

**BETWEEN RHETORIC AND REALITY:
EXPLAINING THE RUSSIAN FEDERATION'S NUCLEAR FORCE POSTURE**

by

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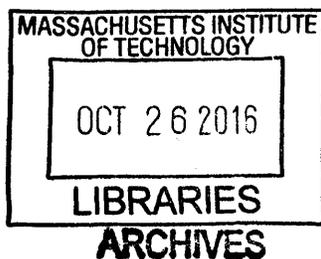
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ABSTRACT

This dissertation proposes and evaluates the performance of three theories that aim to explain Russia's nuclear force posture choices since the collapse of the Soviet Union. Two are rooted in concepts of inter-state competition. Of these, one begins with a central hypothesis that nuclear weapons, being more destructive than other weapons, are sufficient to deter a broad range of threats and will be preferred for doing so. The second argues that nuclear weapons contribute to a state's overall power and prestige, but are not sufficient to define it. They are preferred to deter nuclear, but not conventional, threats. The third theory postulates that strategic culture shapes which government actors will be most successful at garnering resources, resulting, in Russia's case, in a proclivity for offensive, ground-based weapons.

I develop these theories and test them against the reality of Russia's nuclear rhetoric and force structure from 1992-2012. I find strongest support for the explanation rooted in cultural and bureaucratic factors. However, this theory predicts only force structure. In contrast, the theory that predicts states will treat nuclear weapons as one contributor to power and prestige appears to successfully predict Moscow's declaratory policy, but not its force structure (except between 2009 and 2012, when force structure is compatible with both this theory and the culture and bureaucracy theory).

My analysis indicates that cultural and bureaucratic factors appear to play an important role in Russia's force structure choices, and help explain a continued emphasis on silo-based systems. Systemic factors appear crucial to Russian declaratory policy, but their impact on force structure is less pronounced, with the exception of Russia's desire for prestige driving larger force size. The divergence between declaratory policy and force structure is a notable finding not predicted by my theories (although allowed for by the culture and bureaucracy theory). Finally, I hope that with my culture and bureaucracy theory, I have proposed a useful way forward in operationalizing cultural factors for testing and analysis.

Thesis Supervisor: Barry R. Posen
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Chapter One: Explaining Nuclear Force Posture

Introduction

In this dissertation, I propose three ways to explain nuclear posture and test them against the historical experience of post-independence Russia. Two of these theories are neorealist “systemic” explanations, that is, they are rooted in the nature of the international system. The third is a domestic politics explanation, rooted in the strategic culture of the Russian defense establishment and its bureaucratic proclivity to reinforce the organizational strength of one sort of force over others. Specifically, the theories I develop and test are:

- 1) **The Absolute Weapon.** This theory holds that nuclear weapons, by their nature, are so powerful, and have so changed the nature of conflict, that the possibility of nuclear use is sufficiently threatening to make most hostile actions against nuclear weapon states deeply unappealing, making a nuclear deterrent universal and effective, even at minimal levels. This leads to the hypothesis that Russia will build minimal nuclear capabilities to deter conflict and its escalation, with the specifics of posture determined by whether threats are nuclear, conventional, or both.
- 2) **Internal Balancing.** This theory posits that nuclear weapons are one tool among many that states will use to attain their security goals, and that they will be postured in ways that send clear and credible signals to adversaries. Moreover, it views nuclear weapons capability as a source of prestige, which also enhances a state’s capacity to influence and affect others. This leads to the hypothesis that Russian force postures will reflect its threat environment, (but with different predictions for at least some conditions than the Absolute Weapon theory), and will, to the extent resources permit, be built to attain parity with, and if possible supremacy over, other nuclear weapon states.
- 3) **Culture and Bureaucracy.** This theory posits that organizations whose cultures are in line with broader strategic culture will be more successful.

On this basis, it argues that Russian preference for large-scale firepower and artillery as a warfighting approach led Moscow to privilege the Strategic Rocket Forces (SRF) among not just nuclear, but all military capabilities during the Soviet period and since. This has also led the SRF to emphasize silo-based forces over mobile missiles, and to prefer large-scale capabilities that, insofar as possible, dwarf those of the adversary. As long as the SRF remain unchallenged in the bureaucracy, Russia will continue to emphasize silo-based ICBM capabilities over other capabilities and seek to build large, heavy forces. If it is effectively challenged, either by parts of the military or by civilians, other force structures will emerge, but this will be unsustainable absent a broader shift in strategic culture.

Russian nuclear posture is the dependent variable for all three theories. The two systemic theories share the independent variable of threat environment, which is determined by whether threats are nuclear, conventional, or mixed. The Cultural/Bureaucratic theory has a different independent variable. This is whether the Strategic Rocket Forces are challenged or unchallenged by others. In addition, all three theories incorporate an intervening variable¹: the state of the economy, which bounds the resources available to Russia's military to build and develop its nuclear forces.

In the balance of this chapter, I present the postures possible for a state like Russia, the dependent variable for all three theories. In Chapter Two, I present in depth the two systemic theories, Absolute Weapon and Internal Balancing/Prestige. For each, I highlight their predictions and the relevant independent variables. In Chapter Three, I do the same for the third theory, the Cultural/Bureaucratic theory. In Chapter Four, I explain how I intend to test the theories in the balance of this

¹ I define intervening variable as "a variable that explains a relation, or provides a causal link, between other variables." This definition is found in W. Paul Vogt and R. Burke Johnson, *Dictionary of Statistics & Methodology: A Nontechnical Guide for the Social Sciences* (Los Angeles, London, New Delhi, Singapore, Washington DC: Sage, 2011), p. 187. The economic situation could also be termed a condition variable if one uses the definition for this term used by Steven Van Evera: "a variable framing an antecedent condition...govern the size of the impact of IVs or IntVs on DVs and other IntVs." Van Evera's definition of an intervening variable is narrower, requiring that it provide a causal link between the independent and dependent variable Stephen Van Evera, *Guide to Methods for Students of Political Science* (Ithaca and London: Cornell University Press, 1997), p. 11.

dissertation. Chapters Five through Eight test the theories in different periods of Russian history. The final chapter, Chapter Nine, presents my conclusions.

Why Study Russian Nuclear Posture?

Russia is one of only two countries in the world with a long-standing, large-scale nuclear capability. Both Russia's and the United States' arsenals dwarf those of any other state. As a result, how Russia's nuclear posture is determined is important for both policy and theoretical reasons. From the policy perspective, understanding the underpinnings of one of the world's two largest nuclear arsenals is critical. From the political science perspective, the study of Russian nuclear force posture explores strategic decision-making generally and nuclear policy and posture specifically.

To explain Russian nuclear posture is to explain one half of the nuclear postures that exist at this complexity and level of capability. Moreover, there is less literature already devoted to Russian nuclear decision-making than to U.S. nuclear decision-making. For example, Frank Gavin² does an excellent job of covering the evolution of U.S. posture and rhetoric regarding nuclear weapons, and a wealth of other scholars have examined components of this over the course of the last few decades. However, while there is some analysis of Soviet behavior, there is nothing currently available that comprehensively looks at Russia's post-independence nuclear posture.

What is Posture?

While one could argue that force posture is simply the sum of forces, I, like most others who use the term, see posture as a broader concept. Specifically, I define posture as a combination of a state's force structure, that is, the mix of forces it deploys; its operational doctrine for its forces; and its declaratory policy. Because I am focused on Russia's nuclear posture specifically, I am interested in how Russia

² e.g., Francis J. Gavin, *Nuclear Statecraft: History and Strategy in America's Atomic Age* (Ithaca, NY: Cornell University Press, 2012).

structures its nuclear forces and how it thinks and talks about their value and possible use.

Because posture combines force structure, strategy, operational doctrine, and declaratory policy, it is, inherently, a part of military doctrine, which Barry Posen has usefully defined as “that subcomponent of grand strategy that deals explicitly with military means.”³ Doctrine itself is, of course, part of overall defense and foreign policy. Thus, to explain posture, we look to the same tools that explain states’ actions in the international sphere more broadly. There is no shortage of postulated explanations for what makes states do the things they do. These fall into two main categories. One set assumes that states respond to their environment in rational ways, seeking to maximize benefit to the country as a whole and minimize costs. Doctrine, (and thus posture) should reflect the range of environmental and systemic factors that affect the state. Specifically, strategy, doctrine, posture, and actions can be expected to be closely aligned with one another and recognizable as responses to the international system, working to guarantee security through means of effective and relevant forces, partnerships, and other mechanisms.

Other explanations seek to explain state behavior as a response to various domestic factors, because states are not monolithic. These factors can be bureaucratic or cultural, or they may pertain specifically to the individuals making policy.⁴ They lead these individuals and organizations to promote and carry out actions that diverge from the state’s rational best interests. This should not be assumed to be a matter of malice. To the contrary, the literature on bureaucratic politics generally posits that policymakers genuinely seek to guarantee security for the state. However, they also want maintain personal and/or organizational security and power, and may not themselves differentiate between what’s good for them or their organizations and what’s good for the state.⁵

³ Barry Posen, *Sources of Military Doctrine* (Ithaca and London: Cornell University Press, 1984).

⁴ Kenneth N. Waltz, *Man, the State, and War* (New York: Columbia University Press, 1959), also Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Glenview, Illinois and London, England: Scott, Foresman, and Company, 1971).; Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington, D.C.: The Brookings Institution, 1974).

⁵ Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Glenview, IL, and London: Scott, Foresman, and Company, 1971).; Halperin, *Bureaucratic Politics and Foreign Policy*.; on

Types of Nuclear Doctrine and Posture

Military doctrine is often grouped into three categories: offensive, defensive, and deterrent. States with offensive doctrines believe that there is advantage to be gained in striking first, those with defensive doctrines believe it is better to respond, and those with deterrent doctrines seek to prevent attack by threatening unacceptable damage to the prospective adversary through either counterattack or particularly vicious defense.⁶ This means, importantly, that deterrence approaches can be either defensive or offensive. Moreover, the notion of unacceptable damage also allows for a range of possibilities. Damage can be unacceptable because it renders the attack pointless in the first place (deterrence by denial), because it is too painful (deterrence by punishment), or both.

Because deterrence has come to be seen as inherent to nuclear weapons, nuclear doctrine, or strategy, is generally seen as reflecting the intent to retaliate and/or to strike first with deterrent intent. Herman Kahn's "Type I deterrence" is deterrence of nuclear attack on oneself through a credible threat of retaliation (punishment).⁷ Vipin Narang, focusing on a regional power context, terms this "Assured Retaliation."⁸ Alternatively, a state may not fear an adversary's nuclear attack, but may want to deter a conventional attack, attacks on allies, or other behavior. This means threatening one's own first use of nuclear weapons. Kahn's Type II deterrence is the threat of nuclear first use in the event of attacks on allies.⁹ His Type III deterrence, characterized as a retaliatory action that negates the value of the initial action, covers efforts to deter in the midst of conflict, to prevent further escalation (here, nuclear weapons are used to deter both by punishment and by denial). Both Kahn's Type II and Type III are subsumed by Narang's category of

resultant misperception specifically, see Robert Jervis, *Perception and Misperception in International Politics* (Princeton, NJ: Princeton University Press, 1976).

⁶ Posen, *Sources of Military Doctrine*, pp. 67-73

⁷ Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960).

⁸ Vipin Narang, *Nuclear Strategy in the Modern Era, Regional Powers and International Conflict*, (Princeton: Princeton University Press, 2014). e-book, pp. 31-33

⁹ Kahn, *On Thermonuclear War*.

“Asymmetric Escalation:” a willingness to use nuclear weapons first to deter a broad range of threats.¹⁰ In principle, both Kahn and Narang divide nuclear deterrence into threat of response to nuclear attack on oneself, and threat of nuclear use to prevent other sorts of actions.

Posture, which combines forces with doctrine, makes this a bit more complicated, because it adds the component of capability. Capability is important for several reasons. First, it can render a doctrine credible, or not. The forces actually fielded can demonstrate that a doctrine is not backed up by the capabilities at hand, or, conversely, prove government statements true. For example, a state that eschews the capacity to launch a first strike that eliminates that adversary’s capacity to retaliate (for instance by having far fewer weapons) sends a strong signal that the role of its forces is truly deterrent, at least in the strategic context. The importance of capabilities was highlighted by both Brodie and Kahn, among others, early on (Kahn outlined detailed views of what force combinations were needed for various goals).¹¹ In line with these theoretical discussions, planners in the United States and the Soviet Union felt that their deterrents were made more credible if the adversary knew that they had actual plans for how to use those weapons, and their force structures were developed in part to demonstrate that they did have such plans.¹²

Second, different sorts of force structure can support the same doctrine. A state that seeks to deter a strategic nuclear attack should, in principle, seek a secure, survivable, retaliatory capability, even after absorbing a first strike.¹³ However, if it cannot afford to build such a capability, it may build cheaper, less survivable forces,

¹⁰ Narang, *Nuclear Strategy in the Modern Era, Regional Powers and International Conflict*, pp. 33-36. Narang also postulates a third posture which is not relevant to my analysis. This is a catalytic posture of ambiguous/questionably operational nuclear capability and aligned declaratory policy that aims to induce a stronger third party to intervene for fear of the deterring state’s nuclear first use. *Ibid.*, pp. 30-33.

¹¹ Kahn, *On Thermonuclear War*.

¹² The work of Albert Wohlstetter demonstrates this approach. See, for example, Albert Wohlstetter, *The Delicate Balance of Terror* (Santa Monica, CA: RAND, 1958). In addition, Austin Long provides an informative discussion of how U.S. analysts thought about counterforce targeting and deterrence during the Cold War in Austin Long, *Deterrence From Cold War to Long War: Lessons from Six Decades of RAND Research* (Santa Monica, CA: RAND, 2008), esp. Chapter 4.

¹³ Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca and London: Cornell University Press, 1989), pp. 8-12, 15.

and intend to launch some or all them when and if it believes an adversary strike is en route.

The converse of this is when declaratory policy is necessary to define doctrine, because force posture on its own is ambiguous. Vipin Narang has made a strong argument regarding the importance of nuclear posture (including declaratory policy) for sending deterrent signals.¹⁴ And, indeed, while a non-survivable posture precludes a retaliatory strategy, survivable systems can also be used first.¹⁵ Thus, a state with survivable forces and no intentions to use them first must rely on its declaratory policy (and perhaps some technical measures, such as safeguards) to indicate its strategy to others.

I draw on Kahn's and Vipin Narang's typologies of deterrence postures to propose five types of posture, each reflecting a combination of strategy, reflected in declaratory policy and doctrine, and force structure.

I characterize declaratory policy based on what is said in documents and by officials about:

1. willingness to use nuclear weapons first in a conflict;
2. willingness and plans to use nuclear weapons against non-nuclear weapon states;
3. whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
4. attitudes towards parity, minimalism, and survivability.

For force structure, I focus on the following components:

- Nonsurvivable, first use strategic weapons: silo-based ICBMs and long-range bombers
- More survivable systems: mobile ICBMs and SLBMs
- Non-strategic systems

¹⁴ Vipin Narang, "What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict," *Journal of Conflict Resolution* (2012).

¹⁵ Ibid. makes this point. For a discussion that argues that survivable forces can meet all of a state's (in this case, the United States') needs because they are capable of both see Owen Cote, "The Trident and the Triad: Collecting the D-5 Dividend," *International Security* 16, no. 2 (1991).

- Early warning capabilities
- Safeguards¹⁶

I outline some assumptions regarding targeting for each of the postures, with the caveat that targeting plans are generally classified, so this aspect of the posture is difficult to discern except in a very general sense.

The five types of posture I outline comprise four that are inherently strategic, that is, focused on peer adversaries in large-scale conflict. One is non-strategic. The postures are not meant to be exclusive of one another. Rather, they can be combined and, in particular, it may make sense for the non-strategic posture to be pursued along side one or more of the strategic postures.

The postures, and their associated strategies, are:

Assured.¹⁷ An Assured strategy and posture is a second-strike strategy and posture. It aims to deter other states' large-scale use of nuclear weapons by means of a credible threat of retaliation. It includes a declaratory policy which abjures first use of nuclear weapons, but threatens large-scale retaliation in response to attack. In terms of force structure, it calls for second strike capabilities that signal to opponents that one will ride out a first strike and retaliate, either against remaining capabilities or against population centers or other targets of value to the opponent.¹⁸ Submarine and mobile ICBM systems are preferred in this posture. Effective early warning capabilities are also very helpful, since they will enable the state to move or otherwise prepare survivable weapons if needed (i.e., send submarines to sea, flush mobile ICBMs). Bombers and silo-based ICBMs are less relevant because they make it difficult to signal the absence of an intent to strike first. The state may signal that its assured forces will not be used first by limiting

¹⁶ I do not include command and control in my analysis because it is difficult to find credible information regarding Russian command and control.

¹⁷ Throughout this dissertation, I capitalize the names of the postures when they are referring to the posture types.

¹⁸ This is closely aligned with Narang's assured retaliation posture and to a lesser extent with Kahn's Type I deterrence. (Kahn, *On Thermonuclear War*, esp. pp. 126-127, 127-138; Narang, "What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict.")

their potential to do so with various safeguards, e.g., those that make it more difficult to launch weapons.

Strategic Escalatory (SE). An Escalatory strategy and posture is designed to deter and prevent both nuclear use and conventional dangers through the threat of a nuclear attack, that is to say, first use.¹⁹ This requires a declaratory policy that explicitly allows for first use. An Escalatory force structure meant to deter large-scale nuclear attack by an adversary relies on strategic offensive weapons: ICBMs and bombers, without much interest in safeguards on survivable systems. The deterrent threat is usually against enemy weapons (nuclear or otherwise, and including command and control and other related capabilities). The idea is that one can eliminate, or at least significantly limit, the danger that these pose with a first strike. This approach is often termed “damage limitation.” However, it makes sense only when the state believes that it can truly limit damage significantly by striking first—if the adversary has substantial survivable capabilities, this strategy is most likely suicidal.²⁰ A state may also threaten different sets of targets to signal restraint, or to threaten punishment, but this requires careful calibration, faith in one’s signaling capacity, and confidence that the adversary will not escalate further. If a state with such a posture faces adversaries with similar strategic nuclear capabilities and is concerned that those adversaries may also seek to strike first, effective early warning will be desirable. While launching weapons on warning will not be preferred, a state with this posture will be forced to do so if its adversary strikes first, having no capacity to reliably ride out a large-scale attack. However, if the state is not concerned about adversary first strike capabilities (for instance if the adversary does not have nuclear weapons), it will not pursue early warning.

Warfighting Escalatory (WE). A state that looks to deter conventional conflict or smaller-scale nuclear conflict with its nuclear weapons will develop a posture

¹⁹ This comprises Narang’s asymmetric escalation posture and Kahn’s Type II and Type III deterrence.

²⁰ For brief discussions of the U.S. history of damage limitation approaches, see Long, *Deterrence From Cold War to Long War: Lessons from Six Decades of RAND Research*, pp. 26-43 and Jeffrey Lewis, “Minimum Deterrence,” *The Bulletin of the Atomic Scientists* 64, no. 3 (2008).

centered on theater-appropriate weapons: bombers and non-strategic weapons first of all. These may threaten counter-force or symbolic strikes. They may also threaten punishment against population centers or other targets the adversary values.²¹ Scalability is important. For the deterrent to be credible, it should be calibrated to the threat, lest it risk escalation. This is particularly salient if the adversary is also nuclear-armed. Safeguards are not desired and early warning is not relevant. Most larger-scale strategic systems do not make sense unless this posture is combined with another.

Launch on Warning (LoW). A Launch on Warning strategy anticipates launching at least some nuclear weapons when an adversary strike is believed to be en route,²² and deterring attack by means of clearly signaling that intent.²³ It is not a first use, Escalatory strategy—the intent is to use these forces only in response to an adversary attack.²⁴ However, the force structure is very similar to that of a Strategic Escalatory posture in that it relies on less survivable systems (which is why the ride-out approach of an Assured strategy is not feasible). Declaratory policy is therefore very important to this posture and must be clear. In a large-scale conflict, because many or all of the adversary’s weapons are already on their way, they cannot credibly be the targets of this posture: rather, command and control capabilities and perhaps population centers or other objects of value to the adversary are the most likely targets (as for an Assured posture). If the adversary attack is smaller, some counter-force strikes are also possible. The force structure is nearly identical to that for a Strategic Escalatory posture except that will strongly

²¹ It will not do this in large-scale nuclear contexts due to the threat of retaliation.

²² The term “launch on warning” is often used interchangeably with “launch-under-attack,” particularly in the United States. In contrast, Russian analysts have historically differentiated them, defining launch-under-attack as requiring certainty that an attack is underway (whether because of adversary statements, or one or more adversary weapons reaches its target). “Launch on warning,” by contrast, implies credible warning but not proof. See Valery E. Yarynich, *C3: Nuclear Command, Control Cooperation* (Washington, DC: Center for Defense Information, 2003), pp. 27-28 and Sergei Rogov et al., “Sud’ba Strategicheskikh Vooruzhenii Posle Pragi,” *Nezavisimoe Voennoe Obozrenie*, August 27 2010.

²³ Thus, this, like an Assured posture, is also Kahn’s Type I deterrence and Narang’s Assured approach.

²⁴ Thus, this, like an Assured posture, is also Kahn’s Type I deterrence and Narang’s Assured approach.

emphasize early warning. Safeguards may be considered, though likely not emphasized.

Versatile. This posture allows for both retaliation and first use. A state pursuing this strategy will build weapons suitable for a second strike capability, such as submarines and mobile ICBMs, but plan and signal the intent to use nuclear weapons first under certain, if not all, circumstances. This includes damage limitation strikes, for which all the caveats discussed above in the context of the Strategic Escalatory posture apply. A state pursuing this posture will eschew safeguards. As in an Assured posture, the state’s intention to retaliate if an adversary uses nuclear weapons first requires some attention to early warning capabilities that will enable it to more effectively prepare.

These five types of postures are presented in Table 1.1, below.

Table 1.1 Postures

Postures		Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy						
Declaratory Policy		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers					✓
	Silo-based ICBMs	✗	✗	✓	✓	✗
Survivable/ second strike	Mobile ICBMs	✓	✓	✗	✗	✗
	SLBMs					
	NSNF	✗	✗	✗	✗	✓
	Early Warning	✓	✓	✓	✓	✗
	Safeguards	✓	✗	✓	✗	✗

A final component of posture is the size of the force. Here, three approaches are possible: a state may seek minimalism, parity, or supremacy, that is, either the smallest capability that could meet operational requirements, a capability that is equal to that of the most likely adversary, or one that supersedes that of all adversaries.

As I noted above, these postures can be combined. A state may want both a Warfighting Escalatory capability and one of the other sets of strategically-focused

capabilities (e.g., Assured or Strategic Escalatory), particularly if it seeks to deter a variety of dangers and threats.

A state may also build both offensive and defensive capabilities. It may plan to launch some weapons on warning, while letting more survivable systems ride out the attack. It may also seek to develop nuclear weapons for other purposes than deterrence of threats, e.g., as a means of coercion, in which case Versatile and Escalatory strategies will likely make sense. But while these five categories are not complete, these posture types reflect the possibilities most relevant to Russia: a state that inherited a large and diverse nuclear force that is rivaled by that of only one other state, and which may seek to deter a broad range of threats.

I also do not expect any state to match any of these postures perfectly at any time. These are, to a large extent, archetypes. In reality, strategies can change faster than force structures, and some components are more important than others: because safeguards are limited in their true impact, they are less critical than early warning. However, to the extent that one can identify emphasis on some systems over others in line with what I have laid out, one can assess whether the declaratory policies and force structures match these “ideal” postures, singly or in combination, in a general sense.

Chapter Two: Two Structural Realist Theories

Introduction

In *Theory of International Politics*, Kenneth Waltz built on the work of “realists” such as Hans Morgenthau who posited international relations as a struggle for power.²⁵ Waltz advanced a parsimonious theory based in the notion of the international system as one of anarchy, and therefore self-help. In the absence of any overarching global order, countries seek to increase their security and balance against threats. They do this both by aligning with others and by increasing their own independent capabilities.²⁶

Political scientists who followed Waltz have sought to improve on and clarify his theory, in the process presenting more complicated variations on it. Stephen Walt argued that states do not, by and large, balance simply against power, as power in and of itself is not always threatening. Rather, he postulated that states balance against threat, or, more accurately their perception of threat, which he saw as based in a combination of power, geographical proximity, offensive capability, and aggressive intent on the part of other states.²⁷

Much of the neorealist literature that has followed accepts Walt’s correction, and seeks to understand balance of perceived threat, rather than balance of more easily measured power. But this is difficult to measure: history provides substantial evidence that states often have a difficult time reading their threat environment accurately, instead over-balancing, under-balancing, or finding other alternatives, such as “buck-passing, bandwagoning, appeasement, engagement, distancing, or

²⁵ Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: Alfred A. Knopf, 1948).

²⁶ Kenneth N. Waltz, *Theory of International Politics* (New York: McGraw-Hill, Inc, 1979).

²⁷ Stephen M. Walt, *The Origins of Alliances* (Ithaca, NY: Cornell University Press, 1987). Walt agrees that in some circumstances, sufficient power may be enough to lead to perceptions of threat, even if distance and aggressive intent are absent. Note that Walt’s balance of threat hypotheses are also supported by a statistical analysis presented in Paul Fritz and Kevin Sweeney, “The (De)limitations of Balance of Power Theory,” *International Interactions* 30 (2004).

hiding.”²⁸ Many of the reasons advanced for why states will respond less than optimally to the threat environment are rooted in domestic factors, an approach that has more recently been termed “neoclassical” realism.²⁹

The literature on balance of power/balance of threat is rich. However, only a small component of it is relevant to my purposes. While most of the literature focuses on balancing (or lack thereof) by means of alliances, states also seek to attain security by developing and deploying capabilities. When one studies military, and perhaps especially nuclear, posture, it is this mainly internal balancing that is of interest. Military doctrine and posture may include some aspects of external balancing or bandwagoning, particularly in the context of reliance on partners and allies, but they are at their core expressions of a state’s own capabilities.

The military doctrine literature recognizes this, and focuses on how states formulate doctrine and approaches to warfighting. Specifically, this body of literature tends to focus on doctrinal innovation, a trend begun by Posen with his foundational *Sources of Military Doctrine*. There has been little effort to deconflict doctrine and innovation since.³⁰ And while studying doctrinal innovation and how it drives doctrinal change is important to understanding doctrine, these approaches may overlook evolutionary changes in doctrine as well as emulation and adaptation

²⁸ Randall L. Schweller, "Bandwagoning for Profit: Bringing the Revisionist State Back In," *International Security* 19, no. 1 (1994); "Unanswered Threats: A Neoclassical Realist Theory of Underbalancing," *International Security* 29, no. 2 (2004). Schweller’s “nonbalancing” may also be viewed as similar to, if not synonymous with, the concept of “soft balancing.” In 2002, both Joseph Joffe and Walt discussed (Joffe more explicitly) tacit, or implicit balancing which involves coalitions focused on economic, rather than security issues; public statements; bandwagoning; buck-passing; and so forth (Stephen M. Walt, "Keeping the World 'Off Balance'," in *America Unrivaled: The Future of the Balance of Power*, ed. G. John Ikenberry (Ithaca, N.Y.: Cornell University Press, 2002).; Joseph Joffe, "Defying History and Theory: The United States as the 'Last Superpower'," in *America Unrivaled: The Future of the Balance of Power*, ed. G. John Ikenberry (Ithaca, N.Y.: Cornell University Press, 2002).); T.V. Paul and Robert A. Pape each termed this “soft balancing (T.V. Paul, "Soft Balancing in the Age of U.S. Primacy," *International Security* 30, no. 1 (2005).; Robert A. Pape, "Soft Balancing Against the United States," *International Security* 30, no. 1 (2005).). Brooks and Wohlforth, however, reject the soft balancing premise, arguing that all the “soft” coalitions of the 1990s and 2000s were formed for the members’ own reasons, unrelated to U.S. power or actions (Stephen G. Brooks and William C. Wohlforth, "Hard Times for Soft Balancing," *International Security* 30, no. 1 (2005).) Schweller, "Unanswered Threats: A Neoclassical Realist Theory of Underbalancing."

²⁹ Gideon Rose, "Neoclassical Realism and Theories of Foreign Policy," *World Politics* 51, no. 1 (1998).

³⁰ Indeed, this focus is so prevalent that Adam Grissom terms his excellent review of the field a review of the doctrinal innovation literature (Adam Grissom, "The Future of Military Innovation Studies," *Journal of Strategic Studies* 29, no. 5 (2006).)

that fall short of innovation (although some definitions of innovation in fact incorporate one or both of these).³¹

My dissertation seeks to explain Russian nuclear force posture. In part, this means looking at when it changes, or fails to, in response to other factors. These changes may or may not result from innovation: I am interested in doctrinal and posture shifts whether they are innovative or not. The two theories that I develop that are systemic in nature draw on key aspects of the international system, most importantly the nature of the threats a state faces, to predict posture and doctrine. The main difference between them is in their different interpretations of the role that nuclear weapons play in that system. They thus predict different responses to similar threat and resource conditions, in at least some cases. I do not ask why the state interprets nuclear weapons in this way or whether either theory is the better reflection of the realities of the international system as a whole: I can simply test to see whether one or the other of them better reflects Russian perspectives driving their nuclear weapons posture.

The first theory, the Absolute Weapon theory, postulates a view of nuclear weapons as extremely powerful, capable of deterring all aggression. The threat environment, that is, whether the most relevant threats are nuclear, conventional, or mixed, will shape posture, with a minimal role for resource constraints (because very few nuclear weapons are needed to deter, and there is no need to build more than is needed). The second theory, the Internal Balancing and Prestige theory, views nuclear weapons as capable of deterring nuclear use, but of more limited (albeit not negligible) utility vis-à-vis conventional weapons, and as an important tool of prestige. Again, the threat environment (whether threats are nuclear or conventional) will shape force posture, but resource constraints or lack thereof are

³¹ Indeed, some scholars have looked quite extensively at emulation and the spread of doctrine. Terry Terriff and Theo Farrell, "Military Change in the New Millenium," in *The Sources of Military Change: Culture, Politics, Technology*, ed. Theo Farrell and Terry Terriff (Boulder, CO: Lynn Reinner Publishers, 2002); Theo Farrell and Terry Terriff, "The Sources of Military Change," in *The Sources of Military Change: Culture, Politics, Technology*, ed. Theo Farrell and Terry Terriff (Boulder, CO: Lynn Reinner Publishers, 2002).; Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton, NJ: Princeton University Press, 2010).

more important, and states will actively seek to build larger forces (and ones with greater capabilities), to the extent they can afford to.

The Absolute Weapon

I start with the Absolute Weapon theory. This theory is rooted in that part of the deterrence literature that views nuclear weapons as *sui generis*. It holds that nuclear weapons have changed the way that nuclear states and those who interact with them view conflict, such that the possibility of nuclear use is sufficiently threatening to make most hostile actions against nuclear weapon states prohibitively unappealing. Simply put, it posits that nuclear weapons are universal deterrents: they are so potent that even a small amount of nuclear capability is sufficient to leave adversaries unwilling to threaten a nuclear power.

To explain the logic behind this approach, I turn to nuclear deterrence theory. But before I delve into the specifics of nuclear deterrence, I will briefly discuss deterrence more generally. For a very simple definition of deterrence, I borrow from Glenn Snyder.³² Snyder's formulation tells us that deterrence will work if a party's perceived gain from action [g(a),] is outweighed by the perceived loss caused him/her by the deterrer's threatened reaction [l(t)] multiplied by the deterrer's credibility to carry out that threat [c(t)] (again as perceived).³³ Thus, deterrence functions when:

$$c(t)*l(t)>g(a)$$

Note that this simple formulation is dependent neither on rationality nor on perfect perception. Instead, the variables are defined by their value as perceived by the party to be deterred, regardless of whether their perception is accurate or rational. Moreover, the perceived loss can include both punishment and the inability to attain one's goal (denial), as discussed earlier.

³² Glenn Herald Snyder, *Deterrence and Defense* (Princeton: Princeton University Press, 1961).

³³ While the argument is Snyder's both the notation for the variables and the specific formulation of the equation are mine. Further, Snyder includes another variable, for the probability of attaining the gain from the action being deterred. I subsume this within the g(a) variable. Snyder argues that this probability variable is more affected by the deterred party's c(t) estimate while the perceived gain variable [our g(a)] is more closely linked to the l(t) variable, I find it more useful to simply note that both are interdependent. For my limited purposes here, there is no need to separate out the perceived gain from its probability (also perceived) and the two can be combined.

While countries and sub-national groups have doubtless been using the threat of war and ever-more destructive weapons to deter one another since the dawn of humanity, nuclear deterrence theorists posited that the splitting of the atom changed things categorically.

In 1946, Bernard Brodie described the nuclear bomb as “The Absolute Weapon” in an edited volume of the same name. As Lawrence Friedman notes, it took some time before the ideas in that volume garnered much attention. However, Brodie’s basic concept, that nuclear weapons fundamentally changed the course of conflict by making military planning about preventing, rather than executing, war eventually became the core of nuclear deterrence theory (even if Brodie himself later came to argue that certain nuclear weapons might be usable³⁴).³⁵ The underlying argument is that nuclear weapons surpass all others in their destructive capability (empirically not true in all cases, although certainly true in the aggregate³⁶) and therefore in their ability to deter unwanted behavior by an adversary. While a general threat of war might fail to deter, either because the threat is not credible or the danger not perceived as all that great (that is, war is worth risking), a nuclear weapon is so threatening that an adversary will forego the potential gains of war in its face.³⁷

Brodie’s “absolute weapon” argument is at its core a realist argument about technology, defining the nuclear weapon as having changed the international system, trumping other weapons because of its greater destructive capability. Returning to the simple formula above, those who argue that nuclear weapons can deter all sorts of aggression believe that the value for $l(t)$ in the nuclear context is so high that even a very low value for $c(t)$ will still outweigh the predicted gains. This is Thomas Schelling’s “threat that leaves something to chance.” Key to Schelling’s conception of a very high value for nuclear threat is the notion that an adversary armed with

³⁴ Bernard Brodie, “The Development of Nuclear Strategy,” *International Security* 2, no. 4 (1978).

³⁵ Lawrence Freedman, *The Evolution of Nuclear Strategy* (Houndsmill and New York: Palgrave Macmillan, 2003).; *Deterrence* (Cambridge: Polity, 2004).

³⁶ I have not done the calculations, nor can I identify anyone who has, but I think it is safe to argue that the combined capability of all the nuclear weapons that might plausibly be used together outweighs that of all the conventional weapons that might plausibly be used at one time.

³⁷ Thomas C. Schelling, *Arms and Influence* (New Haven and London: Yale University Press, 1966).

nuclear weapons may not be fully rational, and thus the state being deterred cannot assume that they will only be credible in the context of nuclear use that is rational (that is, that makes sense to the state being deterred).³⁸

Waltz rejected this to some extent in *Theory of International Politics*, arguing that the superpowers are superpowers whether or not they possess nuclear weapons, and a smaller state with nuclear weapons does not necessarily rise in the international system. However, Waltz does argue that nuclear weapons usefully function in the hands of both greater and lesser powers to both deter nuclear use (and potentially other aggression) and prevent escalation.³⁹ Moreover, he made an absolute weapon argument at a later date when he wrote that nuclear forces ought, because of their destructive capability, be more than sufficient to deter not only nuclear attack, but also conventional.⁴⁰

The absolute weapon approach was also inherent in early views of nuclear deterrence in U.S. doctrine. Before the Soviet Union had the capacity to threaten the United States in return, the United States saw its nuclear arsenal as deterring a wide range of possible Soviet conventional aggression and adventurism.⁴¹ After the Soviet Union developed its own nuclear capability and intercontinental range in the 1950s, the concept of mutual assured destruction, or MAD, characterized a standoff of terror, in which both countries were kept in check by the capacity of the other to completely destroy them.⁴² According to MAD, both were deterred from conventional as well as nuclear action due to the fear of escalation to this point.

³⁸ *The Strategy of Conflict* (Cambridge, Massachusetts and London: Harvard University Press, 1960), pp. 187-203.

³⁹ Waltz, *Theory of International Politics*; "More May Be Better," in *The Spread of Nuclear Weapons: A Debate*, ed. Scott Sagan and Kenneth N. Waltz (New York: W.W. Norton, 1995).

⁴⁰ "More May Be Better." See also Waltz's arguments in later editions, including Scott Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: a Debate Renewed* (New York: W.W. Norton, 2002) and *The Spread of Nuclear Weapons: An Enduring Debate* (New York: W.W. Norton, 2012).

⁴¹ Freedman, *The Evolution of Nuclear Strategy*, p. 50, 66-69.

⁴² For a Russian view which supports the idea that both the USSR and the United States saw the situation similarly, see Aleksei Fenenko, "Transformatsiia Sderzhivaniia," *Rossii v Global'noi Politike* 7, no. 6 (2009).

Escalation to large-scale destruction is at the root of the absolute weapon argument for some to this day.⁴³ But others have postulated that the destructive power of nuclear weapons is sufficient to deter even well short of the capacity to utterly demolish the adversary. They argue that the devastation presented by even a single nuclear weapon should deter others, and that it should do so even if they are better armed. $l(t)$ is again so high, in the nuclear context, that it outweighs $g(a)$ even with low-scale nuclear use. This is important because it suggests that, in a change from the pre-nuclear past, an inferior arsenal should be able to deter even a substantially superior one.⁴⁴ And even credibility is not that important, as Waltz notes, because the threat is so dire. The result is greater caution overall.⁴⁵ Herman Kahn, among others, took fundamental issue with this argument, and with the MAD paradigm, holding that it was possible to imagine and model nuclear conflict from which one or both sides could recover.⁴⁶ Kahn's concern reflects the fact that this argument rests on a view of nuclear weapons as more powerful than their actual capability, an approach that seems to veer somewhat beyond realist parameters.

The Absolute Weapon theory presented here holds that nuclear weapons are perceived by states as surpassing all others in their destructive capability and therefore in their ability to deter unwanted behavior by others. While a threat of conventional war might fail to deter, either because the threat is not credible or the war is seen as winnable and thus worth risking, the threat of nuclear use and escalation is sufficiently threatening that an adversary will forego any potential gains of war in its face.⁴⁷

I reject the idea that the absolute weapon argument, if it holds, would make posture irrelevant, since the capacity for response is critical if more than one of the states involved has nuclear capability: nuclear states will deter each other and

⁴³ See, for example, Susan B. Martin, "The Continuing Value of Nuclear Weapons: A Structural Realist Analysis," *Contemporary Security Policy* 34, no. 1 (2013).

⁴⁴ Bernard Brodie, *The Anatomy of Deterrence*, Research Memorandum (Santa Monica, CA: The RAND Corporation, 1958).

⁴⁵ Waltz, "More May Be Better."

⁴⁶ Kahn, *On Thermonuclear War*.

⁴⁷ Schelling, *Arms and Influence*. Kahn discusses this viewpoint as "minimum deterrence," and finds it faulty (Kahn, *On Thermonuclear War*, pp. 7-13)

posture in part to signal intent. I do agree that it calls for minimal numbers of weapons. I also argue that posture is, under some conditions, also affected by resourcing. The question of economic resources is embedded into the broad range of writing on strategy, doctrine, and posture. Economic power is among the components of power and threat identified by Waltz, Walt, and everyone who has followed them as critical to balancing decisions.

Limitations on resources constrain a state's capacity to respond to the threat environment as policy-makers weigh military spending against other requirements and different components of the armed forces against one another. When resources are tight, the state may be pushed towards cheaper ways to attain the same goals. What makes a given approach cheaper will depend in part on what is at hand: although some things are cheaper than others when built from scratch, that does not necessarily mean that for an existing nuclear weapon state those will be the more affordable options: it is less expensive, for example, to maintain an existing force structure than to build new forces. Thus, there is a certain path dependency inherent in resource-constrained choices. Therefore, while threat environment is the independent variable that defines posture for this theory, economic conditions, which affect resourcing for defense generally and nuclear weapons specifically, are an intervening variable—they affect what a state can do to respond to threats.

Hypotheses

Master hypothesis: Countries view nuclear weapons as sufficient and credible to deter all undesired behavior, including but not limited to nuclear use. They will posture their nuclear weapons to send signals about what they are deterring, but they will not seek either superiority or parity in numbers, just adequate capability. What is adequate will be defined by their view of the threat environment, specifically whether or not potential adversaries are nuclear-armed. However, because nuclear weapons are seen as superseding all others, there are no conditions under which large numbers, or even numbers equal to those of adversaries, are needed. Nuclear-armed states will be viewed as threats, because of their capabilities.

Conventionally-armed states may also be viewed as threats or potential adversaries for other reasons.⁴⁸

This leads to the following subsidiary hypotheses:

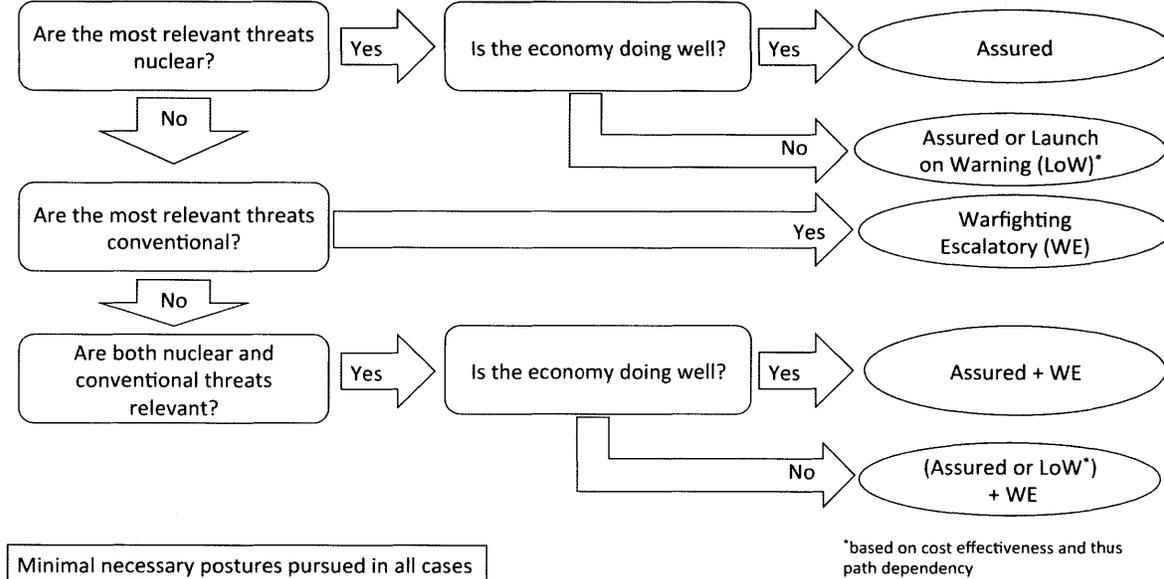
- *AH1* When the primary threat is perceived as the strategic nuclear capabilities of a prospective adversary, a nuclear-armed state will develop an Assured retaliation posture with small (minimal) numbers of weapons. If an Assured posture is unaffordable but a Launch on Warning (LoW) posture is feasible (for example, because less survivable systems are cheaper to build or maintain), it will opt for the latter, still at minimal levels. Thus, the Launch on Warning posture, according to this theory, will in at least some cases be the poor country's alternative to an Assured posture.
- *AH2* When conventional threats are the primary concern, a nuclear-armed state will use its nuclear capacity to deter them. Because adversaries will not pose real threats to the nuclear arsenal, survivability and early warning are not relevant. This means a Warfighting Escalatory (WE) posture, at minimal levels needed to meet needs.
- *AH3* Given resources and faced with adversaries that pose both nuclear and conventional threats, a nuclear weapon state will develop a posture with both Assured and Warfighting Escalatory elements. This means survivable strategic nuclear weapons poised to deter strategic nuclear threats and non-strategic nuclear capabilities to deter conventional threats. If resources are constrained, however, the state will do whatever is more affordable. This means that a Warfighting Escalatory posture will be combined with either an Assured or a Launch on Warning posture, whichever is cheaper to build and maintain (this will be based in part on what a state already has in its arsenal). Any first use rhetoric will be focused on non-nuclear threats (i.e., not damage limitation). Because survivable systems tend to be more expensive, for most countries in this situation, constrained resources will lead to Launch on

⁴⁸ e.g., if they are aligned with threatening states, or if Russia has expansionist aims vis-à-vis those states.

Warning, rather than Assured, postures combined with Warfighting Escalatory postures.

These hypotheses are summarized in Figure 2.1, below:

Figure 2.1: Absolute Weapon Theory Hypotheses



Internal Balancing and Prestige

The second theory I present views nuclear weapons as one mechanism among many that states use to enhance their capabilities vis-à-vis other states, that is, to balance. It posits that nuclear weapons, for all their destructive capability, are not an “absolute” and universal deterrent. While they are a capable and preferred deterrent of large-scale nuclear use by adversaries, this requires force postures that can truly threaten retaliation. Moreover, their role in conventional deterrence varies, because states prefer to counter and deter conventional capabilities with other conventional capabilities and will rely on nuclear weapons for this only when they cannot afford both options and also need the nuclear deterrent. Finally, nuclear weapons are also an important source of prestige, which leads to a preference for force postures that demonstrate numerical and/or capability parity with or supremacy over other nuclear powers (over and above what is needed for a credible deterrent).

This approach therefore is different in several important ways from the Absolute Weapon theory. Although that theory is also based on a balancing argument, it assumes that nuclear weapons are ultimate balancing tools. This theory does not. It is based in an assessment of the lived experience of the nuclear world, which raises strong doubts that nuclear weapons truly trump all other interests and threats. While there have been no wars between nuclear weapon states, nuclear weapon states have gone to war. Moreover, many states have eschewed nuclear weapon development. At the same time, nuclear weapons do appear to affect behavior and change interests for both the states that possess them and others. As Frank Gavin writes, posturing in regard to Germany in the early years of the Cold War would have taken a different shape had Russia and the United States not been nuclear-armed.⁴⁹

The non-use of nuclear weapons over the past seven decades has led some to postulate that a norm exists that leads most countries to prefer not to use nuclear weapons, although they may brandish them and certainly will rely on them to deter nuclear use against themselves by others.⁵⁰ Some argue that for states with high conventional capabilities (e.g., the United States), the threat of nuclear use in a conventional context is simply not credible.⁵¹ Some may argue that nuclear deterrence of conventional war is demonstrated by the fact that no nuclear weapon states has fought another, except on a very small scale, since the dawn of the nuclear age.⁵² While true, this is based on a sample set too small for full confidence.

⁴⁹ Gavin, *Nuclear Statecraft: History and Strategy in America's Atomic Age*.

⁵⁰ The work of Nina Tannenwald makes this argument, particularly in regards to the United States, but also more broadly. See Nina Tannenwald, "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use," *International Organization* 53, no. 3 (1999); "Stigmatizing the Bomb: Origins of the Nuclear Taboo," *International Security* 29, no. 4 (2005) and the book-length treatment in *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (Cambridge: Cambridge University Press, 2007). Daryl G. Press, Scott Sagan, and Benjamin A. Valentino, "Atomic Aversion: Experimental Evidence on Taboos, Traditions, and the Non-Use of Nuclear Weapons," *American Political Science Review* (2013) argue that there is not a strong taboo. They base this conclusion on public opinion survey research conducted in the United States. However, public opinion may not be indicative of elite or decisionmaker views, and U.S. opinion may not reflect Russian views. Moreover, given that Soviet rhetoric and propaganda may well have played an important role in creating and cementing the taboo (Tannenwald, "Stigmatizing the Bomb: Origins of the Nuclear Taboo."), it may be more likely that such a taboo would hold for Russians.

⁵¹ Scott Sagan, "The Case for No First Use," *Survival: Global Politics and Strategy* 51, no. 3 (2009).

⁵² Martin, "The Continuing Value of Nuclear Weapons: A Structural Realist Analysis."

Moreover, nuclear weapon states have gone to war in the last 70 years, and they have faced attacks by conventionally-armed adversaries.⁵³ While the wars fought by the U.S. and the Soviet Union/Russia, the world's greatest nuclear powers, have been wars they chose, their adversaries have not instantaneously backed down for fear of nuclear escalation.

Narang's findings indicate that nuclear deterrence of conventional threats is possible, but not universal. Specifically, he concludes that countries that are clear about their intent to use nuclear weapons against a broader range of threats have been successful at deterring undesired conflict—precluding them from having to make good on the threat. States that do not have such an intent, and do not signal it, have not been able to deter conflict.⁵⁴

Narang's analysis and the historical record, which includes "No First Use" pledges by nuclear states, also make clear that states sometimes do not want to use nuclear weapons to deter conventional attack. At least under certain conditions, states seem to prefer to rely on conventional, rather than nuclear, threats to deter lesser dangers (whether or not this works is another question).

This, then, is one part of theory I present here: states will prefer to view their nuclear weapons as a means of deterrence against nuclear weapons only. However, this norm is not determinative: if alternatives are excessively expensive or difficult to obtain, a state will use its nuclear forces to deter conventional threats, and it will clearly articulate that intent.

The second component of this theory is the concept of prestige. Nuclear weapons are consistently identified as sources of prestige. Russia, especially (along with France), is often described as viewing its nuclear force this way.⁵⁵ Moreover, those who seek to eliminate nuclear weapons talk of the need to devalue them,

⁵³ See Narang, *Nuclear Strategy in the Modern Era, Regional Powers and International Conflict*, especially the analysis in Chapters 9 and 10.

⁵⁴ "What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict; *Nuclear Strategy in the Modern Era, Regional Powers and International Conflict*, pp. 25-26, 257-261,

⁵⁵ Mathhew Moran and Heather W. Williams, "Keeping Up Appearances: National Narratives and Nuclear Policy in France and Russia," *Defence Studies* 13, no. 2 (2013). on France, see also Scott Sagan, "Why Do States Build Nuclear Weapons?," *International Security* 21, no. 3 (1996).

whether through arms control arrangements such as the Non-Proliferation Treaty or other means.⁵⁶

These arguments tend to view prestige as a norms and belief-based phenomenon. I propose an alternative view of prestige, one rooted in Hans Morgenthau's classification of states' grand strategies as either status quo, expansionist, or prestige-seeking. Status quo grand strategies are the world-views of nations satisfied with the current state of affairs, which seek to maintain them. Expansionist strategies, in contrast, are developed by states that are dissatisfied with things the way they are. They perceive current conditions as dangerous and their security as better assured if they can accrue more resources, power, territory, etc., including at the expense of others. Morgenthau's third category, that of the prestige-seeking state, is somewhat underspecified in his discussion, but it can be understood to mean a state that seeks increased influence but is not inherently expansionist.⁵⁷ The prestige-seeking state does not see immediate dangers, but it sees the potential for dangers emerging. Thus, it is interested in ensuring that it is viewed as sufficiently powerful by others that dangers do not arise, to balance preemptively, as it were.

What does that mean? A number of factors play in to prestige, indeed, most of the elements of national power can contribute to it. What is crucial is that these elements be visible to others and that they be greater than those of other states, indicating a given country's importance. Strong military capabilities, a robust economy, a technically capable population: all of these can contribute to prestige. But given the importance of military might in the international system, military capabilities are particularly important. They are, after all, a reasonable way to keep dangers from arising.

A state's nuclear and conventional forces are thus both demonstrations of its capacity that serve not only to deter, but to remind other states of its importance. The need to do this in ways that show one to be more capable than other states

⁵⁶ "Why Do States Build Nuclear Weapons?"; Nick Ritchie, "Valuing and Devaluing Nuclear Weapons," *Contemporary Security Policy* 34, no. 1 (2013); Paul Schulte, "The Strategic Risks of Devaluing Nuclear Weapons," *Contemporary Security Policy* 34, no. 1 (2013).

⁵⁷ Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*.

creates an imperative to seek equivalent, if not greater, numbers of weapons and capabilities compared to others, including specifically in the nuclear realm.

Nuclear weapons thus contribute to prestige because of their tremendous power and capability. This capability is not a matter of normative belief, it is a fact.⁵⁸ They are also an indicator of technological prowess. And if a state seeks nuclear weapons in part for prestige reasons, it seems likely that it will seek equal or larger numbers than those of prospective adversaries, to the extent this is feasible. This makes resourcing important, as it determines what numbers are attainable. Fundamentally, resourcing plays the same role for this theory as it does for the Absolute Weapon theory: it defines what options are available to the state in pursuing its preferences.

To summarize, this theory predicts that states will build nuclear weapon postures that can credibly deter nuclear threats. They will prefer conventional deterrence of conventional threats unless resources are limited, in which case they may rely on nuclear weapons to deter both, signaling this to improve credibility. They will also view nuclear weapons as mechanisms of prestige, and put an emphasis on numerical and capability parity, if not supremacy, vis-à-vis other nuclear weapon states, to the extent this is feasible.

Hypotheses:

Master Hypothesis Nuclear weapons are preferred for deterring nuclear attack, while conventional weapons are preferred for conventional deterrence and warfighting. Nuclear weapons may be relied on if other options are not deemed sufficient, including because they are unaffordable. Nuclear weapons are also a source of prestige, meaning that a state's desire for numerical superiority/parity will affect nuclear posture, even if greater numbers serve no military purpose.

This leads to the following subsidiary hypotheses:

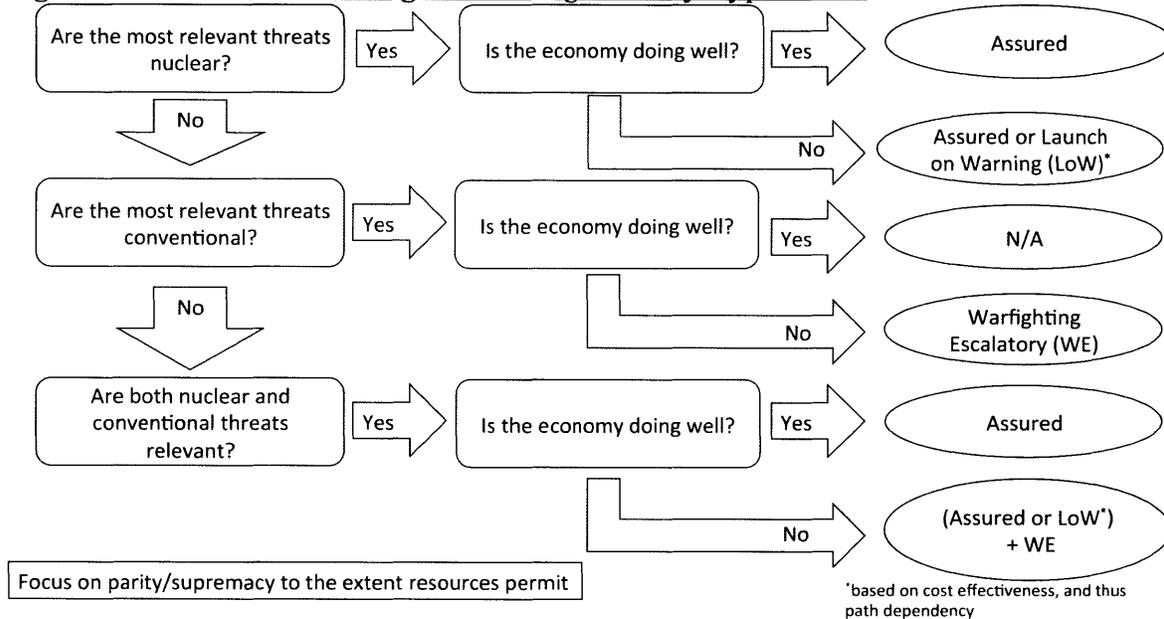
⁵⁸ Martin, "The Continuing Value of Nuclear Weapons: A Structural Realist Analysis." points out that the value of nuclear weapons is not constructed, though she questions their prestige value for at least some states.

- *IH1* When the primary threat is perceived as the strategic nuclear capabilities of a prospective adversary, a nuclear-armed state will develop an Assured retaliation posture as large as it can afford. If an Assured posture is unaffordable but a Launch on Warning posture is cheaper (either to build from scratch or to maintain on the basis of an inherited force posture), it will opt for the latter. This prediction is identical to that of the Absolute Weapon theory and again postulates that, at least in some cases, the Launch on Warning posture is a poor country's Assured posture.
- *IH2* A state that is concerned with conventional threats will, given resources, focus on developing its conventional capacity rather than seeking to use a nuclear deterrent. If resource constraints preclude this, however, it will rely on its nuclear deterrent for conventional threats. Because such adversaries will not pose real threats to the nuclear arsenal, survivability and early warning are not relevant. This means a Warfighting Escalatory posture. Because parity is not relevant, minimal nuclear capacity is sufficient.
- *IH3* A state facing both nuclear and conventional threats will build up its conventional forces and develop an Assured nuclear posture, as large as is feasible, if it can afford to do this. The nuclear weapons will be meant to deter nuclear use, the conventional forces to deter, and if necessary fight, conventional adversaries. If the state cannot afford both strong conventional forces and a large Assured arsenal, it will rely on nuclear forces to deter both nuclear and conventional attacks. This means that it will develop a Warfighting Escalatory capability combined with an Assured posture if a more survivable force structure is cheaper (for example, if one already exists and can be affordably maintained). This will mean survivable nuclear deterrent forces to deter nuclear adversaries and smaller-scale non-strategic capabilities to provide a more credible threat in the face of conventional dangers. If less survivable forces are cheaper, it will combine its Warfighting Escalatory posture with a Launch on Warning posture. Because survivable systems tend to be more expensive, for most countries in this situation,

constrained resources will lead to Launch on Warning, rather than Assured, postures combined with Warfighting Escalatory postures. However, a pre-existing arsenal may make the latter combination posture possible.

These hypotheses are summarized in Figure 2.2 below.

Figure 2.2: Internal Balancing and Prestige Theory Hypotheses



The predictions of this theory are similar in many ways to those of the Absolute Weapon theory. Indeed, they predict the same overall postures when resources are constrained, with the only difference being more effort to build larger forces, insofar as this is affordable, if the Internal Balancing and Prestige theory holds. When resources are more plentiful, however, this theory differs from the Absolute Weapon theory in predicting not only that the state will build as large a force as possible (and larger forces will, presumably, be possible if there are more funds), but that it will also eschew nuclear deterrence of conventional threats. Thus, testing the two theories against one another is only possible under conditions of resource plenty, and will be most effective when threats include conventionally armed adversaries.

Variables

The two theories presented in this chapter make different predictions for Russia's nuclear force posture, the dependent variable, under a variety of conditions.

For both of them, the key independent variable is Russia's threat environment, defined by whether Russia sees other states' nuclear capabilities, conventional capabilities, or both as its most likely threats. Also for both of them, the state and trajectory of the national economy is an intervening variable that shapes how the independent variables affect the dependent variable. However, they make different predictions for how and why changes in these variables will define posture. In Chapter Four, I will discuss how I intend to measure these variables to assess which of the theories performs better in explaining the evolution of Russia's nuclear posture.

Chapter Three: A Theory of Russian Nuclear Weapon Strategic Culture and Bureaucracy

Introduction

This chapter presents an explanation of Russian nuclear force posture rooted in both cultural and bureaucratic factors. Specifically, I develop an argument that Russian nuclear force posture is a product of cultural predispositions that increased the bureaucratic strength of the Strategic Rocket Forces during the Soviet period. As a result, force posture in independent Russia will tend to reinforce the preferences of the Strategic Rocket Forces and result in a force posture that looks similar to an Escalatory posture, except when other organizations are able to challenge the SRF. I will test this theory in the balance of this dissertation.

I do not take a purely cultural approach because I believe that bureaucratic structures are critical funnels that shape which cultural preferences will win out. I eliminate a purely bureaucratic approach because it risks tautology: i.e., strong bureaucracies succeed because they are strong.⁵⁹ If culture can provide some insights into what it is that makes certain bureaucracies stronger than others, as well as help define how their preferences are shaped, then it provides a useful explanatory tool.

This chapter has six components. The first section describes how culture might be thought to affect foreign policy choices and preferences in general, and doctrine and force posture in particular, and explains how bureaucracy is shaped by and shapes these dynamics. Based on this assessment, I provide an outline of what is needed to develop a cultural explanation, and how bureaucracy might play in. Specifically, I argue that one must first define broader strategic culture, including its historical evolution. One can then describe the culture specific to the relevant subset of the broader organization, including how it has affected organizational

⁵⁹ Two classic studies of bureaucratic politics are Allison, *Essence of Decision* and Halperin, *Bureaucratic Politics and Foreign Policy*; Jack Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914* (Ithaca and London: Cornell University Press, 1984).

development. This enables predictions to be made regarding what key organizations will prefer, and how they will interact, in the future. I then apply this approach: I develop an overview of Soviet/Russian strategic culture, drawing on primary and secondary sources on the topic. Then, I outline the history of Soviet nuclear weapons and nuclear strategy. I draw on this outline to map nuclear development against Russian culture, to synthesize the attributes relevant to defining predictions for how Russian strategic culture (or cultures) might be thought to affect organizational preferences and thus nuclear posture. This is, of necessity, a descriptive and inductive effort. However, I try to do more than describe and establish plausibility. Rather, I use the inductive results to, finally, develop testable hypotheses regarding Russian force posture. These will, of course, be tested in the balance of this dissertation.

Culture in International Relations

Domestic determinants of strategic choices are often used to explain residuals—when reality veers off from what might be predicted by a system-based rational actor model.⁶⁰ Sometimes, they are used to explain why one, rather than another, of several rational choices is made. Bureaucratic arguments, for example, assume rationality, but instead of looking at the state as a unitary actor within the international system, they look at organizations within a state competing for resources. While the results may not be rational from the perspective of the state as a whole, they will align with organizational interests.

Cultural arguments, on the other hand, more often seek to explain divergence from rationality both in the domestic and international contexts by arguing that cultural factors and biases can lead to misperceptions and other faulty thinking to cause such divergence. As Terriff and Farrell note, culture-based approaches do not accept that interests are “given,” that is that they result from rational, informed assessments of the environment. Instead, they ask how interests are defined by

⁶⁰ See *The Soviet Strategic Culture: Implications for Limited Nuclear Operations* (Santa Monica, CA: RAND, 1977), Theo Farrell, “World Culture and Military Power,” *Security Studies* 14, no. 3 (2005), discussion in Long, *Deterrence From Cold War to Long War: Lessons from Six Decades of RAND Research*.

those involved and how social factors may constrain actors from maximizing their interests. This is useful in explaining divergence from the rational, effectiveness-maximizing behavior, whether for states or for organizations, that systemic and organizational politics approaches, respectively, would predict.⁶¹

Some take issue with the notion that culture (and other domestic factors) can only explain residuals and poor choices. Johnston, for instance, has demonstrated that Chinese approaches to foreign policy and conflict match the predictions both of structural realist approaches and consistent cultural themes. Thus, what seem to be rational responses may not, in fact, be structural, but rather the result of cultural biases.⁶² Dima Adamsky has argued that culture can both prevent the making of advantageous decisions and facilitate it, depending on the specifics of that culture. He views it as an instrumental factor, rather than simply an explanation for divergence.⁶³

But tests of alternative theories are only viable when they do, in fact, predict different things, and do so specifically enough to be falsifiable and testable. If we accept that rational strategic answers exist, culture, personality, domestic politics, and bureaucracy are most interesting when they lead a country towards deviations from them. If multiple rational approaches are possible, domestic factors are interesting if they shape which approach is taken. Specifically to this analysis, if one can define the ways that specific institutions, cultures, or psychologies might affect perceptions (and thus perhaps also shape bureaucratic preferences) it should be possible to predict on that basis how individuals and groups will view security and define their interests, how they will compete in the bureaucratic realm, and how this combination will affect doctrine (and posture).⁶⁴ These predictions can then be tested against the predictions of other theories.

⁶¹ Terriff and Farrell, "Military Change in the New Millenium."

⁶² Alastair Iain Johnston, *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History* (Princeton: Princeton University Press, 1998).

⁶³ Dima Adamsky, *The Culture of Military Innovation: The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the U.S, and Israel* (Stanford, CA: Stanford University Press, 2010).

⁶⁴ See Deborah D. Avant, *Political Institutions and Military Change: Lessons from Peripheral Wars* (Ithaca and London: Cornell University Press, 1994), Elizabeth Kier, *Imagining War: French and British Military Doctrine between the Wars* (Princeton, New Jersey: Princeton University Press, 1997).

Defining Culture

It is helpful to briefly discuss what I mean by culture (and strategic culture), and how I think it may impact policy (and thus posture). Denzau and North usefully argue that cultures, whether national, institutional, or otherwise, bound rationality and ensure that those representing that culture share perceptions and approaches. These perceptions and approaches can change over time, but they remain shared by the bulk of the relevant group or organization.⁶⁵ According to Ksenia Kas'ianova, culture limits the actions and approaches available to its adherents.⁶⁶ Ann Swidler described culture as a "'tool kit' of symbols, stories, rituals, and world-views ... [used].. to solve different kinds of problems." She argued that culture defines not end states, but strategies and approaches (although one might argue that certain strategies and approaches may make some end states more likely than others).⁶⁷

Not everyone differentiates between strategic culture and culture more generally, but the former is a useful tool in focusing attention on those elements of culture that are relevant to military matters. According to Jack Snyder, strategic culture consists of "Unique historical experiences, distinctive political and institutional relationships, and a preoccupation with strategic dilemmas...[that]...have combined to produce a unique mix of strategic beliefs and a unique pattern of strategic behavior based on those beliefs. The term 'culture' is used to suggest that those beliefs tend to be perpetuated by the socialization of individuals into a distinctive mode of thinking. Thus, viewed from a strategic-cultural perspective, changes in...strategic thought will not occur as direct responses to the changing strategic environment but indirectly, in a way mediated by preexisting cultural beliefs."⁶⁸ Johnston, for his part, defines strategic culture as "an integrated system of symbols (i.e., argumentation structures, languages, analogies, metaphors, etc.) that acts to establish pervasive and long-lasting strategic

⁶⁵ Arthur T. Denzau and Douglass C. North, "Shared Mental Models: Ideologies and Institutions," *Kyklos* 47, no. 1 (1994).

⁶⁶ Ksenia Kas'ianova, *O Russkom Natsional'nom Kharaktere*, (Moscow: Institut Natsional'noi Modeli Ekonomiki, 1994), http://www.hrono.ru/libris/lib_k/kasyan0.php, esp. Chapter 11.

⁶⁷ Ann Swidler, "Culture in Action: Symbols and Strategies," *American Sociological Review* 51, no. 2 (1986).

⁶⁸ Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, p. 38

preferences by formulating concepts of the role and efficacy of military force in interstate political affairs, and by clothing those conceptions with such an aura of factuality that the strategic preferences seem uniquely realistic and efficacious.”⁶⁹ Colin Gray argues that strategic culture (and “national style” as he terms it) stems from “geopolitical, historical, economic, and other unique influences.”⁷⁰ In later work, he has highlighted the importance of historical experience.⁷¹

If history is important, then origins are a critical starting point. Many cultural theorists posit that how a group (whether national, corporate, organizational, cultural, or other) is formed, and under what conditions, lays the groundwork for how it will develop.⁷² However, while origins are very useful for understanding some cultural perspectives, they are not sufficient to understand and define an existing culture, which will have shifted and developed over time. This said, it seems reasonable to postulate that changes will be path-dependent: that key steps along the way will have an impact, potentially serving as formative experiences. The specifics of how that will work may not be predictable, but they can be described, on a case-by-case basis.⁷³ Moreover, it is possible to predict that some types of events will be more important than others. For military organizations, for example, experiences of conflict will be particularly important. Thus, in his argument regarding the sources of military organizational culture, Austin Long makes a strong argument for the “first war” experience: the conflicts that a military organization experiences early become a template for how it sees itself and its role.⁷⁴ Later wars, however, can also lead to shifts in approach.

