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Strategic Missile Defense: Russian and U.S. Policies and Their Effects on Future Weapons Proliferation

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Strategic Missile Defense: Russian and U.S. Policies and Their Effects on Future
Weapons Proliferation

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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DEDICATION

I would like to dedicate this thesis to all of my family and friends who have helped and supported me in my academic career. Without the tireless backing of especially my mother, father, and brothers, this journey would not have been possible. Thank you mom for always peer-reviewing my papers, even when a lot of times I needed them done last minute! Thank you dad for always being my rock and always having such faith and pride in me! Thanks to my brothers for always calming me down or making me laugh when I was at my wits end! Thank you to all of my managers and coworkers who would always help me out if I needed a day off or shift picked up in order to study! I would also like to thank one of my best friends and “sister” for the Snickers bar that you gave me the night before my thesis presentation! You wanted to give me something unique to show that you were behind me 110% and that I could do this! It sat on the podium as I gave my presentation and truly helped to calm my nerves when I would glance at it! Thank you again to everyone who always believed in me (you know who you are)! I love you all so much!

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ABSTRACT

The purpose of this research is to study the effects that Russian, U.S., and NATO policies of deterrence have on strategic missile defense as well as how these policies and strategic missile defense affect future weapons proliferation. The aspects explored are the current Russian strategic forces and quality, Russian policies and strategies, the Phased Adaptive Approach, and U.S. and NATO policies and strategies. Mitigation of this pressing issue may be through open dialogue, a system to limit future U.S. and NATO interceptors and sensors, and a possible joint data exchange center.

CHAPTER ONE:

BACKGROUND, THEORY DEVELOPMENT, AND LITERATURE REVIEW

The United States, the North Atlantic Treaty Organization (NATO), and Russia have experienced a tumultuous relationship over the years. These animosities stem back to the Soviet era and Cold War mentalities. The Russian aim of maintaining their global influence as well as the growing number of threats to the U.S. and its allies has recently sparked new tensions between these groups, especially in relation to missile defense. As the U.S. and Russia are two of the largest holders of nuclear weapons, these states have a major influential position in global security.

In 2009, the United States, under President Obama, unveiled their plan of a European-based missile defense system. This system was designed to defend the U.S. and its allies against attacks from adversaries and rogue states such as Iran and North Korea. Russia, in the beginning, showed a positive outlook towards this missile defense program. Only after the U.S. released proposals for the shield did Russia begin to voice their concerns over the strategic capabilities of the system and its effects on Russia's nuclear deterrence position. The U.S. countered these arguments stating that this system did not target Russia. This has not assuaged Russia's concerns, though, as tensions have risen dramatically between these states. Subsequently, Russia has recently threatened to pull out of the Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START). Without the bounded regulations set forth in this treaty as to the types and

maximum limit of strategic offensive forces each state can possess, the potential of weapons proliferation is possible.

1.A. Background and Theory Development

The policies and strategies set forth by both of these states rely on the theory of deterrence. In general, deterrence refers to the utilization of threats by one party, the deterring state, in an effort to deter another party, the potential attacker, from undertaking objectionable contingencies (Huth 26). These threats function within deterrence theory to the extent that it persuades a potential attacker to refrain from executing an action due to the costs/benefits ratio that the attacker would ultimately incur (Lebow and Stein “Beyond Deterrence” 6). Deterrence can include the use of military, economic, diplomatic, and other means in order to prevent courses of action by other states. In a military context, deterrence theory refers to one state preventing a rival state’s use of military force and therefore stipulates the circumstances for averting war (Danilovic 48).

Deterrence includes the classification distinctions as either being general or immediate and direct or extended. General deterrence refers to a state maintaining a large arsenal to influence the objectives of others where there is no imminent threat of attack, but an underlying animosity is present (Slantchev 7 and Barnett 3-4). Immediate deterrence is a short-term strategy that relates to a particular time, area, dispute, and antagonist in order to challenge an imminent threat or attack (Slantchev 7, Huth 27, Lebow and Stein “Deterrence and Cold War” 161, and Barnett 4). Direct deterrence refers to threats issued to prevent direct attacks against a state’s own territory (Slantchev 7, Barnett 4, and Huth 161). Finally, extended deterrence is the use of threats to deter an attack against a third party (Slantchev 7, Barnett 4, and Huth 161). These dimensions of deterrence, therefore, leads to four conditions of deterrence that states may pursue:

direct-immediate deterrence, direct-general deterrence, extended-immediate deterrence, and extended-general deterrence (Huth 161).

There are several assumptions that deterrence theory rests upon: rationality, credibility, capability, and communication (Barnett 4 and Howlett 19). The assumption of rationality plays an integral role in deterrence. This states that a deteree will behave in a “rational” manor in that they will pursue behaviors that are not only adverse to risk, but also are in line with their expected utility to the attainment of their goals (Howlett 20, Sagan 71, and Barnett 5). As Sagan states:

International relations scholars often assume high degrees of rationality, not because it is accurate, but because it is helpful: it provides a relatively simple way of making predictions, by linking perceived interests with expected behavior. (Sagan 71).

Secondly, deterrence bases itself upon the concept of credibility. Defending states must differentiate themselves as having the wherewithal to execute any threats against a deteree. Without the deteree’s belief that a defending state would implement these threats, then these threats could ultimately become ineffective and possibly allow for an increased escalation of precarious actions between a deterer and deteree (Howlett 20, Barnett 6-7, and Huth 31).

Third, deterrence is composed of a defending state’s capability. This revolves around an appropriate force structure of a deterer in relation to a particular adversary (Howlett 20). This force structure consists of a deterring state’s ability to deliver weapons to an intended target as well as having a second-strike capability after an initial attack (Howlett 20 and Cimbala 53).

Lastly, deterrence consists of the effective ability of a deterer to clearly communicate any threats posed to a deteree. The effective communication of threats is a necessity in that any

misperceptions or misinterpretations could lead to uncertainty about a deterrer's response to a deteree's particular action (Howlett 20).

As efforts in the disarmament of world nuclear arsenals have stalled between the U.S. and Russia, both of these states are now undergoing a modernization of their nuclear forces. This consequently subverts the legitimacy of existing treaties that bind these states as well as encourages other nuclear weapons states to proliferate their forces. The continued practice of deterrence is significant in that it plays an integral role in the shaping of these current issues. This leads to specific questions such as how Russian and U.S. policies of deterrence affect strategic missile defense? Subsequently, how do these deterrence policies as well as missile defense affect future weapons proliferation? Discussed below is a detailed analysis of the history and evolution of deterrence theory.

1.B. Literature Review

Deterrence has remained an integral and dominant concept of nuclear strategies since the development of the atomic bomb. Policymakers have long sought ways to prevent cataclysmic wars while also exploiting available strategic benefits for political advantages (Lebow 1). This concept is dependent on weapons and their controlled testing which ultimately placed policymakers in a tough spot as they were sometimes in direct odds with their own militaries (Brown and Arnold 293-294). Deterrence poses a massive risk to the safety of the human population should it fail.

Following the development of the atomic bomb, scholars, defense analysts, and policymakers became interested in deterrence theories and strategies. One of the earliest works on the subject belongs to Brodie's 1946 book entitled *The Absolute Weapon: Atomic Power and World Order*. In it, Brodie stated that in the age of nuclear weapons, the U.S. security strategy

must implement measures that guarantee the possibility of retaliation if attacked (Brodie et al. 76). He asserts that up to that point in time, the main goal of the U.S. military establishment was to win wars, but with the advent of these catastrophically destructive weapons, their new policy must be to avert them (Brodie et al. 76). This deterrence strategy applied to the Soviet Union, who at the time did not possess nuclear weapons, but theorized to have these capabilities in the near future. Brodie's theory on the devastating consequences of deterrence, therefore, contradicted Clausewitz's 1976 description of war that it is merely a continuation of policy by other means (Von Clausewitz 87).

A new urgency in deterrence increased in August 1949 when the Soviets successfully detonated their first atomic bomb in a remote test region of Kazakhstan. In the decade to follow, the approach to U.S. nuclear deterrence centered on the difficult issue of conveying credibility to threats. This included the strategy of massive retaliation. Kaufman's work, *The Requirements of Deterrence*, stated that the establishment of credibility lied in three main areas. These included the areas of capability, cost, and intentions (Kaufman 7). The adversary had to be convinced that there was the capability of the U.S. to act, that these actions, in turn, would inflict greater costs than benefits to the adversarial state's objectives, and more importantly, that the U.S. would act in this contingency (Kaufman 7).

Brodie's 1959 work, *The Anatomy of Deterrence*, also discussed the notion of credibility. He stated the minimum security objectives for the U.S. during this period should include not only national interests, but also states that have democratic institutions (Brodie "Anatomy" 1). Basic deterrence as policy is meaningful only through the constant perfection of this system, but goes permanently unused (Brodie "Anatomy" 5). The issue of credibility, therefore, does not arise in circumstances that target the U.S. homeland, but resides in the doctrine of massive

retaliation where the U.S. is providing security guarantees to allies. A state which also possesses a large nuclear arsenal would find it hard to believe the employability of this strategy (Brodie “Anatomy” 6). On the other hand, Brodie stated that it is erroneous to assure an adversary that the U.S. would only strike after a homeland attack. Mistaken predictions of the United States’ own actions could result in the adversary’s mistaken predictions which might precipitate a total war scenario as seen in Korea (Brodie “Anatomy” 6).

