DEPARTMENT OF DEFENSE
UNITED STATES STRATEGIC COMMAND

Reply To:
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9 Apr 19
SM# 3027-19

John Greenewald
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Dear Mr. Greenewald

This is in response to your 23 March 2018 Freedom of Information Act (FOIA) request you submitted to the National Security Agency (NSA) for documents pertaining to BRILLIANT PEBBLES and/or Project Excalibur. NSA assigned your request tracking number 103877 R-2 and their search produced the enclosed documents, containing primarily USSTRATCOM equities. The URLs for the Intelink pages and the name of an NSA affiliate have been protected by the NSA pursuant to FOIA Exemption 3, specifically Section 6, Public Law 86-36: *National Security Agency Act of 1959* (50 U.S.C. 3605, *NSA Functions and Information*). NSA referred the documents to USSTRATCOM for review and direct response to you on 7 December 2018.

After careful consideration of the content of the documents, I have determined certain portions discussing military plans, weapons systems, or operations are properly classified according to Executive Order 13526, *Classified National Security Information*, Section 1.4.(a), and are therefore not releasable. I am also denying access to the names throughout the documents as disclosure would constitute a clearly unwarranted invasion of personal privacy.

In accordance with 5 U.S.C. § 552, *Freedom of Information Act*, Exemptions 1, 3, and 6 are hereby invoked, and require this information be withheld. If you are not satisfied with this action, you may appeal this response to the appellate authority, Ms. Joo Chung, Director of Oversight and Compliance, Office of the Secretary of Defense. The appellate address is: ODCMO, Director of Oversight and Compliance, 4800 Mark Center Drive ATTN: DPCLTD, FOIA Appeals, Mailbox #24, Alexandria VA 22350-1700. As an alternative, you may use the OSD FOIA request portal at http://pal.whs.mil/palMain.aspx; or e-mail your appeal to OSD.FOIA-APPEAL@mail.mil. Your appeal must be submitted within 90 calendar days of the date of this letter, should cite FOIA case number 19-094, and be clearly marked "Freedom of Information Act Appeal."

Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows: Office of Government Information

Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001, e-mail at ogis@nara.gov; telephone at (202) 741-5770; toll free at (977) 684-6448; or facsimile at (202) 741-5769.

Sincerely

DANIEL L. KARBLER
Major General, USA
Chief of Staff

Doc ID: 6642257

(U//~~FOUO~~) Introduction to Missile Defense

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From Intellipedia

(U) On July 22, 1999, the National Missile Defense Act of 1999 (Public Law 106-38) was signed into law. This law states, "It is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against limited ballistic missile attack (whether accidental, unauthorized, or deliberate) with funding subject to the annual authorization of appropriations and the annual appropriation of funds for National Missile Defense." The Administration's program on missile defense is fully consistent with this policy.

Contents

(U) History

Main article: Bmds history

(U) Over the years, much has been learned from both successful and unsuccessful attempts to develop and launch ballistic missiles. Technological advances often outpace current initiatives, and although research and development is continuous, procurement and deployment were often deferred. The following timeline depicts some of the historical events in missile defense.

(U) Missile Defense has existed in one form or another for a long time. From the first time a warrior used a shield to defend against incoming arrows man has sought out technological solutions for defense. In WWII, the British dispatched over 2000 German V1 "cruise missiles", shooting them down or knocking them off course by Royal Air Force fighter aircraft. In the 1960s, the United States developed the Nike-Zeus system, which was a very high altitude, long-range interceptor using a nuclear-tipped warhead which, while effective against a single volley, blinded warning radars after the first defensive shot. Nike-Zeus was canceled in 1961 and replaced by Nike-X, which included advances such as a phased-array, electronically guided radar. Missile defense development and deployment continued throughout the 1960s and 1970s, culminating in the 1972 ABM Treaty which limited the U.S. and the USSR to two land-based fixed ABM sites, enabling each side to defend either their nation's capital or ICBM fields.

(U) The 1980s ushered in the era of President Reagan's Strategic Defense Initiative (SDI). SDI investigated a number of intercept concepts. The US Army tested the Homing Interceptor Terminal, known as hit-to-kill or HTK, concept. The HTK program produced a lightweight, optically guided interceptor to destroy re-entry vehicles (RVs) in the exoatmosphere. "Brilliant Pebbles" was a concept envisioning an orbiting network of thousands of small, inexpensive, autonomous HTK interceptors. In 1993, emphasis shifted to mainly theater missile defense systems. Three projects constituted the core of this shifting priority: improving the Army's PATRIOT missile system, modifying the Navy's AEGIS air defense system to intercept theater ballistic missiles, and a new Army missile defense system known as Terminal High Altitude Area Defense (THAAD).