⁶⁹ Johnston, *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History*, p. 36

⁷⁰ Colin Gray, “National Style in Strategy: The American Example,” *International Security* 6, no. 2 (1981), p. 22.

⁷¹ *Nuclear Strategy and National Style* (London: Hamilton Press, 1986), p. 37. The strategic culture literature is ably reviewed by Jeffrey S. Lantis, “Strategic Culture: From Clausewitz to Constructivism,” in *Strategic Culture and Weapons of Mass Destruction*, ed. Jeannie L. Johnson, Kerry M. Kartchner, and Jeffrey A. Larsen (New York: Palgrave MacMillan, 2009). A Russian take is provided by Tat’iana Aleksandrovna Alekseeva, “Strategicheskaiia Kul’tura: Evoliutsiia Kontseptsii,” *POLIS. Politicheskie Issledovaniia*, no. 5 (2012).

⁷² Edgar H. Schein, *Organizational Culture and Leadership* (San Francisco: Jossey-Bass, 2004).

⁷³ Denzau and North, “Shared Mental Models: Ideologies and Institutions.”

⁷⁴ Austin Long, “First War Syndrome: Military Culture, Professionalization, and Counterinsurgency Doctrine” (unpublished, Massachusetts Institute of Technology, 2010), pp. 51-53

For purposes of this dissertation, strategic culture represents lasting beliefs that shape views of what works, what doesn't, and how, in the national security sphere. These beliefs are influenced by origins, but they also continue to develop over time, and are affected by environment, domestic and international. As such, they define preferences and perspectives on national security issues. Strategic cultures can include how an entire nation looks at security. Gray has posited that national "peculiarities," that is "mind sets and behavior patterns" flow, as responses from a very distinctive historical-geographical and, hence, cultural context.⁷⁵ But there may also be specific strategic cultures shared by national security bureaucracies specifically. These could include a country's military establishment as a whole, as postulated in the work of both Gray and Elizabeth Kier.⁷⁶ Alternatively or additionally, military services or other sub-components of the security apparatus may have their own views and cultures that shape how they see policy.⁷⁷ In the language of organizational theory, these are subcultures of the dominant culture.⁷⁸

As Tom Mahnken puts it, "At the national level, strategic culture reflects a society's values regarding the use of force. At the military level, strategic culture (or a nation's "way of war") is an expression of how the nation's military wants to fight wars... Finally, strategic culture at the service level represents the organizational culture of the particular service—those values, missions, and technologies that the institution holds dear."⁷⁹ Interestingly, Mahnken omits the possibility of a strategic culture for a civilian sub-component of the security apparatus separate from the overall national culture, for instance among defense scientists or civilian national security experts.

⁷⁵ Gray, *Nuclear Strategy and National Style*, p. 38

⁷⁶ Kier, *Imagining War: French and British Military Doctrine between the Wars*; "Culture and Military Doctrine: France Between the Wars," *International Security* 19, no. 4 (1995).; Gray, *Nuclear Strategy and National Style*; "National Style in Strategy: The American Example."

⁷⁷ Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore, MD: Johns Hopkins University Press, 1989).

⁷⁸ For a brief overview, see Joanne Martin and Caren Siehl, "Organizational Culture and Counterculture: An Uneasy Symbiosis," *Organizational Dynamics* 12, no. 2 (1983).

⁷⁹ Thomas Mahnken, "U.S. Strategic and Organizational Subcultures," in *Strategic Culture and Weapons of Mass Destruction*, ed. Jeannie L. Johnson, Kerry M. Kartchner, and Jeffrey A. Larsen (New York: Palgrave MacMillan, 2009).

Culture and Organizations

Mahnken's formulation brings the organizational aspect very clearly to the center of cultural arguments. Aside from being specific to various levels of a nation-state, organizational cultures may also span similar organizations and cross national boundaries. In this, cultural arguments can overlap considerably with bureaucratic explanations of doctrine formation. In what Grissom, in his excellent review of the literature on military doctrine, describes as the "civil-military school,"⁸⁰ Posen and his followers have not simply looked at security sector bureaucracies as value-maximizing actors like all other bureaucracies. Rather, they focus on the differences between civilian and military organizations and consistently ascribe to each behaviors believed to be rooted in their military and civilian natures and thus shared with others of their ilk globally. In this way, these analyses are rooted in the literature on civil-military relations. This literature views militaries as different from other government organizations, and focuses on the importance of relationships between national security civilians and military leaders, specifically on establishing the correct balance between military autonomy and civilian oversight.⁸¹

There is a strong cultural thread in the civil-military relations literature, including in how it is applied to the study of doctrine development. Posen and Snyder, writing separately, were among the first to present arguments and evidence that militaries, in a general sense, share certain proclivities, such as a tendency to favor offensive doctrines and/or simplistic ones.⁸² In this, they are arguing for at least some aspects of a military culture that spans borders and national attitudes, rooted, at least in part, in attributes common to all militaries. Specifically, they posit that militaries prefer offensive doctrines because they enhance the prestige and autonomy of the military, thereby making it more powerful in organizational

⁸⁰ Grissom, "The Future of Military Innovation Studies."

⁸¹ The two core classics of this field are Samuel Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, Massachusetts and London: The Belknap Press of Harvard University Press, 1957). ⁸¹ Morris Janowitz, *The Professional Soldier* (New York: Free Press, 1960).

⁸² See Posen, *Sources of Military Doctrine*, Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914*. For a counterargument, see Kier, *Imagining War: French and British Military Doctrine between the Wars*; "Culture and Military Doctrine."

bargaining within the state; make planning and development of Standard Operating Procedures (SOPs) easier, as the offense has the initiative and needs less flexibility and adaptability than does the defense; and, for Snyder, follow from the military's perception of international relations as zero-sum.⁸³ The first two of these are structural and instrumental. The third, however, is cultural, in that it makes an argument about how military personnel think. Scott Sagan, citing Posen and Snyder, echoes their view that a preference for offensive military doctrine is a product of a number of factors linked to enhancing organizational power. He, too, however, adds a cultural factor by describing this preference as a natural outgrowth of the way military personnel tend to see the world: as hostile and offensive, leading to the need for preventive, offensive doctrines.⁸⁴ In addition to a preference for the offense, Peter Feaver has also argued that militaries will prefer robust and plentiful warfighting capabilities, including in the deterrence context.⁸⁵

Of course, if one believes that overall military culture can be shared across countries, so can other organizational cultures, and certainly subcomponents of the military. Farrell, for example, argues that Builder's conclusions about the predilection for technology exhibited by the U.S. Air Force and U.S. Navy can be generalized to other Air Forces and Navies.⁸⁶

Building a Cultural Thesis

But if culture may well matter to how policy, including defense policy, is made, it remains a very difficult variable to operationalize. The first problem is the one I started with: there is no clear way to identify the true sources of policy (or doctrine and posture) in cases where systemic incentives align with cultural

⁸³ Jack Snyder, "Civil-Military Relations and the Cult of the Offensive, 1914 and 1984," in *Military Strategy and the Origins of the First World War*, ed. Steven E. Miller, Sean M. Lynn-Jones, and Stephen Van Evera (Princeton, New Jersey: Princeton University Press, 1991), p. 41; Posen, *Sources of Military Doctrine*, pp. 47-50.

⁸⁴ Scott Sagan, "1914 Revisited: Allies, Offense, and Instability," in *Military Strategy and the Origins of the First World War*, ed. Steven E. Miller, Sean M. Lynn-Jones, and Stephen Van Evera (Princeton, New Jersey: Princeton University Press, 1991), pp. 113-114, 120-124.

⁸⁵ Peter D. Feaver, *Guarding the Guardians: Civilian Control of Nuclear Weapons in the United States* (Ithaca and London: Cornell University Press, 1992), p. 57.

⁸⁶ Theo Farrell, "The Dynamics of British Military Transformation," *International Affairs* 84, no. 4 (2008).

interests (or, for that matter, bureaucratic or other interests). This is further complicated by the fact that whether root causes are cultural or bureaucratic, decision-makers will couch their arguments in broader strategic terms, and, indeed, think that this is what is driving their viewpoints. The solution to this methodologically has been to process-trace in specific cases to identify who stood to gain, and who to lose, from various outcomes and to see how policy was actually made. But in cases where data is limited or unreliable, this is challenging to say the least.⁸⁷ The second problem is that cultural explanations, even when they succeed in demonstrating explanatory value, are unlikely to be particularly generalizable, because they explain things in ways peculiar to specific countries, organizations, or even sub-organizations, such as military services.

One way around this is to seek rules for how culture works that apply across cultures. Adamsky's argument, as already noted, postulates that culture is instrumental, whether effectively so or not: cultural factors make it easier or harder for militaries to integrate and adapt new technologies.⁸⁸ But other analysts argue that culture does not predict specific outcomes, but rather explains how issues and situations will be approached by organizations, countries, and individuals. It is therefore best used as an approach to understanding each specific situation, rather than seeking general rules.⁸⁹ Gray, for instance, describes his approach as inductive, noting that he seeks only to establish the plausibility of cultural explanations rather than to prove that they are decisive.⁹⁰

Gray could be more ambitious. If one can describe a specific culture, then certain predictions about behavior, and thus results, will flow from that analysis. These predictions can then be tested against other theories. They may not be generalizable beyond the specific case, insofar as the cultural attributes in question

⁸⁷ David Haglund, "What Good is Strategic Culture? A Modest Defense of an Immodest Concept," *International Journal* 59, no. 3 (2004). outlines a defense of cultural approaches by recommending that the topic of culture be thought of more as a research program that allows for the exploration of both causal and descriptive arguments.

⁸⁸ Adamsky, *The Culture of Military Innovation*.

⁸⁹ Kier, *Imagining War: French and British Military Doctrine between the Wars*; "Culture and Military Doctrine" is an example of such an approach

⁹⁰ Gray, *Nuclear Strategy and National Style*, p. 38

are unique to it, but approaches to defining and testing culture can be. Moreover, if cultural explanations can be shown to better explain behavior than alternative explanations, they indicate that the cultural explanations are not simply plausible, but necessary to understanding state behavior.

Bringing Bureaucracy Back In

What then, might be a good approach to operationalizing culture to explain force posture? One way may be simply to argue that overall strategic culture leads to certain force posture outcomes. But how does it do that? Bureaucratic politics theories tell us (and observation confirms) that the various organizations that comprise the national security sector of any given country compete with one another for resources, driving force posture, doctrine, and policy more broadly. Harvey Sapolsky's work on how rivalry between the U.S. Air Force and Navy spurred innovation was germinal in this field, and it led to a number of additional studies, interestingly all centered on the United States, although many looked at nuclear weapon programs.⁹¹ Of course, services compete for resources world-wide, so the U.S. bias should not be taken to mean that the work is irrelevant to my purposes. The bottom line here is that the defense budget must be divided up among the different components of the armed forces, and each will seek a bigger piece of the pie.

Also critical are relationships between the military and civilian leaders. The two pioneers of civil-military relations, Samuel P. Huntington and Morris Janowitz, were both concerned with civilian and military policy-makers venturing into each other's lanes. Huntington worried more about civilian interference in military matters and Janowitz about military interference in politics.⁹² This theme has been critical in the doctrine literature, from Posen's view that civilian intervention may be necessary to create innovation to Elizabeth Kier's assertion that, although there

⁹¹ Grissom, "The Future of Military Innovation Studies."

⁹² Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations*. ⁹² Janowitz, *The Professional Soldier*.

are no shared traits among global militaries, civilians worldwide seek to limit political action by the military.⁹³

At the core of Posen's argument is the view that civilians will be more likely to pursue strategic goals, while militaries will seek to advance their bureaucratic (and/or culturally-driven interests). Civilian intervention can thus be needed to get things on track, and the risk of military bureaucratic dominance is particularly substantial during more peaceful, unthreatening conditions.⁹⁴ Others have questioned both the need for civilian involvement and civilian tendencies towards more strategic and rational approaches.⁹⁵ It does seem likely that civilians will, at the least, be vested in different bureaucratic imperatives than the military services. However, the notion that civilians will, in general, espouse approaches more in line with rational requirements is worth questioning.⁹⁶

The bottom line, then, is that any given organization will seek to pursue its interests, whether simply out of a desire to maximize its resources or because of culturally determined preferences as well. Its ability to do this may be limited by challenges from other organizations. Military services will particularly compete with one another, and face challenges from civilians, as well. Bureaucratic success can be measured in accrual of resources and/or the success of preferred policies. Culture can help explain how those preferences are defined and determined.

⁹³ Kier, *Imagining War: French and British Military Doctrine between the Wars*; "Culture and Military Doctrine."

⁹⁴ Posen, *Sources of Military Doctrine*. On bureaucratic politics playing a stronger role in peacetime, see also Avant, *Political Institutions and Military Change: Lessons from Peripheral Wars*.

⁹⁵ The military doctrine and innovation literature unpacks these issues at some length. See particularly Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991).; Kimberly Marten [Marten Zisk, Kimberly], *Engaging the Enemy: Organization Theory and Soviet Military Innovation, 1955-1991* (Princeton, New Jersey: Princeton University Press, 1993).; Kier, *Imagining War: French and British Military Doctrine between the Wars* and the excellent review essay by Adam Grissom, "The Future of Military Innovation Studies."

⁹⁶ Zachary Zwald, "Imaginary Nuclear Conflicts: Explaining Deterrence Policy Preference Formation," *Security Studies* 22, no. 4 (2013) argues that policymakers' views of how a nuclear conflict might occur is more determinative than a simple civilian-military divide.

Developing a Cultural/Bureaucratic Argument

While organizations seek to increase their resources, in general, there are usually a number of ways they can define their preferences. If it is relevant, organizational culture should shape those preferences. Martin and Siehl identified three categories of subculture, each in relation to the dominant culture. Enhancing subcultures take an even more fervent approach to aspects of the dominant culture than does the rest of the culture. Orthogonal subcultures accept the dominant culture's values but add to them new, but non-conflicting, aspects, and countercultures challenge the dominant culture.⁹⁷

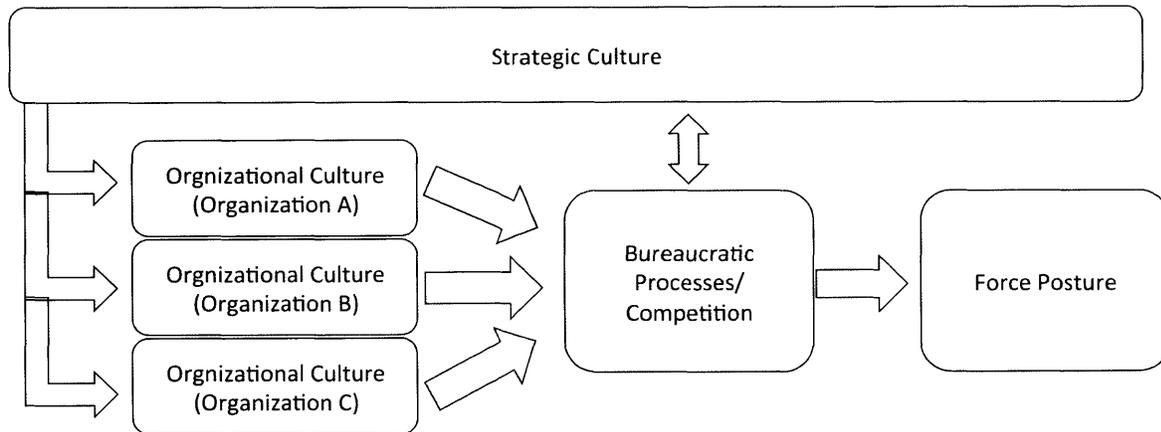
The organizational literature has debated whether subcultures of these various sorts challenge an organization's effectiveness or contribute to it.⁹⁸ This aside, the literature seems to agree that if subcultures affect dominant culture, they do it by either causing it to shift or to entrench.⁹⁹ If we take national strategic cultures, as defined above, as the dominant culture of national security for a given state, and recognize, per Mahnken's discussion cited above, the strategic cultures of various organizations as its subcultures, we accept that strategic culture influences organizational culture. Moreover, the interaction between the different components of the national security sector as part of their bureaucratic competition is informed by their organizational cultures and its outcomes (including force posture) are affected by both these and overall strategic culture. This is illustrated below:

⁹⁷ Martin and Siehl, "Organizational Culture and Counterculture: An Uneasy Symbiosis."

⁹⁸ See the overview in Alicia Boisnier and Jennifer A. Chatman, "The Role of Subcultures in Agile Organizations," in *Leading and Managing People in the Dynamic Organization*, ed. Randall S. Peterson and Elizabeth A. Mannix (New York: Psychology Press, 2003).

⁹⁹ Martin and Siehl, "Organizational Culture and Counterculture: An Uneasy Symbiosis; Boisnier and Chatman, "The Role of Subcultures in Agile Organizations."

Figure 3.1 Strategic Culture, Organizational Cultures, and Force Posture



In line with organizational theory, I postulate that, for the most part, organizations whose cultures and preferences are best aligned with overall strategic culture will do best. While they can be successfully challenged, resulting in force posture shifts, those will be sustainable only given concomitant shifts in strategic culture. Formulated as a hypothesis, this is:

General Hypothesis: An organization with a strategic subculture that is enhancing (in Martin and Siehl’s terminology) of the national strategic culture will tend to win bureaucratic fights. As a result, force postures will reflect its preferences, unless it is effectively challenged by other organizations. However, for resulting changes in force posture to be sustained, strategic culture must also shift.

In order to operationalize this hypothesis for Russian nuclear force posture, the balance of this chapter seeks to identify key aspects of strategic culture, first for Russia and its armed forces as a whole and then specifically in relation to nuclear weapons. This means that I present a discussion of Russian strategic culture, followed by a historical overview of the evolution of Russian nuclear weapons and an assessment of Russian nuclear weapons strategic culture and how it aligns with overall strategic culture. This enables me to determine whether my general hypothesis holds over Soviet and Russian history. If it does, then I have established its plausibility, on the basis of which I can develop hypotheses specific to Russian nuclear force posture, which I do at the conclusion of this chapter.

Russian Strategic Culture

The present study is far from the first effort to assess whether Russian military culture may help explain Russian nuclear policy.¹⁰⁰ Indeed, much of the early work on strategic culture focused, at least in part, on Soviet planning, posture and warfare, and a substantial portion of it looked at nuclear issues. In keeping with the importance of history to cultural explanations, these analyses of Soviet strategic culture drew heavily on concepts and descriptions of Russian culture. While Soviet culture is not identical with Russian culture, it stands to reason that Soviet approaches are in some ways descendants of Imperial Russian approaches and precursors to modern Russian approaches. Russians were the dominant ethnic group in the Soviet Union, and as such dominated Soviet government (and military) structures. Indeed, many studies of Soviet culture (strategic and otherwise) have looked to Russian culture (or gone back even further, for instance, in the case of Gustafson, to Byzantine culture) to explain it.¹⁰¹ And, indeed, there is no question that Russian culture dominated the Soviet Union, even as some Soviet-specific approaches came and went.¹⁰²

Thus, it makes sense to look at Soviet strategic culture as a critical interlude in the overall history of Russian strategic culture. Soviet culture was affected by Russian culture from the pre-Soviet and affected Russian culture after the USSR

¹⁰⁰ For a Russian take on U.S. strategic culture, see M. I. Rykhtik, "Strategicheskaiia Kul'tura i Novaia Kontsepsiia Natsional'noi Bezopasnosti SShA," *Vestnik Nizhegorodskogo Gosudarstvennogo Universiteta* 1 (2003).

¹⁰¹ The Russian nature of Soviet behavior is asserted by K. C. Gustafson, "Echo of Empires: Russia's Inheritance of Byzantine Security Culture," *The Journal of Slavic Military Studies* 23, no. 4 (2010). Constancy between Russian and Soviet culture, politics, and attitudes is discussed by Kas'ianova, *O Russkom Natsional'nom Kharaktere.*; James H. Billington, *The Icon and the Axe: An Interpretive History of Russian Culture* (New York: Vintage Books, 1966), pp. 538-597; and Richard Pipes, *Russia Under the Bolshevik Regime* (New York: Vintage Books, 1995), pp. 501-506.

¹⁰² That Russian culture resurged throughout the USSR in the 1930s, after many initial revolutionary Soviet efforts to redefine society failed is documented in Nicholas S. Timasheff, *The Great Retreat: The Growth and Decline of Communism in Russia* (New York: E.P. Dutton and Company, Inc, 1946). See especially pp. 166-181, 230-239 (the latter regarding the Russian Orthodox Church. Also mentioned by Billington, *The Icon and the Axe*, p. 52. On the Soviet cultural revolution, see the edited volume Sheila Fitzpatrick, ed. *Cultural Revolution in Russia, 1928-1931* (Bloomington: Indiana University Press, 1978). On Russian cultural dominance in the USSR, see Timasheff, *The Great Retreat*, pp. 188-190; Geoffrey Hosking, *The Awakening of the Soviet Union* (Cambridge, Mass: Harvard University Press, 1991), pp.84-87; Dominic Lieven, "The Russian Empire and Soviet Union as Imperial Polities," *Journal of Contemporary History* 30, no. 4 (1995).

came to an end. It also seems reasonable to surmise that Soviet culture has had a lasting influence on all the post-Soviet states. In the case of Russia, the ties can be assumed to be even closer. For Russian nuclear weapons, finally, the Soviet experience is their point of origin.

Dima Adamsky provides a useful brief overview of the literature on Russian culture writ large. Cultural theorists describe Russian culture as collectivistic and high-context. The former indicates a focus on community rather than the individual. The latter means that rather than express ideas directly, Russians are more likely to be indirect and expect readers and listeners to infer meaning in part from context. Cultural theorists see Russians as polychronic, that is, not particularly focused on time and timeliness. They also describe Russian culture as more focused on understanding than action: “being, not doing.” Russian scientific approaches, anthropologists and sociologists note, display a strong preference for systemic and holistic theories, and reject the idea that theory must be confined to objective reality. Russians, according to these observers, are more comfortable with a measure of irrationality and reliance on intuition than, for example, Americans.¹⁰³

When these tenets are compared with assessments of Soviet and Russian military culture, however, some hold up better than others. Nathan Leites’ review of Soviet military writing, for example, evidences a substantial focus on methods and approaches to neutralize aspects of Russian culture described above. For example, officers are called upon to counteract their soldiers’ seemingly natural tendencies towards inaction, obfuscation, and dangerous delays. Prized behaviors, which would seem to run counter to traditional Russian cultural approaches, include calculation and clarity: one should avoid both ambiguity and wishful thinking.¹⁰⁴ The fact that Soviet military writing calls upon Soviet military leaders to fight these tendencies might serve as evidence that the tendencies exist. Yet, in this ostensibly collectivistic culture, officers are also instructed that they will have to incentivize cooperation,

¹⁰³ See Adamsky, *The Culture of Military Innovation*, pp. 39-52. Adamsky cites a variety of Western and Russian works on Russian national culture and his review is worth reading. Particularly useful, with analysis that relies in part on sociological questionnaires that compare Soviet and American attitudes, is Kas'ianova, *O Russkom Natsional'nom Kharaktere*.

¹⁰⁴ Nathan Leites, *Soviet Style in War* (Santa Monica, CA: RAND, 1992), pp. 1-20, 25-37, 91-121, 134-138, 302-314

particularly between units, calling into question the postulated Russian preference for communal, systemic approaches.¹⁰⁵

Thus, Russian strategic culture (military and, likely, civilian) may be affected by overall cultural predilections in some ways, yet be divorced from them in others, including as a result of intentional efforts to instill a different world view in military personnel.

Cultural theories often postulate that formative experiences shape military (and other) culture. Soviet military thought can be traced to two fairly obvious formative experiences: World Wars I and II. World War I, combined with the Civil War that came on its heels, was the Red Army's origin war, fought even as the Army was being developed. As Mary E. Glantz writes, it left the USSR with an emphasis on air power, armor, and artillery.¹⁰⁶ It also birthed two concepts, the operational art and Deep Strike (both discussed below), that would stay with the Soviet Union and Russia for decades to come. World War II was, in many ways, a second origin war, because the deterioration of the forces up until that point meant that the military had to be all but entirely rebuilt.¹⁰⁷ The impact of World War II was less about concepts and more about cementing the centrality of certain approaches. Of course, the integration of technologies, from airpower to radio-electronic capabilities, changed the way everyone, including the Soviet Union, fought. But World War II is notable in that it has remained a sort of ideal war in Russian thinking, the one referenced by military scholars for decades to justify arguments on tactics and strategy (and operations) alike. Much of Soviet military writing after that war harkened back to it, and with new and old theories tested by examining its history. Perhaps most importantly, if the Soviet Union had inherited from Imperial Russia a

¹⁰⁵ Ibid., pp. 263-266, 276-283

¹⁰⁶ Mary E. Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," *The Journal of Slavic Military Studies* 7, no. 3 (1994), pp. 450, 452, 455; Vitalii Valer'ianovich Panov, "Vooruzhenie Sukhoputnykh Voisk," in *Sovetskaia Voennaia Moshch' ot Stalina do Gorbacheva*, ed. Aleksandr Vasil'evich Minaev (Moscow: Voennyi Parad, 1999).

¹⁰⁷ V.V. Kirillov and Yu. N. Kriuchkov, "Vliianie Voin na Razvitie i Mezhdunarodnoe Znachenie Rossii v Mire," *Voennaia Mysl*, no. 2 (2008).

general sense of insecurity, the World War II experience cemented it for decades to come.¹⁰⁸

I identify nine characteristics specific to Soviet, and now Russian, military culture which appear consistently and seem to hold across time. These can be seen as key components of Russian strategic culture.¹⁰⁹

Holistic, Analytical Approaches to Strategy, if Not Practice

Most analysts see the tendency towards analysis and holistic scientific approaches as a common theme that guided Soviet written doctrine and strategy in the military realm. An embrace of theory is inherent in the structure and purpose of the General Staff and its leadership. Since the General Staff reform under Frunze in 1924, the organization was meant to combine thinkers with doers for an approach to leading the armed forces based in sound theoretical principles.¹¹⁰ Systemic and holistic approaches were favored from the start, creating the breeding ground that birthed the concepts of operational art and deep strike, discussed below. However, while big ideas generated broad and open discussion, and sometimes even exercises, they were not consistently reflected in Soviet operations or force structure. A variety of factors, from Stalin's purges in the 1930s to constraints in the 1980s (to say nothing of the challenges of warfighting itself), precluded the translation of these ideas into how the Soviet Union actually fought. In line with cultural descriptions of Russians as comfortable with gaps between theory and practice, no one seemed to mind.¹¹¹

¹⁰⁸ See Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations.*; Condoleezza Rice, "The Making of Soviet Strategy," ed. Peter Paret, EPUB file ed, *Makers of Modern Strategy: from Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986).; Gray, *Nuclear Strategy and National Style*, p. 69.

¹⁰⁹ I do not delve into pre-Soviet Russian military culture here, since the Soviet experience is sufficient to establish factors critical to the nuclear era. For an overview dating to the 18th century, see Walter Pinter, "Russian Military Thought: The Western Model and the Shadow of Suvorov," ed. Peter Paret, *Makers of Modern Strategy: from Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986). See also Brian Taylor, *Politics and the Russian Army: Civil-Military Relations, 1689-2000* (Cambridge: Cambridge University Press, 2003).

¹¹⁰ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (London and Portland, OR: Frank Cass, 1997), p. 175; Adamsky, *The Culture of Military Innovation*, pp. 42, 46-47, 50

¹¹¹ *The Culture of Military Innovation*, pp. 30-31, 36, 37-39, 51, 52-53.

Preference for the Offense

Another consistent theme in Soviet military writing is a preference for offensive operations and approaches. This attribute is one that was often identified by Western analysts of Soviet approaches throughout the Cold War. In keeping with the literature on military approaches and civil-military relations globally, this was more a military than a civilian preference, as both Jack Snyder and Condoleezza Rice have pointed out. Indeed, a continuing tension between the military focus on the offense and an equally consistent rhetoric of defense in Soviet political ideology traces back to the days of Trotsky and Frunze.¹¹² The earliest Soviet doctrine was defensive, driven in part by Trotsky. But even this incorporated the idea that the USSR would take on the offense if it had to. That early view was rooted primarily in the Soviet Union's weakness in the 1920s, which demanded a defensive focus, tempered by Frunze's insistence on the importance of offensive capabilities.¹¹³ And while some Soviet military theorists continued to favor more affordable defensive and/or attrition-focused approaches, the offense soon won out. By the end of the 1920s Soviet military thought reflected Mikhail Tukhachevskii's strategy of annihilation. This approach, which drew on Imperial Russian military thought, called for decisive destruction of the enemy force.¹¹⁴

The focus on the offensive is, of course, not uniquely Soviet or Russian—Snyder, Posen, and Sagan, among others and as noted above, argue that militaries in general tend to prefer offensive approaches, while civilians do not. On the other hand, it is worth noting that Frunze, like Trotsky, rose through the Bolshevik political ranks to take military command. He was a civilian operative before he became a military commander.

To some Western observers who see the preference for offense as Russian rather than generally military, the reasons for it are historical. During the formative

¹¹² Rice, "The Making of Soviet Strategy;" Naveh, *In Pursuit of Military Excellence*, p. 177.

¹¹³ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 445-447

¹¹⁴ Richard W. Harrison, *The Russian Way of War: Operational Art, 1904-1940*, ed. Theodore A. Wilson, Modern War Studies (Lawrence, KS: University Press of Kansas, 2001), pp. 129-131, 137-139; David M. Glantz, "Introduction: The Formative Years: 1927-1940," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995).

years of the Russian nation, it faced numerous invasions. According to these scholars, this led to a preference for offensive operations and a continuing sense that true security is elusive.¹¹⁵ George Kennan famously described Russia's "sense of insecurity" as both "traditional and instinctive." This is not the only historical explanation, however. Gustafson attributes Russia's paranoid tendencies to its Byzantine heritage.¹¹⁶ Others view its large and difficult to defend borders as the challenge, arguing that Russia historically expanded (creating even longer borders) in an effort to limit the threat.¹¹⁷

The Soviet Union did have a brief return to defensive approaches in its later days. The concept of "reasonable sufficiency" was introduced in 1986. Reasonable sufficiency implied a focus on defensive, rather than offensive, capabilities. However, it was not particularly well-defined, enabling some proponents of the offense to continue to argue that sufficiency meant the capacity to defeat any possible enemy. It led to a 1987 Warsaw Pact military doctrine which stated that the alliance had no enemies and enshrined war prevention as its core goal, and defense its core capability.¹¹⁸ In 1990, the Soviet Union was in the process of drafting a new doctrine, one that allowed for a war between the United States and Russia but fundamentally retained the defensive/"reasonable sufficiency" concepts accepted by the Warsaw Pact in 1987.¹¹⁹

¹¹⁵ Colin Gray, *Nuclear Strategy and National Style*, London: Hamilton Press, 1986, p. 86; Fritz Ermarth, "Russian Strategic Culture in Flux: Back to the Future," in *Strategic Culture and Weapons of Mass Destruction*, ed. Jeannie L. Johnson, Kerry M. Kartchner, and Jeffrey A. Larsen, New York: Palgrave MacMillan, 2009.

¹¹⁶ Gustafson, "Echo of Empires: Russia's Inheritance of Byzantine Security Culture."

¹¹⁷ Fritz Ermarth, "Russian Strategic Culture in Flux: Back to the Future," in *Strategic Culture and Weapons of Mass Destruction*, ed. Jeannie L. Johnson, Kerry M. Kartchner, and Jeffrey A. Larsen (New York: Palgrave MacMillan, 2009).

¹¹⁸ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 459-462; David M. Glantz, *Soviet and Commonwealth Military Doctrine and the Gulf War* (Fort Leavenworth, Kansas: Foreign Military Studies Office, 1992), p.1; Raymond L. Garthoff, "Russian Military Doctrine and Deployments," in *State Building and Military Power in Russia and the New States of Eurasia*, ed. Bruce Parrott, *The International Politics of Eurasia* (Armonk, NY and London: M.E. Sharpe, 1995), p. 46; "The Defensive Nature of Soviet Military Doctrine and Troop (Force) Preparation," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1988)).; Anatolii Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II," *Na Strazhe Rodiny*, October 31 1997.

¹¹⁹ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 464-468.

There is little reason to think that reasonable sufficiency was the result of anything other than political directives. It most likely did not stem from the General Staff's analysis of new requirements, for instance driven by adversary development of long-range precision weapons, or any other bottom-up assessments. Rather, its intellectual origins most likely lay in the budget constraints and a changing world order facing the Soviet Union in the late 1980s, combined with the reform effort and outreach to the West undertaken by Soviet General Secretary Mikhail Gorbachev.¹²⁰

Moreover, it did not last. The 1990-91 Gulf War made a substantial impact on Soviet, and then Russian, military analysts. That conflict was read in the Soviet Union, and, after its collapse, Russia, as emphasizing the importance of quality of forces over quantity, and of technological capabilities, in which the USSR had fallen behind. In some ways, it seemed proof of the revolution of military affairs engendered by the development of high precision weapons. But while it lent some credence to arguments that technology might be more important than prior Russian strategists had thought, it was also viewed as affirming the advantages of offense over defense (even if this was simply because the advanced technology had been on the attacking side), challenging the sufficiency argument. It also supported traditional Soviet views on surprise attack (as well as deception)—and fears thereof.¹²¹ While some argued that these new capabilities meant the need for new approaches to defense, others were convinced that it meant the need for stronger forces overall—and parity with the West.¹²² Still others felt that the development and fielding of new technologies by others should drive not an unaffordable effort to catch up, but rather asymmetrical responses.¹²³

¹²⁰ Ibid., pp. 459-462; Glantz, *Soviet and Commonwealth Military Doctrine and the Gulf War*, p.1; Garthoff, "Russian Military Doctrine and Deployments," p. 46; "The Defensive Nature of Soviet Military Doctrine and Troop (Force) Preparation;" Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II."

¹²¹ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," p. 463; Glantz, *Soviet and Commonwealth Military Doctrine and the Gulf War*, pp. 3-5; *Soviet and Post-Soviet Military Art at a Crossroads: The Study of War in Revolutionary Times* (Fort Leavenworth, KS: Foreign Military Studies Office, 1992), p. 19.

¹²² *Soviet and Commonwealth Military Doctrine and the Gulf War*, pp. 6-10; Tor Bukkvoll, "Iron Cannot Fight--The Role of Technology in Current Russian Military Thought," *The Journal of Strategic Studies* 34, no. 5 (2011).

¹²³ Adamsky, *The Culture of Military Innovation*, p. 46; Bukkvoll, "Iron Cannot Fight."

The Operational Level and Deep Strike

Two of the most important, consistent, and persistent themes of Soviet military doctrine stemmed from the WWI/Civil War experience. These were the notion of an operational level between the strategic and the tactical and the concept of deep strike. These emerged in the 1920s and 1930s, perhaps a product of a General Staff eager to prove its capacity for innovation. And although their originators would be shot in Stalin's purges, these ideas would return from the dead (as their developers could not), to influence Soviet military thought for many decades.

The formulation of an "operational" level of warfighting emerged from debate and discussion in the General Staff, although Aleksandr Svechin is often credited with having first developed the term. He and other Soviet military theorists argued that tactics were too narrow, and strategy too broad, for at least some military planning needs. The operational level, and its sibling, "operational art," combines multiple battles and approaches towards common goals. Unlike strategy it is looking at intermediate, rather than end goals. Unlike tactics, it looks at larger combinations of forces and battles, allowing for feints and losses in the service of a greater good.¹²⁴ While some might argue that either strategy or tactics, or the two together, are sufficient, the Soviets, and later the Russians, would continue to emphasize this concept for decades to come.¹²⁵

Deep strike, or deep battle, is a component of an operational view of the battlefield and perhaps one of Soviet military thought's greatest innovations. Vladimir Triandafillov, Mikhail Tukhachevskii, and others argued that the Civil War experience indicated that military operations should be viewed in a context of strategic depth. Deep strikes behind enemy lines, including with air power and

¹²⁴ David M. Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, ed. David M. Glantz, Cass Series on Soviet Military Theory and Practice (London and Portland, OR: Frank Cass, 1991), pp.21-25, 57-63, 68-92. Adamsky, *The Culture of Military Innovation*, p. 34; Naveh, *In Pursuit of Military Excellence*, p. 170, 184-189; Harrison, *The Russian Way of War*, pp. 139-141; I Mariyevsky, "Formation and Development of the Theory of Operational Art," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1962)).

¹²⁵ See "The Evolution of Soviet Operational Art 1927-1991," in *Cass Series on the Soviet Study of War*, David M. Glantz (London: Frank Cass, 1995).; *The Evolution of Soviet Operational Art 1927-1991*. 2 vols, vol. 2, Cass Series on the Soviet Study of War (London: Frank Cass, 1995).

substantial artillery, were meant not to simply destroy the enemy, but to eliminate its capacity to be effective.¹²⁶ Deep strike placed emphasis on the use of shock and holding troops, identification of and action on multiple axes, maneuver, the use of aviation, and, importantly, encirclement.¹²⁷

Just how new Deep Strike was is also debated. German thinking in the 1920s and 1930s, as well as before, had forwarded some similar concepts.¹²⁸ But like the concept of the operational level, Deep Strike would have a long-term impact (so to speak), for many years.¹²⁹ By the time of the Soviet Union's collapse, they would prove central to Russian thinking about the Revolution in Military Affairs, as Russian theorist pondered how high-precision technologies could enable effective deep strikes by the defender as well as the attacker.¹³⁰

Maskirovka

The concept of *maskirovka* also dates to World War I and the Civil War, and the development at that time of more advanced reconnaissance. It has remained critical to Soviet (and Russian) military approaches since.¹³¹ I use the Russian term

¹²⁶ Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, pp.21-25, 57-63, 68-92. Adamsky, *The Culture of Military Innovation*, p. 34; Naveh, *In Pursuit of Military Excellence*, p. 170, 184-189; Harrison, *The Russian Way of War*, pp. 184-217. Mariyevsky, "Formation and Development of the Theory of Operational Art."

¹²⁷ Leites, *Soviet Style in War*, pp. 217-218; Naveh, *In Pursuit of Military Excellence*, p. 213; G. Isserson, "The Development of the Theory of Soviet Operational Art in the 1930s," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1965)); L. I. Voloshin, "The Theory of Deep Operation and its Developmental Trends," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1978)); V. I. Ul'yanov, "The Development of the Theory of Deep Offensive Battle in the Prewar Years," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1988)).

¹²⁸ Tal Tovy, "1930s German Doctrine: A Manifestation of Operational Art," *Military Review* (2015).

¹²⁹ See Voloshin, "The Theory of Deep Operation and its Developmental Trends;" N. V. Ogarkov, "The Deep Operation," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1976)); Adamsky, *The Culture of Military Innovation*, p. 34.

¹³⁰ *The Culture of Military Innovation*, p. 34.

¹³¹ Iu. L. Koziratskii, A. V. Ivantsov, and P. I. Anotonovich, "Aspekty Razvitiia Poniatiinogo Apparata v Oblasti Maskirovki i Protivodeistviia Tekhnicheskim Sredstvami Razvedki," *Voennaia Mysl*, no. 2 (2015). For translated examples of Soviet authors discussing *Maskirovka*, see I. Pavlovskiy, "Soviet Operational Art in the Great Patriotic War," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1968)) and V. Chervonobab, "Principles of Military Art and Their Development," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1971)).

because there is no direct English translation. *Maskirovka* includes elements of camouflage, deception, feints, and other related concepts intended, as Charles L. Smith wrote, to “mislead, confuse, and interfere with accurate data collection regarding all areas of Soviet plans, objectives, and strengths or weaknesses.”¹³² This definition tracks with that in the Russian military encyclopedic dictionary, of (my translation) “the set of activities intended to hide from an adversary the forces (capabilities) and infrastructure and confuse that adversary regarding the form, location, make-up, condition, actions, and intentions of forces, as well as leadership plans.”¹³³

Manpower and Massing

Not as easily traceable to the experience of any given war but remarkably consistent in Soviet doctrinal writing and operations (including those of World War II) is a tendency to rely on large quantities of personnel and massing. These factors emerge when Soviet military analysts write about a range of topics, including deep strike and operations. A large population was one of Russia’s, and then the Soviet Union’s, assets, and that population was consistently deployed when both Russia and the USSR went to war. Large numbers of personnel were seen as the most effective possible battering ram to use against an adversary, whether for a direct attack, a flanking maneuver, or a deep strike to the enemy’s rear.¹³⁴ Large numbers could also, in theory, help make up for lower levels of training and capacity by individual soldiers. Technology, while important, was seen as a force multiplier, rather than replacement.¹³⁵ After all, it is Stalin to whom the aphorism “quantity has a quality of its own” is most often attributed. And, in line with that, the fact that large

¹³² Charles L. Smith, "Soviet Maskirovka," *Airpower Journal* 2, no. 1 (1988).

¹³³ Cited in Koziratskii, Ivantsov, and Anotonovich, "Aspekty Razvitiia Poniatiinogo Apparata v Oblasti Maskirovki i Protivodeistviia Tekhnicheskim Sredstvam Razvedki."

¹³⁴ Adamsky, *The Culture of Military Innovation*, p. 43; Fritz Ermarth, *Russia's Strategic Culture: Past, Present, and...in Transition?* (SAIC, 2006), p. 5; V. E. Sakvin, *The Basic Principles of Operational Art and Tactics: A Soviet View* (Honolulu: University Press of the Pacific, 2002), p. 202-206, 228.

¹³⁵ Bukkvoll, "Iron Cannot Fight."

numbers of unqualified soldiers suggests an acceptance of large casualty counts, fits well with a broader Russian penchant to glorify self-sacrifice and suffering.¹³⁶

Surprise

A preoccupation with surprise attack, both in the context of preparing for it and expecting it of adversaries and an effort to seek to surprise adversaries on the tactical, operational, and strategic levels was an important legacy of World War II. Not only was surprise how that conflict began for Russia, with the German attack; but Russian forces got better at tactical surprise vis-à-vis the Germans as the war went on.¹³⁷

Firepower and Artillery

The emphasis on massing combined with the belief in rapid, decisive action to engender effective surprise led to a preference for large-scale and early use of forces, likely reinforced with successive actions, or successive operations.¹³⁸ This translated into a focus on artillery preparation of the battlefield. In World War II, these approaches were perfected: heavy artillery bombardment, after which armor and other units could move in. This approach was, notably, not dependent on high levels of capability. Indeed, the Russian approach to the use of artillery in WWII was much more focused on firepower than precision, in large part because they had far more capacity for the former than the latter. Like manpower, firepower was meant to make up for both human capital and technology gaps.¹³⁹ That it did so in World

¹³⁶ On self-sacrifice, see Kas'ianova, *O Russkom Natsional'nom Kharaktere*, Chapter 11.

¹³⁷ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 450, 452, 455; Panov, "Vooruzhenie Sukhoputnykh Voisk;" Rice, "The Making of Soviet Strategy;" Leites, *Soviet Style in War*, pp. 104, 242, 343-345, 365; Chervonobab, "Principles of Military Art and Their Development."

¹³⁸ Leites, *Soviet Style in War*, pp. 358-359; Sakvin, *The Basic Principles of Operational Art and Tactics: A Soviet View*, pp. 213-229.

¹³⁹ V Zlobin, "The Triumph of Soviet Operational Art in the Great Patriotic War," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1950)); Pavlovskiy, "Soviet Operational Art in the Great Patriotic War;" Chervonobab, "Principles of Military Art and Their Development."

War II likely contributed to a prevailing and lasting belief that large amounts of firepower (the more, the better) were needed for success.¹⁴⁰

The focus on artillery would prove lasting. Since World War II, artillery units have enjoyed high levels of prestige, and both Soviet approaches to warfare after the second World War and Russian fighting since independence have shown a continuing tendency to rely on artillery.¹⁴¹

Centralized Decision-Making

The Soviet military, with its reliance on conscripts and continuing concerns about loyalty to the Communist Party, tended to centralize decision-making at high levels.¹⁴² Soviet commanders did not particularly trust individual initiative. Like much of Soviet society, the armed forces rarely rewarded initiative and incentivized getting along. This, too, can be linked to collectivistic attitudes, although it is also fairly prevalent in bureaucracies in general and appears in not a few other militaries.

¹⁴⁰ Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, p. 167; *The Military Strategy of the Soviet Union: A History* (London: Frank Cass, 1992), p. 140; Sakvin, *The Basic Principles of Operational Art and Tactics: A Soviet View*, pp. 224-225; see also Zlobin, "The Triumph of Soviet Operational Art in the Great Patriotic War." and V. G. Reznichenko, "Preparation and Conduct of Army Operations: Historical Experience and Contemporaneity," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1991)).

¹⁴¹ There is some discussion of the Russian predilection for artillery in Olga Oliker, *Russia's Chechen Wars: Lessons from Urban Combat* (Santa Monica, CA: RAND, 2001). Artillery was crucial to the Russian approach in its brief 1969 clash with China (D.S. Riabushkin and V.D. Pavliuk, "Soviet Artillery in the Battles for Damanskii Island," *Journal of Slavic Military Studies* 20 (2007).) Artillery, along with aerial bombardment, also played important (perhaps too important) roles in Afghanistan (Lester W. Grau, *Artillery and Counterinsurgency: The Soviet Experience in Afghanistan*, (Center for Army Lessons Learned 1997), <http://fms.leavenworth.army.mil/documents/art/art.htm>; Olga Oliker, *Building Afghanistan's Security Forces in Wartime: The Soviet Experience* (Santa Monica, CA: RAND, 2011).) and in Georgia (a good overview of that conflict can be found in the compendium Ruslan Pukhov, ed. *The Tanks of August* (Moscow: Centre for Analysis of Strategies and Technologies, 2010). Recent evidence from Ukraine supports this as well (Anna Nemtsova, "Why Is Ukraine's War So Bloody? The Soviet Union Trained Both Sides," *The Daily Beast* (2015), <http://www.thedailybeast.com/articles/2015/02/03/why-is-ukraine-s-war-so-bloody-the-soviet-union-trained-both-sides.html>.) and there is even evidence from Syria (James T. Quinlivan, "Artillery Returns to the Battlefield in the War Against ISIL," *War on the Rocks* (2016), <http://warontherocks.com/2016/01/artillery-returns-to-the-battlefield-in-the-war-against-isil/>).

¹⁴² See Richard G. Head, "Soviet Military Education: Technical, Tactical, Traditional," *Air University Review* (1978).; David S. Alberts and Richard E. Hayes, *Command Arrangements for Peace Operations*, (Washington, DC: National Defense University Press, 1995), http://www.au.af.mil/au/awc/awcgate/ndu/peace_alberts/capohome.html.; Jodie Sweezey and Austin Long, *From Concept to Combat: Tomahawk Cruise Missile Program History and Reference Guide, 1972 - 2004* (Patuxent River, MD: Naval Air Systems Command, 2005), p. 7

Ground Forces More Important than Naval or Air

Russian writings throughout the Soviet period and since also show a strong focus on ground forces, perhaps supplemented by air, but with little attention to the Navy. The World War II experience may well have had a role in cementing this, as well, though one can also trace aspects of it to Russia's geography.¹⁴³

Principles of Russian Strategic Culture

To summarize, then, Soviet strategic culture can be characterized by nine components, which permeate Russian attitudes towards national security and warfighting across its services, civilian leadership, and General Staff. They shape Russia's ways of war theories of victory and define how it seeks to make and sustain peace.

- Holistic, analytical approaches to strategy, if not practice
- Preference for the Offense
- The Operational Level and Deep Strike
- *Maskirovka*
- Manpower and Massing
- Surprise
- Firepower and Artillery
- Centralized Decision-Making
- Ground Forces More Important than Naval or Air

How then, do these translate into nuclear strategy and force posture, if at all? The next section examines the historical evolution of Soviet nuclear forces and the way that Soviet leaders saw their value. I then assess how each of the above factors was or was not reflected in nuclear weapon development and approaches and what else might have been critical to it. This lets me identify which of the subcultures relevant to Russia's nuclear forces are enhancing, orthogonal, or counter to the

¹⁴³ Sergei Patyrev, "Podtekst Morskoi Doktriny. Voenno-Morskoi Flot Nameren Vyiti iz Podchineniia Minoborony," *Nezavisimoe Voennoe Obozrenie*, no. 30 (2001).

dominant strategic culture. That assessment, in turn, provides the context for defining the predictions of my Cultural/Bureaucratic theory.

The History of Soviet Nuclear Weapons: Origin and Development

Force Structure

Bombers were the first nuclear weapon delivery system in the Soviet arsenal. Bombers had proven themselves in World War II, but they had certain limitations in a nuclear context. Whereas the United States could forward-deploy bombers in Europe, the Soviet Union had to develop refueling capability if it was to reach its main adversary with airplanes. By the end of the 1950s, the USSR had intercontinental bombers, but both range and refueling capabilities remained works in progress, even as the Soviet Union sought to develop and improve cruise missile capabilities.

Meanwhile, the Soviets found early success with a different approach: ballistic missiles. Aside from their military role, variations on the R-7 rocket were also effectively used to launch satellites in 1957, contributing to the Soviet space program, another key national priority. This was both something of a propaganda coup and an early signal of progress.¹⁴⁴

In 1955, the rocket forces became a separate branch, with its own dedicated Deputy Defense Minister for Special Weapons and Rocket Engineering (who had a Director of Rocket Armaments reporting to him).¹⁴⁵ This was Artillery Marshall Mitrofan Nedelin, who also continued to oversee artillery, as well as nuclear missile development.¹⁴⁶ In 1958, tactical nuclear units, initially under Nedelin, were made subordinate to the ground forces instead. Some engineering units responsible for intermediate range nuclear missiles reported to Air Force Strategic Aviation. Others

¹⁴⁴ Pavel Podvig et al., eds., *Russian Strategic Nuclear Forces* (Cambridge, Massachusetts: The MIT Press, 2001), p. 121; See also Rem Nikiforovich Kanin and N.N. Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*, ed. V. G. Degtiar' (Moscow: Voennyi Parad - GRTs "KB im. Akademika V.P. Makeeva", 2007). For more on the history of the early Soviet ballistic missile program, see Igor Afanasyev, "The Legacy of the V-2: The First Soviet Ballistic Missiles," *The Journal of Slavic Military Studies* 11, no. 4 (2007) and Mikhail Pervov, *Mezhkontinental'nye Ballisticheskie Rakety SSSR i Rossii* (Moscow 1998), pp. 5-66.

¹⁴⁵ Podvig et al., *Russian Strategic Nuclear Forces*, pp. 143-145.

¹⁴⁶ Viktor Esin, "Glavnye Sily Iadernogo Sderzhivaniia," *Vestnik VoЕННОI Informatsii* (1994).

reported as a branch to Nedelin. This confusing bifurcation ended with the creation of a separate Strategic Rocket Forces service, headed by Nedelin, in December 1959. The new service included engineering regiments and brigades with nuclear capability. It was comprised of missile armies and an associated infrastructure of staff, training, research, testing, and higher education.¹⁴⁷

During this time Russia also began to develop SLBMs. Although submarine-launched nuclear munitions were not originally envisioned in a strategic role, naval designers were working on ballistic missiles for submarines from 1949 onwards. With torpedoes already in use on submarines, Soviet designers moved quickly to develop nuclear variants: the T-5 came online in the 1950s. Nuclear cruise missiles were also developed. Ballistic missiles were deployed on submarines in the 1950s, but nuclear-armed ballistic missiles were not complete until the 1960s. Meanwhile, the Soviets hoped that the development of nuclear-powered submarines would mitigate anti-submarine warfare concerns by eliminating the requirement to surface as frequently and lowering the sound signature.¹⁴⁸

But the decision to make the SRF a separate service was decisive: it cemented their status as the core of Russia's nuclear capability.¹⁴⁹ Putting the SRF commander on an equal footing with the Army, Navy, Air Force and Air Defense commands meant control of resources and leadership attention unmatched by the other two thirds of the Soviet nuclear triad.¹⁵⁰ The SRF even got its pick of the best officers from other services.¹⁵¹ Its importance was further emphasized by the fact that the 12th Main Directorate, created in 1957 to oversee all nuclear weapons development, testing, and safety, was also moved under the SRF when the latter became a separate service.¹⁵² The other branches (i.e., the Navy and Air Force) had 6th Directorates to carry out related functions, and these were themselves subordinate

¹⁴⁷ Podvig et al., *Russian Strategic Nuclear Forces*, pp. 344-345.

¹⁴⁸ Ibid., pp. 235-245, 252, 255-256.

¹⁴⁹ Ibid., pp. 344-345.

¹⁵⁰ Esin, "Glavnye Sily Iadernogo Sderzhivaniia;" Podvig et al., *Russian Strategic Nuclear Forces*, p. 145.

¹⁵¹ Viacheslav Davidenko, "Bez Grifa 'Sekretno.' U Pul'ta Strategicheskikh Raket Nesut Boevoe Dezhurstvo Ofitsery RVSN," *Na Boevom Postu* (1996).

¹⁵² Mikhail Nervov, "Raketnye Kompleksy RVSN," *Tekhnika i Vooruzhenie*, no. 5 (2001).

to the 12th Main Directorate.¹⁵³ This was reversed in 1974, when the 12th Main Directorate was moved out of the SRF structure and under the Defense Ministry as a whole. At that time, the SRF, like the other strategic nuclear forces, got a 6th Directorate, subordinate, like the others, to the now central 12th Main Directorate.¹⁵⁴ Until then, however, the SRF's research and development branch oversaw the research and development of the other legs of the triad.

The SRF went through several generations, or phases of modernization. Work on mobile missiles began in the 1960s, although none were successful before the 1970s, and the one to actually join the force, the SS-25, did not do so until 1985. Similarly, the first Soviet solid-fueled ICBM was deployed in 1969, although follow-ons lagged.¹⁵⁵ In the 1980s, the USSR undertook a three-pronged effort to develop new modern missiles, including a liquid-fueled option for silo-based systems, a solid-fueled system for silo-based systems, and a solid-fueled option for mobile missiles.¹⁵⁶ Other critical developments including placing multiple warheads, or MIRVs (multiple independently targetable reentry vehicles) on each missile. As the Soviet Union grew more concerned about US missile defense capabilities, countermeasures were incorporated into Soviet systems. SRF commanders also received increasing levels of authority over the planning of nuclear force use over time.¹⁵⁷

Meanwhile, resources for the strategic bomber fleet shrunk as those for the SRF grew.¹⁵⁸ The creation of the SRF command, meant that Long-Range Aviation command lost the missile units. Its divisions and regiments, which remained under Air Force command, were subordinated to a heavy bomber aviation corps. Long Range Aviation did not go away, but it no longer had a lead role. Rather, its purpose

¹⁵³ Michael Jasinski, "The Security and Safety of Russia's Nuclear Weapons," <http://www.nti.org/analysis/articles/security-and-safety-russias-nuclear-weapons/>; O. Kasimov, "'Atomnyi' Admiral," *Morskoi Sbornik*, no. 1 (2004); P. Kabziuk, "Garant Bezopasnosti Rossii," *Morskoi Sbornik*, no. 9 (2004).

¹⁵⁴ Nervov, "Raketnye Kompleksy RVSN."

¹⁵⁵ Podvig et al., *Russian Strategic Nuclear Forces*, pp. 7, 132, 205-206.

¹⁵⁶ Vladimir Iakovlev, "Arsenal. 'Topol'-M'-Oruzhie XXI Veka," *Vestnik Voennoi Informatsii*, no. 1 (1999).

¹⁵⁷ Nikolai Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku," *Armeiskii Sbornik*, no. 12 (2004).; For detail, see Pervov, *Mezhkontinental'nye Ballisticheskie Rakety SSSR i Rossii*;

¹⁵⁸ Podvig et al., *Russian Strategic Nuclear Forces*, pp. 344-345.

was to support strategic missile strikes and destroy key targets if and when called upon to do so (in 1980, Long-Range Aviation was eliminated entirely, although it was resurrected in 1988). Moreover, Soviet design bureaus shifted their focus from aircraft and cruise missiles and refocused on ICBM development.¹⁵⁹

This said, an effort to reach parity with the United States spurred bomber development in the 1960s and 1970s, although the resulting aircraft, the Tu-160, did not fly until 1981. Meanwhile, the 1950s-era Tu-95 was modernized and outfitted with new longer-range Kh-20M missiles (themselves an improvement on the 50s-era Kh-20) in the 1960s.¹⁶⁰

The submarine fleet fared better than the bombers. As with strategic bombers, Russia's desire to match U.S. capabilities helped keep submarines funded and relevant although with even more success. This began in the late 1960s, when U.S. Polaris program spurred the Soviet Union to counter with its own second generation of strategic submarines.¹⁶¹ The search for equivalency drove submarine development and while this, in turn, this may not have made the Soviet SSBN fleet as important as the SRF, it did raise its prominence within the Navy. The service deemed support to ballistic missile submarines among its key functions.¹⁶² This is not to say that the Navy had no other roles. Of course, it did, but the nuclear mission was central, reflecting a broader view of likely conflict focused on large-scale nuclear war and deterrence.

While many of the technologies for SLBMs paralleled those for ICBMs, there were also clear differences. Some of these were technical—while the Soviets sought to develop solid-fueled SLBMs starting in the 1970s, Soviet submarine-launched ballistic missiles used liquid propellant until the 1980s.¹⁶³ Others had more to do

¹⁵⁹ Ibid., pp. 345, 349, 352-353.

¹⁶⁰ Ibid., pp. 347-348.

¹⁶¹ Ibid., p. 240; Kabziuk, "Garant Bezopasnosti Rossii;" Pervov, *Mezhkontinental'nye Ballisticheskie Rakety SSSR i Rossii*, p. 7.

¹⁶² Podvig et al., *Russian Strategic Nuclear Forces*, pp. 245, 252, 255-256.

¹⁶³ Rem Nikiforovich Kanin, "Dilemma Morskogo Raketostroeniia," *Nezavisimoe Voennoe Obozrenie*, August 24, 2012; Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; Fedor Ivanovich Novoselov, "Vooruzhenie Voennno-Morskogo Flota," in *Sovetskaia Voennaia Moshch' ot Stalina do Gorbacheva*, ed. Aleksandr Vasil'evich Minaev (Moscow: Voennyi Parad, 1999).

with how the USSR saw these systems and their role. For example, from the 1960s through the 1980s, the Soviet Union put substantial resources to improving command and control connectivity with submarines at sea.¹⁶⁴ These innovations made greater centralization possible and limited the dependence on individual Naval officers.¹⁶⁵ Land-based missiles, however, quite simply did not pose these problems.¹⁶⁶

The Soviet Union also developed missile defense and early warning capabilities. While these are not technically part of the strategic triad, they are certainly relevant to the Soviet Union's nuclear force posture and its development. Both of these capabilities, along with space defense, were initially placed under the Soviet Air Defense Command, a separate and thus powerful command (like the SRF would be) since WWII.¹⁶⁷ From 1978 to 1982, the forces were returned to their structure before and during WWII: under regional commands, rather than centralized control. They were returned to a unified command structure in January 1986. Despite these bureaucratic reorganizations, the Air Defense forces remained well-resourced throughout the 1970s and 1980s.¹⁶⁸

The Soviets only fully deployed one missile defense system, the A-35 around Moscow. A small-area system, it was compliant with the ABM treaty of 1972. This was up and running in the 1970s, and, by 1989, it mostly replaced by the newer A-135 system, although the latter did not officially enter into service until after the collapse of the USSR.¹⁶⁹

¹⁶⁴ Vladislav Gekov and Valentin Adamskii, "Supersviat' Dlia Atomnykh Submarin," *Krasnaia Zvezda*, April 29 1995.

¹⁶⁵ Podvig et al., *Russian Strategic Nuclear Forces*, pp. 281-282

¹⁶⁶ Makeev argues that in wartime, connectivity with all forces will be compromised, and the Navy has, unlike the SRF, been seeking to respond to these problems for years. It is notable that he does not make the case for independent thinking and action on the part of submarine commanders. B Makeev, "Vremiia i Flot. Morskii Strategicheskie Iadernye Sily i Podderzhanie Strategicheskoi Stabil'nosti," *Morskoi Sbornik*, no. 9 (2001).

¹⁶⁷ Boris Chel'tsov, "Zarozhdenit i Razvitie Protivovozdushnoi Oborony Strany," *Voенно-Istoricheskii Zhurnal*, no. 12 (2004).; Boris Zaretskii, Iurii Alekhin, and Sergei Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia," *Vozdushno-Kosmicheskaiia Oborona*, no. 3 (2012).; Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, p. 9.

¹⁶⁸ Chel'tsov, "Zarozhdenit i Razvitie Protivovozdushnoi Oborony Strany;" Zaretskii, Alekhin, and Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia."

¹⁶⁹ Jennifer Mathers, *The Russian Nuclear Shield from Stalin to Yeltsin* (Oxford: St. Anthony's Press, 2000), pp. 146-147; Pavel Podvig, "History and the Current Status of the Russian Early-Warning

Early warning was more successful. Starting in the early 1960s, the Soviets built a system of ground-based radars capable of detecting incoming missiles and, eventually, assess the scope of an attack. In 1972, the USSR set as its goal an integrated early warning system combining the radar network with satellites and over-the-horizon radars to identify missile launches. With the ground-based radars alone, by the end of 1979, the USSR had good coverage from all possible directions of attack except the northeast.¹⁷⁰

The space-based component envisioned satellites in both high elliptical orbits (HEO) and geosynchronous orbits (GEO).¹⁷¹ The USSR began launching these in 1977. In 1982, the system, known as the UK-K or Oko, had 7 of 9 planned satellites deployed in HEO and was declared combat ready. Starting in 1984, the USSR also began deploying satellites in GEO. As first generation satellites, like those in HEO, however, they mainly provided redundancy. The first second generation satellite in the follow-on UK-KMO system was probably launched into GEO in February 1991.¹⁷²

At the time when the Soviet Union collapsed, it, and thus its successor, Russia, had an early warning network that could detect all US ICBM launches. Because of the gap in the northeast, however, it could not see SLBM launches from the Pacific (which would be unlikely for a first strike).¹⁷³ This system did not provide a great deal of warning time. Because U.S. submarines can operate fairly close to Soviet soil, Soviet early warning likely allowed for at best 10-20 minutes of actual warning of launches from near their territory. Reportedly, this may have led the USSR to assume that attacks would only take place in crisis situations, such that the country could prepare its weapons and leadership. According to Pavel Podvig, a physicist who has studied this in depth, this meant that the early warning system existed for crisis situations only, and the USSR did not rely on it for a possible launch on warning in peacetime, although warning was crucial for Russian planning for

System," *Science and Global Security* 10 (2002), pp. 27, 31; Viktor Esin, "Breshi i Okna v Protivoraketnom Zontike Strany," *Nezavisimoe Voennoe Obozrenie*, July 27, 2012. 2012.

¹⁷⁰ Podvig, "History and the Current Status of the Russian Early-Warning System."

¹⁷¹ Ibid.

¹⁷² Ibid.

¹⁷³ Ibid.

retaliation and possible launch on warning.¹⁷⁴ The other possibility is, of course, that in peacetime, as in wartime, a judgment would have to be made, and the limitations of the system taken into account as part of that judgment. Moreover, this short-term for warning applied only to submarine launches from near Russian soil—there would be longer warning of other components of a larger-scale attack, whether in peacetime or wartime.

The Soviet Union developed shorter-range, non-strategic nuclear capabilities as well as strategic missiles.¹⁷⁵ Soviet non-strategic forces included missiles (e.g., those on ABM interceptors, surface-to-air missiles, and submarine-launched cruise missiles), depth bombs, nuclear torpedoes, and rockets. In addition, both the U.S. and the USSR sought even smaller-scale nuclear capabilities in the 1960s. However, while the United States quickly gave up on nuclear artillery, the USSR continued to develop nuclear rounds for existing artillery systems and, it was revealed in 1991, nuclear mines.¹⁷⁶

In 1991, the USSR pledged to eliminate its nuclear artillery munitions, nuclear mines (whose existence had previously been denied) and nuclear warheads for tactical missiles. Air Defense, surface ships, land-based naval aviation, and multi-purpose submarines, it promised, would also no longer have nuclear warheads deployed. Since then, many have questioned the extent to which these promises were kept, as will be discussed in the chapters that followed.

To summarize, the Soviet Union developed a large array of nuclear capabilities in a very substantial arsenal. But from the very start, it was Strategic

¹⁷⁴ "Reducing the Risk of Accidental Launch," *Science and Global Security* 14, no. 2-3 (2006); Podvig et al., *Russian Strategic Nuclear Forces*, pp. 59-66

¹⁷⁵ Non-strategic nuclear weapons are quite simply, weapons that, due to their shorter ranges, are not limited by strategic arms treaties. Strategic weapons are defined as those with ranges over 5500km. Because the Intermediate-Range Nuclear Force (INF) Treaty, signed by the USSR and the United States in 1987 prohibits ballistic missiles and ground-launched cruise missiles with ranges between 500 and 5500 km, all (legal) non-strategic missiles in the Soviet/Russian (and US) arsenal have ranges smaller than 500 km.

¹⁷⁶ "Bez Grifa 'Sekretno.' Atomniiia Artilleriia. Novostrebouvannyi Monstr?," *Krasnaia Zvezda*, March 23 1996. For an excellent overview of Russian nonstrategic capabilities, which provides insight into the Soviet history of these systems, see Igor Sutyagin, *Atomic Accounting: A New Estimate of Russia's Non-Strategic Nuclear Forces*, Occasional Paper (London: Royal United Services Institute, 2012). See also Amy F. Woolf, *Nonstrategic Nuclear Weapons*, CRS Report for Congress (Washington, DC: Congressional Research Service, 2014).

Rocket Forces that enjoyed the greatest privilege and greatest bureaucratic power. The only organization with a related role that could claim a similar status was that of the Air Defense Forces, which oversaw early warning as well as missile defense. Submarine programs were resourced and supported, albeit at a lower level, while strategic bombers and nonstrategic forces, although substantial, were certainly viewed as less important. Repeatedly, it was efforts to match U.S. numbers and capabilities that drove the development of other systems.

Strategy

By the early 1960s, Soviet analysts saw the advent of nuclear weapons as a sort of revolution in military affairs, trumping the operational art concepts associated with conventional warfare.¹⁷⁷ Nonetheless, writing on nuclear weapons was remarkably similar to that on conventional war, with a focus on large-scale, massed attacks, and the importance of surprise.¹⁷⁸ The evolution of Soviet thought to incorporate deterrence theory was a bit spotty. The Soviets debated whether nuclear weapons could be warfighting weapons throughout the 1960s and 1970s.¹⁷⁹ Jack Snyder argues that civilians were focused on deterrence, even though military personnel sought warfighting strategies.¹⁸⁰ Efimov and Frolov report that in 1961, Soviet intelligence assessed that the United States and NATO had the capability to launch a disarming first strike against the Soviet Union, but that the reverse was not

¹⁷⁷ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 454, 455; Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, pp. 178, 179. 181 See also Anatolii Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part I," *Na Strazhe Rodiny*, October 25 1997.; "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II; Fenenko, "Transformatsiia Sderzhivaniia."

¹⁷⁸ Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, p. 225; Sakvin, *The Basic Principles of Operational Art and Tactics: A Soviet View*, pp. 173, 225-227, 234; Glantz, *Soviet and Post-Soviet Military Art at a Crossroads*, p. 10.

