Stjórnmálafræðideild

BA-ritgerð

The United States Ballistic Missile Defense System and its Implications for European Security

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Febrúar 2009
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The United States plans to deploy an interceptor site in Poland and X-band radar in the Czech Republic as a part of its ballistic missile defenses. Ballistic missiles are one of the means of delivery of WMD and therefore pose a considerable threat to international security. The U.S. seems to focus too much on ballistic missiles and tends to forget about other means of delivery of WMD. The system however implies some serious security implications for Europe. Russia has expressed its concerns regarding the location of the system and threatened to attack Poland and the Czech Republic. The United States has tended to ignore Russian and European concerns regarding the system and increasingly hindered NATO involvement in the system. Russia has started to change its nuclear and missile policies in response to the U.S. plans. Europe might be faced with an arms race on the continent and NATO might have to respond to an attack on two of its members, which could surface its weaknesses. The ballistic missile defense system will have a negative impact on European security.
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Introduction

By the end of the Cold War, the Soviet Union and the United States had deployed 10,271 and 10,563 nuclear warheads respectively, aimed at each other’s missile sites and major cities. The Cold War affected European security; the continent was split into East and West, the Berlin Wall being one of the most symbolic attributes of the partition. Both powers knew that the other could completely destroy them if a nuclear war were to be waged, creating a situation of mutually assured destruction (MAD) that in practice deterred both sides from attempting missile attacks. The Anti-Ballistic Missile Treaty (ABM Treaty) was signed in Moscow in 1972 whereby both sides gave up the option of developing large-scale defense systems to intercept missiles in flight. The argument for the ABM Treaty was the fear “that a successful attempt to create a missile defense system by either party could instill in it a dangerous illusion of its invulnerability and, in certain situation, could tempt it to make an irrevocable decision to use nuclear weapons.” In 2001 the ABM Treaty came to an end with the unilateral withdrawal of the United States from the Treaty.

In the year 2009, twenty years after the fall of the Berlin Wall and the end of the Cold War, and five years after all European members of the former Warsaw Pact have joined NATO, the United States is planning to set up a Ballistic Missile Defense System (BMD system) in Poland and the Czech Republic as a part of its National Missile Defense (NMD). The purpose of the NMD, including the European assets, is to protect the United States and certain allies against missile attacks from “rogue” states like Iran. An official agreement was signed between the Czech Republic and the United States on July 8, 2008 regarding the deployment of X-band radar in the Czech Republic. The United States and Poland signed an agreement in Warsaw on

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4 Alyson Bailes and Ian Anthony, 2003, 3.
August 20, 2008 on the deployment of 10 interceptors in Poland.\textsuperscript{6} The signing of the two agreements and the plans to deploy these elements of the BMD system so close to the Russian border have been met with hostility from the Russian Administration.\textsuperscript{7}

Will the deployment of a Ballistic Missile Defense System increase European security? How can the BMD system affect political stability in Europe? What is the role of NATO in the deployment of the BMD system? It will be argued that the ballistic missile defense system will have negative impact on European security because of worsening relations with Russia and the possibility of an arms race.

The first chapter will explain the possible threats stemming from ballistic missiles as means of delivery of WMD, as well as the missile and WMD programs of states of concern. The second chapter lays out the technological aspects of the ballistic missile defense system and the technological criticisms it has received. The third chapter deals with the impact the system has on strategic stability with the emphasis on Europe and Russian concerns. The fourth chapter discusses the involvement of NATO and its missile defense plans; it reviews the different views within the different NATO countries as well as the views and concerns of the European Union (EU). The fifth chapter discusses U.S. nuclear policy and its contradictory elements. The last chapter is the conclusion where the main results are presented and summed up.

1 Possible Threats

In this chapter the threats stemming from ballistic missiles will be explored with a focus on European security.

Ballistic Missiles and Missile Proliferation

A \textit{ballistic missile} is a weapon that is launched from a fixed or mobile platform and follows a predictable arc towards its intended target. Ballistic missiles can travel anywhere from short distances (as little as 100 kilometers), to very long distances (10,000 kilometers or more). Depending on the missile design and sophistication, ballistic missiles can


be armed with conventional explosives or weapons of mass destruction (nuclear, chemical, or biological payloads). Original emphasis.

Ballistic trajectory consists of one to three stages depending on the range of the ballistic missile. These three stages are: (1) “boost phase” where the rocket missile ignites, thrusting the BM into space. (2) “Midcourse phase” which takes place outside the atmosphere, and where the reentry vehicle (RV) and possible counter measures are deployed. (3) “Terminal phase” is when the missile returns into the atmosphere and approaches its target at very high speed (varying from 1-8 km/sec).

Table 1 shows key characteristics of ballistic missiles but their range mainly defines them. Longer range requires more stages and the burnout velocity is positively correlated with the length of the flight time.

Table 1. Characteristics of Ballistic Missiles

<table>
<thead>
<tr>
<th>Range</th>
<th>Stages</th>
<th>Flight time</th>
<th>Burn-out velocity [km/sec]</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 km Short-Range Ballistic Missiles (SRBM)</td>
<td>1</td>
<td>5 min</td>
<td>1.5</td>
</tr>
<tr>
<td>1,000 km Medium-Range Ballistic Missiles (MRBM)</td>
<td>1</td>
<td>9 min</td>
<td>2.8</td>
</tr>
<tr>
<td>3,000 km Intermediate Range Ballistic Missiles (IRBM)</td>
<td>2</td>
<td>16 min</td>
<td>5.0</td>
</tr>
<tr>
<td>10,000 km Intercontinental Ballistic Missiles (ICBM)</td>
<td>3</td>
<td>33 min</td>
<td>6.9</td>
</tr>
</tbody>
</table>

The accuracy of ballistic missiles becomes less relevant when armed with nuclear warheads, as the radius of destruction of nuclear warheads is much greater than the one of conventional warheads.

Development and acquisition of missiles is expensive and technologically challenging. However, the dual-use nature of aero and space industries as well as military technology exports make it possible for countries to get their hands on ballistic missile technologies. For example, it is possible to convert launch vehicles

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10 ISIS Europe et al., 2007, 2.
11 Ibid.
12 Ibid.
initially produced to lift civilian payloads into space, to being able to launch ballistic missiles. Producing a nuclear, biological or chemical ballistic missile warhead is a delicate technology. The art of making a nuclear warhead small enough to fit on top of a ballistic missile is a technology only available to very few states.\textsuperscript{13} Nuclear weapons are, in their simplest form, considerably large and heavy, it is therefore a very challenging task to make them small and light enough to fit on a ballistic missile to be carried over long distances. Building chemical and biological ballistic missile warheads is also challenging but less so than building a nuclear warhead fit for a ballistic missile.\textsuperscript{14}

Ballistic missiles are certainly not the only means to deliver WMD: cruise missiles and unmanned air vehicles could become a more feasible and flexible solution than ballistic missiles in the future. For non-state actors, such as terrorist groups, and some states, asymmetrical means of delivery, such as cargo vessels or trucks, are probable and cheaper means of delivery of WMD. Asymmetric means of delivery are harder to trace back to where they originated than the source of the launch of a ballistic missile, which can be traced with satellite technology.\textsuperscript{15} Some states have the technological basis to develop launch platforms suitable for forward-based ships capable of launching Short-Range Ballistic Missile (SRBM) and Medium-Range Ballistic Missile (MRBM), or even land-attack cruise missiles (LACMs). Long distance strikes with Intercontinental Ballistic Missiles (ICBMs) against the United States or its allies are difficult to master and therefore these other methods are more likely to be used as means of delivery of WMD.\textsuperscript{16}

The Missile Technology Control Regime (MTCR) was established in 1987 as an informal association of countries wishing to cooperate in export controls for missile technologies with the aim of reducing proliferation of missiles capable of delivering WMDs. The MTCR partners numbered thirty-four countries as of end-

\textsuperscript{13} Ibid, 2-5.
\textsuperscript{15} ISIS Europe et al., 2007, 4.
In addition to the MTCR, other export control regimes exist in order to limit the distribution of biological, chemical and nuclear weapons. Export controls have reduced the spread of proliferation technologies, greatly limiting the number of countries capable of developing ballistic missiles and nuclear weapons. Export controls have nonetheless been unable to completely prevent countries from acquiring nuclear weapons and missile technologies. Governments might be unable or unwilling to enforce export controls. Iran is, for example, believed to have gained advanced missile technologies from Russian firms despite Russia being a member of the MTCR and having given assurances that it would prevent such transfers.

Since the end of the Cold War the security environment has changed, becoming less predictable and more complex. Relations between the largest powers are less openly hostile and now have elements of cooperation including in security related matters. Among medium to small powers, fierce regional estrangements remain and serious civil wars have been fought in multiethnic states. “Rogue” states with highly militarized policies against any state (whether small or great) that dares to challenge them pose a threat to global security. In addition to the more complex security environment between states comes the growing power of non-state actors, which now have easier access to weapons and might even be able to get their hands on WMD. The security environment has thus shifted from bipolar, symmetric and geographically focused threats to asymmetric, global, transnational and multiplex threats.