(U) Missile Defense was once again modified in 1995. Additional impetus for National Missile Defense (NMD) came from intelligence estimates of threats against the US homeland. President Clinton signed the Missile Defense Act in July 1999, making it US policy to deploy NMD "as soon as technologically possible" however, in September 2000, Clinton decided not to authorize the Pentagon to proceed with NMD deployment. After taking office in January 2001, President George W. Bush advocated deployment of a system based in Alaska that could intercept a small number of ICBMs launched at the continental United States. In December 2001, the United States withdrew from the ABM Treaty, enabling the testing of more advanced systems that would otherwise violate the treaty. In December 2002, President Bush directed the Department of Defense to proceed with fielding an initial set of missile defense capabilities.

(U) Brief Description of Missile Defense

(U) The Ballistic Missile Defense System as currently fielded is an extremely complex, layered defense system designed to defeat ballistic missiles in all phases of flight. The layering of the system requires sensors and interceptors that are effective against all missile types, in all phases of flight. Upon breaking the system down, however, it simply becomes sensors, shooters and command and control. If you would like further information on any given system in this introduction, click on the hyperlinks at the end of this module to be taken to more detailed IMD lessons.

(U) BMDS sensors range from satellite infrared launch detection systems[1][2][3][4] to highly advanced X-band discrimination-capable radars. Each sensor in the BMDS system has a unique function which overlaps with others to provide the best coverage possible.

(U) MD Theory and Doctrine

(U) National Security Presidential Directive 23 (NSPD-23)

(U) President George W. Bush recognized during his first presidential campaign that many of our friends and allies are no less threatened by missiles than are we. He further recognized that the integrity of the NATO Alliance could be diminished if the United States were protected against missile attacks while our allies in Europe were not. Accordingly, he resolved to ensure that our allies would also have protection against missile attack. NSPD-23, issued on December 16th, 2002, states:

(U) "In light of the changed security environment and progress made to date in our development efforts, the United States plans to begin deployment of a set of missile defense capabilities in 2004. These capabilities will serve as a starting point for fielding improved and expanded missile defense capabilities in the future. The defenses must be capable of not only defending the United States and our deployed forces, but also friends and allies."

(U) In 2002, the Secretary of Defense (SECDEF) proposed an evolutionary way ahead for the deployment of missile defenses. The concept of BMDS would eliminate the artificial distinction between "national" and "theater" missile defenses (for example, the US considered MD in the Gulf War to be theater defense while it was national defense to Kuwait). BMDS would instead use a layered approach--a variety of both short and long-range weapons systems working together to eliminate missile threats. Each layer of the system makes the US, our deployed forces and our allies safer and more secure than any one element working alone.

(U) The Three Missile Defense Mission Priorities

(U) Defending the US

- (U) Since assets are very limited at Limited Defensive Operations (LDO), the first priority is to defend large population centers or protect the most people with the least expenditure of valuable BMDS "bullets". This emphasis on population means that the BMDS weapon system employer must make hard choices: since all targets can't be engaged equally, some targets may not be engaged at all under certain circumstances.

(U) Defending Deployed Forces

- (U) Using the layered BMDS approach means using a variety of both short-range and long-range weapons systems to fulfill our national policy of protecting US deployed forces and our friends and allies.

(U) Defending Friends and Allies

- (U) The President mandated that the DoD deploy a system capable of defending friends and allies. At LDO, this capability is very immature and fragmented. For example, many theaters have legacy assets that are not be fully integrated with the BMDS at LDO. The entire BMDS system is very rudimentary at LDO, and capabilities must be grown from the LDO "baseline." As this happens, the President's mandate is being met.

(U) Joint Functional Component Command, Integrated Missile Defense

(U) JFCC IMD is responsible for planning and coordinating global operations and support for integrated missile defense. The JFCC IMD will conduct operational and tactical level planning and day-to-day employment of assigned and attached missile defense forces for USSTRATCOM integrated missile defense operations, to include integrated missile defense planning and operational support responsibilities with other combatant commands, the Missile Defense Agency and joint service components.

