

BENCHMARK 3

PART 1

Ballistic and National Missile Defense

The Post-World War II Enemies Emerge

At the end of World War II, the cooperative effort that had succeeded in toppling Hitler began to crumble.

Whereas the western powers largely demobilized, Stalin retained a huge military force. The 17 month stand-off over Berlin in 1947-48 confirmed for the United States that Stalin was bent on European domination. Further, the acquisition of “the bomb” by the USSR in 1949, years earlier than predicted, suddenly raised the stakes for U.S. national survival.

The Ballistic Missile Threat Emerges

At the war time Allied coalition split, the new antagonists concentrated on developing long range intercontinental ballistic missiles (ICBMs) that could carry nuclear warheads.

Very early U.S. attempts at developing anti-missile missiles such as the short range hit-to-kill Thumper and the longer range Wizard were poorly funded and inconclusive.

The Soviet launch of Sputnik spurred the U.S. civilian and military space programs. For the military, the key step was combining warheads, missiles, inertial guidance, and command and control systems for both land-based and submarine launched systems. By 1960 the United States had achieved both options, with the Soviet Union close behind. Over the next 11 years, before the first arms limitation talks began, the USSR developed and fielded nearly 1,500 intercontinental ballistic missiles (ICBMs) with nuclear warheads. The Soviet Union was also working to develop a defense to intercept U.S. missiles, a project that eventually resulted in deployment of the nuclear tipped Galosh anti-ballistic missile (ABM) system.

The Other Threats

Meanwhile, at war's end in Asia, the line of division in Korea between Soviet and U.S. forces supervising the surrender of Japanese troops became a permanent dividing line between north and south. In 1949, Mao Tze Dong (China) finally defeated their long-time enemy, Generalissimo Chiang Kai-shek, driving him and the remnants of his army and government onto Formosa (Taiwan). As the United States and the recovering Western Europe faced a new menace in Europe, a hot war began in Korea on June 25, 1950. By August the South Korean army and U.S. soldiers and marines who had been rushed to the peninsula were pinned into a small perimeter on the southeast part of Korea. The U.S. landing at Inchon broke the North Korean advantage, but by the end of the year the Chinese Communists entered the war in support of the North Koreans. Not until 1953 did an armistice take hold, one that to this day has never been replaced by a treaty of peace.

In the Americas, the success of the Cuban rebels under Fidel Castro and Che Guevara in toppling the American-supported Batista dictatorship earned U.S. hostility, culminating in the abortive 1961 Bay of Pigs invasion.

In the Middle East, unstinting U.S. support for Israel in its conflicts with its neighbors earned the U.S. the enmity of a number of Arab states, most notably Egypt, Syria, Libya and Iraq. In the Cold War these nations became clients of the Soviet Union, which supplied all but Cuba with short range “Scud” surface-to-surface ballistic missiles.

In 1964 the Chinese exploded their first atomic bomb. In 1980 they launched their first full-range ICBM. While Beijing would never begin to match the numbers of offensive missiles that the Soviet Union had-never fielding more than about 20-24 missiles and not achieving even a rudimentary submarine platform until the 1980s-the very existence of the Chinese force added another dimension to the missile threat to the USA.

In 1979, with the fall of the Shah and the seizure of American embassy personnel in Tehran, Iran suddenly went from a close ally of the U.S. to an enemy. Moreover, Tehran began supporting terrorist organizations attacking Israel, taking American hostage, and blowing up the U.S. embassy a Marine barracks in Lebanon. This turn of events resulted in a partial rapprochement with Iraq during the 1980-1988 Iran-Iraq War, including reestablishment of diplomatic relations.

By the time Iraq invaded Kuwait in August 1990, no major power supported Baghdad.

Why Should You/We Care?

To an extent seldom seen since Cold War days, the growing debate over the need for a national missile defense (NMD) system has polarized public opinion. Pros and cons are put forward in increasingly strident confrontations, which lead not to understanding or accommodation but to divisive, emotional rejection of opposing views.

What is there about NMD that produces heat-not light-when the issue arises?