¹⁷⁹ John Erickson, "The Soviet View of Deterrence: A General Survey," *Survival: Global Politics and Strategy* 24, no. 6 (1982).; Gray, *Nuclear Strategy and National Style*, pp. 71-72; Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, pp. 10-11. Aleksei Fenenko, "Sovremennye Kontseptsii Iadernogo Sderzhivaniia," *Mezhdunarodnye Protsessy* 10, no. 2 (2012). For an example of a Soviet article arguing that U.S. flexible response approaches imply a view of a nuclear war as winnable, see M. Cherednichenko, "Some Features of Modern Military Art," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1970)).

¹⁸⁰ Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, pp. 10-11.

true.¹⁸¹ According to Russian historian Aleksei Fenenko, the Cuban Missile Crisis led Soviet leaders (if not military planners) to officially reject the idea of potentially winning a nuclear war against the United States.¹⁸² It seems likely that the historians also were not certain, and that within the General Staff and the Politburo, there was more than one point of view.

Notably, even when nuclear forces were explicitly described as deterrence forces, the planning was largely for offense.¹⁸³ If anything, Soviet projections for employment of nuclear weapons were not particularly dissimilar from those for artillery (perhaps not surprising given the key role of artillery officers in Soviet missile force development), although, unlike artillery in WWII, at least, there was no premise that an “armor” equivalent would follow. This artillery was meant to be decisive on its own. Nuclear weapons were lauded for their ability to confer swift and decisive victory, including rapid, large-scale deep strikes and the capacity to destroy a range of enemy capabilities.¹⁸⁴

Snyder ascribes the Soviet Union’s disinclination to trust deterrence, which relies in part on an adversary’s decision calculus, on the World War II experience.¹⁸⁵ However, this does not align well with the Soviet focus on *maskirovka*, reflexive control, and other mechanisms intended to influence adversaries. But it is true that while survivability was at least sometimes described as key to deterrence in Soviet writings of the 1960s and 1970s, details of what it might require were not particularly developed.¹⁸⁶ To avoid an enemy’s nuclear strike, wrote one strategist in the early 1970s (back when publication meant at least some level of official approval), one must eliminate each enemy launcher. This is not, of course, a

¹⁸¹ N. N. Efimov and V. S. Frolov, "Karibskii Krisis 1962 Goda (Novye Dannye)," *Voprosy Istorii*, no. 10 (2005).

¹⁸² Fenenko, "Transformatsiia Sderzhivaniia."

¹⁸³ Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, pp. 28-29.

¹⁸⁴ B. Golovchiner, "Some Questions of Modern Operational Art," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1961)); I Zav'yalov, "The Evolution in the Correlation of Strategy, Operational Art, and Tactics," in *The Evolution of Soviet Operational Art 1927-1991, Case Studies on the Soviet Study of War* (London: Frank Cass, 1995 (original 1971)); Chervonobab, "Principles of Military Art and Their Development;"

¹⁸⁵ Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, pp. 28-29.

¹⁸⁶ Cherednichenko, "Some Features of Modern Military Art."

deterrent approach—rather, it is an argument for pre-emptive action (and dependent on land-based systems).¹⁸⁷ Fenenko notes Soviet efforts in the 1960s and 1970s to improve counter-force capabilities vis-à-vis the U.S. arsenal, including through MIRVing and, somewhat confusingly, mobile ICBMs (although, as already noted, those took time to actually deploy).¹⁸⁸

Numbers were important from a fairly early period. Perhaps due to an assumption that nuclear war would necessarily be large scale, Moscow was convinced that the USSR had to attain and maintain superiority, measured in numbers of nuclear weapons, over the United States. Snyder argues that in the 1960s and 1970s minimal deterrence, targeting restraint, and mutual survivability were rejected in favor of robust and overwhelming capabilities on the Soviet side.¹⁸⁹ It is worth asking, however, to what extent these were ever all that seriously considered. Regardless, from the late 1960s, as the discussion above indicates, Soviet doctrine began to emphasize parity with the United States across the range of systems, that is, parity in type as well as number, rather than ICBM supremacy.¹⁹⁰

The prominence of the Strategic Rocket Forces and of offensive capabilities more generally remained at the core of Soviet strategy, however.¹⁹¹ From the early 1960s, Russian doctrine designated land-based ballistic missiles the central force for both local theaters and strategic conflict.¹⁹² This aligned with the decision to make the Strategic Rocket Forces the one independent nuclear service.¹⁹³ As a result, in 1982, the USSR had an estimated 5500-6000 warheads on silo-based ICBMs, compared to 2000 on SLBMs.¹⁹⁴ Moreover, Soviet statements evidenced consistent pride that the Soviet Union was “ahead” in ICBM counts, indicating a continuing

¹⁸⁷ Chervonobab, "Principles of Military Art and Their Development."

¹⁸⁸ Fenenko, "Sovremennye Kontseptsii Iadernogo Sderzhivaniia."

¹⁸⁹ Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, pp. 18-20.

¹⁹⁰ *Ibid.*, pp. 29-31

¹⁹¹ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," p. 457; Garthoff, "Russian Military Doctrine and Deployments," p. 46; Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II."

¹⁹² Podvig et al., *Russian Strategic Nuclear Forces*, pp. 344-345.

¹⁹³ Glantz, 1994 #409}, pp. 454, 455; Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle*, pp. 178, 179. 181 See also Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part I;" "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II; Fenenko, "Transformatsiia Sderzhivaniia."

¹⁹⁴ "U.S. and Soviet Nuclear Weapons Systems," *Congressional Digests* (1982).

tension between the goal of parity and that of supremacy. From the time the USSR started building ICBMs until the Soviet Union collapsed, land-based missiles were credited with the USSR's attainment of equivalent numbers of nuclear weapons to those of the United States.¹⁹⁵ For Moscow, numbers in their own right stayed important.

Actual Soviet plans for its force remain murky. Officially, starting in 1982, Soviet policy eschewed first use of nuclear weapons, although many western policymakers and analysts doubted the honesty of that pledge.¹⁹⁶ But while Western analysts and officials may have believed that the Soviet Union saw a first strike as a real possibility, it is difficult to find Soviet or Russian analysts who make this case. One exception is Yuri Fedorov, an academic analyst who writes that the USSR planned to begin conflicts with nuclear destruction of enemy defenses, followed by a "conventional blitzkrieg."¹⁹⁷ Those who played senior roles in Soviet nuclear forces and programs, however, seem to reject this. Pavel Zolotarev, a retired Russian/Soviet Strategic Rocket Forces Major General, has indicated that Soviet strategy allowed for either launch on warning or ride-out, perhaps at different times in Soviet history.¹⁹⁸ Vladimir Dvorkin, also a retired SRF General who in addition helped develop Soviet SLBM systems, has argued that Soviet spending on survivability, e.g., hardened silos (until U.S. deployment of Trident II made that moot), and mobile missiles suggests that they also wanted to maintain a ride-out/counterattack capability.¹⁹⁹ Indeed, while submarines were not seen as critical to survivability as they were in the United States (perhaps because of the concerns about command and control noted above), mobile ICBMs were justified in part for

¹⁹⁵ Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku;" Pervov, *Mezhkontinental'nye Ballisticheskie Rakety SSSR i Rossii*, p. 102.

¹⁹⁶ Harold A. Feiveson and Ernst Jan Hogendoorn, "No First Use of Nuclear Weapons," *The Nonproliferation Review* (2003).

¹⁹⁷ Yury E. Fedorov, "Russia's Nuclear Policy," in *Major Powers' Nuclear Policies and International Order in the 21st Century* (Washington, DC: National Institute of Defense Studies, 2010).

¹⁹⁸ Pavel Zolotarev, "Dalekaia Perspektiva Dal'nego Stratega," *Nezavisimoe Voennoe Obozrenie*, September 7, 2012 2012.

¹⁹⁹ Vladimir Dvorkin, "Iadernoe Sderzhivanie i Dogovor SNV-2," *Nezavisimoe Voennoe Obozrenie*, no. 3 (1997).

their contribution to a second strike capability.²⁰⁰ Launch on warning can, of course, be seen as perfectly in line with a no-first-use pledge, since the launch takes place after the adversary has attacked. Nothing about such a pledge precludes the use of strategic weapons in response to a tactical first strike by the adversary.²⁰¹

Podvig rejects the ride-out hypothesis and argues that the USSR's early warning system was geared to the ability to launch on warning if a disabling first strike was en route (presumably one comprised of more than submarine strikes from near Russian shores, which would be more limited).²⁰² However, it is not clear just how much warning the Soviet system, even at its best, provided. If equivalent to U.S. capabilities in the 1980s, the best-case scenario was about 30 minutes, but it was probably even less, perhaps 10-20 minutes.²⁰³ Moreover, the USSR never deployed a system with full coverage, although plans for a far more comprehensive system were repeatedly developed, if not fully implemented, from the 1960s onwards. This means that if the Soviet Union had launch on warning strategy, it was not supported by their capabilities.

This said, an intention to launch on warning would help explain why the Soviet Union rejected the U.S. view (laid out by Paul Nitze in his 1976 *Foreign Affairs* piece²⁰⁴) that large numbers of Soviet MIRVed missiles undermined strategic stability. Quite the opposite: the Kremlin saw the concept as a ruse to limit its warhead numbers, and thus capability, overall, and suspected that the United States sought an advantage in first strike offensive capability.²⁰⁵ Moscow saw security, and thus deterrence, as guaranteed by having equal numbers to those of the United States and its European Allies, and cared less about how forces were comprised.²⁰⁶ It is also possible that this was driven in part by necessity, due to less faith in their

²⁰⁰ Iakovlev, "Arsenal. "Topol'-M'-Oruzhie XXI Veka."

²⁰¹ This is noted in Podvig et al., *Russian Strategic Nuclear Forces*, p. 593, note 28.

²⁰² Podvig, "History and the Current Status of the Russian Early-Warning System," p. 23.

²⁰³ John. D. Williams, "Launch on Warning in Soviet Nuclear Strategy," *Air University Review* (1986); Podvig, "Reducing the Risk of Accidental Launch."

²⁰⁴ Paul H. Nitze, "Assuring Strategic Stability in an Era of Detente," *Foreign Affairs* 54, no. 2 (1976).

²⁰⁵ Ibid; Fenenko, "Transformatsiia Sderzhivaniia."

²⁰⁶ Nitze, "Assuring Strategic Stability in an Era of Detente; Fenenko, "Transformatsiia Sderzhivaniia."

submarines (and substantial, largely justified, faith in U.S. anti-submarine warfare capabilities and intentions) and the slow pace of mobile ICBM construction.

By the time of the USSR's collapse, the prominence of nuclear weapons in general, and the SRF in particular, may have been in question. The Reagan-era United States Strategic Defense Initiative program had led Moscow to be concerned about the capacity of its missiles to reach U.S. soil, and thus the strength of its deterrent. Simply having equivalent numbers and capabilities was deeply insufficient. While the USSR had been developing countermeasures for some time, it was clear that they were concerned these would not be sufficient. Instead, Soviet authors and leaders began talking about "asymmetric response." But in keeping with past planning, it was better countermeasures that the USSR sought as a result, not greater survivability.²⁰⁷ Moreover, the USSR seemed to see a certain value in simply continuing discussions with the United States as a form of stability, force postures aside.²⁰⁸

The lowered status of nuclear forces in general and the SRF in particular may have been evidenced by a 1991 plan to consolidate the USSR's strategic nuclear capabilities under a single command, as was the case in the United States. According to the Russian analytical journal *Voprosy Bezopasnosti*, this was not done for several reasons. These included the complexity of the task, the low level of interest in security issues generally at that time, and the opposition of the General Staff to the possible loss of control over nuclear planning and operations.²⁰⁹

Defining Soviet Nuclear Weapons Culture(s)

As noted at the start of this chapter, Soviet/Russian nuclear weapons culture will likely have both similarities to and differences from broader Soviet/Russian military culture and this may differ by different organizations. I examine this in the context of the areas identified in the previous discussion, and add one area that

²⁰⁷ "Sovremennye Kontseptsii Iadernogo Sderzhivaniia."

²⁰⁸ "Transformatsiia Sderzhivaniia."

²⁰⁹ "Ob'edinennoe Glavnoe Komandovanie Strategicheskikh Sil Sderzhivaniia kak Istochnik Protivorechii v Ministerstve Oborony," *Voprosy Bezopasnosti*, no. 2 (1999).

emerges clearly from the discussion of nuclear weapons evolution that did not appear in the overall culture discussion.

Holistic, Analytical Approaches to Strategy, if Not Practice

The seeming disconnect between stated Russian nuclear strategy and the force structure that was built would seem to support the hypothesis that Russians are comfortable with dichotomies. However, the continued confusion about the role of nuclear weapons suggests a failure to build a truly holistic strategy for these systems. While there might be differences according to various organizations, information regarding these differences is not available.

Preference for the Offense

The history of Soviet nuclear weapons development aligns well with a preference for offensive systems. This includes the focus on ICBMs over SLBMs, the difficulty coming to terms with deterrence and survivability, and the desire for large numbers of forces. This also means that the culture of the SRF is most aligned with the dominant strategic culture in this area. The Air Force's bomber culture is also well-aligned, although it does not permit as large numbers. SLBM culture permits large numbers, but is less inherently offensive, although the systems can, of course, be used offensively.

The Operational Level and Deep Strike

These factors appeared in writing on nuclear weapons, but it is not clear to what extent this simply mirrored approaches to conventional fighting and to what extent it truly guided the way the USSR thought of nuclear weapons use. It is plausible that actual nuclear war-planning incorporated these concepts, but I do not have the data to confirm this, much less break it out by service.

Maskirovka

Russia's interest in mobile ICBMs may speak to a hope of utilizing deception regarding where forces might be. Submarines also contribute to this capability, but

received less attention. Some might argue that the Soviet Union's no first use pledge was a form of deception, as well, if it was not earnest.

Manpower and Massing

Manpower is less relevant to nuclear deterrence. However, the same distrust of individual decision-making that may have led the USSR to prefer large numbers of perhaps less capable personnel is reflected in the tendency to avoid trusting submarine commanders.

Surprise

Russian preoccupation with a possible U.S. attack and its investment in early warning suggests that the threat of surprise was an important element of nuclear weapon planning. The desire for larger numbers also is in line with fear of unexpected attack. It also fits well with Soviet concerns about surprise attacks, as reflected by the development of early warning capabilities. Leites concludes that the general Soviet proclivity towards using the forces available, in large numbers, and doing so early, combined with fear of being taken by surprise led to a distrust of ride-out strategies for nuclear weapons. The USSR may therefore have preferred launch on warning-based planning, despite the limits of warning capabilities. This, in turn, led to a preference for silo-based forces, since survivability is not as important if one intends to launch all or most of one's systems before enemy weapons land.²¹⁰ Again, this facet seems to privilege the SRF over other Russian nuclear-armed services.

Firepower and Artillery

It is notable that artillery was the Strategic Rocket Forces' first bureaucratic home, and senior artillery officers their first proponents.²¹¹ The preference for ICBM systems, particularly silo-based ICBMs is in line with this traditional Russian predilection for rockets. The SRF's culture is thus in closest alignment.

²¹⁰ Leites, *Soviet Style in War*, p. 365.

²¹¹ Podvig et al., *Russian Strategic Nuclear Forces*, p. 118.

Centralized Decision-Making

Russia's ambivalence about its submarine forces and, to a lesser extent, its bombers fits well with a culture of centralized decision-making and, again, means that the SRF's culture and approaches are best aligned with the dominant culture.

Ground Forces More Important than Naval or Air

The time lag between ICBM and naval nuclear development all but ensured that the Navy would not, at least at the start, take the prominent nuclear strategic role. Distrust of submarine commanders, already discussed, further cemented that tendency. The falling behind of the bomber may be linked to the difficulties of employing such a force in conflict, particularly nuclear conflict. Zharskii writes that Khrushchev saw bombers, particularly, as far less useful than either ICBMs or SLBMs.²¹² Moreover, the authors of *Russian Strategic Nuclear Forces* note that strategic bombing was never a doctrinal focus in the Soviet Union as it was in the United States and Britain, leading to a disinclination to capitalize on this capability.²¹³ This characteristic is inherently better aligned with the SRF than with the Air Force or Navy's nuclear components.

Parity

Parity, or the desire to have similar numbers and types of forces as one's adversary, was not a notable factor in Soviet military culture as described above. Large numbers in general were important, but in and of themselves, as contributors to both firepower and as means to overcome adversary capacity for surprise, rather than as compared to the forces of possible enemies. Parity is also not strictly needed for military reasons alone, since asymmetrical responses can be effective. However, parity emerged as an important driver of Soviet nuclear force posture. From a cultural perspective, this could be traceable to the program's origin as an effort catch up with the United States. A bureaucratic explanation is also possible—more

²¹² Zharskii, "Razvitie Vzgliadov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part I."

²¹³ Podvig et al., *Russian Strategic Nuclear Forces*, p 339

forces mean more spending. Parity is not inherently linked to any service, although it is better aligned with ICBMs and SLBMs than with bombers.

From Descriptions to Hypotheses

Earlier in this chapter, I introduced my general cultural/bureaucratic hypothesis: that organizations with strategic subculture that are enhancing of the national strategic culture will tend to win bureaucratic fights, resulting in force postures that reflect their preferences. This can shift if they are effectively challenged by other organizations, but the shifts will not be sustainable unless strategic culture also shifts. To translate that into predictions for Russian nuclear force posture, I first developed nine basic tenets of Russian strategic culture and then evaluated the evolution of Russian nuclear weapons, to develop an assessments of how Russian nuclear weapons culture in general, and for each specific service, lined up.

Not all of the tenets of strategic culture proved relevant to or reflected in the evolution of Russian nuclear forces. However, there is enough alignment to indicate that the Soviet Strategic Rocket Forces, with their focus on offence, and firepower, and their land-basing, were from the start better aligned with overall Russian strategic culture than other nuclear force components. The SRF, and Russian nuclear program as a whole, placed more emphasis on ground-based offensive systems (silo-based ballistic missiles) than it did on more survivable deterrent systems (submarine-launched ballistic missiles and mobile ground-based systems). Russia also sought numerical supremacy, or at the least parity, to/over the forces of its primary adversary, the United States. While this was not something that is easily identified in most discussions of overall Russian strategic culture, it is not unique to Russia's nuclear forces.

One might argue that these factors are common to military culture more broadly, not just Russian nuclear weapon culture. Indeed, this is likely true at least

in many cases.²¹⁴ However, what I hope I have shown above is that for Russia, it is not simply military culture that has these characteristics, but overall Russian strategic culture. In line with the theory I am developing, this will make it more challenging for others (e.g., civilians) to challenge these approaches.

The evolution of Soviet nuclear forces also supports this general hypothesis by showing that the SRF as an organization was privileged over these other components from the start, with repercussions for force posture. Early on, they became a service, while other strategic nuclear forces were subordinated to other services. The tail end of the USSR, however, saw the SRF, and the role of nuclear weapons as a whole, challenged, largely by civilians. The military, however, pressed back. This also is in line with the predictions of my general hypothesis. Thus, the hypothesis is plausible.

To translate this into predictions for post-Soviet nuclear force posture, we need to be confident that the characteristics that applied to Soviet strategic culture apply to Russian strategic culture. While we cannot be certain that this will be the case, we can surmise that just as Soviet nuclear culture grew out of Soviet military culture, which was itself a product of both Russian and Soviet culture more generally, Russian nuclear strategic culture will at least start from the same point as Soviet culture at the end of the USSR, although it may evolve over time. Moreover, since Russia is the nuclear successor state to the USSR and the time elapsed since its independence is not yet that long, there are many reasons to expect continuity. For one thing, the individuals who controlled (and in many cases continue to control) the Russian nuclear arsenal and plans for it when Russia became independent, were the same people who controlled the Soviet arsenal. The same applies to the national security apparatus as a whole. Even their younger colleagues, who are coming to take over, grew up in the same system. Thus, while some divergences may have emerged since 1991, it is reasonable to expect a certain amount of consistency for how Russian military bureaucracies, at least, view nuclear weapons.

²¹⁴ See Posen, *Sources of Military Doctrine*; Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914*. The counterargument can be found in Kier, *Imagining War: French and British Military Doctrine between the Wars*; "Culture and Military Doctrine."

If my theory holds, then, I expect Russian force postures and strategies to be broadly similar to Soviet ones. I have reason to expect the Strategic Rocket Forces to continue to enjoy a high level of privilege, and for that to be reflected in a force structure that emphasizes heavily-MIRVed, silo-based ICBMs. There should also be some attention to mobile ICBMs, but less than to silo-based systems. I expect far less attention to the SLBM force, nonstrategic forces, and other components of the nuclear arsenal, including early warning. The result will be a posture that looks a great deal like an Escalatory posture, although the rhetoric may not reflect this. This general tendency should be sustained over time as these preferences reinforce the SRF's power, and the SRF's power reinforces those preferences.

However, there is also the possibility that this status quo may be challenged. Other services or civilian actors, as well as the military establishment as a whole, may seek change. If they do, they will seek it by means of limiting the SRF and promoting other forces. But if my theory is correct, change may be instigated by these other actors, and it may lift to some shifts, but overall cultural preferences will mean that as long as Russia retains nuclear forces, the tendency to privilege the SRF will return.

Hypotheses

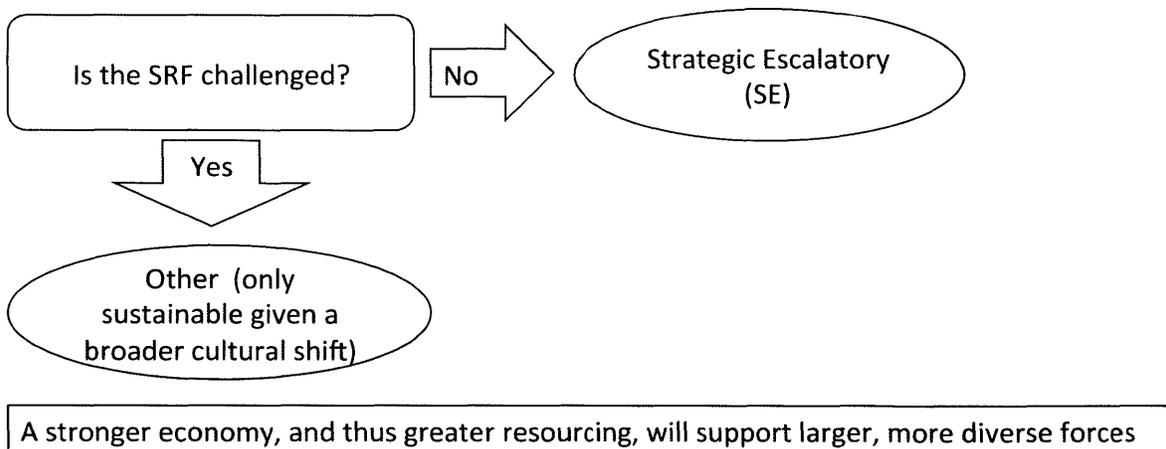
General Hypothesis (restated from above) An organization with a strategic subculture that is enhancing of the national strategic culture will tend to win bureaucratic fights. As a result, force postures will reflect such organizations' preferences, unless they are effectively challenged by other organizations. However, for resulting changes in force posture to be sustained, strategic culture must also shift.

Master Hypothesis (specific to Russian nuclear force posture) When the organizational pre-eminence of the Strategic Rocket Forces is unchallenged and is supported by the military and overall government bureaucracies, nuclear force postures will be more offensive (asymmetric), with an emphasis on heavily-MIRVed, silo-based ICBMs with large numbers of weapons—at least as many as the United States, if not more. This will make for a posture that looks like a Strategic Escalatory

posture. Early warning and bombers will be deemphasized. Mobile ICBMs may be developed as well, but will get less attention. The declaratory policy may be misaligned with the forces deployed, though it will seek to justify whatever force structure exists. When civilians or others intervene to limit the SRF's power, other approaches, which emphasize other systems (such as conventional capabilities or, in the nuclear realm, nonstrategic capabilities, bombers, or submarines), will come to the forefront, but for change to be sustainable, real strategic cultural shifts will be needed. Who is on top will be more visible when resources are tight, because competition will be more fierce, but stronger organizations will seek, and get, more robust postures under all conditions.

- *CBH1* When the SRF are not challenged, postures will be more offensive, with an emphasis on heavily-MIRVed, silo-based ICBMs. This will look like a Strategic Escalatory posture, but will not emphasize early warning. Declaratory policy may not be aligned with this posture.
- *CBH2* When the SRF are successfully challenged, alternative approaches (e.g., Assured) will come to the forefront.
- *CBH3* Any changes that result from challenges to the SRF will not be sustained unless a broader shift in Russian strategic culture takes place

Figure 3.2: Culture/Bureaucracy Hypotheses



In regards to the role of resource availability: increased resourcing to other forces is not sufficient to mark a shift: it stands to reason that when resources overall are more prevalent, all forces will get more funding. Moreover, some

components of the force, such as land forces, are simply larger and cost more. Privilege can thus be partially measured by funding, but less by absolute funding than by comparative funding trends. The forces that face smaller budget cuts, for example, are more privileged, as are those which, in conditions of plenty, get resourcing first and most. In this case, then, in conditions of plenty, with the SRF unchallenged, I expect larger numbers of silo-based missiles and that mobile missile numbers will increase before, for example, SLBMs and bombers get increased resourcing.

Note that these predictions are categorically different from those of the two theories introduced in Chapter Two. Those theories do not predict Strategic Escalatory postures under any conditions. Under some conditions, they predict Launch on Warning postures. Those look very similar to Strategic Escalatory postures but privilege Early Warning far more. Moreover, unlike either systemic theory, this theory predicts that declaratory policy may very well be misaligned with the force structure.

Nonetheless, it is only possible to test this theory against the others when the SRF are not effectively challenged by other organizations. This is because this theory's predictions are indeterminate when the SRF are challenged, and there is nothing in this theory that would preclude alignment with the predictions of the other theories under those conditions. This said, any observable periods of SRF weakness are critical for testing this theory in and of itself, because absent observable posture shifts under those conditions, the theory does not hold up.

Variables

The variables critical to this theory are different from those on which the systemic theories presented in the previous chapter rely. Although nuclear force posture is the dependent variable in all three theories, this theory predicts a Strategic Escalatory that is never predicted by the other two theories. This theory also makes no specific predictions regarding declaratory policy—only that it will seek to justify whatever force structure is deployed. The independent variables are entirely different. Instead of threat environment, the crucial independent variable

for this theory is the strength and power of the SRF. Finally, the intervening variable of the state of the economy plays a different role for this theory. A stronger economy means more resources for defense in all three theories, but this Cultural/Bureaucratic theory predicts that a more resources will not lead to a fundamentally different posture. Rather, more resources will mean more spending on everything. However, the SRF, as long as they are not challenged, should continue to get the best resourcing. The SRF will not necessarily get the most funding, but it will be the first to be topped off and the last to be cut.

In Chapter Four, I will discuss how I intend to measure these variables to assess which of the theories performs better in explaining the evolution of Russia's nuclear posture.

Chapter Four: Approach

Introduction

In this chapter, I explain how I will test my three theories against the experience of Russia's nuclear posture since independence. I begin by summarizing the theories laid out in the previous chapters. I then discuss how I will measure the variables. Next, I outline how I use the intervening variable, Russia's economy, to define the four time periods that are the "cases" assessed in the chapters that follow. Finally, I explain the way in which I will present my analysis in each of the "case study" chapters.

Revisiting the Theories

In Chapters Two and Three, I outlined three theories and their predictions for force posture under different conditions. These are represented in the charts below.

Figure 4.1. Absolute Weapon Hypotheses

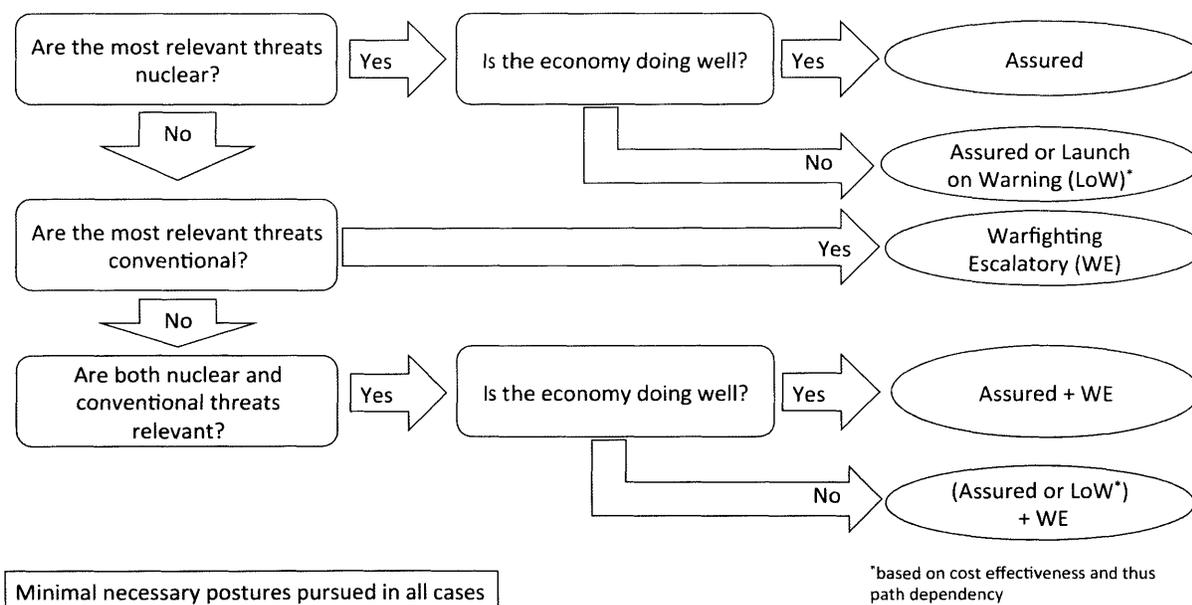


Figure 4.2 Internal Balancing and Prestige Hypotheses

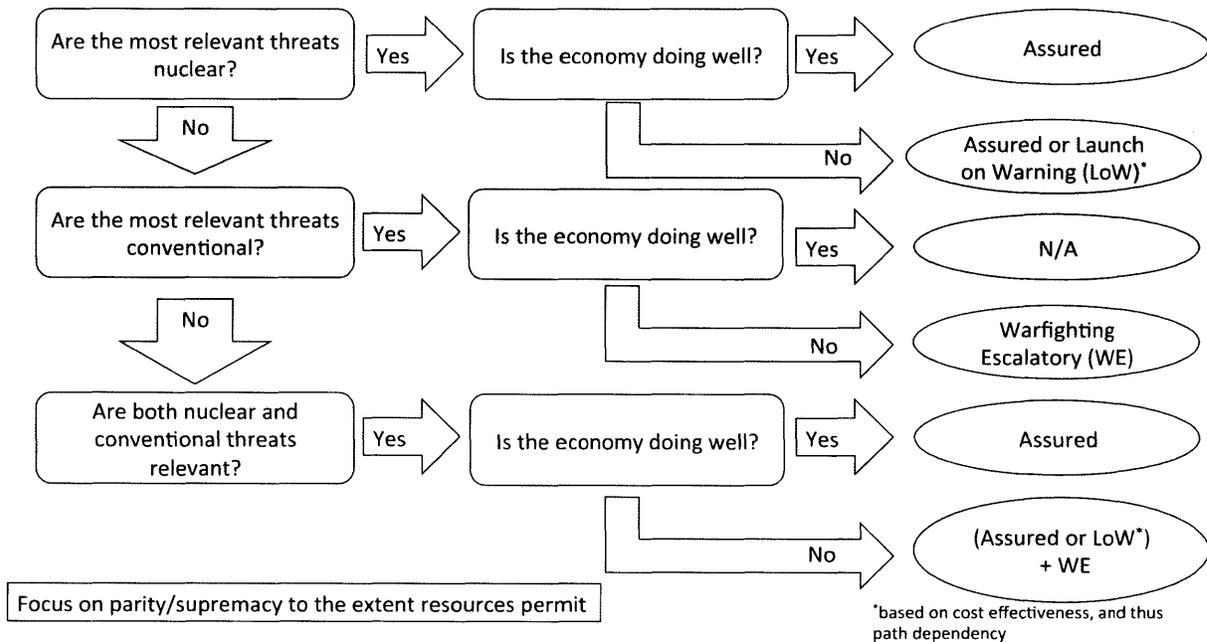
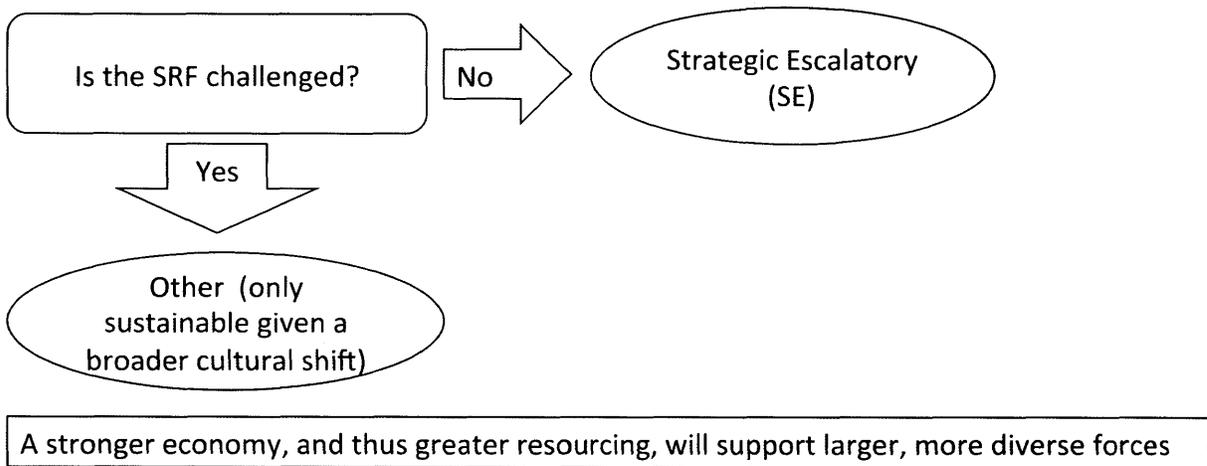


Figure 4.3 Culture and Bureaucracy Hypotheses



Measuring the Variables

As the charts above indicate, I have postulated two independent variables (one for the systemic theories and a different one for the cultural/bureaucratic theory), one intervening variable (the same for all three theories, although playing a lesser role in the Cultural/Bureaucratic theory), and one dependent variable (the same for all three theories), all of which must be measured in order to test the theories.

Dependent Variable: Posture

For the dependent variable, I outlined five different kinds of force posture, noting that they may manifest in combination and recognizing that they are not the only ones possible. They were, however, the ones I deemed relevant to my analysis of Russia either standing on their own or in combination (the text describing each posture below is identical to that in Chapter 1. For more discussion, see that chapter):

Assured.²¹⁵ An Assured strategy and posture is a second-strike strategy and posture. It aims to deter other states' large-scale use of nuclear weapons by means of a credible threat of retaliation. It includes a declaratory policy which abjures first use of nuclear weapons, but threatens large-scale retaliation in response to attack. In terms of force structure, it calls for second strike capabilities that signal to opponents that one will ride out a first strike and retaliate, either against remaining capabilities or against population centers or other targets of value to the opponent.²¹⁶ Submarine and mobile ICBM systems are preferred in this posture. Effective early warning capabilities are also very helpful, since they will enable the state to move or otherwise prepare survivable weapons if needed (i.e., send submarines to sea, flush mobile ICBMs). Bombers and silo-based ICBMs are less relevant because they make it difficult to signal the absence of an intent to strike first. The state may signal that its assured forces will not be used first by limiting their potential to do so with various safeguards, e.g., those that make it more difficult to launch weapons.

Strategic Escalatory (SE). An Escalatory strategy and posture is designed to deter and prevent both nuclear use and conventional dangers through the threat of a nuclear attack, that is to say, first use.²¹⁷ This requires a declaratory policy that explicitly

²¹⁵ Throughout this dissertation, I capitalize the names of the postures when they are referring to the posture types.

²¹⁶ This is closely aligned with Narang's assured retaliation posture and to a lesser extent with Kahn's Type I deterrence. (Kahn, *On Thermonuclear War*, esp. pp. 126-127, 127-138; Narang, "What Does It Take to Deter? Regional Power Nuclear Postures and International Conflict.")

²¹⁷ This comprises Narang's asymmetric escalation posture and Kahn's Type II and Type III deterrence.

allows for first use. An Escalatory force structure meant to deter large-scale nuclear attack by an adversary relies on strategic offensive weapons: ICBMs and bombers, without much interest in safeguards on survivable systems. The deterrent threat is usually against enemy weapons (nuclear or otherwise, and including command and control and other related capabilities). The idea is that one can eliminate, or at least significantly limit, the danger that these pose with a first strike. This approach is often termed “damage limitation.” However, it makes sense only when the state believes that it can truly limit damage significantly by striking first—if the adversary has substantial survivable capabilities, this strategy is most likely suicidal.²¹⁸ A state may also threaten different sets of targets to signal restraint, or to threaten punishment, but this requires careful calibration, faith in one’s signaling capacity, and confidence that the adversary will not escalate further. If a state with such a posture faces adversaries with similar strategic nuclear capabilities and is concerned that those adversaries may also seek to strike first, effective early warning will be desirable. While launching weapons on warning will not be preferred, a state with this posture will be forced to do so if its adversary strikes first, having no capacity to reliably ride out a large-scale attack. However, if the state is not concerned about adversary first strike capabilities (for instance if the adversary does not have nuclear weapons), it will not pursue early warning.

Warfighting Escalatory (WE). A state that looks to deter conventional conflict or smaller-scale nuclear conflict with its nuclear weapons will develop a posture centered on theater-appropriate weapons: bombers and non-strategic weapons first of all. These may threaten counter-force or symbolic strikes. They may also threaten punishment against population centers or other targets the adversary values.²¹⁹ Scalability is important. For the deterrent to be credible, it should be calibrated to the threat, lest it risk escalation. This is particularly salient if the adversary is also nuclear-

²¹⁸ For brief discussions of the U.S. history of damage limitation approaches, see Long, *Deterrence From Cold War to Long War: Lessons from Six Decades of RAND Research*, pp. 26-43 and Lewis, “Minimum Deterrence.”

²¹⁹ It will not do this in large-scale nuclear contexts due to the threat of retaliation.

armed. Safeguards are not desired and early warning is not relevant. Most larger-scale strategic systems do not make sense unless this posture is combined with another.

Launch on Warning (LoW). A Launch on Warning strategy anticipates launching at least some nuclear weapons when an adversary strike is believed to be en route,²²⁰ and deterring attack by means of clearly signaling that intent.²²¹ It is not a first use, Escalatory strategy—the intent is to use these forces only in response to an adversary attack.²²² However, the force structure is very similar to that of a Strategic Escalatory posture in that it relies on less survivable systems (which is why the ride-out approach of an Assured strategy is not feasible). Declaratory policy is therefore very important to this posture and must be clear. In a large-scale conflict, because many or all of the adversary’s weapons are already on their way, they cannot credibly be the targets of this posture: rather, command and control capabilities and perhaps population centers or other objects of value to the adversary are the most likely targets (as for an Assured posture). If the adversary attack is smaller, some counter-force strikes are also possible. The force structure is nearly identical to that for a Strategic Escalatory posture except that will strongly emphasize early warning. Safeguards may be considered, though likely not emphasized.

Versatile. This posture allows for both retaliation and first use. A state pursuing this strategy will build weapons suitable for a second strike capability, such as submarines and mobile ICBMs, but plan and signal the intent to use nuclear weapons first under certain, if not all, circumstances. This includes damage limitation strikes, for which all the caveats discussed above in the context of the Strategic Escalatory posture apply. A state pursuing this posture will eschew safeguards. As in an Assured posture, the

²²⁰ The term “launch on warning” is often used interchangeably with “launch-under-attack,” particularly in the United States. In contrast, Russian analysts have historically differentiated them, defining launch-under-attack as requiring certainty that an attack is underway (whether because of adversary statements, or one or more adversary weapons reaches its target). “Launch on warning,” by contrast, implies credible warning but not proof. See Yarynich, *C3: Nuclear Command, Control Cooperation*, pp. 27-28 and Rogov et al., “Sud’ba Strategicheskikh Vooruzhenii Posle Pragi.”

²²¹ Thus, this, like an Assured posture, is also Kahn’s Type I deterrence and Narang’s Assured approach.

²²² Thus, this, like an Assured posture, is also Kahn’s Type I deterrence and Narang’s Assured approach.

state’s intention to retaliate if an adversary uses nuclear weapons first requires some attention to early warning capabilities that will enable it to more effectively prepare.

I also noted one additional factor relevant to posture: force size. This reflects the goals that a state may have when it comes to sizing its nuclear force. Specifically, there are three possible values for force size: minimal, parity, and supremacy.

To measure the dependent variable, I will examine posture in the context of the components identified in Table 4.1 below for the five possible postures, as well as intentions for force size.

Table 4.1 Postures

Forces & Policy		Postures				
		Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Declaratory Policy		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers					✓
	Silo-based ICBMs	✗	✗	✓	✓	✗
Survivable/ second strike	Mobile ICBMs	✓	✓	✗	✗	✗
	SLBMs					
	NSNF	✗	✗	✗	✗	✓
	Early Warning	✓	✓	✓	✓	✗
Safeguards		✓	✗	✓	✗	✗

Note, however, that one of these postures, the Versatile posture, does not appear in the predictions of any of the three theories outlined. As discussed in the posture descriptions above, both a Versatile and a Strategic Escalatory posture, if they are meant to contribute to deterrence, are most likely focused on damage limitation strategies. Those, however only make sense if damage can, in fact, be limited with a first strike. U.S. nuclear capabilities, however, include fairly large-scale survivable components, with most of America’s warheads on its SLBMs. It is difficult to imagine how Russia might consider itself capable of carrying out a damage limiting strike on the United States.²²³ Thus, the only deterrent strategies that make sense for Russia vis-à-vis the other nuclear superpower are retaliatory strategies.

²²³ Long, *Deterrence From Cold War to Long War: Lessons from Six Decades of RAND Research*, p. 64.

Nonetheless, a Strategic Escalatory posture is predicted by one of my theories—the Culture and Bureaucracy theory. This theory holds that force posture will be determined less by what makes sense in the international strategic context (that is, in relation to plausible adversaries) and more by what makes sense in the context of domestic bureaucratic strategies and tactics, which are shaped by cultural predilections. Because there is no cultural predilection towards more survivable strategic forces that would nonetheless be used first, it does not predict Versatile postures. Because there is one towards offensive, first use weapons, it predicts a Strategic Escalatory posture.

Nonetheless, I maintain the Versatile posture as a possible value for the dependent variable. Because it is not predicted by any of my theories, if it is in evidence, it suggests problems within those theories, which are important to identify.

I will evaluate posture as follows:

- For declaratory policy and force size intentions, I will look at public statements and documents, as well as, for background, to the writings and statements of prominent and informed analysis.
- I will look specifically to the ways in which declaratory policy addresses
 - willingness to use nuclear weapons first in a conflict;
 - willingness and plans to use nuclear weapons against non-nuclear weapon states;
 - whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
 - how the desired force posture is described, including attitudes towards parity, minimalism, and survivability.

For all of the force structure elements, I will look on the one hand to available data regarding forces deployed, dismantled, and planned. I will supplement this with additional information about plans as revealed by officials' public statements and documents, as well as, as relevant, the writings and statements of prominent and informed analysis.

- For the three elements of the strategic triad, ICBMs, SLBMs, and strategic air, I will base my assessment for the most part on the actual forces fielded, and planned/in development. I will pay particular attention to whether proportions of the different strategic components increase or decrease. Because there are lags between decisions, resourcing, and deployed forces, I will lag the force structure by two years.
- For non-strategic nuclear weapons, I will look to force dismantlement and development plans and actions. I do not have a two-year lag for these forces because the available data is not sufficiently detailed for this to be meaningful.
- For safeguards I will look to announced actions, plans, and policies.
- For Russia's early warning systems I will look at capabilities, also with a two year lag, as well as plans and projects in development.

Note that I do not look at spending on these forces as an indicator of posture. As discussed below, I do use spending as one indicator of the independent variable of SRF status, to the extent I have data on it. However, since spending requirements vary substantially from component to component, and are divided differently between personnel, equipment, and other costs, it is a poor indicator of posture itself.

The Culture and Bureaucracy theory has an added wrinkle: it predicts that certain posture shifts will not be sustainable absent a shift in broader, strategic culture. To an extent, this is also a component of my dependent variable of posture. I do not, however, have a clear formula for measuring such shifts—developing one is a worthwhile project, but outside the scope of this dissertation. In the course of my analysis, I will look for and try to characterize indicators that could suggest such a shift if and when they appear. I hope that this will enable more concrete future work in this area. In the meantime, I recognize this as a shortfall of the present effort.

Also, it is worth stating at the outset that I am looking at force posture as a combination of declaratory policy and force structure. I am not trying to determine nuclear strategy beyond very general outlines. I assume that Russia had and continues to have a variety of possible plans for the employment of its nuclear forces, but as

these are classified, as is any information about targeting, I do not have a way to know what these actually were at any given time.

Independent Variables: Threat Environment and SRF Status

Of the independent variables, one, threat environment, is relevant only to the two systemic theories. It has three possible values: nuclear, conventional, or a combination of the two (mixed). The Cultural/Bureaucratic theory has a different independent variable, the status of the Strategic Rocket Forces. This has two possible values: challenged or unchallenged, signifying whether other components of Russia's governing/national security bureaucracy are challenging the SRF's predominance.

I will measure the independent variables as follows:

Threat Environment: This variable rests on the question of whether Russia sees its most relevant threats as those posed by nuclear-armed adversaries that intend to use nuclear weapons, those posed by conventionally-armed opponents (including nuclear armed states whose conventional capabilities are the real worry), or both. I will assess this variable by evaluating government documents (such as official doctrine and strategy), and statements by senior Russian government officials, including in media interviews. Where these conflict, I will evaluate, to the best of my ability, whether this conflict indicates a change in policy that has not been incorporated in doctrine, officials speaking without adequate preparation, or some other factor. For instance, if official statements are consistent with one another and persist over time, they may reflect actual policy better than an older version of doctrine.

While these two indicators will be the most important, they will be supplemented by the writings and statements of influential independent analysts, which can be important in identifying directions and trends, though they may not predict actual policy. I will also look to other sources of information, such as what can be learned from large-scale exercises and the scenarios they posit. Of course, I will not ignore the actual military activities in which the Russian armed forces are involved. However, I recognize that these may or may not reflect the way that the state views its threat environment. All of this together will enable me to make a judgment for any given time period regarding whether Russia sees its greatest threats as stemming from

adversary nuclear capabilities or from conventional dangers. However, particularly when the data from these various sources conflicts, this assessment will be necessarily somewhat impressionistic.

SRF Status: As I indicated, the two values possible for this variable are challenged and not challenged—that is, whether other organizations rise up to threaten the supremacy of the SRF. I will assess this variable by looking at the bureaucratic fortunes of the SRF in the context of the armed forces as a whole and Russian nuclear forces in particular. Organizational changes (such as downgrading one or another force in the overall hierarchy) and evidence of active efforts to reevaluate the value of this force, as identified in public debates, will be important points of evidence. I will also consider funding provided to the SRF in comparison to other components of the Russian military.

In my assessment of spending, I look at trends and context, rather than absolute amounts. On the one hand, it is resources that bureaucracies compete for. On the other, different organizations require different amounts of funding, and allocate them differently. Some components, such as land forces, are simply larger and cost more. Comparative funding trends, however, are telling, enable us to understand whether organizations are getting the funds they require. The forces that face smaller budget cuts, for example, are likely more privileged, as are those which, in conditions of plenty, get resourcing first and most. In this case, then, in conditions of plenty, with the SRF unchallenged, I expect larger numbers of silo-based missiles to be built and fielded. I also expect that mobile missile numbers will increase before, for example, SLBMs and bombers get increased resourcing. The bottom line is that an unchallenged SRF should be more capable of obtaining and holding on to resources than a challenged SRF (and this should be true whether the economy is in good shape or bad).

Intervening Variable

The intervening variable is relevant, although in somewhat different ways, to all three theories. The economic environment represents the capability to allocate resources. It determines what resources are available to Russia's government to build, maintain, and develop its nuclear forces. In this way, it shapes Russia's choices

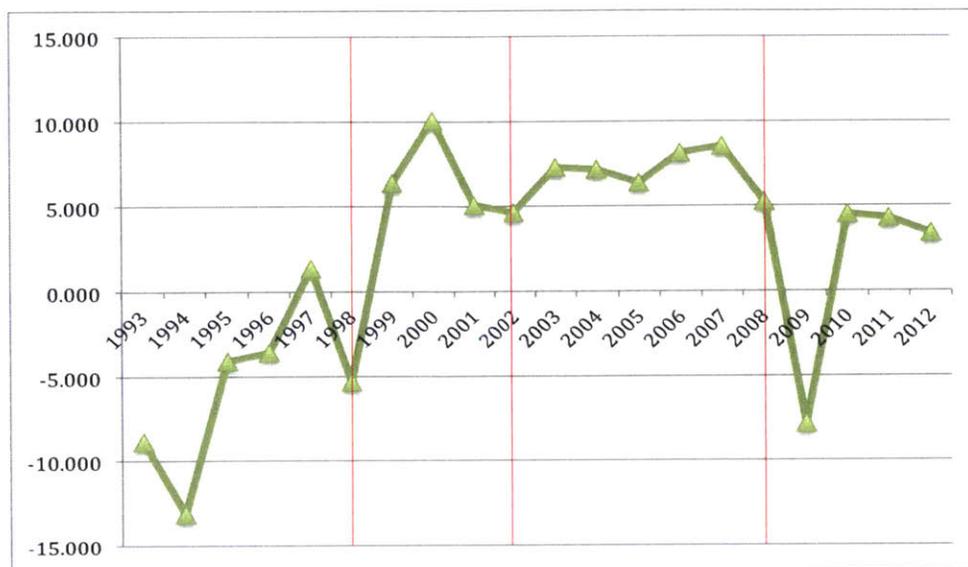
regarding what posture is feasible and affordable. I look at economic environment, and, as a complement, overall government spending, rather than at resources specifically flowing to the forces. The actual funding of different components of the armed forces is, however, an important means of measuring SRF status, as noted above.

This variable is also the mechanism I use to divide Russian history into the discrete time-periods that comprise my “cases.” I do this to make it possible to maintain consistency for this variable with in each of the cases. I am successful in three of the four cases: In one of the periods, there is some variability, discussed below. However, in all of the other case study chapters, only the independent and dependent variables vary.

I measure this intervening variable through GDP growth trends, bolstered by analytical assessments of the state of Russia’s economy and its trajectory during each period, all of which are presented below.

Figure 4.4 shows GDP growth between 1993 and 2012, the basis for my divisions, with lines differentiating the four periods.

Figure 4.4 Percent GDP Growth in Constant (2008) Rubles²²⁴



1992-1998 is a time of severe economic crisis and austerity. Growth throughout was either minimal or, most of the time, negative. 1999-2002 mark the beginnings of economic rebound. 2003-2008 is a period of strong and consistent growth (until the crisis in late 2008). 2009-2012 present first crisis, and then slower growth.

Below, I provide a brief overview of the economic and resourcing situation in each period in somewhat more detail, establishing not only the overall trends in the economy, but also in government spending in general and defense spending in particular. While the overall economic environment is the indicator I am interested in, government spending provides a sense of how resourcing was flowing to the government as a whole. If there are any disconnects between trends in government spending and trends in the overall economy, they could affect my results, so I want to be able to identify them. I also provide the trends in defense spending as a share of both GDP and the government budget. For overall defense spending, I use two figures

²²⁴ "Rossiiskii Statisticheskii Ezhegodnik," (Federal State Statistics Service, 2003), http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1135087342078; "World Bank World Development Indicators Database: Russian Federation," World Development Indicators (2015), <http://data.worldbank.org/country/russian-federation>. Ruble deflators used for conversion to 2008 rubles from "Rossiiskii Statisticheskii Ezhegodnik," (Federal State Statistics Service, 1996), <http://istmat.info/node/23792>; "Rossiiskii Statisticheskii Ezhegodnik," (Federal State Statistics Service, 2011), http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1135087342078; "Indeksy--Deflatory Valovogo Vnutrennego Produkta," (Russian Federal Statistical Service, 2014), www.gks.ru.

for each year. One is spending as defined by the government of Russia in its annual defense budget. The other is defense spending as calculated by the Stockholm International Peace Research Institute (SIPRI). In doing this, I provide the caveat that Russian defense budgets are hard to make sense of. Official defense budgets are differently calculated and subject to different (for the most part increasing) classification rules from year to year.²²⁵ Not all spending on nuclear weapons is included in the official defense budget: some appears in the budget for the Ministry of Atomic Energy, among others. Moreover, different components of the defense budget have been classified to different degrees in different years. Alternative estimates, such as that by SIPRI or those of the International Institute for Strategic Studies generally are not able to adequately estimate nuclear weapon spending, but they do include spending on civil defense and paramilitary forces, among other factors (although most countries do not include the latter, and often the former, in their defense budgets).

For my purposes, as with the overall government budget, I am seeking simply to illustrate the broad trends in defense spending, their relationship to trends in the economy overall and government spending specifically. I therefore provide both the official and the SIPRI estimates to establish consistency (or identify inconsistency) in these trends. The assessments of funding to the SRF in each chapter go into more detail on what is and is not known about the specifics of defense spending.

1992-1998

Russia's economic state through the late 1990s was abysmal. Numerous volumes then and since have chronicled the challenges that faced the Yeltsin government as it sought to shift away from central planning and towards a market economy. In part because government control of various parts of the country varied, reforms were implemented unevenly. Despite Russia's natural resource wealth, GDP growth was almost entirely negative (see Figure 4.5, below). Exports grew very slowly throughout the decade, at perhaps 3 percent a year, as industry collapsed. The small segment of the population that was able to gain from natural resource extraction and privatization of state-owned firms sent its money abroad: capital flight was a

²²⁵ Cooper, 1998 #565; Cooper, 2001 #566; Zatspein, 2007 #567; Cooper, 2013 #569}

consistent problem. Barter and a burgeoning trade in debt itself became key components of the Russian economy. Inflation was rampant. Poverty rates grew fourfold from 1993 to 1996—tenfold for the elderly. Pensioners sold their belongings on the streets. The benefits traditionally provided by workplaces disappeared. In some cases, local government stepped in to provide some of the services that no longer existed, but this was limited. Schoolteachers, doctors, professors, and other professionals saw their real incomes drop to pittance, even as factory workers were paid in the goods produced by their firms. A growing underground economy of organized crime, black market deals, and various shadow enterprises was given a boost by high levels of government corruption.²²⁶ A slight recovery that began around 1996 was undermined by the Asian financial crisis of 1997, which led Russia back into hyperinflation, and eventually the devaluation of the ruble, in 1998.

Of course, government budgets as a whole were underfunded, and ran substantial deficits. Defense spending was no exception. The Defense Ministry was unable to pay wages, much less advance much-discussed reforms. As Figure 4.5 shows, defense and government budgets both generally matched downward trends in GDP. As Figure 4.6 shows, defense budgets, however measured, also fell as a proportion of both GDP and the government budget.

²²⁶ An overview of the situation is provided in Chapter Three of Olga Oliker and Tanya Charlick-Paley, *Assessing Russia's Decline: Implications for the United States and the U.S. Air Force* (Santa Monica: RAND, 2002), esp. pp. 25-36. More detailed discussions and arguments can be found in, among others, Anders Aslund, *How Russia Became a Market Economy* (Washington, DC: The Brookings Institution, 1995).; Maxim Boycko, Andrei Shleifer, and Robert Vishny, *Privatizing Russia* (Cambridge, Massachusetts: The MIT Press, 1995).; David Woodruff, *Money Unmade: Barter and the Fate of Russian Capitalism* (Ithaca and London: Cornell University Press, 1999).; Clifford G. Gaddy and Barry William Ickes, *Stability and Disorder: An Evolutionary Analysis of Russia's Virtual Economy* (1999).

Figure 4.5 GDP, Government, Defense Budget Growth 1993-98 (2008 rubles)²²⁷

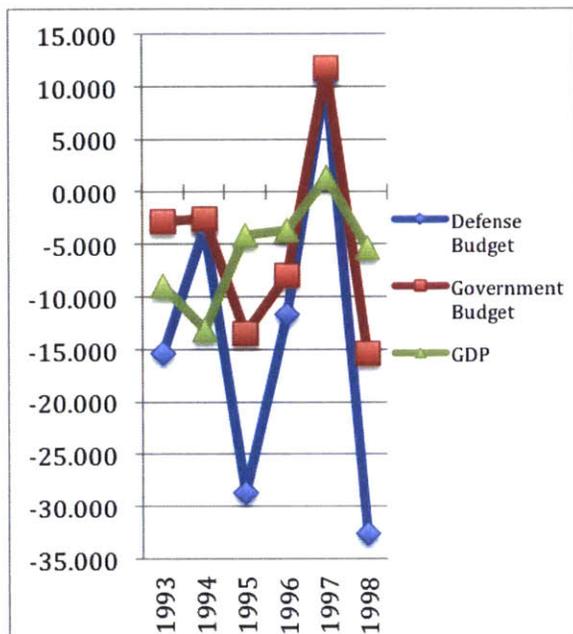
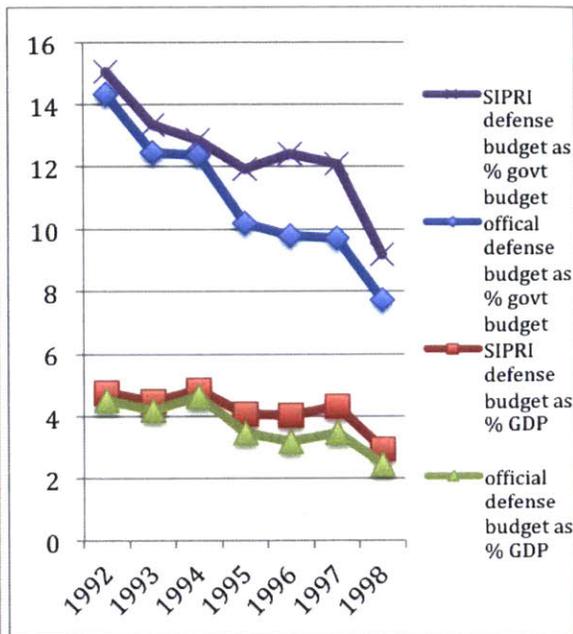


Figure 4.6 Defense Spending as Percent of GDP, Government Budget 1992-1998²²⁸



1999-2002

While the 1998 crisis hit Russia hard, the recovery was much faster than most expected, thanks in large part to high energy prices. As a result, after nearly a decade of economic free-fall, both the Kremlin and at least some individual Russians now had more funds to invest. The suddenness of the shift, however meant that many were uncertain both how long the boom would last and, relatedly, how resources should best be allocated. Analysts expressed concerns about Russia's weak infrastructure, difficulty attracting investment, and other continued problems. Some saw Russia's new record growth as indicative of potential, but expected more ups and downs in the near and medium terms.²²⁹ Moreover, Russia's wealth was still very concentrated, primarily

²²⁷ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "Rossiiskii Statisticheskii Ezhegodnik," (2011); "Indeksy--Deflatory Valovogo Vnutrennego Produkta," (2014).

²²⁸ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation; SIPRI, "SIPRI Military Expenditure Database 1988-2014," SIPRI (Stockholm 2015), http://www.sipri.org/research/armaments/milex/milex_database.

²²⁹ See Jonathan Tennenbaum, "Russia's Economy 1999-2001: Strong Growth, But Exhausting Its Foundation," *Executive Intelligence Review* (2002); Marshall I Goldman, "Russia as an Economic Superpower: Fantasy or Possibility?," *Demokratizatsiya* 1, no. 11 (2003); Allen C. Lynch, "Roots of

in the cities of Moscow and St. Petersburg, with much of the rest of the country still very poor.²³⁰

Thus, what we saw in 1999-2002 was a strong and growing economy, but not one in which the Russian government or people were fully confident, especially early in the period. It is therefore possible that for the first part of the period, particularly, Russian government behavior may be expected to be in line with predictions for a more constrained resource environment.

Nonetheless, added revenue meant more room for investment than had been possible over the previous decade. As Figure 4.7 shows, government and defense budgets generally went up with GDP, as would be expected, with the government budget, particularly, starting from a very low point of negative growth. By 2002, government budget growth was substantially higher than both the defense budget and GDP growth. That year, Russia substantially upped spending on health care, education, and social policy.²³¹ This aligns with Figure 4.8, which shows a slow rise in the defense budget as a proportion of GDP and in the government budget over the course of this period in general, but a drop in the proportion of defense in the government budget in 2002.

Russia's Economic Dilemmas: Liberal Economics and Illiberal Geography," *Europe-Asia Studies* 54, no. 1 (2002).

²³⁰ Slobadanuk, "Russian Economy 2002: Paying Foreign Debt, Suffering from Poverty," *Pravda.ru* (2003).

²³¹ Shinichiro Tabata, "The Russian State Budget in 2002 and the Impact of Tax Reform," Unpublished paper, (2003), <http://www5.cao.go.jp/keizai1/2003/0609symposium/tabata.pdf>; "Finansy Rossii," (Federal State Statistics Service, 2004), http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138717651859.)

Figure 4.7 GDP, Government, Defense

Budget Growth 1999-2002 (2008 rubles)²³²

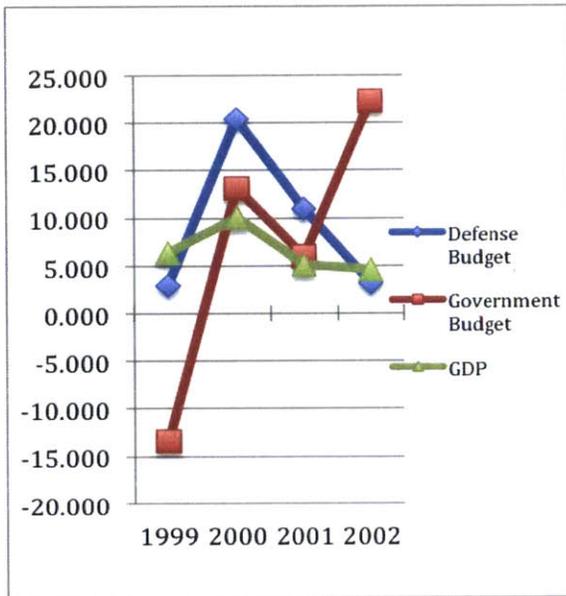
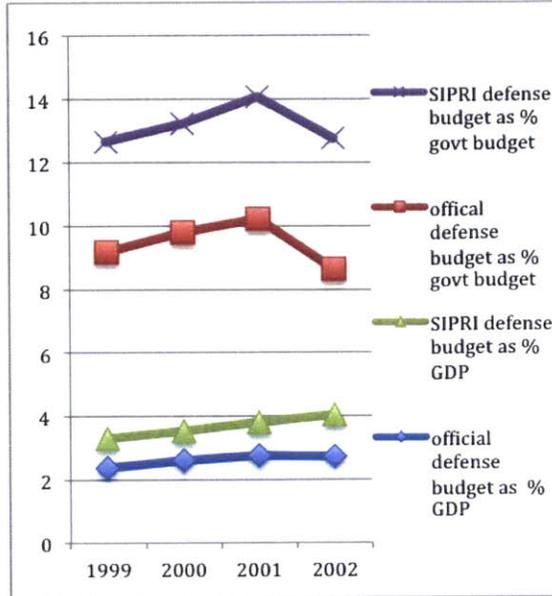


Figure 4.8 Defense Spending as Percent

of GDP, Government Budget 1999-2002²³³



2003-2008

If there were doubts about the staying power of the recovery between 1999 and 2002, they had abated by 2003. Between then and 2008, GDP grew steadily, and Russians saw few reasons to think this would stop. Indeed, calculations based on market exchange rates show even more impressive growth. This growth was able to push Russia into the ranks of the world's ten largest economies. And while much of Russia's economic boom was spurred by high energy prices, they, in turn fueled a boost in production in other industries that ensured that increasing numbers of Russians throughout the country had more resources and lived better than ever before. The banking sector was among those which developed substantially, and was increasingly integrated into global banking. Meanwhile, in line with the increasing wealth of the Russian population, consumer-focused industries such as food services, retail, tourism, and telecommunications were among those that grew the fastest. The

²³² "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation." Ruble deflators used for conversion to 2008 rubles from "Rossiiskii Statisticheskii Ezhegodnik," (2011); "Indeksy--Defliatory Valovogo Vnutrennego Produkta," (2014)

²³³ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation; SIPRI, "SIPRI Military Expenditure Database 1988-2014."

construction sector also did well. This economic progress was tempered by a failure to adequately counter continuing corruption and, relatedly, to implement critical reforms that would draw more investment and develop domestic financial markets. Nonetheless, it was a time of rapidly increasing plenty for Russia and Russians.²³⁴

Government officials appeared to have consciously decided not to spend all they could on defense during this boom time. While government spending growth as a whole was even faster than GDP growth, defense budget growth was lower. The official defense budget remained well below three percent of GDP throughout this period.

Figure 4.9 GDP, Government, Defense Budget Growth 2003-08 (2008 rubles)²³⁵

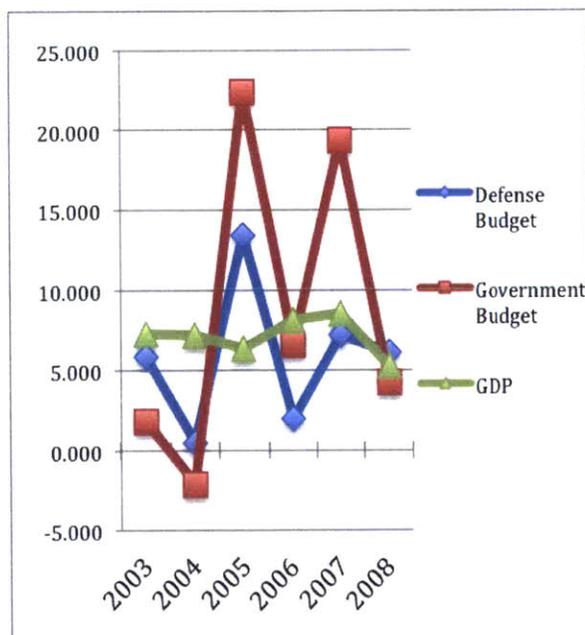
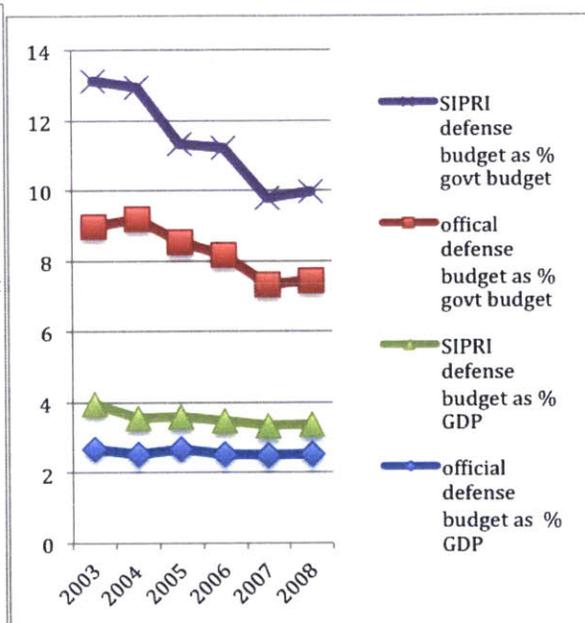


Figure 4.10 Defense Spending as Percent of GDP, Government Budget 2003-08²³⁶



2009-2012

The global economic crisis hit Russia in late 2008. After nearly a decade of unprecedented growth, the economy contracted sharply. Particularly critical to Russia

²³⁴ My co-authors and I discuss Russian economic growth during this period in some detail in Olga Oliker et al., *Russian Foreign Policy: Sources and Implications* (Santa Monica, CA: RAND, 2009), pp. 45-60.