Wohlstetter, in his 1958 work, *The Delicate Balance of Terror*, also regarded credibility issues in the policy of massive retaliation. At the end of World War II, this policy was plausible due to the fact that the U.S. was the only holder of nuclear power. After the Soviets gained nuclear delivery capabilities, massive retaliation was no longer a viable option, as the U.S. would assume enormous losses (Wohlstetter 32). This led to issues of credibility where Europe doubted whether the U.S. would actually use their Strategic Air Command in response to any targeting of these allies (Wohlstetter 32). Critics of massive retaliation policy suggested that a massive response to a limited threat is unlikely and therefore implausible (Wohlstetter 32). Wohlstetter subsequently stated that this argument illustrates the serious need for the development of second-strike capabilities to meet these types of limited aggressions (Wohlstetter 32-33).

These early deterrent theorists highlighted the importance of the United States’ ability to retaliate after a first strike as well as credibility issues. They assumed each side had rational actors as well as stressed the importance of defining obligations, conveying them to rivals, developing abilities to defend them, and communicating credibility to these commitments (Lebow 4). After the Cuban Missile Crisis in 1964, the policy of mutually assured destruction (MAD) became established. The issue of credibility as related to this policy, though, rested in the fact that a state cannot credibly impose a threat if it resulted in its own destruction (Powell 90).

Schelling in his work, *The Strategy of Conflict*, found a way around this issue. Since the U.S. or Soviet Union could not palpably defend themselves against a first strike from the other, the likelihood of crisis escalation to devastating levels would always present (Powell 90). The probability of inadvertent war, therefore, was in of itself a deterrent (Schelling 188). As Schelling states:

Its credibility stems from the fact that the possibility of precipitating major war in response to Soviet aggression is not limited to the possibility of our coolly deciding to attack; it therefore extends beyond the areas and the events for which a more deliberate threat is in force. It does not depend on our preferring to launch all-out war, or on our being committed to, in the event the Russians confront us with the *fait accompli* of a moderately aggressive move. The final decision is left to “chance” (Schelling 189).

He ultimately claimed that if the Soviet Union contemplated a specific act, their uncertainty towards the possible ramifications, such as precipitating a process that neither side could control, would lead them to rethink about undertaking that action.

In Kahn’s 1960 work, *The Nature and Feasibility of War and Deterrence*, the author countered Schelling’s approach. As he stated, the policy of deterrence is successful only if there is mutual belief by both sides (Kahn 3). He asserted that if the balance-of-terror theory is indeed valid, then any state that showed aggression must either experience a limited war or the allowance of these actions (Kahn 41). These aggressor states would ultimately realize this implication, however. Therefore, the use of mutual homicide threats would be ill advised as they would not be credible (Kahn 42).

During the presidency of Carter, the effort to regain U.S. nuclear supremacy evolved into enacting a policy of war-fighting. As Lieber and Press state:

It expanded its nuclear arsenal, continuously improved the accuracy and the lethality of its weapons aimed at Soviet nuclear arms, targeted Soviet command-and-control systems, invested in missile-defense shields, sent attack submarines to trail Soviet SSBNs, and built increasingly accurate multiwarhead land- and submarine-launched ballistic missiles as well as stealth bombers and stealthy nuclear-armed cruise missiles” (Lieber and Press 42).

The Soviet Union during this time also improved and developed their nuclear arsenal in an effort of attaining nuclear superiority (Lieber and Press 42). Continuing this policy, the Reagan administration as well spent vast financial resources in order to develop new weapons systems considered essential to war-fighting (Lebow and Stein “ Deterrence and Cold War” 160). This is discussed in greater depth in Chapter 3.

Since the inception of deterrence theory, there have been many critiques to its validity. Works such as Milburn’s 1959 publication, *What Constitutes Effective Deterrence?*, is one example. In it, Milburn stated that punishment alone is not an effective means of influencing a behavior change due to increases of hostility and anxiety (Milburn 139-140). Instead, deterrence would operate more efficiently through the utilization of a system of both rewards and punishments. He suggests accomplishing this through the operation of a deterrent weapons system in order to decrease the likelihood of a nuclear first strike while simultaneously using positive deterrence through the increase of payoffs for every step in the opposite direction (Milburn 144).

Another critique of deterrence theory stems from Lebow and Stein's 1987 work entitled, *Beyond Deterrence*. The authors argue that deterrence is a flawed strategy of conflict management that only applicable to a limited number of cases (Lebow and Stein "Beyond Deterrence" 6). They expose the issues of deterrence through three interlocking components: political, psychological, and practical (Lebow and Stein "Beyond Deterrence" 6). They state that through historical case studies, the mechanisms of deterrence and reassurance are applicable at different times and in different sequences due to their respective advantages and weaknesses (Lebow and Stein "Beyond Deterrence" 64).

As the world has now developed into a multipolar nuclear arena, Russia and U.S. security experts recognize that the Cold War structure no longer has an explanatory value towards to their nuclear relationship (Cimbala *New Nuclear Disorder* 53). As the number of nuclear weapons states has increased as well as the advent of unconventional warfare, the logic of nuclear deterrence becomes more opaque along with negating its utilization as a general policy without regard to specific circumstances.

President Obama's 2009 Prague address stated that as long as there are nuclear weapons then the United States will maintain an effective deterrent against them. This has massive implications to the future development of U.S. strategic missile programs as well as future arms proliferation. I argue that the current U.S. policies of deterrence will encourage the continuation of strategic missile defense development. I also argue that this will subsequently affect future weapons proliferation negatively as the U.S. and Russia have already begun the modernization and build-up of their weapons forces. Chapter 2 discusses an in-depth analysis of Russian weapons, policies, and strategies.

CHAPTER TWO: RUSSIAN WEAPONS, POLICIES, AND STRATEGIES

The Russian military boasts a copious amount of strategic and non-strategic missiles in their arsenal. Many of these missiles stem back to the Soviet era with Russia currently phasing out and replacing them with new or modernized systems. The overall number and status of these missiles are uncertain due to a lack of publicized data from not only the Russian government, but New START data as well. This data is highly classified with figures from publicly available sources reflecting estimates and speculation. Nevertheless, by comparing numerous sources to each other, a functional comprehension towards the amount, current status, and any modernization or replacement of these missiles is possible.

Several key government documents direct Russian strategies and capabilities. These include the National Security Strategy, the Foreign Policy Concept, and the Military Doctrine. The National Security Strategy assesses internal and external threats and specifies functions of the governmental bodies in this domain while the Foreign Policy Concept outlines general political purposes and priorities in the international arena. The Military Doctrine defines external threats to the country as well as the means of national defense (Godzimirski 74). These core documents govern the nuclear and strategic arms objectives as well as their implementation in this state.

This chapter delves into these aggregate numbers, their status, any new or upgraded missile development, and Russian policies and capabilities in the areas of nuclear weapons and

missile employment. Section 2.A. focuses on aggregate data of Russian missiles as well as individual missile data for the Strategic Rocket Forces, strategic naval force, strategic aviation, and non-strategic nuclear weapons. Section 2.B. discusses new as well as modernized missiles and missile systems with speculations of its current implementation by Russia or in the future. Section 2.C. reviews the Russian National Security Strategy. It details the threats to Russian state security as well as deterrence mechanisms. Section 2.D. discusses the Russian Foreign Policy Concept. It in part describes the priorities, principles, and goals of Russia in the areas of nuclear deterrence and missile defense issues. Section 2.E. examines the Russian Military Doctrine. Its basis lies within several government strategies and determines military capability decisions.

2.A. Russian Forces Aggregate Data

Recently released Russian strategic and non-strategic nuclear forces estimates occurred in 2015 by several organizations tracking these figures. The United States Department of State published the “New START Treaty Aggregate Numbers of Strategic Offensive Arms” data on April 1, 2015. The declared data is current as of March 1, 2015 (Department of State). The fact sheet disclosed that Russia has a total of 515 deployed Intercontinental Ballistic Missiles (ICBMs), Submarine Launched Ballistic Missiles (SLBMs), and heavy bombers; 1582 warheads on deployed ICBMs, SLBMs, and nuclear warheads counted for heavy bombers; and 890 deployed and non-deployed launchers of ICBMs, SLBMs and heavy bombers (Department of State).

The Bulletin of Atomic Scientists’ 2015 data for Russian strategic offensive forces as well as nonstrategic and defensive forces, though, estimates Russia’s arsenal as possessing 4,500 nuclear warheads that include 1,780 strategic warheads deployed on missiles and at bomber bases, 700 strategic warheads in storage, and approximately 2,000 nonstrategic warheads

(Kristensen and Norris 84). Estimates also state that there are 311 ICBMs deployed in Russia that can carry roughly 1,050 warheads (Kristensen and Norris 84). The Federation of Atomic Scientists (FAS) also supports these figures. The numbers stated by Kristensen, Norris, and FAS are estimated to be higher than those released by New START due to difficulties such as the counting methods utilized by the treaty as well as transparency issues of Russia and New START. As such, 2015 New START aggregate warhead data does not include weapons stored at bomber bases and only attributes one weapon per bomber, where in reality each plane is able to carry up to 16 nuclear weapons (Kristensen and Norris 95). An additional issue of data discrepancy comes from a lack of transparency from not only New START discontinuing the release of aggregate numbers, but also through the lack of Russia's willingness to publish their comprehensive nuclear forces data (Kristensen and Norris 84-86).