Let’s turn to the words of CDI Vice-President Rear Admiral Eugene J. Carroll:

“It is because the decision to deploy an NMD system rests on the most fundamental issues of America’s role in the world and our relationship not only with our adversaries but with our closest allies as well. It is not surprising that Russia and China are loud critics of NMD but Germany, France, Great Britain and other western nations are also questioning the wisdom of proceeding with a program that threatens to ignite a new nuclear arms race. It may be possible to shrug off the anticipated criticisms of countries often treated as enemies, but the United States must give thoughtful consideration and great weight to the Same criticism from its friends”.

President Jacques Chirac of France identified this problem when he declared:

“ Nuclear disarmament will be more difficult when powerful countries are developing new technologies [NMD] to enhance their nuclear capabilities”.

Ballistic Missile Defense (BMD)

Ballistic Missile Defense (BMD) systems in various forms have been a recurring idea of U.S. policymakers since the Soviet Union launched its first Inter-Continental Ballistic Missile (ICBM) in the late 1950s. BMD systems would be designed to defend against missile attacks by shooting down the missiles during their short flight times.

The current version of BMD being proposed by the Bush administration is a scaled down version of the Reagan era Strategic Defense Initiative (SDI), also known as “Star Wars”. Reagan had a grandiose vision of being able to protect the U.S. from a major missile attack by an opponent as well armed and powerful as the former Soviet Union. SDI was proposed as a space-based system incorporating many new technologies. At the end of the Cold War, Reagan’s SDI was dismissed as being unneeded.

Reagan’s successor, George Bush continued to support research and development of BMD systems.

The Clinton administration also envisaged a primarily ground-based system, one that could provide protection to the entire country but only against limited attacks from so-called “rogue” states such as Iran, Iraq, Libya, North Korea and Syria.

National Missile Defense (NMD)

President Clinton said that a final decision to deploy NMD must await satisfactory answers to four criteria:

- 1) there must be a real threat;
- 2) we must have the technological means to address that threat effectively;
- 3) our response must be affordable; and
- 4) NMD deployment must not do unacceptable damage to the stability of current and future international security arrangements.

George W. Bush has made deployment of ballistic missile defenses a major goal of his presidency. In a speech on May 1, 2001, President Bush announced that he had asked for an examination of “all available technologies and basing modes for effective missile defenses that could protect the United States, our deployed forces, our friends and our allies.”

The stated purpose of the proposed NMD is to intercept incoming ICBMs, which can carry nuclear warheads or other weapons of mass destruction. The proposed NMD system is a space and missile tracking system that includes both ground-based and space-based components.

NMD system elements can be divided by category: 1) domestic computers and command/control elements; 2) forward-based radars and interceptors; 3) sea-based interceptors and components; and 4) space-based launch detection systems and interceptors. Each of these elements is vulnerable to different types of attack, with varying degrees of difficulty.

The history of postwar military innovations underlines several critical points regarding the possible U.S deployment of NMD: 1) NMD is unlikely to revolutionize the strategic environment or render offensive weapons obsolete; 2) NMD will be met

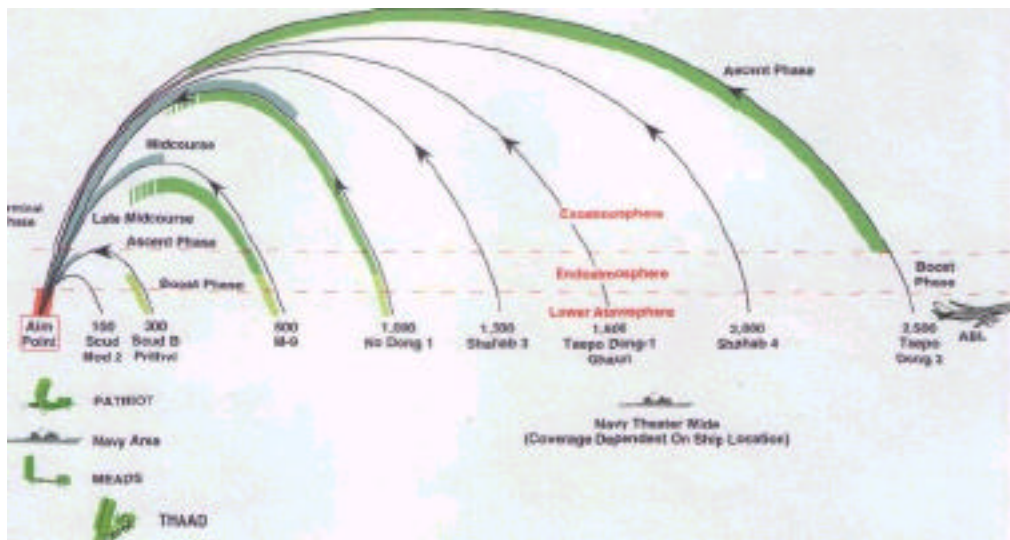
by active military countermeasures from a number of states; and 3) NMD is likely to “ratchet up” rather than reduce the overall number of armaments worldwide

