcher, with a new missile that contains no warhead; the Loral ERINT missile literally flies into the target and destroys it by metal to metal contact (hit-to-kill). The missile is smaller than the PAC-2, permitting the loading of sixteen missiles in the Patriot launch canister instead of four. Other improvements include: increased lethality and range, enhanced battlefield awareness, improved discrimination, and remote launch capability. Patriot PAC-3 will be deployed in fiscal year 1998.

â€¢AEGIS/SM-2 Block IVA (Navy Lower Tier) -- This system will provide the Navy with a tactical ballistic missile defense capability similar to the Patriot PAC-3. This system entails the modification of the AEGIS SPY-1 radar and weapon control system software to enable tracking and engagement of theater ballistic missiles by modified Navy Standard Block IV missiles. Deployment is planned for fiscal year 2000.

â€¢Theater High Altitude Area Defense (THAAD) -- THAAD is a ground-based, air transportable interceptor system intended to provide wide area defense capabilities by intercepting longer range theater ballistic missiles at higher altitudes and greater distances than now possible. Operational testing began on April 21, 1995 at the White Sands Missile Range in New Mexico. Deployment is planned for fiscal year 2002.

TMD Concepts Being Developed

â€¢Medium Extended Air Defense System (MEADS, formerly Corps SAM) -- MEADS will provide limited area tactical ballistic missile and cruise missile defense for U.S. and allied maneuver forces. MEADS is an international cooperative program involving the U.S. (50 percent), France (20 percent), Germany (20 percent) and Italy (10 percent). If fully supported through development, MEADS could enter service in fiscal year 2005.

â€¢Navy Upper Tier -- Whereas the Navy lower tier system provides limited area defense, this sea-based system could provide THAAD-like theater-wide protection, intercepting theater ballistic missiles outside the atmosphere as well as in the ascent and descent phases of the missile's flight.

â€¢Boost Phase Intercept (BPI) -- This concept calls for mounting modified air-to-air missiles on Air Force F-15s or Navy F-14s to destroy missiles shortly after launch, before the deployment of submunitions or counter-measures, while still over enemy territory. The military hopes to demonstrate an air-launched boost phase intercept system by fiscal year 1999.

â€¢Space-Based Infrared System (Brilliant Eyes) -- This system involves the deployment of satellites dedicated to the provision of surveillance, warning and track data for missile defense. The Air Force plans to launch a flight demonstration system in fiscal year 1998.

International Cooperation

Since the inception of the Strategic Defense Initiative (SDI) program, the U.S. has sought allied participation in U.S. BMD efforts. Israel was the first country to enter into an international agreement with the U.S. in the BMD arena. The Gulf War further enhanced U.S.-Israel cooperation. Since the mid-1980s, the Department of Defense has awarded twenty-eight contracts, totaling over $600 million to Israeli high technology industries, research institutions, and universities. U.S.-Israel cooperation in this realm will enable Israel to meet its own unique missile defense requirements, and permit the United States to learn from Israel's experience, while enabling the U.S. to control the transfer of sensitive BMD-related technologies to third parties. The centerpiece of U.S.-Israel cooperation is the Arrow interceptor which benefits from American technology and funding.

This special Policy Forum report was prepared by Matthew Goldin. ❖

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