Another publicly available source estimate of Russian forces states that as of February 2015 Russian strategic rocket forces were estimated to have 305 operational missile systems which can carry 1166 warheads, 128 SLMBs with 512 nuclear warheads, and 66 bombers that can carry approximately 200 long-range cruise missiles and bombs (Russianforces.org "Current Status"). Due again to the issue of transparency and count methods, these figures are rough estimates of Russian strategic forces.

The Russian Strategic Rocket Force, as of 2015, organized into 3 missile armies, includes 11 divisions (Russianforces.org "Strategic Rocket Forces"). The 3 armies include: the 27th Guards Missile Army headquartered in Vladimir, the 31st Missile Army headquartered in Orenburg, and the 33rd Guards Missile Army headquartered in Omsk.

The Russian strategic naval forces include four fleets: the Northern Fleet, the Pacific Fleet, the Baltic Fleet, and the Black Sea Fleet. Russia's Nuclear Power Ballistic Missile

Submarines (SSNBs) deployment is only within the Northern and Pacific Fleets. They currently include 2 Delta III SSNBs (Project 667BDR) carrying Defense Intelligence Agency (DIA) designated SS-N-18 SLMBs, 6 Delta IV SSNBs (Project 667BDRM) carrying SS-N-23 SLMBs, and 3 Project 955 Borey-class SSNBs carrying R-30 Bulava SLMBs (Russianforces.org “Strategic Fleet”).

The Russian strategic aviation currently employs two types of strategic nuclear-capable heavy bombers: the Tu-95MS (Bear H) and the Tu-160 (Blackjack). The total number of these bombers as well as their operational status is uncertain (Kristensen and Norris 9). This is due again to counting methods utilized as well as transparency issues. Kristensen and Norris estimate there are roughly over 60 bombers discovered through satellite images. The authors justify their estimate by stating:

Our current estimate of roughly 60 deployed nuclear bombers is based largely on commercial satellite images, which show an average of 54 to 57 bombers typically present at the two strategic bomber bases, Engels and Ukrainka. Another 23 to 26 bombers are typically present at the Ryazan training base, the Kazan production plant, and the Zhukovsky design plant, for a total inventory of 77 to 83 bombers. This number is probably a little high because some of the visible bombers may have been retired, some of the bombers counted were Tu-142 maritime bombers, and the satellite images were not all taken on the same day. Nevertheless, by averaging the numbers visible on all of the images we arrive at a rough estimate of 72 nuclear-capable bombers in service. In addition to the 54 to 57 deployed bombers normally visible at Engels and Ukrainka, another half a dozen or so aircraft from the bases might be on training flights or temporarily at

other bases, for an estimated force of perhaps 60 deployed nuclear bombers (Kristensen and Norris 92).

Another open-source estimated that the Russian Long-range Aviation Command, as of January 2015, included 66 strategic Tu-95MS and Tu-160 bombers (Russianforces.org “Strategic Fleet”). Both of these sources estimate that the Tu-95MS bomber is able to carry up to 16 Kh-55 long-range air-fired cruise missiles, depending on the configuration, while the Tu-160 is able to carry up to 12 Kh-55SM long-range air-fired cruise missiles (Russianforces.org “Strategic Fleet” and Kristensen and Norris 10).

Russian non-strategic nuclear weapons are even more difficult to account for in their total number as well as locations due to Russia’s non-disclosure policy of this information. The United States as well as NATO also does not share their estimates of these weapons which lead to much conjecture in public discourse. Publicly available sources have recently made estimates, though. In FAS’s 2012 Special Report, Kristensen estimates that there are roughly 2,000 non-strategic nuclear weapons assigned to non-strategic nuclear-capable delivery vehicles (Kristensen 46). This includes approximately 730 air force missiles, 700 navy missiles, 170 army missiles, and 430 defense missiles (Kristensen 53). In the 2011 statement to the U.S. House Armed Services Committee Hearing, Dr. James Miller reported that there may be between 2,000 to 4,000 non-strategic tactical nuclear weapons in Russia (Miller 1). The Strategic Posture Commission’s report in 2009 stated that Russia has an estimated 3,800 non-strategic operational nuclear warheads (Perry et al. 111). An additional source, Sutyagin, estimated that in 2012 Russia had approximately 1,000 operationally assigned tactical warheads (Sutyagin “Atomic Accounting” 3). This includes up to 166 air-space defense warheads, 334 air force warheads, 330 navy warheads, and up to 210 warheads for its ground troops (Sutyagin “Atomic Accounting”

73). Sutyagin's estimation differs from previous assessments, though. Amy Woolf, in her 2015 Congressional Research Service report, elaborates on why this estimation differs:

Where past studies have calculated the number of operational warheads by combining estimates of reductions from Cold War levels with assessments of the number of nuclear-capable units and delivery systems remaining in Russia's force structure, the author of this new study focuses on the number of operational units and the likely number of nuclear warheads needed to achieve their assigned missions (Woolf 23).

Though Russian non-strategic nuclear weapons have declined since the Cold War era, growing tensions between the U.S., NATO, Europe, and Russia may halt this process. General Nikolai Makarov, head of the Russian General Staff, commented in 2008 that Russia, in order to ensure state security, will maintain their non-strategic nuclear forces as long as Europe remains unbalanced and saturated with armaments (Nuclear Threat Initiative "Russian Military").

2.B. New and Modernized Missile Systems and Missiles

Russia's development of new and modernized missile systems and missiles is occurring in an effort to upgrade their current forces. The retirement of all Soviet-era missiles is expected to be completed by 2022 (Kristensen and Norris 4). This includes all sectors of the Russian strategic and non-strategic forces.

The Russian Strategic Rocket Forces is in the process of modernizing Topol-M and Yars missiles as well as upgrading their silos and mobile divisions that support these ICBMs. Five variants of the SS-27 ICBM will replace all Soviet-era missiles. The first and second versions include the Topol-M (Mod. 1) missile. The third is the MIRVed version of the SS-27 known also as the RS-24 Yars. The fourth and fifth variant is the RS-26 road-mobile missile and the Sarmat

heavy ICBM. Both of these missiles represent an even deeper modernization of Topol-M or Yars. The expected deployed of the RS-26 is in 2015 and will eventually replace Topol-M mobile missile complexes (Globalsecurity.org “RS-26”) The expected service date of the Sarmat will be by 2018 to 2026 and will also replace the SS-18 ICBM (Globalsecurity.org “Sarmat”).

The Russian strategic fleet is currently underway in upgrading their Delta IVs in order to carry modified SS-N-23 SLMBs as well as the completion of Borey SSNBs. The upgrading of the six third-generation Delta IV SSNBs are now completed in order to carry the modified SS-N-23 Sineva SLBM as well as a possible modified version known as Layner (Kristensen and Norris 8). Estimates of these SSNBs state they are to remain in service until the end of this decade. The Russian fleet is also implementing Borey-class SSNBs. As of January 2015, three of these SSNBs have been accepted into service with a total of eight projected for deployment in the 2014 to 2020 defense plan (Kristensen and Norris 8). The first three active Borey-class SSNBs carry up to 16 SS-N-32 Bulava missiles. The arming of the other five subs is uncertain.

The Russian strategic aviation is in the process of upgrading their existing bombers as well as developing a new subsonic bomber. Tu-160 as well as Tu-95MS bombers are slated for upgrades with seven of them already returned to service in 2014 (Kristensen and Norris 10). A new long-range nuclear-capable subsonic bomber, the PAK-DA, is also under development and with its expected deployment in 2023 (Globalsecurity.org “Prospective”). It will replace the Tu-160, Tu-95MS, and Tu-22M3 bombers.

The modernization of Russian non-strategic nuclear forces is also underway in an effort to replace Soviet-era weapons. For the Russian navy this includes the introduction of the Yasen nuclear attack submarine. This sub may possibly be equipped with a new sea-launched cruise missile known as Kalibr as well as being able to carry SS-N-16 rockets and nuclear torpedoes

(Kristensen and Norris 11). The Russian air force is replacing the Su-24M bomber with 120 Su-34 fighter-bombers through 2020 (Kristensen and Norris 11). The modernization of the Russian army's short-range ballistic missile force includes the replacement of the SS-21 with the SS-26 missile (Kristensen and Norris 11). The upgrading of the air- and missile-defense forces entails the replacement of the S-300 system with the S-400 as well as its upgraded version the S-500.

The overhaul of Russian strategic and non-strategic forces is of great importance to their defense and deterrence strategy. As Russia regards the expansionism of NATO along with the encroachment of the European ballistic missile shield as a threat to their security, the modernization of these armaments is crucial. With the U.S. and Russia accounting for roughly 95% of the world's nuclear arsenal, the tensions between these two nuclear powerhouses can have a massive impact on future weapons proliferation and deployment.

2.C. Russian National Security Strategy

The Russian National Security Concept is a fundamental document directing courses of action when pertaining to strategic as well as security issues. It is a collection of inter-related papers written under the supervision of Russia's Security Council and is part of an overhaul to their strategic documents (Giles1-3). There have been three publications of this document: 1997, 2000, and 2009. Each strategy outlines the direction and focus needed for Russia in order to ensure their strategic stability as well as advance and solidify their world position.