Theater Missile Defense (TMD)

While NMD is designed to protect the entire territory of the U.S., TMD systems are intended to defend against shorter-range missiles and in regional settings. TMD systems are designed to be mobile for use in various settings, including deployment with troops on a battlefield.

THEATER MISSILE DEFENSE

<p>Lower Tier PAC-3 Navy Area MEADS</p>	<p>Upper Tier THAAD (Endo/Exo) Navy Theater Wide (Exo Only)</p>	<p>Ascent Phase Navy Theater Wide (XO Only)</p>	<p>Boost Phase Airborne Laser</p>
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There are three categories of TMD systems:

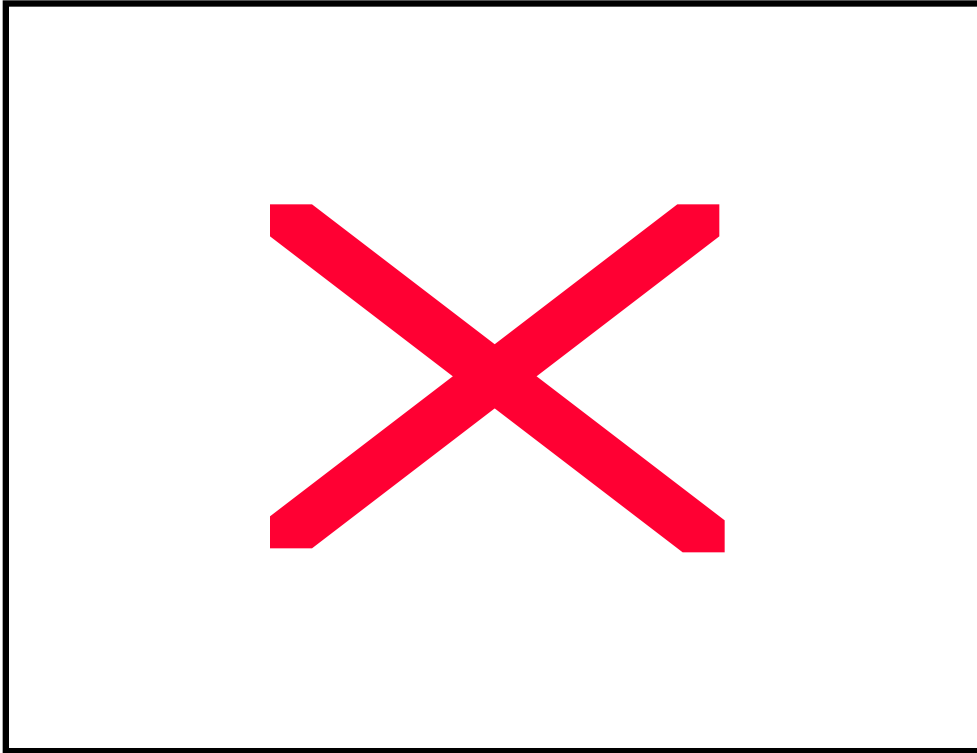
- 1) Lower-tier, designed to intercept missiles low in the atmosphere;
- 2) Upper-tier, designed to intercept missiles high in the atmosphere or above the atmosphere;
- 3) Boost Phase, designed to intercept missiles in the early stage of launch when the rocket booster is still burning.