Twenty-five states, not counting the five established nuclear weapons states, have or are attempting to acquire ballistic missiles (it is worth noting that many of them are allies of the United States). Of those twenty-five states, Israel, India, Pakistan, Iran and North Korea have already procured and tested BMs ranging over

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17 Missile Technology Control Regime, “Introduction,” The MTCR Website, http://www.mtcr.info/english/index.html (accessed December 21, 2008). MTCR Partners: Argentina, Australia, Austria, Belgium, Bulgaria, Brazil, Canada, Czech Republic, Denmark, Finland, France Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America.
19 Ibid.
21 Herfried Münkler, Die neuen Kriege (Reinbek: Rowohlt Verlag, 2002).
1,000 km. Saudi Arabia has, instead of developing its own missiles, bought and deployed approximately 20-25 old Chinese missiles with the range of 2,600 km.\textsuperscript{23} The United States has expressed deep concerns regarding the ballistic missile programs in North Korea and Iran.\textsuperscript{24} North Korea has not only developed, tested and deployed SRBMs and MRBMs but is also developing an Intercontinental Ballistic Missile (ICBM). North Korea has also sold missiles and missile technology to other states such as Pakistan and Iran.\textsuperscript{25}

**North Korea**

North Korea conducted an underground nuclear test explosion in October 2006: however, Michael Hayden, the Director of the U.S. Central Intelligence Agency (CIA), declared the test a failure in March 2007. That was due to a low explosion yield, which raised doubts about North Korea’s technological ability to build an operational nuclear weapon.\textsuperscript{26}

North Korea reported to the United States in December 2007 that it had separated 30 kg of plutonium and used 6 kg of it for its nuclear test in October 2006.\textsuperscript{27} U.S. experts have estimated that as of February 2007, North Korea has between 46-64 kg of plutonium, of which 28–50 kg is separated form and applicable in nuclear weapons.\textsuperscript{28}

North Korea has deployed approximately 500-600 road-mobile SRBMs and 50-200 road-mobile MRBMs and is also developing longer-range missiles. It is considered unlikely that North Korea has been able to build a nuclear warhead small and light enough to fit onto a ballistic missile.\textsuperscript{29}

**The Middle East and Iran**

Israel’s nuclear weapon arsenal is considered to consist of approximately 100 plutonium warheads, but the size of the complete stockpile is unknown. Israel

\textsuperscript{23} ISIS Europe et al., 2007, 3.
\textsuperscript{24} U.S. Department of State and U.S. Department of Defense, 2007, 1.
\textsuperscript{25} ISIS Europe et al., 2007, 3.
\textsuperscript{27} Ibid.
\textsuperscript{29} Shannon N. Kile, Vitaly Fedchenko and Hans M. Kristensen, 2008, 398.
possibly has around 80 intact warheads, 50 of them being re-entry vehicles for ballistic missiles.\(^{30}\)

Israel has deployed 50 Jericho II missiles with the range of 1,500-1,800 km, it is believed that Jericho III was test launched on January 17, 2008, which is an IRBM with the possible range of 4,800-6,500 km and scheduled to be in-service in 2008.\(^{31}\)

It is widely accepted that Iran has acquired ballistic missiles from other states as well as developing its own ballistic missiles by itself or in cooperation with others. The lack of transparency in Iran’s missile programs and the fact that the details about the missile program in Iran are classified in the United States has caused disagreements on the precise ballistic missile systems and programs Iran has or is developing. There are also conflicting views regarding the timeframe for Iran to be able to test launch an ICBM: some argue it is likely to happen before 2010 while others say 2015. These assumptions are made with the condition that Iran has access to foreign technology, e.g. from North Korea or Russia.\(^{32}\) The Iranian government claims that it has terminated its ICBM program and has limited ballistic missile capabilities.\(^{33}\)

Iran is considered to have deployed a series of SRBMs and to be developing various SRBMs. There are various speculations regarding Iran’s ballistic missiles: some believe that Iran has purchased 200 Chinese CSS-8 ballistic missiles in the late 1980s that have the range of 150 km. In the 1990s Iran may have developed the Fateh A-110 with the range of around 200 km and deployed it in 2004. Iran could have purchased Chinese M-11 missiles with the range of about 280 km; however the Chinese authorities have denied this. Iran might also have in its possession numerous SRBMs, often referred to as Shahab-1, with the ranges of 200-300 km imported from Libya or North Korea. The Shahab-2 has the range of around 500-700 km and it is believed that Iran might have a few hundred of those. Some reports state that Iran might have an operational SRBM with a range up to 800 km.\(^{34}\)

Iran claims to have tested a two stage liquid propellant-fueled MRBM with the range of 2,000 km on November 12, 2008. A missile with that range launched from

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\(^{30}\) Ibid, 397.

\(^{31}\) Ibid.


\(^{33}\) ISIS Europe et al., 2007, 10.

\(^{34}\) Steven A. Hildreth, 2008, 5-6.
Iran could reach as far as Warsaw, Poland. Doubts have been raised regarding Iran’s missile capabilities since MRBMs, IRBMs and ICBMs are usually only operable with composite solid fuel, which is extremely difficult to manufacture.

Two non-state actors, Hamas and Hezbollah, have acquired short-range missiles for use against Israel. The missiles they use are very fast and almost impossible to intercept posing a new and serious challenge for Israel.

**India and Pakistan**

There are various estimates regarding the size of the Indian nuclear weapons arsenal. Here the estimate published in the SIPRI Yearbook 2008 will be used, which states that India has about 60-70 nuclear weapons.

In 1999 a draft document on the Indian nuclear doctrine was published; the doctrine is based on “credible minimum deterrence” and a “no-first-use” policy. “Minimum credible deterrence” is according to the Indian Ministry of Defense “a mix of land-based, maritime and air capabilities.” In January 2003 additional guidelines were published where the doctrine of no-first-use was emphasized; but if attacked with biological or chemical weapons, the option of retaliating with nuclear weapons will be kept open.

It is believed that India has deployed 36 AGNI I two-stage ballistic missiles with the range of 700+ km and 36 AGNI II with the range of 2,000+ km. The AGNI III missile with the range of 3,000+ km is being developed. India also has SRBM

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missiles with the range of 100 km. Furthermore, new sea-launched ballistic missiles are under development.\textsuperscript{42}

Pakistan is (conservatively) estimated to have approximately 60 nuclear weapons. Pakistan has claimed that it has produced more nuclear warheads than required to maintain the current “minimum deterrence requirement”; this requirement is however subject to review depending on the situation. With the improvement of the Indian nuclear forces, Pakistan has declared that it would take measures to enhance the credibility of its deterrent.\textsuperscript{43}

Pakistan currently has three types of ballistic missiles suitable for nuclear warheads: The SRBMs HAFT-3 with the range of 400 km, the HAFT-4 of 450 km, and a reverse-engineered M-9. The MRBM Ghauri with the range of 1,300 km was purchased from North Korea and under development is the MRBM Shaheen II, which has a range of over 2,000 km.\textsuperscript{44}

**Unauthorized, Accidental or Erroneous Attacks**

The five legally recognized nuclear weapon states\textsuperscript{45} plus the three “illegal” nuclear weapon states\textsuperscript{46} possess about 10,200 nuclear weapons. A considerable proportion of these nuclear weapons are on high alert and ready to be launched within minutes. Thousands of warheads could therefore be launched accidentally, without permission or because of an erroneous warning of an incoming attack.\textsuperscript{47}

Russia and the United States both have considerable proportions of their ballistic missiles on high-alert under a so-called “launch on warning” policy. That simply means that they are prepared to launch a retaliatory attack before incoming ballistic missiles reach their targets. Launching the missiles upon a warning of an attack also ensures that they are not destroyed on the ground. Having ballistic missiles on high-alert increases the chances of accidental, unauthorized and erroneous attacks.\textsuperscript{48}

\textsuperscript{42} ISIS Europe et al., 2007, 8.
\textsuperscript{43} Shannon N. Kile, Vitaly Fedchenko and Hans M. Kristensen, 2008, 392.
\textsuperscript{44} ISIS Europe et al., 2007, 8.
\textsuperscript{45} United States, Russia, United Kingdom, France and China are legally recognized under Treaty on the Non-Proliferation of Nuclear Weapons (NPT).
\textsuperscript{46} India, Pakistan and Israel.
\textsuperscript{47} Shannon N. Kile, Vitaly Fedchenko and Hans M. Kristensen, 2008, 366.
After the fall of the Soviet Union, concerns arose regarding the state of Russia’s command and control infrastructure due to economic setbacks and the fall of morale within the army.49 These concerns have been focused on the possibility of equipment failure or operational errors causing the launch of a ballistic missile or missiles. There is also the danger of an individual launching missiles with or without authorization because of an erroneous warning of an incoming missile attack. The architecture of Russia’s command and control system is such that an unauthorized launch could result in the launch of 60-200 warheads and retaliatory launch in response to false information might be even larger, resulting in the launch of up to thousands of warheads.50