Presidential Decree No. 24 approved the 2000 National Security Concept on January 10, 2000. This document was a revision of the 1997 Strategy and dealt with the current risks and threats at that time. This included a detailed list of perceived foreign threats mainly directed at the United States. Specifically, the document stated these threats as:

- the striving of particular states and intergovernmental associations to belittle the role of existing mechanisms for ensuring international security, above all the United Nations and the OSCE;
- the danger of a weakening of Russia's political, economic and military influence in the world;
- the strengthening of military-political blocs and alliances, above all NATO's eastward expansion;
- possible appearance of foreign military bases and large troop contingents in direct proximity to Russia's borders;
- proliferation of weapons of mass destruction and their delivery vehicles
- a weakening of the integration processes in the Commonwealth of Independent States;
- outbreak and escalation of conflicts near the state border of the Russian Federation and the external borders of the member states of the Commonwealth of Independent States;
- territorial claims against Russia (National Security Concept of the Russian Federation).

In lieu of these perceived external threats to Russia, the 2000 Security Concept outlined measures for deterrence as well as the use of their military forces, including nuclear weapons, in defense of national security. As the 2000 Security Concept states:

- It is one of the major tasks of the Russian Federation to exercise deterrence in the interest of preventing aggression on any scale, nuclear or otherwise against Russia and its allies.

- The Russian Federation must possess nuclear forces capable of assuredly inflicting the desired extent of damage against any aggressor state or coalition of states in any conditions and circumstances.
- The Russian Federation considers the possibility of using military force to ensure its national security based on the following principles:
- employing all the manpower and resources, including nuclear weapons, in its possession in the event of need to repulse armed aggression, if all other measures of resolving the crisis situation have been exhausted or proven ineffective (National Security Concept of the Russian Federation).

In 2009, President Medvedev approved a new National Security Strategy for the Russian Federation until 2020. This document, viewed as a more optimistic version, reflected the changing political and economic environment for Russia over the past decade (Giles 4). The hard stance taken on security threats in the 2000 Security Concept had much less emphasis in the 2009 version, with the primary focus being on economic growth and sustainability.

These changes also included the hard line approach taken in the 2000 Security Concept towards the use of nuclear weapons as well as relations between the U.S. and NATO. In the 2000 Security Concept, Russia outlined the circumstances under which it would consider the use of first strike nuclear weapons. The 2009 Strategy, in contrast, outlined a goal of zero global nuclear weapons through the advancement of bilateral nuclear arms reductions (Russia's National Security Strategy to 2020). Though the 2009 document does discuss deterrence along with maintaining a reasonable parity level with the U.S., it no longer specifies the U.S. as a security threat (Russia's National Security Strategy to 2020). The 2009 Strategy, instead notes the aim of establishing a strategic partnership in the areas of disarmament and arms control,

confidence-building, nonproliferation, anti-terrorist cooperation, and resolution of regional conflicts (Russia's National Security Strategy to 2020).

2.D. Russian Foreign Policy

President Putin approved Russia's latest version of the Concept of the Foreign Policy of the Russian Federation in February 2013. It is a systematic description of the principles, priorities and goals of Russia's foreign policy. The 2013 Concept discusses nuclear arms control as well as the United States' efforts to create missile defense systems. The 2013 Concept views these issues as top priorities in the realm of strategic stability.

The basis for the maintenance of strategic stability is attributable in part on nuclear deterrence as well as the integration of the missile defense system of NATO and the U.S. The 2013 Concept discusses Russian strategic stability in the face of growing nuclear and missile defense capabilities. Article 32 Section F states:

...the establishment of a system of collective response to potential missile challenges on an equal basis, and stands against unilateral arbitrary actions aimed at building up an anti-missile defense system by a state or a group of states that undermine strategic stability and international security (Concept of the Foreign Policy of the Russian Federation).

Article 70 seeks for legal guarantees that this system will not target Russian nuclear offensive forces (Concept of the Foreign Policy of the Russian Federation).

The 2013 Concept thoroughly discusses nuclear disarmament. It describes Russia's willingness to establish nuclear free zones, strengthening global nuclear security, and developing bilateral and multilateral cooperation among states. Even with these common goals at hand, Russia still maintains a negative posture towards NATO expansionism as well as their missile

system encroachment. Russia perceives this as a violation of their strategic stability and this has ultimately led to a breakdown in relations.

Without more cooperation and guarantees by NATO and the U.S., tensions concerning the missile defense system will continue to intensify. If Russia continues to view their strategic offensive capabilities in jeopardy, this could lead to a proliferation of nuclear weapons and ballistic missiles. This is the opposite effect pursued, as Russia, the U.S., and NATO deem this issue as one of the highest priorities in the area of defense.

2.E. The Russian Military Doctrine

A Presidential Decree approved the latest version of the Russian Military Doctrine in February 2010. Much of the precepts outlined in the 2010 document follow the previous tenets of the 2000 version. The basis of the 2010 Doctrine is on other doctrines such as the Socio-Economic Development of Russia until 2020, the National Security Strategy until 2020, and provisions of the Foreign Policy Concept as well as the Maritime Doctrine (Military Doctrine of the Russian Federation).

Unlike the 2009 National Security Strategy, that took a softer approach towards the U.S. and NATO, the 2010 Military Doctrine blatantly identifies NATO as a military danger. Specifically, it states:

...the desire to endow the force potential of the North Atlantic Treaty Organization (NATO) with global functions carried out in violation of the norms of international law and to move the military infrastructure of NATO member countries closer to the borders of the Russian Federation, including by expanding the bloc (Military Doctrine of the Russian Federation).

This doctrine continues to specify the difference between what constitutes a danger and a threat to Russia. This is an important distinction stipulating that a danger consists of a situation that could, under certain circumstances, develop into a military threat. Other external dangers listed in the doctrine related to the U.S., NATO, and ballistic missile defense include:

- the attempts to destabilize the situation in individual states and regions and to undermine strategic stability;
- the deployment (buildup) of troop contingents of foreign states (groups of states) on the territories of states contiguous with the Russian Federation and its allies and also in adjacent waters;
- the creation and deployment of strategic missile defense systems undermining global stability and violating the established correlation of forces in the nuclear-missile sphere, and also the militarization of outer space and the deployment of strategic nonnuclear precision weapon systems;
- territorial claims against the Russian Federation and its allies and interference in their internal affairs;
- the proliferation of weapons of mass destruction, missiles, and missile technologies, and the increase in the number of states possessing nuclear weapons;
- the violation of international accords by individual states, and also noncompliance with previously concluded international treaties in the field of arms limitation and reduction;

- the use of military force on the territories of states contiguous with the Russian Federation in violation of the UN Charter and other norms of international law (Military Doctrine of the Russian Federation).

The one major modification in the 2010 version is a more subtle approach to the use of nuclear weapons. In the 2010 Doctrine, revision of the use of first strike included nuclear weapon utilization when the Russian state or its ally's existence is under attack (Nichol, 4). Though this change may limit the situations that these weapons deployments, it continues to authorize possible first strike engagements in an ongoing conflict (Nichol 4).

These documents comprise the policies and strategies of the use of Russian nuclear, strategic, and non-strategic weapons. The threats and dangers outlined in the above documents reveal the continuing concerns of Russia over its position in the world. With the encroachment of the missile defense shield along with NATO's denial of Russia's joint missile defense system, the near future will not witness the assuagement of these apprehensions. In order to prevent any type of future weapons build-up, NATO, the U.S., and Russia must work together in an effort to fix these pressing issues.

CHAPTER THREE:
THE PHASED ADAPTIVE APPROACH, U.S. AND NATO POLICIES AND STRATEGIES

The threat of Iranian short- and medium-based missiles to U.S. deployed troops and their families, led the current U.S. administration to revise their missile defense system in Europe. The Phased Adaptive Approach (PAA) is an integral part of U.S. efforts to limit the capabilities of an Iranian missile attack in Europe. Russia began to view this program as the U.S. specifically targeting their strategic offensive forces through the release of information of implementation stages. Even with the cancellation of Phase 4 of the PAA in 2013, Russian fears over this European system have not waned.

The advancement of capabilities along with the growth of threats to the U.S. and NATO have influenced the current policies and strategies pursued by these entities in the areas of ballistic missile defense and nuclear weapons. Many of these threats stem from regional states such as Iran and North Korea. The development of adversarial nuclear weapons as well as ballistic missiles has led the U.S. and NATO to enhance the regional architecture of missile defense along with U.S. homeland defense systems.

A systematic examination of this program as well as the policies and strategies of the U.S. and NATO is needed in order to fully comprehend how this system could potentially affect, if affect at all, Russian offensive capabilities. Section 3.A. delves into the history of U.S. and

Russian missile defense and how these programs subsequently evolved into the programs implemented today. Section 3.B. discusses the current U.S. ballistic missile program, the Phased Adaptive Approach, and its implementation phases. Section 3.C. examines Russian concerns about the PAA as well as the actual capabilities that this system has in detracting from Russia's offensive missile forces. Section 3.D. discusses the U.S. policy on nuclear weapons and their approach to continued deterrence. It examines the Nuclear Posture Review and its policy recommendations in this area. Section 3.E. discusses the U.S. policy on ballistic missile defense. It covers the Ballistic Missile Defense Review along with its proposed framework in the areas of missile defense and regional architectures. Section 3.F. reviews NATO's policy on ballistic missile defense. It discusses the Deterrence and Defense Posture Review and its defense component towards missile defense.