²³⁵ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation." Ruble deflators used for conversion to 2008 rubles from "Rossiiskii Statisticheskii Ezhegodnik," (2011); "Indeksy--Defliatory Valovogo Vnutrennego Produkta," (2014).

²³⁶ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation; SIPRI, "SIPRI Military Expenditure Database 1988-2014."

were drops in commodity prices, especially oil and gas. Russia was forced to dip into its hard currency reserves to defend the ruble, enabling a gradual devaluation.

Oil prices began to recover in 2009 and the Russian economy returned to positive growth rates, but at a lower level than the record-setting boom of a few years earlier. Slower growth meant that Russians had to face the reality that the sharp upward trends they had enjoyed were, at least temporarily, at an end.

Interestingly, the slower economy did not mean decreased government spending. Rather, defense and government spending dipped initially, but after 2010 began to increase at a much faster rate than did overall economic growth, as shown in Figure 4.11. The defense budget grew even faster than government budgets overall, increasing as a share of both government spending and GDP as it had not since the turn of the century (Figure 4.12).

Figure 4.11 GDP, Government, Defense Budget Growth 2009-12 (2008 rubles)²³⁷

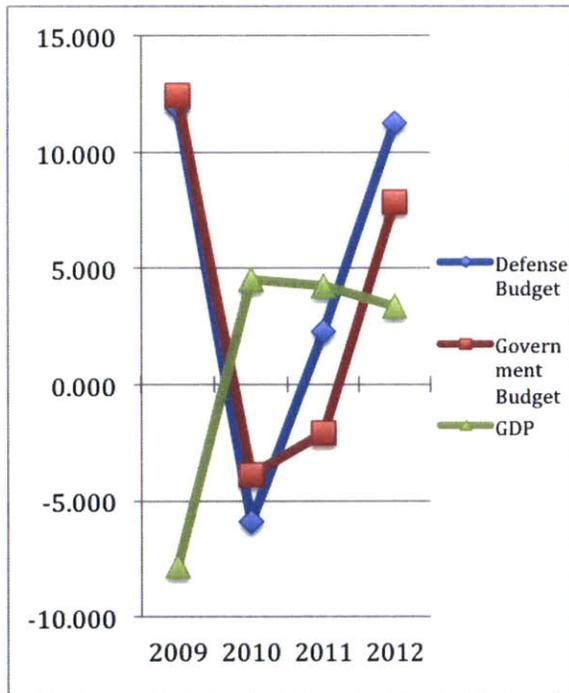
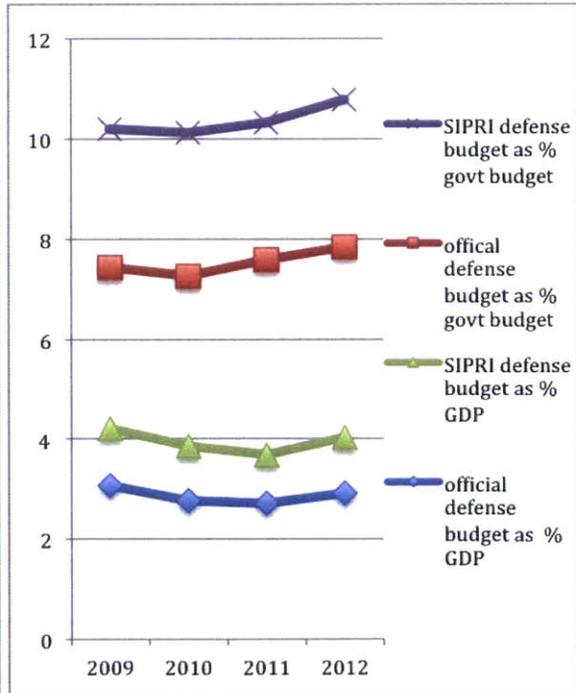


Figure 4.12 Defense Spending as Percent of GDP, Government Budget 2009-12²³⁸



²³⁷ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation." Ruble deflators used for conversion to 2008 rubles from "Rossiiskii Statisticheskii Ezhegodnik," (2011); "Indeksy--Deflatory Valovogo Vnutrennego Produkta," (2014).

²³⁸ "Rossiiskii Statisticheskii Ezhegodnik," (2003); "World Bank World Development Indicators Database: Russian Federation; "SIPRI Military Expenditure Database 1988-2014."

Evaluating the Data

Having explained how I plan to evaluate each of the variables and established four periods aligned with trendlines in the economy, I now explain how I will go about putting these together into an integrated analysis for each period. In general, my goal is to first evaluate how force posture evolved over the course of the period, and assess whether and to what extent it can be coded as matching any of the ideal postures I have presented. The next question is whether my theories can explain this force posture. Each of my theories is associated with predictions for force posture based on values assigned to the independent variables. I therefore must assess those values. Those for the intervening variable have already been defined above, and used to differentiate the periods. Having done this, I may have sub-periods for each period, based on the different combinations of independent variables. All of this will enable me to judge to what extent the force postures I see are predicted by each of the theories.

This approach enables me at best to decisively establish correlation. My conclusions about causality depend on the belief that one or more of these theories actually have some predictive capacity. While establishing correlation is an important first step to demonstrating the viability of a given theory, it is not proof. I cannot definitively determine, by this methodology, that cultural/bureaucratic factors, or systemic ones, led to Russian posture choices. Even official statements (declaratory policy) which are in line with force structure choices do not prove that the forces are based on the tenets of that declaratory policy—after all, it may be the means to justify the posture, not the driver of it.

An evaluation of causality could be accomplished through process-tracing of the specific decisions critical to force posture changes. To the extent that I am able, I do, in each of the case study chapters, try to tell the stories of how these decisions were made. However, my information is incomplete and varies widely from decision to decision. Thus, these discussions can supplement my analysis, but are not sufficient to provide clear and consistent evidence of causality.

I note also that I fully expect that some or all of the periods will have variation within them in regards to perceived threat environment and the extent to which the

SRF is and is not challenged. I also expect some shifts in force posture within each period. Where I find such variation, I will create sub-periods, as feasible, and also describe how I see the shifts as having occurred.

Table 4.2, below, catalogs the different possible combinations of independent and condition variables and the predictions each set of hypotheses has for each combination. Not all variables are relevant to all theories. Threat is relevant to Internal Balancing and Prestige, and to Absolute Weapon, while SRF status is relevant to Bureaucracy/Culture. However, with that in mind, this chart helps identify which combinations of these variables will be the best tests for the theories.

Table 4.2 Variables and Predictions

Ind. Vs		Int. V Economy	DV: Predicted Posture for Each Theory		
Threat	SRF		Absolute Weapon	Internal Balancing	Bureaucracy/ Culture
Nuclear	Unchallenged	Up	Assured	Assured	SE
Nuclear	Unchallenged	Down	Assured or LoW	Assured or LoW	SE
Nuclear	Challenged	Up	Assured	Assured	Not SE
Nuclear	Challenged	Down	Assured or LoW	Assured or LoW	Not SE
Convent.	Unchallenged	Up	WE	N/A	SE
Convent.	Unchallenged	Down	WE	WE	SE
Convent.	Challenged	Up	WE	N/A	Not SE
Convent.	Challenged	Down	WE	WE	Not SE
Both	Unchallenged	Up	Assured + WE	Assured	SE
Both	Unchallenged	Down	(Assured or LoW) + WE	(Assured or LoW) + WE	SE
Both	Challenged	Up	Assured + WE	Assured	Not SE
Both	Challenged	Down	(Assured or LoW) + WE	(Assured or LoW) + WE	Not SE
			Predicted Force Size Goals		
All combinations			Minimal	Parity (+)	Parity (+)

This chart clearly shows that there are a number of combinations of the independent and intervening variables where both of the systemic theories predict the same types of posture, albeit with different force size goals. This means that to the extent that we can differentiate between force size goals, such circumstances make it possible to test these two theories against one another, but not as well as circumstances which lead them to predict clearly different postures—something that only happens when conventional threats are part of the equation and the economy is doing well. By contrast, under all conditions where the Cultural/Bureaucratic Theory makes a specific posture prediction (that is, conditions when the SRF is not challenged), its prediction is of a Strategic Escalatory posture that the other two theories never

predict. This means that such conditions can establish plausibility of that theory over the other two, if it holds and they do not. However, in order to effectively test that theory itself, we also need to see how it performs in conditions where the SRF is challenged. Although it does not predict a specific posture under such conditions, it does predict a change in posture. The absence of such a shift would weaken the performance of that theory.

For coding purposes, I do not expect to see perfect matches between reality and the postures predicted by any of the three theories. Strategies can change faster than force structures, and some components are more important than others: because safeguards are limited in their true impact, they are less critical than early warning. However, to the extent that I can identify emphasis on some systems and approaches over others in line with these predictions, I can assess whether the declaratory policy and force structures provide substantial enough matches to these “ideal” postures to be useful.

I also do not expect to be able to test the hypotheses under all possible combinations. However, I do expect the coding of conditions under various circumstances over time to provide enough cases with a sufficient variety of conditions that some should perform better than others. Together, I expect my cases to provide an adequate environment to assess which, if any, of my theories can explain Russian force posture, and to what extent.

Chapter Five: 1992-1998, Economic Weakness and Strategic Change

Introduction

The period from 1992 to 1998 marked a painful start to Russia's independence. The economy was in free-fall. Political parties proliferated. Russia's foreign policy was murky. One thing that seemed clear was that independence had not brought security. Conflict in the states on Russia's borders was soon accompanied by a civil war at home, in Chechnya. Meanwhile, escalating U.S. and NATO involvement in the war in Yugoslavia heightened Moscow's fears that the United States and its partners could pose a threat to Russia, as well.

Russia's nuclear force posture evolved somewhat over the course of these seven years. Bound by the START Treaty to cut overall numbers, the strategic arsenal shrank, and as it did, the relative weight of its component parts shifted. While Russia initially appeared to be putting more effort into mobile land-based systems, it soon turned its focus to silo-based ICBMs. Bombers were all but ignored and the submarine fleet deteriorated as did, starting in the middle of the decade, early warning capabilities. Non-strategic forces were reduced slightly behind schedule (based on Russia's unilateral commitments, not a formal treaty), but got little attention. Safeguards generated some excitement, but actions in that regard were largely symbolic.

In terms of declaratory policy, Russia dropped the no first use of nuclear weapons pledge made by the USSR early in the 1990s. The new doctrine and official statements all made clear that Russian nuclear weapons were now meant to deter both conventional and nuclear attack, although discussions of nuclear deterrence focused on retaliation, not first use. Moscow also espoused minimal numbers, in some cases, although officials also talked about the importance of parity with the United States, which played a large role in START II ratification debates. Force structure was in line with the latter rhetoric: while numbers dropped in line with treaty commitments, they did not drop further.

Table 5.1, below, illustrates how Russia’s force posture changed between 1992 and 1998. For force structure, the arrows indicate trends for each system: whether systems were getting more resourcing and programs were successful (arrow up), if systems were deteriorating, whether relatively to others or absolutely (arrow down), or if they were holding even (arrows side to side). Because Russia was cutting its overall strategic nuclear force numbers, total numbers for all systems went down and are thus not a primary determinant of the coding. Alongside the coding for these years, I have placed the “ideal” or archetypal postures introduced in Chapter One.

Table 5.1: Posture 1992-1998

Postures		1992-1994	1994-1997	1997-1998	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy									
Declaratory Policy		Shift to possible first use. Minimal capability in strategy; parity emphasis in START II debate	First use in conventional context, retaliation in nuclear context. Minimal capability in strategy; parity emphasis in START II debate		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↓	↓	↓	×	×	✓	✓	✓
	Silo-based ICBMs	↑	↓	↑	×	×	✓	✓	×
Survivable/ second strike	Mobile ICBMs	↔	↑	↔	✓	✓	×	×	×
	SLBMs	↓	↓	↓	×	×	×	×	✓
	NSNF	↓	↓	↓	×	×	×	×	✓
	Early Warning	↔	↓	↓	✓	✓	✓	✓	×
Safeguards		↑	↑	↑	✓	×	✓	×	×

Russia’s actual postures do not match perfectly any of the archetypes. Because nuclear deterrence of conventional attack was one of the few things that were explicit in Russia’s new policy, it definitely had a Warfighting Escalatory component. However, as it was initially unclear whether Moscow intended to deter nuclear dangers with the threat of first use or retaliation, any of the strategic postures could have applied as well. Later, Russian statements indicated the intent to either retaliate or launch on warning in a nuclear scenario, suggesting an Assured or Launch on Warning approach. Russian attitudes towards force size were bifurcated, lauding minimalism on the one hand and parity with the United States on

the other. Thus, as far as declaratory policy is concerned, Russia's can be coded as a Warfighting Escalatory posture in the early part of the period and either an Assured or Launch on Warning posture, combined with a Warfighting Escalatory posture for the rest of the period.

The force structure, for its part, did not particularly match a Warfighting Escalatory posture at any point. Bombers did not receive any attention and pledges to dismantle non-strategic forces were reaffirmed. The force structure was a better match for a Strategic Escalatory or Launch on Warning posture, at least initially. After 1994, the decline in early warning capabilities made the second of these less tenable. A brief increase in the share of mobile ICBMs in the force suggested the possibility of a shift towards an Assured (or Versatile) posture, but this was fleeting and may have reflected path-dependencies rather than planning. In terms of size, Russia's force structure and plans seemed geared towards maintaining equal numbers. Thus, overall, Russia was developing a force structure in line with a Strategic Escalatory approach.

The theories developed in Chapters One and Two predict different postures under different conditions, depending on what sorts of threats are predominant, the state of the economy, and, for the Cultural/Bureaucratic theory, the status of the Strategic Rocket Forces. The time period under consideration is defined by Russia's rapidly declining economy. The threat environment, for its part, shifted over time. At the start of the period officials saw most threats as conventional in nature, but they later began to express more concern with nuclear threats and argue that Russia's nuclear forces were meant to deter both nuclear and conventional attack (including large-scale conventional attack). Meanwhile, the SRF fared comparatively well. Although all of Russia's defense forces faced budgetary constraints, the SRF did better than most, and also benefited from the naming of a former SRF Commander to the post of Defense Minister in 1997.

Thus, in the early years of independence, with the economy in tough shape and Russia most worried about conventional threats, the two systemic theories predict a Warfighting Escalatory posture—a good mix for declaratory policy, but not force structure. Later in the period, when nuclear threats become more salient, they

predict either an Assured or a Launch on Warning posture combined with Warfighting Escalatory elements—again, a perfect fit for declaratory policy, but not for force structure (tentative moves towards a slightly more survivable mix in the middle of the period did not last). In addition, the Internal Balancing and Prestige theory predicts an effort to build as many forces as are affordable, while Absolute Weapon theory predicts minimalism. Both threads are identifiable in declaratory policy, but actual force structure, with its emphasis on maintaining sufficient numbers for parity with the United States, is a better fit for Internal Balancing.

With the SRF fairly strong, the Cultural/Bureaucratic theory predicts a Strategic Escalatory force structure without real emphasis on early warning. This is very much what we see. This theory predicts, moreover, both an emphasis on parity and that declaratory policy may well be misaligned with force structure—both, once again, in evidence.

Thus, the theory that best predicts the posture of Russian nuclear forces during this time period is the Cultural/Bureaucratic theory, even as declaratory policy matches both systemic theories comparatively well.

The chapter that follows discusses all of this in detail. It first describes in more detail the evolution of Russia's force posture between 1992 and 1998, outlining developments in each of the identified components. It then asks what the theories say about the postures that result. This requires an assessment of the independent variables of Russia's threat perception and the strength of the Strategic Rocket Forces. Based on this, I evaluate how my theories perform against the tests posed by this time period.

Defining Russian Force Posture

To describe Russian force posture, I unpack each component in turn. For declaratory policy, I focus, to the extent I am able, on elements that address:

1. willingness to use nuclear weapons first in a conflict;
2. willingness and plans to use nuclear weapons against non-nuclear weapon states;

3. whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
4. attitudes towards parity/minimalism and survivability.

For force structure, I outline the evolution of Russian forces in the force structure categories identified in Chapter 1. These are:

- ICBMs, including less survivable silo-based ICBMs and more survivable mobile ICBMs.
- More survivable SLBMs
- Long-range bombers
- Early warning capabilities
- Non-strategic systems
- Safeguards

Declaratory Policy and Strategy

In 1992, a draft military doctrine was circulated but never approved. That draft reiterated the Soviet Union's pledge not to be the first to use nuclear weapons in a conflict. However, it stipulated that conventional attacks on nuclear systems or related infrastructure (command and control, early warning, etc.) would be seen as first use, justifying a nuclear response.²³⁹ In 1993, the approved formal doctrine went a step further and dropped the no first use pledge. Moscow now espoused the right to use nuclear weapons (whether first or otherwise) against 1) nuclear-armed states; 2) non-nuclear allies of nuclear-armed states; and 3) non-nuclear armed states that joined or supported an attack on Russia.²⁴⁰ Analysts at the time postulated that Moscow might seek to use nuclear weapons against former Soviet states (if those became NATO members and threatened Russia).²⁴¹ It is also possible

²³⁹ "Fundamentals of Russian Military Doctrine (Draft)," *Voennaia Mysl* Special Edition (1992).; Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," p. 466

²⁴⁰ "Osnovnye Polozheniia VoЕННОi Doktriny Rossiiskoi Federatsii," *Krasnaia Zvezda*, November 19 1993.

²⁴¹ "The Origins and Development of Soviet and Russian Military Doctrine," p. 474; Mikhail Tsyppin, "The Politics of Russian Security Policy," in *State Building and Military Power in Russia and the New*

that Russia saw nuclear weapons as a means of compelling other states, e.g., former Soviet Republics and Warsaw Pact allies, though to what ends specifically is unclear.²⁴²

But while the new doctrine dropped the no first use pledge, it also softened previous language in other areas. Unlike the 1992 draft, the 1993 doctrine did not equate attacks on nuclear infrastructure to nuclear attacks, although it did identify actions that would hamper the functioning of those systems, space systems, and general military command and control as threatening.²⁴³ It also emphasized both the prevention of conflict and its rapid termination, by means of a peaceful settlement.²⁴⁴

Later doctrinal documents were consistent with this approach. The 1997 Strategic Concept reiterated that the role of nuclear weapons was to counter existential threats, nuclear or conventional, to Russia's sovereignty. It also described Russia's nuclear arsenal as the means by which Russia can preclude foreign aggressors from posing a real danger.²⁴⁵

Russia's new doctrine also appeared to reject the principle of parity, and of course with it, supremacy: despite a seeming greater reliance on nuclear weapons, it did not demand a robust nuclear posture. To the contrary, it called for cuts in the nuclear arsenal to the minimal levels needed for deterrence and strategic stability, although these were not defined. Russian Foreign Minister Andrei Kozyrev described the doctrine as defensive, and said his country sought not to use any sort of weapon first.²⁴⁶ The 1997 Strategic Concept affirmed the concept of sufficiency,

States of Eurasia, ed. Bruce Parrott, *The International Politics of Eurasia* (Armonk, NY and London: M.E. Sharpe, 1995), p. 31.

²⁴² Stephen J. Cimbala, "Russia and Nuclear Coercion: How Necessary? How Much?," *The Journal of Slavic Military Studies* 10, no. 3 (1997), p. 77

²⁴³ "Osnovnye Polozheniia Voennoi Doktriny Rossiiskoi Federatsii."

²⁴⁴ Ibid.; Garthoff, "Russian Military Doctrine and Deployments," pp. 58-59. See also Charles J. Dick, "The Military Doctrine of the Russian Federation," *The Journal of Slavic Military Studies* 7, no. 3 (1994), p. 484.

²⁴⁵ "Kontseptsiia Natsional'noi Bezopasnosti Rossiiskoi Federatsii (utv. Ukazom Prezidenta RF ot 17 Dekabria 1997 g). N 1300," (Office of the President of the Russian Federation, 1997), available in Russian at <http://www.armscontrol.ru/start/rus/docs/snconold.htm>.

²⁴⁶ Andrei Kozyrev, "Interesy Rossii. Voennaia Doktrina Strany i Mezhdunarodnaia Bezopasnost'," *Krasnaia Zvezda*, January 14 1994.

defining it as the capability to inflict “given” damage upon an aggressor state or coalition.²⁴⁷

Official statements also toed this line, insisting that Russia did not need large numbers of nuclear forces, repeating themes from the late Soviet period (see Chapter Two).²⁴⁸ In the speech to Russia’s military leadership in 1996, President Boris Yeltsin emphasized the need to maintain a nuclear arsenal “necessary and sufficient” for deterrence.²⁴⁹ General Staff Chief Mikhail Kolesnikov described “sufficiency” as a level of capability needed for effective deterrence.²⁵⁰ Sergeev, as Defense Minister, indicated that Russia sought to reduce its nuclear capabilities to the minimal level needed to assure strategic stability.²⁵¹ His First Deputy Defense Minister, Nikolai Mikhailov made a point that missile quality was more important than quantity.²⁵² One analyst termed the approach “realistic deterrence.”²⁵³

Countering these endorsements of minimalism, however, were the debates over START II ratification, which indicated that parity still mattered. The agreement, signed in 1993, incorporated a notion of strategic stability that was in line with U.S. definitions of the term, focused on secure second-strike capabilities. It limited offensive capabilities, namely MIRVed ICBMs. While START II allowed both sides equal numbers, many Russians felt that it weakened effective parity, because the limits affected only deployed weapons, and not those in storage, potentially enabling the U.S. to quickly increase numbers if it broke out of the treaty. Russian ratification

²⁴⁷ "Kontsepsiia Natsional'noi Bezopasnosti Rossiiskoi Federatsii (utv. Ukazom Prezidenta RF ot 17 Dekabria 1997 g). N 1300," (1997, available in Russian at <http://www.armscontrol.ru/start/rus/docs/snconold.htm>).

²⁴⁸ "Novaia Kontsepsiia Natsional'noi Bezopasnosti Rossii: Vopros Iadernogo Oruzhiia," *Voprosy Bezopasnosti* 22, no. 2 (1998).; Nikolai Fedorovich Novikov, "Poslednii Etap Kholodnoi Voiny," *Nezavisimoe Voennoe Obozrenie*, no. 3 (1998).; Sergei Vadimovich Kortunov, "Iadernoe Sderzhivanie Ne Panatseia," *Nezavisimoe Voennoe Obozrenie* (1998).

²⁴⁹ Boris Nikolaevich Yeltsin, "Vystuplenie Prezidenta Rossiiskoi Federatsii Borisa El'tsina Pered Rukovodiashchim Sostavom Vooruzhennykh Sil Rossiiskoi Federatsii," *Vestnik VoЕННОi Informatsii* (1996).

²⁵⁰ Mikhail Kolesnikov, "Voennaia Reforma i Stroitel'stvo vooruzhennykh Sil Rossii," *Na Strazhe Rodiny* (1996).

²⁵¹ "Voennaia Doktrina i Reformirovanie Vooruzhennykh Sil rossiiskoi Federatsii," *Krasnaia Zvezda* (1998).

²⁵² Andrei Garavskii, "Sokrashchenie Iadernogo Arsenala v Interesakh Rossii," *Krasnaia Zvezda* (1998).

²⁵³ "Novaia Kontsepsiia Natsional'noi Bezopasnosti Rossii: Vopros Iadernogo Oruzhiia."

failed in 1993, 1995, and 1998.²⁵⁴ And, for all the talk of minimalism, Russian numbers remained broadly equal to those of the United States.

There was far less discussion of how a nuclear scenario might develop. The only place this was formally indicated was in discussions of SRF capability. These are important, however, in that they assumed that forces must be prepared for both launch on warning and rideout scenarios, noting that Russia's ICBMs would be responsible for 90 percent of a launch on warning strike and 60 percent of a ride-out response.²⁵⁵ This indicates that Russia allowed for first use to deter conventional attack and intended to either launch on warning or survive and retaliate in the event of a nuclear attack. If first nuclear use against a nuclear opponent was contemplated, it was not discussed publicly.

ICBMs

Russia inherited robust ICBM capabilities from the USSR. Its 1991 force posture comprised hundreds of 1970s era silo-based R-36 (NATO designation SS-18) and UR100 (SS-19) missiles, capable of carrying ten and six warheads each, respectively. It also had dozens of RT-23 (SS-24) missiles, developed in the 1980s and deployed in mobile and silo-based variations and capable of carrying 10 warheads each. Finally, it had over 300 Topols (SS-25) a mobile, single-warhead missile developed in the late 1970s and 1980s as a replacement for the UR100.

But if the inventory was large, there were questions about its quality. In 1994, it was reported that nearly half the missiles deployed were past warranty and many launchers were in need of repair.²⁵⁶ Despite this, the SRF reported that same year

²⁵⁴ Fenenko, "Transformatsiia Sderzhivaniia."

²⁵⁵ Igor' Korotchenko, "Obnovleniie Strategicheskikh Sil," *Nezavisimoe Voennoe Obozrenie*, no. 25 (1997).; Aleksandr Dolinin and Il'shat Baichurin, "Vooruzhennye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO," *Suvorovskii Natisk*, no. 137 (1997).; Igor' Korotchenko, "My Sokraniaem Vysokii Boevoi Potentsial," *Nezavisimoe Voennoe Obozrenie*, no. 46 (1997).; "Daidzhest. Raketchiki Pervymi Vykhodiat Na Orbitu Reform," *Voennyi Vestnik Iuga Rossii*, no. 53 (1997).; "Boegotovnost' RVSN Vozroslo na .01 Protsenta," *Suvorovskii Natisk* (1998).

²⁵⁶ Aleksandr Dolinin, "Sobytiia i Kommentarii. Boegotovnost' RVSN Obkhoditsia Nedorogo. No Deneg Yet i Na Eto," *Krasnaia Zvezda*, November 2 1994; "Rossiia Mozhet Ostat'sia Bez Raket," *Krasnaia Zvezda*, November 22 1994.; Sergei Davidenko, "Raketnye Voiska Garantiruiut Natsional'nuiu Bezopasnost' Rossii," *Krasnaia Zvezda*, July 30 1996.

that its readiness, security, and capability were as good as ever.²⁵⁷ This remained the case into 1995 and 1996, despite wage arrears, the occasional electric outage to SRF facilities, limited training, and reports of SRF personnel harvesting potatoes.

The START II Treaty had an important impact on plans for the SRF. The treaty banned deployments of multiple warheads on land-based ICBMs. Russia had the option of downloading MIRVed missiles to one warhead. Its plans, however, focused on a transition towards an ICBM posture composed entirely of single-warhead missiles built for that purpose, specifically, of Topol-M (SS-27) missiles in both a road-mobile and silo-based variant.²⁵⁸ The Topol-M, a successor to the Topol, was to be the first missile produced entirely in Russia, by the long-time missile producer Moscow Institute of Thermal Technology. Its development was touted as breaking dependencies on production capabilities and infrastructure now abroad as a result of the breakup of the Soviet Union.²⁵⁹ However, some non-Russian facilities still played a role in missile production, including a Belarus firm responsible for the chassis for the road-mobile variant (as it had been for past Soviet missiles).²⁶⁰

The replacement of aging systems with Topol-Ms was expected to cut repair and maintenance costs.²⁶¹ Old missiles, meanwhile would be converted to use as space launch vehicles.²⁶² However, Russia knew that it would take time to build a Topol-M force. In the meantime, all talk of minimalism aside, it clearly sought to maintain its ICBM numbers. Thus, as Topol-Ms came on line, life extension for older

²⁵⁷ Aleksandr Dolinin, "General-Polkovnik Igor' Sergeev: Poletnye Zadaniia Raket "Nulevye," No Smysl Dezhurstva Ne Izmenilsia," *Krasnaia Zvezda*, December 17 1994.

²⁵⁸ Pavel Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization," *IFRI Proliferation Papers*, no. 37 (2011).

²⁵⁹ Key enterprises that designed and produced Soviet ICBMs in Ukraine include the Yuzhmash design and production organizations in Dnipropetrovsk (produced the SS-18 and other ICBMs), the Pavlograd production facility (SS-24 ICBMs), and the Kharkiv Scientific Center (guidance system technologies). The Baikonur missile test range and launch facility is in Kazakhstan, as is the Semipalatinsk nuclear testing range, Jon Brook Wolfsthal, Cristina-Astrid Chuen, and Emily Ewell Daughtry, eds., *Nuclear Status Report: Nuclear Weapons, Fissile Material, and Export Controls in the Former Soviet Union* (Monterey, CA and Washington, DC: Monterey Institute of International Studies and Carnegie Endowment for International Peace, 2001), pp. 14-18, and 31.

²⁶⁰ Valerii Kovalev, "Novosti. Belorusskie 'Korni' Rossiiskikh 'Topolei'," *Krasnaia Zvezda* (1998).

²⁶¹ Korotchenko, "My Sokraniaem Vysokii Boevoi Potentsial."

²⁶² Dolinin and Baichurin, "Vooruzhennnye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO."

systems continued.²⁶³ Even after START II entered into force, Russia planned to maintain some UR-100s, downloaded to a single warhead.²⁶⁴ In October of 1996, an SRF official noted that 26 test launches had taken place over the prior four years.²⁶⁵ The launches extended the warranties for the RS-18 (SS-19), RS-20 (SS-18), RS-22 (SS-24), and Topol (SS-25) systems.²⁶⁶ Despite these life extension programs, in 1998 SRF chief Vladimir Iakovlev reported that 58 percent of ICBMs were beyond their service life, although he also said that the system would remain sufficient until 2005-2007.²⁶⁷

Moreover, although the Topol was slated for obsolescence, new missiles of that type continued to be deployed (three new regiments were added in 1995).²⁶⁸ Russia's SRF numbers also got a few brief boosts from the return of UR-100 missiles from Ukraine, although UR-100 numbers as a whole dropped over the period, in line with plans.

Because Topols were mobile, their deployments helped boost the share of mobile missiles among Russia's strategic nuclear launchers. Starting in the middle of the decade (1995), Russia had more mobile ICBM launchers than silo-based, as illustrated in Figure 5.1 below.²⁶⁹ However, because this was on the strength of the Topols, which were slated for elimination, this is not as meaningful as it would have been if, for example, mobile Topol-Ms were being deployed. Moreover, as Figure 5.1 shows, because all of the Topol mobile missile launchers held a single warhead,

²⁶³ Korotchenko, "Obnovleniie Strategicheskikh Sil."

²⁶⁴ Esin, "Glavnye Sily Iadernogo Sderzhivaniia;" Davidenko, "Raketnye Voiska Garantiruiut Natsional'nuiu Bezopasnost' Rossii."

²⁶⁵ Davidenko, "Bez Grifa 'Sekretno.' U Pul'ta Strategicheskikh Raket Nesut Boevoe Dezhurstvo Ofitserov RVSN."

²⁶⁶ Vasilii Lata, "Vooruzhennyye Sily: Problemy, Resheniia. RVSN: God v Novom Kachestve," *Armeiskii Sbornik*, no. 10 (1998).; Sergei Sokut, "V Novyi God - S Novoi Raketoi," *Nezavisimoe Voennoe Obozrenie* (1998).

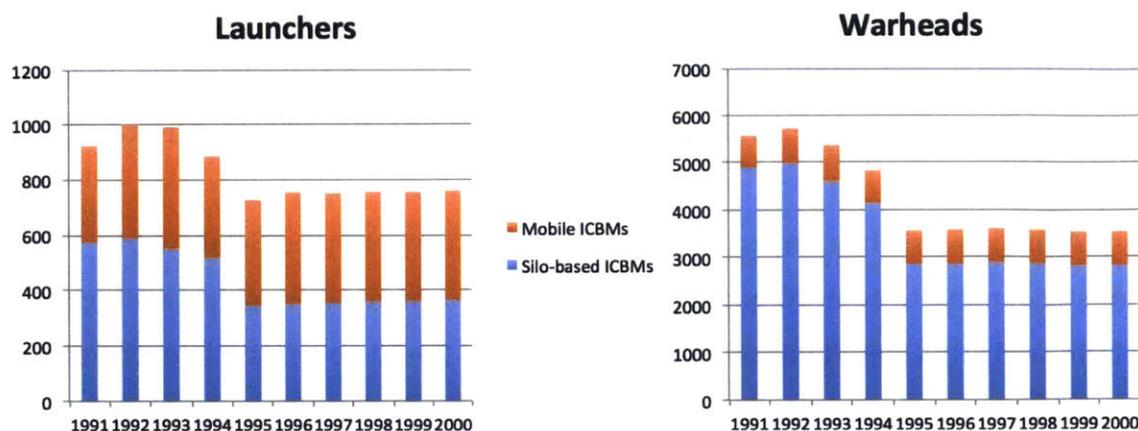
²⁶⁷ Vladimir Iakovlev, "Reformirovat' - Znachit Sozidat', a Ne Lomat'," *Armeiskii Sbornik*, no. 2 (1998).

²⁶⁸ Esin, "Glavnye Sily Iadernogo Sderzhivaniia;" Davidenko, "Raketnye Voiska Garantiruiut Natsional'nuiu Bezopasnost' Rossii."

²⁶⁹ I have extended the date range to 2000 to allow for lagged effects of of plans and resourcing from 1992-1998.

while most of the remaining launchers were MIRVed, this didn't make much of a difference to the proportion of warheads on mobile vs. silo-based launchers.²⁷⁰

Figure 5.1 ICBM Launchers and Warheads 1991-2000²⁷¹



Meanwhile, plans that called for Topol-M to replace all other ICBMs by about 2010 soon looked wildly unrealistic.²⁷² Moscow had hoped that timelines would be shortened for the Topol-M because of its many commonalities with the Topol,

²⁷⁰ My calculations. Data reflects estimates in Robert S. Norris and William M. Arkin, "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998," *The Bulletin of the Atomic Scientists* 55, no. 2 (1999); "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997," *The Bulletin of the Atomic Scientists* 54, no. 2 (1998); "Nuclear Notebook: Estimated Russian Stockpile, End of 1996," *The Bulletin of the Atomic Scientists* 53, no. 3 (1997); "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995," *The Bulletin of the Atomic Scientists* 52, no. 2 (1996); "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1994," *The Bulletin of the Atomic Scientists* 51, no. 2 (1995); "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992," *The Bulletin of the Atomic Scientists* (1993); "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991," *The Bulletin of the Atomic Scientists* 48, no. 2 (1992); "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993," *The Bulletin of the Atomic Scientists* 50, no. 2 (1994).

²⁷¹ Charts are my own. Data reflects estimates in "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998;" "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997;" "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1994;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992;" "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991;" "Nuclear Notebook: Russian Nuclear Forces 2001," *The Bulletin of the Atomic Scientists* 57, no. 3 (2001); "Nuclear Notebook: Russian Nuclear Forces, 2000," *The Bulletin of the Atomic Scientists* 56, no. 4 (2000); "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993." Data in the articles dated 2000 and 2001 indicate that the numbers are current year numbers (in contrast to earlier articles, the titles of which indicate that they provide figures for the end of the prior year). However the discussion in the text indicates that they are accurate as of late the prior year, so will be considered for purposes of this paper to reflect the prior year's year-end situation. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, they count all R-36 (SS-18) missiles as carrying the maximum possible 10 warheads per missile, although they can carry fewer.

²⁷² Korotchenko, "Obnovleniie Strategicheskikh Sil;" Iakovlev, "Arsenal. 'Topol'-M'-Oruzhie XXI Veka."

limiting the need for test launches, for example.²⁷³ But the Topol-M program, like the rest of the SRF, was funded at about half of its requirements throughout this period.²⁷⁴ And despite plans for equal numbers of silo-based and mobile deployments, all of the period's new Topol-Ms were silo-based.²⁷⁵ The first two were deployed in early 1997, complemented by three more later in the year. Thanks to a final push in November and December, Russia had a full regiment of 10 by the start of 1998.²⁷⁶

Although less than hoped for, this was still a success, and officials were optimistic of more to come. Continued Topol-M deployments were given a budget line item, and SRF chief Vladimir Yakovlev promised 20-30 new missiles each year for the next three years, followed by 40-50 annually for the three years following.²⁷⁷

To summarize, ICBM posture and deployments started off slow, but ramped up in the last year of the period. The share of warheads on silo-based missiles started out high and remained high. Mobile Topol deployments shifted the launcher balance slightly in favor of mobile missile. However, this was a doomed system, and its replacement, the Topol-M, was deployed in its silo-based variant: silo-based missiles were still the core of the force.

SLBMs

If ICBMs were ascendant in the 1990s, SLBMs followed the opposite trajectory. In 1991, Russia's strategic nuclear submarines included five different systems. The Project 667B (Delta I), Project 667BD (Delta II), Project 667 BDR (Delta III) and Project 667 BDRM (Delta IV) SSBNs carried variations on the R29 liquid-fueled missile. The Project 941 (Typhoon) SSBNs carried the solid-fueled R-

²⁷³ Korotchenko, "Obnovleniie Strategicheskikh Sil;" "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant," *Voprosy Bezopasnosti* 22, no. 2 (1998).

²⁷⁴ "Obnovleniie Strategicheskikh Sil;" Iakovlev, "Arsenal. 'Topol'-M'-Oruzhie XXI Veka."

²⁷⁵ "Daidzhest. Tri Tainy 'Topolei'," *Voennyi Vestnik Iuga Rossii* (1998).; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

²⁷⁶ They did not appear in the START counts (and thus in my figures) until 1998, when the first regiment was complete. "V Ministerstve Oborony RF. Pressa i Voennaia Reforma," *Krasnaia Zvezda* (1998).; Dmitrii Litovkin, "'Topolinaia Roshcha' Podnimaetsia k Kontsu Goda Na Zashchitu Rossii," *Krasnaia Zvezda* (1998).; Oleg Falichev, "Novyi God Pod 'Topoliami'," *Krasnaia Zvezda* (1998).

²⁷⁷ Litovkin, "'Topolinaia Roshcha' Podnimaetsia k Kontsu Goda Na Zashchitu Rossii;" "Russia Deploys Six Topol-M Long-Range Missiles," *Arms Control Today* (2001).

39. The 1970s era 667Bs and BDs were already on their way out when the USSR collapsed and out of service by 1994. The Delta IIIs were built in the 1970s and 1980s, and the Delta IVs and Typhoons in the 1980s.²⁷⁸

While Russia took pains to keep up its ICBM numbers, SLBM reductions in the 1990s were soon well ahead of the schedule developed to meet START limits. In addition to the withdrawal of the 667 Bs and BDs, the numbers of 667 BDRs and Project 941 boats also dropped.²⁷⁹ Capabilities were generally assessed as being lower still, since not all the weapons on the books were functional.

Ironically, plans for Russia's future forces, developed in the context of the START II treaty, would have placed about half of Russia's strategic nuclear warheads on submarines.²⁸⁰ This would have marked quite a change—the number in 1991 was under 30 percent.²⁸¹ It would also have required substantial attention and modernization. To be fair, this was promised by Russian Foreign Minister Andrei Kozyrev in 1994.²⁸² But it never happened.

The Russian military press claimed in 1994 that Russian submarine patrols, although reduced, equaled NATO patrols (which had dropped to 11-14 submarines patrolling at a time).²⁸³ Later reports, however, indicated that Russia had perhaps 25 percent of its submarines at sea during the Soviet period, and no more than 15 percent in the 1990s. Since total numbers of boats dropped from 40 in 1992 to 21 in 1998, it's not clear just what those figures might really mean.²⁸⁴ The bottom line is that patrols were rare. While a 1997 piece claimed that Russia had been able to

²⁷⁸ Podvig et al., *Russian Strategic Nuclear Forces*.; Norris and Arkin, "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992;" "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991;" "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993."

²⁷⁹ "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998;" "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995."

²⁸⁰ Vladimir Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia," *Krasnaia Zvezda*, July 2 1994.; Podvig et al., *Russian Strategic Nuclear Forces*.

²⁸¹ Norris and Arkin, "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991."

²⁸² Kozyrev, "Interesy Rossii. Voennaia Doktrina Strany i Mezhdunarodnaia Bezopasnost'."

²⁸³ Anatolii Belousov, "Strategicheskaiia Triada Posylaet Rakety v Tsel'," *Krasnaia Zvezda*, June 24 1994; Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia."

²⁸⁴ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant."

increase them, a 1998 article stated that a total of four Russian SSBNs were at sea at a time, in the Pacific and Atlantic Oceans combined.²⁸⁵

In contrast to sanguine promises that the SRF missiles were doing fine, even if the personnel faced pay arrears and morale gaps, officials sounded alarms about the submarine fleet throughout the 1990s. Personnel challenges were a given, but equipment was also in increasingly poor shape. A February 1994 inspection found the nuclear components of the fleet satisfactory, but noted that safety could be compromised in the future.²⁸⁶ Naval officials and missile builders complained that there was not only no financing for the future of the nuclear navy, there was no plan for its development.²⁸⁷ Russia failed to find the funds to carry out either necessary maintenance or required overhauls (needed every 7-8 years to maintain service life) for its nuclear submarines throughout the 1990s.²⁸⁸ Russia's Naval leadership repeatedly told the Federal Assembly that the SSBN fleet would shrink to a mere handful of ships without substantial resource allotments.²⁸⁹

In the meantime, it almost ran out of missiles. While launches and tests confirmed that both deployed and stored rockets still worked, Russia's weapons development planning and implementation were disastrously misaligned.²⁹⁰ Production of the R-29 RM missile, needed for the Delta IVs, was halted in 1993.²⁹¹ Concerted efforts by then-Deputy Minister of Defense Andrei Kokoshin and a

²⁸⁵ "Vooruzhennyye Sily. Pul's Reformy. V Boevoi Podgotovke Severnogo Flota Provalov Net," *Krasnaia Zvezda* (1997); Eduard Chukhraev, "VMF Na Poroze XXI Veka," *Boevaia Vakhta* (1998).

²⁸⁶ Vladimir Mariukha, "Armiia i Obshchestvo. Korotko. Na Iadernykh Ob'ektakh Flota Obstanovka Kontroliruemf," *Krasnaia Zvezda*, February 19 1994.

²⁸⁷ Viktor Gupalov, "Oboronnyi Kompleks. Ne Terpit Otlagatel'stva. Rakety - Nositeli ili Prositeli?," *Krasnaia Zvezda*, April 15 1995.

²⁸⁸ Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia," Podvig et al., *Russian Strategic Nuclear Forces*.

²⁸⁹ Vladimir Mariukha and Andrei Gavrilenko, "Podvodnyi Flot Rossii 90 Let v Boevom Stroiu," *Krasnaia Zvezda*, March 19 1996.

²⁹⁰ Belousov, "Strategicheskaiia Triada Posylaet Rakety v Tsel'; Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia;" "Podvodnye 'Strategi' Streliali Uspeshno," *Krasnaia Zvezda* (1996); "Iz Barentseva Moria-Na Kamchatku," *Boevaia Vakhta* (1997); "Vooruzhennyye Sily. Pul's Reformy. V Boevoi Podgotovke Severnogo Flota Provalov Net;" Aleksandr Belediev, "V Glavnom Shtabe VMF. Podvodnyi Raketno-Iadernyi Shchit Prochen Po-Prezhnemu," *Boevaia Vakhta* (1997); Dmitrii Litovkin, "Novosti. Morskoi Komponent SlaS Podtverdil Svoiiu Boegotovnost'," *Krasnaia Zvezda* (1997); "Voennyye Moriaki Demonstriruiut Vysokoe Masterstvo," *Vestnik Voennoi Informatsii* (1997).

²⁹¹ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*.

request to President Yeltsin and First Deputy Prime Minister Oleg Sotskov got this reversed on paper—but not in practice.²⁹² In July 1995, the President of Russia signed a decree calling for the overhaul of the 667BDRM submarines (needed to keep them functioning past 2007—or perhaps even 2003, according to some)²⁹³ and resumption of serial production of the R-29 RM missiles. However, this decree was never financed, and never even showed up in Defense Ministry planning.²⁹⁴ Instead, the staff of the Navy's 6th Directorate, responsible for weapons development, was substantially cut in 1995.²⁹⁵

In early 1996, the official plan was for Russia at the turn of the century to have seven Project 667 BRDM submarines and six Project 941s. Later, they would all be replaced by a new submarine, the Project 955 (Borei). Just as the Topol-M was to be Russia's sole ICBM, the Borei would be its only SSBN.²⁹⁶ In the meantime, older submarines, and their missiles, had to remain functional. But while the SRF not only kept the old systems alive but kept churning out Topols, the cash-strapped Navy had no equivalent options. According to reports, by the mid 1990s, all of the existing submarines were in need of repair, and repairs were severely underfunded and chronically delayed. The first 667 BRDM had been sent to the shipyard back in 1991 for a repair estimated to take two years. In 1996, it was still there.²⁹⁷ Of Russia's six Typhoons, only four were combat-capable as of early that year.²⁹⁸ And while construction of the first Borei, the Yury Dolgorukiy, began in 1996, it, too, was soon

²⁹² Gupalov, "Oboronnyi kompleks. Ne Terpit Otlagatel'stva. Rakety - Nositeli ili Prositeli?."

²⁹³ Podvig et al., *Russian Strategic Nuclear Forces*.

²⁹⁴ Ibid.; Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; V. G. Degtiar' and Rem Nikiforovich Kanin, "Rakety Startuiut iz Glubiny," *Nezavisimoe Voennoe Obozrenie*, November 2 2012.

²⁹⁵ Kabziuk, "Garant Bezopasnosti Rossii."

²⁹⁶ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant;" Podvig et al., *Russian Strategic Nuclear Forces*; Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

²⁹⁷ Nikolai Kalistratov, "Nabolelo. Morskie Strategicheskie Iadernye Sily Rossii Idut Ko Dnu, ili Neprazdnichnye Razmyshleniia Nakanune 300-letii Rossiiskogo Flota," *Krasnai Zvezda*, January 12 1996.

²⁹⁸ Andrei Gavrilenko, "Russkoe Oruzhie. Proiasniaem Situatsiiu. Remonstirovat' Korabli Vse Trudnee," *Krasnaia Zvezda*, February 17 1996.;

running behind schedule.²⁹⁹ Despite the promise of a line item in the federal budget for the ship's construction (and financial support to the factory from Moscow's city government), even MoD officials did not think the ship would be completed in the four years promised. Deputy Defense Minister Kokoshin suggested, however, that by the early 2000s, the submarines would be ready to go to sea.³⁰⁰

This plan was derailed when development of a new R-39 missile for the Typhoons (and now also for the Boreis), came to halt. The underfunded missile, begun in the 1980s and known as the Bark, failed its third flight test in 1998 and was cancelled. Construction of the Yury Dolgorukiy stopped.³⁰¹

This was a tremendous failure for Russia's SLBM program. The Yury Dolgorukiy was Russia's first submarine to be laid down in ten years, and, as noted, the hope for the fleet's future. Deputy Defense Minister Kokoshin had promised that the Borei class would help Russia not only maintain the strategic balance with the United States, but would keep the nuclear submarine industrial base alive.³⁰²

A tender was issued for a new missile for the Borei. This was won not by the Makeev Bureau, which had held a virtual monopoly on SLBM design for decades, but by the Moscow Institute of Thermal Technology (MITT), the ICBM designer that had developed the Topol missile family.³⁰³ MITT had argued that it could attain synergies with its land-based systems, and, indeed, based the Bulava missile that it developed for the Boreis in large part on aspects of the Topols.³⁰⁴ Both critics and proponents argued that part of the motivation for the Bulava was emulation of western systems, since the Bulava system was to be solid-fuelled, like U.S. SLBMs,

²⁹⁹ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant;" Podvig et al., *Russian Strategic Nuclear Forces*; Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

³⁰⁰ Vladimir Gundarov, "'Iuriiu Dolgorukomu' Plyt' v XXI Vek," *Krasnaia Zvezda* (1996).

³⁰¹ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant;" Podvig et al., *Russian Strategic Nuclear Forces*; Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; Degtiar' and Kanin, "Rakety Startuiut iz Glubiny; Dmitrii Litovkin, "'Sineva' Podnimaetsia Nad Morem," *Nezavisimoe Voennoe Obozrenie*, no. 16 (2000).

³⁰² Gundarov, "'Iuriiu Dolgorukomu' Plyt' v XXI Vek."

³⁰³ Alla Kassianova, "The Bulava Missile: What Propels its Unsteady Flight?," in *PONARS Eurasia Policy Memo* (2009).

³⁰⁴ Ibid; "Russia Tests New Missile With Previously Unachievable Performance," *Pravda.ru* (2012).

while Makeev would have built a liquid-fuelled missile, as was traditional to the Russian fleet.³⁰⁵

But in the meantime, Russia had a fleet of submarines in disrepair, and a shortage of missiles for both existing and planned systems. The Borei tender, in this context, could easily be viewed as just the latest in a series of promises of resourcing and attention that would not be kept. And it did nothing to solve the problem of missiles for existing systems, the 667 BRDMs and 941 Typhoons, since both R-29 and R-39 production had stopped.³⁰⁶

In April of 1998 the Defense Ministry developed a proposal for the future of the naval strategic nuclear forces. This plan, an odd contrast to that year's promises of emphasis on strategic nuclear forces, called for significantly limiting the repair of existing strategic submarines and a definitive end to the (nonexistent) production of R-29 RM missiles.³⁰⁷ On the one hand, this step would have cemented the status quo. On the other, it would have meant that Russia was willing to let the existing fleet atrophy, to eventually be replaced by the Boreis when and if they came online.

As in 1995, Andrei Kokoshin (first as Russian Defense Council Secretary and then, briefly, as Secretary of the Security Council), played a key role in getting this plan reversed, and possibly saving Russia's SSBN capability. Along with Roskosmos General Director Yurii Koptev (a missile engineer), he pushed the government to agree, at least on paper, that the 667 BDRMs and 941s could be sustained while Russia awaited the Borei. The government (once again) directed the resumption of R-29 production and the needed overhaul of the 667 series submarines, four of which (with 256 warheads apiece) could then last until at least 2025.³⁰⁸ This seems

³⁰⁵ Vladimir Gundarov, "Vzgliad Na Problemu. 'Sineva' ot Vremeni Ne Bleknet," *Krasnaia Zvezda* (2004); Vladimir Dvorkin, "Zachem Nam Triada?," *Nezavisimoe Voennoe Obozrenie* (2005).

³⁰⁶ Litovkin, "'Sineva' Podnimaetsia Nad Morem."

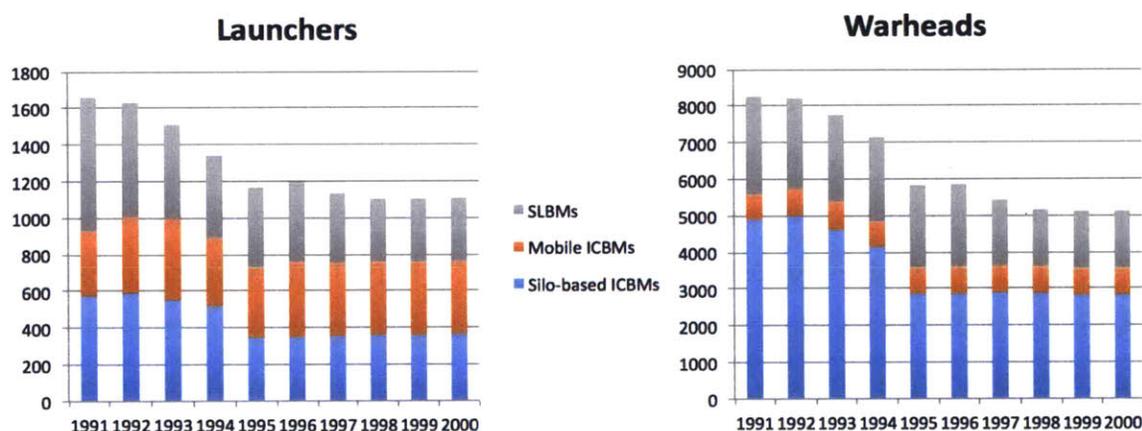
³⁰⁷ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

³⁰⁸ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny;" Sergei Oznobishchev, Vladimir Iakovlevich Potapov, and Valerii Pavlovich Volodin, "Predisolvie," in *Problemy Obespecheniia Strategicheskoi Stabil'nosti*, ed. Andrei Afanasevich Kokoshin (Moscow: URSS, 2011).

to have led to the development of the Sineva missile, a follow on to the R-29, by the Makeev design bureau (see Chapter 5).³⁰⁹

Thus, the SSBN force deteriorated drastically through the 1990s, even as occasional efforts, such as the start of Borei construction, attempted to buck the trend. Plans and promises remained unfulfilled (as opposed to just running behind schedule, as was the case with the SRF). Indeed, Russia came close to losing its SLBM capability, intentionally or otherwise. As Figure 5.2, below, shows, submarines lost ground to the ICBM force, even as numbers overall shrank. The SLBM program was at best not a priority between 1992 and 1998, and at worst expendable.

Figure 5.2 Missile Launchers and Warheads 1991-2000³¹⁰



³⁰⁹ Litovkin, "'Sineva' Podnimaetsia Nad Morem."

³¹⁰ Charts are my own. Data reflects estimates in Norris and Arkin, "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998;" "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997;" "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1994;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992;" "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991;" "Nuclear Notebook: Russian Nuclear Forces, 2001;" "Nuclear Notebook: Russian Nuclear Forces, 2000;" "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993." Data in the articles dated 2000 and 2001 indicate that the numbers are current year numbers (in contrast to earlier articles, the titles of which indicate that they provide figures for the end of the prior year). However the discussion in the text indicates that they are accurate as of late the prior year, so will be considered for purposes of this paper to reflect the prior year's year-end situation. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, they count all R-36 (SS-18) missiles as carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three in the sources listed above.

Bombers

Russia's bombers also fared poorly. The strategic aviation fleet inherited from the USSR was comprised by Tu-95MS (NATO designation Bear H) and Tu-160 (Blackjack) bombers. Although a comparatively small share of Russia's warhead and launcher numbers, both in reality and, even more so, under START counting rules (which ascribe a certain number of bombs to each aircraft, despite the capacity for both lighter and heavier loads), bombers are the component of Russia's nuclear triad most often used in Russia's large-scale exercises.³¹¹

While Russia officially inherited all of the USSR's strategic bombers and all of them counted against its START ceilings, some of them were still based in Kazakhstan and Ukraine after the Soviet Union collapsed. They remained there for several years, as Russia negotiated for their return. 27 Bear-H6 and 13 Bear-H16 bombers were back from Kazakhstan by the end of 1994, but some aircraft remained in Ukraine until 1999.³¹²

As with much of Russia's force structure during this period, there was little in the way of new construction, particularly for the bombers.³¹³ The exception was one Tu-160 aircraft already in the pipeline when the USSR collapsed, which was completed in 1993.³¹⁴ In fall of 1998, Russia decided to complete construction of bombers left unfinished when the USSR collapsed, and there was talk of developing new medium and heavy bombers, which could join the force as early as 2005.³¹⁵ But while an order for six new Tu-160s was eventually placed, none were completed before the end of the decade. Moreover, no visible progress was made in the area of new design and development.³¹⁶

³¹¹ A number of these are described and discussed in both {Oliker, 2009 #240} and James T. Quinlivan and Olga Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States* (Santa Monica, CA: RAND, 2011), particularly Table 3.3 on p. 60 in the latter.

³¹² Norris and Arkin, "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995."

³¹³ "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993;" Viktor Baranets, "Pochemu Rossiiskoi Armii Ne Khvataet Novogo Oruzhiia?," *Komsomol'skaia Pravda*, June 18 2009.;

³¹⁴ Norris and Arkin, "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993."

³¹⁵ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant."

³¹⁶ "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian Nuclear Forces 2001."

As of 1998, plans also called for a new cruise missile, a follow-on to the Kh-55, the Kh101/102 (in conventional and nuclear variants) that was promised for sometime around 2001.³¹⁷ Its prospective deployment necessitated modification of the Tu-95Ms, and plans were made to do that, as well.³¹⁸ In late 1998, Air Force Chief Kornukov also promised modernization to improve both accuracy and range.³¹⁹ As with the submarine fleet, however, these promises tended to be fleeting,

It was not clear just what condition the planes that already existed were in. In 1997, one article asserted that Russia had one third of the functional bombers that the Soviet Union had had in 1990, and that a large number were in need of repair.³²⁰ The Natural Resources Defense Council Nuclear Notebook was consistent in describing most of Russia's bombers, including those returning from Ukraine and Kazakhstan, as largely nonfunctional.³²¹ In 1997 and 1998, it reported, only two Tu-160s in Russia's arsenal were flight-capable.³²² A Russian report, however, quoted Air Force Commander Anatolii Kornukov asserting that 90 percent of the aircraft were serviceable in 1998.³²³

Because of complicated counting rules for bombers, which changed between START I and START II, I do not include a count of launchers or warheads compared to SLBMs and ICBMs. Specifically, under START I, some Russian heavy bombers (those equipped to carry long-range nuclear ALCMs) were attributed with eight warheads each while others, equipped for gravity bombs or short-range missiles), were attributed with one warhead. START II attributed the numbers for which the bombers were equipped to each bomber.³²⁴ By following Norris and Kristensen's

³¹⁷ Alexei Arbatov, "Ratifikatsii SNV-2 Net Al'ternativy," *Nezavisimoe Voennoe Obozrenie*, no. 7 (1998).

³¹⁸ Aleksandr Shaburkin, "Strategicheskaiia Aviatsiia Porazhaet Tseli," *Nezavisimoe Voennoe Obozrenie* (1998).

³¹⁹ M. Shevtsov, "Est' v Rosii Dal'niaia Aviatsiia," *Suvorovskii Natisk* (1998).

³²⁰ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant."

³²¹ Norris and Arkin, "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997;" "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992."

³²² "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998;" "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997."

³²³ Shevtsov, "Est' v Rosii Dal'niaia Aviatsiia."

³²⁴ "Strategic Arms Reduction Treaty Text (START I)" (United States Department of State, 1991), <http://www.state.gov/t/avc/trty/146007.htm>; "Treaty Between the United States of America and

approach to counting warheads, which is comparatively maximal, I calculate that Russia's bombers accounted for between 13 and 16 percent of its warheads and between six and nine percent of its launchers between 1992 and 2000 (to allow for two out-years).³²⁵ However, as the discussion above indicates, it was not always clear how many bombers Russia had, or what condition they were in, even as bombers still in Ukraine or Belarus counted against Russia's START numbers. I therefore have not constructed a comparison chart as I did for the other components of the triad.

Thus, while military leaders and analysts insisted that strategic bombers remained critically important,³²⁶ instead of attention or resourcing they got insufficient maintenance and overall neglect.

Early Warning and Missile Defense

The basic constellation and outline of Russian early warning and missile defense at the tail end of the USSR is described in Chapter Two. The system, despite its gaps, remained comparatively robust until the mid-1990s. In February 1996,

the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms (START II)," (United States Department of State, 1993),

<http://www.state.gov/t/avc/trty/102887.htm#treatytext>; "Background Information: START II Ratification," (The White House, 1996), <http://fas.org/nuke/control/start2/docs/strtrat.htm>.

³²⁵ Data is based on estimates in Norris and Arkin, "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1998;" "Nuclear Notebook: Russian Strategic Nuclear Forces, End of 1997;" "Nuclear Notebook: Estimated Russian Stockpile, End of 1996;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1995;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1994;" "Nuclear Notebook: Russian (C.I.S.) Strategic Nuclear Forces, End of 1992;" "Nuclear Notebook: CIS (Soviet) Strategic Nuclear Forces, End of 1991;" "Nuclear Notebook: Russian Nuclear Forces, 2001;" "Nuclear Notebook: Russian Nuclear Forces, 2000;" "Nuclear Notebook: Russian (CIS) Strategic Nuclear Forces End of 1993." Data in the articles dated 2000 and 2001 indicate that the numbers are current year numbers (in contrast to earlier articles, the titles of which indicate that they provide figures for the end of the prior year). However the discussion in the text indicates that they are accurate as of late the prior year, so will be considered for purposes of this paper to reflect the prior year's year-end situation. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, they count all R-36 (SS-18) missiles as carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three in the sources listed above.

³²⁶ Mikhail Mikhailovich Oparin, "Boites' 'Strategov' Dary Prinosiashchikh. Dal'niaia Aviatisiia Dlia Rossii-Ne Roskosh', a Garant Natsional'noi Bezopasnosti," *Armeiskii Sbornik*, no. 8 (1997).; Oleg Falichev, "Vooruzhennye Sily: Pul's Reformy. Rossiia Sokhranit Aviatsionnuu Sostavliaiushchuiu Svoei Iadernoi Triady," *Suvorovskii Natisk*, no. 138 (1997).

celebrating the 25th anniversary of the complex, Defense Minister Grachev praised Russian early warning and declared it capable.³²⁷ And, indeed, the system was functioning. While some satellites had left orbit, others had been launched to take their place. As noted in Chapter Two, the USSR had begun launching a new generation of satellites in 1991. The geosynchronous second generation satellites had look-down capability, which helped Russia cover the oceans (and thus SLBM launches). Thus, Russia between 1992 and 1996 maintained its full complement of at least eight satellites in high earth orbit and between one and four satellites in geosynchronous orbit with an increasingly modernized system.³²⁸

As 1996 went on, problems emerged. That year, three deployed HEO satellites and one GEO satellite failed. This left Russia with five satellites in HEO and one in GEO, below what was needed for reliable warning. Over the next few years, as more satellites failed, Russia was not able to keep pace with replacements. In 1997, two high earth orbit satellites and a new geosynchronous orbit satellite were launched, getting the system up to six in high earth orbit. Three of the six, however, failed by March 1998. In late 1998, Russia had three satellites in HEO and two in GEO. One satellite, launched into GEO in April of that year, failed in June.³²⁹ In 1998, SRF chief Vladimir Yakovlev promised that the systems would continue to meet requirements until at least 2003-2005.³³⁰ However, the configuration at the end of 1998, with GEO satellites in orbit, but in questionable condition (at least one had ceased sending signals as of April 1998) was surely insufficient to reliably cover U.S. launch sites, particularly the oceans.³³¹ If I consider data for two more years, to account for lags between planning and development, the situation only gets worse, with no Russian GEO satellites in space.

³²⁷ "Novosti. Nam iz Kosmosa Vse Vidno," *Krasnaia Zvezda*, February 15 1996.

³²⁸ Podvig, "History and the Current Status of the Russian Early-Warning System," p. 49. "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiia," *Voprosy Bezopasnosti* (1998). concluded that as of late 1998, they could cover ICBM bases and the northern Atlantic Ocean.

³²⁹ "History and the Current Status of the Russian Early-Warning System," Table 3, esp. pp. 38-39 and Figure 9, p. 47.

³³⁰ Iakovlev, "Reformirovat' - Znachit Sozidat', a Ne Lomat'."

³³¹ Podvig, "History and the Current Status of the Russian Early-Warning System," p. 49. "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiia." concluded that as of late 1998, they could cover ICBM bases and the northern Atlantic Ocean.

Table 5.2 Early Warning Satellite Launches and Losses 1992-2000

	HEO		GEO		complement at end of year	
	launches	losses	launches	losses	HEO	GEO
1992	4	3	2	1	10	3
1993	3	4	0	0	9	3
1994	1	1	1	0	9	4
1995	1	2	0	2	8	2
1996	0	3	0	1	5	1
1997	2	2	1	0	5	2
1998	1	3	1	1	3	2
1999	1	0	0	2	4	0
2000	0	0	0	0	4	0

Russia had also inherited a ground-based radar system that was fairly dependable as long as it could continue to use at least some radar sites in other former Soviet republics. Russia retained use of the new Daryal radar in Gabala (Azerbaijan) and the Dnepr radars in Balkhash (Kazakhstan), Sevastopol (Ukraine) and Mukachevo (Ukraine.) It also was able to continue to access the Dnestr radar at Skrunda until 1998, although the Daryal radar at that site had been destroyed in 1995. Generally, these relationships worked, although negotiations with the Ukrainian and Kazakh governments regarding conditions of use were sometimes tense.³³² Supplies may also have been an issue: SRF Chief of Staff General-Colonel Anatolii Perminovyi told a reporter that early warning facilities outside of Russia faced difficulties getting sufficient fuel and even food.³³³ New development had ground to a halt, both due to resource constraints and the fact that a lot of the

³³² "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiiia;" "History and the Current Status of the Russian Early-Warning System," pp. 31, 32; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³³³ Oleg Falichev, "K Armii XXI Veka. Ot Integratsii RVSN Vyigrali. No ne Tol'ko," *Krasnaia Zvezda* (1998).

systems that had been in progress were now abroad, in Ukraine, Latvia, Belarus, and Kazakhstan.³³⁴

Of course, Russia also had several radars on its own soil, including at Mishelevka, Pechora, and Olenogorsk, as well as those that were part of the Moscow ABM system. The system as a whole ensured that although the gap in the northeastern direction, discussed in Chapter Two, remained, this was not catastrophic.³³⁵

But it was also not improving. The new Mishelevka radar in Russia was also not completed.³³⁶ Still the overall system remained at largely its Soviet capacity until August 1998, when the loss of Skruna created a more substantial gap—in the northwest direction over the North Atlantic.³³⁷ Although some argued that the Moscow ABM system's radars could make up for that gap,³³⁸ this does not seem likely.

Another accomplishment of the early 1990s was the completion the new A-135 missile defense system for Moscow. Although most of the work had been done before the collapse of the USSR, it was not deemed combat-ready until 1995. The ABM Treaty-compliant system covers a 150km zone, and can detect incoming ballistic missiles up to 6000km, provide preliminary targeting data, and target anti-ballistic missiles against the incoming warheads. However, as former Strategic Rocket Forces Chief of Staff and Deputy Commander Viktor Esin notes, its capabilities remained modest: at full capacity, this system is probably able to

³³⁴ "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiia," Podvig, "History and the Current Status of the Russian Early-Warning System," pp. 31, 32; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³³⁵ "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiia," Podvig, "History and the Current Status of the Russian Early-Warning System," pp. 31, 32; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³³⁶ "Sistema Bevogo Upravleniia Strategicheskikh Iadernykh Sil: Otsenka Neneshnego Sostoianiia," Podvig, "History and the Current Status of the Russian Early-Warning System," pp. 31, 32; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³³⁷ Podvig, "History and the Current Status of the Russian Early-Warning System," pp. 31, 32; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³³⁸ Sokut, "V Novyi God - S Novoi Raketoi."

destroy at best dozens of incoming missiles.³³⁹ As part of the 1997 reorganization, it was decided that further modernization of the A-135 would be put on hold.³⁴⁰

The integration of the early warning system and launch capabilities may have also been inherently flawed, or damaged in some way. In January 1995 the launch of a Norwegian scientific rocket reportedly alerted Russia's early warning system. Strategic alert was activated, and although no weapons were launched, there were reports that system malfunctions led to some components of Russia's arsenal entering combat mode despite the lack of any operator involvement.³⁴¹

In summary, the early warning system remained reasonably effective over the first few years of independence, but then began to disintegrate dangerously. As with other components of Russia's nuclear sector, the government promised that more attention would be forthcoming. President Boris Yeltsin, for example, made such a pledge in 1998, voicing his worry at the deterioration of early warning and space-based capabilities.³⁴² But despite continued assurances to this effect,³⁴³ the system continued to fall apart.