China, unlike the United States and Russia, does not rely on “launch on warning” and has its warheads and fuel separated from the missiles themselves. The Chinese ballistic missiles are liquid fuelled and take time to prepare. China poses therefore no threats of accidental, unauthorized or erroneous attacks. China is currently modernizing its ballistic missile forces to solid fuel propulsion and is growing increasingly concerned about the U.S. missile defense plans, notably in case they may be extended to Japan and/or Taiwan. Therefore China might feel propelled to adopt a “launch on warning” policy.51

The United States and Russia have been reducing the number of missiles on high alert but are not willing to withdraw completely from the “launch on warning” policy.52 They are also reducing their operational nuclear forces in compliance with the 1991 Treaty on the Reduction and Limitation of Strategic and Offensive Arms (START I Treaty) and the 2002 Strategic Offensive Reductions Treaty (SORT).53

States with vulnerable missile capabilities are likely to adapt the “launch on warning” policy because of the fear of “losing them before using them”. This doctrine might become more appealing to emerging missile states.54

49 ISIS Europe et al., 2007, 5.
50 David C. Wright, 255-257.
51 Ibid, 257-258; ISIS Europe et al., 2007, 5-6.
52 ISIS Europe et al., 2007, 6.
54 ISIS Europe et al., 2007, 6.
**Non-State Actors**

The probabilities of non-state actors using ballistic missiles as means of delivery of WMD are very low. They would have to be in cooperation with state authorities in order for them to be able to control or build a nuclear arsenal and ballistic missiles and launch platforms. A civil war or internal turbulence could create the opportunity for non-state actors to take over ballistic missile arsenals.55

Non-state actors with ambitions to obtain or develop nuclear weapons have problems gaining access to fissile material useable in weapons. Terrorist groups could however steal nuclear weapons or nuclear weapon material from storage or during transportation. The International Atomic Energy Agency (IAEA) maintains an Illicit Trafficking Database, from 1995 until December 2004 662 incidents of theft have been reported, 18 of these incidents involving highly enriched plutonium or uranium. Non-state actors could, instead of attempting to acquire nuclear material or explosives, attack nuclear facilities. There are reports that Osama Bin Laden and al Qaeda sought advice from a Pakistani nuclear scientist on building a “dirty bomb.”56

The so-called dirty bomb is a bomb or a device created to disperse radioactive materials. Radioactive materials can be found in hospitals and other industries as well as in nuclear waste. Dirty bombs are not considered as WMD since they do not cause mass fatalities but are easily capable of causing disruption and terror if detonated in a major city.57

According to the National Intelligence Estimate of 2001, non-state actors (and states for that matter) are more likely to use non-missile means to deliver WMD to the United States and its allies. Such means include cargo vessels such as trucks, airplanes and ships as mentioned above.58

Non-state actors have shown interest in manned and unmanned low-technology aircraft. A terrorism expert has recorded 43 cases where delivery systems using remote controls were “either threatened, developed, or actually utilized.”59 One

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55 Ibid, 4.
example is al Qaeda’s plans to kill G-8 leaders at the 2001 summit in Italy using an unmanned airplane loaded with plastic explosives. There exists a variety of recreational, home-assembled aircrafts that can be modified to fly automatically or with a remote control. Non-state actors can therefore easily modify them and load them with explosives, biological or chemical agents making it unnecessary for them to rely on military unmanned aerial vehicles (UAV). In fact, using UAVs (military or “home-assembled”) or cruise missiles is ten times more lethal than using ballistic missiles as means of delivery. Using low-flying unmanned or manned aircraft in an attack against the United States will most likely succeed, as U.S. capacity to defend against such attacks is more or less non-existent. The radar system of the Federal Aviation Administration (FAA) operates in the altitudes above 3,000 feet. A smart adversary could therefore easily fly a small aircraft below the FAA’s radar system and collide with its target successfully. If the intended target was Washington the unarmed Immigration and Customs Enforcement helicopters, which operate within a 15-mile radius around the capital, might detect the aircraft. If able to detect and notify military authorities swiftly, the only defense would be a modest anti-aircraft defense aimed to defend a few high-profile sites in the city. Other cities in the U.S., Europe or Asia are even less capable of defending against low-flight threats.60

There is an increasing concern that persons or small groups with modest engineering skills are able to build, at a low cost, a simple autonomous, self-guided, air-breathing cruise missiles with considerable payload capabilities. Low-cost cruise missiles (LCCM) can be built with items easily available and it is therefore hard to detect such activities.61 Bruce Simpson, an engineer from New Zealand, launched a website to prove his point called “Do-It-Yourself Cruise Missile” where he aimed to build a missile for under $5,000. He managed to build the missile but before being able to test it, the government of New Zealand, under pressure from the U.S. government, forced him to end his project.62

It is worth noting that the means of delivery discussed in this chapter are not exclusive to non-state actors and may as well become the preferred choice for states.

60 Ibid, 5-10.
2 Characteristics of the Ballistic Missile Defense System

The National Missile Defense Act of 1999 was signed into law on July 22, 1999. It 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.\(^63\)

Following the National Missile Defense Act came the National Security Presidential Directive (NSPD-23) of 2002, which laid out the plans for the ballistic missile defense system. The NSPD stated that the United States would start the deployment of missile defenses in 2004. These deployments would be the starting point allowing for expansion and improvement of the system as missile defense technology improves.\(^64\) Table 2 shows a summary of U.S. missile defense program as of December 2007 and demonstrates how extensive U.S. missile defense programs are.

### Table 2. Summary of Principal U.S. Missile Defense Programs, December 2007\(^65\)

<table>
<thead>
<tr>
<th>Program</th>
<th>System</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interceptors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminal phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patriot Advanced</td>
<td>Land-based, air-transportable launcher, single-stage Extended Range</td>
<td>Most technologically mature BMD system, in US Army service since</td>
</tr>
<tr>
<td>Capability-3 (PAC-3)</td>
<td>Interceptor (ERINT) missile armed with explosive warhead, phased array</td>
<td>2003; a total of 712 missiles to be in U.S. inventory at end of 2008.</td>
</tr>
<tr>
<td></td>
<td>radar and engagement control station (ECS).</td>
<td></td>
</tr>
<tr>
<td>Terminal High</td>
<td>Truck-mounted launchers equipped with hit-to-kill interceptor missiles,</td>
<td>Resumed flight tests in 2005, after major design changes; successful</td>
</tr>
<tr>
<td>Altitude Area Defense</td>
<td>mobile X-band radar, and battle management command and control (BMC)</td>
<td>interception tests in Jan. and Oct. 2007; first unit to be deployed in</td>
</tr>
<tr>
<td>(THAAD)</td>
<td>system.</td>
<td>2009.</td>
</tr>
<tr>
<td><strong>Mid-course phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground-based Midcourse</td>
<td>Long-range, multi-stage Ground-Based Interceptor (GBI) missile carrying</td>
<td>GBI and GMD radar network used in successful interception test in Sep.</td>
</tr>
<tr>
<td>Defense (GMD)</td>
<td>an EKV for intercepting ICBMs; land- and sea-based tracking radars;</td>
<td>2007; 40 GBI missiles to be based at Fort Greely, Alaska, 4 at</td>
</tr>
<tr>
<td></td>
<td>and a GMD Fire Control and Communications (GFC/C) system.</td>
<td>Vandenberg AFB, California, and 10 in Poland by 2011.</td>
</tr>
</tbody>
</table>

### Aegis Ballistic Missile Defense

Aegis ships equipped with AN/SPY-1 radar reconfigured for a long-range surveillance and track (LRS&T) capability and Block 1A SM-3 hit-to-kill interceptors for engaging short- and medium-range ballistic missiles.

3 Aegis BMD cruisers and 13 destroyers to be in U.S. Navy service at end of 2008 with c. 40 SM-3s; the Block 2 SM-3 to be fielded in 2013 will have capability to intercept ICBMs.

Control system of payload carrier vehicle tested in 2006; testing of EKVs to begin in 2009; initial operational capability in 2014.

### Multiple Kill Vehicle (MKV)

Long-range interceptor carrying 8-20 miniaturized EKVs which can independently track and target multiple warheads and mid-course countermeasures, such as decoy re-entry vehicles.

### Boost phase

#### Airborne Laser (ABL)

Modified Boeing 747 aircraft carrying a modular, megawatt-class chemical oxygen iodine laser (COIL), beam control optics, infrared sensors, and target acquisition lasers.


#### Kinetic Energy Interceptors (KEI)

A fast-burn, high-velocity interceptor missile to be deployed on mobile land launchers or on sea-based platforms near an enemy launch site; may replace ABL as main boost-phase defense system.

Land-based booster flight to be tested in 2008; sea-based platform to be selected in 2008; initial operational capability to be determined.

### Sensors

#### Sea-Based X-band (SBX) radar

High resolution radar based on maneuverable offshore platform for acquisition, tracking and discrimination of target missiles.

Completed sea trials in 2007; used in successful test of GMD elements in Sep. 2007; to be based at Adak Island, Alaska.


#### AN/TPY-2 radar

Transportable high-resolution radar for detecting, tracking and discriminating missile threats; designed as part of the THAAD system.

Two satellites to be launched in 2008.

#### Space-Tracking and Surveillance System (STSS)

Constellation of low-earth orbit satellites designed to detect and track missiles in all phases of flight; size of constellation to be determined.