3.A. History of U.S. and Russian Ballistic Missile Defense

During the 1950's the United States began directing their interests to protecting the country against the growing threat of Russian ICBMs. The U.S. Army was therefore sanctioned to develop an anti-ballistic missile. Approval of the project known as Nike Zeus occurred in 1958 and consisted of a system of radars and long-range nuclear interceptor missile engineered to target and destroy incoming ICBMs above the atmosphere. In 1962, tests of this system were successful in its interception of an Atlas D missile. The employment of Nike Zeus, though, was ultimately not approved by policymakers due to the immense cost of deployment, the growing fear of a USSR response in increasing their offensive forces, and that countermeasures could effectively defeat this system (Union of Concerned Scientists).

In response to these issues, the Nike X program subsequently replaced the unsuccessful Nike Zeus system in 1963. Nike X units were equipped with electronically steered single phased-

array radars that had the capability to track several targets at once (Union of Concerned Scientists). Nike X also included a new high-acceleration missile, named Sprint, which could intercept incoming ICBMs within the atmosphere.

During this time, the USSR was also developing an ABM system. The SA-5 missile was widely being deployed in 1963 and possessed long-range high-altitude intercept capabilities (Flax 38). Replacement of this system ultimately occurred in 1963, though, with the ABM-1 system designed to protect Moscow. The original planning of the system included eight complexes each with 16 interceptors, but due to the ratification of the ABM Treaty this number shrank to one site carrying a total of 100 nuclear-armed Galosh interceptors (Union of Concerned Scientists). ABM-1 was equipped with phased-array radars utilized for initial tracking as well as peripheral radars utilized for early warning (Flax 39). The eventual upgrade of this system occurred in 1978 where deployment of two nuclear-armed interceptors, the Gazelle and updated Galosh, as well as the utilization of a phased-array Pillbox radar, the original phased-array radars, and periphery radars (Union of Concerned Scientists). This system is still operational, but is in an ever declining capacity.

With increasing pressure to construct a U.S. ABM shield in response to Soviet missile defense, President Johnson in 1967 ordered the development of a “thin” missile defense system named Sentinel. Its basis lied in Nike X technology with the design to protect U.S. cities against a light attack (Flax 36). Due to massive upheaval against the proposed deployment sites, Nixon approved development of a significantly modified version of the Sentinel system, called Safeguard, in 1969. It was to consist of the same components as Sentinel, but deployed in different amounts and locations (Flax 36). Its new objective consisted of deployment around military installations with offensive missile shields in an effort to ensure that these ICBMs could

withstand a first strike (Hildreth 3). This system, effectively terminated in 1978, gave way to President Reagan's Strategic Defense Initiative.

In an address on October 6, 1985, President Reagan stunned the world when he announced that his administration would begin the development of space-based weapons systems, called the Strategic Defense Initiative (SDI). This program was to consist of land-, sea-, air-, and space-based sensors and interceptor missiles for a complete global defense network (Hildreth 3-4). Reagan's foreign policy objective at the time was to force the USSR to the negotiating table in an effort to derail their hold as an international superpower. Statements of this program found it not to be in violation of the ABM Treaty due to the non-deployment of these specific weapons. The Department of Defense in 1984 outlined SDI to Congress, with the main goal of enhancing deterrence in contrast to that of the previous 25 year policy of mutually assured destruction (Drell et al. 52). This administration prefaced that as long as the basis of SDI was on research, then there was no breach to the ABM Treaty (Kennedy 857). The Central Intelligence Agency warned, though, of possible Soviet fallout in implementing and operating this defensive system. Criticisms of this ambitious initiative included its unfeasibility and deemed by many as a starting point to rekindle offensive arms races between the USSR and United States. The Reagan administration, though, countered these negative assessments and touted the importance that SDI had towards hastening Cold War hostilities.

During the latter part of the 20th century and the early part of the 21st century, the United States began discussions of deploying a national missile defense (NMD) program. This was to be the hallmark piece for the George W. Bush administration's 2001 security policy and designed to combat rogue states. Several factors brought strategic missile defense back into the limelight in this era. These included threats from potentially hostile states that possessed missiles and

WMDs, the technological advances of the United States, the budgetary surplus the U.S. amassed in the later part of the 1990s, and U.S. domestic politics (Gordon 20-21). In reaction to potential threats, the Bush administration established this program to deploy intercept components in Poland and the Czech Republic (Mankoff 333). Abandonment of these states occurred in 2010, though, in favor of Romania and Bulgaria. These strategic missile defense systems included the following:

- ground-based interceptors employing exoatmospheric kinetic-kill vehicles using multispectral (including long-wave infra-red) seekers to home on their targets;
- ground-based X-band tracking radars (ABM radars) either collocated with an NMD site or deployed elsewhere;
- upgraded ballistic-missile early-warning radars to provide warning and cueing information to X-band tracking radars, and possibly to provide track data on missile trajectories beyond the range of X-band tracking radars;
- two space-based sensor systems: the Space-Based Infra-Red System – High Earth Orbit satellites (SBIRS-High) that will replace the current Defence Support Program (DSP) satellites for ballistic-missile early warning, and the Space-Based Infra-Red System – Low Earth Orbit (SBIRS-Low), a constellation of satellites designed to provide accurate track and decoy discrimination data on objects in space; and
- a battle-management and command, control and communication system based at the North American Aerospace Defence headquarters at Cheyenne Mountain, Colorado, which would integrate sensor data for early-warning

tracking and decoy discrimination, allocate interceptors against incoming targets, allow human intervention in the decision-making process, and provide communication links with the various elements of the NMD system, including an in-flight interceptor communication system that provides data link to ground-based interceptors in flight (Wilkening 30-31).

NMD was in clear violation of the ABM Treaty, though. In order to counter this, the Bush Administration made a shocking announcement that it would withdraw from the ABM Treaty in December 2001. The backlash towards NMD ultimately facilitated in paving the way for the Phased Adaptive Approach.

3.B. The Phased Adaptive Approach

The United States effectively pulled out of the ABM Treaty in mid-2002, in order to develop a missile defense system. Russia as well as NATO members started to criticize the possible ramifications of this policy. As a result of U.S. withdrawal from the ABM Treaty, Russia subsequently announced that the START II Treaty would no longer bind them. With more NATO cooperation desired by Russia in the context of missile defense, this left a glaring hole in the continuance of arms non-proliferation. The U.S. and Russia attempted to mitigate the ongoing issues concerning the missile shield. The measures undertaken by officials to quell uncertainties, such as in the 2007 G8 Summit and the 2007 Kennebunkport Summit, were met with failure, though (Weitz 108-110).

In 2009, President Obama revealed a new U.S. plan for missile defense in Europe called the Phased Adaptive Approach (PAA). Secretary of Defense Gates along with the Joint Chiefs of Staff at that time recommended that the United States revise their 2007 European missile defense program in light of new threat assessments of Iranian ballistic missiles as well as advances in

missile defense capabilities and technologies (White House). The program's implementation was to occur in four phases with each phase occurring in different years as well as different and upgraded platforms, missiles, and sensors. The PAA outline consists of:

- Phase One (in the 2011 timeframe) – Deploy current and proven missile defense systems available in the next two years, including the sea-based Aegis Weapon System, the SM-3 interceptor (Block IA), and sensors such as the forward-based Army Navy/Transportable Radar Surveillance system (AN/TPY-2), to address regional ballistic missile threats to Europe and our deployed personnel and their families;
- Phase Two (in the 2015 timeframe) – After appropriate testing, deploy a more capable version of the SM-3 interceptor (Block IB) in both sea- and land-based configurations, and more advanced sensors, to expand the defended area against short- and medium-range missile threats;
- Phase Three (in the 2018 timeframe) – After development and testing are complete, deploy the more advanced SM-3 Block IIA variant currently under development, to counter short-, medium-, and intermediate-range missile threats; and
- Phase Four (in the 2020 timeframe) – After development and testing are complete, deploy the SM-3 Block IIB to help better cope with medium- and intermediate-range missiles and the potential future ICBM threat to the United States (White House).

The stated benefits of such a system included the sustainment of U.S. homeland defenses; accelerated protection of U.S. deployed forces, civilian personnel, and their accompanying

families; the confirmation and enhancement of protection of all NATO allies' territories and populations; the deployment of proven capabilities and technologies; and flexibility in architectural upgrades and adjustments (White House).

At the 2010 Lisbon Summit, NATO members adopted a common missile defense program that was to incorporate the PAA. This was in direct response to threats posed by potential adversarial regimes' ballistic missile proliferations (Hildreth and Ek 5). As Article 37 in the Summit's Declaration elaborated on this point:

To this end, we have decided that the scope of NATO's current Active Layered Theatre Ballistic Missile Defence (ALTBMD) programme's command, control and communications capabilities will be expanded beyond the protection of NATO deployed forces to also protect NATO European populations, territory and forces. In this context, the United States European Phased Adaptive Approach is welcomed as a valuable national contribution to the NATO missile defence architecture, as are other possible voluntary contributions by Allies. We have tasked the Council to develop missile defence consultation, command and control arrangements by the time of the March 2011 meeting of our Defence Ministers. We have also tasked the Council to draft an action plan addressing steps to implement the missile defence capability by the time of the June 2011 Defence Ministers' meeting (North Atlantic Treaty Organization "Lisbon Summit").