(U) HQ USSTRATCOM Missile Defense Functions

(U) USSTRATCOM J31

- (U) Integrated Missile Defense Division (USSTRATCOM/J31) is responsible for coordinating the operational configuration of assets providing capability to the Ballistic Missile Defense System (BMDS). Assets include those with existing, legacy missions in addition to those providing capability still under development by the Missile Defense Agency (MDA). In this role, J34 brings a global perspective to maximizing Geographic Combatant Commander support through employment of both

offensive and defensive missile defense elements.

(U) USSTRATCOM J85

- (U) J85 is the USSTRATCOM lead for identifying, analyzing, integrating, and monitoring the development of future global missile defense and combating weapons of mass destruction capabilities, and then advocating for them to meet the needs of the Joint Warfighter. Additionally, J85 serves as the Command focal point for interactions with the Force Protection Functional Capabilities Board.

(U) USSTRATCOM J533

- (U) USSTRATCOM J533 standardizes STRATCOM mission area planning inputs for USSTRATCOM's Missile Defense mission. J533 also develops standardized tools and processes to support this mission area.

(U) Other Missile Defense Players

(U) USPACOM

- (U) USPACOM's AOR for the conduct of missile defense operations will be the Pacific Ocean from Antarctica to [a portion of] the Indian Ocean, Japan, the Republic of Korea, the Democratic People's Republic of Korea, the People's Republic of China, Mongolia, the countries of Southeast Asia, to the western border of India and Madagascar. PACOM, a key player in the defense of Hawaii, has the following responsibilities in the UCP:
  - (U) Deterring attacks against United States interests in the PACOM theater
  - (U) Employing appropriate force should deterrence fail
  - (U) Planning for and executing military operations

(U) USNORTHCOM

- (U) USNORTHCOM's general geographic AOR for the conduct of normal operations is the 48 contiguous states and the District of Columbia, Alaska, Canada, Mexico, the Caribbean Sea and its island nations. Defense of this area includes defense against missile threat. USNORTHCOM Responsibilities include:
  - (U) Deterring attacks against the United States
  - (U) Employing appropriate force should deterrence fail
  - (U) Planning for and executing military operations as directed by the President or Secretary of Defense in support of the National Military Strategy

Next Section BMDS Policy and Legal Considerations

References

1. Theater_missile_warning
2. Defense Support Program
3. Space-Based_Infrared_System
4. Joint_Tactical_Ground_Station

Categories: Articles lacking sources Ballistic Missiles Missile Defense Missile Warning

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(U//~~FOUO~~) Bmds history

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From Intellipedia

Contents

Executive Summary

(U) This article provides an overview of missile defense history from World War II to the present.

U) The purpose of this article is to provide familiarization with:

- (U) The history of BMDS
- (U) Lessons learned from past attempts to intercept ballistic missiles
- (U) The progress of modern ballistic missile intercept development
- (U) How Ballistic Missile Defense is influencing current theory and policy
- (U) Why the BMDS has become critical to future military operations

Introduction

(U) Over the years, much has been learned from both successful and unsuccessful attempts to create and launch ballistic missiles. Technological advances often outpace current initiatives, and although research and development (R&D) are continuous, procurement and deployment are often deferred. The following timeline depicts some of the historical events in missile defense.

(U) 1940-1950: World War II and Early Efforts

(U) V-1

- (U) In June 1944, Germany became the first country to use "guided" missiles in a war. The V-1 or "vengeance weapon", and better known to London residents as the "Buzz Bomb", made a very distinct buzzing sound as it flew overhead at low altitude before the timing mechanism stopped, releasing the bomb.
- (U) Between June 1944 and March 1945, a total of 9,251 V-1 cruise missiles were launched against England. Of these, only 2,419 made it to their intended targets. Over 2000 of them were shot down or knocked off course by Royal Air Force fighter aircraft; Spitfire pilots learned that placing the wing tip of their fighter planes underneath the V-1's outer wing would often upset the missile and send it crashing out of control before reaching its target. An additional 1,971 V-1's were shot down by anti-aircraft guns while 278 more were derailed by barrage balloons along the approach paths south of London.
- (U) Defense against the V-1 was possible. This changed with the introduction of the V-2 rocket

(U) V-2

- (U) The V-2 was the first ballistic missile used in warfare as well as the first manmade object to reach the fringes of outer space. It is the ancestor of practically every rocket flown in the world today. Developed by Germany during World War II, it was used against the Allies primarily as a terror weapon.
- (U) Because it was relatively inaccurate, the V-2 could not be used against specific military targets, so it was used instead

against civilians. Hitler named his "Vengeance Weapon 2" because it wreaked vengeance upon a helpless population. The V-2 traveled faster than the speed of sound, with no warning before impact or possibility of defense (unlike the V-1).