Non-Strategic Nuclear Forces

In 1992, Boris Yeltsin reaffirmed Mikhail Gorbachev's commitment to reduce Russia's non-strategic nuclear forces substantially. Gorbachev had pledged to rid Russia of nuclear artillery munitions, warheads on tactical missiles, and mines. He also promised not to deploy, but instead to keep in central storage, nuclear weapons assigned to surface ships, multipurpose submarines, and air defense weapons. Yeltsin added to this a pledge to get rid of half of Russia's nuclear surface-to-air missile warheads, half of its airborne tactical nuclear weapons, and a third of its sea-based non-strategic nuclear systems. If the U.S. did the same, he promised to move

³³⁹ Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

³⁴⁰ Sergei Sokut, "Zavershen Pervyi Etap Ob'edineniia VVS i PVO," *Nezavisimoe Voennoe Obozrenie* (1998).

³⁴¹ Stephen J. Cimbala, "Russia's Nuclear Command and Control: Mission Malaise," *The Journal of Slavic Military Studies* 14, no. 2 (2001).

³⁴² Aleksandr Pel'ts, "Iz Kremliia. Sovet Bezopasnosti j Dolgosrochnoi Iadernoi Politike Gosudarstva," *Krasnaia Zvezda* (1998).

³⁴³ Sokut, "V Novyi God - S Novoi Raketoi."

the remaining half of airborne weapons to central storage.³⁴⁴ He promised that production of nuclear mines, artillery shells, and warheads for land-based tactical missiles had stopped.

However, Yeltsin's promises aside, Russia's progress on reductions in nonstrategic capabilities were difficult to track. Official statements often contradicted one another.³⁴⁵ A 1996 article in the military *Krasnaia Zvezda* newspaper even reported that nuclear artillery was still around, although it was not clear where or for what purpose.³⁴⁶ Moreover, Igor Sutyagin cites mentions of a new tactical nuclear system in 1997, which would most likely have been the dual-capable Iskander, then under development.³⁴⁷

If the numbers are uncertain, the role of these forces is even less clear. In 1993, top General Staff theorist Vladimir Slipchenko argued that nonstrategic weapons would be at the core of future warfighting, supplanting strategic weapons, which would be limited due to their deterrent role.³⁴⁸ He was countered by those who held that bombers with lower-yield bombs could easily fill such roles, leaving no need for non-strategic nuclear systems.³⁴⁹ Russian officials, for their part, were largely silent on the topic of what non-strategic nuclear forces were for during this period—even in the context of discussions of a lowered threshold for nuclear use, discussed above.

Russia did, of course, also have medium-range bombers, notably the Tu-22Ms. AS noted above, these were part of Russian Strategic Aviation organizationally, although deemed nonstrategic under START. They suffered from the same neglect as did the longer-range bombers. In 1998, an article in *Nezavisimoe Voennoe Obozrenie* reported that the planes were largely grounded due to lack of fuel and

³⁴⁴ "The Presidential Nuclear Initiatives (PNIs) on Tactical Nuclear Weapons at a Glance," *Fact Sheets and Briefs*(2010), <https://www.armscontrol.org/factsheets/pniglance>.

³⁴⁵ Discussed in Oliker and Charlick-Paley, *Assessing Russia's Decline: Implications for the United States and the U.S. Air Force*.

³⁴⁶ "Bez Grifa 'Sekretno.' Atomnaia Artilleriia. Novostrebovannyi Monstr?."

³⁴⁷ Sutyagin, *Atomic Accounting*.

³⁴⁸ Vladimir I. Slipchenko, "A Russian Analysis of Warfare Leading to the Sixth Generation," *Field Artillery* October (1993).

³⁴⁹ "Kakie Iadernye Sily i Politika Neobkhodimy Rossii," *Voprosy Bezopasnosti* (1998).

insufficient engine maintenance. It also said that not only were flight hours low, the force was undermanned.³⁵⁰

Thus, despite some discussions of a non-strategic use for nuclear weapons during this period, there is no reason to think that non-strategic weapons themselves were in any way a priority. Systems slated for dismantlement were dismantled, and the rest were largely neglected. Although Russia was unwilling to give these systems up entirely, it is also not clear that it had any real plans for them or sense of their possible value.

Safeguards

By contrast to other force posture components, safeguards received a good bit of attention in the mid 1990s, part of a general effort to build confidence between the United States and Russia. In January 1994, the two countries signed an agreement that pledged, among other things, that both sides would cease to target one another with their nuclear missiles.³⁵¹ Since detargeting had been discussed since early 1992,³⁵² the agreement could be viewed as a breakthrough, and a validation of policy approaches focused on building bridges. Others, however, have argued that detargeting is fairly meaningless, being unverifiable and in any case easily reversible.³⁵³ While it is, indeed, unlikely that this agreement changed operations in any real way,³⁵⁴ it did signal a certain lessening of tension, which was no doubt what the two governments sought to convey. Similarly symbolic was a 1998 agreement between the United States and Russia to establish a Joint Data

³⁵⁰ Andrei Riskin, "V Dal'nei Aviatsii Odnoi Diviziei Stalo Men'she," *Nezavisimoe Voennoe Obozrenie* (1998).

³⁵¹ William Jefferson Clinton and Boris Nikolaevich Yeltsin, "Moscow Declaration," (U.S. Government Printing Office, 1994), <http://www.gpo.gov/fdsys/pkg/PPP-1994-book1/pdf/PPP-1994-book1-doc-pg74.pdf>.

³⁵² Aleksandr Gol'tz, "Prezident Rossii B.N. Yel'tsin: 'My Khotim Izmenit' Nashu Voennuiu Doktrinu...'," *Krasnaia Zvezda*, January 28 1992.

³⁵³ Bruce Blair, "Russian Nuclear Policy and the Status of Detargeting," in *Testimony before the House Committee on National Security, Subcommittee on Military Research and Development* (The Brookings Institution 1997), <http://www.brookings.edu/research/testimony/1997/03/17defense-blair;> Aleksandr Tikhonov, "Raketno-ladernyi Obereg Rossii," *Krasnaia Zvezda*, December 17 2014.

³⁵⁴ Dolinin, "General-Polkovnik Igor' Sergeev: Poletnye Zadaniia Raket "Nulevye," No Smysl Dezhurstva Ne Izmenilsia."

Exchange Center in Moscow, although this effort quickly stalled.³⁵⁵ In both cases, however, since the operational implications were so limited, it is difficult to see this as an important component of Russian posture.

Posture 1992-1998

Thus, we see that starting in 1993, official doctrine jettisoned the Soviet no first use of nuclear weapons pledge, explicitly allowing for nuclear use against overwhelming conventional force. In the nuclear context, Russian officials said little, but what was said allowed for both launch on warning and rideout scenarios. Moreover, while officials insisted that Russia needed only minimal numbers of nuclear forces, what this meant was not clearly defined, and later discussions, in the context of START II ratification, belied this argument by focusing on maintaining parity with the United States.

From a force structure standpoint, Russia deployed new mobile and silo-based ICBMs, although overall numbers of these systems went down, in line with treaty commitments. All of the new mobile missiles, however, were Topol systems, scheduled to be replaced (and a number were removed from service during these years, as well). Other than returns from Ukraine and Kazakhstan (which already counted against Russia's START accountable numbers), the bomber fleet grew by only one aircraft, completed in 1993. No new submarines were completed, and submarine numbers dropped steadily. As a result, their proportion of the force decreased, and the share of ICBMs, silo-based and mobile, increased.

Nonstrategic forces were also cut, in line with plans, and while Moscow espoused an interest in improving safeguards in the 1990s, results were largely symbolic. The only other new nuclear-related systems to come online were early warning satellites, which were deployed in sufficient numbers to keep pace with losses in 1992-1994, but which fell behind after that, leading to a substantially degraded capability.

³⁵⁵ Podvig, "Reducing the Risk of Accidental Launch."

The story is summarized in Table 5.3, below (it is identical to Table 5.1, presented earlier in this chapter). Again, for force structure, the arrow up, down, or sideways coding signify whether systems were getting more resourcing and programs were successful (up), if systems were deteriorating, whether relatively to others or absolutely (down), or if they were holding even (side to side). Because Russia was cutting its overall strategic nuclear force numbers, total numbers for all systems went down and are thus not a primary determinant of the coding. The archetypal postures are again presented for comparison.

Table 5.3 Posture 1992-1998

Postures		1992-1994	1994-1997	1997-1998	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy									
Declaratory Policy		Shift to possible first use. Minimal capability in strategy; parity emphasis in START II debate	First use in conventional context, retaliation in nuclear context. Minimal capability in strategy; parity emphasis in START II debate		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↓	↓	↓					✓
	Silo-based ICBMs	↑	↓	↑	×	×	✓	✓	×
Survivable/ second strike	Mobile ICBMs	↔	↑	↔	✓	✓	×	×	×
	SLBMs	↓	↓	↓					
	NSNF	↓	↓	↓	×	×	×	×	✓
	Early Warning	↔	↓	↓	✓	✓	✓	✓	×
	Safeguards	↑	↑	↑	✓	×	✓	×	×

The side-by-side comparison demonstrates that reality is not an ideal fit for any of the archetypal postures. However, the specific alignments and misalignments are worth looking at in detail. Specifically, from 1992-1994, Russia instituted a new doctrine that eliminated the Soviet Union's no first use pledge and allowed for nuclear weapons to deter a range of attacks, nuclear and conventional, explicitly permitting nuclear first use in the event of large-scale conventional aggression. This is in line with a Strategic Escalatory approach, particularly as there was little discussion of whether Russia planned to retaliate against nuclear attacks or try to pre-empt them. The force structure was a poor match, lacking emphasis on non-strategic forces or bombers. In fact, it looked more appropriate to either a Strategic Escalatory posture or a Launch on Warning one.

The declaratory policy stayed fairly consistent through 1998, with a bit more clarification of nuclear strategy, with discussion that indicated that Russia planned to retaliate against nuclear attacks, either after riding them out or by launching on warning. This was in line with a Launch on Warning or Assured posture, combined with a Warfighting Escalatory one, since Russia continued to make clear its intent to use its nuclear weapons to deter conventional attack. Force structure also shifted somewhat. Between 1994 and 1997, it looked like mobile ICBMs were getting more attention, bringing the mix a bit closer into line with an Assured (or Versatile) posture, a better fit to the declaratory policy. However, this is mainly due to a very slight uptick in mobile ICBM proportions, which is quite small and easily explained simply by uneven reductions in weapons (SS-25 Topol counts go up and down during these years, although they grow slightly in the lag years of 1995 and 1996). Moreover, non-strategic forces continued to be ignored. From 1997 to 1998 (and on into the out-years), the emphasis returned to silo-based ICBMs. Meanwhile, early warning deteriorated starting in 1994, making a Launch-on Warning posture less viable. Thus, the posture that best matches force structure is a Strategic Escalatory one.

The contrast between statements emphasizing minimalism in general discussions of nuclear weapons and those emphasizing parity in the context of the START II treaty is also worth noting. The fact that Russia did maintain systems that were slated for destruction until replacements could be built, and made parity-based arguments in doing so, suggests that numbers remained quite important.

Explaining Russian Force Posture

The above discussion indicates that Russia's posture, while not a perfect fit for any of the outlined postures, tended towards a Strategic Escalatory posture between 1992 and 1998. The brief shift towards what might have been a more survivable, Assured, posture between 1994 and 1997 is worth noting, but does not change the overall coding. Declaratory posture was initially aligned with a Warfighting Escalatory posture and later added elements compatible with Assured or Launch on Warning approaches. Moreover, although some official statements

argued that Russia should maintain minimal capabilities, Russia actually made a point of holding on to as large a force size as it could, within the constraints of arms control commitments.

Can the theories I developed in Chapters One and Two explain Russian posture? All three allow for the approaches evident in declaratory policy and force structure, albeit under different conditions. Specifically, the systemic theories predict Assured or Launch on Warning postures (whichever is cheaper) combined with Warfighting Escalatory approaches when resources are constrained and both nuclear and conventional threats are present. They predict Warfighting Escalatory postures (not in combination with any others) when threats are conventional in nature (when resources are constrained in the case of the Internal Balancing and Prestige theory, and regardless of the economic climate in the case of the Absolute Weapon theory). Absolute Weapon theory predicts minimalist approaches to force size, while Internal Balancing and Prestige theory predicts maximalist approaches. Meanwhile, the Cultural/Bureaucratic theory predicts a Strategic Escalatory posture as long as the SRF are not effectively challenged within Russia's bureaucracy. It also predicts larger forces.

So, do the conditions match those that are required by these theories? We know that resources were, indeed, constrained between 1992 and 1998, as demonstrated in Chapter 3. What can we say about the threat environment and the power of the SRF?

Threat Environment

Whether Russia saw the threats to its security as nuclear, conventional, or both is the fundamental question for the two systemic theories presented in Chapter One. The discussion above regarding declaratory policy makes it fairly clear that Russia saw itself as faced with both conventional and nuclear threats through most of 1992-1998. However, it is worth unpacking just how Russia saw both of these types of threats, and how attitudes changed over time, in a bit more detail.

The early months after the collapse of the U.S.S.R. were confusing and policy and threat definition were a challenge. It was not clear what role the Commonwealth of

Independent States would play in security (indeed, it was not clear whether Russia would have armed forces separate from the CIS).³⁵⁶ Nonetheless, analysts and policymakers sought to define threats, and thus make arguments for the capabilities Russia needed.³⁵⁷ The 1992 draft military doctrine that was never approved echoed late Soviet doctrine. It emphasized that the threat of both nuclear and conventional war was substantially reduced. But this did not mean that Russia was safe. Rather, the draft described Russia's threat environment as one in which Russia simultaneously had no enemies and faced as its greatest threat "states and coalitions" that might want to dominate some or all of the world, a phrasing that appeared to reference the United States and the NATO alliance.³⁵⁸ Moreover, conflict, if less likely, was still possible. Nuclear or large-scale conventional war could emerge as a result of the escalation of a smaller, local conflict, although it was not clear exactly how. Perhaps those dominating "states or coalitions" were a factor, but if so, this was not stated explicitly.³⁵⁹

In sum, the 1992 draft doctrine reflected a view of a generally more benign threat environment, but one in which both nuclear and conventional conflict remained possible. Indeed, in the analytical debates of the time, some military strategists actually argued that the threat of nuclear war had increased, requiring a more robust nuclear posture.³⁶⁰

The official doctrine which followed in November of 1993 repeated the 1992 draft's statement that Russia had no enemies. The greatest danger to Russia, it argued, was that of localized conflict. The doctrine also discussed the potential for an internal role for the armed forces, a deviation from typical military preference

³⁵⁶ See Elena Agapova, "Armiu Nado Sozdavat', Kogda Znaesh' Zachem, Schitaet Ekspert Andrei Kokoshin," *Krasnaia Zvezda*, March 17 1992; Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," pp. 464-467.

³⁵⁷ "The Origins and Development of Soviet and Russian Military Doctrine," pp. 467-470; Garthoff, "Russian Military Doctrine and Deployments," pp. 53-56.

³⁵⁸ The 1992 draft also worried some in the West with its reference to violations of the rights of Russia's citizens in other former Soviet republics. "Fundamentals of Russian Military Doctrine (Draft)." (Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," p. 471; Garthoff, "Russian Military Doctrine and Deployments," pp. 53-56.

³⁵⁹ "Fundamentals of Russian Military Doctrine (Draft)."

³⁶⁰ Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," p. 471; Garthoff, "Russian Military Doctrine and Deployments," pp. 53-56.

and testifying to continuing concerns that Russia remained at risk of internal unrest. Moreover, it asserted a role for Russia in defending the interests of Russian citizens abroad.³⁶¹ In late fall of 1993 then Foreign Minister Kozyrev emphasized a need for Russian peacekeeping in the “near abroad.”³⁶² This suggests that Russia had come to see the predominant threat to its security as coming from within and from the countries in its immediate neighborhood—conventional threats. Kozyrev affirmed this position again in early 1994, arguing that the greatest threats to Russia were local conflict and nuclear and WMD proliferation.³⁶³

It is not surprising that Russia was worried about conflict in the neighborhood—the early part of the decade saw plenty of it, as violence escalated in the South Caucasus and Tajikistan. In both cases, Russia sent troops.³⁶⁴ In anticipation of more to come, the MoD sought to retain its bases in CIS states.³⁶⁵ Whether Russia was, as it claimed, living up to its responsibilities or acting out of a continuing desire to maintain, if not empire, than influence in territory historically under Russian control, there seemed no question that Russian forces could expect to keep fighting on neighboring territory.³⁶⁶

To summarize, the Russian attitude of the early 1990s appeared to postulate a threat environment dominated by small-scale, conventional concerns near Russia’s borders, none of them existential in nature. The 1993 doctrine did include one reference to threats a bit further away, specifically those posed by broadening

³⁶¹ "Osnovnye Polozheniia Voennoi Doktriny Rossiiskoi Federatsii;" "Russian Military Doctrine and Deployments," p. 57

³⁶² Fiona Hill and Pamela Jewett, *Back in the USSR: Russia's Intervention in the Internal Affairs of the Former Soviet Republics and the Implications for United States Policy Towards Russia*, Strengthening Democratic Institutions Occasional Papers (Cambridge, Massachusetts: Belfer Center for Science and International Affairs, Harvard Kennedy School, 1994).

³⁶³ Kozyrev, "Interesy Rossii. Voennaia Doktrina Strany i Mezhdunarodnaia Bezopasnost'."

³⁶⁴ It is worth noting that during this period, public opinion polls showed little Russian appetite for increased military action in the neighborhood. While at this time Russia’s Federation Council was not required to approve military action, Yeltsin sought, and failed to gain its approval for a peacekeeping mission in Abkhazia (Georgia), although a special parliamentary resolution then let the mission go forward (Tsyppkin, "The Politics of Russian Security Policy," p. 33; Peter Roudik, "Russian Federation: Legal Aspects of War in Georgia," Library of Congress, <http://www.loc.gov/law/help/russian-georgia-war.php#t25>).

³⁶⁵ Garthoff, "Russian Military Doctrine and Deployments," p. 60.

³⁶⁶ Tsyppkin, "The Politics of Russian Security Policy," pp. 32-33.

military alliances or blocs.³⁶⁷ This vague language, surely meant to refer to NATO enlargement, was not linked to any direct dangers of conflict or escalation.³⁶⁸ At the same time, the enlargement that most concerned Russia was into the territories of other former Soviet states—where Russia was making very clear it intended to stay involved.³⁶⁹

Between the 1993 doctrine and Russia's intensive activity in and rhetoric regarding its neighborhood, it makes sense to characterize the country's threat perception as focused on local, conventional threats. The possibility of a large-scale adversary emerging remained in the background. By the end of 1994, however, deployments in the neighborhood had been eclipsed by a war within Russia, namely the effort to subdue separatists in the breakaway region of Chechnya.

This led military officials and analysts to call for a new doctrine to guide Russia's evolving military reform plans in what they termed a new threat environment.³⁷⁰ But while work on a new draft began in late 1994 and continued through 1996, consensus proved difficult to reach.³⁷¹ Local conflicts remained on the agenda, and Russian troops fought at home and near its borders. But there was increasing concern about other, greater threats. A minority worried about comparatively vague dangers rooted in China's developing capabilities, or Islamism. Most analysts, however, increasingly wrote about the need for Russia to focus on the threat posed by the United States and the NATO Alliance.³⁷²

Boris Yeltsin's public statements also shifted towards this point of view. In a speech in June of 1995, he emphasized the greatly reduced danger of nuclear or larger-scale conventional conflict. Yeltsin said that Russia's first priority was returning law and order to Chechnya. And while he noted that Russia must

³⁶⁷ "Osnovnye Polozheniia Voennoi Doktriny Rossiiskoi Federatsii."

³⁶⁸ Garthoff, "Russian Military Doctrine and Deployments," pp. 57-58.

³⁶⁹ Tsyppin, "The Politics of Russian Security Policy," pp. 32-33.

³⁷⁰ Aleksandr Pel'ts, "Nuzhna Novaiia Voennaia Doktrina," *Krasnaia Zvezda* (1996).; M.A. Gareev, "Voennaia Doktrina Rossii," *Nezavisimoe Voennoe Obozrenie*, no. 29 (1997).

³⁷¹ "Akademii Voennykh Nauk Vzialas' Za Doktrinu," *Krasnaia Zvezda*, January 26 1996.

³⁷² Lester W. Grau and Timothy L. Thomas, "A Russian View of Future War: Theory and Direction," *The Journal of Slavic Military Studies* 9, no. 3 (1996).; Valentin Rog, "Operatsiia v Vozdushno-Kosmicheskom Prostranstve," *Nezavisimoe Voennoe Obozrenie* (1998); Zharskii, "Razvitie Vzglidov Na Voennuiu Doktrinu. Istoricheskii Aspekt, Part II." identifies both German unification and Iran as threats.

cooperate with NATO, Yeltsin called out further NATO enlargement as a danger. Instead of enlarging as a military alliance, he said, NATO should become a political source of European stability.³⁷³

Where the Alliance (or, really, the United States, which most Russian writings saw as the puppet master of NATO) had been in the background of Russian concerns in the early 1990s, it had a more prominent place by the middle of the decade. This may seem surprising in light of the very real fights on Russia's borders and within its territory. It is also notable that there was no consensus on just what dangers NATO posed. NATO involvement in the conflict in the former Yugoslavia had escalated, and Russia's ally Serbia was under tough sanctions from the West, but Russia had sent its own forces to Bosnia in 1996 in support of the broader international effort. Some argued that a local fight could escalate, with Russia and the United States on opposite sides, driven in part by Washington's expansive views of its global interests.³⁷⁴ Others posited that NATO and the United States were embarked upon a project to weaken Russia.³⁷⁵ NATO enlargement, wrote General Staff Chief Mikhail Kolesnikov in 1996, threatened to drive Russia to isolationism.³⁷⁶

The argument that NATO and the United States posed a threat to Russia implied that Russia had to prepare to face a technologically-advanced, large-scale adversary armed with nuclear weapons. But it was Western conventional capabilities that worried Russia most. U.S. performance in the Gulf War and since had made clear that Russia was far behind on a great many fronts.³⁷⁷ Indeed, Operation Desert Storm, and thus the importance of both technology and airpower,

³⁷³ "Ofitsial'nyi Otdel. Nam Nuzhny Kachestvenno Novye Vooruzhennye Sily," *Vestnik Voennoi Informatsii* (1995).

³⁷⁴ Viktor Samsonov, "Tochka Zreniia. Nuzhna Novaia Sistema Kollektivnoi Bezopasnosti, ili Chto Segodnia Mozhet Ugrozhat' Natsional'nym Interesam Gosudarstv SNG," *Krasnaia Zvezda*, December 5 1995.; Pel'ts, "Nuzhna Novaia Voennaia Doktrina;" Arbatov, "Ratifikatsii SNV-2 NEt Al'ternativy;" "Voennaia Doktrina i Reformirovanie Vooruzennykh Sil rossiiskoi Federatsii."

³⁷⁵ Pel'ts, "Nuzhna Novaia Voennaia Doktrina."

³⁷⁶ Kolesnikov, "Voennaia Reforma i Stroitel'stvo vooruzhennykh Sil Rossii."

³⁷⁷ Grau and Thomas, "A Russian View of Future War: Theory and Direction."

was consistently referenced as a model for future war, as it had been in the final months of the Soviet period.³⁷⁸

This is reflected in two Yeltsin speeches, one to the Federal Assembly and one to the military leadership, in 1996. In both, Yeltsin said that the threat of large-scale war was greatly diminished, but emphasized dangers posed by NATO enlargement.³⁷⁹ In the Federal Assembly speech he lauded the United States and Russia for unprecedented cuts in their nuclear arsenals, as well as detargeting of nuclear weapons.³⁸⁰ Speaking to the military leadership, he emphasized the need to maintain a nuclear arsenal "necessary and sufficient" for deterrence.³⁸¹

While a new military doctrine did not appear, these ideas were reflected in a new document, Russia's 1997 Strategic Concept, similar in some ways to a National Security Strategy. The Concept emphasized political and economic approaches to resolving international problems. However, it also identified large consolidations of forces of great powers and coalitions near Russia as a prospective threat, and noted that NATO enlargement was threatening to Russia with or without aggressive intent on the part of the alliance.³⁸² By late 1998, in addition to the military threats posed by NATO, analysts were worrying about Russia's need to avoid coercion from the West, possible because of the U.S.'s greater military capacity.³⁸³

Throughout this period, many Russians were also nervous about relying on its nuclear weapons to deter conventional, as well as nuclear threats, and saw this as a near-term solution. Even proponents of a greater reliance on nuclear weapons for deterrence of a wide range of threats explicitly referenced the resource-constrained environment, arguing that nuclear forces presented a way to cover both nuclear and

³⁷⁸ Ibid.; Jacob W. Kipp, "Russian Military Forecasting and the Revolution in Military Affairs: A Case of the Oracle of Delphi or Cassandra?" *The Journal of Slavic Military Studies* 9, no. 1 (1996), p. 5; Rog, "Operatsiia v Vozdushno-Kosmicheskom Prostranstve."

³⁷⁹ Yeltsin, "Vystuplenie Prezidenta Rossiiskoi Federatsii Borisa El'tsina Pered Rukovodiashchim Sostavom Vooruzhennykh Sil Rossiiskoi Federatsii;" "Poslanie Prezidenta Rossiiskoi Federatsii Federal'nomu Sobraniuu," *Suvorovskii Natisk*, March 16 1996.

³⁸⁰ "Poslanie Prezidenta Rossiiskoi Federatsii Federal'nomu Sobraniuu."

³⁸¹ "Vystuplenie Prezidenta Rossiiskoi Federatsii Borisa El'tsina Pered Rukovodiashchim Sostavom Vooruzhennykh Sil Rossiiskoi Federatsii."

³⁸² "Kontseptsiiia Natsional'noi Bezopasnosti Rossiiskoi Federatsii (utv. Ukazom Prezidenta RF ot 17 Dekabria 1997 g). N 1300," (1997, available in Russian at <http://www.armscontrol.ru/start/rus/docs/snconold.htm>).

³⁸³ "Kakie Iadernye Sily i Politika Neobkhodimy Rossii."

conventional threats that was cheaper and easier than both maintaining nuclear forces and fixing the dilapidated conventional force.³⁸⁴ Some were uncomfortable with this concept, including Makhmut Gareev (former Deputy Chief of the General Staff and, since 1993, President of Russia's National Academy of Military Sciences) who worried that a larger nuclear role potentially gave a decisive role to tactical nuclear weapons and made escalation more likely.³⁸⁵ He and others, including Igor' Rodionov, Russia's Defense Minister from 1996-1997 and military commanders turned politicians Lev Rokhlin and Aleksandr Lebed, advocated for stronger conventional capacity.³⁸⁶

Yuri Baturin, Defense Council Secretary from 1996-1997, and Andrei Kokoshin (an early champion of the Soviet-era "defensive sufficiency" concept for the nuclear forces³⁸⁷), argued that nuclear reliance would buy time for Russia to build up conventional capabilities.³⁸⁸ Kokoshin, however, also cautioned that nuclear capabilities could not make up for conventional forces in many cases.³⁸⁹ The Kokoshin line was echoed in a speech Defense Minister Sergeev gave to the Belgian

³⁸⁴ Mikhail Khodarenok, "Nuzhna Li Rossii Vozdushno-Kosmicheskaiia Oborona," *Nezavisimoe Voennoe Obozrenie*, September 7, 2001. For an example of this argument, see Esin, "Glavnye Sily Iadernogo Sderzhivaniia." For a western perspective, see also Cimbala, "Russia and Nuclear Coercion: How Necessary? How Much?," p. 72

³⁸⁵ See "Interesy Rossii. Makhmut Gareev: Iadernoe Oruzhie v Sovremennom Mire," *Krasnaia Zvezda*, June 29 1994.; M.A. Gareev, "Voina i Voennoe Iskusstvo v Meniaiushchemsia Mire," *Mezhdunarodnaia Zhizn'*, no. 3 (1994); "Kontury Vooruzhennoi Bor'by Budushchego," *Mezhdunarodnaia Zhizn'*, no. 4 (1994).; *Esli Zavtra Voina* (Moscow: Vldar, 1995). The latter is summarized in English in Kipp, "Russian Military Forecasting and the Revolution in Military Affairs: A Case of the Oracle of Delphi or Cassandra?," pp. 25-40. See also "Forecasting Future War: Andrei Kokoshin and the Military-Political Debate in Contemporary Russia. Andrei Kokoshin: Scholar and Bureaucrat," *Foreign Military Studies Office Paper* (1999), <https://www.fas.org/nuke/guide/russia/agency/990100-kokoshin.htm>. Similar views are expressed in "Novaia Kontseptsiiia Natsional'noi Bezopasnosti Rossii: Vopros Iadernogo Oruzhiia."

³⁸⁶ See "Interesy Rossii. Makhmut Gareev: Iadernoe Oruzhie v Sovremennom Mire;" Gareev, "Voina i Voennoe Iskusstvo v Meniaiushchemsia Mire;" "Kontury Vooruzhennoi Bor'by Budushchego;" *Esli Zavtra Voina*. The latter is summarized in English in Kipp, "Russian Military Forecasting and the Revolution in Military Affairs: A Case of the Oracle of Delphi or Cassandra?," pp. 25-40. See also "Forecasting Future War: Andrei Kokoshin and the Military-Political Debate in Contemporary Russia. Andrei Kokoshin: Scholar and Bureaucrat"; "Novyi Sekretar' Soveta Bezopasnosti Andrei Kokoshin i Ego Proekt voennoi Reformy," *Voprosy Bezopasnosti*, no. 5 (1998).

³⁸⁷ "Forecasting Future War: Andrei Kokoshin and the Military-Political Debate in Contemporary Russia. Andrei Kokoshin: Scholar and Bureaucrat".

³⁸⁸ "Novyi Sekretar' Soveta Bezopasnosti Andrei Kokoshin i Ego Proekt voennoi Reformy."

³⁸⁹ *Ibid.*

Royal Defense College in summer of 1998. There, he said that Russia would rely more on nuclear deterrence while reforms continued.³⁹⁰

In summary, we can identify two different predominant views of the threat environment from 1992-1998, each aligned with a different portion of that time period. From late 1992 to roughly 1994, Russia saw itself as mainly focused on low-scale conventional threats. From 1994 to the end of the period, however, the threat from NATO and the United States had become more central to government documents and statements. Nonetheless, while nuclear deterrence was a factor, it was Western conventional capabilities that were highlighted. Thus, the threat environment was a mixed one, and nuclear weapons were meant, at least in the near term, to deter a broad range of threats.

Bureaucratic Strength of the Strategic Rocket Forces

My cultural-bureaucratic theory posits that the extent to which the power of the SRF vis-à-vis other components of Russia's nuclear triad (and armed forces as a whole) is challenged may be an important factor in defining Russian nuclear force posture. Specifically, it posits that when this organization is not challenged, either by other military organizations or civilian decision-makers, Russia will tend towards more offensive systems and postures. I am therefore seeking evidence during this period of clear bureaucratic challenges to the SRF, which could take the form of reorganizations that deprive those forces in comparison to others, funding shifts, and so forth.

The Bureaucratic Power of the Strategic Rocket Forces

Like everyone else in the armed forces, the SRF did not get the funding they asked for in the 1990s, when the MoD as a whole was substantially underfinanced. For the most part, in the early and mid 1990s, they got about half.³⁹¹ In 1994, this translated into a 5 percent share of the overall defense budget plan for the year.³⁹²

³⁹⁰ "Voennaia Doktrina i Reformirovanie Vooruzennykh Sil rossiiskoi Federatsii."

³⁹¹ Korotchenko, "Obnovleniie Strategicheskikh Sil;" Iakovlev, "Arsenal. 'Topol'-M'-Oruzhie XXI Veka."

³⁹² Kozyrev, "Interesy Rossii. Voennaia Doktrina Strany i Mezhdunarodnaia Bezopasnost'; Esin, "Glavnye Sily Iadernogo Sderzhivaniia; Dolinin, "Rossiia Mozhet Ostat'sia Bez Raket;" "General-Polkovnik Igor' Sergeev: Poletnye Zadaniia Raket "Nulevye," No Smysl Dezhurstva Ne Izmenilsia."

As the decade continued, this would grow to 8 percent, and finally 10 percent by the end of the decade.³⁹³ The only other service that saw growth in its share of the budget was the ground forces, which went from just under 28 percent in 1992 to 38 percent in 1996 (dropping to 36.6 in 1997).³⁹⁴ The ground forces, of course, were the bulk of the troops fighting in Chechnya much of that time, and even they received little if anything in the way of new equipment. By contrast, in the early 1990s the Navy as a whole was receiving only about a quarter of its budget requests.³⁹⁵ By 1996, this had dropped to 10 percent and the funds were eaten up by salaries and basic sustainment.³⁹⁶ Its share of the overall military budget also dropped. The Air Force's share stayed roughly stable according to some sources.³⁹⁷ Others, however, argued that it had dropped from 20 percent of the military budget in 1992 to nine percent in 1998.³⁹⁸

Aside from being better funded than other services, the SRF were promised protections: in September 1996, service officials pledged that arms control cuts would not lead to personnel cuts among the missile forces.³⁹⁹ In the submarine force, low patrol rates meant that many sailors had no opportunity to go to sea, leading to concerns that personnel capabilities were deteriorating.⁴⁰⁰ The nuclear submarine

³⁹³ Nikolai Poroskov and Aleksandr Dolinin, "Reservy Boegotovnosti. RVSN: Zapas Prochnosti, Energiia Poiska," *Krasnaia Zvezda* (1997).; Korotchenko, "My Sokraniaem Vysokii Boevoi Potentsial," Dolinin and Baichurin, "Vooruzhennye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO."

³⁹⁴ Julian Cooper, "Appendix 6D. The Military Expenditure of the USSR and the Russian Federation, 1987-97," in *SIPRI Yearbook 1998* (Stockholm: Stockholm International Peace Research Institute, 1998).

³⁹⁵ Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia."

³⁹⁶ Gavrilenko, "Russkoe Oruzhie. Proiasniaem Situatsiiu. Remonstirovat' Korabli Vse Trudnee."

³⁹⁷ Cooper, "Appendix 6D. The Military Expenditure of the USSR and the Russian Federation, 1987-97."

³⁹⁸ Sergei Sokut, "Ob'edinenie s PVO Pozvolilo Sokratit' Sily i Sredstva Bez Ushcherba Dlia Boesposobnosti Voisk," *Nezavisimoe Voennoe Obozrenie* (1999).

³⁹⁹ Davidenko, "Bez Grifa 'Sekretno.' U Pul'ta Strategicheskikh Raket Nesut Boevoe Dezhurstvo Ofitsery RVSN."

⁴⁰⁰ Mariukha, "Atomnyi Podvodnyi Flot-Eto Dostoianie Rossii, Kotorym Nel'zia Razbrasyvat'sia;" "Sobesednik Dnia. Morskoe Velichie Rossii Nikem i Nikogda Ne Dolzhno Byt' Podvergnuto Somnenniu," *Krasnaia Zvezda*, July 25 1995; Andrei Gavrilenko, "Pul's Armii i Flota. "Taifun" Na Poliuse," *Krasnaia Zvezda*, September 27 1995.; Aleksandr Khrolenko, "S 90-Letiem, Podvodnyi Flot Rossii! Sud'ba Odnogo Coedineniia. Vysokii Symbol Glubiny," *Boevaia Vakhta*, March 16 1996.

fleet was not getting its choice of junior officers, and commanders cultivated ties with local government to get housing and facilities.⁴⁰¹

Organizational changes also tended to weaken other organizations, even if they did not strengthen the SRF. Russia eliminated its Air Armies in 1994, placing the strategic bomber force directly under Long Range Aviation command.⁴⁰² In 1997, Long Range Aviation became the 37th Air Army, part of the broad Air Force reform effort of that time.⁴⁰³ In addition to Tu-160 and Tu-95MS bombers, the 37th Air Army included the Tu-22M (Backfire), also nuclear capable but, because of its shorter range, dubbed nonstrategic under START; Russia's Il-78 refueling tankers; and some Tu-134s for training.⁴⁰⁴ Although the Air Force as a whole was strengthened by these organizational shifts, this resulted in no immediate force structure changes to Strategic Aviation.⁴⁰⁵

Nonetheless, speculation emerged in the Russian national security-focused press that the bomber leg of the triad would disappear.⁴⁰⁶ The bomber was under sufficient threat that articles appeared in the military press defending the need for strategic aviation, arguing, for example, that it was the only component of the triad permitted to carry air launched nuclear cruise missiles under START I, and thus critical to defeating missile defense.⁴⁰⁷ One article on the subject reassured readers in its headline that Russia would retain strategic air as part of its triad.⁴⁰⁸

The Navy was in similarly bad shape, as discussed in some depth above. In the context of the underfunding and lack of attention that almost eliminated Russia's SLBM capacity, some in the national security bureaucracy openly questioned its

⁴⁰¹ Konstantin Lobkov, "Kontr-Admiral V. Gol'dibaev: 'Amerikantsy Dali Poniat', Chton Pobaivaiutsia Nashikh 'Strategov'," *Boevaia Vakhta* (1996).

⁴⁰² Podvig et al., *Russian Strategic Nuclear Forces*.

⁴⁰³ Anatolii Mikhailovich Kornukov, "Teoriia Stroitel'stva Novykh VVS," *Nezavisimoe Voennoe Obozrenie* (1998).; "Russia," *The Military Balance* 99 (1999); "Russia," *The Military Balance* 98 (1998).

⁴⁰⁴ "Russia," *The Military Balance* 100 (2000).; "Russia," *The Military Balance* 109 (2009).

⁴⁰⁵ "Russia;" "Russia;" Iurii Gavrillov, "Bez Otryva ot Boevoi Ucheby Osushchestvliatsia Integratsiia VVS i Voisk PVO," *Krasnaia Zvezda* (1998).; "V Ob'edinennykh VVS i PVO. Sokrashchenie? - Pereobrazovanie," *Suvorovskii Natisk* (1998).

⁴⁰⁶ Vladimir Lebed'ko, Anatolii Dotsenko, and Viktor Siryk, "Tochka Zreniia. Raketnyi Shchit - V Odni Ruki," *Krasnaia Zvezda* (1998).

⁴⁰⁷ "Kak Budut Razvivat'sia Rossiiskie Strategicheskie Nastupatel'nye Vooruzheniia: Variant."

⁴⁰⁸ Falichev, "Vooruzhennnye Sily: Pul's Reformy. Rossiia Sokhranit Aviatsionnuiu Sostavliaiushchuiu Svoei Iadernoi Triady."

utility. Organizationally, although the nuclear submarines remained part and parcel of the beleaguered Navy, they did experience one notable demotion: in 1998, the Navy's 6th Directorate became its 6th Department. Aside from the organizational downgrading, this also meant the loss of subordinate, fleet-level 6th departments, the Novaia Zemlia nuclear test site, a training center, and some other functions.⁴⁰⁹

Early warning and air defense organizations also fared poorly. As early as 1993, Russian officials voiced plans to combine air and space defenses into a single system. That year, President Yeltsin signed a law "On the Organization of Air Defense in the Russian Federation" which, along with supporting documents, called for the development of a unified structure. Although resources were allocated and studies carried out, like many plans of the 1990s, this did not materialize.⁴¹⁰ Instead, Air Defense forces continued to shrink, with personnel numbers in late 1997 half of what they were at the end of the USSR.⁴¹¹ The 1997 reform noted subordinated Air Defense to the Air Force.⁴¹²

Also in 1997, the SRF's status was further elevated and cemented by elevation of Igor Sergeev, previously Strategic Rocket Forces (SRF) commander, to the position of Defense Minister. Soon after his appointment, in August of that year, Moscow announced that space and space missile defense forces (the latter having previously been part of the Air Defense Forces) as well as early warning capabilities as a whole, were to be subordinated to the SRF. This move became effective in November.⁴¹³ The rest of the Air Defense forces' previously independent command was placed under the Air Force.⁴¹⁴

⁴⁰⁹ Kabziuk, "Garant Bezopasnosti Rossii."

⁴¹⁰ Khodarenok, "Nuzhna Li Rossii Vozdushno-Kosmicheskaiia Oborona," Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁴¹¹ Viktor Prudnikov, "Sliianie Voisk PVO i VVS Zhiznenno Neobkhodimo," *Nezavisimoe Voennoe Obozrenie*, no. 38 (1997).

⁴¹² Kornukov, "Teoriia Stroitel'stva Novykh VVS;" "Russia;" "Russia."

⁴¹³ Iakovlev, "Reformirovat' - Znachit Sozdat', a Ne Lomat';" Khodarenok, "Nuzhna Li Rossii Vozdushno-Kosmicheskaiia Oborona;" Nervov, "Raketnye Kompleksy RVSN."

⁴¹⁴ "Russia;" "Raketnye Kompleksy RVSN;" Zaretskii, Alekhin, and Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia."

At the time, most military and civilian officials described these consolidations as cost-driven.⁴¹⁵ They certainly cut personnel expenses, ridding the force overall of 5500 people, just under half of them officers.⁴¹⁶ As a combined proportion of the budget, the forces now under the SRF would drop from 19.3% to 15.5%.⁴¹⁷ Of that amount, the SRF itself accounted for 10%, according to MoD officials.⁴¹⁸ The changes also enabled some cost savings in related defense industry, eliminating some 300 of 1000 firms previously supporting the SRF and/or the space forces.⁴¹⁹ Some argued that there were also effectiveness gains to be had in these changes, specifically an improved ability to respond quickly to warning,⁴²⁰ and thus a better second strike capability.⁴²¹

Evidence that this move, combined with the elevation of Igor' Sergeev to defense minister, also helped strengthen the status of the SRF can be found in contemporary articles and official statements which emphasized the strategic aspect of the changes. The reorganization was presented as part and parcel of broader military reform plans, explicitly meant to shift the focus to nuclear strategic forces as a whole for the near term.⁴²² These plans explicitly called for financing priority

⁴¹⁵ Prudnikov, "Sliianie Voisk PVO i VVS Zhiznenno Neobkhodimo;" Dolinin and Baichurin, "Vooruzhennyye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO;" "Daidzhest. Raketniki Pervymi Vykhodiat Na Orbitu Reform;" "Russia: A Semblance of Order," *Strategic Survey* 98, no. 1 (1997).; "Russia," *The Military Balance* 97 (1997).; Vladimir Iakovlev, "Integratsiia Strategicheskikh Iadernykh Sil.Pervye Itogi," *Vestnik VoЕННОI Informatsii*, no. 12 (1997).; Korotchenko, "My Sokraniaem Vysokii Boevoi Potentsial;" Podvig et al., *Russian Strategic Nuclear Forces*, p. 37 "Russia."

⁴¹⁶ Dolinin and Baichurin, "Vooruzhennyye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO;" Iakovlev, "Integratsiia Strategicheskikh Iadernykh Sil.Pervye Itogi;" "Reformirovat' - Znachit Sozidat', a Ne Lomat';" "Boegotovnost' RVSN Vozroslo na .01 Protsenta."

⁴¹⁷ Dolinin and Baichurin, "Vooruzhennyye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO;" Iakovlev, "Integratsiia Strategicheskikh Iadernykh Sil.Pervye Itogi;" "Reformirovat' - Znachit Sozidat', a Ne Lomat';" "Boegotovnost' RVSN Vozroslo na .01 Protsenta."

⁴¹⁸ Dolinin and Baichurin, "Vooruzhennyye Sily: Pul's Reformy. RVSN V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSN, VKS, i Voisk RKO."

⁴¹⁹ Prudnikov, "Sliianie Voisk PVO i VVS Zhiznenno Neobkhodimo;" Lata, "Vooruzhennyye Sily: Problemy, Resheniia. RVSN: God v Novom Kachestve."

⁴²⁰ "Vooruzhennyye Sily: Problemy, Resheniia. RVSN: God v Novom Kachestve."

⁴²¹ Il'shat Baichurin, "Vooruzhennyye Sily: Pul's Reformy. RVSN: God Spustia Posle Integratsii," *Krasnaia Zvezda* (1998).

⁴²² "Kontseptsiiia Stroitel'stva Vooruzhennykh sil Na Period do 2005 Goda," *Suvorovskii Natisk*, no. 91 (1997).; Prudnikov, "Sliianie Voisk PVO i VVS Zhiznenno Neobkhodimo;" Anatolii Sitnov, "Oruzhie

for strategic nuclear forces (with some funding also promised for non nuclear advanced technology).⁴²³ If the overall language spoke of strategic deterrent forces as a whole, it was clear that it was the SRF that would get these funds, not the bomber fleet or the submarines. Indeed, in August 1998, the Naval strategic forces' greatest civilian advocate, Andrei Kokoshin, was fired by Yeltsin from his position as National Security Council Secretary, in which he had been only since March.⁴²⁴

By contrast, officials discussing Russia's strategic future underlined the land-based missiles' prominent role in the state's nuclear strategy. As already discussed, their leading role in both launch on warning and ride-out scenarios were described in articles on the force.⁴²⁵ Moreover, MoD officials also promised that Topol-M deployment and revamping the space-based early warning system would be spending priorities going forward.⁴²⁶

This is not to say that all was well with the SRF. It got roughly half the funding it asked for in 1998 (even if, as noted above, its share of military spending had gone up.)⁴²⁷ Officials raised concerns about the longevity of equipment.⁴²⁸ Pay arrears to the SRF, as for other forces, continued.⁴²⁹ SRF garrisons tried to be self-sufficient with small farms and got help from local governments (just as submariners did).⁴³⁰ Indeed, Krasnoyarsk governor and retired general Aleksandr

Budushchego Sozdaetsia Segodnia," *Vestnik VoЕННОI Informatsii*, no. 1 (1998).; "Voennaia Doktrina i Reformirovanie Vooruzennykh Sil rossiiskoi Federatsii."

⁴²³ "Oruzhie Budushchego Sozdaetsia Segodnia."

⁴²⁴ Sergei Sokut, "Rossiia Soberet Iadernye Sily v Edinyi Kulak," *Nezavisimoe Voennoe Obozrenie* (1998).

⁴²⁵ Korotchenko, "Obnovleniie Strategicheskikh Sil;" Dolinin and Baichurin, "Vooruzhennye Sily: Pul's Reformy. RVSН V Novom Kachestve. S Press-Konferentsii, Posviashchennoi Integratsii RVSН, VKS, i Voisk RKO;" Korotchenko, "My Sokraniaem Vysokii Boevoi Potentsial;" "Daidzhest. Raketchiki Pervymi Vykhodiat Na Orbitu Reform;" "Boegotovnost' RVSН Vozroslo na .01 Protsenta."

⁴²⁶ "My Sokraniaem Vysokii Boevoi Potentsial."

⁴²⁷ Falichev, "Novyi God Pod 'Topoliami'."

⁴²⁸ "K Armii XXI Veka. Ot Integratsii RVSН Vyigrali. No ne Tol'ko."

⁴²⁹ Sergei Sokut and Aleksandr Shaburkin, "Prem'er Ministr v Gostiakh u Raketchikov," *Nezavisimoe Voennoe Obozrenie* (1998).

⁴³⁰ Yurii Kavelin, "Den' RVSН. Ofitserskoe Sobranie. Pervym Vsegda Trudnee," *Krasnaia Zvezda* (1998).

Lebed' offered to cover the salaries of missile troops based in his region, if he could then declare it an independent nuclear weapon state.⁴³¹

Moreover, if the SRF was organizationally strong at the end of the period, its continued power was in some doubt, as competing plans for the future of Russia's nuclear forces circulated. If nuclear forces were emphasized in rhetoric and spending in the near term, a longer-term program was announced as part of the 1998 military reform plan that would move Russia to a three-service (ground/air/sea) structure between 2001 and 2005.⁴³² This meant that the Strategic Rocket Forces would eventually be incorporated into the Air Force, although not before significant cuts in nuclear weapons numbers, in line with expected future arms control treaties (e.g., START III, multilateral agreements), had taken place.⁴³³ At that future time, conventional forces were promised more funding, and more attention.⁴³⁴

This, however, was not the only plan out there. A completely different approach was announced by the Defense Ministry in 1997. This plan would maintain the prominence of nuclear strategic forces, and particularly the SRF, by consolidating the three legs of the triad (along with the 12th Directorate of the Defense Ministry, responsible for designing, building and overseeing the nuclear weapon stockpile) as the Strategic Deterrent Forces.⁴³⁵ Reportedly, the SRF had long supported the idea of a unified strategic nuclear command. The Navy became an advocate of the approach late in the 1990s, and the Air Force continued to oppose it, suspecting that it would lead to a reduction in the role of strategic aviation.⁴³⁶ Reportedly, at the end of 1998 Sergeev signed off on an implementation approach

⁴³¹ "World: Europe. Lebed Threatens to Take Control of a Missile Unit," *BBC News*(1998), <http://news.bbc.co.uk/2/hi/europe/138810.stm>.; Falichev, "K Armii XXI Veka. Ot Integratsii RVSN Vyigrali. No ne Tol'ko."

⁴³² "Kontseptsiia Stroitel'stva Vooruzhennykh sil Na Period do 2005 Goda;" Prudnikov, "Sliianie Voisk PVO i VVS Zhiznenno Neobkhodimo;" Sitnov, "Oruzhie Budushchego Sozdaetsia Segodnia;" "Voennaia Doktrina i Reformirovanie Vooruzhennykh Sil Rossiiskoi Federatsii; Mikhail Timofeev, "Sokrashchenie RVSN Ob'ektivno Neizbezhno. Drugoe Delo, Skol'ko Vremeni Zaimet Etot Protsess," *Nezavisimoe Voennoe Obozrenie*, no. 27 (2000).

⁴³³ Sokut, "Zavershen Pervyi Etap Ob'edineniia VVS i PVO."

⁴³⁴ Sitnov, "Oruzhie Budushchego Sozdaetsia Segodnia."

⁴³⁵ Sokut, "V Novyi God - S Novoi Raketoi."f; Jacob W. Kipp, "Russia's Nonstrategic Nuclear Weapons," *Military Review* (2001).

⁴³⁶ Sokut, "Rossiia Soberet Iadernye Sily v Edinyi Kulak."

for this way forward, with SRF Chief Vladimir Iakovlev to be at the helm of the new organization (in the new position of Deputy Minister of Defense). However, as will be discussed in the next chapter, the plan was never implemented. Although approved by the President, it had not been vetted with the Ministry of Defense collegium, General Staff Chief Kvashnin, the National Security Council, or with Prime Minister Primakov.⁴³⁷

But whatever the organizational future of the forces, the government was starting to sound dire warnings about capability, even that of the much lauded and powerful SRF. First Deputy Prime Minister Yuri Masliukov estimated in 1998 that Russia would need to build between 35 and 45 missiles annually to make up for the degradation of its ICBMs and SLBMs.⁴³⁸ In July 1998, Yeltsin told his Security Council that the overall aging of the nuclear forces, as well as decline in early warning and command and control capabilities, presented continuing challenges.⁴³⁹ Yet, at that meeting, where the Security Council reported on a year-long analysis of Russia's nuclear arsenal and its future, undertaken with an expert commission, the result was largely affirmation of status quo plans, including planned life extension and force cuts. The one real action in support of the strategic nuclear forces was a promise on the part of the Yeltsin government that they would have their own explicit line item in Russia's federal budget starting in 1999.⁴⁴⁰ In addition, a late 1998 Presidential order created a Permanent Council on Nuclear Deterrence under the Security Council, meant to coordinate Russian nuclear policy.⁴⁴¹

In that same time-frame, the Duma Defense Committee introduced a bill on financing for the strategic nuclear forces through 2010. This bill, developed with the Ministries of Defense and Atomic Energy, was signed into law in 1999. It was meant to ensure that systems would be modernized, that life extension would take place, and that research would continue. It placed parameters on government spending,

⁴³⁷ "Ob'edinennoe Glavnoe Komandovanie Strategicheskikh Sil Sderzhivaniia kak Istochnik Protivorechii v Ministerstve Oborony."

⁴³⁸ "Rossiia Soberet Iadernye Sily v Edinyi Kulak."

⁴³⁹ Pel'ts, "Iz Kremliia. Sovet Bezopasnosti i Dolgosrochnoi Iadernoi Politike Gosudarstva."

⁴⁴⁰ Sokut and Shaburkin, "Prem'er Ministr v Gostiakh u Raketchikov;" "Iz Minoborony RF. Iadernaia Triada Rosii: Put' Razvitiia," *Krasnaia Zvezda* (1998).

⁴⁴¹ Oznobishchev, Potapov, and Volodin, "Predisolviie."

including that the forces should receive at least 40 percent of their annual funding within the first quarter, that funds not be used to pay for prior year debts, and that these budgetary assignments not be subject to sequestration. It also precluded the Duma from unilaterally cutting the strategic nuclear forces budget.⁴⁴²

Thus, Russia's Strategic Rocket Forces can be safely said to have inherited the Soviet Rocket Forces' general position of privilege in the MoD as a whole. Through most of the 1990s, however, this meant that the SRF remained in slightly better shape than other forces, as everything deteriorated.⁴⁴³ As of 1997-1998, it meant a bit more: the elevation of Igor' Sergeev raised the missile forces' bureaucratic clout even further, and promised it still more funding. Moreover, the government as a whole was promising more resourcing for the strategic nuclear forces, and the SRF, in the leading role, was poised to gain from this.

How the Theories Perform

Above, I laid out the postures that emerged between 1992 and 1998 (represented in Tables 5.1 and 5.3 above) and asked how the three theories developed for this dissertation might explain them. Specifically, I noted that the posture was not perfectly in line with any of the ideal types presented in Chapter 1, but that declaratory policy was largely in line with, early in the period, a Warfighting Escalatory approach, with the addition of rhetoric matching an Assured or Launch on Warning strategy later in the period. This included dropping the Soviet no first use pledge and consistent statements that the nuclear arsenal is meant to deter both nuclear and conventional threats. Russian officials also specifically stated that they saw the possibility of both ride-out and launch on warning in case of an adversary nuclear attack. In terms of force size, the rhetoric vacillated between espousal of minimalist approaches and insistence on the need for parity with the United States.

Meanwhile, the force structure was largely in line with a Strategic Escalatory posture, with an emphasis on silo-based ICBM systems. This was especially the case

⁴⁴² Igor' Korotchenko, "Finansirovanie Strategicheskikh Iadernykh Sil Budet Garantirovat' Zakon," *Nezavisimoe Voennoe Obozrenie* (1998).

⁴⁴³ As noted above, the ground forces also got proportionately more funding. However, much of this supported their efforts in Chechnya, which also ably demonstrated the deterioration of the force.

after 1994 when the deterioration of early warning capability made a Launch on Warning posture less viable. A brief shift towards a more survivable mix, with more mobile ICBMs deployed in line with an Assured posture, was not sustained. According to my theories, all of these postures are possible under different conditions.

Both of my systemic theories predict a Warfighting Escalatory posture when a state is most worried about conventional threats, as was the case at the start of this period. The Internal Balancing theory also requires that resources be constrained, but as the economy was doing poorly throughout, the two theories make the same prediction, with the only difference being that Internal Balancing theory expects larger forces than does Absolute Weapon theory. Later in the period, Russia's threat perception expanded to greater worry about nuclear attack. After 1994, the Kremlin's threat perception encompassed a mix of threats, including both small-scale and large-scale conventional dangers (the latter from NATO countries' higher technology conventional capabilities) as well as a strategic nuclear threat from the United States and NATO. Under such conditions, the two systemic theories predict Warfighting Escalatory components to be combined with either Assured or Launch on Warning elements (whichever approach is cheaper). Thus, throughout this time period, Russia's declaratory policy is in line with these two theories' predictions. Force structure, however, with its focus on silo-based ICBMs, is not.

It is possible that Russia simply did not have time to develop the capabilities that would have matched its rhetoric. But in the case of non-strategic weapons, at least, the fact that instead Russia actively chose to shrink that arsenal suggests that force plans really were at odds with official statements. Similarly the brief shift to mobile systems between 1994 and 1997 could be seen as a move towards an Assured posture. According to the systemic theories, this was most likely to happen if Russia felt that mobile ICBMs were cheaper than silo-based systems in the period between 1994 and 1997. Since the uptick in mobile systems was driven by the deployment of Topol systems already in the pipeline, this is plausible. Moreover, the shift back to silo-based systems after 1997 could have been financially driven. Not knowing the internal debates, this cannot be determined definitively, but again, it is

plausible. However, if Russia were building towards either an Assured or a Launch on Warning posture in this way, we would have expected more emphasis on early warning capabilities. Their deterioration thus undermines this tenuous support for these two theories.

The only theory that predicts the Strategic Escalatory posture that matches force structure is the Cultural/Bureaucratic Theory. The independent variable relevant to that theory is whether or not there are challenges to the preeminence of the Strategic Rocket Forces. Between 1992 and 1998, there were not. Although the armed forces as a whole suffered from underfunding, the Strategic Rocket forces did far better than most, and much better than, for example, the SSBN fleet, which almost perished due to lack of weapons. Their prominence was further reinforced when the former SRF commander became Defense Minister in 1997. Under these conditions, the theory predicts something that looks like a Strategic Escalatory posture, with an emphasis on ICBMs, particularly silo-based ICBMs, but without much attention paid to non-strategic systems, early warning, bombers, or submarines. It also predicts a tendency to aim for parity, if not supremacy in numbers. Notably, the theory allows for the possibility that declaratory policy will not align well with force posture. This is, of course, very much what we see throughout this period.

Returning to the three sub-periods identified earlier in this chapter, I present below the predictions of the different theories and the actual outcomes side by side, differentiating between declaratory policy and force structure, since these have proven to be somewhat misaligned.

Table 5.4: Predictions and Reality, 1992-1998

Years	Absolute Weapon	Internal Balancing and Prestige	Cultural/Bureaucratic	Actual Posture
1992-1994	Warfighting Escalatory (WE); minimal size	WE; Parity+	Strategic Escalatory (SE); maximal size	Declaratory: WE; both minimal size and parity Force structure: SE, parity
1994-1997	(Assured or LoW) +WE; minimal size	(Assured or LoW) +WE ; Parity+	SE; maximal size	Declaratory: (Assured or LoW) + WE; Both minimal and parity Force structure: SE (→Assured), parity
1997-1998	Assured or LoW +WE; minimal size	Assured or LoW +WE; parity+	SE; maximal size	Declaratory: (Assured or LoW) + WF. Both minimal and parity Force structure: SE, parity

Thus, while this period is not fully determinative, the two systemic theories get some support from declaratory policy, but very little from force structure. The Absolute Weapon theory performs worst, because of its predictions of minimalism. This said, aspects declaratory policy suggest that perhaps at least some Russian officials believed in a variation of that theory. The Cultural/Bureaucratic theory performs best at predicting force structure and, because it allows for disconnects between declaratory policy and force structure, it performs best overall.

Conclusion

Between 1992 and 1998, Russia's economy was in terrible condition and domestic politics in disarray. Foreign policy perceptions, meanwhile, shifted over the course of these seven years. In the early part of the period, through about 1994, Russian officials generally saw the greatest threats to their nation as coming from conventionally armed adversaries, generally in the form of unrest on Russia's borders. Later, as relations with the United States and NATO worsened, the nuclear threat posed by those powers became relevant as well, although their conventional capabilities were probably even more important when Russians considered possible

scenarios for conflict. Meanwhile, while Russia's armed forces as a whole, like most everything else in its government, were deeply underfunded and deteriorating, the Strategic Rocket Forces generally did better than any other component of the force. With their former commander as Minister of Defense, they continued to receive new missiles and maintained comparatively high levels of readiness (if perhaps, not as high as reported). This was in sharp contrast to the SSBN force, which required senior civilian intervention to make it possible to maintain sufficient missiles for its submarines.

Between 1992 and 1994, when Russia was predominantly worried about conventional threats, the two systemic theories introduced in Chapter Two both predict Warfighting Escalatory postures, although the Absolute Weapon theory predicts minimal force size and Internal Balancing predicts a more maximalist approach. During the rest of the period, when Russia began to worry about nuclear threats as well, these theories predict either that Warfighting Escalatory approaches will remain in place, but will be bolstered by either Assured or Launch on Warning capabilities, whichever of the two proves cheaper. Again, the Absolute Weapon theory predicts this with minimal force size goals while the Internal Balancing theory predicts aspirations to at least parity, and possibly more. Throughout the entire time frame, from 1992-1998, because the SRF was never particularly challenged, the Cultural/Bureaucratic theory predicts a Strategic Escalatory posture—with emphasis on silo-based strategic weapons and a lack of emphasis on early warning capabilities.

In fact, early in the period, Russia's declaratory policy matched a Warfighting Escalatory posture: Moscow dropped the USSR's pledge of "no first use" of nuclear weapons in its first military doctrine in 1993, although officials and analysts alike evidenced discomfort with the idea that nuclear weapons could really make up for conventional weakness, at least for very long. This choice is in line with both systemic theories, but the concern about it suggests that Russian perspectives may have been more in line with Internal Balancing and Prestige theory, which posits at least some disinclination to use nuclear weapons to deter conventional threats, although economic constraints can overpower it. Internal Balancing is also

supported by Russia's concern with maintaining parity with the United States in its force size, despite the lip service paid to minimalism. The force structure, however, looks far more like the Strategic Escalatory posture predicted by the Cultural/Bureaucratic Theory. Because that theory is neutral on what sort of declaratory policy there might be, and also predicts a desire for larger numbers and parity, it is the strongest performer. But the outcome is far from clear. For the most part, Russia appears to have had difficulty deciding what its strategy should be while it continued to build the weapons that its bureaucracy predisposed it towards.

Chapter Six: 1999-2002, The Beginning of Economic Resurgence

Introduction

Russia's economy began to improve noticeably after 1999, surprising many who expected a slow recovery in the wake of the 1998 crisis and the turmoil that came before it. Although few were confident that the economic upturn would last, more funds enabled more spending on defense, some of which went towards the costs of a renewed civil war in Chechnya. Meanwhile, Boris Yeltsin was replaced by his handpicked successor. Former KGB officer and St. Petersburg city apparatchik Vladimir Putin became Prime Minister in August of 1999. Months later, on December 21, Yeltsin resigned and Putin became acting President. He was elected President in March 2000 and formally inaugurated in May.

Russia's force structure, meanwhile, largely continued to follow the trends established earlier in the 1990s. Moscow maintained its Strategic Rocket Forces comparatively well, while the submarine and early warning systems deteriorated further. The strategic bomber fleet got a boost from the return of aircraft from Ukraine, and its optempo increased as Russia began using bombers in more exercises. However, modernization and upgrades to existing aircraft were painfully slow, and it was not clear how many of the planes were fully operational. Moreover, officials increasingly emphasized their conventional, rather than nuclear, role. Nonstrategic nuclear forces received no real attention, although dismantlement appeared to have fallen slightly behind plans. Safeguard programs and approaches petered out, mostly due to U.S. disinterest.

These trajectories remained consistent even in the wake of the U.S. withdrawal from the ABM treaty and Russia's subsequent declaration that it would not continue to abide by START II. The latter freed Russia to maintain MIRVed ICBM systems for longer, and to deploy new ones. But while Russian statements indicated plans along these lines, the development of new MIRVed ICBMs did not begin immediately, and despite some life-extension, the old systems continued to be dismantled.

Russian declaratory policy, however, was less consistent. Despite the fact that Russia was fighting a conventional fight at home, the period started with a substantial rhetorical emphasis on nuclear weapons, with talk of “de-escalatory” nuclear strikes against conventionally armed adversaries. This did not last long, however. In 2000, nuclear weapons were de-emphasized in favor of conventional capabilities. Parity, nonetheless, remained important, which meant that in order to shrink its nuclear arsenal, Moscow had to become a stronger proponent of arms control, to ensure that the U.S. force shrunk as well. This seemed plausible as relations seemed to briefly improve in the wake of the September 11, 2001 attacks on the United States. But both prospects for cooperation and the arms control agenda were soon sidelined by renewed tension. The U.S. choice to withdraw from the ABM treaty was followed by Russian abandonment of START II, and then the far less restrictive SORT (or Moscow Treaty). Force structure was not immediately affected, but declaratory policy shifted yet again. While “de-escalation” did not return, Russian officials expressed significant concern about their second strike capability, indicating that Russia sought to maintain ride-out as an option (preferred or not) for a large-scale conflict.

Table 6.1, below, illustrates these shifts, accompanied by the “ideal” postures presented in Chapter One. As in Chapter Five, the arrows indicate trends for each system: whether systems were getting more resourcing and programs were successful (arrow up), if systems were deteriorating, whether relatively to others or absolutely (arrow down), or if they were holding even (arrows side to side). Again, since Russia continued to cut its strategic nuclear force numbers in line with treaty commitments, total numbers for all systems dropped and do not define trends.

Table 6.1: Posture 1999-2002

Postures		1999-2000	2000-2002	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy								
Declaratory Policy		First use, "deescalation" in conventional conflict	Nuclear deterrence of nuclear weapons, emphasis on parity	No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↑	↑					✓
	Silo-based ICBMs	↑	↑	✗	✗	✓	✓	✗
Survivable/ second strike	Mobile ICBMs	↔	↔	✓	✓	✗	✗	✗
	SLBMs	↓	↓					
	NSNF	↓	↓	✗	✗	✗	✗	✓
	Early Warning	↓	↓	✓	✓	✓	✓	✗
Safeguards		↑	↔	✓	✗	✓	✗	✗

As in the first years of independence, the match between Russia’s posture at the turn of the century to the archetypes is imperfect. In late 1999, Russian declaratory policy emphasized a Warfighting Escalatory approach in conventional contexts combined with an Assured or Launch on Warning posture towards nuclear adversaries. The force structure, however, continued to look far more like a Strategic Escalatory posture. Specifically, while Russian rhetoric allowed for small-scale nuclear use for “de-escalation,” Russia paid little attention to the non-strategic nuclear forces such an approach would require. The strategic force structure maintained its emphasis on silo-based systems (while mobile missiles held their own as a share of the force, new deployments focused on silo-based systems). Moreover, the continued deterioration of early warning limited Russia’s capacity to, in fact, launch on warning.

In the latter half of the period, the force structure remained much the same, with the only difference being even less interest in safeguards (particularly on the part of the United States). Declaratory policy, however, shifted towards one appropriate to an Assured posture, with a particular emphasis on ride-out. It was also compatible with Launch on Warning, which remained an option in rhetoric. However, the lack of priority on either early warning or survivable systems surely threatened both Russia’s ride-out and rapid response capacity far more than did the U.S. missile defense plans Russian officials said were at the heart of their worries.

The stress on parity also remained, both in rhetoric and in efforts to keep force numbers up.

Both the Absolute Weapon and Internal Balancing theories can be interpreted to predict postures for 1999-2000 that match the declaratory policy of those years, particularly if we assume a lag for economic effects. Absolute Weapon theory predicts a combination of an Assured and a Warfighting Escalatory posture when both nuclear and conventional threats are relevant and the economy is doing well. The Internal Balancing and Prestige Theory predicts an Assured posture, without Warfighting Escalatory elements, under these conditions. However, they both predict Warfighting Escalatory approaches combined with either Assured or Launch on Warning ones (depending on which is cheaper) if threats are mixed and the economy is doing poorly. Thus, while Absolute Weapon would seem to do far better on overall posture approaches on the face of it, given that Russia's economy was on the mend, if we accept that there was little confidence in its success (as discussed in Chapter Four), then both theories find some support in the rhetoric. Moreover, the strong emphasis on parity in force size is more in line with the Internal Balancing and Prestige theory.

This said, both systemic theories predict that force posture will match the declaratory policy and, as noted above, it does not. Rather, the force structure that we see is a Strategic Escalatory approach that neither theory predicts.

Similarly, in the second half of the period, when resourcing had stabilized but the threat environment was largely unchanged, the theories, of course, have those same predictions. Declaratory policy in this period thus matches the predictions of the Internal Balancing Theory better. That theory is further strengthened by the continuing emphasis on parity, rather than the minimalism the Absolute Weapon Theory predicts. The disconnect from force structure, however, continues, and is difficult for either of these theories to explain.