This Summit ultimately aided in solidifying the PAA into the European defense strategy. There were numerous Russian concerns, however, of the PAA's approach to missile defense as well as the ultimate aims of this program.

The PAA has become a major factor influencing the development of the European missile defense system. With the continued emergence of potential threats to the U.S. and its allies, this system helps gain a strategic deterrence advantage over U.S. adversaries and proliferating rogue states. This is at a cost, though, to Russian strategic stability and their parity level to U.S. weapons numbers. The policies and strategies of these two states may see significant changes in bilateral relations and upset the reset accorded to them through the New START Treaty.

3.C. Russian Concerns and PAA Capabilities

Many saw the introduction of the PAA in 2009 as quelling factor to Russian concerns over the Bush ballistic missile program. Russia first met the PAA with positive reactions, but as details of the program emerged, Russian officials once again expressed major concerns about this system. This was due to Phase 4 of the PAA where SM-3 IIB interceptors deployed at Redzikowo, Poland as well as missile defense ships deployed in the North Sea and Barents Sea had the capability of intercepting their ICBMs (Sankaran “PAA” xi). Russian officials stated that deploying missiles in Poland signaled that the real target was not Iran, but in fact Russia. The successful negotiations on Iran’s nuclear program also lent further credence to Moscow of the true intentions of the U.S. Putin has argued that the continuation of the missile defense program confirms that it was directed against Russia all along.

Another significant issue arose in the disparity between the U.S. and Russia as to extent of the threat posed by Iran and North Korea (Bermant 40). Russia has deployed 9 early warning radar sites many of which provide protection from Iran and North Korea (Sutyagin “Russian Countermeasures”). Almost half of Russia’s theatre ballistic missile defense assets are also located near Iran where they defend against a theoretical Iranian missile strike (Bermant 40).

These deployments contradict the Kremlin's stance on their threat assessments towards Iran and North Korea, therefore, as well as their negative position towards the PAA that it is an unnecessary asset to defend against these regimes (Sutyagin "Russian Countermeasures").

Russia continued to demand full involvement in the missile defense system, legally binding agreements that interceptor missiles will not target Russian offensive forces, that all missiles should point outside the Euro-Atlantic region, a deal on the maximum number of missiles deployed, a limit on missile maximum velocity, and restrictions on missile defense sites (Peczeli 5-6). The cancellation of Phase 4 of the PAA ultimately occurred in 2013 in part to assuage Russian concerns of vulnerability.

As Russia strove to become an active participant in European missile defense, they initially proposed a joint missile defense system with NATO in which Europe would be divided into two sections. Russia would assume responsibility for some Eastern European states and NATO would be responsible for the others. This would ensure that missiles were not directed towards Russia as well as it would provide the Kremlin with equal authority in interceptor launch decision-making (Peczeli 6). The United States as well as NATO rejected this proposal, citing Article 5 of the North Atlantic Treaty (Sankaran "Missile Defense"). The United States continually declined to engage in negotiations with Russia over a joint missile defense initiative, which led President Medvedev and President Putin, during those years, to threaten deployment of an early warning radar and short-range missiles in order to eliminate PAA interceptor sites (Peczeli 6). President Medvedev warned in 2011 that without more tangible cooperation between Russia, the U.S., and NATO, this system could lead to a new arms race, even with Russia's weak economic position (Hildreth and Ek 9).

The United States, countering Russian claims of susceptibility, has touted that PAA deployed interceptors would not interfere with or pose a threat against Russian missile forces. Currently, Russia's strategic missiles forces are so significant that they could easily inundate European missile defenses including interceptors at the site in Poland (Wilkening 34). In-depth, open source physical analysis confirms that ballistic missile defense (BMD) interceptors and their footprints do not have the capability to threaten Russia's strategic forces.

A missile defense's footprint is the geographic area of defence against a threat with its size determined by the maximum kinetic reach of an interceptor (Wilkening 37). SM-3 IIA interceptors launched from the site in Redzikowo, Poland would not kinematically be able to reach Russian ICBMs even with a zero time delay (Sankaran "United States" 37). The SM-3 IIA missile with a burnout velocity of 4.5 km/s would only be capable of intercepting Russian ICBMs from the launch sites of Kozelsk and Tatishchevo and only if heading to Washington D.C. (Sankaran "United States" 37). This leaves nine other sites where Russia could launch without fear of interception since a burnout velocity of more than 5.5 km/s would be needed (Sankaran "United States" 37-38). A time delay of 155 seconds for interceptors at the Poland site also inhibits the interception of Russian ICBMs (Sankaran "United States" 38). The same goes for SA-3 IIA missiles deployed on Aegis ships in the North and Barents Seas. With a time delay of approximately 155 seconds along with a 4.5 km/s burnout velocity, these sea-based missiles would not be capable of intercepting Russian ICBMs (Sankaran "United States" 45). Only the now terminated Phase 4 SM-3 IIB missiles would have had the capability to intercept any of these targets.

Deployment of U.S. missile defenses in Alaska and California has already begun, during the Bush administration, in order to intercept a limited North Korean ICBM attack. After the

cancelation of Phase 4 of the PAA, the Obama administration planned on adding more interceptors to the missile system in Alaska in an effort to remain steadfast in their goal of defending against an Iranian ICBM attack. This has done little to assuage the concerns of Moscow as they have recently expressed fears of this enhanced U.S. based system. The perceived impact this as well as European-based interceptors will have on Russian missile forces relies on the number and locations of these missiles. The evolving technology and capabilities of U.S. and NATO missile defenses as well as the economic superiority of the U.S. has Moscow on edge. This negative outlook still remains, even with the evidentiary data that the PAA could not effectively deter the capabilities of Russian ICBMs. The effects of Russia's growing concern that these systems affect their strategic stability may cause significant ramifications in the areas of arms control and non-proliferation, even though the Russian economy could ill afford another arms race with the United States.

3.D. U.S. Policy on Nuclear Weapons

The United States nuclear policy is an adaptive approach to nuclear deterrence. Its basis is the legislatively-mandated Nuclear Posture Review (NPR). This review establishes the nuclear policies, strategies, capabilities, and force posture of the United States. This is the third comprehensive review of U.S. nuclear policies and built upon the Ballistic Missile Defense Review as well as the Quadrennial Defense Review.

The latest NPR assessment was in 2010 and outlined a strategy for implementing the President's Prague Agenda as well as the sustainment of nuclear deterrence. The 2010 review listed 5 objectives for U.S. nuclear policy. These included preventing nuclear proliferation and nuclear terrorism, reducing the role of nuclear weapons, maintaining strategic deterrence and stability at reduced nuclear force levels, strengthening regional deterrence and reassurance of

U.S. allies and partners, and sustaining a safe, secure, and effective nuclear arsenal (Nuclear Posture Review “Fact Sheet”).

Preventing nuclear proliferation and terrorism is for the first time the top priority in the U.S. nuclear agenda. The Department of Defense defined four key initiatives in this area. The first entailed increased efforts to strengthen and encourage non-proliferation through the bolstering of the International Atomic Energy Agency’s (IAEA) compliance regulations and safeguards as well as increasing the Department of Energy’s (DOE) non-proliferation programs by 25% (Nuclear Posture Review “Rollout”). Second, is the effort to secure nuclear material that is susceptible to theft or sale within a four-year time span (Nuclear Posture Review “Rollout”). Third, includes the fulfillment of the Nuclear Non-Proliferation Treaty (NPT) obligations. Fourth, is the commitment to hold any state, non-state actor, or terrorist group accountable that assists terrorist efforts to gain WMDs (Nuclear Posture Review “Rollout”).

The second objective of the 2010 NPR is a reduction in the employment of nuclear weapons. This is through an updated policy, which states that the U.S. will not threaten the use of nuclear weapons against states that are party to the NPT. Only under extreme circumstances would the U.S. consider the use of nuclear weapons in defense of itself or its allies. Decreasing the role of nuclear weapons would then be through the strengthening of conventional weapons. Utilization of U.S. nuclear forces would occur only as a means of deterrence as long as nuclear weapons exist (Nuclear Posture Review “Fact Sheet”).

The third 2010 NPR goal is the maintenance of strategic deterrence and stability at reduced force levels. The basis of the renewal of arms control in conjunction with Russia is established through New START requirements. Key provisions include:

- The United States and Russia agreed to limits of 1,550 accountable strategic warheads, 700 deployed strategic delivery vehicles, and 800 deployed and non-deployed strategic launchers. The Treaty does not constrain U.S. missile defenses, and allows the United States to pursue conventional global strike systems.
- The U.S. nuclear Triad of ICBMs, SLBMs, and nuclear-capable heavy bombers will be maintained under New START
- All U.S. ICBMs will be “de-MIRVed” to a single warhead each to increase stability
- The United States will pursue post-New START arms control with Russia that addresses not only strategic weapons, but also non-strategic and non-deployed nuclear weapons.
- The United States will pursue high-level bilateral dialogues with Russia and China aimed at promoting more stable and transparent strategic relationships (Nuclear Posture Review “Fact Sheet”).

New improvements to U.S. command and control systems are another step expressed in the NPR in the completion of this objective.