- (U) The V-2 incorporated several advancements in rocketry including an aerodynamic shape, an innovative inertial guidance system, and a radio transmission (telemetry) system. Flying at five times the speed of sound accurately to targets nearly 190 miles away, its engine was 17 times more powerful than that of the largest rocket motor.

- (U) Although the V-2s were militarily ineffective – its guidance system was too primitive to hit specific targets, and they were cost prohibitive compared to using bombers – they did cause the British to expend resources to defend against them. This lesson was not lost on Saddam Hussein in Desert Storm as he leveraged his militarily ineffective SCUDs as a strategic weapon, attempting to draw Israel into the war and break the Allied Coalition.

(U) Post World War II

(U) **Sputnik I**

- (U) On October 4, 1957, the USSR launched the first man-made earth orbiting satellite (Sputnik I), blindsiding the United States in what has been called a "technological Pearl Harbor". The satellite was of little scientific value but was huge politically. Orbiting the earth every 90 minutes, its radio signal shocked the US and the world.

- (U) With Sputnik, the Soviet Union achieved technological parity with the US, demonstrating that it had the means to deliver a nuclear payload against the United States. The vulnerability of strategic nuclear forces to surprise attack compelled the further R&D of anti-ballistic missile (ABM) defenses. At the same time, the United States spent significant amounts of money on air defenses. Shooting down an aircraft was within US technological capability, while shooting down a missile was a far more difficult task.

(U) 1950-1970: ABM Defense

(U) **Nike-Zeus**

- (U) Nike-Zeus was one of the first US efforts to develop long-range defenses against ballistic missiles. This program called for a very high altitude, long-range interceptor carrying a nuclear warhead that, when detonated, would destroy incoming missiles.

- (U) The first serious study of what was called an "anti-missile missile" dates to as early as 1956, when a US scientific group evaluated the challenges of shooting down ballistic missile warheads. It realized that warheads were small and might not show up on radar, and that responding to an attack in time would be difficult. The biggest problem was getting a missile into the vicinity of the attacking warhead to destroy it. Because they could not get close to their targets, early anti-missile proposals relied on nuclear warheads, which had a wide explosive radius to compensate for the inaccuracy of the missile.

- (U) In the 1950s, the US Army built the Nike-Zeus with some anti-missile capabilities. However, by 1959, President Dwight D. Eisenhower's Presidential Science Advisory Committee ruled that Nike-Zeus was too slow, too vulnerable to attack, and could not differentiate between real warheads and decoys. No system was ever deployed.

(U) **Nike-X**

- (U) Under President Kennedy, Nike-Zeus was canceled in 1961 and replaced by Nike-X. This program incorporated three major advances: a phased-array, electronically guided radar; a new short-range missile called Sprint; and an upgraded medium-range Nike-Zeus missile called Spartan. Sprint and Spartan used nuclear warheads as their kill mechanism. These upgrades enhanced the survivability of the radar subsystem and the accuracy of the missile intercept.

- (U) To SECDEF McNamara, civil defense remained a higher priority than BMD. BMD decisions during 1963 and 1964 with Nike-X were much like they had been before with Nike-Zeus: R&D would be continued, but procurement and deployment would be deferred.

(U) **Sentinel**

- In 1967, faced with Soviet refusal to discuss arms limitations on ABM systems, President Lyndon Johnson went forward with deployment of the Sprint-Spartan system, which was given the overall name "Sentinel". Sentinel was regarded as a limited defensive system, able to defend against attacks from a relatively unsophisticated adversary such as China, but not an all-out attack by the Soviet Union.

- (U) When SECDEF McNamara announced the deployment plan in September 1967, he made two points on Missile Defense that echo to this day:

- (U) A comprehensive ABM system was expensive and technologically difficult
- (U) A limited system to thwart a "simple" attack was achievable

(U) The Nixon Administration refocused the Sentinel system from guarding cities to guarding vital military locations by employing as many as twelve ABM sites. Sentinel would provide protection to Minuteman Intercontinental Ballistic Missile (ICBM) fields, Strategic Air Command bases, and the National Command Authority in Washington, DC.