#### Space-Based Infrared System-High (SBRIS-High)

USAF procurement plan is for 3 satellites in geosynchronous orbit, and 2 satellites with infrared sensors in highly elliptical orbit, to provide early warning of ballistic missile launches.

Upgraded Early Warning Radar (UEWR)

Modified early-warning radar (EWR) for detection and tracking of post-boost and mid-course re-entry vehicles; data transmitted to 2 GMD Fire Control Centers, in Alaska and Colorado.


The U.S. Ballistic Missile Defense System (BMD System) planned in Europe involves the deployment of ten silo-based long-range interceptors in Poland and a narrow beam, midcourse tracking radar in the Czech Republic. The radar is to be deployed in 2011 and the interceptors between 2011 and 2013. The upgraded early warning radar (EWR) at Fylingdales, United Kingdom and the EWR at Thule, Greenland (which is currently being upgraded) will also be an important part of the

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European missile defense sites. The Fylingdales and Thule radar sites have been much less controversial than the planned BMD sites in Poland and the Czech Republic, at least in regard to East-West relations.  

The ten ground-based interceptors will be based underground in a field about the size of a football field. The interceptors will not employ explosives but small hit-to-kill vehicles, weighing around 75 kg. The collision with the target would take place well over the atmosphere or more than 200 km above the surface, with a speed of over 7 km per second. The interceptors in Poland will resemble the three-stage interceptors in California and Alaska; however the ones in Poland are two-stage interceptors. The interceptors are based on two components, a booster vehicle and an exoatmospheric kill vehicle (EKV). The booster steers the interceptor to the projected interceptor point where it releases the EKV that, with the use of on-board sensors and with the aid of ground-based assets, acquires the ballistic missile as a target. The EKV then performs a final discrimination and navigates itself to collision with the hostile warhead and destroys it with clear kinetic force of impact.

The European midcourse radar (EMR) to be deployed in the Czech Republic is currently situated in Kwajalein Atoll in the Marshall Islands and has once it has been moved on site in the Czech Republic, it will be focused on Iranian missile threats. The EMR will not scan 360 degrees continuously but will use information from satellites and other sensors, such as mobile forward-based X-band radars situated closer to Iran, that will send the EMR information on where to point its narrow beam at ballistic missiles after they have been launched. The EMR will gather information in order to distinguish between decoys and the actual warhead and thus to guide the interceptor missiles. One of the additional sensors is a transportable forward-deployed radar (FBX). The FBX is high-resolution X-band radar and would, along with the layered sensors, provide a continuous tracking capability and increased ability to distinguish between decoys and incoming missiles, increasing the probability of intercepting incoming ballistic missiles. The phased-array radar at Fylingdales United Kingdom will search large areas for targets to direct the EMR

68 Ibid, 3-4
69 Ibid.
where to look for objects to distinguish as either warheads or decoys.\textsuperscript{71} Once the early warning radar in Thule, Greenland has been upgraded in autumn 2009, the radar site will be integrated into the U.S. BMD.\textsuperscript{72}

Decoys are lightweight devices used to confuse a defense system and are warhead replica balloons made of aluminized mylar or aerosol clouds. It is possible to make the decoys a part of the ballistic missile’s payload and after the burnout of the ballistic missile in space; the decoys are set free along with the real warhead. Since the decoys are released in space it becomes very difficult to distinguish them from the actual warhead.\textsuperscript{73}

**Technological Criticism**

The most fundamental problem with missile defense is its inability to discriminate between fairly simple countermeasures and the actual warheads. That is because at the altitudes that the missile defense system has to deal with, very light objects travel at the same speed as heavy objects. “Any object large enough to contain a nuclear warhead must be regarded as potentially containing such a devastating weapon – even if the object is actually a lightweight balloon serving as a decoy.”\textsuperscript{74} The system will only be able to distinguish the warhead from the decoy(s) if it knows exactly what it is looking for and the adversary has not changed the appearance of the expected appearance of the warhead. It is quite simple, for instance, for the adversary to put the warhead into a balloon and give the surrounding decoys different shapes and sizes. These measures would create more potential targets than the interceptors could handle.\textsuperscript{75}

A National Intelligence Estimate published in 1999 under the name: “Foreign Missile Developments and the Ballistic Missile Threat to the United States Through 2015,” concluded that “many countries, such as North Korea, Iran and Iraq would rely initially on readily available technology… to develop penetration aids and countermeasures.” Furthermore it stated: “These countries could develop countermeasures based on these technologies by the time they flight test their


\textsuperscript{72} Shannon N. Kile, 2008, 407.

\textsuperscript{73} ISIS Europe et al., 2007, 17.

\textsuperscript{74} George N. Lewis and Theodore A. Postol, 2008, 38.

\textsuperscript{75} Ibid.
missiles.”

If emerging missile states have developed countermeasures alongside their ballistic missile programs, the missile defense system will be outdated once the emerging threat has become real.

The Ground-based Midcourse Missile Defense (GMD) system, as planned for Europe, has only gone through relatively few tests and the targets have been programmed to be cooperative, making the tests very artificial and unlike real attack situations. The Missile Defense Agency (MDA) has stated that the system can only defend against a so-called “unsophisticated threat.” Philip E. Coyle III, a Senior Advisor at the World Security Institute, identifies “unsophisticated threat” as an attack of one or two missiles from North Korea or Iran with no countermeasures or decoys. He further states that none of the GMD flight intercept tests that have been made in the past five years included decoys or countermeasures and only two of those have been successful. The MDA still needs to make about 20 different flight-intercept tests before being able to conduct a real operational testing.

Positioning the BMD system in Poland and the Czech Republic creates a protection from ballistic missile threats from the Middle East for most of Europe and the United States. It has however been observed that parts of south-eastern Europe, Bulgaria, Romania, Turkey and Greece, will be unprotected by the system. Placing the interceptors in Turkey, Albania, Bulgaria or Romania as well as installing the radar closer to Iran would cover the whole of Europe, pose less threat to the Russian ICBMs and prove as a better protection against Iranian threats. According to the MDA the system will be unable to intercept ballistic missiles launched from the western part of Russia towards the United States, as there would not be enough time

77 ISIS Europe et al., 2007, 17.
to detect and intercept them. Independent analysts have however noted that the interceptors in Poland will be able to intercept ballistic missiles launched from the western part of Russia because the interceptors only carry a kill vehicle and are therefore able to reach a 40 percent faster speed than the Russian ICBMs.

3 Strategic Stability

As the NMD is to act as deterrence and protection for the United States and its allies against missile attacks from “rogue” states, it is important to look into the effects it might have on strategic stability and deterrence.

If the NMD is effective the United States gains more freedom of action and during a crisis situation it would make a rogue state more likely to back down. Rogue states can be defined as states that are willing to pursue their interests harder in a crisis and less likely to back down than other states. This has caused many to believe that rogue states are extreme risk takers and that leaders of rogue states might be ready to risk retaliation. Robert Powell uses the model of brinkmanship bargaining in crisis to describe the effects of the NMD on stability and the probability of nuclear attack. He describes brinkmanship as “a contest of resolve in which states bid up the risk of events spiraling out of control until one of the states finds this risk intolerably high and backs down.” Under the circumstances where the balance of resolve favors the rogue state and the NMD is ineffective, the United States is unlikely to pursue its interests very hard thus minimizing the probability of the situation spiraling out of control (that is minimizing the likelihood of a nuclear attack). Increased effectiveness of the NMD increases the resolve of the United States, causing the balance of resolve to blur and thus increasing the risk of an attack. The risk of an attack rises until the NMD has become very effective, then starts falling once the balance of resolve becomes clearer. The NMD has to be practically flawless for the probability of an attack to fall below what it would be without the NMD.

Advocates of the NMD argue that it is aimed to defend against missile attacks from rogue states; however the NMD must be extremely effective before the balance

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85 Ibid, 91.
86 Ibid, 110.
of resolve becomes clear, suggesting that the NMD actually increases the risk of a nuclear attack in a conflict with a rogue state.\textsuperscript{87}

The criticism that the missile defense system has received indicates that the system is far from adequate to decrease the probability of a nuclear attack according to the brinkmanship model. On the contrary, the deployment of the system in its current form is likely to increase the danger of a nuclear attack and with that pose a greater danger to the United States and its allies.