The fourth objective of strengthening regional deterrence as well as reassuring U.S. allies and partners comprises several parameters including the enhancement of conventional capabilities through missile defenses. These regional architectures will retain a nuclear component on fighter bombers and heavy bombers. The U.S. will also maintain close relations with allies and partners in order to ensure reliability of U.S. deterrence (Nuclear Posture Review “Rollout”).

The final objective is the approach to sustaining the U.S. nuclear stockpile. Several principles guide this process. First, the U.S. will not conduct nuclear testing while pursuing the ratification of the Comprehensive Nuclear Test Ban Treaty. Second, no new nuclear warheads development will occur while reviewing all warhead sustainment options such as Life Extension Programs (LEPs). Third, includes an increase in investments of the U.S. nuclear weapons complex (Nuclear Posture Review “Rollout”).

The BMDR and NPR policies led President Obama in June 2013, to announce a new U.S. nuclear policy. Its basis lies in the evolving security challenges faced by the U.S. and its allies and partners. This new guidance:

- affirms that the United States will maintain a credible deterrent, capable of convincing any potential adversary that the adverse consequences of attacking the United States or our allies and partners far outweigh any potential benefit they may seek to gain through an attack.
- directs DOD to align U.S. defense guidance and military plans with the policies of the NPR, including that the United States will only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners. The guidance narrows U.S. nuclear strategy to focus on only those objectives and missions that are necessary for deterrence in the 21st century. In so doing, the guidance takes further steps toward reducing the role of nuclear weapons in our security strategy.
- directs DOD to strengthen non-nuclear capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks.

- directs DOD to examine and reduce the role of launch under attack in contingency planning, recognizing that the potential for a surprise, disarming nuclear attack is exceedingly remote. While the United States will retain a launch under attack capability, DOD will focus planning on the more likely 21st century contingencies.
- codifies an alternative approach to hedging against technical or geopolitical risk, which will lead to more effective management of the nuclear weapons stockpile.
- reaffirms that as long as nuclear weapons exist, the United States will maintain a safe, secure and effective arsenal that guarantees the defense of the U.S. and our allies and partners. The President has supported significant investments to modernize the nuclear enterprise and maintain a safe, secure, and effective arsenal. The administration will continue seeking congressional funding support for the enterprise (Nuclear Posture Review “Fact Sheet”).

This approach has been determined to be paramount in the maintenance of U.S. strategic deterrence. This includes a reduction in U.S. nuclear weapons established in the New START Treaty. The U.S. pursues these objectives in order to continue arms reductions deals with Russia. This is in an effort to move beyond the Cold War mentality of mutually assured destruction.

3.E. U.S. Policy on Ballistic Missile Defense

Delivery of a review on the U.S. policy on ballistic missile defense to Congress occurred in February 2010. The Ballistic Missile Defense Review (BMDR) discussed current threats to the

U.S. as well as the strategies, policies, and priorities of the current administration. This included defending against regional threats through the integration of regional capabilities.

Current situations that the U.S. views as priority in defense against a limited ballistic missile attack, include several threats. First, the expectation of growth and improvement in capabilities of adversarial ballistic missile systems will continue over the next decade. Second, the development of long-range missile from regional actors will be capable of threatening the U.S. Third, short-range missile threats to U.S. deployed troops, allies, and partners will grow (Ballistic Missile Defense Review “Briefing Slides”). In light of these threats, the BMDR has offered a strategy and policy framework for U.S. defenses as well as ballistic missile defenses.

The administrative priorities that the BMDR framework recommends include multiple facets. Protection maintenance of the homeland against a limited ballistic missile attack is through the continued development of the Ground-based Midcourse Defense (GMD) system as well as advancing potential auxiliary capabilities. Defense against regional threats hostile to U.S. forces, allies, and partners will be through the continued deployment of existing capabilities as well as the development of new technologies in an effort to increase U.S. ballistic missile system potentials. Initial deployment of new system capabilities will occur only after new system capabilities are tested and verified to be reliable and effective as well as fiscally sustainable over the long term. U.S. BMD potentials must have flexible capabilities in order to adapt to evolving threats. The BMDR’s last policy priority includes the U.S. effort to expand international cooperation in missile defense (Ballistic Missile Defense Review “Fact Sheet”).

International cooperation as well as defending against regional threats includes the implementation of the PAA within a NATO context. The BMDR outlines the continued cooperation and engagement with Russia on this ballistic missile defense system. As the review

states, “With Russia, we are pursuing a broad agenda concentrating on shared early warning of missile launches, possible technical cooperation, and even operational cooperation” (Ballistic Missile Defense Review “Fact Sheet”). Russia, though, has expressed concerns as NATO and the U.S. have met their desired involvement in the PAA with great resistance.

3.F. NATO Policy on Ballistic Missile Defense

The Chicago Summit in May 2012 reviewed the NATO policy review towards their deterrence posture against multiple ranges of threats. The Deterrence and Defence Posture Review (DDPR) is similar to the NPR and BMDR in the sense that it assesses the overall posture and strategy of NATO in the areas of deterrence and defense. Since NATO views ballistic missile defense as an important component of deterrence, these systems represent a strategy of deterrence by denial (Bermant 31). As Bermant states:

The denial strategy seeks to dissuade a potential aggressor by convincing it that its actions will be denied the benefits originally anticipated. In 2007, the US MDA stated that BMD can work to deter adversaries since it diminishes the political and military value of offensive missiles. Furthermore, missile defenses are not an alternative to an offensive deterrent; rather they constitute an important and supplementary component of deterrence (Bermant 31).

The DDPR includes three major defense components: the contribution of nuclear forces, the contribution of conventional forces, and the contribution of missile defense. These sections are meant to complement each other, but at different levels of involvement between NATO members. Below is the review of the contribution of missile defense.

Section IV of the DDPR discusses the role of missile defense utilized in deterrence for NATO member states. Article 20 in Section IV states this role as:

20. Missile defence can complement the role of nuclear weapons in deterrence; it cannot substitute for them. This capability is purely defensive and is being established in the light of threats from outside the Euro-Atlantic area. It is expected that NATO's missile defence capabilities would complicate an adversary's planning, and provide damage mitigation. Effective missile defence could also provide valuable decision space in times of crisis. Like other weapons systems, missile defence capabilities cannot promise complete and enduring effectiveness. NATO missile defence capability, along with effective nuclear and conventional forces, will signal our determination to deter and defend against any threat from outside the Euro-Atlantic area to the safety and security of our populations (North Atlantic Treaty Organization "Deterrence and Defence").

The basis of missile defense lies in the PAA as well as other NATO member's contribution of relevant capabilities. The objective of this system is the continued commitment to the Lisbon Summit in an effort to provide missile defense coverage of all NATO members, territories, and forces through capabilities centered on the Active Layered Theatre Ballistic Missile Defence command.

The DDPR also addresses Russian reservations and fears of the implementation of this system. In Section IV Article 21, the review states that it will engage in cooperation and transparency as allowed through NATO's engagement policy. This article specifically states that the focus of these missile defense capabilities is not against Russia nor will they challenge their offensive strategic forces (North Atlantic Treaty Organization "Deterrence and Defence"). This has been a huge issue of contention for Russia, though, as they see this as direct encroachment

upon their strategic deterrence. This will more than likely have negative impacts on Russia's commitment to reduce their nuclear weapons stockpile.

The policies, strategies, and capabilities of the U.S. and NATO, under the regulations of the Intermediate-Range Nuclear Forces (INF) Treaty and the New START Treaty, direct the development and implementation processes of the European and U.S. missile defense shields. Russia continues to vocalize their concerns about these systems, as encroachment to their state persists. Russia, though, has recently come under fire from the U.S. stating that they were in violation of the INF Treaty. Russia has denied these allegations in an INF compliance meeting held in Moscow in 2014. With these continued hostilities, lack of trust, and expanding missile defense systems concerns, the U.S., NATO, and Russia must more than ever adhere to the guidelines of these treaties in order to maintain the non-proliferation and control of strategic and non-strategic weapons.

CHAPTER FOUR:

CONCLUSION

The New START Treaty entered into force in 2011 between the U.S. and Russia. Seen as a reset in the relations of these states, this treaty also established controls over weapons proliferation. As both of these states have released documents within the last decade confirming their commitment to arms control as well as nuclear non-proliferation and reduction, the European missile defense system has contrarily sparked rhetoric of a new arms race. With the expansion of this system coming closer to Russian territory, they claim that their strategic stability is becoming unstable in relation to weapons parity with the U.S. This factor has greatly attributed to the rise in tensions between these two states.

The end of the Cold War marked a time where mutually assured destruction was no longer relevant. The fall of the Soviet Union as well as evolving geopolitical situations led to the end of ABM Treaty in 2002 and the formation of new missile defense technologies. These factors have attributed to issues arising in the area of strategic stability. This is especially prevalent in Russia's viewpoint. In terms of today's international environment, Russia finds that their arsenal is the only true leverage they hold in their struggle to remain an influential global power that can rival the U.S. As Rojansky elaborates, "Emphasis on strategic stability is a way for Russia to maintain some leverage over the world's dominant power, the United States, and by extension over other great powers that are fast eclipsing Russia in every other sphere" (Colby

and Gerson 297-298). The U.S. on the other hand, finds that the development of a missile defense system does not affect this dynamic as its focus is towards potential threats and not directed at Russia.