(U) 1970's: ABM & Arms Control

(U) By the 1970s, both the US and the USSR were tiring of the programs to employ ABM systems. The expense was enormous, and the effectiveness of the ABM system was viewed as highly uncertain.

(U) Efforts to build an ABM system were dramatically reduced by the 1972 ABM Treaty, which limited each side to two, land-based, fixed ABM deployment areas with no more than 100 ABM weapons at each site. A Protocol to the 1974 ABM Treaty reduced the number from two to one and stipulated that either the national capital or ICBM field could be defended.

(U) The Soviet Union chose to defend its capital by deploying the "Galosh" missile defense system around Moscow, which was an exoatmospheric, nuclear-tipped interceptor to protect 75% of the population. Conversely, the US "Safeguard" program was to protect the ICBM site at Grand Forks, North Dakota using both Sprint interceptors and Spartan missiles.

(U) **Soviet Galosh**

- In the late 1960's, the Soviets started construction of eight ABM launch sites for in the vicinity of Moscow, with four actually becoming operational. By 1971, four of the eight sector radars and eight of the 16 firing complexes had been built.
- (U) The performance of the Galosh appeared similar to that of the Nike-Zeus. The use of mechanically-steered radars and high-yield nuclear warheads substantially limited the effectiveness of this system. The system was unable to counter missiles with multiple warheads, especially when penetration aids such as light and heavy decoy targets and active jammers were used.

(S//REL TO USA, AUS, CAN, GBR) (b)(1) Sec 1.4(a) USSC

- (S//REL TO USA, AUS, CAN, GBR) (b)(1) Sec 1.4(a) USSC

(b)(1) Sec 1.4(a) USSC

(U) **Safeguard**

- On October 1, 1975 the Safeguard ABM site became operational near Grand Forks, ND. The next day, the House of Representatives voted to close the system down because the Soviet decision to put multiple independently targetable reentry vehicles (MIRVs) on their missiles would easily overwhelm Safeguard. Also, the radars that were part of the system would be blinded by the electromagnetic pulse from exploding nuclear warheads on the Sprint and Spartan missiles. In February 1976, the system went into "caretaker" status after only four months of operation. Except for its supporting radar, which is used today as an early warning and space surveillance asset, Safeguard was closed completely in 1978.

(U) 1980's: National Missile Defense

(U) During the 1980 presidential campaign, Ronald Reagan toured the Cheyenne Mountain complex and was alarmed to learn that the United States had no capability to defend against a ballistic missile attack. He announced in 1983 that the US would start a major research program to determine if missile defense was practical.

(U) In April 1984, following a year of technical and strategic studies to determine how best to pursue the President's goal, the Defense Department established the Strategic Defense Initiative Organization (SDIO). This organization was to carry out the R&D to resolve the feasibility issue of missile defense.

(U) Strategic Defense Initiative (SDI). SDI investigated a number of intercept concepts. The US Army tested the Homing Interceptor Terminal, known as hit-to-kill or HTK, concept. The HTK program produced a lightweight, optically-guided interceptor to destroy re-entry vehicles in the exoatmosphere (120 KMs above the earth). Although 1 of 4 HTK tests was declared a success, the HTK vehicle became strictly a proof-of-concept device.

(U) With the introduction of HTK devices, a comparison of HTK to the nuclear intercept method employed in the past is warranted. A nuclear device has the advantage of a large kill area with no need to identify the incoming warhead. Limitations include the detrimental effects that nuclear detonations in space cause to the magnetosphere and the natural space radiation environment. HTK requires precise accuracy and discrimination; however, assuming the HTK device hits the target, there is a high probability of a kill.

(U) **Brilliant Pebbles**

- (U) Lawrence Livermore National Laboratories (LLNL) also investigated a number of speculative technologies, such as particle beam weapons, high-power conventional lasers, and orbiting X-ray lasers. In 1988, LLNL came up with the less ambitious "Brilliant Pebbles" concept, an orbiting network of thousands of small, inexpensive, mostly autonomous HTK

interceptors capable of spotting the exhaust of an ascending ICBM and destroying it.