**Global Impact**

Japan is very interested in ballistic missile defenses because of the missile threats stemming from North Korea. Japan has started a missile defense program and purchases missile defense technologies from the United States. Japan and the U.S. also have a cooperation agreement on sharing missile defense technologies. Without discussing the technological details of the Japanese missile defenses, it is worth to note that they are quite extensive and rely on the U.S. PAC-3 system.\textsuperscript{88}

China has an extensive ballistic missile build up with ballistic missiles able to reach Taiwan. In response, Taiwan has purchased and deployed the U.S. Patriot (PAC-2) anti-missile system. The PAC-2 system has proven effective in intercepting ballistic missiles but is unable to defend against low-flying cruise and ballistic missiles unless equipped with advanced information on the launch location of the incoming missiles. China has thus started developing and testing various land-attack cruise missiles (LACM). This in turn has motivated Taiwan to start its own LACM program. An arms race has emerged between Taiwan and China, whereby both parties are responding to the defense measures taken by the adversary. The missiles being developed and deployed in this arms race are not equipped with WMD warheads but the situation is very serious since the threshold to launch an attack is even lower than if the missiles were equipped with WMD warheads.\textsuperscript{89}

The United States has offered missile defense cooperation to India and the process is in its very early stages. If such cooperation is realized Pakistan might take measures to upgrade its missile arsenal and its alternative aerial means of delivery, such as cruise missiles and UAVs. This could in turn create an even more serious

\textsuperscript{87} Ibid.
\textsuperscript{88} Shannon N. Kile, 2007, 411-412.
\textsuperscript{89} Dennis M. Gormley, 2005, 16.
arms race between India and Pakistan. Pakistan might choose to put its missiles on high alert and thus move away from having the nuclear warheads separated from the ballistic missiles, increasing the danger of an accidental, unauthorized or erroneous attack. China would also have to respond to the deployment of missile defenses in India, and could in response continue to modernize its nuclear forces and move to a high alert missile policy.\footnote{Todd Fine, “Missile Defense: A Wrong Turn for U.S.-India Cooperation?” \textit{Center for Defense Information}, March 5, 2008, http://www.cdi.org/program/document.cfm?DocumentID=4227 (accessed January 13, 2009).}

There is the danger of regional arms races all over the world with the introduction of ballistic missile defenses. The case of China and Taiwan is the clearest example of such an arms race. Alternative means of delivery might also become increasingly popular to increase rival states’ capacity to penetrate missile defenses. Ballistic missile defenses can therefore cause more harm than good to international security and act as a destabilizing factor.

**Russian Concerns**

Any step towards the deployment of the ballistic missile defense system in Europe is met with hostility from Russia, as it sees the system as a threat to its national security. A statement from the Russian Ministry of Foreign Affairs, following the signing of the U.S.-Czech agreement, stated that the deployment of the GMD system so close to Russia’s boarders would require Russia to “…respond using not diplomatic but military-technological methods.”\footnote{Ministry of Foreign Affairs of the Russian Federation (a), “Statement of the Russian Ministry of Foreign Affairs Concerning the Signing of the US-Czech Agreement on Deployment of Elements of the US Global Missile Defense System on the Territory of the Czech Republic,” (Information and Press Department, July 8, 2008), http://www.russianembassy.org/ (accessed July 15, 2008).} President Dmitry Medvedev stated in a press conference on August 15, 2008 that deploying elements of the ballistic missile defense system in Poland showed hostility towards Russia and demonstrated the anti-Russian aspect of the system. Five days later the United States and Poland signed an agreement on the deployment of 10 interceptors in Poland, as well as a Patriot (PAC-3) air defense system.\footnote{Ministry of Foreign Affairs of the Russian Federation (b), 2008.}

Russian concerns that followed the signing of the agreement with Poland were manifold. First, concerns regarding the radar installation in the Czech Republic that according to Russia, will be able to scan the entire European part of Russia.
Furthermore the interceptors in Poland will only target Russian ICBMs in the foreseeable future since the Iranian and other relevant threats are so far non-operative. Second, the Patriot air defenses are similarly unnecessary in the absence of Iranian missiles that could hit Poland and can therefore be seen as aimed at Russia. Third, the “transparency and trust-building measures” promised to Russia during earlier U.S.-Russian exchanges over missile defense developments have been ignored. Fourth, the GMD sites in Europe, having anti-Russian potential, increase the risk of an arms race and foster mistrust. Russia furthermore stated its belief that the timing of the signing of the agreement was no accident; it was a response to Russia’s actions in South Ossetia. On top of these concerns, Russia perceives the closeness of the GMD to its territory as a means to weaken its own deterrent.

It is not only the geographic location of the GMD that is of Russia’s concern but also the geopolitical location of the system. The hosting countries, Poland and the Czech Republic, are both former members of the Warsaw Treaty Organization (WTO), which was the Eastern bloc’s equivalent to NATO. Russia’s influence within the former WTO member states as well as the other successor states of the Soviet Union is now sharply diminished. This is because of NATO and EU enlargements to the east, which have caused Russia to lose the strategic leverage and extensive buffer zone it had through having Central European states as allies. In fact, President Medvedev referred ironically to the installations of military bases in Russia’s neighboring states and the NATO enlargements as “presents for Russia” in his first Address to the Federal Assembly.

In 1996 and 1997 NATO pledged not to deploy nuclear weapons, numerous combat forces or a substantial build up infrastructure in new member states (most of them being former allies or parts of the Soviet Union). These promises were further

95 ISIS Europe et al., 2007, 24.
97 NATO, “Final Communiqué” (Meeting of the North Atlantic Council in defence ministers session, Brussels, December 18, 1996), http://www.nato.int/docu/pr/1996/p96-172e.htm (accessed January 10, 2009); NATO, “Statement by the North Atlantic Council” (Brussels March 14, 1997), http://www.nato.int/docu/pr/1997/p97-027e.htm (accessed January 10, 2009). Similar assurances had been given on German reunification when the territory of the former GDR was brought into NATO, and they were repeated in connection with the later ‘Big Bang’ enlargement of 2004 which included the Baltic States.
emphasized in the 1997 “Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation.”\textsuperscript{98} U.S. agreements with Romania and Bulgaria on placing U.S. military bases (for conventional troop transit) within their territory have been met with criticism from Russia in light of the 1996 and the 1997 pledges. The planned deployment of the NMD on the territory of Poland and the Czech Republic has further escalated concerns and objections from the Russian side, which claims that the deployment of such a system goes completely against NATO’s promises not to deploy substantial military bases on the territory of new member states. Russia’s response has been very hostile, including direct threats against Poland and the Czech Republic as well as threats to either suspend or terminate arms control agreements such as the 1992 Conventional Forces in Europe (CFE) Treaty and the 1987 Intermediate Nuclear Forces (INF) Treaty.\textsuperscript{99} In accordance with the CFE Treaty and the 1999 Adapted Conventional Armed Forces Treaty in Europe (ACAF), Russia has moved its heavy weapons from the European parts of Russia behind the Urals and has reduced its Armed Forces. At the same time new U.S. bases are deployed in Romania and Bulgaria and a missile defense system is to be set up in Poland and the Czech Republic. In Russia’s view there is a deep contradiction in the actions of the U.S. and NATO: it as unfair that Russia disarms unilaterally when the other participants of the ACAF seem to be doing the opposite.\textsuperscript{100} According to the Russian Army Chief of Staff, Baluyevsky, Russia’s future participation in the INF depends on U.S. ballistic missile defense plans. Russia has also threatened to upgrade its nuclear program and deploy warheads capable of penetrating the NMD.\textsuperscript{101} 

Russia considers the INF regime to be ineffective since it only limits Russia’s and the United States freedom to acquire missiles with ranges between 500-5,000 km whereas other states can have and deploy such missiles. Putin has therefore suggested

\textsuperscript{101} Nicola Butler and Martin Butcher, 2008, 72.
that the obligations set forth in the INF Treaty be made global, which in turn could have implications for the deployment of interceptors in Poland.  

Russian officials have stated that they might aim their nuclear warheads at Poland if the interceptors are placed there. In January 2008 the Russian Ambassador to Belgium, Vadim Lukov, said at a seminar that: “The trajectory of any American missile from Poland would be south-south-east and the speed would be very high. In this situation any notion of an early warning evaporates. Poland is just six and a half minutes from Moscow and in this situation the Russians would rely on an automated response. I am sure you may all well imagine the unfortunate consequences.”

Putin has stated that Russia would have to target its missiles at missile defense facilities in the Czech Republic and Poland as a counter measure to the NMD: such actions should not come as a surprise, and Russia should not be provoked to take such action. He claimed the NMD installations in Europe will initiate an arms race on the continent and it is an arms race that Russia refuses to take responsibility for.

At a press conference on June 4, 2007 a journalist asked Putin if the deployment of a ballistic missile defense system in Poland and the Czech Republic would move us back to the situation and times similar to those of the Cold War where the nuclear forces of the Soviet Union was focused on European cities. His response was: “Certainly. Of course we will return to those times.” A few days earlier he had warned that the deployment of the BMD would turn Europe into a “powder keg.”

The threats that have come from Russian officials have been very serious. Following the signing of the agreement between the U.S. and Poland, Russian General Nogovitsyn stated that Poland was risking an attack, which could be a nuclear one and added that Poland “could not go unpunished.”