The Cultural/Bureaucratic explanation, which makes no specific predictions for declaratory policy, is a very good fit for force structure in 1999-2000. As long as the SRF is not challenged, it predicts an SRF-heavy Strategic Escalatory posture but with potentially some gaps in early warning capabilities. It also, like the Internal

Balancing theory, predicts an effort to build a larger force. All of this is largely what we see during into 2000, with the SRF riding strong, its former commander Sergeev still in charge of the Defense Ministry and plans to consolidate all of Russia's strategic nuclear forces in a force led by SRF officials.

However, by the end of 2000, General Staff chief Anatoly Kvashnin had successfully lobbied to reverse many of the policies that had strengthened the SRF in favor of conventional systems. But while there was talk of more privilege for the Navy, especially, this did not materialize. The fact that while the SRF were weakened vis-à-vis conventional forces but much the same hierarchy was maintained among the components of Russia's strategic arsenal means that this theory does not succeed in predicting the reality of these years. It is plausible that the policy shift simply did not last long enough to make a force structure difference, and it is true that the limited change in emphasis may have helped ensure that the submarine fleet survived. And the theory does predict that change will not be sustainable absent a larger cultural shift. However, what we see is not unsustainable change, but very little change.

Thus, results are ambiguous, but still potentially instructive. I note first the tendency for declaratory policy to align with the Internal Balancing theory, even though force structure does not. Force structure, for its part, initially aligns best with the predictions of the Culture and Bureaucracy Theory, but the theory's performance is weakened by absence of real shifts in posture, which the theory predicts after 2000. Indeed, none of the theories predict the force structure that we see between 2000 and 2002. The continued emphasis on parity, and rejection of minimalism, is also important, and is in line with both the Internal Balancing theory and the Culture and Bureaucracy theory.

As in the previous chapter, this chapter begins with a detailed discussion of how Russia's force posture between 1999 and 2002 evolved, component by component. It then outlines what my theories have to offer in explaining these phenomena. To evaluate the performance of the theories, I step back to assess the independent variables: Russia's threat perception and the degree to which the Strategic Rocket Forces are and are not challenged. Based on this, I conclude with an

evaluation of what this period says about the capacity of my theories to explain Russian posture.

Defining Russian Force Posture

As I did in Chapter Four, to describe Russian force posture, I unpack each component in turn. In Russia's declaratory policy, I am looking for evidence of:

1. willingness to use nuclear weapons first in a conflict;
2. willingness and plans to use nuclear weapons against non-nuclear weapon states;
3. whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
4. attitudes towards parity/minimalism and survivability.

For force structure, I look at the evolution of Russian capabilities one subset at a time:

- ICBMs, including less survivable silo-based ICBMs and more survivable mobile ICBMs.
- More survivable SLBMs
- Long-range bombers
- Early warning capabilities
- Non-strategic systems
- Safeguards

Declaratory Policy and Strategy

Russian declaratory policy and seeming strategy went through several iterations over the course of the four years covered by this chapter. Official policy as of 1999 still allowed for nuclear weapons use only when all else has failed, to guarantee Russian territorial integrity and sovereignty. In early 1999, officials emphasized this phrasing.⁴⁴⁴ As the period went on, however, there were calls for a change in Russia's declaratory policy to either allow for first use in a conflict

⁴⁴⁴ B. Kipkeev, "Iadernoe Oruzhie--Garant Bezopasnosti Rossii," *Suvorovskii Natisk* (1999).

(whether with tactical or strategic weapons), or simply to create more ambiguity on the matter and thus increase flexibility (the latter being an argument made by Andrei Kokoshin).⁴⁴⁵ Moreover, the concept that nuclear weapons could make up for conventional inferiority, at least in the near term, also remained part of Russian official statements.⁴⁴⁶ How exactly they would do this was initially unclear. Between 1999 and 2002, however, a number of approaches were advanced to define just how conventional conflict could require Russian nuclear weapons.

The logic that attracted most attention was that forwarded by Levshin, Nedelin and Sosnovskiy, who, in a 1999 piece in *Voennaia Mysl*, presented a formula for limited nuclear strikes by Russia that could “de-escalate” a conflict by signaling Russian resolve.⁴⁴⁷ One could argue that this was simply a way of making deterrence more credible, by maintaining genuine plans for nuclear use, and some made the case that indeed, for effective deterrence, Russia needed nuclear warfighting plans which clearly integrated tactical and strategic elements.⁴⁴⁸ Others saw these discussions, however, as a sign that Russia sought to lower the nuclear threshold and make its arsenal usable in the context of plausible conflicts.⁴⁴⁹ In line with this argument, Russian proponents of a lower threshold argued that their country’s tactical nuclear weapons could play a strategic role, helping to compensate for conventional weakness as well as deterring conventional or nuclear attack.⁴⁵⁰ One expressed concern that U.S. missile defenses would not only weaken a Russian

⁴⁴⁵ "Sformulirovannaia Andreem Kokoshinyim Ideia Novoi Iadernoi Strategii Rossii Stala Sensatsiei," *Agenstvo Voennykh Novostei* (1999); "Pervyi Udar Ostaetsia Vazhnyv Elementom Soveremennoy Iadernoi Politiki Rossii," *Voprosy Bezopasnosti* (1999).

⁴⁴⁶ Sergei Rogov, "Voennaia Reforma. Vzgliad Zpetsialista. Rossiia i Iadernoe Oruzhie," *Flag Rodiny* (1999).

⁴⁴⁷ V.I. Levshin, A.V. Nedelin, and Mikhail Sosnovskiy, "Use of Nuclear Weapons to Deescalate Military Operations," *Voennaia Mysl*, no. 3 (1999).

⁴⁴⁸ S. V. Kreidin, "Global'noe i Regional'noe Iadernoe Sderzhivanie: K Sisteme Printsipov i Kriteriev," *Voennaia Mysl*, no. 4 (1999).

⁴⁴⁹ See the discussion of Levshin, et al in Oliker and Charlick-Paley, *Assessing Russia's Decline: Implications for the United States and the U.S. Air Force* and Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*.

⁴⁵⁰ V. A Ivasik, A. S. Pis'iaukov, and A. L. Khriapin, "Iadernoe Oruzhie i Voennaia Bezopasnost' Rossii," *Voennaia Mysl*, no. 4 (1999); S. V. Kreidin, "Problemy Iadernogo Sderzhivania: Boevaia Ustoichivost' Iadernogo Potentsiala," *Voennaia Mysl*, no. 3 (2000).

second strike capacity, but also limit its ability to use “de-escalatory” strikes against the adversary’s homeland.⁴⁵¹

There were some signs in 1999 that the “de-escalation” argument was becoming integrated into policy. Vladimir Putin, then Secretary of the Security Council, spoke of the use of non-strategic nuclear forces as a component of deterrence in the context of a Yeltsin promise to renew the nuclear weapons complex overall.⁴⁵² In April of that year, there may even have been an effort to threaten nuclear weapons use in support of Serbian President Milosevic, then facing NATO attacks. Russian President Yeltsin publicly referenced using nuclear forces based in Belarus. The Belarusian government indicated that it had no plans to host Russian nuclear weapons, however. Moreover, Russia’s signaling, never fully clear, did not seem to particularly affect the NATO calculus.⁴⁵³ Later, a June 1999 military exercise, Zapad-99, modeled Russian nuclear strikes on enemy territory undertaken to stop a conventional opponent.⁴⁵⁴

Russia’s new national security concept and military doctrine, both issued in 2000, dropped the threshold for nuclear use, in seeming alignment with a “de-escalation” approach. The concept, published in January, allowed for “use of all available forces and assets, including nuclear, in the event of need to repulse armed aggression, if all other measures of resolving the crisis situation have been exhausted and have proven ineffective.”⁴⁵⁵ The new doctrine, issued in April (though a draft was circulated the previous October), stated that Russia reserved

⁴⁵¹ V. A. Vakhrushev, "Lokal'nye Voyny i Vooruzhennye Konflikty: Kharakter i Vliianie Na Voennoe Iskusstvo," *Voennaia Mysl*, no. 4 (1999).

⁴⁵² Jacob W. Kipp, "Russian Doctrine on Tactical Nuclear Weapons: Contexts, Prisms, and Connections," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, and Jeffrey D. McCausland (Carlisle, PA: Strategic Studies Institute, 2012).

⁴⁵³ "Konflikt v Jugoslavii Pokazal: Rossiia Ne Znaet, Chto Delat' s Iadernym Oruzhiem," *Voprosy Bezopasnosti* (1999).

⁴⁵⁴ Nikolai Sokov, "Russian Perspectives on Non-Strategic Nuclear Weapons," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, and Jeffrey D. McCausland (Carlisle, PA: Strategic Studies Institute, 2012) argues that the 2000 doctrine accepted de-escalation as a tenet.

⁴⁵⁵ "National Security Concept of the Russian Federation, Approved by Presidential Decree No. 24 of 10 January 2000," (Office of the President of the Russian Federation, 2000), available in English translation at the website of the Ministry of Foreign Affairs of the Russian Federation: <http://www.mid.ru/bdomp/ns-osndoc.nsf/1e5f0de28fe77fdcc32575d900298676/36aba64ac09f737fc32575d9002bbf31!OpenDocument>.

the right to nuclear weapon use if faced with “large-scale aggression by conventional weapons in situations deemed critical to the national security of the Russian Federation.”⁴⁵⁶

However, by the time the new concept and doctrine were issued, there was increasing evidence that support for “de-escalation” was not unanimous, and perhaps had even been rejected. Deputy General Staff Chief Manilov reiterated in late 1999 that nuclear deterrence was meant to prevent an attack on the country, and dismissed the possibility of nuclear use in a local conflict.⁴⁵⁷ Indeed, although the Zapad-99 exercise was likely developed in line with thinking about the doctrine to come, the exercise itself may have led Russian officials and thinkers to question the “de-escalation” premise. Soon after the exercise, President Yeltsin discounted the possibility of such a large-scale conventional attack.⁴⁵⁸ Jacob Kipp has argued that even Defense Minister Sergeev was unconvinced of the warfighting potential of nuclear weapons.⁴⁵⁹ It is not even clear to what extent the concept was incorporated into planning and operations: Russian proponents of “de-escalation” argued that Russia must improve its command and control capabilities and to generally implement better planning. This suggests that even if the concept was accepted by Russian leaders as policy, it may not have been integrated into Russian planning and approaches.⁴⁶⁰

Whether or not this is true, there were good reasons to question the logic of scenarios based in an overwhelming conventional attack on Russia, as Russian forces continued to be far more active in domestic and local conflicts, especially in

⁴⁵⁶ "Military Doctrine of the Russian Federation: Approved by Order of the President of the Russian Federation on April 21, 2000, Order No. 706," (Security Council of the Russian Federation, 2000).

⁴⁵⁷ Oleg Falichev, "General-Polkovnik Manilov," *Krasnaia Zvezda* (1999).

⁴⁵⁸ Kipp, "Russia's Nonstrategic Nuclear Weapons." Of course, by the time the concept and doctrine were issued, he was no longer President, having been replaced by his hand-picked successor, Vladimir Putin, who became acting President on New Year's Eve Day 1999, was elected in March of 2000, and inaugurated in May. One could argue, therefore, that the concept and doctrine were Putin's, not Eltsin's.

⁴⁵⁹ Ibid.

⁴⁶⁰ Ivasik, Pis'iaukov, and Khriapin, "Iadernoe Oruzhie i Voennaia Bezopasnost' Rossii; Kreidin, "Global'noe i Regional'noe Iadernoe Sderzhivanie: K Sisteme Printsipov i Kriteriev; Vakhrushev, "Lokal'nye Voiny i Vooruzhennye Konflikty: Kharakter i Vliianie Na Voennoe Iskusstvo; P. I. Dubok and N.A. Zakaldaev, "O Nekotorykh Voprosakh Upravleniia Raketnymi voiskami i Artilleriei Pri Osushchestvlenii Regional'nogo Iadernogo Sderzhivaniia," *Voennaia Mysl*, no. 6 (1999).

Chechnya, which were not going to escalate to involve other states. Its most likely contingencies thus left little room for a nuclear role.

This reality likely strengthened those, like General Staff chief Kvashnin, who argued that Russia had made a mistake in emphasizing nuclear capabilities over conventional. Air power proponents also had their doubts, and sought to emphasize the capabilities of strategic aviation in a conventional role, for instance with conventional cruise missiles.⁴⁶¹ In late 1999, 37th Air Army Commander Mikhail Oparin suggested developing a conventional air deterrence regiment.⁴⁶² But it was 2000 before these views became preponderant.

More attention to conventional capabilities did not mean, as Jennifer Mathers argues, that Russia instituted a minimal nuclear deterrence strategy. Although both the 2000 Russian National Security Concept and statements made in an interview by President Vladimir Putin early in his presidency call for “sufficiency” of military forces, (echoing language of the Gorbachev years and the mid 1990s, as discussed in Chapter Four)⁴⁶³ this related to Russia’s military forces as a whole. In regard to nuclear weapons, discussions of minimalism (characteristic of the early and mid 1990s, as discussed in Chapter Four) had been dropped: the concept clearly calls for parity with the United States and the capacity to inflict the “desired extent of damage against any aggressor state or coalition of states in any conditions and circumstances.”⁴⁶⁴

This is not to say that Russia was opposed to lower numbers. However, Russia’s desire for a smaller arsenal was not rooted in a belief that lower numbers were a good in themselves. Rather, Moscow knew that its arsenal was shrinking

⁴⁶¹ Anatolii Dokuchaev, "Vzgliad Iz Redaktsii. S Raschetom Na Nepriemlymi Ushcherb," *Krasnaia Zvezda* (1999); Mikhail Mikhailovich Oparin, "Rol' Dal'nei Aviatsii v Obespechenii Natsional'noi Bezopasnosti Rossii," *Armeiskii Sbornik*, no. 10 (1999).

⁴⁶² "Komandovanie VVS Predlagaet Sozdat' Aviapolk, Reshaiushchii Zadachi Neiadernogo Sderzhivaniia Protivnika," *Agenstvo Voennykh Novostei* (1999).

⁴⁶³ Jennifer Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," *Europe-Asia Studies* 64, no. 3 (2012), pp. 498, 499

⁴⁶⁴ "National Security Concept of the Russian Federation, Approved by Presidential Decree No. 24 of 10 January 2000," (2000, available in English translation at the website of the Ministry of Foreign Affairs of the Russian Federation: <http://www.mid.ru/bdomp/ns-osndoc.nsf/1e5f0de28fe77fdcc32575d900298676/36aba64ac09f737fc32575d9002bbf31!OpenDocument>).

regardless. Its weapons numbers were already below those called for by its START commitments. Russia was thus looking for ways to ensure that a smaller arsenal was sufficient for parity purposes. If Russia's numbers were going down, they wanted the U.S. to go down, as well. Arms control was the means by which to accomplish this. Thus, Russian officials supported START II and called for a follow-on to START III.⁴⁶⁵

Then there was the question of the actual numbers. In February of 2000, General-Major Vladimir Belous, then head of the Center for International and Strategic Studies, speculated that 1200-1500 intercontinental ballistic missiles would be sufficient, assuming the United States remained bound by the ABM treaty.⁴⁶⁶ 1500 strategic warheads was also the number cited in some discussions of a possible START III treaty, and it was the number presented by Russian President Vladimir Putin in his proposal for more radical cuts in November 2000.⁴⁶⁷

Russia's policies changed once again when the United States withdrew from the ABM treaty in the summer in 2002, having signaled at the end of 2001 that it would do so. As it had previously indicated it would, Russia quickly announced that it would no longer be bound by START II and would retain MIRVed ICBM systems, which that treaty would have banned. With this, Russia was abandoning a key

⁴⁶⁵ "Minoborony Rossii Zainteresovano v Podpisanie SNV-3," *Zakavkazskie Voennye Vedomosti* (1999); Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001," V. M. Baryn'kin, "Voennye Ugrozy Rossii i Problemy Razvitiia Ee Vooruzhennykh Sil," *Voennaia Mysl*, no. 1 (1999); Vladimir Putin, "Speech at a State Duma Meeting to Consider the Ratification of the Treaty between Russia and the United States on the Further Reduction and Limitation of Strategic Offensive Arms (START-2) and Documents Relating to the May 26, 1972 Treaty Between the USSR and the US on the Limitation of Anti-Ballistic Missiles," http://archive.kremlin.ru/eng/text/speeches/2000/04/14/0100_type82912type84779_122392.shtml; "National Security Concept of the Russian Federation, Approved by Presidential Decree No. 24 of 10 January 2000," (2000, available in English translation at the website of the Ministry of Foreign Affairs of the Russian Federation: <http://www.mid.ru/bdomp/ns-osndoc.nsf/1e5f0de28fe77fdcc32575d900298676/36aba64ac09f737fc32575d9002bbf31!OpenDocument>; Anatolii Antipov, "Zemlia-Nash Obshchii Dom. SNV-2: Bezopasnost' Na Paritetnykh Nachalakh," *Morskaia Gazeta* (2000); Valerii Aleksin, "Glavnye Ugrozy Bezopasnosti Rossii--Vnutrennie," *Nezavisimoe Voennoe Obozrenie* (2000); "Est' Li Budushchee u Dogovora po PRO," *Voprosy Bezopasnosti* (2000).

⁴⁶⁶ "V Rossiiskikh i Amerikanskikh Interesakh - Ne Peresmatrivat' Dogovor po Pro, a Sokrashchat' Kolichestvo Raket," *Agenstvo Voennykh Novostei* (2000).

⁴⁶⁷ Anatolii D'iakov and Pavel Podvig, "Na Povestke Dnia Dogovor SNV-3," *Nezavisimoe Voennoe Obozrenie* (2000); "Rossia Predlozhila SSHA Sovemstno Snizit' Uroven' Global'noi Iadernoi Opasnosti," *Agenstvo Voennykh Novostei* (2000).

cornerstone of arms control. The SORT (or Moscow Treaty), signed in May 2002, after the U.S. had announced its intention to leave ABM, offered little in the way of restraining the United States aside from a unilateral commitment to cut numbers. However, unlike the START II treaty, SORT placed no limits on MIRVed missiles.⁴⁶⁸

Although Putin said that nuclear production was “not a priority” during his press conference with U.S. President George W. Bush after the SORT signing,⁴⁶⁹ the clear statement of a plan to retain and build new MIRVed systems indicated a shift in emphasis back both to nuclear weapons. Defense Minister Ivanov, in a piece defending SORT in the Russian journal *Mezhdunarodnaia Zhizn'*, argued that strategic stability was improved on the one hand by fewer strategic offensive weapons, and on the other by more nuclear warheads per missile, which, he asserted, improved deterrence. Ivanov did not explain the logic of his argument.⁴⁷⁰

The predominant Russian argument for why missile defenses were unstable was that they would weaken Russia's second-strike capability, and thus its deterrent.⁴⁷¹ From the time Russia withdrew from START II, it has touted heavy, MIRVed systems as the means to overcome possible missile defense systems.⁴⁷² Moscow's worries about U.S. “upload” potential: its ability to add warheads to systems in violation of treaties, made possible by keeping large numbers of warheads in storage, were also framed partly in the context of a second strike capability (some also argued that upload capacity would hurt Russia's launch on warning, or even first strike, effectiveness).⁴⁷³

Russia was also consistently concerned with the possibility of an unexpected first strike by the United States, so much so that Stephen Cimbala wrote in 2001 the capacity to respond to a surprise attack was a focus of contemporary Russian

⁴⁶⁸ Robert S. Norris, William M. Arkin, and Hans M. Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002," *The Bulletin of the Atomic Scientists* 58, no. 4 (2002).

⁴⁶⁹ Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," p. 505. The comment can be found in Vladimir Putin, "Joint Press Conference with US President George W. Bush,"

http://archive.kremlin.ru/eng/speeches/2002/05/24/0002_type82914type82915_150597.shtml.

⁴⁷⁰ Sergei Ivanov, "Strategicheskaiia Stabil'nost' Na Soveremennom Etape," *Mezhdunarodnaia Zhizn'*, no. 8 (2002).

⁴⁷¹ M. Gerdov, "Chto Daet Ratifikatsiia Dogovora SNV-2?," *Dialog* (2000).

⁴⁷² See *Interview to Al Jazeera Television Channel*, (2003).

⁴⁷³ "Chto Daet Ratifikatsiia Dogovora SNV-2?."

strategy.⁴⁷⁴ Indeed, Duma Defense Committee Deputy Chair Musatov argued that survivability of systems (as well as improved command and control) was critical if Russia hoped to have a second strike capability, and thus credible deterrence, in a missile defense environment.⁴⁷⁵ Others wrote of the importance of bombers and, of course, early warning.⁴⁷⁶ However, rather than promoting more survivable SLBMs and mobile ICBMs, officials and analysts insisted that the Topol-M system (particularly when MIRVed) was more than adequate to overcome any possible missile defenses.⁴⁷⁷

Moreover, while most of the missile defense discussion would suggest that Russia was concerned about a retaliatory capacity, this is countered by an article Deputy Defense Minister Mikhailov published in the military daily *Krasnaia Zvezda* in 1999. There, he argued that another state's efforts to reduce its susceptibility to a nuclear first strike weakens Russia's deterrent and thus threatens Russia. This suggests that Russia also viewed first strike capability as a component of deterrence, although what was being deterred in this way was not specified.⁴⁷⁸

Importantly, nuclear weapons were also consistently described as a symbol of Russia's status as a great power and important for that reason. In late 2002, SRF Commander Solovtsov published a piece in *Krasnaia Zvezda* describing Russia's strategic nuclear weapons as critical both for deterrence and for maintaining Russia's great power status.⁴⁷⁹ Another article lauded the Topol-M force for proving Russia to be a great power, despite its economic difficulties.⁴⁸⁰ This, of course, is in line with the desire for parity.

⁴⁷⁴ Cimbala, "Russia's Nuclear Command and Control."

⁴⁷⁵ Mikhail Musatov, "Strategicheskie Iadernye Sily Rossii: Kakimi Im Byt'?", *Morskoii Sbornik* (2000).

⁴⁷⁶ Sergei Sokut, "Vashington Vnov' Reanimiruet Programmu 'Zvezdnykh voin'," *Nezavisimoe Voennoe Obozrenie* (1999); "Obrushitsia Sistema Strategicheskoi Stabil'nosti," *Nezavisimoe Voennoe Obozrenie* (1999).

⁴⁷⁷ "Rossiia Namerena Predpriiat' Dopolnitel'nye Usiliia Dlia Aktivizatsii Dialoga s Soedinennymi Shtatami po Povodu PRO," *Voprosy Bezopasnosti* (1999); "Popytki SSHA Narushit' Strategicheskoe Ravnovesie Mogut Vernut' Mir Vo Vremena Gonki Vooruzhenii," *Agentstvo Voennykh Novostei* (1999); Valerii Aleksin, "Otvety Na Amerikanskii Vyzov Imeiutsia," *Nezavisimoe Voennoe Obozrenie* (2000).

⁴⁷⁸ Nikolai Mikhailov, "Natsional'naia Bezopasnost' Na Rubezhe Vekov," *Krasnaya Zvezda*, November 16, 1999.

⁴⁷⁹ Nikolai Solovtsov, "Garantiia Bezopasnosti," *Krasnaia Zvezda* (2002).

⁴⁸⁰ Iurii Kozhukh, "Vzgliad Voennogo Obozrevatel'ia. Illiuzii i Real'nost', Ili 'Topol'-M' Kak Sredstvo Otrezvlenniia Goriachikh Golov," *Flag Rodiny* (1999).

In sum, Russia's declaratory policy and, most likely, at least some aspects of its strategy changed several times between 1999 and 2002. Evidence suggests that in 1999, Moscow lowered the threshold for nuclear use and may have integrated a "de-escalatory" strike concept into its doctrine. Late in 2000, however, it stepped away from an emphasis on nuclear capacity, and sought arms control agreements that would limit U.S. numbers, demonstrating a continued interest in parity, if not in minimal deterrence. The desire for parity remained important after the United States withdrew from the ABM treaty. Russia then rejected START II, and from that time forward began to (at least rhetorically) emphasize MIRVed systems. Moscow now sought to maintain parity in part by putting more warheads on missiles. Official statements suggested that Russia was concerned about a U.S. first strike, and thus needed the capacity to either launch on warning or ride out that attack.

ICBMs

Production of Topol-M (SS-27) missiles remained slower than promised from 1999-2002. Rather than the dozens of missiles per year projected by Russian officials, Russia deployed at best a handful of these systems annually (and some years, no new missiles joined the force).⁴⁸¹ In 1999, MITT chief Solomonov noted that at current rates of production, the Topol-M missile would not form the core of Russia's ICBM force until 2010.⁴⁸² But despite its slow deployment pace, the Topol-M system was being deployed, and it continued to be touted as the weapon of the future, and an asymmetric, more survivable response to U.S. missile defenses (although why was never made entirely clear).⁴⁸³ A few officials also noted that Russia could not afford to rethink plans for a Topol-M-based force and so was committed to the plans it had.⁴⁸⁴

⁴⁸¹ (2002). Defense Ministry Official Outlines Russia's Arms Program Up To 2010. *ITAR-TASS*. Moscow; Olikier and Charlick-Paley, *Assessing Russia's Decline: Implications for the United States and the U.S. Air Force.*; Olikier et al., *Russian Foreign Policy: Sources and Implications*.

⁴⁸² "Rossiia Namerena Predpriniat' Dopolnitel'nye Usiliia Dlia Aktivizatsii Dialoga s Soedinennymi Shtatami po Povodu PRO."

⁴⁸³ Iakovlev, "Arsenal. 'Topol'-M'-Oruzhie XXI Veka."

⁴⁸⁴ Vitalii Denisov, "Vcherashnii Mech Ili Zavtrashnii Shchit," *Krasnaia Zvezda* (1999).

As of 1999, Russia's plans called for the elimination of both the R-26 (SS-18) and UR-100 (SS-19) by 2005. However, as Topol deployments lagged, tests of these older systems extended their warranties, and thus lifespans.⁴⁸⁵ This not only helped keep Russia's numbers up in the near term, but also provided longer-term insurance. Because START II would allow for downloading of the system to one warhead apiece, these tests indicated that Russia was hedging against the possibility of not having enough Topol-Ms to deploy by the time the treaty entered into force. A test of the R-36 (SS-18) that year enabled the missile's warranty to be extended to 24 years. The UR-100 (SS-19) was tested with a single warhead starting in 2000. And while Topol (SS-25) deployments had stopped, no reductions of those systems took place until 2002, and one was flight tested in 2000 and three in 2001, ensuring that the system remained viable.⁴⁸⁶

All of this planning and production was based on START II limits. But, as discussed above, the treaty never entered into force. Unlike START II, the May 2002 SORT (or Moscow Treaty) included no limits on multiple warheads on a single ICBM. Instead, it required both sides to reduce to a range of between 1700 and 2200 operationally deployed warheads, however configured, by 2012. As long as Russia stayed under its overall ceilings, it could deploy the warheads however it wanted. This cleared the way to maintain MIRVed systems (e.g., the R-36 and UR-100) that had been slated for destruction and to build new ones to replace them when their service life ended.

Thus Russia faced a choice: On the one hand, existing MIRVed systems could help maintain Russia's missile and warhead numbers. On the other hand, the age of the older systems mattered, despite their life extensions. Despite reports that Russia

⁴⁸⁵ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces 2001."

⁴⁸⁶ Leonid Batalov and Mikhail Shchipanov, "Arsenal. Iadernyi Kod Bezopasnosti," *Tikhookeanskaia Vakhta* (1999); Kozhukh, "Vzgliad Voennogo Obozrevatel'ia. Illiuzii i Real'nost', Ili 'Topol'-M' Kak Sredstvo Otrezvleniia Goriachikh Golov; Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" "Nuclear Notebook: Russian Nuclear Forces, 2000;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

would cease dismantling those systems, and even retain a division of SS-24 missiles, dismantlement continued. Testing, however, continued as well.⁴⁸⁷

Figure 6.1, below, tracks ICBM launcher and warhead numbers from 1999-2004 (the period in question, plus two lag years). It illustrates the impact of continued SS-19 dismantlement, SS-25 dismantlement that halted but restarted in 2002, and the slow deployment of silo-based Topol Ms. Moscow managed to declare one more regiment of silo-based Topol-Ms operational by the end of 1999, for a total two regiments and 20 missiles.⁴⁸⁸ In contrast to plans that called for a regiment a year in 2000 and 2001, followed by three annually after that, four more Topol-M missiles came online in 2000 and five in 2001.⁴⁸⁹ In the two years that followed this period (the out-years), about ten more missiles joined the force.⁴⁹⁰

All the Topol-Ms deployed were silo-based. While MITT chief Solomonov indicated in 1999 that testing of the mobile variant could begin in 2000, he noted that this depended on financing, which apparently did not materialize in sufficient quantities to make that possible.⁴⁹¹ In 2001, the SRF indicated that it planned to begin deploying mobile Topol-Ms in late 2002 or early 2003.⁴⁹² This, too, proved overly optimistic. Testing of the silo-based version continued, meanwhile, with four test launches in 1999 and one each in February of 2000 and June of 2002.⁴⁹³ And,

⁴⁸⁷ Robert S. Norris and Hans M. Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003," *The Bulletin of the Atomic Scientists* 59, no. 4 (2003).

⁴⁸⁸ Valerii Manilov, "Reforma. Strategiia Reformy," *Vestnik Voennoi Informatsii* (1999).

⁴⁸⁹ Yuri Golotiuk, "Pod Znakom Marsa. Zato My Delaem Rakety. Rossiiskie Iadernye Sily Osnashchaiutsia 'Terminatorom'," *Tikhookeanskaia Vakhta* (1999); Igor' Korotchenko, "Pervyi Pusk-V Etom Godu," *Nezavisimoe Voennoe Obozrenie* (1999); "Gosudarstvennyi Oboronnyi Zakaz Na Obychnye Obrazy Vooruzhenii i Voennoi Tekhniki Uvelichitsia Bolee Chem v Dva Raza," *Agenstvo Voennykh Novostei* (1999); "Russia Deploys Six Topol-M Long-Range Missiles;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

⁴⁹⁰ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003;" "Nuclear Notebook: Russian Nuclear Forces, 2004," *The Bulletin of the Atomic Scientists* 60, no. 4 (2004); "Nuclear Notebook: Russian Nuclear Forces, 2005," *The Bulletin of the Atomic Scientists* 61, no. 2 (2005).

⁴⁹¹ Korotchenko, "Pervyi Pusk-V Etom Godu."

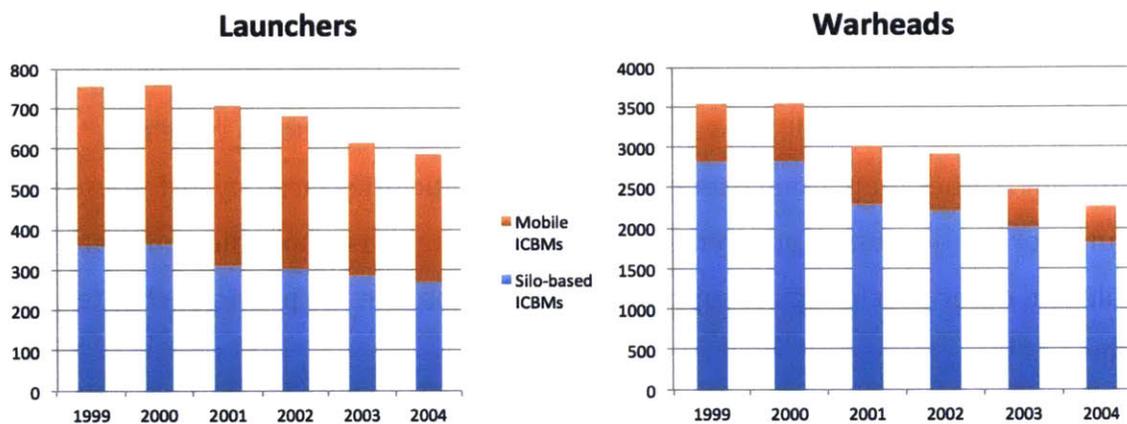
⁴⁹² Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" "Nuclear Notebook: Russian Nuclear Forces, 2000;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

⁴⁹³ Manilov, "Reforma. Strategiia Reformy;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003."

reportedly, the newest missiles had some improvements embedded, including GLONASS capability.⁴⁹⁴

The result is that while Russia maintained more mobile launchers than silo-based launchers throughout the period (and out-years), this was due in large part to the 360 SS-25 single warhead mobile systems in the force until the out-years. Moreover, the share of ICBM warheads on mobile launchers remained very small. It rose slightly in 2002 and 2003 due to SS-19 dismantlement, but shrank substantially in the out-years as Topol-Ms came online.

Figure 6.1: ICBM Launchers and Warheads 1999-2004⁴⁹⁵



Meanwhile, as had been the case through the 1990s, the SRF were consistently touted as capable according to various ratings, and reports indicated that they had passed training sessions, spot checks, and the like with flying colors.⁴⁹⁶

⁴⁹⁴ Golotiuk, "Pod Znakom Marsa. Zato My Delaem Rakety. Rossiiskie Iadernye Sily Osnashchaiutsia 'Terminatorom'."

⁴⁹⁵ Charts my own. Data reflects estimates in Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2000;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2006," *The Bulletin of the Atomic Scientists* 62, no. 2 (2006); Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces 2001." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer.

⁴⁹⁶ "V Raketykh Voiskakh Strategicheskogo Naznacheniia. Sokhranen Vysokii Uroven' Boegotovnosti," *Suvorovskii Natisk* (1999); "V Chastiakh RVSN. Itogi Uchebnogo Perioda. Osen' Veneset Verdikt," *Voin Rossii* (2000).

In 1999, the Defense Ministry praised the SRF for fulfilling all of its summer training plans, as no other service had done.⁴⁹⁷ At the end of that year, Chief Vladimir Iakovlev reported that over 70% of the force had been rated as good or better.⁴⁹⁸ Similarly, readiness assessments carried out over the course of 2002 reported that the SRF remained at high levels of capabilities, with 95 percent of squadrons and 90 percent of rocket regiments rated "good."⁴⁹⁹

A slightly darker story is told by reports of continued gaps in fuel for the SRF forces and housing for newly retired SRF personnel (a surge of whom had resulted from the 1998 reorganizations).⁵⁰⁰ Officials complained of the quality of both conscripts and officers joining the force and of the unwillingness of junior and mid-level personnel to stay in service.⁵⁰¹ Problems such as pay arrears seemed to be easing by the middle of 2000, however, and reports began to discuss instead insufficient (rather than nonexistent) pay, and the difficulties faced by SRF spouses seeking work in depressed economic environments. Reports also indicated that morale and other psychological support programs, noted in the previous chapter, continued.⁵⁰²

To conclude, the deployments of the long-promised Topol-Ms, although behind schedule, were a substantial accomplishment, and Moscow cemented its commitment to the system as the future of the force with continued dismantlement of older missiles, even as it hedged by ensuring a few could stay in service if needed. Russia's ICBM force remained heavily silo-based, and while MIRVing was allowed by SORT by the end of the period, there was too little time between the treaty's signing the end of 2004 to see real effects.

⁴⁹⁷ Oleg Falichev and Vladimir Matiash, "Boevaia Gotovnost'. Rabotat' Stol'ko, Skol'ko Nuzhno Dlia Khoroshego Resul'tata," *Krasnaia Zvezda* (1999).

⁴⁹⁸ Vladimir Iakovlev, "40 Let RVSN. Strategicheskii Argument Velikoi Derzhavy," *Orientir*, no. 12 (1999).

⁴⁹⁹ Solovtsov, "Garantiia Bezopasnosti."

⁵⁰⁰ Ibid.

⁵⁰¹ A. Borzenkov, "Zolotaia Seredina. Agressoru Otvetnyi Udar Garantiruiu," *Soldat Otechestva* (1999); "V Chastiakh RVSN. Itogi Uchebnogo Perioda. Osen' Veneset Verdikt."

⁵⁰² Aleksandr Dolinin, "Tvoi Garnizony, Rossiia. 'Topolia' Na Valdae," *Krasnaia Zvezda* (2000); "V Chastiakh RVSN. Itogi Uchebnogo Perioda. Osen' Veneset Verdikt."

SLBMs

The submarine fleet started out the period in poor shape. Despite arguments (from both proponents and opponents) that START II limits would lead Russia to put a higher proportion of its strategic nuclear warheads on submarines,⁵⁰³ the SSBN fleet and its weaponry continued to trail the SRF substantially in actually acquiring—or even retaining—weapons. The 2000 edition of the NRDC “Nuclear Notebook” for Russia voiced doubts about the future of the SSBN force as a whole.⁵⁰⁴ That year, reports indicated that the Navy’s development plan would at best maintain naval nuclear deterrent forces at the “minimal allowable level.”⁵⁰⁵

Russia managed seven submarine patrols in 1999.⁵⁰⁶ According to officials that year, one SSBN per fleet (Northern and Pacific) was patrolling the open seas at a time, with two or three more at a time patrolling near home waters.⁵⁰⁷ Northern fleet patrols as of 1999 were limited to the Barents Sea, by two 667-BRDM (Delta IV) submarines. The General Staff expressed hopes of having four such submarines patrolling in the North Atlantic and the Arctic by 2003, if financing permitted.⁵⁰⁸ 1999’s patrol rate proved to be a high point, however. In 2001 there was at most one patrol, although SSBNs continued to be based with both the Northern and Pacific Fleets.⁵⁰⁹ In 2002 there were none.⁵¹⁰ The low patrol numbers also created a greater demand for protective tunnels for the SSBNs in port. Existing tunnels had fallen into disrepair since the early 1990s and were in need of refurbishment.⁵¹¹

As of 2000, Russia had six of its seven Delta IV (Project 667 BDRMs) SSBNs in working service and three Typhoons, as well as 11 Delta IIIs (667BDRs) slated for

⁵⁰³ Noted in the previous chapter. See also Mikhail Musatov, “SNV-2: Problemy Ratifikatsii. Smozhet Li Rossiia Oboitis' Bez Iadernogo Shchita?,” *Krasnaia Zvezda* (1999).

⁵⁰⁴ Norris and Arkin, “Nuclear Notebook: Russian Nuclear Forces, 2000.”

⁵⁰⁵ “Programma Obnovleniia Rossiiskogo Flota Budet Gotova Uzhe v Pervoi Polovine 2000 Goda,” *Agenstvo Voennykh Novostei* (2000).

⁵⁰⁶ “Nuclear Notebook: Russian Nuclear Forces 2001.”

⁵⁰⁷ “Dlia Podderzhivaniia Boegotovnosti Morskikh Strategicheskikh Iadernykh Sil Do 2005 Goda Trebuetsia 50 Milliardov Rublei,” *Agenstvo Voennykh Novostei* (1999).

⁵⁰⁸ “Chislo Rossiiskikh Podvodnykh Raketnostsev Nakhodiashchikhsia Na Boevom Patruleirovanii, Uvelichitcia,” *Agenstvo Voennykh Novostei* (1999).

⁵⁰⁹ Norris, Arkin, and Kristensen, “Nuclear Notebook: Russian Nuclear Forces, 2002.”

⁵¹⁰ Norris and Kristensen, “Nuclear Notebook: Russian Nuclear Forces, 2003.”

⁵¹¹ “Voенно-Morskoi Flot Raskonserviruet Spetsial'yt Ukrytiia Dlia Raketnykh Submarin Na Kol'skom Poluostrove i v Primor'e,” *Agenstvo Voennykh Novostei* (1999).

the scrapheap but still on the books.⁵¹² At the end of 2001, with five more 667 BDRs removed from service and only two Typhoons operational, the Russians were down to 14 SSBNs.⁵¹³ One of Russia's out-of-service Typhoons spent most of the period under repair and undergoing modernization. When it finally returned to the fleet, in late 2002, it had been renamed the Dmitry Donskoi and converted into a platform for testing the new Bulava missile.⁵¹⁴

There was some progress on the Borei SSBN: The first of these finally left dry dock in April 2002.⁵¹⁵ Its Bulava missile was not ready, however, and both the Typhoons and the 667 BDRMs, Russia's next most modern systems, were in danger of running out of missiles. The service life of the Typhoons' R-39 missile was expiring in 2003.⁵¹⁶ As discussed in the last chapter, R-29 missile production, needed to keep the 667 BRDM submarines in service, was restarted in 1999. That same year, the Makeev bureau was hired to build another new missile: the modernized R-29 RMU missile, to be called the Sineva. The Sineva could be deployed on the 667 BDRMs, and, some thought, might be a back-up for the Bulava if it failed.⁵¹⁷

These decisions would make it possible for Russia to maintain a nuclear strategic submarine fleet if the Boreis and Bulavas continued to be delayed. However, like the Bark before it, the Sineva took longer than desired. Some components that had been used in the R-29 were produced in what were now foreign countries, and other firms were simply no longer capable of doing the work required. While serial production was ordered in February 2000 (with a Roskosmos

⁵¹² Litovkin, "'Sineva' Podnimaetsia Nad Morem; "Rossiia Raspolagaet 23 Raketami Podvodnymi Kreiserami Strategicheskogo Naznacheniiia," *Agenstvo Voennykh Novostei* (2001); Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2000."

⁵¹³ "Rossiia Raspolagaet 23 Raketami Podvodnymi Kreiserami Strategicheskogo Naznacheniiia."

⁵¹⁴ "Vooruzhenie Atomnoi Submariny 'Taifun' Budet Modernizirovano v Nachale 2000 Goda," *Agenstvo Voennykh Novostei* (1999); Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003;" "Tiazhelyi Atomnyi Podvodnyi Raketnyi Kreiser Stregicheskogo Naznacheniiia 'Dmitrii Donskoi' (TK208). Proekt 941 'Akula'," *Boevaia Vakhta*, no. 68 (2008).

⁵¹⁵ "Nuclear Notebook: Russian Nuclear Forces, 2003."

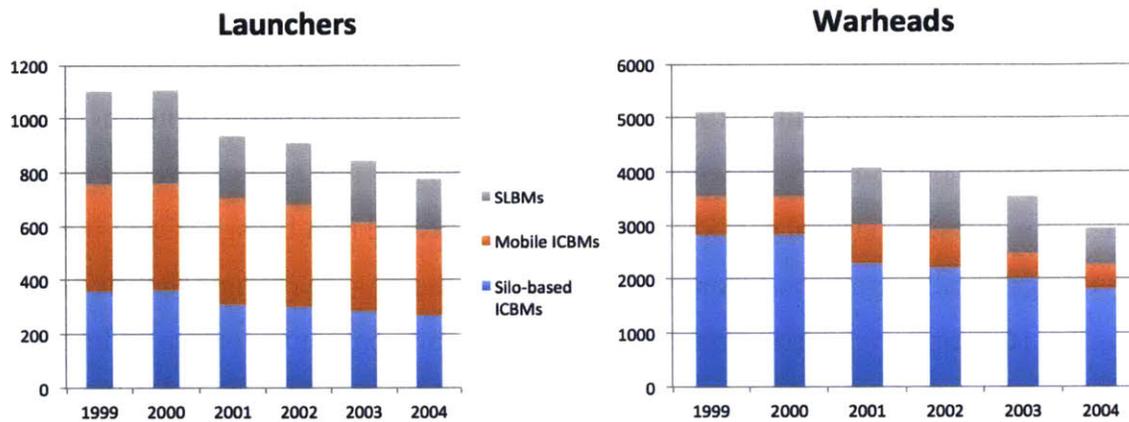
⁵¹⁶ Litovkin, "'Sineva' Podnimaetsia Nad Morem."

⁵¹⁷ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

order and federal budget financing),⁵¹⁸ no Sineva testing took place until 2004.⁵¹⁹ As a result, as of 2001 Russia was moving to extend the service lives of existing missiles, with the attendant flight tests.⁵²⁰

As Figure 6.2 shows, the submarine share of the overall strategic nuclear force continued to decline throughout this period and into the out-years, both in terms of launchers and warheads.

Figure 6.2: Missile Launchers and Warheads 1999-2004⁵²¹



In summary, 1999-2001 was a period of continued decline for the Navy's strategic nuclear forces. Patrols remained low and the SLBM proportion of Russia's missiles continued to shrink. Although the first, much-delayed, Borei left dry-dock in

⁵¹⁸ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

⁵¹⁹ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

⁵²⁰ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

⁵²¹ Charts my own. Data reflects estimates in Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2000;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2006;" Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces 2001." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

2002, the Bulava missile was not ready. Plans to maintain older submarines, with alternative missiles were in place, but also behind schedule.

Bombers

Russia started 1999 with many of its START accountable bombers still in Ukraine (24 TU95s and 17 Tu-160s). Most observers described the bomber fleet as in poor shape. That year, Air Force Chief V.P. Sinitsyn called for modernizing the force, but made no promises of new aircraft.⁵²² The General Staff had promised new strategic aircraft development that year, but there is no evidence that anything was done.⁵²³ However, by the end of 2000, Ukraine had finally repatriated eight Tu-160s and three Tu-95MS bombers, as well as 575 cruise missiles and tanker aircraft as payment for Russian natural gas.⁵²⁴ Later reports indicated that those aircraft had arrived in generally good condition.⁵²⁵ Also in 2000, there were reports that five of the six Tu-160s under construction at the Kazan aircraft company were completed and undergoing testing, with plans for up to 20 new bombers of this type.⁵²⁶ One joined the force in mid-2000.⁵²⁷ In 2002, three more were promised by the end of 2003, but not delivered (See chapter 6).⁵²⁸

The return of the bombers from Ukraine made it possible for Russia to create the new 22nd Donbass Guard Heavy Bomber Division, comprised of 15 Tu-160s, and make plans to modernize the aircraft. Modernization plans discussed in 2001 and 2002 included service life extension as well as the capability to carry more types of

⁵²² V. P. Sinitsyn, "Voenno-Vozdushnye Sily: Itogi Preobrazovaniia i Napravleniia Razvitiia," *Voennaia Mysl*, January 1 1999.

⁵²³ Manilov, "Reforma. Strategiia Reformy."

⁵²⁴ Igor' Korotchenko, "V Obychnoi i Iadernoi Voine. Komanduiushchii 37-i VA V GK General-Lietenant Mikhail Oparin Uveren, Chto Dal'niaia Aviatsiia Sposobna Vypolnit' LiuBuyu Postavlenuiu Pered Nei Zadachu," *Nezavisimoe Voennoe Obozrenie* (2001); Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces 2001."

⁵²⁵ Vladimir Rigmant, "Dolgaia Doroga k Tu-160," *Aviatsiia i Kosmonavtika* (2006).

⁵²⁶ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2000."

⁵²⁷ "Nuclear Notebook: Russian Nuclear Forces 2001."

⁵²⁸ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003."

missiles, nuclear and conventional. However, it was not clear just what sort of condition the bombers that had arrived from Ukraine were really in.⁵²⁹

While the Air Force touted the concept that strategic aviation was capable of both nuclear and missions, the reality was that conventional capabilities, and associated weapons, were not particularly well-developed.⁵³⁰ Thus much of the talk of promised upgrades focused on the bombers' conventional role, including plans to improve high-precision weaponry for the aircraft.⁵³¹

Speaking in March of 2002, Air Force Commander Mikhailov promised modernization of all of Russia's Tu-160s to extend their service lives and enable them to carry new conventional and nuclear missiles.⁵³² But repairs and limited upgrades addressed at best one or two aircraft at a time, with very slow progress.⁵³³ As for new missiles, development of the promised Kh-101/102 cruise missile continued, but its 2001 deadline came and went. In 2002, Russia again promised it soon, but it did not appear by the end of the year.⁵³⁴

Even if the infrastructure was not in the best of shape, the bombers were nonetheless the most active component of Russia's strategic forces: A Tu-95MS was used in the Zapad-1999 exercise, discussed above.⁵³⁵ Russia flew two TU-160s near the Norwegian border in February 2001, spurring Norway to launch interceptors. That same month, four Tu-22s approached Japanese airspace, possibly violating it as part of exercises that also involved cruise missile launches from a Tu-95 bomber and two Tu-22Ms (the same exercises also included ICBM and SLBM launches).⁵³⁶ Russia cancelled an additional Pacific air exercise, planned for September of that

⁵²⁹ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

⁵³⁰ Aleksandr Chernorechin, "Rol' Voennoi Aviatsii v Soveremennoi Voine," *Nezavisimoe Voennoe Obozrenie* (1999); Oparin, "Rol' Dal'nei Aviatsii v Obespechenii Natsional'noi Bezopasnosti Rossii."

⁵³¹ Sergei Sokut, "Omyslenie Chechenskogo Opyta," *Nezavisimoe Voennoe Obozrenie*, August 10 2001.

⁵³² Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003."

⁵³³ Alexander Stukalin, "Bears and Blackjacks Are Back. What Next?," *Moscow Defense Brief*(2010), <http://mdb.cast.ru/mdb/4-2010/item4/article1/?form=print>.

⁵³⁴ Sokut, "Ob'edinenie c PVO Pozvolilo Sokratit' Sily i Sredstva Bez Ushcherba Dlia Boesposobnosti Voisk; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003."

⁵³⁵ Stukalin, "Bears and Blackjacks Are Back. What Next?"; Oliker et al., *Russian Foreign Policy: Sources and Implications*; Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*.

⁵³⁶ Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

year, in accordance with U.S. government requests in the wake of the September 2001 terrorist attacks on that country. However, Tu-95 bombers and Tu-22 M3s took part in a large air exercise in April 2002. The biggest in ten years, it covered all of Russia's territory, as well as parts of the Arctic and the Sea of Japan. The Russian bomber flights again forced Japanese fighter intercepts. The Bears also flew close to U.S. airspace, resulting in US intercepts. Smaller exercises involving Russian bombers took place in Astrakhan and Leningrad, and in the Caspian Sea region.⁵³⁷

This increased activity may also have created the need for more in the way of repairs. With the planes mostly grounded through much of the 1990s, they faced little wear and tear. The greater optempo must have been more taxing. In statements, however, the Russian government remained optimistic. In 2002, officials stated that the aircraft could stay in service until 2015 (as, indeed, they did—and beyond).

As was the case in the previous chapter, due to the complicated counting rules for bombers, I do not include a launcher or warhead counts of bombers compared to SLBMs and ICBMs. Because bombers were not being dismantled, however, their share of overall strategic force numbers went up slightly. By following Norris and Kristensen's approach to attributing warheads, I calculate that Russia's bombers accounted for between 16 and 20 percent of its warheads and between seven and eight and a half percent of its launchers between 1999 and 2004 (to allow for two out-years).⁵³⁸ However, as the discussion in Chapter Four and that above indicates, these numbers cannot be seen as reliable.

⁵³⁷ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2003."

⁵³⁸ Data reflects estimates in "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2003;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002;" Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" "Nuclear Notebook: Russian Nuclear Forces, 2000." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it as for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

In sum, the bomber force benefitted from the return of aircraft from Ukraine, but received little else, despite promises. Nonetheless, its optempo went up considerably during this period and exercises indicated that Russia saw its bombers as an important deterrent asset.

Early Warning and Missile Defense

Although Russian officials insisted throughout this period that the space-based early warning system was fully capable,⁵³⁹ in fact, it continued to degrade. Although Russia announced a second phase of its US-KMO network in 1998, and began testing command posts in the West and East,⁵⁴⁰ it continued to lose satellites. In the summer of 1999, the last of Russia's satellites in GEO left orbit. As a result, Russia had no ability to monitor U.S. ICBM launch sites for nearly five hours each day. The rest of the time, there was coverage, but no redundancy, so if a given satellite missed a launch, there were no others to see it. A launch of another HEO at the end of the year provided for more consistent coverage, and Russia maintained this skeletal configuration of four HEO satellites into 2001. In May of that year, however, a fire at the ground control station for the early warning system cut communications. All four satellites drifted. The control station did not come back online until August. At that point, one satellite was returned to orbit and a new geostationary satellite was launched, bringing Russia to two functional satellites, one in GEO and one in HEO. An additional HEO was launched in April 2002.⁵⁴¹ That same year, the Eastern command post was declared operational.⁵⁴²

⁵³⁹ "Voennaia Reforma. Raketno-Kosmicheskii Shchit Rossii," *Suvorovskii Natisk* (1999).

⁵⁴⁰ Anatoly Zak, "US-K and US-KMO Constellations," <http://www.russianspaceweb.com/oko.html>.

⁵⁴¹ Podvig, "History and the Current Status of the Russian Early-Warning System," pp. 49-50.

⁵⁴² Zak, "US-K and US-KMO Constellations".

Table 6.2 Early Warning Satellite Launches and Losses 1999-2004

	HEO		GEO		complement at end of year	
	launches	losses	launches	losses	HEO	GEO
1999	1	0	0	2	4	0
2000	0	0	0	0	4	0
2001	0	3	1	0	1	1
2002	2	1	0	0	2	1
2003	0	0	1	1	2	1
2004	0	0	0	0	2	1

In late 1999, SRF commander Iakovlev, then in charge of defense and early warning forces in the wake of the 1998 reorganization, wrote of intentions to shift to an approach that would require fewer satellites in orbit.⁵⁴³ Other plans called for a new generation of early warning satellites, to be deployed by 2005, with four in GEO orbit and five or six in HEO orbit.⁵⁴⁴

Iakovlev also promised to update ground-based radars and ensure that that component of the force would be cheaper to operate.⁵⁴⁵ The loss of the Skrunda radar at the end of 1998 spurred Russia to seek at least a partial solution to the gap in the northwest. As before, it maintained radars at three Russian locations and access to radars in other former Soviet countries. Work on the Volga radar at Baranovichi, in Belarus, abandoned in the early 1990s, resumed in 1999, and the system began testing in December of that year. It became operational in test mode in 2002. Together with the radars of the A-135 ABM system for Moscow, it provided coverage of most of Western and Central Russia, closing the hole in the north-western direction left by Skrunda, albeit with a continued gap in Russia's far northeast.⁵⁴⁶ However, there were concerns that the Moscow system was not at full

⁵⁴³ Iakovlev, "40 Let RVSN. Strategicheskii Argument Velikoi Derzhavy."

⁵⁴⁴ Anatoly Zak, "Development of the EKS network," <http://www.russianspaceweb.com/eks-origin.html>.

⁵⁴⁵ Iakovlev, "40 Let RVSN. Strategicheskii Argument Velikoi Derzhavy."

⁵⁴⁶ Aleksin, "Otvety Na Amerikanskii Vyzovy Imeiutsia; Viacheslav Davidenko and Aleksandr Dolinin, "U Etikh Voisk i Zadachi Kosmicheskie," *Krasnaia Zvezda* (2003); Aleksandr Bogatyrev, "Vse Pod

capacity and some reports that plans for a new, A-235 system, shelved years ago, would be revived. Critics complained that its personnel numbers had been cut as part of the 1998 reorganization, and that the system was less capable as a result.⁵⁴⁷

At the same time, there were some hopes for the future: a new air-space defense concept was developed in the early 2000s, and approved in November 2002 by the Defense Ministry. Soon after, a project for the air-space defense of the Russian Federation was conceived, followed by a technical plan for air-space defense of Moscow and Russia's central region.⁵⁴⁸

Thus, while there was some minimal progress on ground-based radars, and promises of a new satellite system and air-space defense, Russia's early warning capabilities continued to deteriorate. In 2002, Podvig questioned whether Russia's combined early warning system could conceivably be integrated into command and control and be used for a launch on warning decision, given its overall weakness.⁵⁴⁹

Non-Strategic Nuclear Forces

There is no evidence that Russia purposefully stalled on any of its commitments to dismantle non-strategic nuclear weapons during this period. Official statements clearly indicated every intent to fulfill past promises on this score.⁵⁵⁰ It seems likely that Russia's non-strategic nuclear weapons had been consolidated at various storage sites, and not mated to weapons, in line with promises, by at least 2000.⁵⁵¹ Russia also simply had fewer delivery vehicles for some weapons: estimates of the number of ships in Russia's Navy able to carry nuclear weapons dropped from 400 in 1990 to 100 in 2001. Western analysts

Kontrolem. 1 Octiabria 2003 Goda Pod Baranovichami Na Bevoe Dezhurstvo Zastupila RLS 'Volga'," *Krasnaia Zvezda* (2003); Podvig, "History and the Current Status of the Russian Early-Warning System; "Reducing the Risk of Accidental Launch."

⁵⁴⁷ Esin, "Breshi i Okna v Protivoraketnom Zontike Strany; Alexander Stukalin, "Russian Air and Space Defense Troops: Gaping Holes," *Moscow Defense Brief*, no. 2 (2012); Jana Honkova, "Current Developments in Russia's Ballistic Missile Defense," *George C. Marshall Institute Policy Outlook*(2013), <http://marshall.org/wp-content/uploads/2013/08/Honkova-Current-Developments-in-Russias-Ballistic-Missile-Defense.pdf>.

⁵⁴⁸ Zaretskii, Alekhin, and Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia."

⁵⁴⁹ Podvig, "History and the Current Status of the Russian Early-Warning System."

⁵⁵⁰ "Konflikt v Iugoslavii Pokazal: Rossiia Ne Znaet, Chto Delat' s Iadernym Oruzhiem; "Analitiki PIR-Tsentra Otsenivaiut Itogi Iadernogo Zasedaniia Soveta Bezopasnosti," *Voprosy Bezopasnosti* (1999).

⁵⁵¹ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces 2001."

estimated that by 2002, roughly half of the Air Force's nuclear air-bombs and half of its nuclear warheads for surface-to-air missiles had been eliminated.⁵⁵² However, plans to destroy Russian ground forces' tactical nuclear weapons, initially expected to be fully implemented by the end of 2001, turned out to be behind schedule when Russia noted in April of the following year that this was still ongoing. At that time, officials said that, provided funding continued to flow, the weapons would be fully eliminated by 2004. Also in 2002, the Russian government confirmed the statement of a decade ago that it no longer produced nuclear warheads for ground-launched tactical missiles, artillery shells, and mines.⁵⁵³

Russian analysts argued that developments in warfighting globally indicated that Russia, like other countries, would put little emphasis on nonstrategic nuclear weapons, preferring instead to put its resources into technologically advanced high-precision conventional capabilities.⁵⁵⁴ Yet, while this was one line of thought, some officials said the opposite: that Russia was actually developing nonstrategic nuclear systems. Rumors of SS-20 follow-ons (or calls for them⁵⁵⁵) appeared periodically. Coupled with perennial calls by Russian officials and analysts for Russia to withdraw from the Intermediate-Range Nuclear Force (INF) Treaty,⁵⁵⁶ some might see evidence of intent to build these capabilities. However, there was no evidence of any real attention to the modernization of this arsenal.⁵⁵⁷

Safeguards

The 1998 agreement to set up a Joint Data Exchange Center (JDEC) looked like it might move forward early in this period, but in the end amounted to nothing. In 1999, there was talk of creating an early warning center that would, among other things, mitigate problems caused by the so-called "Year 2000 problem."⁵⁵⁸ In June

⁵⁵² Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002."

⁵⁵³ Ibid.

⁵⁵⁴ Georgii Kostev and Igor' Kostev, "Vremia i Flot. O Voenno-Morskom Flote Rossii v XXI Veke," *Morskoi Sbornik*, no. 11 (2002).

⁵⁵⁵ Sergei Brezkun, "'Pionery' Nado Vozrodit'," *Nezavisimoe Voennoe Obozrenie* (1999).

⁵⁵⁶ Quinlivan and Olikier, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*, pp. 44

⁵⁵⁷ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁵⁵⁸ "Sotrudnichestvo. Sozdaetcia Tsentr Rannego Preduprezhdeniia," *Na Boevom Postu* (1999).

2000, Year 2000 problems presumably over with, Presidents Clinton and Putin signed a formal memorandum to create this Center and enable it to exchange early warning and missile launch notification information.⁵⁵⁹ The Bush administration, however, suspended the agreement in 2001. In 2002, there was talk that it might be revived, but this never happened.⁵⁶⁰

Discussions of other safeguard measures, including demating of warhead from weapons, shifting weapons mixes, and so forth, also continued, but did not move beyond conversations.⁵⁶¹

Posture 1999-2002

This period, despite being comparatively short, saw substantial changes in declaratory policy, although force structure trajectories remained fairly stable. In 1999, Russia lowered the threshold for nuclear use and flirted with a strategy of “de-escalatory” first strikes, including in conventional contexts. But while this was reflected in the national security doctrine published in 2000, by the end of that year, Russia had stepped away from this approach and officials insisted that nuclear weapons were meant for deterring other nuclear weapons. The focus was on parity, and, ideally, ensuring that the United States would reduce its nuclear force numbers so that Russia could do the same. At the end of the period, however, the U.S. withdrawal from the ABM treaty spurred concern about overcoming U.S. defenses, and Russian prospects for riding out a U.S. first strike. With Russian rejection of START II and the signing of a new treaty, SORT, Russia promised a renewed emphasis on MIRVed systems.

In the context of force structure, both bombers and silo-based ICBMs enjoyed more attention, the former due to the return of aircraft from Ukraine and increased patrols, the latter from the long-awaited deployment of the new Topol-M missiles

⁵⁵⁹ "Memorandum of Agreement Between the United States of America and the Russian Federation on the Establishment of a Joint Center for the Exchange of Data from Early Warning Systems and Notifications of Missile Launches (JDEC MOA)," (United States Department of State, 2000), <http://www.state.gov/t/isn/4799.htm>.

⁵⁶⁰ Viola Gienger, "Russia, U.S. May Share Missile-Defense Data, Gates Says," *Bloomberg*, March 21 2011; Tom Z. Collina, "Russia, U.S. Working on Joint Launch Notification," *Arms Control Today* (2010).

⁵⁶¹ Sergei Brezkun, "Dom Na Peske. Mery Doveriia Mogut Dopolnit' Rezhim Iadernogo Sderzhivaniia, No Ne Zamenit' Ego," (2000).

and, at the end of the second sub-period, the promise of MIRVing (although it did not fully materialize by the end of the period). Mobile ICBMs generally retained their share of the force, but on the strength of old systems—no new ones were deployed. The submarine fleet was in decline and in danger, with dropping numbers of patrols, the Bulava missile for the Borei delayed and the alternative Sineva missile, which would let Russia keep its older submarines afloat longer, slow to develop. Early warning continued to degrade and non-strategic nuclear forces received no evident attention, although there were rumors of new systems in the works. Safeguards showed some promise early, only to be ignored later.

Table 6.3: Posture 1999-2002

Postures		1999-2000	2000-2002	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy								
Declaratory Policy		First use, "deescalation" in conventional conflict	Nuclear deterrence of nuclear weapons, emphasis on parity	No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↑	↑	✗	✗	✓	✓	✓
	Silo-based ICBMs	↑	↑					✗
Survivable/ second strike	Mobile ICBMs	↔	↔	✓	✓	✗	✗	✗
	SLBMs	↓	↓	✗	✗	✗	✗	✓
	NSNF	↓	↓					✗
	Early Warning	↓	↓	✓	✓	✓	✓	✗
Safeguards	↑	↔	✓	✗	✓	✗	✗	

As in the previous chapter, there is no perfect fit between reality and the archetypes developed in Chapter One. But, once again, the specifics of the similarities and differences can be illuminating.

If there was a certain disconnect between declaratory policy and force structure in the first period I looked at, this was even more pronounced in 1999-2000. The "de-escalation" strategy that appeared to be incorporated into Russian planning in 1999 is a Warfighting Escalatory strategy, one that relies on limited strikes against conventional adversaries. As such it would call for nonstrategic nuclear forces, though it can make do with bombers in a pinch. Russian rhetoric on nuclear threats, meanwhile, focused on retaliation, either in Launch on Warning or Assured (retaliatory) contexts. However, the force structure for that period looked

far more like a Strategic Escalatory posture, missing the emphasis on early warning that would be required for a Launch on Warning posture—much the same posture as in the previous period.

These force structure trends remained fairly steady into 2002, although a slight uptick in interest in safeguards in 1999-2000 evaporated due to U.S. inattention. Declaratory policy, however, shifted substantially. The new emphasis on developing conventional capabilities and leaving nuclear weapons to deter nuclear weapons is an excellent match for an Assured posture, although it is also not out of line with Launch on Warning. The concern about a U.S. first strike and discussion of whether ride-out was truly feasible for Russia suggests that Launch on Warning was, indeed, a central planning parameter. In terms of force structure, Launch on Warning was supported by the lack of real emphasis on improving survivable systems. As before, these mostly got lip service, rather than new weapons.

But force structure remained disconnected from Launch on Warning because of the continued deterioration of early warning itself. Although in most other aspects, a Launch on Warning force structure is identical to a Strategic Escalatory force structure, the critical difference lies those capabilities, which are central to Launch on Warning. Thus, the force structure remained a better match for a Strategic Escalatory posture.

Explaining Russian Force Posture

How well do the theories I presented in Chapters One and Two explain these developments? As described above, between 1999 and roughly 2000, Russia's declaratory policy looked like one that combined Warfighting Escalatory with Assured (or Launch on Warning) approaches, while force structure remained better fit for a Strategic Escalatory posture. After 2000, declaratory policy focused heavily on parity and dropped the Warfighting Escalatory component, tending towards a strategic Assured or Launch on Warning approach, while force structure trends did not change.

My Absolute Weapon theory predicts a Warfighting Escalatory posture combined with an Assured posture when threats are mixed and the economy is

doing well, while my Internal Balancing theory predicts just the Assured posture under these conditions. Both allow for either an Assured or a Launch on Warning posture (whichever is cheaper), with Warfighting Escalatory elements, if the economy is doing poorly and threats are mixed. Regardless of circumstances, the Absolute Weapon theory predicts minimal postures. Internal Balancing predicts a focus on parity, at the least.

Meanwhile, my Culture and Bureaucracy theory predicts Strategic Escalatory postures, potentially with less attention to early warning, as long as the Strategic Rocket Forces are not effectively challenged by others in the government bureaucracy. It also predicts an emphasis on large force sizes, and makes no particular predictions about declaratory policy.

What, then, were the circumstances between 1998 and 2002? We know that resources were increasingly available during this period, as discussed in Chapter 3, although there was substantial doubt that the economic uptick would last, especially at the start. Did the threat environment and situation of the SRF match those that the theories argue are necessary for these results?

Threat Environment

Despite a brief rapprochement in the wake of the September 11, 2001 attacks on the United States, Russia's view of its threat environment remained focused on Western capabilities and intentions throughout 1999-2002. Nonetheless, some sort of alignment with the United States against global instability and terror seemed briefly plausible. Russia's renewed war in Chechnya had been triggered in part by a series of apartment bombings in Moscow in 1999. Although there were many theories on the true reasons behind the bombs, including ones that implicated the Russian government, the official explanation was terrorism, which the Kremlin began to increasingly identify as a threat.

For example, the 2000 National Security Concept for the first time identified terrorism, the drug trade, and organized crime as national security concerns.⁵⁶²

⁵⁶² Evgenii Moskvina, "Novaia Strategia Nastorazhivaet Zapad," *Nezavisimoe Voennoe Obozrenie* (2000).

National Security Council Secretary Sergei Ivanov, discussing the Concept in April of 2000, indicated that he felt that internal threats were in fact the greatest dangers Russia faced, a reasonable statement as Russian forces continued to fight in Chechnya.⁵⁶³ The danger reached Moscow in October 2002, when violent jihadists took hundreds of Moscow theatergoers hostage (and the ensuing police operations killed over 100 of the hostages). In November of that year, Ivanov, Defense Minister since March 2001, argued that global terrorism had declared war on Russia.⁵⁶⁴

But counter-terror cooperation with Washington faced challenges, and could not provide the bedrock for a stronger relationship overall. Despite pledges to cooperate, Russia was soon frustrated by the U.S. failure to share information, and the U.S. by the quality of what it got from Russia. Moscow also felt shirked in U.S. attitudes that indicated it had nothing to learn from the Soviet experience in Afghanistan. U.S. insistence on missile defense plans and eventual abrogation of the Anti-Ballistic Missile (ABM) treaty put the nail in the coffin of real cooperation.