First, lower-tier and upper-tier TMD systems have very different characteristics. Lower-tier TMD systems are endo-atmospheric, defend a small area, intercept missiles with ranges up to approximately 1,400 km and are used (generally) for point defense and force protection purposes. Upper-tier TMD systems are exo-atmospheric, defend an area far larger than lower-tier systems, use a different interceptor able to maneuver outside the atmosphere and can defend against missiles with range up to 4,000-5,000 km.

Second, current US plans envision a “family systems” that provides for comprehensive defense by layering the various lower-tier and upper-tier TMD systems on top of each other.

Third, US TMD systems are designed to operate in a stand-alone mode, but can also use space-based cueing to enhance their capabilities.

Layered defense TMD lower and upper tier in the future



Lower-tier TMD systems

The **Patriot advanced capability-3 (PAC-3)** system has 3 configurations, all of which include qualitative upgrades from the PAC-2 system. PAC-3 configuration 1 and 2 include more advanced fire control and command, control, communications and intelligence capabilities. PAC-2 and PAC-3 systems have dual roles as both air defense systems, but the United States plans to deploy a mix of less expensive PAC-2 interceptors and more advanced hit-to-kill PAC-3 interceptors in order to maximize performance and reduce costs.

The Navy Area Defense (NAD)

The NAD system will be deployed on an Aegis-equipped cruiser or destroyer and essentially functions like a floating PAC-3 with a slightly bigger area of coverage. The interceptor uses a fragmentary blast warhead for increased lethality.

Upper-tier TMD systems

The **Theater High Altitude Area Defense (THAAD)** system is a land-based area defense system. THAAD is primarily an exo-atmospheric system, but also has some capability against shorter-range missile operating inside the atmosphere.

The Navy Theater Wide (NTW) system has two forms: one uses the Standard Missile-3, Block I missile and defends an area 10 times greater than the NAD system. A second version, the Block II interceptor, will defend a footprint twice as large as the Block I missile and will be able to defeat most tactical ballistic missile operating in the exo-atmosphere.

The NTW interceptor is designed for exo-atmospheric operation, the system cannot defend against missiles with range less than 600 km.

Sea-Based NMD Systems might not be the most practical technical option.

Boost-phase Systems

The **Air-borne Laser (ABL)** is being developed by the US Air Force. The system mounts a giant air-borne laser on a 747 aircraft.

Boost-Phase Intercept (BPI) requires faster interceptors and new sensors on the interceptor that can see through the missile plume. BPI would also require highly advanced command, control and early warning capabilities to respond rapidly to missile launches and to avoid the risk of shooting down a peaceful space launch vehicle. In addition a boost-phase system would require development of new battle management software, would need to be deployed close to and down range from the target and would clearly violate the ABM Treaty. Finally, the political and diplomatic implications of a ground-based boost-phase system have not yet been thoroughly studied.

The **Medium Extended Air Defense System (MEADS)** is the USA, Italy and Germany jointly conducting project in the field of extended air defense. The project has only symbolic significance, illustrating the concept of transatlantic partnership and the international orientation of US missile defense policy.

TMD systems are just as destabilizing as the proposed NMD system as they pose serious risks to regional security, especially in the Middle East and Asia. In particular, China has decried U.S. plans to jointly develop TMD systems in East Asia with Japan because it implies that the shield could be extended over Taiwan. By providing a defense, TMD systems would offensively empower Taiwan's proindependent forces and therefore contradict the mainland government's policy of unified China.

There is equal concern among Arab States in the Middle East over US-Israeli joint development of TMD, including the Patriot and Arrow systems. Israel is the only nuclear weapon State in the region (as it is officially believed). Israel has an even greater advantage in achieving its own and U.S. economic and political interests because of missile defense capabilities, thus undermining the balance of power and security in the region.

At the end of the issue some points of view of famous politicians and leaders:

- 1) Jacques Chirac, President of France: If you look at world history, ever since men began waging war, you will see that there's permanent race between sword and shield. The sword always wins. The more improvements that are made to the shield, the more improvements are made to the sword. We think

that with these [anti-missile] systems, we are just going to spur swordmakers to intensify their efforts.

- 2) Vladimir Putin, President of Russia: Implementing plans for an NMD system will “have most serious negative consequences for the security of not only Russia, China and other countries, but also for the security of the USA itself and for global strategic stability in the world as a whole.