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105 Interview with Newspaper Journalists from G8 Member Countries, 2007.
In his Address to the Federal Assembly on November 5, 2008, President Dmitry Medvedev addressed his concerns regarding the GMD and said that if the United States goes ahead with its missile defense plans, Russia will deploy the Iskander missile system in the region of Kaliningrad (a Russian sovereign exclave which borders Lithuania and Poland). The purpose of the Iskander missile system would be to neutralize the missile defense system. He also said that electric jamming of the BMD sites in Poland and the Czech Republic would be carried out in Kaliningrad. Furthermore, he stated that Russia will not disband its missile system, specifically mentioning the plans to decommission missile regiments in Kozlesk and disbanding them completely by 2010.108

One might ask why Russia is so concerned over 10 interceptors in Poland since Russia’s ballistic missiles are far too numerous than the interceptors in Poland can handle? In addition to the concerns mentioned above is the NSPD-23, which sets out the policy behind the ballistic missile defense system. The NSPD-23 creates a policy of deploying “an initial set of capabilities that will evolve to meet the changing threat and to take advantage of technological developments.”109 It is natural for Russia to assume that the radar and the interceptor sites in Poland and the Czech Republic will be updated as technology develops. The EMR might in the future be able to scan the entire European part of Russia, thus being able to track hundreds of targets, and more interceptors might be deployed in Poland if Iran or another “rogue” state in the Middle East deploys a number of ICBMs. Once the agreements with the Poland and the Czech Republic have been ratified and installations have taken place, political obstacles to further upgrading the system have been overcome.110

Russia’s perceptions of the U.S. missile defense program are bound to have also a more general impact on its own strategic nuclear planning. “As of January 2008, Russia had an estimated 5189 nuclear warheads.”111 Russia has, in compliance with provisions of the Treaty on Strategic Offensive Reductions (SORT), reduced its strategic nuclear forces and in the process has moved away from substantially redundant deterrence to minimally sufficient deterrence. The strategic nuclear forces are capable of guaranteeing a minimally sufficient deterrence until 2015-2020 within the limitations of SORT, despite the U.S. development of a BMD system. It is

however important for Russia to improve its missiles in order to extend their lifetime and such developments are already underway. The goal is to extend missile survivability and missile defense penetration abilities. In accordance with these objectives, Russia started in 2007 the testing of more developed re-entry vehicles with defense penetration capabilities.\footnote{Ibid.}

In May 2007 Russia tested a new ICBM, which according to Russia, is capable of penetrating any foreign ballistic missile defense system. Earlier in 2007 (then) President Putin had promised a “highly effective response” to the missile defense plans in Europe, one component being the new ICBM. The missile tested is a new version of the Topol-M, referred to as RS-24, and has been modified to carry multiple independently targetable re-entry vehicle (MIRV) and has a range of over 10,000 km. The RS-24 missile will be difficult to defend against because of the multiple warheads. Alexander Pikayev, an arms control expert, stated that the development of the new Topol-M was most likely “inevitable” after the U.S. withdrawal from the ABM Treaty. In addition to this, Russia has tested a tactical cruise missile in response to deployment of medium- and short-range missiles by its neighbors to the east and south.\footnote{Reuters, AP, 2007.} The RS-24 was tested again in late December 2007 and in October 2008 it was announced that the RS-24 ICBM system will enter service in 2009 in both silos and on mobile platforms.\footnote{RIA Novosti, “Russia’s new-generation RS-24 ICBM to enter service in 2009,” October 22, 2008, http://en.rian.ru/russia/20081022/117888060.html (accessed January 11, 2009).}

In 2007 Russia successfully tested the SS-19 missile and the SS-25 sickle missile. The tests extended the life of the SS-19 to 31 years and the SS-25 to 21 years. Russia has also made plans on deploying 154 new missiles by the year 2015.\footnote{Shannon N. Kile, Vitaly Fedchenko and Hans M. Kristensen, 2008, 376.} On October 22, 2008 Russia tested a RS-18 (a stiletto) ICBM successfully, extending its service life up to the year 2031. The test concluded that the RS-18 missiles could remain on high-alert as before and the missile is one of the most dependable in Russia’s missile arsenal. A Topol missile was tested on August 28, 2008 and another one was tested on October 12, 2008 at the “Stability 2008” exercise.\footnote{ITAR-TASS News Agency, “Intercontinental RS-18 missile launched from Baikonur,” October 22, 2008, http://www.itar-tass.com/eng/level2.html?NewsID=13198623&PageNum=0 (accessed October 31, 2008).} Russia has in
the past 5 years made 31 tests on various types of ICBMs and intends to double the number of tests in coming years.\textsuperscript{117}

Vladimir Putin proposed to President Bush in June 2007 a cooperative development of missile defense which would give both states joint use of the Russian radar station at Gabala, Azerbaijan and could involve the deployment of interceptors in Turkey or even Iraq. The interceptors could also be deployed on mobile platforms. The radar at Gabala covers the area under concern in the Iranian context, and offers protection for the whole of Europe. The danger of missile debris falling on European countries would no longer exist, as it would fall into the Black Sea or the ocean. This approach would further eliminate Russian concerns and Russia would not have to take action to enhance its nuclear deterrent. Putin also suggested that there is no rush to deploy the interceptors since it would take Iran at least five years from its first missile tests to be able to deploy an operating missile system. The missile defense system could therefore be set up once the threat is emerging and the need for such defenses becomes apparent. In Russia’s view such cooperation could ensure the equal, democratic and mutually acceptable involvement of all participants in the command and control of the system.\textsuperscript{118} The United States does not seem to take these proposals seriously, which in turn makes it difficult to assess if Putin was serious about his proposals.

4 Effects on NATO and Europe
The U.S. ballistic missile defense plans are extremely controversial within NATO and, along with worsening relations with Russia, presented two of the most difficult issues for the 26 NATO member states at the Bucharest NATO Summit on April 2-4, 2008. A few European nations are afraid that the Bush administration is attempting to bypass NATO on the whole issue, given the U.S.’s statements that it does not intend its BMD plans to become a NATO effort. The Bush administration seems to ignore European concerns regarding the effects the system could have on European security, which in turn sends the signal that the U.S. no longer has much time to make

collective agreements and alliances. NATO’s approval of the system could therefore be viewed as more of a rubber stamp than anything else for the United States. Some U.S. advocates of the system have gone so far as stating that the United States does not need permission from anyone to protect itself.\footnote{Nicola Butler and Martin Butcher, 2008, 68-73.}

The bilateral nature of the negotiations on the BMD system has been criticized since the system will affect neighboring countries and the whole of Europe. The system is far-reaching and many want the decision making on its deployment to be discussed in a European forum, such as the EU or NATO. Others simply see no reason to deploy a BMD system in Europe. Another concern is the fact that the system does not provide protection to all NATO member states, notably Bulgaria, Romania, Greece and Turkey as previously mentioned, which goes against the NATO principle of indivisibility of Alliance security. The deployment of the system also poses a new risk for Europe. After a successful interception of a hostile ballistic missile, radioactive debris would fall on Europe and even Russia.\footnote{The same applies to Canada in the case of an incoming attack from East Asia because of the interceptor sites in Alaska.} Europe will have to face this risk in order to defend the United States.\footnote{Nicola Butler and Martin Butcher, 2008, 74.}

The agreements signed between the U.S. and Poland on one hand and the Czech Republic and the U.S. on the other are bilateral agreements. Although they do mention NATO and the possibility of the BMD sites in both host countries to be integrated into a NATO wide missile defense system, it remains to be seen if NATO will want to or be able to proceed with the latter.

Since the deployment of the BMD system will affect the EU’s relations with Russia, Javier Solana the EU High Representative for Security and Defense, has asked that the EU be consulted in the negotiations on the deployment of the BMD in Poland and the Czech Republic. Solana’s views are shared with a significant number of EU member states such as Germany, France, Austria and Ireland; however Poland, the Czech Republic and the United Kingdom are against an EU involvement in the negotiations.\footnote{Ibid.}

NATO is working on the development of an Active Layered Theater Ballistic Missile Defense System (ALTBMD) to protect deployed NATO troops on missions. The ALTBMD is scheduled to be operational by 2010 and will protect troops against
short- and medium-range ballistic missiles as well as against other aerial threats such as aircraft and UAVs. The system is multi-layered with lower and upper layer defenses that include warning sensors, radar, interceptors and battle management, communications, command and control (BMC3I). NATO is also looking into the options of deploying a full range missile defense to protect the Alliance territory. It was agreed at the Bucharest Summit in April 2008, that the U.S. BMD would serve as a protection for many NATO members and that the U.S. BMD “capability should be an integral part of any future NATO-wide missile defence architecture.”\textsuperscript{123} At the 2009 NATO Summit, extending the coverage of the U.S. BMD to all NATO members will be reviewed.\textsuperscript{124} It is still not certain whether NATO will develop a missile defense system to protect the territory of Allies. Hardening relations with Russia can also affect the agreement made at the Bucharest Summit, that the U.S. BMD system will provide protection for many of its allies, as the hosting countries of the BMD sites are increasingly threatened by Russia. An attack on a NATO member means an attack on all NATO members and it is not clear if NATO is willing to take such responsibility.

Poland

The United States had a very challenging task of dealing with NATO as a whole on this issue, but its path to agreement with the two states that eventually accepted the bases have been even more challenging and time consuming.