The narrative of hostile U.S. (and NATO) intentions was a familiar one and similar to that of the last decade, both before and after the brief warming in 2001. In a broad sense, U.S. actions were described as dangerous to global stability, and its pursuit of a unipolar international system contrasted with Russia's ostensible support for a multipolar one.⁵⁶⁵ In regards to Russia itself, officials at as high a level as the Deputy Chief of the General Staff accused the US of ignoring and undermining Russian interests and preventing Moscow from exercising its rightful (even "legal," according to Deputy Chair of the Duma Defense Committee Mikhail Mustatov) great power role. This refrain could also be found in the 2000 national security concept.⁵⁶⁶ Russian responses to NATO's bombing of Serbia in 1999 fit this narrative well. Some even alleged that Washington was financing Chechen rebels and planning for a possible war in Russia.⁵⁶⁷ There were those who downplayed the NATO threat, reiterating the doctrinal description of it as a danger (something that could become

⁵⁶³ Aleksin, "Glavnye Ugrozy Bezopasnosti Rossii--Vnutrennie."

⁵⁶⁴ Svetlana Babaeva, "Sergei Ivanov: "Nam Ob'iavlena Voyna Bez Frontov i Granits," *Izvestia* (2002).

⁵⁶⁵ Vadim Solov'ev, "Zerkalo Novoi Voennoi Doktriny," *Nezavisimoe Voennoe Obozrenie* (2000).

⁵⁶⁶ Falichev, "General-Polkovnik Manilov; Musatov, "Strategicheskie Iadernye Sily Rossii: Kakimi Im Byt'?"

⁵⁶⁷ Falichev, "General-Polkovnik Manilov."

threatening), and noting that real threats (things that posed immediate problems) could yet emerge from anywhere.⁵⁶⁸ But theirs were not the dominant voices.

NATO's enlargement, most Russian analysts and officials argued, both isolated and threatened Moscow.⁵⁶⁹ Although Vladimir Putin, then acting President after Yeltsin's resignation, famously told British journalist David Frost that he saw no reason Russia could not one day join NATO, this depended on NATO coming around to Russia's point of view (respect for its interests), not vice versa.⁵⁷⁰ In 2002, Defense Minister Ivanov argued for the importance of new NATO members signing on to the CFE treaty.⁵⁷¹

An example of the ways in which NATO capabilities were presented as a perennial yardstick against which to measure Russia's capacity was a 1999 article which noted that the expansion of NATO to include Poland, Hungary, and the Czech Republic meant that NATO's total number of divisions had grown from 43 to 56 (while Russia fielded a mere four complete divisions in Europe).⁵⁷² While this argument may seem ridiculous, it was indicative of the tone of discussions of NATO in Russia. Moreover, Russian analysts argued that NATO planning was focused on conventional war, not peacekeeping, and the alliance was therefore a real danger to Russia.⁵⁷³

In the nuclear context, the United States was viewed and portrayed as unreliable. The potential for a U.S. first strike was one argument regularly dispatched against START II ratification, including by Duma members.⁵⁷⁴ Officials accused the United States of violating START I with Trident tests that tested more warheads than were permitted by the treaty (as well as U.S. refusal to destroy all

⁵⁶⁸ Babaeva, "Sergei Ivanov: "Nam Ob'iavlena Voina Bez Frontov i Granits."

⁵⁶⁹ A. S. Pushkin, "Geopolitika: Grozit Li Kto Nam iz Sosedei?," *Ural'skie Voennye Vesti*, no. 53 (1999).; Nadezhda Arbatova, "Mir Na Poroge Tysyacheletia. Otnosheniia Rossii i Zapada Posle Kosovskogo Krizisa," *Mirovaia Ekonomika i Mezhdunarodnye Otnosheniia*, no. 6 (2000).

⁵⁷⁰ David Frost, "BBC Breakfast With Frost," (2000), transcript at http://news.bbc.co.uk/hi/english/static/audio_video/programmes/breakfast_with_frost/transcripts/putin5.mar.txt.

⁵⁷¹ Ivanov, "Strategicheskaiia Stabil'nost' Na Soveremennom Etape."

⁵⁷² Anatoliy Iakovlev, "Boevoe Dezhurstvo: Ekzamen Derzhat Voiny PVO. Ispytanie Na Zrelost' Ili Slozhivshaiasia Privychka," *Na Strazhe Rodiny* (1999).

⁵⁷³ Ibid; Anatolii Mikhailovich Kornukov, "VVS Kak Faktor Natsional'noi Bezopasnosti," *Na Boevom Postu* (1999).

⁵⁷⁴ Musatov, "SNV-2: Problemy Ratifikatsii. Smozhet Li Rossiia Oboitis' Bez Iadernogo Shchita?."

stages of the MX missile).⁵⁷⁵ U.S. missile defense plans also remained a central component of the Russian narrative, justifying weapons development plans and presenting a consistent example in Russian writings and statements of U.S. antagonism to Russia.⁵⁷⁶ The 2000 National Security Concept dropped discussion of “partnership” with the West, touted in past documents, and replaced it with the somewhat more limited “cooperation.” It also explicitly called out Western policies as a potential threat to Russian security.⁵⁷⁷ As it became clear that the United States intended to pursue a national missile defense program and abrogate the ABM treaty if it could not be modified, this rhetoric became ever more heated.

The U.S. announcement in late 2001 that it would, indeed, withdraw from the ABM treaty reinforced to many in Russia not only that partnership with the U.S. was a pipedream, but also that nuclear deterrence of the United States remained a critical mission. This view was likely bolstered by the late 2001 U.S. Nuclear Posture Review, in which the U.S. was explicit about the need to hedge against possible worsening of relations with Russia with the ability to deploy more nuclear weapons (including by maintaining warheads in storage that could then be loaded on to existing delivery vehicles—something Russians had long complained about in an arms control context, as their weapon development and deployment systems did not allow for such long-term storage and upload approaches).⁵⁷⁸

Russia expressed concerns during this time about U.S. missile defense plans, tying its implementation of START II to the maintenance of ABM.⁵⁷⁹ Russian officials and analysts consistently described U.S. plans as destabilizing.⁵⁸⁰ However, there is evidence to suggest that until the U.S. actually announced its intention to do so, Moscow was not convinced that Washington would abrogate the ABM treaty.⁵⁸¹ Even once U.S. plans became clearer, the Kremlin pushed for cooperation in missile

⁵⁷⁵ Oleg Falichev, "SShA Narushaiu Dogovor SNV-I," *Krasnaia Zvezda* (1999).

⁵⁷⁶ Vitol'd Lobodenko et al., "Protivoraketnaia Oborona Uiazvima," *Nezavisimoe Voennoe Obozrenie* (1999); Sokut, "Vashington Vnov' Reanimiruet Programmu 'Zvezdnykh vojn'."

⁵⁷⁷ Moskvina, "Novaia Strategiiia Nastorazhivaet Zapad."

⁵⁷⁸ Mikhail Tsypkin, "Russian Politics, Policy-making, and American Missile Defense," *International Affairs* 85, no. 4 (2009), p. 791.

⁵⁷⁹ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2000."

⁵⁸⁰ Fenenko, "Transformatsiia Sderzhivaniia."

⁵⁸¹ Noted in "Est' Li Budushchee u Dogovora po PRO."

defenses, rather than unilateral action by the United States.⁵⁸² Indeed, in June 2000 Putin proposed cooperative missile defense efforts between the two countries, a proposal later detailed further, and characterized as cooperation across Europe, at meetings with NATO later that month by Defense Minister Sergeev.⁵⁸³

Perspectives on just what the United States and its allies might do to hurt Russia, and what Russia should do to prepare, varied. Deputy Defense Minister Nikolai Mikhailov, writing in *Krasnaia Zvezda*, argued that Russia should align with China, the Republic of Korea, India, and Malaysia to counter the US "information monopoly."⁵⁸⁴ (It is worth noting here that while not generally reflected in official documents, the argument that China might pose a threat also appeared from time to time.⁵⁸⁵) Some analysts postulated that the United States might use separatists and terrorists to attack Russia.⁵⁸⁶ Far more common, however, were arguments that Russia could be subject to the same sort of "coercive" uses of air power and precision weapons as had been effective in the former Yugoslavia.

Indeed, the lessons of NATO's air campaigns in the former Yugoslavia and Iraq were consistently presented in discussions of the capabilities Russia might need. The main lesson Russian analysts seemed to take from these campaigns was that airpower and precision weapons could be decisive on the battlefield.⁵⁸⁷ There were some dissenting voices: SRF Commander Iakovlev argued that war in the Balkans also showed the limits of western conventional precision capabilities and that Russia had no cause to be overly concerned. His, however, was a minority

⁵⁸² Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," pp. 502-503.

⁵⁸³ "Predlozhenie Vladimira Putina Sovmestno s SShA Sozdavat' Protivoraketnyi Shchit - Priglasenie SShA k Novomu Kachestvu Dialoga po PRO," *Agenstvo Voennykh Novostei* (2000); Igor' Korotchenko, "Na Puti Sotrudnichestva Rossiia-NATO Sokraniuitsia Prepiatstva," *Nezavisimoe Voennoe Obozrenie* (2000).

⁵⁸⁴ Mikhailov, "Natsional'naia Bezopasnost' Na Rubezhe Vekov."

⁵⁸⁵ Pushkin, "Geopolitika: Grozit Li Kto Nam iz Sosedei?."

⁵⁸⁶ "Problemye Voprosy Vzaimodeistviia Sil i Voisk Voennno-Morskogo Flota s Drugimi Vidami Vooruzhennykh Sil, sDrugimi Voiskami i Voinskimi Formirovaniiami rossiiskoi Federatsii v Ob'edinennykh Gruppirovkakh Federal'nykh Sil v Sovermennykh Usloviakh," *Voennaia Mysl*, no. 6 (1999).

⁵⁸⁷ Evgenii Aleksandrovich Fedosov and Igor' Dmitrievich Spasskii, "Vysokotochnoe Oruzhie Zanialo Mesto Boga Voiny," *Nezavisimoe Voennoe Obozrenie* (1999).

view.⁵⁸⁸ His boss, Defense Minister Sergeev, far less sanguine, characterized western conventional improvements as potentially a new revolution in military affairs. He called on Moscow to respond with its own investments in “breakthrough” technologies.⁵⁸⁹

Russia’s fears of western conventional capability led it to push for the inclusion of those weapons into future arms control negotiations, along with verifiable warhead dismantlement and other mechanisms to eliminate the U.S. upload hedge.⁵⁹⁰

To bridge the gap between Russia’s actual wars and concerns about the U.S. and NATO, not a few Russian analysts argued that large-scale conflict was most likely to result from the escalation of a local war.⁵⁹¹ Some bolstered the argument with (again) the examples of the Persian Gulf War and conflict in the Balkans, enabling them to reinforce the importance of both airpower and precision weapons.⁵⁹²

Increasingly, however, Russia’s worries were closer to home. Western troop numbers were growing in Central Asia, where Russia had long feared (and, in Tajikistan, responded to) instability. Despite Putin’s initial statement that Western presence in the region, in support of its war in Afghanistan, was “not a tragedy,” as relations deteriorated and U.S. troops stayed, building ties with Russia’s neighbors, Moscow grew more concerned. While few defined specific scenarios for escalation, Defense Minister Ivanov was not alone in arguing that long-term presence of foreign troops in the region would hurt, rather than help, stability.⁵⁹³ Many Russians

⁵⁸⁸ Sokut, "Obrushitsia Sistema Strategicheskoi Stabil'nosti."

⁵⁸⁹ Igor' D. Sergeev, "Osnovnye Faktory Opredeliaiushchie Voenno-Tekhnicheskoiu Plitiku Rossii Nakanune XXI Veka," *Krasnaia Zvezda* (1999).

⁵⁹⁰ "Rossiiskaia Pozitsiia Na Budushchikh Peregovorakh po SNV-3: Prognoz," *Voprosy Bezopasnosti* (1999); D'iakov and Podvig, "Na Povestke Dnia Dogovor SNV-3."

⁵⁹¹ Aleksandr Dolinin, "Raketnye Voiska: Vzgliad v XXI Vek," *Krasnaia Zvezda* (1999).

⁵⁹² Oparin, "Rol' Dal'nei Aviatsii v Obespechenii Natsional'noi Bezopasnosti Rossii; Fedosov and Spasskii, "Vysokotochnoe Oruzhie Zanialo Mesto Boga Voiny."

⁵⁹³ Ivanov, "Strategicheskaiia Stabil'nost' Na Soveremennom Etape."

believed that the U.S. sought a foothold in Central Asia as a component of their desire to weaken Russia.⁵⁹⁴

Thus, Russia's threat perception throughout this period was of a varied set of threats. Despite the fact that Russia's military was fighting in Chechnya for the second time in a decade, and that most of its wars were local, the most important threats were deemed those from the United States and NATO, exacerbated in 1999 by the bombing of Serbia and in 2001-2002, after a brief thaw, by U.S. abrogation of the ABM Treaty. Russia was concerned about both the nuclear and conventional capabilities of the United States and NATO, as well as less well-defined efforts by these states to exert influence over Russia and its neighbors.

Bureaucratic Strength of the Strategic Rocket Forces

Although government budgets started to go up with GDP, it took some time for this to reach the forces. In 1999, the Air Force complained of gaps in fuel and the need for aircraft and airfield repair.⁵⁹⁵ That same year, some raised questions about whether the increased tempo for the force would be funded.⁵⁹⁶ The Navy, however, was in far worse shape, just as it had been throughout the 1990s. In 1999 it complained that its budget was sufficient to cover only eight or nine months of sailor and officer pay, and only three percent of the cost of repairs. It also reported that it was forced to withdraw ships from service early, because they could not be repaired. Fuel shortages made it impossible to raise the number of patrols.⁵⁹⁷ Even submarine dismantlement was underfinanced. Russian planned to dismantle 10

⁵⁹⁴ Olga Oliker, "Friends Like These: Defining U.S. Interests in Central Asia," in *In the Tracks of Tamerlane: Central Asia's Path to the 21st Century*, ed. Daniel L Burghart and Theresa Sabonis-Helf (Washington, D.C.: National Defense University Center for Technology and National Security Policy, 2004).

⁵⁹⁵ Kornukov, "VVS Kak Faktor Natsional'noi Bezopasnosti."

⁵⁹⁶ Sokut, "Ob'edinenie s PVO Pozvolilo Sokratit' Sily i Sredstva Bez Ushcherba Dlia Boesposobnosti Voisk."

⁵⁹⁷ Stanislav Masliuk, "Iz Gosdumy. Glavnyi Shtab VMF Prinial Dumskii 'Desant'," *Krasnaia Zvezda* (1999); "K 2005 Godu Korabel'nyi Sostav Voenno-Morskogo Flota Rossii Mozhet Umenshit'siz v Dva Raza," *Agenstvo Voennykh Novostei* (1999); S. Klimenchenko, "Strategicheskaiia Zadacha - Sokhranit' Korabli," *Na Strazhe Zapoliar'ia*, no. 3 (2000).

subs between January and October 1999, but was only able to destroy six.⁵⁹⁸ These problems manifested in the SSBN fleet, even as they did elsewhere, and the problems lasted well into the new century: Russia's fleet proudly reported a year without accidents in early 2000,⁵⁹⁹ only to face the infamous sinking of the Kursk submarine in August of that year.

The SRF, for its part, seemed to have remained in comparatively good shape. In August of 1999 SRF chief Iakovlev was still offering the party line that Russia's economic situation precluded serious conventional capability development and thus meant that it needed to rely on its nuclear deterrent.⁶⁰⁰ For that year, this meant that the SRF, specifically, was allocated a substantial share of the defense budget. Exactly how much is difficult to parse, as sources vary widely. Topol-M designer Yuri Solomonov claimed that the missile program was financed at only 15% of requirements, a level far from sufficient for serial production.⁶⁰¹ Yet, preliminary plans had promised the SRF some 28 percent of procurement rubles, with a focus on modernization of strategic forces.⁶⁰² Il'ya Klebanov, the Deputy Prime Minister in charge of the defense industrial complex, indicated that 80 percent of Russia's defense order had gone to supporting the SRF (although it is not clear during what period).⁶⁰³ His numbers are challenged, however, by MoD sources indicating that in 1999 the combined sum for the SRF, Air Force, and Navy was less than 50 percent of the order.⁶⁰⁴ In 1999, the Duma unanimously passed a law that guaranteed financing to the Strategic Rocket Forces.⁶⁰⁵

The financing story tells us, then, that the Navy remained substantially underfunded, the Air Force still felt short of funds, and the SRF remained

⁵⁹⁸ "V 2000 Godu Minatom Rossii Planiruet Vydelit' 1 Mlrd. Rublei Na Utilizatsiiu Atomnykh Podvodnykh Lodok," *Agenstvo Voennykh Novostei* (1999).

⁵⁹⁹ "Strategicheskaya Zadacha - Sokhranit' Korabli."

⁶⁰⁰ Dolinin, "Raketnye Voiska: Vzgljad v XXI Vek."

⁶⁰¹ Korotchenko, "Pervyi Pusk-V Etom Godu; "Rossiia Namerena Predpriniat' Dopolnitel'nye Usiliia Dlia Aktivizatsii Dialoga s Soedinennymi Shtatami po Povodu PRO."

⁶⁰² Batalov and Shchipanov, "Arsenal. Iadernyi Kod Bezopasnosti."

⁶⁰³ "Gosudarstvennyi Oboronnyi Zakaz Na Obychnye Obrazy Vooruzhenii i Voennoi Tekhniki Uvelichitsia Bolee Chem v Dva Raza."

⁶⁰⁴ Sergei Sokut and Igor' Korotchenko, "V 2000 Godu Dokhody Oboronki Vozrastut," *Nezavisimoe Voennoe Obozrenie* (2000).

⁶⁰⁵ Petr Karapetian, "Zakonproekt. SIA Ob'edinili Deputatov," *Krasnaia Zvezda* (1999).

comparatively well-resourced into 1999. In the meantime, the effects of the 1998 reorganization were manifesting, both good and ill. The consolidation of the SRF, Air Defense, and Space Forces was touted as saving large amounts of money, even as Russia continued to struggle to pay personnel and provide social benefits.⁶⁰⁶ Meanwhile, the Early Warning Forces commander and four of his deputies found the new structure sufficiently constraining that they resigned in 1999, while the Air Defense forces complained of food shortages.⁶⁰⁷

In 2000, however, the Kremlin decided to deemphasize the strategic nuclear forces in general and the SRF in particular. The first indicator of a shift was the failure of Sergeev's plan, discussed in the previous chapter, to consolidate all of Russia's strategic nuclear forces (naval, air, ICBM, and the 12th directorate) under a single Strategic Deterrent Force commanded by then-SRF Chief Iakovlev (who would also be named Deputy Defense Minister). The new structure would have had resourcing, planning, and operational control over the strategic forces. Signed, as noted in the last chapter, in late 1998, it was to have been implemented in 1999. On the face of it, the plan had some potential advantages. It seems plausible that consolidation would have enabled substantial cost savings. It could also have helped assure the continued financing of the nuclear strategic forces, especially the SRF. However, some speculated that Sergeev's reasons for pushing consolidation were more parochial, specifically to make it possible to promote his protégé Iakovlev to Defense Minister when he retired.⁶⁰⁸

But while many assumed the plan was a done deal and speculated on its implementation, it stalled.⁶⁰⁹ Reportedly at the core of its failure was that Sergeev had not gotten agreement from the rest of the MoD, General Staff Chief Kvashnin, the Security Council, or the Prime Minister. Indeed, the General Staff, which would have

⁶⁰⁶ Il'shat Baichurin and Viacheslav Davidenko, "Aktual'noe Interv'iu. Den'gi Dlia Raketnykh Voisk," *Krasnaia Zvezda* (1999).

⁶⁰⁷ Iakovlev, "Boevoe Dezhurstvo: Ekzamen Derzhat Voiny PVO. Ispytanie Na Zrelost' Ili Slozhivshaiasia Privychka."

⁶⁰⁸ "Ob'edinennoe Glavnoe Komandovanie Strategicheskikh Sil Sderzhivaniia kak Istochnik Protivorechii v Ministerstve Oborony."

⁶⁰⁹ Rogov, "Voennaia Reforma. Vzgliad Zpetsialista. Rossiia i Iadernoe Oruzhie; "Iadernyi Shchit Rossii v Novykh Usloviakh," *Krasnaia Zvezda* (1999).

lost operational and planning control over the nuclear strategic forces to the new organization, was opposed. Evidently, the 12th main directorate was also opposed. According to a contemporary article, the Navy and Air Force were agnostic, expecting the change to have little impact on their operations. This may indicate that strategic nuclear operations were divided from conventional ones in these services. This, however, is difficult to credit, particularly for long-range aviation. Indeed, outside analysts argued that removing strategic aviation from the Air Force's purview would weaken it substantially and potentially even eliminate the conventional (strategic and tactical) capabilities and role of long-range aviation.⁶¹⁰

Whatever the positions of the specific services, in the event, it was the General Staff that put up a fight. Sergeev was openly challenged by its Chief, Anatoly Kvashnin, a long-time proponent of a stronger conventional capability and more "minimal" nuclear deterrence.⁶¹¹ Kvashnin had never made a secret of his skepticism of reliance on the nuclear strategic force. By the end of June 1999, the working group on strategic forces reform, tasked with developing an implementation program for the Sergeev plan, had been disbanded. There was also no evidence the plan was discussed at an April National Security Council meeting focused on nuclear capabilities.⁶¹² Instead, by the end of that year, even as Russia's new doctrine lowered the nuclear threshold, the government had committed to shift funds to conventional forces.⁶¹³

In the middle of 2000 the General Staff Chief backed a proposal to reduce Russia's strategic nuclear force to 1000-1500 warheads, as well as potentially eliminate the Strategic Rocket Forces as a separate military structure. His approach also reiterated the intent to move Russia to a three-service structure, subordinating the SRF to the Air Force. Sergeev was of course opposed, and not a few had long

⁶¹⁰ Valentin Rog, "VVS Dolzhny Ostat'sia Edinyimi," *Nezavisimoe Voennoe Obozrenie* (1999); Chernorechin, "Rol' Voennoi Aviatsii v Soveremennoi Voine."

⁶¹¹ "Gosudarstvennyi Oboronnyi Zakaz Budet Skorrekktirovan s Uchetom Situatsii Na Severnom Kavkaze," *Agentstvo Voennykh Novostei* (1999); Sergei Sokut, "Topolinyi Les Zamedlil Svoi Rost. Sorok Pervyi God s Momenta Obrazovaniia Stal Samym Trudnym v Istorii RVSN," *Nezavisimoe Voennoe Obozrenie* (2001).

⁶¹² "Analitiki PIR-Tsentra Otsenivaiut Itogi Iadernogo Zasedaniia Soveta Bezopasnosti."

⁶¹³ "Gosudarstvennyi Oboronnyi Zakaz Na Obychnye Obrazy Vooruzhenii i Voennoi Tekhniki Uvelichitsia Bolee Chem v Dva Raza."

expressed doubts that this would ever happen. But Sergeev's moment was over: the SRF was demoted from a service to a branch.⁶¹⁴ In August 2000, a Security Council formally decided to begin deprivileging the missile force, ending all modernization programs while allowing missiles to live out their service life (a January 2001 decision further cemented the move).⁶¹⁵ Naval strategic forces also took a hit. Russia's March 2000 Naval Policy identified nuclear strategic capabilities as among those needed by the Russian Navy, rather than the Navy's central role, as had been the case in the past.⁶¹⁶

In late March 2001, Sergeev was dismissed as Defense Minister, replaced by Sergei Ivanov, who shared Putin's FSB background and had held the military reform portfolio on the Security Council prior to his appointment to the Defense Ministry.⁶¹⁷ Nikolai Solovtsov was named the new SRF commander one month later, replacing Sergeev protégée Vladimir Iakovlev. Some reports indicated that Solovtsov was asked by the MoD leadership to limit his public activities so as not to call attention (public or Duma) to the rocket forces. The SRF was stripped of its control of the Space Forces and both of these organizations were reclassified as branches reporting to the General Staff. Early warning and some air defense capabilities were subordinated to the space forces.⁶¹⁸ Discussions about subordinating the SRF to the Air Force, however, came to naught.⁶¹⁹

⁶¹⁴ Norris and Arkin, "Nuclear Notebook: Russian Nuclear Forces, 2001;" Petr Romashkin, "Rossiia Teriaet Iadernyi Status," *Nezavisimoe Voennoe Obozrenie*, no. 6 (2001).

⁶¹⁵ Rog, "VVS Dolzhny Ostat'sia Edinymi; Mikhail Vinogradov, "Protivoraketnaia Oborona Nachal'nika Genshtaba," *Russkaia Mysl*, no. 4328 (2000).; "'Stroitel'stvo Vooruzhennykh Sil Budet Otvechat' Vyzovam Vremeni' interview with Russian Defense Minister Sergei Ivanov," *Krasnaya Zvezda*, August 10 2001.; Khodarenok, "Nuzhna Li Rossii Vozdushno-Kosmicheskaiia Oborona;" Alexei Arbatov and Petr Romashkin, "Kakie Voiny Rossii po Karmanu," *Nezavisimoe Voennoe Obozrenie*, April 27 2001.; "The Russian Army Will Become Triune," *Emerging Markets Database (Izvestia Press Digest)*, April 18, 2001.; See also Alexei Arbatov, Vladimir Dvorkin, and Sergey Oznobishchev, *Russia and the Dilemmas of Nuclear Disarmament* (Moscow: IMEMO RAN, 2012); Timofeev, "Sokrashchenie RVSN Ob'ektivno Neizbezhno. Drugoe Delo, Skol'ko Vremeni Zaimet Etot Protsess; Sokut, "Ob'edinenie s PVO Pozvolilo Sokratit' Sily i Sredstva Bez Ushcherba Dlia Boesposobnosti Voisk."

⁶¹⁶ Vladimir Putin, "Morskaia Politika Rossii," *Kaspiets*, no. 15 (2000).

⁶¹⁷ Aleksandr Voronin, "Rech Idet o Statuse..." *Armeiskii Sbornik*, no. 12 (2007).

⁶¹⁸ Solovtsov, "Garantiia Bezopasnosti; Aleksandr Kulakov, "Asimmetrichnyi Otvet Ne Spaset," *Nezavisimoe Voennoe Obozrenie*, no. 25 (2008); Rog, "VVS Dolzhny Ostat'sia Edinymi; Vinogradov, "Protivoraketnaia Oborona Nachal'nika Genshtaba;" "'Stroitel'stvo Vooruzhennykh Sil Budet Otvechat' Vyzovam Vremeni' interview with Russian Defense Minister Sergei Ivanov;" Khodarenok, "Nuzhna Li Rossii Vozdushno-Kosmicheskaiia Oborona;" Arbatov and Romashkin, "Kakie Voiny

Some analysts saw these shifts, combined with pending START II ratification, as likely to lead to a focus on Naval and/or bomber capabilities. Some projections envisioned a 1500 warhead force with 600-700 air-launched bombs and missiles and 700 sea-launched warheads, leaving only 100-200 for the SRF.⁶²⁰ In 2001-2002, a debate played out in the pages of the weekly *Nezavisimoe Voennoe Obozrenie* and a few other fora. Sergei Brezkun argued that given funding constraints on all of Russia's nuclear forces, it behooved Moscow to rethink the triad and to focus its resources on the Strategic Rocket Forces (although in a later piece, he allowed as to how naval forces might play a support role).⁶²¹ In response, others made the argument for the SLBM fleet as first among equals due to its survivability (some even suggesting that all strategic nuclear forces be subordinated to the Navy). Not a few pointed out that other nuclear powers, including the United States, placed all or most of their warheads on submarines, rather than ICBMs.⁶²² Others, in turn, argued that strategic aviation was the most important component, both because of its prominence for plausible war fighting and its capacity to serve in both nuclear and conventional roles.⁶²³

Indeed, submarine-based capabilities did get a bit more attention. Even if funding for the Navy as a whole remained insufficient, the MoD promised in 2001 to

Rossii po Karmanu;" *"The Russian Army Will Become Triune;"* See also Arbatov, Dvorkin, and Oznobishchev, *Russia and the Dilemmas of Nuclear Disarmament*; Timofeev, "Sokrashchenie RVSN Ob'ektivno Neizbezhnko. Drugoe Delo, Skol'ko Vremeni Zaimet Etot Protsess; Sokut, "Ob'edinenie c PVO Pozvolilo Sokratit' Sily i Sredstva Bez Ushcherba Dlia Boesposobnosti Voisk; Podvig, "History and the Current Status of the Russian Early-Warning System."

⁶¹⁹ "Russia."

⁶²⁰ Romashkin, "Rossiia Teriaet Iadernyi Status."

⁶²¹ Sergei Brezkun, "Iaderno-Podvodnyi Perebor. Rossiia Stoit Pered Neobkhdimost'iu Provesti REviziiu Svoei Strategicheskoi Triady," *Nezavisimoe Voennoe Obozrenie*, no. 27 (2001); "Polemika. Retsidiv Global'nykh Ambittsii," *Nezavisimoe Voennoe Obozrenie*, no. 20 (2002).

⁶²² Makeev, "Vremiia i Flot. Morskie Strategicheskie Iadernye Sily i Podderzhanie Strategicheskoi Stabil'nosti; Vladimir Zaborskii, "Struktura Triady. Eshche Odin 'Perebor' v Nepriiatii Voennogo - Morskogo Flota," *Nezavisimoe Voennoe Obozrenie*, no. 31 (2001); "Vsekh 'Strategov' - Na Flot," *Nezavisimoe Voennoe Obozrenie*, no. 44 (2002); Georgii Kostev and Igor' Kostev, "Vopreki Doktrine i Programmam. Provozglasiv v Svoei Morskoj Strategii Okeanskie Prioritety, Rossiia Pristupila k Stroitel'stvu Korablei Blizhnei Morskoj Zony," *Nezavisimoe Voennoe Obozrenie*, no. 3 (2002).

⁶²³ Valentin Rog, "Dokument, Dalekii ot Sovershenstva," *Nezavisimoe Voennoe Obozrenie* (2000); "Orientir--Neiadernoe Sderzhivanie. Blagodaria Svoei Universal'nosti i Manevrennosti Nailuchshim Obrazom Etu Zadachu Mogut Reshit' VVS," *Nezavisimoe Voennoe Obozrenie*, no. 38 (2001). Similar arguments had been made in 1999 Iurii Gavrillov and Sergei Babichev, "VVS: Zadachi Po Reformirovaniu Vypolneny," *Krasnaia Zvezda* (1999); Batalov and Shchipanov, "Arsenal. Iadernyi Kod Bezopasnosti."

restart construction of ballistic missiles for strategic nuclear submarines the following year. This promise was an interesting one, given that the process was actually already in train on the basis of 1998 decisions.⁶²⁴ But in January of 2002, then First Deputy General Staff Chief Yuriy Baluevskiy stated that Russia's new nuclear concept placed construction priority on naval systems.⁶²⁵ Later that year the Makeev design bureau was promised substantial new funding to maintain capacity to produce SLBMs.⁶²⁶ This is notable given the fact that MITT, with which Makeev maintained a public debate begun in 1998, continued to have the contract for the Bulava.⁶²⁷

This was not solely about submarines, however. Decisions to continue to produce missiles were also heavily lobbied by Russia's domestic space agency, Roskosmos. Moreover, continued production of the Sineva likely saved the Krasnoyarsk Machine Building Plant (Krasmach), the long-time manufacturer of SLBMs as well as core modules for the upper stage of the Zenith and Proton rockets.⁶²⁸

All of this seems adequate evidence of a challenge to the SRF's dominance. However, it would prove short-lived. Emphasis on the Navy had its critics from the start. Petr Romashkin, writing in 2001, however, argued that an emphasis on the underwater leg of the triad would lead to a very small second strike capability: he doubted that the Navy would not be able to boost its SSBN patrols beyond than 1-2 boats at a time (out of 6-7 total).⁶²⁹ And by May 2001, even the Air Force was hesitant to overturn SRF supremacy. 37th Air Army Chief Oparin, while highlighting an enhanced role for bombers, nonetheless characterized the SRF as the basis for Russian strategic nuclear capabilities.⁶³⁰

⁶²⁴ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁶²⁵ Sergei Sokut, "Russia Changes Its Conception for Building Nuclear Forces," *Nezavisimoe Voennoe Obozrenie*, January 19 2002.

⁶²⁶ Mikhail Khodarenok, "Tema. Sud'ba 'Taifuna'," *Voенно-Promyshlennyi Kur'er* (2004).

⁶²⁷ Kassianova, "The Bulava Missile: What Propels its Unsteady Flight?."

⁶²⁸ Thanks to Pavel Podvig for pointing this out in an email exchange with the author in December 2012.

⁶²⁹ Romashkin, "Rossiia Teriaet Iadernyi Status."

⁶³⁰ Ibid.

In summary, the SRF, which started the period strong, was substantially weakened bureaucratically in 2000 by a conscious decision taken by Defense Ministry and central government leaders to prioritize conventional capabilities. But while conventional forces may have been strengthened, this did little to boost the submarine and bomber fleets (although it may have helped ensure that SLBM production continued, no mean feat in itself, given that it required repeated effort and attention). By the end of the period, however, it appeared that the SRF, although downgraded in the context of the armed forces as a whole, remained safe in their privileged position vis-à-vis the other strategic deterrent forces.

How the Theories Perform

I now return to the postures between 1999 and 2002 (represented in Tables 6.1 and 6.3 above) and combine them with the intervening variables of threat environment and SRF status, described above, to evaluate the performance of the theories.

Throughout these years, the disconnect between declaratory policy and force structure again means that the systemic theories cannot provide complete explanations: both predict alignment between all aspects of posture. However, it is still worth asking whether their predictions align with either declaratory policy or force structure.

To recap, between 1999 and 2000, Russia's declaratory policy combined an emphasis on Warfighting Escalatory approaches to conventional adversaries with rhetoric that matched Assured or Launch on Warning approaches in regard to nuclear adversaries. It also emphasized parity with the United States. A posture that combines Assured and Warfighting elements is predicted by the Absolute Weapon theory when the economy is doing well (and, as discussed, it was on the upswing) and both nuclear and conventional threats are present. However, that theory predicts minimal force size. The Internal Balancing theory predicts an Assured posture under such circumstances but calls for more emphasis on parity. Thus, overall, declaratory policy seems more in line with Absolute Weapon theory for this

period, despite the disconnect on force size and the continued presence of some discussion of Launch on Warning.

This said, both theories predict a posture that combines a Warfighting Escalatory approach with either an Assured or Launch on Warning strategy if threats are mixed and the economy is doing poorly. I note this because while Russia's economic recovery had begun, there remained substantial distrust that the boom would last. It may therefore be more appropriate to code this part of this period as one in which resources were still constrained. If that is the case, declaratory policy, including the emphasis on parity, is actually a better fit for the Internal Balancing and Prestige theory.

The problem is that regardless of which theory better matches declaratory policy, neither of these two match force structure, except in the emphasis on parity that was reflected in fielded forces as well as rhetoric (and thus makes a better match for the Internal Balancing/Prestige theory). The lack of investment in non-strategic capabilities is one key disconnect, precluding an effective Warfighting Escalatory approach. While the lack of investment in survivable systems makes it hard to make the case for an Assured posture, a Launch on Warning posture would still be plausible—except for the lack of investment in early warning. Another is the continued failure to improve early warning.

The Cultural/Bureaucratic theory has a lower bar, because it allows for a disconnect between declaratory policy and force structure. And, as long as the SRF is not challenged, as it was not in 1999, it predicts exactly the Strategic Escalatory posture we continue to see in Russia—an emphasis on offensive systems, especially silo-based ICBMs, over and above all else, and an effort to build as large a force as feasible.

What of the later part of the period, when rhetoric began to sound more like an Assured or a Launch on Warning approach? At this point, with more faith in the economic boom, the Absolute Weapon theory's prediction of a posture that combines Assured with Warfighting Escalatory elements does not hold up because of the rejection of the latter. Here, the Internal Balancing theory predicts an Assured posture, which does match the rhetoric, including in a continued emphasis on force

size parity with the United States. Moreover, Russia's stated concerns about missile defense imply a desire to maintain the capacity to ride out an initial adversary attack.

However, an Assured strategy would have required far more attention to survivable forces than we see. Instead, the force structure did not really change. One could argue that given the short time-frame, it is too much to ask for Russia to have truly shifted its posture to a more survivable, Assured, approach. But some movement in this direction would be expected. Instead, while there was rhetoric suggesting greater emphasis on SLBMs during this period, this did not translate into real support of the fleet (although it may, once again, have kept it from being entirely eliminated).

My Culture and Bureaucracy theory also does not do as well during this subperiod as it did previously. This is because the SRF was challenged, and quite effectively, including a downgrade from service to branch. But while this resulted in renewed emphasis on conventional weapons and some discussion of boosting the Naval and, to a lesser extent, Air Force legs of the triad, the nuclear force structure did not actually shift. The SRF remained, despite its demotion among the armed forces as a whole, first among the strategic nuclear forces. Again, the short time-frame may have precluded real shifts, and its demotion in a general sense, as well as the discussion of a greater naval role, are all still notable. Moreover, the theory notes that sustainable change requires broader strategic cultural shifts, which the continuing debate on nuclear weapons suggests may not have occurred. Thus, the period is not devastating to this theory, but it does not strongly confirm it.

To put this in graphic form, I present below the predictions of the different theories for this time period and the actual outcomes side by side, differentiating between declaratory policy and force structure.

Table 6.4: Predictions and Reality 1999-2002

Years	Absolute Weapon	Internal Balancing and Prestige	Cultural/ Bureaucratic	Actual Posture
1999-2000	(Assured or LoW) +WE; minimal size	(Assured or LoW) +WE; parity+	SE; maximal size	Declaratory: WE + Assured/LoW, parity. Force structure: SE, parity
2000-2002	Assured + WE; minimal size	Assured; parity+	Shift away from SE	Declaratory: Assured/LoW, parity Force structure: SE, parity

Thus, this period is ambiguous in terms of what it tells us about the theories. First, behavior during the first two years is generally more in line with a slow economy than with growth, although it is reasonable to expect that Russia was adjusting to growth after a long and difficult period of hardship. With this in mind, the Internal Balancing theory is reasonably well-aligned with declaratory policy, if not force structure, throughout the period, although the disconnect itself represents a failure for the theory. The Cultural/Bureaucratic theory performs best at predicting force structure in the early stages of this period, but its predicted shifts do not occur in the second phase. The Absolute Weapon theory is aligned with declaratory policy in all but the question of force size during the first half of the period, but the theory does poorly in the second half. It is also quite notable that in the early part of this period, the disconnect between Russia's declaratory policy, which called for the use of small-scale nuclear strikes to deter conventional conflict, and its force structure, which failed to emphasize such capabilities, is particularly high.

Conclusion

Between 1999 and 2002, Russia's economy began to improve, but few expected this to last, at least initially. Meanwhile, the country's security situation remained unclear, with a renewed domestic conflict in Chechnya and overall

worsening relations with the United States, despite a brief effort at rapprochement in the wake of the September 11 attacks. Meanwhile, at the turn of the century Russia's General Staff presented a challenge to the SRF's predominance in the armed forces, demanding more resourcing and attention to conventional capabilities and preventing the SRF from taking formal leadership over the strategic nuclear forces as a whole.

While Russia had more money at its disposal, the fear that this was temporary meant that for the first couple of years of this period, it seemed to behave as though it did not. This, combined with the Kremlin's concerns about both nuclear and conventional capabilities on the part of adversaries created a situation in which both systemic theories predicted that Russia would pursue a force posture that combined Warfighting Escalatory elements with ones appropriate to either Assured or Launch on Warning postures. The Cultural/Bureaucratic theory predicts continued emphasis on offensive strategic ICBM capabilities for a Strategic Escalatory posture.

Later, with the threat environment still comprised of both conventional and nuclear worries but economic growth seeming more reliable, the Absolute Weapon Theory predicts a Warfighting Escalatory/Assured posture that would enable nuclear use in conventional contexts, and deter any nuclear-armed adversary with the threat of a large-scale retaliatory strike. The Internal Balancing theory, by contrast, predicts an Assured force posture that promises a retaliatory strike against nuclear adversaries, but eschews nuclear use vis-à-vis conventional threats, and thus does not invest in nonstrategic forces or threaten the first use of nuclear weapons. Finally, the Cultural/Bureaucratic theory predicts that the successful challenges to the SRF in evidence from 2000 to 2001 will lead to a shift in emphasis towards non-ICBM capabilities.

In fact, Russia incorporated Warfighting Escalatory and nuclear retaliation-based elements into its declaratory policy in 1999 and early 2000, but failed to build the forces that would make these feasible. During the second part of the period, it walked away from the first use rhetoric to an emphasis on retaliation in the event of nuclear attack (whether through ride-out or launch on warning), but again did not

make any real changes to the force structure. Thus, in the first half of the period the Cultural/Bureaucratic theory holds up best for force structure, while Internal Balancing aligns with declaratory policy. Both of these theories also predict the emphasis on parity that is, in fact, evident in both rhetoric and fielded systems. In the second half of the period, the Internal Balancing theory again predicts the declaratory policy, but the force structure does not align with the predictions of any of the theories, except for the continuing emphasis on parity.

One possible very simple explanation for these disconnects is that this period is a short one, and policies changed quickly. It may well be that Russia simply did not have time to so substantially shift its force structure, even with the two-year time lag I include. Force structure follows changes in policy, whether these are bureaucratically driven or strategically determined, and change takes time. Between 1998 and 2000, Russia changed Presidents once and changed nuclear strategy twice. Still more changes followed by the end of 2002. That is a lot to respond to, and perhaps it should not surprise us that the results are not entirely clear.

Chapter Seven: 2003-2008, The Boom Years

Introduction

2003-2008 was an economic boom period for Russia, as the recovery that began in 1999 took firm hold. GDP grew rapidly and consistently. Meanwhile, President Vladimir Putin steadily centralized power around the executive office, and increased limits on political opposition and dissent. In 2007, Putin backed his First Deputy Prime Minister Dmitry Medvedev as his preferred (and thus only viable) Presidential candidate in the March 2008 elections. Medvedev took office in May 2008, and Putin became Prime Minister.

The war in Chechnya continued in the early part of the period, although responsibility for operations was transferred to internal security forces. As time went on, Chechnya looked increasingly stable, but the rest of the North Caucasus became marked by unrest, with terrorist attacks spilling into the rest of Russia. Meanwhile, the United States and NATO continued to be perceived as seeking to weaken and undermine Russia, and military discussions and planning centered on them. The war that Russia fought at the end of the period, however, was a conventional conflict against its neighbor Georgia.

As was shown in Chapter Six, economic resurgence did not immediately reinvigorate Russia's strategic nuclear production lines. However, with time, the numbers of new systems began to ramp up (even as dismantlement of old weapons continued). The Strategic Rocket Forces benefitted most. Initially, only silo-based systems were joining the force. But after 2006, mobile systems, first the mobile Topol-Ms and then the new Yars RS-24 (fundamentally a MIRVed Topol-M) began to appear, the latter notably deployed first in mobile variants. Multiple warheads on ICBMs would have been prohibited by START II, but were now allowed under SORT. MIRVing could help keep Russia's warhead numbers up at a lower cost and was touted as part of the solution to U.S. missile defense plans. Overall, however, mobile missiles continued to drop as a share of the ICBM force.

The SSBN fleet continued to shrink, as well. While slow construction of the new Borei class submarines continued, their designated missile, the Bulava, began flight testing but did poorly. Russia maintained an SSBN force by keeping its 667 BRDM (Delta IV) submarines in service longer, thanks to the development of a new missile system, the Sineva, the result of a hard fought bureaucratic battle discussed in previous chapters. Interestingly, this meant that by the end of the period, the SLBM share of Russia's missiles was higher than at the start. Patrols, however, remained sporadic at best.

Bomber activity trends also remained steady, with a higher patrol op-tempo and more exercises. Modernization was slow but ongoing, and one new bomber joined the force, the first since 2000. Because bomber numbers were not shrinking the way SLBM and ICBM numbers were, the strategic air's share of the arsenal increased. On the other hand, modernization remained slow, and there was no evidence that bombers were receiving substantial funding allocations. Moreover, their prospective conventional role was touted more and more.

Russia's early warning system also remained on the same path as before—of deterioration. Although plans for a modernized follow-on were developed, it was slow to deploy and existing early warning satellites continued to fail. Ground-based radars were not sufficient to make up the difference; many continued to be located abroad, and deployments of new generation systems remained behind schedule.

Nonstrategic nuclear capabilities, which would likely be of use if Russia really saw warfighting potential for its nuclear forces, continued to be reduced in line with prior commitments. Towards the end of the period, however, talk surfaced of placing nuclear warheads on the new Iskander missile. Although officials initially denied any such plans, Russia's threats to place Iskanders in Kaliningrad late in 2008 were surely meant to play upon Western concerns about the system.

Meanwhile official Russian strategy was unchanged. The written doctrine on the books was that from 2000, an artifact of the 1999 debates (see Chapter Five), it allowed for nuclear use in the face of overwhelming conventional threats. However, as had been the case starting later in 2000, Russian officials had not emphasized or devoted much discussion to the possibility or mechanisms of first use. Instead,

statements implied that the primary role of nuclear weapons was to deter nuclear attacks, while conventional capabilities existed to deter conventional conflict.

Parity with the United States also remained important. It appeared to drive force size at least as much as any strategic goals. What these were was not entirely clear. While Defense Ministry leaders talked about the capacity to inflict unacceptable damage on an adversary to make them question the utility of any aggression, Putin spoke of the ability to “destroy” any possible aggressor. Many Russians also appeared genuinely concerned about the possibility of a debilitating U.S. first strike which, perhaps combined with advanced missile defenses, could obviate Russia’s second strike deterrent. This suggests that Russia at least considered a launch on warning strategy during this period, despite the condition of its early warning systems.

Table 7.1, below, illustrates Russia’s force posture trends between 2003 and 2008. Again, for force structure, the arrows indicate trends for each system: whether systems were getting more resourcing and programs were successful (arrow up), if systems were deteriorating, whether relatively to others or absolutely (arrow down), or if they were holding steady (arrows side to side). Because Russia continued to shrink its overall strategic nuclear force numbers, total numbers for all systems dropped and are thus not a primary determinant of the coding. Alongside the assessment for this period, I have placed the “ideal” or archetypal postures introduced in Chapter One.

Table 7.1: Posture 2003-2008

Postures		2003-2006	2006-2008	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy		First use if needed. Nuclear deterrence of nuclear weapons only preferred. Launch on Warning likely		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Declaratory Policy		First use if needed. Nuclear deterrence of nuclear weapons only preferred. Launch on Warning likely		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↑	↑	✗	✗	✓	✓	✓
	Silo-based ICBMs	↑	↑					✗
Survivable/ second strike	Mobile ICBMs	↓	↑	✓	✓	✗	✗	✗
	SLBMs	↔	↔	✗	✗	✗	✗	✓
	NSNF	↓	↔	✗	✗	✗	✗	✓
	Early Warning	↓	↓	✓	✓	✓	✓	✗
	Safeguards	↓	↓	✓	✗	✓	✗	✗

For the first years of this period, Russia’s force structure best matches either a Strategic Escalatory posture or a Launch on Warning posture, but since one of the key disconnects is continued problems with its early warning capabilities, the better match is the former. Declaratory policy during those years was a fair match for an Assured or a Launch on Warning posture, with an emphasis on nuclear deterrence of nuclear use. Parity also remained important in rhetorical terms and was matched by an emphasis on maintaining equal numbers with the United States in fact, as well. After 2006, the deployment of new mobile ICBMs suggests movement towards more of an Assured (or Versatile) capability, but progress was not sufficient to change the coding.

After 2006, declaratory policy remained in line with Assured or Launch on Warning postures and continued to emphasize parity. Moreover, some rhetorical attention to non-strategic systems in 2008 raises the possibility that first use approaches (supporting elements of Strategic Warfighting) may have been on the rise. There is not, however, sufficient evidence of this to be conclusive. Despite slight progress in SLBM and mobile missile development, the force structure remained focused on silo-based ICBMs. Combined with the weakness of early warning, this meant that despite these changes the archetypal posture that best matches the force structure of the second half of the period remained Strategic Escalatory—just as it had been in previous periods.

As discussed in previous chapters, the theories developed in Chapters One and Two outline a number of conditions under various postures are predicted. These relate to the economy (which was, as noted, doing spectacularly well during this period), threat environment, and the status of the SRF. Russian statements indicate that both nuclear and conventional threats were factors in planning and the SRF remained a powerful bureaucratic force. Under these conditions, the Absolute Weapon theory predicts a posture that incorporates elements of both Assured and Warfighting Escalatory approaches and tends towards minimal force size. The Internal Balancing theory predicts an Assured posture and an emphasis on parity, if not supremacy. Finally, the Culture and Bureaucracy theory predicts a Strategic Escalatory posture.

Thus, as in previous periods, Russia's declaratory policy aligns well with the systemic theories. Overall, the Internal Balancing and Prestige theory is best aligned with declaratory policy, as that tends towards an Assured posture and an emphasis on larger force size. However, the discussions of non-strategic systems suggest that the Absolute Weapon theory might have some explanatory power, as well. Force structure, for its part, remains in line with the predictions of the Culture and Bureaucracy theory, which is further supported by the emphasis on MIRVed systems, in line with that theory's description of Russian strategic culture as focused on firepower and offensive capabilities. This said, the movement towards improvements in survivable systems, while incomplete and hampered by continued under-emphasis on early warning, does lend some force structure support for the systemic theories, and bears watching (although it is also allowed for by the Culture and Bureaucracy theory).

This balance of this chapter first describes in more detail the evolution of Russia's force posture between 2003 and 2008 (allowing for two lag years into 2010 for actual fielding of systems), outlining developments in each of the identified components. It then asks what the theories say about the postures that result. This requires an assessment of the independent variables of Russia's threat perception and the strength of the Strategic Rocket Forces. With this, I evaluate how my theories perform against the tests posed by this time period.

Defining Russian Force Posture

As noted in Chapter Four, to describe Russian force posture, I unpack each component in turn. For declaratory policy, I focus on elements of rhetoric that address:

1. willingness to use nuclear weapons first in a conflict;
2. willingness and plans to use nuclear weapons against non-nuclear weapon states;
3. whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
4. attitudes towards parity/minimalism and survivability.

For force structure, I outline the evolution of Russian forces in the force structure categories identified in Chapter 1. These are:

- ICBMs, including less survivable silo-based ICBMs and more survivable mobile ICBMs.
- More survivable SLBMs
- Long-range bombers
- Non-strategic systems
- Early warning capabilities
- Safeguards

Declaratory Policy and Strategy

Official statements on the purpose of nuclear weapons continued to emphasize deterrence on the one hand and parity on the other. What these weapons were meant to deter was another question. The renewed focus on conventional capabilities since 2002 had created an overall narrative that nuclear weapons were for nuclear deterrence and conventional weapons for conventional deterrence. But while Russia's nuclear arsenal was no longer expected to be sufficient for all its needs, as the decade went on, there seemed less interest in debating the specifics of what nuclear weapons could and could not do. Some analysts continued to see

nuclear weapons as an absolute deterrent,⁶³¹ but this was not prevalent in government statements. In December 2004, Defense Minister Ivanov said that Russia's nuclear arsenal was first and foremost meant to deter aggression. This seemed to mean nuclear aggression, since he also said that deterrence required the ability to deliver a second strike sufficient that an adversary would doubt its ability to attain its war aims.⁶³² In December 2005, SRF Commander Solovtsov stated that Russia's nuclear weapons were intended to also defend other CIS countries.⁶³³ That same year, General Staff analysts wrote that deterrence rested on both nuclear and conventional capabilities, and their capacity to convince prospective aggressors that their goals would be denied and/or punished by Russian responses.⁶³⁴ In 2006, Ivanov said that Russia would maintain "a strategic deterrent capability minimally sufficient for guaranteed repulsion of contemporary and future military threats."⁶³⁵ In 2007, Putin stated that Russia's strategic deterrent forces had to be able to destroy any potential aggressor—a few steps beyond minimal sufficiency.⁶³⁶ Early in 2008, General Staff Chief Baluevskii said that Russia left open the possibility of preventive use of force, including nuclear weapons, to protect itself and its allies.⁶³⁷ On the other hand, Russia's 2008 Foreign Policy Concept spoke of reductions in nuclear forces, leading Mathers, for example, to argue that Russia began to shift back to a more minimalist deterrence posture by the end of 2007.⁶³⁸

Parity also remained an important component of declaratory policy. Putin's speeches linked nuclear forces to Russia's great power status and equality with the

⁶³¹ A. L. Khriapin and V.A. Afanas'ev, "Slovo Iuviliaram. Kontseptsual'nye Osnovy Stratgicheskogo Sderzhivaniia," *Voennaia Mysl*, no. 1 (2005).

⁶³² "Prioritety Nedeli. I Submarina Chetvertogo Pokoleniia," *Strazh Baltiki* (2004).

⁶³³ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2006."

⁶³⁴ Khriapin and Afanas'ev, "Slovo Iuviliaram. Kontseptsual'nye Osnovy Stratgicheskogo Sderzhivaniia."

⁶³⁵ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2006," citing a January 2006 *Wall Street Journal* editorial by Ivanov.

⁶³⁶ "Nuclear Notebook: Russian Nuclear Forces, 2007," *The Bulletin of the Atomic Scientists* 63, no. 2 (2007); "Nuclear Notebook: Russian Nuclear Forces, 2008," *The Bulletin of the Atomic Scientists* 64, no. 2 (2008).

⁶³⁷ "Nuclear Notebook: Russian Nuclear Forces, 2008;" Viktor Litovkin, "Akademicheskoe Bepokoistvo," *Nezavisimoe Voennoe Obozrenie*, January 25 2008.

⁶³⁸ Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," p. 510

United States.⁶³⁹ In 2006, Ivanov, as Deputy Prime Minister, argued that parity was necessary in order for Russia to be taken seriously.⁶⁴⁰ In 2006, Putin promised substantial growth in nuclear force numbers.⁶⁴¹ But parity meant more than just numbers—Russia was at least somewhat concerned about parity of capabilities. For example, in 2003, after U.S. strategic statements and documents referenced the possibility of pre-emptive strikes, including possible nuclear use, Russians called for modernization and development of new nuclear technologies to ensure that their country also had the capacity to pre-empt (somewhat begging the question of what was lacking in their capabilities that precluded pre-emption)⁶⁴²

The attitude towards MIRVing is in line with Russian parity goals. In 2005, Deputy SRF Commander Viktor Aleseev indicated that the U.S. abrogation of the ABM treaty had worked in Russia's favor, by enabling its withdrawal from START II and a shift to more MIRVed systems.⁶⁴³ A MIRVed ICBM force would help Russia reach upper treaty limits on warheads (that is, parity) while building fewer missiles. Moreover, MIRVed systems would allow for a range of possible loading options, giving Russia its very own upload potential (also possible with the Bulava SLBM system).⁶⁴⁴ And, of course, MIRVing was touted as one mechanism by which Russian systems would overcome U.S. missile defenses.

The connection between MIRVing and missile defense is important to the logic of Russian strategic nuclear strategy. Russians argued that MIRVed systems were critical to overcoming missile defense in a second strike scenario: Missile defense would effectively make a U.S. first strike debilitating, because those defenses would be able to overcome Russia's second strike. MIRVed systems would be better able to overcome those defenses. Russian concerns were about future

⁶³⁹ Ibid., pp. 508-509.

⁶⁴⁰ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁶⁴¹ "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁶⁴² "Otvét Rossii Na Iadernye Uzhimki Cheini. Stoit Li Otkryvat' Iadernyi Iashchik Pandory," *Novosti Razvedki i Kontrrazvedki* (2003).

⁶⁴³ Oleg Falichev and Andrei Gavrilenko, "Iz Pervykh Ruk. Iadernyi Paritet s Amerikoi Garantirovan," *Voenna-Promyshlennyi Kur'er* (2005).

⁶⁴⁴ Vladimir Gundarov, "Iadernyi Trezubets Strany," *Krasnaia Zvezda* (2004).

missile defense capabilities, not current ones⁶⁴⁵ (see also the discussion under threat environment, below). Moreover, while the survivability of systems received a certain amount of lip-service, both in discussions of submarines,⁶⁴⁶ and in the promises of future deployments of mobile Topol-M missiles, it was, as shown below, not matched by deployments.⁶⁴⁷ It is not clear, however, how the MIRVing of silo-based ICBMs is helpful in a second strike scenario. This, combined with continuing fears of a U.S. first strike (discussed below as well), indicates that a launch on warning strategy was very plausible.

Some of Russia's rhetoric also suggested possible strikes on missile defense systems. SRF Chief Solovtsov said in December 2007 that U.S. missile defense sites situated in Poland or the Czech republic could become targets for Russian ICBMs, to ensure that Russia's deterrent was not weakened—although he also said that if the system was limited by treaty, Russia would find it more acceptable. In February 2008, President Putin extended this threat to Ukraine, should it join NATO and host such facilities.⁶⁴⁸ Insofar as this suggests first nuclear strikes on these facilities, this is worrying, but it is not entirely clear whether this is what Solovtsov and Putin meant.

Finally, the question of non-strategic capabilities, and their prospective use for pre-emptive strikes seemed to all-but-disappear from the debate during this period. Indeed, there was simply less discussion of prospects for nuclear warfighting, linked, perhaps, to the stepping away from a notion of nuclear forces making up for conventional weakness. The one analytical piece that discussed this question posited the difficulty of carrying out tactical nuclear strikes with available non-strategic weapons and noted the dangers of early escalation. It also argued that non-strategic weapons could be of use in the strategic context, for instance in

⁶⁴⁵ Aleksandr Khriapin, "Poka Lish' Probnyi Shag," *Voенно-Promyshlennyy Kur'er* (2007).

⁶⁴⁶ Andrei Koliashnikov, "Naznachenie i Sostav Vooruzhennykh Sil Rossiiskoi Federatsii," *Orientir* (2006).

⁶⁴⁷ Viktor Alekseev, "'Topol' Posadili Na Kolesa," *Nezavisimoe Voенnoe Obozrenie* (2005); Oleg Vasilenko, "Raketnyi Shchit Rossii," *Armeiskii Sbornik*, no. 12 (2007).

⁶⁴⁸ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

countering enemy missile defenses.⁶⁴⁹ However, towards the tail end of the period, there were some hints of a revived emphasis on dual-capable non-strategic systems, specifically in the form of discussions of the soon-to-be deployed Iskander system, previously discussed only in a conventional role. This is discussed in more detail below. Meanwhile, the emphasis on bombers in a conventional, rather than a nuclear role, would seem to lend credence to Russia's overall effort to beef up its conventional capacity, and use it to deter. Indeed, some, including Vladimir Dvorkin, argued that the bombers should be shifted to a purely conventional role, reversible if needed.⁶⁵⁰

ICBMs

Moscow and Washington's 2002 decision to let START I expire and START II never enter into force, instead replacing both with the SORT treaty, was a game-changer. As discussed in the previous chapter, it opened the door for Russia to retain MIRVed systems and build new ones. Indeed, Russia's slow Topol-M production in the 1990s and early 2000s may have worked in the SRF's advantage in this new environment, making it easier to change course from a START II-compliant plan to one that incorporated MIRVed ICBMs.

Initially, it seemed that Russia would hang on to old systems and technologies: In October 2003, Putin said that Russia would restart deployments of SS-19 missiles starting in 2010.⁶⁵¹ But new systems were also a possibility; officials talked about a new heavier ballistic missile which could carry up to ten warheads.⁶⁵² Putin and General Staff Chief Yuri Baluevskii also referenced possible work on a maneuverable warhead that could hit "targets at intercontinental range with

⁶⁴⁹ V.V. Sukhorutchenko and S. V. Kreidin, "Aktual'nye Aspekty Problem Iadernogo Sderzhivaniia i Dostatochnosti Iadernykh Vooruzhenii," *Voennaia Mysl*, no. 7 (2004). is an exception

⁶⁵⁰ Vladimir Dvorkin, "Budushchee Iadernykh Sil v Tiskakh Topornoj Diplomatii," *Nezavisimoe Voennoe Obozrenie* (2005); "Zachem Nam Triada?."

⁶⁵¹ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁶⁵² "Nuclear Notebook: Russian Nuclear Forces, 2005."

hypersonic speed and high precision and with the possibility of deep maneuver both in terms of altitude and direction.⁶⁵³

By the end of 2004, Russia's position had clarified. Instead of holding on to the SS-18s and SS-19s, it now pledged to be rid of older systems by 2009, according to a December statement by the SRF commander Solovtsov.⁶⁵⁴ At the time, this may have implied holding on to some newer SS-18s and -19s, particularly the approximately 30 SS-19s in storage which could be deployed as new. However, in 2005 and 2006, Russia reaffirmed its prior intent to move to an all-Topol-M force, for both silo-based and mobile missiles (and with the related Bulava as Russia's sole SLBM system), by 2015.⁶⁵⁵ Later statements indicated that this might take longer, with modern systems perhaps only making up 80% of the force by 2016.⁶⁵⁶ To hedge against the possibility of further delays shrinking Russia's warhead numbers too fast, Russia continued to test older systems to ensure they could last until past that date (a twenty-year-old SS-25 Topol was also tested to prove its continuing effectiveness⁶⁵⁷), while also maintaining the dismantlement of those classes of missiles. As before, one justification for the all Topol-M force was that a single platform would save money.⁶⁵⁸ Russian officials also lauded the new, maneuverable warheads on the Topol-M, ostensibly the same ones Putin and Baluevskii had referenced previously.⁶⁵⁹

The difference from past plans was that Russia now intended to deploy MIRVed variations on this platform.⁶⁶⁰ However, loading more warheads onto an existing system violated START I, still in force until 2009. Thus, when Russia tested MIRVed Topol-Ms in 2007 and 2008, it made some small modifications and called

⁶⁵³ "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2007."

⁶⁵⁴ "Nuclear Notebook: Russian Nuclear Forces, 2005."

⁶⁵⁵ "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Baluevskii Poschital Rakety," *Ural'skie Voennye Vesti* (2006).

⁶⁵⁶ Vasilenko, "Raketnyi Shchit Rossii."

⁶⁵⁷ Aleksandr Voyk and Aleksandr Dolinin, "'Topolia' Zhivut Dolgo," *Krasnaia Zvezda* (2005).

⁶⁵⁸ Vasilenko, "Raketnyi Shchit Rossii."

⁶⁵⁹ Ibid.

⁶⁶⁰ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces 2009," *The Bulletin of the Atomic Scientists* 65, no. 3 (2009).

the “new” missile the Yars RS-24.⁶⁶¹ This variant was also lauded as having substantial countermeasures, making it even more able to overcome missile defenses.⁶⁶²

In the meantime, single-warhead Topol-M ICBMs were being deployed at a faster rate, if still behind schedule. In December 2003, Russia’s first silo-based Topol-M regiment was deployed. By end of 2004 it reached its full complement.⁶⁶³ In April that same year, Russia tested a mobile version of the single warhead Topol-M (officials noted at the time that the missile might carry more warheads, between four and six) and promised its first deployments by year’s end.⁶⁶⁴ This did not happen, but by the end of 2005, Russia had five silo-based Topol-M regiments, although the fifth regiment was not fully complete (with ten missiles) until 2008.⁶⁶⁵ In 2005, the Russian Defense Minister promised mobile Topol-Ms would be deployed in 2006.⁶⁶⁶ This promise was kept: late that year, three road-mobile Topol-M missiles joined the Teykovo 54th missile regiment. With five more silo-based missiles also joining the force, Russia had fielded eight new missiles in 2006, a marked improvement over past rates.⁶⁶⁷ However, further deployments lagged. The mobile Teykovo regiment had grown to only six missiles by the end of 2007, still short of a full complement of 13, which was only attained at the end of 2008.⁶⁶⁸ The out-years, however, saw the deployment of five more mobile Topol-Ms and one silo-based Topol-M. They also witnessed the first six Yars RS-24s, all initially deployed in the mobile version.⁶⁶⁹ The fact that these were deployed as mobile missiles first suggests some emphasis on the need for these capabilities, although it is very

⁶⁶¹ "Nuclear Notebook: Russian Nuclear Forces, 2008;" "Nuclear Notebook: Russian Nuclear Forces 2009."

⁶⁶² Vasilenko, "Raketnyi Shchit Rossii."

⁶⁶³ Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku."

⁶⁶⁴ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁶⁶⁵ "Nuclear Notebook: Russian Nuclear Forces, 2006."

⁶⁶⁶ Alekseev, "'Topol' Posadili Na Kolesa."

⁶⁶⁷ Pavel Podvig, "Rocket Forces Tell About Plans for 2009 (Comments)."

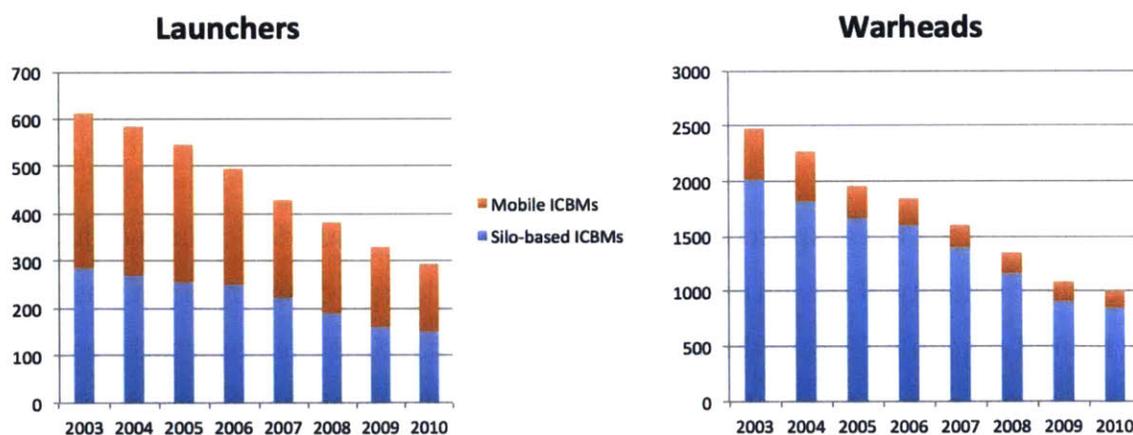
⁶⁶⁸ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2008;" Pavel Podvig, "More Topol-Ms to be Deployed in Teykovo," http://russianforces.org/blog/2009/02/more_topol-ms_to_be_deployed_i.shtml; "New Topol-M Regiment in Teykovo," http://russianforces.org/blog/2008/12/new_topol-m_regiment_in_teykov.shtml.

⁶⁶⁹ Baranets, "Pochemu Rossiiskoi Armii Ne Khvataet Novogo Oruzhiia?."

plausible that, given the similarities between the Topol-M and the Yars RS-24, these were taking the place of mobile Topol-Ms that were not deployed.

The result was a force that continued to be heavy on silo-based systems from a warhead count perspective, as the charts below show. For much of the period, although not continuously, Russia actually maintained more mobile launchers (with the exception of 2006 and 2007, and the out-year 2010 when Russia actually had more silo-based launchers, as well). This was, however, mainly because of the SS-25 single-warhead road-mobile missiles; although these were slowly being destroyed, they still made up roughly half of Russia's launchers throughout the period. In general, mobile systems decreased in their percentage of Russia's ICBMs through this period and into the out-years. This is consistent with the situation in the previous period. Nonetheless, the progress in deployments of new mobile systems, and particularly the first deployments of the Yars RS-24 as a mobile missile, are a notable shift from the past.