- (U) Prototype interceptors were developed and tested in lab environments, and government studies proclaimed Brilliant Pebbles workable and affordable. The estimate was $25 billion for deploying the entire network.

- (U) The critics of Brilliant Pebbles pointed at the exorbitant cost and felt the Brilliant Pebble stations were much too vulnerable to attack and countermeasures. Also, Brilliant Pebbles was risky in that it might attack a Soviet cosmonaut launch or the US space shuttle.

(U) 1990's: End of the Cold War

(U) The collapse of the Soviet Union eliminated most of the rationale for SDI, and the Brilliant Pebbles initiative was cancelled. Under President George H. W. Bush, the idea of a nationwide defense against a massive Soviet missile strike was abandoned in favor of Global Protection Against Limited Strikes or GPALS. GPALS, a predecessor of today's BMDS concept, envisioned an integrated system that would provide protection against tactical/theater missiles as well as up to 200 nuclear warheads mounted on land-based ICBMs or submarine-launched ballistic missiles (SLBMs).

(U) **Theater Missile Defense (TMD)**

- (U) In 1993 the name of SDIO was changed to the more modest title of the Ballistic Missile Defense Organization (BMDO). Research for missile defense technologies continued on a limited basis. The emphasis was redirected to mainly TMD systems, which became fashionable after the Gulf War in 1991. Three projects constituted the core of this shifting priority: improvements to the Army's Patriot missile system; a modification to the Navy's Aegis air defense system to give it the capability to intercept theater ballistic missiles; and a new Army missile defense system known as Terminal High Altitude Area Defense (THAAD).

(U) **National Missile Defense (NMD) Changes**

- Pressure for changes in the NMD program developed after Republicans, strong supporters of national missile defense, gained control of Congress in 1995. Additional impetus came from intelligence estimates of threats against the US homeland.

- (U) DoD announced in February 1996 that NMD was shifting to a "three-plus-three" program – this new approach called for BMDO to complete three more years of developmental work leading to a systems integration test in 1999. Following this test, the US would be ready to field NMD within three years of a viable threat. Until that time, BMDO would continue to refine and improve the NMD components.

(U) **BMD Assessments**

- (U) The 1998 Rumsfeld Commission concluded that the threat posed by ballistic missiles to the security of the US and its allies was growing. North Korea, Iran, and Iraq were expected to be able to inflict major destruction on the US within roughly five years of a decision to do so (10 years for Iraq), and the US might not be aware that such a decision had been made.

- (U) Coinciding with the release of the Rumsfeld Commission report, North Korea surprised the world by launching a medium-range ballistic missile over Japan, leaving debris nearly to the coast of Alaska. This prompted renewed debate within the United States about the threat from ballistic missiles.

(U) **Missile Defense Act**

- President Clinton signed the Missile Defense Act in July 1999, which made it US policy to deploy NMD "as soon as it is technologically possible." However, in September 2000, Clinton decided not to authorize the Pentagon to proceed with NMD deployment citing three major concerns:
  - (U) The status of technology
  - (U) The refusal of Russia to agree to modify the ABM Treaty to permit deployment of an NMD system
  - (U) The reluctance of our closest allies to endorse NMD unless the ABM Treaty was to be modified, thus preserving strategic nuclear stability

(U) 2000's: Current Period

(U) In December 2001, he announced his intention to withdraw the United States from the ABM Treaty. Such a move was necessary if the United States was going to test more advanced systems that would otherwise violate the treaty. In December 2002, President Bush directed the Department of Defense to proceed with fielding an initial set of missile defense capabilities (reference Module 2 - Policy and Legal).

~~(S//REL TO USA, AUS, CAN, GBR)~~ The U.S. Ballistic Missile Defense System declared Limited Defensive Operations status without fanfare in the summer of 2006 via the (b)(1) Sec 1.4(a) USSC The system, while available for use, is still undergoing research, development, testing, and evaluation (RDT&E) while being available for recall

should the need arise. DP

Doc ID: 6642259

Summary

(U) In this article, we looked at missile defense efforts from World War II to the present and discussed the differences between nuclear intercepts and hit-to-kill devices. We have seen how throughout the history of missiles and missile defense, political decisions, funding, and technological capability have shaped our efforts.

Previous Section BMDS Policy and Legal Considerations

Next Section BMDS Missile Fundamentals and the Strategic Environment

Categories: Missile Defense Missile Warning

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