During the negotiations with the United States, Poland sought greater security arrangements from Washington, as it felt that current NATO obligations were not sufficient or adapted to cover the extra risk it would face by hosting the base. The security arrangements Poland wanted involved a PAC-3 system and Terminal High-Altitude Air Defense (THAAD); it also demanded that the U.S. pay the overall costs of the missile defense facilities and equipment in Poland, and U.S. assistance to modernize and transform the Polish Armed Forces. It is worth noting that Polish Prime Minister Donald Tusk stated early 2008 that Poland was in no hurry to sign an agreement on ballistic missile defenses. Tusk also feels that it is important that the BMD sites in Poland become an element of NATO’s common defenses in the long

\textsuperscript{124} Ibid.
run. He has been more open to discussions with Russia on the matter and is more concerned about NATO and Russia’s concerns.125

Following the conflict in South Ossetia in early August 2008, Poland suddenly dropped it reservations and signed an Agreement with the United States on basing a part of the BMD system in Poland. In the Agreement, Poland will get the PAC-3 air defense battery and the U.S. will contribute to the modernizing and transformation of the Polish Armed Forces. The Agreement also mentions that the interceptor sites in Poland should become a part of a NATO missile defense system in the future. It is important to note that the U.S.-Polish Agreement refers to Article 5 of the North Atlantic Treaty, which states that an attack against one NATO member is to be considered as an attack against all NATO members. The agreement needs to be ratified by the Polish Parliament before it comes into effect.126

The Polish requirement of additional security guarantees from the United States because of mistrust in NATO’s defense capabilities has obvious negative implications for NATO. The fact that a NATO member feels that NATO as a security alliance cannot provide sufficient protection for it, especially vis-à-vis Russia which was the Alliance’s original adversary, can only be harmful for the existence of NATO.

The sudden rush to sign the Agreement with the United States after the events in South Ossetia might indicate that Poland sees Russia as a potential threat: but in recent years, Russia’s only direct threats against Poland have been linked precisely with the U.S. plans to deploy components of the NMD on Polish territory. Therefore accepting the base seems to go against Polish security and Poland’s recognition of Russian concerns. This is one of the reasons why the majority of Poles oppose the deployment of interceptors in Poland. Many Poles also feel that the United States is using Poland while Poles are not allowed visa-free travel to the United States.127 It also remains to be seen if the United States would defend Poland if, for example, Russia would launch a missile attack on Poland. Would the United States in such an event, risk a full-blown war against Russia?

125 Nicola Butler and Martin Butcher, 2008, 69.
127 Nicola Butler and Martin Butcher, 2008, 69.
The Czech Republic

The United States and the Czech Republic reached an agreement on placing the missile defense radar at the Brdy site on July 8, 2008. The U.S.-Czech Agreement mentions, like the Polish Agreement, that the radar site should be made interoperable with a NATO missile defense system. The 1951 Agreement Between the Parties to the North Atlantic Treaty Regarding the Status of Their Forces (NATO SOFA) will be applied to the U.S. forces in the Czech Republic and special provisions are laid out regarding the U.S. forces in the Czech Republic (CR-US SOFA).128

The U.S.-Czech Agreement needs to be ratified by the Czech Parliament and signed by the President of the Czech Republic before it comes into legal force. Getting the parliamentary majority needed to approve of the Agreement remains a challenge. The Green Party, which is a member of the coalition government, only supports an agreement that contains a binding commitment from the U.S. that the BMD system will be under NATO command. The leadership of the Green Party is divided on the issue whereas the grassroots deeply oppose it. The Agreement puts the command of the system in the hands of the United States so it is doubtful that the Green Party will vote for it in the Parliament. There is also a growing opposition against the radar site at Brdy among the public. The Czechs, just like the Poles, are concerned about Russia’s response to the radar and fear the growing threats coming from Russia. Some are opposed to foreign bases on Czech soil because of the country’s bad memories from Nazi and then Soviet occupation. People living in the area near Brdy have not only raised concerns over the affects the radar site could have on their security, but also the possible health affects and have wondered whether the U.S. would station a powerful radar so close to a populated area within its own country.129

The security concerns are understandable, as an adversary determined to attack the United States or its allies would most likely start by destroying the BMD sites in order to enhance the probability of its BMs successfully hitting its target. It has been pointed out that an early warning of such an attack could also be gained

129 Ibid; Nicola Butler and Martin Butcher, 2008, 70.
through an attack or destruction of the U.S. early warning radar sites in Fylingdales and Thule.\textsuperscript{130}

**United States**

The U.S. Democrat-led Congress has cut back funding for the BMD sites in Poland and the Czech Republic and imposed significant conditions for the use of the funds it has accepted for the project. The Congress has also expressed concerns regarding the system’s coordination with NATO and is more supportive of a comprehensive and layered system coordinated and controlled by NATO. Such a system would have short- and medium-range components developed by NATO while the U.S. BMD would come in as a defense against long-range missile threats: meaning that the U.S. missile defense plans would be fully integrated into a NATO missile defense system that would cover all NATO members.\textsuperscript{131}

The Congress is in any case unwilling to accept funds for the BMD sites in Poland and the Czech Republic until both countries have ratified the Agreements they have made with the United States. It has also restricted funding for the construction of the BMD until the interceptors have been tested further. One of the authors of the restrictions, Ellen Tauscher stated: “Congress will not be funding an untested system, period.”\textsuperscript{132}

The Bush administration tried very hard to seal the deal with Poland and the Czech Republic before the Presidential elections in 2008. The Administration hoped that the Democrat Congress and the new President would be forced to go ahead with the plans if they were well under way. However the Congress has not been willing to accept anything regarding the European sites until President Obama takes office in late January this year.\textsuperscript{133}

President-elect Barack Obama has said that he is supportive of a missile defense against Iranian threats but feels that the Bush administration has over-exaggerated the capabilities of the system. Obama is more willing to cooperate with Russia on missile defenses than the Bush administration. It is possible therefore that

\textsuperscript{130} Nicola Butler and Martin Butcher, 2008, 70.
\textsuperscript{131} Ibid, 70-71.
\textsuperscript{133} Ibid; Nicola Butler and Martin Butcher, 2008, 71.
Obama will focus more on a NATO wide missile defense system that would include cooperation with Russia, an approach which in turn would imply freezing or considerably deferring the Polish and Czech installations.\footnote{Philip P. Pan, “Russia Gives Obama Brisk Warning,” The Washington Post, November 6, 2008, http://www.washingtonpost.com/wp-dyn/content/article/2008/11/05/AR2008110502987_pf.html (accessed January 10, 2009).}

**United Kingdom**

The U.K. government can be said to be the most enthusiastic supporter of the U.S. missile defense plans in Europe and has allowed the U.S. to upgrade the early warning radar at RAF Fylingdales in Yorkshire. The Secretary of State for Defense, Des Browne, confirmed in 2007 that RAF Menwith Hill would be used to gather intelligence from U.S. satellites on possible missile attacks. Browne has not ruled out the option of an interceptor site to be deployed in the U.K.: although there are no current plans for such a deployment, it will be kept under review as threat emerges.\footnote{Nicola Butler and Martin Butcher, 2008, 71.}

The U.K. government tried in both cases to prevent parliamentary scrutiny of U.K. participation in the missile defense system. In 2003 when the upgrade of the Fylingdales radar was under discussion, key statements were released during the Christmas holidays despite a promise from Tony Blair that the issue would be discussed both in the House and outside it. Gordon Brown used the same tactic for Menwith Hill and published the government’s decision on the matter in a written statement distributed right before the parliamentary summer recess. Both the House of Commons and the House of Lords have expressed their disappointment with the lack of parliamentary discussion on ballistic missile defense and have demanded a proper parliamentary discussion on the matter. Baroness Williams of Crosby, appointed as an adviser on arms control and non-proliferation by Gordon Brown himself, has called the government’s actions a “contemptuous treatment of Parliament.”\footnote{Ibid, 72.}

**NATO and EU Relations with Russia**

As noted above, Russia’s concerns are quite extensive and the threats that have been made are very serious. The Bush administration’s deaf ears to Russian concerns have increased Moscow’s suspicions regarding the BMD system and made the Russians
even more convinced that the intent is anti-Russian. The fact that the Bucharest Summit declared support of the BMD system also increases Russia’s suspicion of NATO. U.S.-Russia relations and NATO-Russia relations are not the only ones that may be severely harmed as a result.

The European Union and Russia engage in a quite extensive partnership. The European Security Strategy, adapted in December 12, 2003 by the Council of the European Union, acknowledges that Russia is a major factor in European security and calls on the EU to work for closer relations with Russia. Many EU member states rely heavily on energy from Russia, which is transferred via pipelines from Russia to Europe. Worsening relations with Russia could cause harm to those important energy transfers as has happened during the gas pipeline disputes between Russia and Ukraine in January 2009.

The U.S. BMD sites in the Czech Republic and Poland will create a greater risk of an attack on a NATO member. If attacked, Article 5 of the North Atlantic Treaty would have to be invoked, otherwise NATO’s existence could come to an end because its credibility would vanish. The question is whether NATO is able and ready to take on the responsibility implied in Article 5. It is more likely that it would do so if the attacker is a rogue state, but what would NATO do if Russia were to attack the BMD sites?

5 What is Wrong with U.S. Nuclear Policy?

The current nuclear policy of the United States is based on the assumption that legally binding arms control agreements hinder U.S. flexibility to take action, and notably, to reverse nuclear arms reductions if it ever becomes necessary to reestablish the nuclear arsenal. This philosophy is the reason why the Bush administration has chosen to

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dismiss opportunities to limit the Russian nuclear arsenal if doing so would also constrain the flexibility of the United States.  