Today, potential threats to the U.S. included regional adversaries such as Iran and North Korea. Controversy surrounding missile defense has become a pinnacle topic in the current deterrence policies of the U.S. and Russia. As Rybachenkov expounds, “Missile defense has become nowadays one of the most contentious factors in the US-Russian relations obstructing the way to further nuclear arms reductions and consequently the way to enhancement of strategic stability” (Rybachenkov 2).

Deterrence theory has been the hallmark of policies and strategies undertaken by both the United States and Russia since the Cold War. The assumptions of this theory influence the overall effectiveness of deterrence. This is problematic, though, as many of these assumptions have numerous flaws when applied to real-world scenarios.

A core assumption of deterrence theory rests upon that of decision-makers acting in a rational manor. Concepts of what constitutes “rational” behavior differ around the world, though. As Huntington states:

Western concepts differ fundamentally from those prevalent in other civilizations. Western ideas of individualism, liberalism, constitutionalism, human rights, equality, liberty, the rule of law, democracy, free markets, the separation of church and state, often have little resonance in Islamic, Confucian, Japanese, Hindu, Buddhist, or Orthodox cultures.... Indeed, the author of a review of 100 comparative studies of values in different societies concluded that “the values that

are most important in the West are least important worldwide” (Huntington 40-41).

This divergence in values and perspectives may lead to fundamental misjudgments towards the expected behavior between actors. This is especially valid in the case of rogue states and non-state actors.

The U.S. deterrence policy relies on the maintenance of nuclear weapons as well as enhancing its nuclear capabilities in part to deter rogue states as well as terrorist organizations (Malhotra 1). The issue with this rationale arises, though, through the tactics often employed by these actors. Groups such as Al Qaida, Hamas, Hezbollah, and the Islamic State in Iraq and the Levant (ISIL), among others, utilize self-immolating tactics in an effort to gain power. They do not operate under what deterrence theory would regard as rational behavior. Rogue states such as Iran, Sudan, and Syria utilize terrorist groups in order to maintain the ruling powers in these states. Deterrence theory, therefore, is not applicable to actors such as these whom politically have nothing to lose (Malhotra 1). It is thus illogical to assume that all state and non-state actors will operate under the premise of rational decision-making strategies.

The next critique of deterrence theory lies in its ambiguity. In order to establish if deterrence works you must first know whether a deteree had the intention of attacking then refrained due to the defending state’s threats (Wilson 432). The deteree, for example, may not have even intended to attack in the first place or been dissuaded to attack through political, social, moral, or financial reasons. As Smoke states, “It is difficult, however, to identify cases of deterrence success reliably in the absence of better data on the policy calculations of potential initiators who presumably deterred. Instances of apparently successful deterrence... may be spurious” (George and Smoke 516).

In the case of nuclear deterrence, proponents of this theory argue that it was a stabilizing effect between the Soviet Union and U.S. during the Cold War. Although there was a massive build-up of nuclear arsenals at that time, heralding deterrence as the reason that neither side launched an offensive attack is a false assumption. There is little evidence to suggest that either side was on the threshold of carrying out a strike on the other as well as there is no evidence that such an attack was ever proposed, approved, then prevented due to the threat of a nuclear counterattack (Wilson 433).

With Russia's position that the U.S. and NATO missile defense system will negatively alter their deterrence parity, how does this viewpoint as well as deterrence policies affect future weapons proliferation? One way that deterrence deleteriously affects future weapons proliferation is that it imparts nuclear weapons as being of fundamental importance in the protection of states, as evidenced through the increase of nuclear weapons holding states over the years. Deterrence theory, if accepted as valid, should have no opposition from world leaders for all states around the globe to acquire and hold these weapons. Another point resides in the issue that if nuclear deterrence is valid, then the need for missile defense should then become obsolete. This is not the case, though, as the U.S. and Russia spend vast resources on developing missile defense systems around the world.

Missile defense systems, in turn, also adversely affect weapons proliferation. Since the beginning of the European missile defense system, Russia has warned about a breakdown in future arms control. They claim if there is no cessation in the progression of the missile field, they would consider pulling out of the New START Treaty (Nuclear Threat Initiative "NATO"). As Mikhail Ulyanov, head of the ministry's department on arms control, stated in 2014, "We are concerned that the U.S. is continuing to build up missile defense capability without considering

the interests and concerns of Russia. Such a policy can undermine strategic stability and lead to a situation where Russia will be forced to exercise [its] right of withdrawal from the [New START] treaty” (Nuclear Threat Initiative “NATO”).

If Russia does abandon the New START Treaty then weapons proliferation may commence at an alarming rate. Already many analysts and top U.S. and NATO officials have warned policy makers about the ramifications of Russian proliferation. President Putin has made several statements about the European missile defense system leading to a new arms race between the U.S. and Russia. If Russia views its strategic stability to be in any more danger of diminishing then these threats could become reality. Former NATO Supreme Allied Commander, Wesley Clark in a recent interview with CNN stated that, “...yes, there is an arms race that’s coming. We just have to face that Russia is coming back under Vladimir Putin” (CNN). Withdrawal from the New START Treaty will unbind Russia from its regulations on the number of deployed and non-deployed ICBMs, SLBMs, and heavy bombers.

Recent world events have also influenced the current status of Russian forces. As Russian leaders adhere to the viewpoint that the U.S. and NATO missile system is not only encroaching on Russia’s sphere of interests, but also adversely affecting its deterrence position, they have begun to increase their weapons forces. This is evidence in the current New START Aggregate Treaty data revealing that Russia has increased their forces in every category to levels that are higher than when this treaty entered into force (Department of State).

Deputy Prime Minister Dmitry Rogozin addressed the belief that the U.S. is upsetting the nuclear balance after a Russian Security Council meeting in July of this year. He countered that Russia had no choice but to react to the aggressive capabilities of the U.S. (Kelly and Lowe). As Rogozin stated, “Measures for countering the aggressor could include those that concern Russia's

strategic nuclear capability, that is reciprocal measures so that, God Forbid, no one gets a crazy idea in their head” (Kelly and Lowe). As tensions have heightened to drastic levels following the annexation of Crimea, Russia’s rhetoric of utilizing nuclear weapons if the U.S. and NATO violate Russian vital interests has increased.

President Putin, on June 16th of this year, stated that Russia will boost its nuclear arsenal with 40 new missiles in response to concerns about the U.S. and NATO missile defense system near its borders (Baczynska). Officials in Russia warned at a meeting in Elbe in March of this year that the Kremlin will respond with force, including nuclear, if the U.S. and NATO undertakes their plan to store heavy military equipment in Eastern Europe, attempt to return Crimea to Ukraine, and supply weapons to Ukraine (Lain). As Putin stated, “We will be forced to aim our armed forces ... at those territories from where the threat comes” (Baczynska). This is not the first time, though, that Putin has threatened to use their nuclear arsenal. In a documentary released in March 2015, Putin acknowledged his readiness to place Russian nuclear weapons on high-alert status over hostilities stemming from the annexation of Crimea (Lain).

The recent agreement reached with the Iranian Nuclear Deal has also sparked tensions between the U.S., NATO, and Russia. The lack of commitment of the U.S. to Obama’s statement in the 2009 Prague speech to cease development of the missile shield in lieu of the elimination of an Iranian threat has caused many officials in Moscow to claim that the U.S. was misleading in its ultimate goals. As Putin stated in Sochi earlier this year, “We had the right to expect that work on development of US missile defense system would stop. But nothing like it happened, and it continues” (RT.com). He also added that under the guise of the Iranian threat, the international security system had been destroyed (RT.com). The U.S. on the other hand views the Iranian

ballistic missile program as a threat and hence has continued efforts to develop missile defense technologies (RT.com).

Can the relationship strain between these two nuclear giants over missile defense and its potential ramifications ever see resolution? Since compromise between these states may not be realistic, due to their fundamentally divergent interests, one possibility is through open dialogue discussions about the implementation and component structure of the missile defense system (Giles and Monaghan 44). Allowing Russia access to the burnout velocity data for interceptors has been suggested (Sankaran “Missile Defense”). The reduction to the maximum velocity of current interceptors and the elimination of SM-3 IIB interceptors as well as the Precision Tracking Space System from the PAA has already occurred, though. With the ability of Russia’s new early-warning radars to assess the characteristics of these interceptors, it is not clear what additional data the U.S. or NATO could provide to Moscow that they could not discern themselves (Sankaran “Missile Defense”). It will be necessary, though, for U.S. and NATO policymakers to discuss the future of the PAA to their Russian counterparts in an effort to reassure them of the limited capabilities of this system as well as its ultimate goals. Accomplishing this may be through the U.S. voluntarily limiting the operational capacity and range of future missile sensors and interceptors along with developing a joint data exchange center that monitors missile launches (Sankaran “Missile Defense”).

The cancelation of Phase IV of the PAA along with its specific components that would have been able to affect Russia’s deterrence position reveals in part, the U.S. and NATO’s efforts towards assuaging Russian fears of this system’s capabilities and intended targets. As global situations such as the war in Ukraine and Syria, both sides seem to be taking steps back towards more proliferation. Even with the successful agreement on the Iran Nuclear Deal, hostilities have

still grown. Existing bilateral arms agreements must be maintained as well as open dialogues towards creating new arms limitations treaties. With the world now witnessing a rise of fundamentalist terrorist groups forming, many with a goal of trying to acquire weapons of mass destruction, arms proliferation could result in one of these weapons being detonated.

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