The Bush administration has many times stated that the U.S. and Russia are no longer enemies so the United States does not need nor intends to sustain its nuclear forces as it did in the Cold War era. The administration has stated that there is no need to structure the nuclear arsenal to deter Russian threats. This seems to contradict the decision to deploy a ballistic missile defense system so close to Russia’s borders and then at the same time try to convince the Russian government that the system is not directed against them. It is even more contradictory when the threat the system is to defend against is an emerging Iranian threat, making it more sensible to deploy the system closer to Iran and also to explore the seriousness of the Russian proposals regarding the use of the Russian radar site in Gabala and placing the interceptors in for example Turkey.

The United States has not ruled out the option of first use nuclear policy but has stated that it would not use nuclear weapons against a non-nuclear weapon state. The Nuclear Posture Review (NPR) states that the United States might use nuclear weapons in response to an attack from states equipped with chemical, biological and nuclear weapons. This is intended to deter non-nuclear states from acquiring nuclear weapons. Reports following the NPR have indicated that the U.S. might be ready to use nuclear weapons against non-nuclear states. The U.S. also keeps the option open for a first use of nuclear weapons against sites that might store biological, chemical or nuclear weapons.

The U.S. offers negative security assurances to non-nuclear states under the NPT but the possibility of a first use of nuclear weapons against non-nuclear states goes completely against those assurances. The U.S. has responded to such concerns by stating that negative security assurances are not very productive and should be reviewed.

142 Ibid, 13.
The Bush administration has sought to regain the Department of Energy’s (DOE) nuclear weapons complex abilities that have been lost since the end of the Cold War. That would increase U.S. capability to maintain and produce nuclear warheads. The DOE started a study on a “robust earth penetrator,” a warhead that would be capable of penetrating below ground before exploding and would thus give the U.S. the ability to destroy underground sites. However the Congress denied the DOE funding for the project in FY2005 and in the FY2005 DOE has ended its program. The NPR also requested that the time preparing the Nevada testing site for nuclear tests to be reduced and the DOE started such efforts in 2003. This implies that the Bush administration might be considering the option of testing a new nuclear weapon, greatly undermining international efforts against the proliferation of WMDs and going against the U.S. unilateral moratorium on nuclear tests. The administration has refused to take steps to ratify the Comprehensive Test Ban Treaty (CTBT), which would impose a universal ban on the testing of nuclear weapons. Clinton signed the CTBT in 1996 but Congress did not ratify it: many now believe that if the U.S. would ratify the CTBT other states will follow suit.

The United States under the Bush Administration has been highly skeptical on international institutions and instruments in general, which is one of the reasons why there have been setbacks in international disarmament developments in recent years. The U.S. relies on freedom of action to maintain its strategic superiority. The U.S. has adopted a “counter proliferation policy” focusing on unilateral use of force against current and emerging WMD threats. There are extremely few states that accept this perceived right of the U.S. to take unilateral action. The United States can be said to be unilateralist while much of the rest of the world is multilateralist. This explains in many ways why the United States has sought to base the deployment of the foreign assets in its GMD system on bilateral agreements, rather than using multilateral forums to address the issue and reduce the concerns that have emerged regarding the GMD plans.

Barack Obama will take office on January 20, 2008. He has stated that he will put the ratification of the CTBT on the agenda and put pressure on Congress to ratify

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143 Ibid, 40-41.
144 Weapons of Mass Destruction Commission, 2006, 107. The CTBT states 44 countries that need to sign and ratify the treaty before it enters into force. So far 34 of those states have ratified it, the 10 remaining are: United States, China, India, Pakistan, North Korea, Colombia, Egypt, Indonesia, Iran and Israel.
145 Ibid, 25.
the Treaty and he intends to put pressure on India and Pakistan to sign and ratify the Treaty as well. Obama thus has the opportunity to put the United States in the lead in the global pursuit of a nuclear free world.  

Obama has declared that he will not go ahead with missile defense plans unless the system is proven effective and its deployment has support from the allies of the United States. Since the system has neither been proved effective nor cost sufficient, and does not have the support of allies, it is doubtful that Obama will press for the deployment of the system in its current form. Because of the concerns raised by various NATO members and Russia, a decision to freeze, delay or abandon the program makes it extremely important that such action is fully discussed both within NATO and with Russia to extract the maximum goodwill and understanding for the U.S. in both settings. Such consultations would hopefully result in some gestures from Moscow.

6 Conclusion

The United States Ballistic Missile Defense System is already affecting European security even though the interceptor site in Poland and the X-band radar in the Czech Republic have not yet been deployed. Russia has serious concerns about the strategic location of the system and believes that the motivation behind locating the interceptor site and the X-band radar in Poland and the Czech Republic is anti-Russian. Moscow has furthermore actively threatened to attack Poland and the Czech Republic if the deployment of the system goes ahead as planned.

The Russian threat should be considered as real and very serious as an attack on Poland and the Czech Republic would increase the risk of war in Europe. The Russian threats create an increasing risk of a nuclear attack on Europe since Moscow has stated that it would seriously consider using nuclear warheads to attack the Eastern European missile defense sites.

Russia’s reaction towards the BMD sites in Eastern Europe are closely linked to NATO and EU enlargements to the East. Russia has lost influence in former WTO states and in the successor states of the Soviet Union, which are looking more and more to the West for closer cooperation and ties. There is also frustration in Moscow.

147 Ibid.
because of broken promises from NATO on not placing substantial bases or nuclear warheads in new NATO member states. Plans to deploy missile defenses in the Czech Republic and Poland are therefore even more frustrating and infuriating for Moscow.

Russian concerns have not been actively addressed by the United States, which seems not to understand why Russia has responded the way it has. If the United States continues to be deaf to Russian concerns, the result will be a serious constraint on U.S.-Russia relations and NATO-Russia relations. Europe might face an arms race on the continent as a response to the BMD deployments. Indeed Russia has started planning, developing and deploying countermeasures to the BMD system. The arms race between China and Taiwan could be an indication of what might take place in Europe.

NATO is already divided on the issue of missile defenses but might develop its own missile defense capabilities to defend the territory of the Alliance. The United States, despite demands that the U.S. BMD system should become a part of NATO missile defense capabilities, has shown little intent to actively seeking to do so. The bilateral nature of the agreements with Poland and the Czech Republic and lack of multilateral consultations on the matter, demonstrate this point. The United States has, like with Russia, failed to seriously consider European and NATO concerns on its BMD plans. With the bilateral agreements the U.S. is, without consultations with NATO, increasing the risk of an attack on Alliance member states. Article 5 of the North Atlantic Treaty states that an attack on one Allied state is to be considered as an attack on all Allied states. If the BMD sites in either Poland or the Czech Republic are attacked, NATO will be forced to respond otherwise the Alliance will lose credibility as a security alliance. It is more likely that NATO would response with a retaliatory attack if the aggressor is a rogue state, but would it be ready to engage in a war against Russia?

The geographic location of the planned European sites does not cover the whole of Europe, leaving, Romania, Bulgaria, Greece and Turkey out. It would be more effective to deploy the system in the Middle East, closer to Iran, the emerging threat the system is to defend against. Placing the system in the Middle East would be more effective in detecting and intercepting Iranian missiles and it would cover the whole of Europe. It would also eliminate the environmental risk of radioactive debris falling on Europe as it would fall into the Sea or ocean. Europe is asked to take the risk of debris falling on Europe after a successful interception from Polish
interceptors, a risk that Europe will have to take in order to provide protection for the United States.

Ballistic missiles are also far from being the only means of delivery of WMD. Cruise missiles, UAVs and aircraft are more likely to be used as means of delivery especially since the BMD system in Europe will be unable to protect against such threats. A determined adversary would also develop more sophisticated decoys in order to penetrate the defenses of the BMD. Non-state actors have been able to acquire short-range missile capabilities and are able to acquire and use low-tech aircraft as means of delivery. Non-state actors are more likely to use low-tech means of delivery, which are much harder to defend against and a BMD system would be far from able to prevent such attack.

The observations and analysis presented here clearly indicates that the deployment of the ballistic missile defense system in Poland and the Czech Republic will have a negative impact on European security by creating more risks and challenges than it would reduce. The system is also not technologically advanced enough to provide a robust protection. The system is unable to discriminate warheads from decoys and it is therefore unlikely that the system would be able to intercept an incoming missile. According to the brinkmanship theory, a missile defense system must be extremely effective before it serves as a deterrent and reduces the threat of nuclear attack. An ineffective ballistic missile system that has caused serious constrains in relations with Russia creating a possible danger of war in Europe, might come into reality. The Bush Administration seems to have ignored the danger that the system might cause Europe and not engaged in extensive Europe-wide consultations on the matter. Making one wonder if the Bush Administration believes that Europeans have no say in such an important implication on its security?

In coming months it remains to be seen what the incoming Obama Administration will do to address these issues. Obama will have to respond to Russia’s concerns and reconsider U.S. policy on missile defenses if he is concerned about global strategic stability. Obama appears to have more of a multilateral approach to international relations than George W. Bush and will hopefully address the issue of missile defenses in multilateral forums in order to enhance European, U.S. and of course global security.
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