Figure 7.1 ICBM Launchers and Warheads 2003-2010⁶⁷⁰



⁶⁷⁰ Charts my own. Data reflects estimates in in Hans M. Kristensen and Robert S. Norris, "Nuclear Notebook: Russian Nuclear Forces 2011," *The Bulletin of the Atomic Scientists* 67, no. 3 (2011); Robert S. Norris and Hans M. Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010," *The Bulletin of the Atomic Scientists* 66, no. 1 (2010); "Nuclear Notebook: Russian Nuclear Forces, 2009;" "Nuclear Notebook: Russian Nuclear Forces, 2008;" "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2006;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2003;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers.

As before, the SRF's leadership continued to report excellent readiness and capability, with 70 percent of the force at permanent readiness and personnel fill at about 90 percent as of 2004.⁶⁷¹ In 2004, the SRF underwent an inspection by a General Staff commission, reportedly successfully.⁶⁷² The Russians also reported improvements in attracting personnel to the force, saying that in 2004, for the first time in five years, more officers joined the SRF ranks than left. Other positive trends included an increase in average education of SRF personnel, and a drop in their average age, caused in part by the removal of older personnel.⁶⁷³

Some Western analysts doubted the high ratings.⁶⁷⁴ Doubts were also raised in the Russian press. An otherwise very laudatory piece by the SRF commander in 2004 noted that his forces suffer from "somewhat lowered professionalism, lack of interest in duty, the desire of some part of the officer corps to leave service early, problems with reserves for essential command-staff tasks, etc."⁶⁷⁵ As of late that year, there were also reports of housing shortages, both for serving personnel and those leaving service. But there were also efforts to fill the gap: former and serving SRF personnel could take advantage of a government housing vouchers program and a housing fund for the closed cities, respectively.⁶⁷⁶

SLBMs

In 2003, the naval strategic forces remained in poor shape. Although officials touted the reliability of this force,⁶⁷⁷ even the dismantlement of submarines was well behind schedule.⁶⁷⁸ Both the Bulava missile and its SSBN, the Borei class, were delayed, the former by testing failures and the latter by slower than planned

As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer.

⁶⁷¹ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces 2009."

⁶⁷² Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku; Falichev and Gavrilenko, "Iz Pervykh Ruk. Iadernyi Paritet s Amerikoi Garantirovan."

⁶⁷³ Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku; Vasilenko, "Raketnyi Shchit Rossii."

⁶⁷⁴ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces 2009."

⁶⁷⁵ Solovtsov, "'Privilegiia' RVSN-Byt' Nacheku."

⁶⁷⁶ Ibid.

⁶⁷⁷ Andrei Gavrilenko, "Okeanskii Shchit Ostaetcia Nadezhnym," *Krasnaia Zvezda* (2003).

⁶⁷⁸ "Lodki Ukhodiat...v Util," *Morskaia Gazeta* (2003).

construction. Three Boreis were under construction during this time. The first, the Yury Dolgorukiy, initially laid down in 1996 (as discussed in previous chapters) was as of 2004 promised in 2005 or 2006.⁶⁷⁹ Construction of a second Borei, the Aleksandr Nevsky, had begun in March 2004, with delivery promised initially for 2007-8. A third one, the Vladimir Monomakh, was promised for 2010—its construction began in 2006.⁶⁸⁰ At that time, Russia planned for a total of six Boreis, each armed with 16 SLBMs carrying six warheads apiece.⁶⁸¹

In the end, the Yury Dolgorukiy went to sea in April of 2007, over a decade in the making.⁶⁸² By then, Russia's plans for the Borei had increased to eight submarines.⁶⁸³ However, going to sea was but one step toward deployment. For one thing, there was still no functioning missile for the submarine. Promises that Bulava testing would begin in 2004 were not fulfilled, though testing did begin the following year. The missile underwent twelve flight tests between then and 2009. Of those, one was fully successful. Eight were unmitigated failures. While MITT head Yurii Solomonov blamed the problems on insufficient financing, not a few worried that the missile was inherently flawed.⁶⁸⁴

By 2008, it was clear that the Bulava would not be deployed that year as promised, and the target date was moved to 2012. Some hoped that the Sineva could take the Bulava's place in the meantime. Indeed, Sineva and Bulava proponents (i.e., liquid fuel and solid fuel proponents, respectively) fought it out in the specialized press. Specifically, this manifested in a series of pieces written by and interviews with MITT (with Solomonov playing a prominent role) and Makeev senior staff, something that had begun in 1998 (as noted in the previous chapter). Kassianova has even argued that this debate overshadowed any real government discussion of

⁶⁷⁹ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Prioritety Nedeli. I Submarina Chetvertogo Pokoleniia."

⁶⁸⁰ Il'ia Kedrov, "Tema. Pervoe Popadenie 'Bulavy'," *Voенно-Promyshlennyi Kur'er* (2005); Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005;" Inga Zvolinskaia, "'Vladimir Monomakh' Voorizhitsia Iadernoi 'Bulavoi'," *Na Strazhe Zapoliar'ia* (2006).

⁶⁸¹ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2007."

⁶⁸² Vladimir Shcherbakov, "Strategicheskii "Iurii Dolgorukii"," *Voенно-Promyshlennyi Kur'er* (2007).

⁶⁸³ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2007."

⁶⁸⁴ Yurii Solomonov, "Iadernaia Degradatsiia," *Voенно-Promyshlennyi Kur'er* (2003); Gundarov, "Vzgliad Na Problemu. 'Sineva' ot Vremeni Ne Bleknet; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2006."

the topic.⁶⁸⁵ It is also worth noting that for all their concerns about the Bulava, Sineva's design bureau, Makeev, was also involved in that missile's development.⁶⁸⁶ In the end, however, the Sineva was certainly available sooner, having been accepted for serial production by the Navy, Roskosmos, Rosatom, and the Federal Agency for Industry in December 2004. It was accepted into service in 2007.⁶⁸⁷

The Sineva ensured that the BRDM 667 (Delta IV) submarines could stay in the fleet longer, giving Russia submarine capability as it waited for the Boreis.⁶⁸⁸ In January 2003, one Delta IV emerged from refitting, while another two remained in the shop, but generally, the boats were expected to last until at least 2016, when they were scheduled to leave service (the Sineva could last until at least 2030).⁶⁸⁹ The first Delta IV was modernized to carry the Sineva in early 2008.⁶⁹⁰

Meanwhile, other submarines were being taken out of service, in line with arms control commitments, and Russia's submarine numbers (like its SRF numbers) were dropping (though their proportion of the force, both in terms of warheads and launchers, fluctuated and actually went up slightly over the course of this period, including out-years, a result of ICBM dismantlement). Indeed, one submarine force advocate argued in 2007 that the numerical decline was a mistake, and a result of U.S. pressure, geared to weakening Russia.⁶⁹¹

Russia formally decommissioned the Typhoon class in late April 2004.⁶⁹² In 2006, Defense Minister Sergei Ivanov promised that the modernization of the remaining Typhoons (three at that point) would be completed, "as necessary."⁶⁹³ One, the Dmitri Donskoi, which had been in overhaul for over a decade, had already

⁶⁸⁵ Kassianova, "The Bulava Missile: What Propels its Unsteady Flight?."

⁶⁸⁶ Dvorkin, "Zachem Nam Triada?"; Kassianova, "The Bulava Missile: What Propels its Unsteady Flight?"; Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States.*; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁶⁸⁷ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

⁶⁸⁸ Kanin and Tikhonov, *SKB-385 KB Mashinostroeniia GRTs "KB im. Akademika V.P. Makeeva"*; also discussed in Degtiar' and Kanin, "Rakety Startuiut iz Glubiny."

⁶⁸⁹ Oleg Sergeev, "'Bulavu' v Arsenale Ne Vidno," *Nezavisimoe Voennoe Obozrenie*, no. 2 (2008).

⁶⁹⁰ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁶⁹¹ Vadim Kulichenko, "Nuzhen li Rossii Podvodnyi Flot? I Kakoi?," *Morskaia Gazeta* (2007).

⁶⁹² Shcherbakov, "Strategicheskii "Iurii Dolgorukii"."

⁶⁹³ Andrei Gavrilenko, "'Sevmash' Daet Putevku v More," *Krasnaia Zvezda* (2006).

been retrofitted as a test bed for the Bulava missile and returned to the force in 2004.⁶⁹⁴ While some talked of modifying the other two to also carry the Bulava, this was dismissed in late 2008 as too expensive. Instead, officials talked about a conventional role for the remaining submarines: laying mines, firing conventional cruise missiles, and supporting special operations.⁶⁹⁵

Some Delta III submarines also remained in service. A Delta III which had been in overhaul for 11 years returned to the fleet in November 2003, suggesting that Russia may have thought to maintain some of these submarines in the Pacific fleet beyond their planned 2005 retirement.⁶⁹⁶

The bottom line, though, is that, as Paul Podvig has argued, it was the Sineva program, combined with the 1998 decision to keep the Delta IVs in service, that enabled Russia to have any fleet at all in the face of repeated Bulava and Borei delays and questions regarding their viability.⁶⁹⁷ While it may seem hyperbolic to credit those involved in these decisions with saving the fleet,⁶⁹⁸ it also has an element of truth.

Meanwhile, the Russian Navy resumed SSBN patrols in 2003, but only carried out two patrols that year and the next.⁶⁹⁹ It reached three patrols in 2005 and five in 2006. Although the number dropped to back to three in 2007, it was up to ten in 2008. The numbers alone tell only part of the story, however. The five patrols in 2006 appeared to be simultaneous, rather than spread out over time, and it is not clear how patrols were dispersed over the course of 2008.⁷⁰⁰ This indicates that Russia may have been carrying out patrols for the sake of proving it could, not with a clear plan of ocean coverage for any given year. In 2006, Vladimir Dvorkin argued

⁶⁹⁴ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁶⁹⁵ "'Akuly' Bez Iaderykh Raket," *Strazh Baltiki* (2008).

⁶⁹⁶ "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁶⁹⁷ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

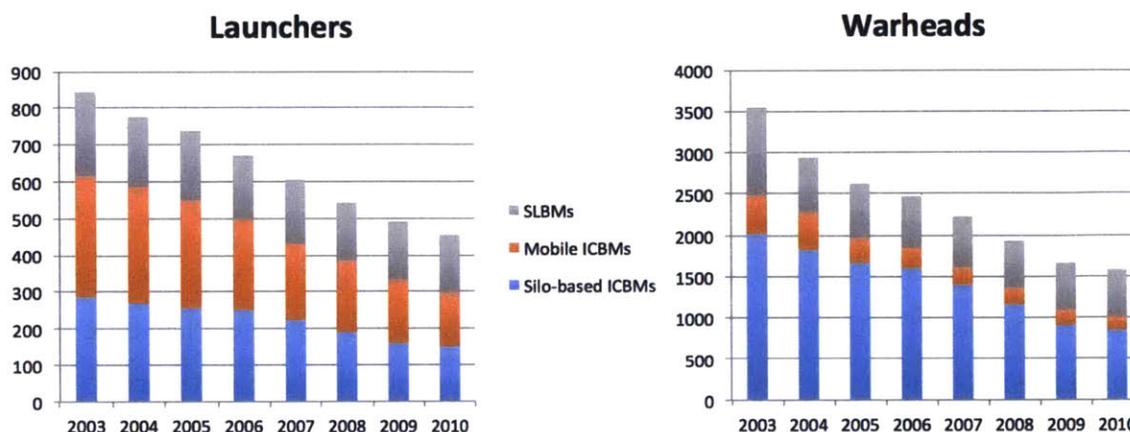
⁶⁹⁸ As Oznobishchev, Potapov, and Volodin do in Oznobishchev, Potapov, and Volodin, "Predisolvie."

⁶⁹⁹ Dvorkin, "Budushchee Iadernykh Sil v Tiskakh Topornoj Diplomatii; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁷⁰⁰ Dvorkin, "Budushchee Iadernykh Sil v Tiskakh Topornoj Diplomatii; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2006;" "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2008;" "Nuclear Notebook: Russian Nuclear Forces, 2009;" Hans M. Kristensen, "Russian SSBN Fleet: Modernizing But Not Sailing Much," *Federation Of American Scientists*(2013), <https://fas.org/blogs/security/2013/05/russianssbns/>.

that Russia would be better served with fewer submarines that could patrol more, than with greater numbers that stayed in harbor (he also argued for shifting the bomber fleet entirely to a conventional mission).⁷⁰¹

Figure 7.2 Missile Launchers and Warheads 2003-2010⁷⁰²



In sum, Russia's submarine capabilities did not get worse, but neither did they improve during this period. The Sineva, a product of bureaucratic fights and civilian intervention back in the 1990s, made it possible for Russia to maintain a force. However, progress remained slow, and the future in doubt.

Bombers

The bomber fleet was largely in stasis through this period as far as numbers were concerned, the crash of a Tu-160 in 2003 aside.⁷⁰³ In 2004, with 78 strategic

⁷⁰¹ Dvorkin, "Budushchee Iadernykh Sil v Tiskakh Topornoj Diplomatii."

⁷⁰² Charts my own. Data reflects estimates in Kristensen and Norris, "Nuclear Notebook: Russian Nuclear Forces, 2011;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010;" "Nuclear Notebook: Russian Nuclear Forces, 2009;" "Nuclear Notebook: Russian Nuclear Forces, 2008;" "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2006;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2003;" Norris, Arkin, and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2002." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

⁷⁰³ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2004."

bombers officially on Russia's books, officials promised a force of 75 capable bombers as of 2010, perhaps with new Tu-160s replacing the Tu-95s, which were to be phased out over time. When Defense Minister Ivanov, in late 2005, pledged two new Tu-160s in that year, 37th Air Army Commander Igor' Khvorov indicated that this meant one new aircraft and one modernized aircraft.⁷⁰⁴ Russia did finally receive a new Tu-160 in 2008, the first new aircraft to be added to strategic aviation since 2000. It had been in the works since 2002.⁷⁰⁵

Modernization, promised for both the Tu-160s and the Tu-95s, moved forward slowly.⁷⁰⁶ If we consider the out-years, Russia indeed had a 75 bomber force in 2009 and 76 in 2010 (numbers vacillated as aircraft were pulled out for modernization and then returned), but it is unlikely that the vast majority of them were particularly modernized. The new cruise missile, the Kh-102, in development since 1998, also seemed to come no closer to deployment.⁷⁰⁷ In 2007, Russia's Air Force directed the Tupolev firm to develop a new strategic aircraft as part of the 2007 (to 2015) defense order. Plans at that time called for financing was to begin in 2008, and the initial construction of aircraft starting in 2015. However, by the end of 2008, there was no evident movement.⁷⁰⁸

Meanwhile, much was made of upgrades to enhance the bombers' capability in their conventional roles, including plans to improve high-precision weaponry for the aircraft, a continuation of discussions and promises of the previous period.⁷⁰⁹ Here there appeared to be some progress. In late 2004, Air Force officials reported that the force had taken delivery of the first conventional ALCMs.⁷¹⁰

⁷⁰⁴ "Prioritety Nedeli. I Submarina Chetvertogo Pokoleniia; Andrei Lunev, "Dal'ney Aviatsii -- 90 Let. 'Dlinnaiia Ruka' Derzhavy," *Krasnaia Zvezda* (2004); Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005."

⁷⁰⁵ Sokut, "Omyslenie Chechenskogo Opyta;" Baranets, "Pochemu Rossiiskoi Armii Ne Khvataet Novogo Oruzhiia?;" Pavel Podvig, "Tu-160 Modernization Program is Underway," http://russianforces.org/blog/2008/04/tu160_modernization_program_is.shtml; "Russia Added New Tu-160 to Its Bomber Force," http://russianforces.org/blog/2008/04/russia_added_new_tu160_to_its.shtml; Stukalin, "Bears and Blackjacks Are Back. What Next?"

⁷⁰⁶ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁷⁰⁷ "Nuclear Notebook: Russian Nuclear Forces 2009."

⁷⁰⁸ Andrei Frolov, "Strateg v Perspektive," *Nezavisimoe Voennoe Obozrenie*, August 24 2012.

⁷⁰⁹ Sokut, "Omyslenie Chechenskogo Opyta."

⁷¹⁰ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005."

But if numbers stayed steady (even dropping slightly, as noted above), the force aged, and a conventional mission was envisioned, it was also true that bomber activity with the existing planes, in what was assumedly a nuclear role, went up substantially, with the increase in exercises and patrols begun at the start of the decade continuing to ramp up. A large-scale exercise in February 2004 included tu-95 bombers simulating AS-15 cruise missile strikes and ICBM and SLBM launches.⁷¹¹ A land-sea exercise undertaken jointly with China in 2005 also included long-range aviation. But the real change took place in 2007, when Russian bombers resumed regular strategic patrols off the U.S., Canadian, and UK coastlines, as well as over the Pacific, patrols that had not been consistently undertaken in 15 years. A Tu-95 patrol in fall 2007 spurred a UK intercept.⁷¹² In 2008, Russian bombers buzzed the U.S.S. Nimitz near Japan and approached the Alaskan coast.⁷¹³

At that time, Vladimir Putin described the resumption of patrols as a necessary response to the strategic patrols of (unnamed) other countries. He also spoke of these and follow-on efforts as a sign of the reinvigoration of Russia's strategic aviation.⁷¹⁴ Defense Minister Ivanov, however, insisted that they were merely a necessary component of maintaining the bomber force. However, officials complained that despite the increased activity, flight hours for long-range aviation pilots continued to lag those of other aircraft.⁷¹⁵

Because of complicated counting rules for bombers, which changed between START I and START II, I do not include a comparative chart for launcher or warhead counts of bombers as compared to SLBMs and ICBMs. Specifically, under START I, some Russian heavy bombers (those equipped to carry long-range nuclear ALCMs) were attributed with eight warheads each while others, equipped for gravity bombs or short-range missiles), were attributed with one warhead. START II, by contrast,

⁷¹¹ "Nuclear Notebook: Russian Nuclear Forces, 2004."

⁷¹² Iurii Gavrilov, "Strategicheskii Patrul'," *Boevaia Vakhta* (2007).

⁷¹³ Stukalin, "Bears and Blackjacks Are Back. What Next?"; Oliker et al., *Russian Foreign Policy: Sources and Implications*; Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁷¹⁴ Stukalin, "Bears and Blackjacks Are Back. What Next?"

⁷¹⁵ Lunev, "Dal'ney Aviatsii -- 90 Let. 'Dlinnaia Ruka' Derzhavy."

attributed the numbers for which the bombers were equipped to each bomber.⁷¹⁶ SORT attributed the number of bombs loaded onto a bomber, and thus deployed, as reported by each country.⁷¹⁷ By following Norris and Kristensen in assigning maximal numbers, I calculate that Russia's bombers went from about 9 percent of its launchers to almost 15 between 2003 and 2010 (to allow for two out-years), and from nearly 1/5 to nearly 1/3 of its warheads during this period.⁷¹⁸ These jumps, of course, have more to do with dismantlement of other systems than anything else—as noted above, the total number of bombers dropped. However, it is a sufficiently substantial jump as to be notable, especially in combination with the higher op-tempo.

Thus, the bottom line is that while Russia's strategic bombers were increasingly active, their maintenance and modernization continued to lag requirements.

Early Warning and Missile Defense

As in previous periods, early warning got some lip service but continued to deteriorate during this period. In 2006 Putin approved a new "Concept of air-space defense of the Russian Federation to 2016 and beyond." This concept, in the works since a 2001 Presidential order to study Russia's options, had been through several

⁷¹⁶ "Strategic Arms Reduction Treaty Text (START I)" (1991, <http://www.state.gov/t/avc/trty/146007.htm>); "Treaty Between the United States of America and the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms (START II)," (1993, <http://www.state.gov/t/avc/trty/102887.htm#treatytext>); "Background Information: START II Ratification," (1996, <http://fas.org/nuke/control/start2/docs/strtrat.htm>).

⁷¹⁷ Steven Pifer, "SORT vs. New START: Why the Administration is Leery of a Treaty," *Brookings Blog* (2013), <http://www.brookings.edu/blogs/up-front/posts/2013/03/15-sort-start-pifer>.

⁷¹⁸ Data reflects estimates in Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010;" "Nuclear Notebook: Russian Nuclear Forces, 2009;" "Nuclear Notebook: Russian Nuclear Forces, 2008;" "Nuclear Notebook: Russian Nuclear Forces, 2007;" "Nuclear Notebook: Russian Nuclear Forces, 2006;" "Nuclear Notebook: Russian Nuclear Forces, 2005;" "Nuclear Notebook: Russian Nuclear Forces, 2004;" "Nuclear Notebook: Russian Nuclear Forces, 2003." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it as for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

drafts, including one deemed near final in November of 2002, but not accepted in 2003, as initially planned. It called for capable and integrated systems but said little about how they would be attained. There was no question, moreover, that Russia's capabilities were far from what was envisioned and desired, either in the context of capability or integration.⁷¹⁹ This remained the case through 2007, when Russia's Air Force Chief of Staff called for that integration to be written into Russia's next military doctrine.⁷²⁰

Indeed, despite these plans, and despite substantial advocacy by members of the analytical and military communities,⁷²¹ the overall capability of space-based systems largely continued to stagnate, if not decline.⁷²² This was particularly evident in the early warning context. Table 7.2, below, summarizes the situation over time. Russia managed to launch one new GEO satellite in April of 2003. However, it began to drift in June of that same year. The complement then remained unchanged for the next two years, until two more HEO satellites were launched, one each in 2006 and 2007. Two different HEO satellites were lost, one each year, so total numbers remained the same. The launch of new HEO and GEO satellites in 2008 boosted the numbers, though they were still too low to ensure global coverage. In the lag years of 2009 and 2010, the record was also not impressive. In 2009, Russia lost a GEO satellite in orbit since 2001, leaving just the one launched in 2008 in orbit. That one was then lost in 2010, although a new HEO satellite was launched that year.

Research and development for the next generation of satellites was well behind schedule. A new design was approved in 2004, and a contract to develop the system was awarded to RKK Energia in 2007. But while the first launches were promised for 2009, this seemed very optimistic. Also telling is a *Kommersant* story from April 2006, cited by Podvig. According to that report, Russia was planning to

⁷¹⁹ Boris Chel'tsov and Sergei Volkov, "Perspektiva: Rossiia Stroit Vozdushno-Kosmicheskuiu Oboronu," *Nezavisimoe Voennoe Obozrenie* (2003).

⁷²⁰ Aleksandr Bogatyrev, "Zavtra-Den' Voisk Protivovozdushnoi Oborony. Ot PVO k VKO," *Krasnaia Zvezda* (2005).; Boris Chel'tsov, "Vozdushno-Kosmicheskaiia Oborona v Ozhidanie Integratsii," *Nezavisimoe Voennoe Obozrenie* (2007).

⁷²¹ See, for example, Viacheslav Fateev, Sergei Sukhanov, and Vasilii Omel'chuk, "Ugrozy Bezopasnosti Rossii Rastut," *Vozdushno-Kosmicheskaiia Oborona*, no. 4 (2006).

⁷²² Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

replace one of its functional satellites that year, one which had been in orbit since 2001. However, the loss of a launcher which was transferred to civilian use meant that any such launches would be delayed.⁷²³ This story, together with the effort to design a new system, indicates continued efforts to move forward and modernize, even with the low numbers in orbit. However, these also indicate that the plans were easily and repeatedly postponed—once again underlining the lack of priority to space-based early warning.

Table 7.2 Early Warning Satellite Launches and Losses 2003-2010

	HEO		GEO		complement at end of year	
	launches	losses	launches	losses	HEO	GEO
2003	0	0	1	1	2	1
2004	0	0	0	0	2	1
2005	0	0	0	0	2	1
2006	1	1	0	0	2	1
2007	1	1	0	0	2	1
2008	1	0	1	0	3	2
2009	0	0	0	1	3	1
2010	1	0	0	1	4	0

In terms of ground-based early warning, Russia continued to work to eliminate its dependence on foreign radars through new technology and domestic deployments.⁷²⁴ However, as of 2006, about half the country's early warning radar network was still located outside of the Russian Federation.⁷²⁵ Podvig also notes that the system was aging, with the Dnepr-M and Dnester radars over three decades old. New radars were being deployed, but very slowly.⁷²⁶ The radar at Baranovichi (Belarus), operational in test mode since 2002, was officially declared on combat

⁷²³ Pavel Podvig, "A New Early-Warning Satellite is Left Without a Launcher?," http://russianforces.org/blog/2006/04/a_new_earlywarning_satellite_i.shtml.

⁷²⁴ "Russia," *The Military Balance* 106 (2006).

⁷²⁵ "Reducing the Risk of Accidental Launch."

⁷²⁶ *Ibid.*

patrol as of October 2003.⁷²⁷ Within Russia, a new Voronezh DM modular radar at Lekhtusi, was begun in 2005. This upgrade would finally make up in part for the loss of the Skrunda radar, but it would be years before it was operational.⁷²⁸ A radar of the same type was planned for Armavir, also in Russia, but was not expected at the time to be deployed before 2007.⁷²⁹ Until 2008, Russia also leased sites in Ukraine, but it curtailed this relationship, reportedly because the facilities, and thus the data they provided, were so degraded.⁷³⁰

After the US withdrew from the ABM treaty, Russia promised to also upgrade its missile defense capabilities.⁷³¹ But other than continuing improvements to the Moscow A-135 system, which some complained was antiquated, if functional, and despite some rumors of the A-235 follow-on to that system making some progress, it does not seem that much was done at this time, and the period passed with no breakthroughs or new systems.⁷³²

Non-Strategic Nuclear Forces

There were no substantial changes in the nonstrategic nuclear force posture, as fielded, between 2003 and 2008. Reductions of systems on the chopping block continued. In May of 2004, Russia's Foreign Ministry reported that over half of its tactical sea-based missiles, naval aviation, anti-aircraft missiles, and nuclear aviation bombs had been destroyed.⁷³³ The next update, in October 2007, reported that all ground force-allocated non-strategic warheads were gone, along with half of

⁷²⁷ Bogatyrev, "Vse Pod Kontrolom. 1 Octiabria 2003 Goda Pod Baranovichami Na Bevoe Dezhurstvo Zastupila RLS 'Volga'."

⁷²⁸ Pavel Podvig, "Radar in Lekhtusi Begins Combat Duty," http://russianforces.org/blog/2012/02/radar_in_lekhtusi_begins_comba.shtml; "Russia," *The Military Balance* 108 (2008).

⁷²⁹ "Reducing the Risk of Accidental Launch."

⁷³⁰ Esin, "Breshi i Okna v Protivoraketnom Zontike Strany;" See also Pavel Podvig, "Early Warning," <http://russianforces.org/sprn/>. Although some sites are identified differently in these two sources, they refer to the same radars and are in alignment substantively.

⁷³¹ Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁷³² Vladimir Ivanov, "Minoborony Reanimiruet Antiraketnykh Dinozavrov," *Nezavisimoe Voennoe Obozrenie* (2004); Esin, "Breshi i Okna v Protivoraketnom Zontike Strany; Stukalin, "Russian Air and Space Defense Troops: Gaping Holes; Honkova, "Current Developments in Russia's Ballistic Missile Defense".

⁷³³ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005."

those for the air force and 30 percent of naval weapons. Moreover, over half (60 percent) of nuclear missile defense warheads had been eliminated.⁷³⁴

But a possible shift was brewing. In 2004, Russian officials began noting that the Iskander short-range ballistic missile system, in development since the mid-1990s, might be fieldable in a nuclear variant (that is, could be armed with nuclear warheads). Previously, the Iskander had been discussed mainly in the context of filling the gap in precision conventional weaponry, where Russia felt it was behind the United States. Although Sutyagin notes that references to a new nuclear capable system in the late 1990s likely referred to the Iskander,⁷³⁵ in 2000, the possibility of a nuclear-armed Iskander was rejected outright by the head of the Mashinostroenie Design Bureau, the system's home. The reason he gave was that Russia had eschewed the use of tactical nuclear weapons, although he noted that its effects would be similar to those of nuclear use, but without the environmental repercussions.⁷³⁶ But by 2004, the possibility of a nuclear armament was mentioned in passing, though the system, delayed, had yet to join the force.⁷³⁷ By 2007, Russia had begun deploying the Iskander. At this time, its nuclear capacity was mentioned, but not dwelled upon.⁷³⁸ In 2008, however, reports appeared in Western media that Iskanders in Belarus and Kaliningrad might be deployed with nuclear weapons. Russian officials rejected this idea.⁷³⁹ After the August 2008 war with Georgia, however, Duma Defense Committee Chair Viktor Zarazin averred that the possibility of a tactical nuclear deployment in Kaliningrad had been proposed, would be perfectly reasonable in light of NATO's dual-use capabilities, and would be a Presidential-level decision.⁷⁴⁰ And in November, Russian President Dmitry Medvedev suggested that Iskanders might be deployed in Kaliningrad in response to

⁷³⁴ "Nuclear Notebook: Russian Nuclear Forces, 2008."

⁷³⁵ Sutyagin, *Atomic Accounting*. Also noted in Chapter Five

⁷³⁶ Dmitrii Litovkin, "Nashi Prioritety. 'Iskander' iz Kolomny," *Krasnaia Zvezda* (2000).

⁷³⁷ V. Kulikov, "Vesti s Poligonov. 'Iskander'," *Na Strazhe Rodiny* (2004).

⁷³⁸ Il'ia Kedrov, "Asimmetrichnyi Zapusk 'Iskandera'," *Voенno-Promyshlennyi Kur'er*, no. 21 (2007).

⁷³⁹ Pavel Bruntal'skii, "'Iskander' Vstupil v Psikhologicheskuiu Voinu," *Voенno-Promyshlennyi Kur'er*, no. 49 (2007); Viktor Miasnikov, "Evropeiskoe Pro dovinogo Naznacheniia," *Nezavisimoe Voенnoe Obozrenie* (2008).

⁷⁴⁰ Vitalii Denisov, "'Iskander': Dostoinyi Protivoves," *Krasnaia Zvezda* (2008).

missile defense deployments in Poland and the Czech Republic, although he did not mention a possible nuclear role for them.⁷⁴¹

Sutyagin argues that the Iskander as deployed did not have the climate control systems it would need to be nuclear-armed, but that this would not be a difficult adaptation to make. Moreover, given the elimination of the old surface to air nuclear warheads, a nuclear Iskander also implies a new system.⁷⁴² This, however, is also possible, as noted in Chapter Five. If it is true that there was some discussion of actually deploying the missiles with nuclear weapons, this would be very significant. But the evidence is simply not clear. It does seem however that Russia sought to take advantage of the ambiguity inherent in a dual-capable system, and concomitant Western concerns.

Safeguards

The concept of safeguards seemed all but obsolescent between 2003 and 2008. Past plans for early warning centers having come to naught, the subject seemed to interest only the specialist community, and that very rarely. One analyst, a specialist on U.S. policy, suggested turning certain systems over to international monitoring, including space-based, conventionally armed strategic platforms, and high technology systems with “smart” sub-projectiles.⁷⁴³ But there is no reason to think that ideas such as these found much favor in government circles. To the contrary, even information-sharing and dual-control concepts were rejected as undermining Russian deterrence.⁷⁴⁴

Interestingly, a 2007 public opinion poll indicated that 59 percent of Russian respondents supported the removal of both their country’s and U.S. nuclear weapons from high alert.⁷⁴⁵ But there was little reason to think that their government felt similarly.

⁷⁴¹ Philip P. Pan, "Russia Gives Obama Brisk Warning," *Washington Post* (2008).

⁷⁴² Sutyagin, *Atomic Accounting*.

⁷⁴³ Georgii Borisovich Korsakov, "Politika SShA v Oblasti Neiadernykh Vosokotekhnologichnykh Vooruzhenii," *SShA-Kanada. Ekonomika, Politika, Kul'tura*, no. 5 (2003).

⁷⁴⁴ Sergei Brezkun, "Polemika. Podkop Pod Strategicheskuiu Stabil'nost'," *Voенно-Promyshlennyi Kur'er* (2004).

⁷⁴⁵ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2008."

Posture 2003-2008

I classify bombers as being on the upswing in this period due to the additional attention paid them in the context of exercises and patrols and their increased proportion of the force, while recognizing the enduring challenges of maintenance and modernization, as well as the increased focus on the bombers' conventional roles. There is no question, however, that silo-based ICBMs continued to receive the most substantial attention, which led to a much higher tempo of new missiles coming online than ever since independence (overall numbers, of course, went down in line with treaty commitments).

Mobile ICBMs are more difficult to code. Although their numbers grew by the end of the period, their proportion of the force went down. The beginning of the period, moreover, saw no mobile deployments, though dismantlement continued. I therefore code them trending down in the first half of the period and somewhere between holding even and trending up in the second half, as new systems were coming online.

Similarly, the slow pace of Bulava development meant that SLBM results were slow to surface (as it were). However, the Sineva enabled the SSBN fleet to continue in service. I therefore code the SLBM force as holding steady, albeit at a low level. Non-strategic nuclear forces continued to be dismantled, although nascent discussion of a possible nuclear role for the Iskander towards the tail end of the period indicated some possibility of new attention to systems in this category. This isn't quite an upward trend, but it is an improvement from the downward trend of prior years. I code NSNF as trending down in the first half of the period and holding steady in the second. Safeguards were ignored, and when discussed in the press, those who favored them were excoriated. Hence, I classify them as trending down. In terms of Russia's stated policy, first use remained a possibility, but conventional capabilities were what was touted as the means to deter conventional threats. In the nuclear context, Russia worried about its second strike capacity, which meant that retaliation remained on the table. However, its fears that this capability was not sufficient meant that Launch on Warning was plausible, as well.

Table 7.3 Posture 2003-2008

Postures		2003-2006	2006-2008	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Forces & Policy		First use if needed. Nuclear deterrence of nuclear weapons only preferred. Launch on Warning likely		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Declaratory Policy		First use if needed. Nuclear deterrence of nuclear weapons only preferred. Launch on Warning likely		No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↑	↑	×	×	✓	✓	✓
	Silo-based ICBMs	↑	↑	×	×	✓	✓	×
Survivable/ second strike	Mobile ICBMs	↓	↑	✓	✓	×	×	×
	SLBMs	↔	↔	×	×	×	×	×
	NSNF	↓	↔	×	×	×	×	✓
	Early Warning	↓	↓	✓	✓	✓	✓	×
Safeguards		↓	↓	✓	×	✓	×	×

As in previous periods, the deterioration of early warning keeps Russia’s posture from matching any of the archetypes that assume a nuclear adversary. With that exception, however, the force structure looks substantially like a Strategic Escalatory throughout both sub-periods of this time-frame. This, of course, also means that force structure looks like Launch on Warning, since the two are nearly identical—but the lack of early warning makes the latter coding less appropriate. This is the same result that we saw repeatedly in the past, although with slight shifts in the component parts. The deployment of MIRVed ICBM systems (and plans for more of the same) throughout the period is worth highlighting as emphasizing an offensive approach. Declaratory policy, for its part, was in line with a Launch on Warning or an Assured posture.

While the overall coding remains the same for both parts of this period, some developments between 2006 and 2008 are important to note. Although they were not sufficient to change the coding, deployments of mobile ICBMs suggested that Russia may have been moving towards developing more survivable capabilities, appropriate to an Assured (or Versatile) posture. Meanwhile, the deployment of Iskanders combined with the willingness to play to Western concerns about their possible nuclear role suggested that, if this continued, the posture might be incorporating Warfighting Escalatory elements.

The emphasis on parity remained in place throughout 2003-2008, both in declaratory policy and in force structure. While Russian numbers continued to drop, dismantlement rates were adjusted to maintain equivalency with U.S. numbers.

Explaining Russian Force Posture

Thus, between 2003 and 2008, we again see what looked like a Strategic Escalatory posture, with declaratory policy in line with either a Launch on Warning or an Assured posture. Towards the end of the period, there was some movement that suggests the development of Assured (or Versatile capabilities), but not enough to definitively change the coding, and some rhetorical shifts towards Warfighting Escalatory approaches. Parity remained important to both declaratory policy and force structure.

The theories introduced in Chapters One and Two allow for different conditions under which such postures might emerge. Assured postures are predicted by the two systemic theories when threats are nuclear. Internal Balancing theory also predicts them when threats are mixed and the economy is doing well. The Absolute Weapon and Internal Balancing Theories predict Launch on Warning or Assured postures (whichever is cheaper) when the economy is weak and threats are predominantly nuclear. When threats are mixed, they both add a Warfighting Escalatory element to the mix: both theories predict this when resources are tight, but only the Absolute Weapon theory predicts it when funds are available. The Bureaucracy/Culture theory predicts a Strategic Escalatory posture, potentially with underattention to early warning capabilities, as long as the Strategic Rocket Forces are not challenged.

We know that the economy was doing extremely well during this period, however, so that limits the relevance of some of these predictions. The following sections explore what can be said about the threat environment and the SRF.

Threat Environment

Russia's overall rhetoric about its threat environment continued to incorporate concerns about terrorism, domestic and foreign, as it had in the

preceding period. Indeed, terrorist attacks in Russia had increased sharply. A particularly deadly spate in 2004 included an attack on the Moscow metro, two airplane bombings, and the now infamous multi-day hostage crisis at a school in Beslan, South Ossetia. In its wake, some analysts argued that military and other security forces needed to be optimized to better respond to events like Beslan and 2002's theater hostage crisis (in both cases, scores of hostages died in the course of the rescue operation).⁷⁴⁶ Moreover, the worry that terrorist groups could grow more deadly had been integrated into official fears: A 2006 Russian government white paper characterized the possibility of terrorist acquisition and use of weapons of mass destruction as the country's greatest threat.⁷⁴⁷

But if actual terrorist attacks were on the rise, and this was recognized by Moscow, Russian officials seemed more concerned about other threats. Some of these concerns were broad and global. For instance, the proliferation of intermediate-range missile capabilities to more countries led a few Russian officials to discuss a possible withdrawal from the INF treaty.⁷⁴⁸ But increasingly, Russian officials seemed most worried about possible threats to government stability. Popular protests dubbed "color revolutions" had forced changes in post-Soviet governments in the wake of contested elections in Georgia, Ukraine, and Kyrgyzstan, and Russian officials and analysts made no secret that they saw a U.S. hand behind these events. This is particularly important in the context of Washington's outreach to and relationships with countries in the former Soviet Union. The April 2008 Bucharest NATO summit, with its pledge that Ukraine and NATO would (one day) join NATO, was seen in Russia as an infringement of its interests, and Vladimir Putin made no secret of this.⁷⁴⁹

⁷⁴⁶ Alexei Arbatov, "Kakoi Armii Nam Nuzhna?," *Rossii v Global'noi Politike* (2003); Mikhail Khodarenok, "Tendentsii. Vozmozhnosti Preventivnogo Uudara," *Voенno-Promyshlennyi Kur'er* (2004).

⁷⁴⁷ "White Paper of the Russian Federation on Weapons of Mass Destruction Proliferation (English Translation)," (Government of the Russian Federation: Center for Nonproliferation Studies, 2006), <http://cns.miis.edu/other/rusfed.htm#con>.

⁷⁴⁸ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2007."

⁷⁴⁹ Angela Stent, *The Limits of Partnership: U.S.-Russian Relations in the Twenty-First Century*, (Princeton and Oxford: Princeton University Press, 2014). Kobo, Chapters 5 and 7.

Meanwhile Russia's opposition to the U.S. invasion of Iraq had heightened tensions with Washington—and reinforced the belief that Washington was in the business of forcibly changing other states' leadership, and thus was itself a threat to stability.⁷⁵⁰ Indeed, Tsyarkin suggests that the domestic terrorism act in Beslan, when schoolchildren were held hostage and many were killed, led Putin to see the world as particularly threatening—he even intimated that the Beslan terrorists had some sort of foreign support, aimed at “dismembering” Russia.⁷⁵¹

Military leaders such as General Staff chief Baluevskii said that Russia was not planning for large scale conflict, nuclear or conventional, on foreign soil, although it would continue to prepare to defend itself.⁷⁵² But the prospective adversaries it was defending itself from continued to be the United States and its allies. Russians, official and otherwise, continued to argue that the NATO alliance existed to maintain U.S. domination over Europe and thus posed a real threat to Russia. NATO's existing and planned capabilities and its ever-expanding mandate were cited as evidence, particularly NATO's own discussions of threats to the alliance, which now included the dangers posed by internal changes in transitioning countries and the possibility of large-scale conventional war. The Alliance had also set for itself the task of responding to terrorism and other transnational problems. A fairly typical 2008 article also points to the fact that U.S. nuclear strategy allows for first (“preemptive”) strikes against asymmetric threats, while ignoring Russia's very similar stated strategy.⁷⁵³ The growth of US and NATO (combined) defense spending, and America's continued warhead production were also cited as evidence of intent to weaken Russia, perhaps by drawing it into an arms race. NATO enlargement and relationships in the former Warsaw Pact and post-Soviet space were characterized as mechanisms to prevent Russia from responding to some possible future aggression.⁷⁵⁴

⁷⁵⁰ Aglaya Snetkov, “When the Internal and External Collide: A Social Constructivist Reading of Russia's Security Policy,” *Europe-Asia Studies* 64, no. 3 (2012).

⁷⁵¹ Tsyarkin, “Russian Politics, Policy-making, and American Missile Defense,” p. 784

⁷⁵² Norris and Kristensen, “Nuclear Notebook: Russian Nuclear Forces, 2006.”

⁷⁵³ Anatolii Kulikov, “Vrode Ne Protivniki,” *Vozdushno-Kosmicheskaiia Oborona*, no. 6 (2008).

⁷⁵⁴ Viktor Kirillov, “NATO i Rossiia: Ot Kogo Iskhodit Ugroza?,” *Orientir* (2008).

In the nuclear realm, a 2008 article in *Atomnaia Strategia* characterizes U.S. assistance to Russia to dismantle submarines (among other systems) as a means by which the U.S. and its allies sought to disarm Russia, while not reducing its own arsenal by anywhere near as much.⁷⁵⁵ Even more Western-leaning analysts, such as Alexei Arbatov, argued that Russia could not discount NATO as a threat absent its own membership in the alliance.⁷⁵⁶ And when Russian officials discussed progress in cooperation and coordination with NATO, they took pains to pair that with concerns about NATO enlargement and underlined the fact that NATO, for all its transformation, remained a military alliance.⁷⁵⁷ Future cooperation, some argued, depended on the alliance changing its orientation from a Cold War-determined "inertia."⁷⁵⁸

It follows, then, that Russia also continued to measure both nuclear and conventional capabilities against a U.S. capabilities yardstick and force planning continued to be oriented to the U.S. and NATO.⁷⁵⁹ In the conventional context, U.S. operations in Iraq and elsewhere were assessed for how Russia would respond in the face of similar tactics.⁷⁶⁰ Past U.S. operations were also used as evidence in arguments for the importance of effective air defenses.⁷⁶¹ Analysts argued that Russian forces needed the conventional capacity to deter U.S. attack, and that this should be an emphasis for future systems (including the promised strategic bomber follow-on).⁷⁶²

These discussions drew a line between conventional and nuclear threats, but in some cases that line appeared blurry. Washington's statements about conventional deterrence and strategic use of conventional weaponry fed Russian

⁷⁵⁵ N.G. Mormul' and T. A. Deviatova, "Problemy Podvodnogo Flota Rossii i Ne Tol'ko Flota," *Atomnaia Strategia*, no. 3 (2008).

⁷⁵⁶ Arbatov, "Kakaia Armia Nam Nuzhna?."

⁷⁵⁷ Yurii Baluevskii, "Rossiia i NATO: Printsipy Vzaimootnoshenii, Problemy i Perspektivy Sotrudnichestva," *Voennaia Mysl*, no. 6 (2003).

⁷⁵⁸ Aleksandr Voronin, "Problemy i Perspektivy Strategicheskogo Partnerstva Rossiia-NATO," *Voennaia Mysl*, no. 11 (2005).

⁷⁵⁹ Aleksandr Tsymbalov, "Strategicheskie Bombardirovshchiki XXI Veka," *Nezavisimoe Voennoe Obozrenie* (2005); Bogatyrev, "Zavtra-Den' Voisk Protivovozdushnoi Oborony. Ot PVO k VKO."

⁷⁶⁰ Olga Zenkovich, "Ozhidanie Ugrozy s Zapada Mozhet Stoit' Nam Ochen' Dorogo," *Novosti Razvedki i Kontrrazvedki*, no. 21 (2003).

⁷⁶¹ Chel'tsov, "Vozdushno-Kosmicheskaia Oborona v Ozhidanie Integratsii."

⁷⁶² Tsymbalov, "Strategicheskie Bombardirovshchiki XXI Veka."

fears. Russia, analysts argued, was at risk of ballistic missile and cruise missile attack, as well as attacks from space (the former was not only a threat from the United States: analysts were also concerned about missiles in the hands of terrorists).⁷⁶³ Some opined that conventional systems must be included in strategic arms control discussions, lest they undermine strategic stability.⁷⁶⁴

Then there was the fear of nuclear attack. In the mid to late 2000s, a number of pieces appeared in the Russian specialized press and journals expressing concern that the United States could carry out a disabling first strike against Russia, obviating its retaliatory deterrent capability. To some extent, these worries may well have been spurred in part by two articles by Keir Lieber and Daryl Press in the U.S. journals *Foreign Affairs* and *International Security* which made that very argument.⁷⁶⁵ As Quinlivan and I have written, others in the United States and Russia disagreed then and have disagreed since, arguing that Russia's retaliatory capability is secure. But the concerns remained, and centered around the possibility of a surprise, bolt-from-the blue attack.⁷⁶⁶

The argument that the United States sought supremacy was strongly supported, in the view of a large number of Russians, by continued U.S. pursuit of missile defenses.⁷⁶⁷ Many saw this as undermining strategic stability, which, they argued, required that a limited Russian nuclear second strike be able to reach its target. This argument was sufficiently pervasive to be incorporated into suggested materials for high school teachers.⁷⁶⁸ In a 2008 piece, Aleksandr Savel'ev argued that the United States had consciously abandoned strategic stability, as the term was

⁷⁶³ Fateev, Sukhanov, and Omel'chuk, "Ugrozy Bezopasnosti Rossii Rastut."

⁷⁶⁴ Korsakov, "Politika SShA v Oblasti Neiadernykh Vosokotekhnologichnykh Vooruzhenii."

⁷⁶⁵ Keir A. Lieber and Daryl G. Press, "'The Rise of U.S. Nuclear Primacy,'" *Foreign Affairs* 85, no. 2 (2006); "The End of MAD: The Nuclear Dimension of U.S. Primacy," *International Security* 30, no. 4 (2006).

⁷⁶⁶ Quinlivan and Olikier, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*. For additional examples, see Viktor Ruchkin, "Proschety Ameriki. Russkii 'Topol' i Odin v Pole Voin," *Krasnaia Zvezda* (2006); Igor' Plugatarev, "SShA Gotoviatsia k Beznakazannomu Iadernomu Udaru. V Mosckve Schitaiut Bezosnovatel'nym Vozvrashchenie k Diskussii o Ch'ei-Libo Pobede v Atomnoi Voine," *Nezavisimoe Voennoe Obozrenie* (2006).

⁷⁶⁷ Fenenko, "Transformatsiia Sderzhivaniia."

⁷⁶⁸ Viacheslav Evlakhov, "OBZh-OVS. Raketnye Voiska Strategicheskogo Naznacheniiia," *Voennye Znaniia*, no. 6 (2005).; Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," pp. 508-509.

missing from U.S. rhetoric starting in 2002, the time of its withdrawal from the ABM treaty.⁷⁶⁹

While many in the West argued then and argue now that Russian fears of U.S. missile defense were irrational and driven as much by domestic political concerns as anything else,⁷⁷⁰ repeated U.S. insistence that its missile defense program is intended against third countries' developing ballistic missile programs largely fell on deaf ears in Moscow (there were some exceptions⁷⁷¹). Russian officials did not disagree that current U.S. missile defense capabilities posed no threat to Russia's deterrent. However, government statements consistently reflected a belief that a U.S. national missile defense system would eventually have that capacity. Indeed, it was those third states' ballistic weapons programs that Russians argued were a long way away from reality.⁷⁷² Russia insisted that the only way to assuage its fears would be through a truly cooperative approach that gave Moscow a measure of control. In line with this, it offered in 2007 the use of the Gabala and Armavir radars as part of a joint missile defense system.⁷⁷³

But while rhetoric may have focused on the United States and its capabilities, Russia's military actions remained closer to home. Its 2008 war with Georgia was ample evidence that Russia continued to see the countries in its neighborhood as in its sphere of influence, a viewpoint articulated in President Dmitry Medvedev's comments soon after the war, in which he said, in part, "there are regions in which Russia has privileged interests. These regions are home to countries with which we share special historical relations and are bound together as friends and good neighbours."⁷⁷⁴ There was no explicit nuclear component to the Georgia war. While some may have wondered whether Russia's status as a nuclear weapon state

⁷⁶⁹ Aleksandr Savel'ev, "Strategicheskie Otnosheniia Rossii i SShA," *Mezhdunarodnaia Zhizn'*, no. 11 (2008).

⁷⁷⁰ Tsyarkin, "Russian Politics, Policy-making, and American Missile Defense." See also Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010."

⁷⁷¹ It is made, however. See Sukhorutchenko and Kreidin, "Aktual'nye Aspekty Problem Iadernogo Sderzhivaniia i Dostatocnosti Iadernykh Vooruzhenii."

⁷⁷² Olikier et al., *Russian Foreign Policy: Sources and Implications*; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization;" Arbatov, Dvorkin, and Oznobishchev, *Russia and the Dilemmas of Nuclear Disarmament*.

⁷⁷³ Fenenko, "Transformatsiia Sderzhivaniia."

⁷⁷⁴ Dmitri Medvedev, *Interview to Television Channels Channel One, Rossia, NTV*, (2008).

deterred Western states from supporting Georgia more than they did, there is a strong argument to be made that the situation was overdetermined, given Georgia's own share of responsibility for the conflict and the absence of any commitments from NATO states to that country. The question, to the extent it is important, is interesting in the abstract—whether under other circumstances, say with an alliance commitment, the possibility of nuclear escalation would have prevented any foreign involvement. Certainly whatever implicit threat of possible Russian nuclear use might have been relevant did not deter Georgia itself. This suggests that it was not particularly credible, if it was truly present at all.

In summary, then, Russia was living in a mixed threat environment. While the greatest possible danger that could require use of force remained some combination of the United States and NATO, and thus encompassed nuclear capabilities, most of the weapons of greatest concern from these and other possible adversaries were conventional. Moreover, the other substantial concerns for Russia were domestic and regional: terrorist threats and the dangers of broadly defined “instability” at home and in near-by countries. When Russia went to war in Georgia, moreover, it was to assert its interests, in line with past rhetoric about its right to act on its periphery.

Bureaucratic Strength of the Strategic Rocket Forces

The Strategic Rocket Forces, weakened compared to conventional forces in the period examined in the last chapter, remained the primary force among Russia's strategic nuclear triad. One way that this was evidenced was in government spending plans. While defense orders tended not to be fulfilled as written, they provide a sense of intent. The 2004 defense order, approved at the end of 2003 (in contrast to prior years, when the orders had generally been approved in May, after the year was well in train), was established at 341.2 billion rubles, 20 percent less than had been previously calculated as needed. In contrast to prior years, Topol-M development was put at a lower priority (fourth or fifth on the list, rather than at the top). Bomber modernization and continued work on the Borei and Bulava also made

the list, though as even lower priorities.⁷⁷⁵ While no direct data is available, it was reported that past Topol-M spending had exceeded initial estimates, costing about 1/3 more than initially expected. The 2004 defense order thus allowed for three year financing plans, rather than year-by-year, for that and other long-term efforts.⁷⁷⁶ Nonetheless, critics including MITT director Yuri Solomonov argued that funding for the SRF and Bulava programs, particularly, was insufficient, and that more attention had to be paid to preserving the defense industrial base.⁷⁷⁷

In the years that followed, overall budgets continued to rise. In 2006, General Staff chief Baluevskii said that the defense order through 2015 would be sufficient to replace all ICBMs (and SLBMs) with Topol-M variants (that is, including the YARS RS-24 and the Bulava for the submarine fleet) by that year.⁷⁷⁸

Meanwhile, Deputy Air Force Commander Chel'tsov told a journalist in 2005 that the Moscow Missile Defense system had survived overall air and missile defense program cuts comparatively unscathed, although it had also been slightly downsized. Air Defense, he reported, received what it needed to conduct training and exercises. The air force as a whole, however, was receiving fewer and fewer new aircraft with time, he said. Although planes were promised, they were entering the force in ones and twos, although repairs and modernization were continuing.⁷⁷⁹ The extra funds coming to the Air Force were, at least, covering fuel: quotas had been increased, supporting the higher op-tempo of patrols and exercises.⁷⁸⁰

In 2004, Putin pledged improvements to the nuclear forces (along with the rest of Russia's armed forces), promising projects unique to Russia. As already discussed, General Staff Chief Baluevskii promised a new maneuverable warhead, able to overcome missile defenses. Defense Minister Ivanov, in late 2004, offered assurances that Russia would be able to maintain parity with the U.S. Other

⁷⁷⁵ Il'ia Kedrov, "Prioritety Gosoboronzakaza," *Voенно-Promyshlennyi Kur'er* (2003).

⁷⁷⁶ Ibid.

⁷⁷⁷ Solomonov, "Iadernaia Degradatsiia."

⁷⁷⁸ "Baluevskii Poschital Rakety."

⁷⁷⁹ Bogatyrev, "Zavtra-Den' Voisk Protivovozdushnoi Oborony. Ot PVO k VKO."

⁷⁸⁰ Stukalin, "Bears and Blackjacks Are Back. What Next?"; Lunev, "Dal'ney Aviatsii -- 90 Let. 'Dlinnaiia Ruka' Derzhavy."

promises included new bombers, as well as submarines and ICBM launchers.⁷⁸¹ But when Vladimir Putin vowed more funding for Russia's nuclear strategic systems that year, it was in the context of programs for the SRF—he said nothing about the Navy or Air Force.⁷⁸²

Funding, of course, tells only part of the story, but the evidence presented above indicates that the SRF remained strong, but did not have the clout it had enjoyed before 2000. And while there were fewer open debates around nuclear force predominance and no substantial institutional changes, there were plans to shrink the SRF, reflecting missile force reductions. In 2005, the MoD intent was to draw down Russia's missile divisions from 15 to 13.⁷⁸³ The number actually dropped to 12 by 2007.⁷⁸⁴ MIRVing of course, made it possible to field fewer missiles while maintaining warhead numbers to a higher level than otherwise possible. Meanwhile, reports indicated that the SRF was undergoing various organizational and structural reforms of the main staff, and specific divisions, although the details were not clear.⁷⁸⁵

At the same time, the discussions of privileging the Navy that had become prevalent at the turn of the century were fading. Although some continued to argue for the greater importance of the SLBM fleet, the last gasp of arguments for naval predominance was probably in 2004, when Russia announced its plans for Moscow Treaty implementation. These called for reduced emphasis on ICBMs, such that by 2010 SLBM and ICBM warhead numbers would be similar.⁷⁸⁶ But this did not necessarily imply more support for the Navy, but rather less for the SRF. And, in the event, SORT was not implemented in this way. In 2010, there were nearly twice as many warheads on ICBMs as SLBMs. And even when these ideas of parity were still in play, according to a 2004 piece in *Voenna-Promyshlennyyi Kur'er*, the possibility of

⁷⁸¹ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005;" Voronin, "Rech Idet o Statuse..."

⁷⁸² Khodarenok, "Tema. Sud'ba 'Taifuna'."

⁷⁸³ "Russia," *The Military Balance* 105 (2005).

⁷⁸⁴ "Russia," *The Military Balance* 107 (2007).

⁷⁸⁵ Vasilenko, "Raketnyi Shchit Rossii."

⁷⁸⁶ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2005."

allowing the sea-based component of the triad to fade away was also discussed within government circles.⁷⁸⁷

It is also worth unpacking some of the arguments for Russian naval prominence, particularly in light of the discussion of Russian strategic culture in Chapter Three, on which the Cultural/Bureaucratic theory is based. Where U.S. submarine program enthusiasts making a case for SSBNs might note that the independence of submarine commanders is an asset for their survivability, their Russian counterparts seemed to view it as a liability. Instead, they argued that communications within the fleet had been improved greatly, and wartime communications with the fleet would not necessarily be worse than with other components of the triad.⁷⁸⁸ This overall attitude is also reflected in the views of those who discount the submarine fleet. A colonel who wrote consistently on these topics in the Russian military-focused press, for instance, argued that the long timeline inherent in sending an order to a submarine and then awaiting its implementation left the SSBN force with no warfighting utility.⁷⁸⁹ This argument, of course, fundamentally discounts the second strike, even as it, confusingly, argues for an ICBM launch on warning (presumably against counter-value targets).

The bomber fleet got a good bit of attention from its exercises, and from its potential as a presidential photo-opportunity: Vladimir Putin was photographed flying aboard a T-160 in summer of 2005.⁷⁹⁰ But, as noted above, much of the emphasis on bombers lauded them in their possible conventional role, in line with arguments that Russia needed these capabilities for terrorist and other threats.⁷⁹¹ And, as the financial numbers above indicate, the Air Force as a whole was struggling for funding.

⁷⁸⁷ Khodarenok, "Tema. Sud'ba 'Taifuna'."

⁷⁸⁸ Fedor Ivanovich Novoselov, "Strategicheskaiia Triada Rossii," *Voenna-Promyshlennyi Kur'er*, no. 13 (2003). See also the discussion of communications in Zhores Alferov, Sergei Kovalev, and Anatolii Rodionov, "Glavnaia Udarnaia Sila Rossiiskogo Flota," *Nauka v Rossii* (2006) and Mikhail Leonidovich Abramov, "Podvodnye Sily Rossii: Sostoianie i Perspektivy," *Voennaia Mysl*, no. 3 (2006).

⁷⁸⁹ Sergei Kherkherov, "Arsenal. Iadernyi Mech Rossii," *Voenna-Promyshlennyi Kur'er* (2004).

⁷⁹⁰ Rigmant, "Dolgaia Doroga k Tu-160; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2006."

⁷⁹¹ Khodarenok, "Tendentsii. Vozmozhnosti Preventivonogo Udara; Lunev, "Dal'ney Aviatsii -- 90 Let. 'Dlinnaia Ruka' Derzhavy."

In summary, while the SRF was weaker than it had been at its height, its clout compared to the SSBN and bomber forces was not in doubt. Indeed, independent expert Alexei Arbatov argued in 2003 that Russia should concentrate its nuclear strategic resources on the Strategic Rocket Forces, maintaining, but not developing, Naval and strategic air capabilities, quite simply because attempting to do everything would lead to overall failure. He also recommended putting more resources towards missile defense (as well as air defenses).⁷⁹² In the years that followed, it seems that the first part of his advice was followed, although the latter, at least when it came to missile defense, was not.

How the Theories Perform

Now that I have established values for the independent variables, as well as the dependent variable of posture, how well do the theories explain Russian posture between 2003 and 2008?

As already discussed, I code Russian force structure between 2003 and 2008 as largely compatible with a Strategic Escalatory posture, much as it had been since independence. Still, there were differences: ICBM modernization and MIRVing both accentuated the focus on the offense and, later in the period, included more mobile deployments. The bomber force was getting ever more use in exercises and other activities. The SLBM force, for its part, although still facing troubles, was no longer in immediate danger of disappearing. Declaratory policy, for its part, also remained compatible with either a Launch on Warning or an Assured posture. As this period drew to a close, however, there was some discussion of a possible nuclear role for dual-capable non-strategic weapons, suggesting Warfighting Escalatory elements.

The Absolute Weapon theory and the Internal Balancing theory allow for Launch on Warning postures mainly when the economy is weak. This is not the case between 2003 and 2008, which presents rapid growth. Under these conditions, and when security threats are both nuclear and conventional (as was the case during these years), these two theories predict Assured postures, combined with Warfighting Escalatory approaches in the case of the Absolute Weapon theory.

⁷⁹² Arbatov, "Kakaia Armiia Nam Nuzhna?."

Declaratory policy thus fits the predictions of Internal Balancing best, particularly bolstered by the continued emphasis on parity. Similarly, the emphasis on bombers in a conventional role is in line with Internal Balancing theory and its predictions that conventional weapons should deter conventional threats.

The Bureaucracy and Culture theory predicts a Strategic Escalatory posture as long as the SRF enjoy a comparatively unchallenged bureaucratic environment. Thus, while the Internal Balancing theory is in line with declaratory policy and some aspects of force structure, this theory is a much better predictor of force structure. The development of MIRVed ICBM systems also fits well with that theory's description of Russian strategic culture, with its focus on firepower and offensive approaches.

Table 7.4 below presents side-by-side the predictions of the different theories and the actual outcomes.

Table 7.4: Predictions and Reality 2003-2008

Years	Absolute Weapon	Internal Balancing and Prestige	Cultural/ Bureaucratic	Actual Posture
2003-2006	Assured + WE; Minimal size	Assured; parity+	SE; maximal size	Declaratory: Assured/LoW, parity Force structure: SE, parity
2006-2008	Assured + WE; Minimal size	Assured, parity+	SE; maximal size	Declaratory: Assured/LoW (+WE?), parity Force structure: SE, parity

It is also worth asking how these theories explain the seeming shifts in Russian approaches towards the end of the period. If Russia was moving towards more of an Assured posture, deterring strategic nuclear strikes by means of building a more survivable force, while also looking to build up its non-strategic capabilities in support of Warfighting Escalatory approaches, that would be in line with the Absolute Weapon theory. The Internal Balancing theory, by contrast, predicts an Assured posture. This would require the deployments of mobile missiles to continue,

but the talk of nuclear-armed Iskanders to die down. This said, the Cultural/Bureaucratic theory predicts that a strong economy will enable spending on a broad range of capabilities, although offensive ones will do best. Thus, these developments are not incompatible with its predictions.

Once again, the Cultural/Bureaucratic theory performs best overall. Internal Balancing appears to have some predictive power when it comes to declaratory policy, but moves towards the end of the period suggest a possible explanatory power for the Absolute Weapon theory, as well—depending on just how the force posture trends continue to evolve.

Conclusion

The Russian economy stabilized into record growth between 2003 and 2008, enabling concomitant increases in defense resourcing. Meanwhile Russia continued to perceive threats from NATO and the United States, both nuclear and conventional, and it engaged in a war with its neighbor, Georgia, at the tail end of the period, asserting its right to intervene in its neighborhood when it deemed necessary. The Strategic Rocket Forces remained the strongest component of Russia's strategic triad, although weaker than they had been before 2000.

Under these conditions, the Absolute Weapon theory predicts that Russia would emphasize survivable capabilities and non-strategic forces, leveraging the capacity of nuclear weapons to deter a broad range of threats, even at small arsenal sizes. The Internal Balancing theory predicts an Assured posture, also calling for an emphasis on survivable forces, but not non-strategic capabilities. It would expect Russia to reject the possibility of first use. It also predicts that more resourcing should lead to larger forces. Both systemic theories predict an emphasis on early warning, to enable those survivable forces to better survive a first strike by an adversary. The Cultural/Bureaucratic theory again predicts the same Strategic Escalatory posture that it always expects as long as the SRF is not challenged effectively. It allows for less emphasis on early warning, but generally predicts that more resources should lead to more investment in a broader range of systems, although with the most attention paid to the ICBM force, and particularly silo-based

offensive capabilities. It also predicts that, when the economy is doing well, other components of the force will get more resourcing, although not enough to overshadow the prominence of the SRF.

What we actually see is during these years is a declaratory policy that indicates retaliation against nuclear attack, either after ride-out (Assured) or by launching Russian missiles on warning (Launch on Warning). The force structure remains the Strategic Escalatory approach we saw in previous periods, but by the end of this time frame, Russia did appear to be putting more emphasis on survivable systems, suggesting a shift towards an Assured (or Versatile) posture. There was also some tenuous evidence that Russia might have been increasing its interest in non-strategic capabilities, including to counter conventional threats. If so, the emerging posture would have combined Assured and Warfighting Escalatory approaches, but is also a good fit for the predictions of the Cultural Bureaucratic theory, with SRF prominence combined with investment in other systems. Early Warning, however, continued to deteriorate in this period, undermining the goals of any plans to retaliate or launch in time to avoid decimation of less survivable forces. Parity remained very important to Russia and a driver of its discussions of arms control with the United States.

Thus, force structure throughout these years is in line with the Cultural/Bureaucratic theory, in large part because it is the only theory that allows for Russia's continued weakness in early warning and focus on ICBMs. The two systemic theories both appear to explain aspects of declaratory policy at different times. The continued emphasis on parity and compatibility of declaratory policy overall with an Assured posture makes the Internal Balancing theory overall somewhat stronger. However, the trendline at the very end of the period might suggest some support for the Absolute Weapon theory as well, for both declaratory policy and force structure.

It is also worth noting that while Russian rhetoric makes clear that it does not see nuclear weapons as sufficient to all threats, as the Absolute Weapon theory would predict, the Georgia conflict may suggest the capacity for nuclear weapons to play a broader role. If Russia's sheer possession of nuclear weapons played some

part in making other powers think twice about getting involved in that conflict, however small a component of that overdetermined situation this might have been, that could be indicative of the broad-scale deterrent effect of a nuclear arsenal.

Chapter Eight: 2009-2012, Military Revitalization

Introduction

Russia began 2009 with lawyer Dmitry Medvedev as President and former President Vladimir Putin as Prime Minister. Despite Russia's war in Georgia soon after his inauguration, Medvedev's ascension to the job had raised a lot of hopes in and out of Russia for new approaches, as many saw in Medvedev a modernizer and technocrat. From the Kremlin's perspective, the war in Georgia staked out Russia's claim to "privileged interests" in the countries on its borders (excluding the Baltic states, according to most interpretations). The 2009 effort by the United States to "reset" relations with Russia was seen in Moscow as evidence of U.S. acceptance of this reality, although the Kremlin was soon disappointed when U.S. policies in Russia's neighborhood and beyond proved fundamentally unchanged.

Moreover, in 2011, it was announced that Vladimir Putin would run for President (for a newly expanded six-year term, and with no serious opposition) and would make Medvedev his Prime Minister in turn. Urban protests in 2011 and 2012 were partially a response to this news and reflected the general frustration among at least some Russian elites with the lack of choice in Russia's electoral process. The protests, although comparatively localized and small, were taken seriously by the Kremlin: they were met with sharp crackdowns on both media and opposition. In May of 2012, Putin was re-inaugurated as President of the Russian Federation.

The Georgia war also had consequences for Russia's armed forces. Despite Russia's victory, the five-day long conflict in August of 2008 exposed a Russian force far short of what the Kremlin wanted to see, and served as the impetus for substantial progress in military reform after nearly two decades of setbacks. That this spate of reforms was different from those of the past became clear early in 2009. The "New Look" reforms shifted Russia's armed forces from a division to a brigade structure and replaced six military districts with four. They also reallocated authority from services and branches to those districts, with an eye to improving the combined arms capabilities that had shown themselves to be lacking in Georgia. The

impetus for reform helped ensure that despite the economic crisis of 2009, which was followed by a return to growth far slower than that of the previous decade, defense spending grew even as the government as a whole tightened its belt.

The New Look reforms had little direct structural effect on Russia's strategic nuclear forces, but most of these, too, benefited from the influx in funding and attention. The increase in missile production discussed in the previous chapter continued and accelerated. Aside from the deployments of MIRVed Yars RS-24s, Russia promised a new SS-18 follow-on—an extra-heavy silo-based missile that would be armed with up to ten warheads. Although talk of new bombers continued to seem largely aspirational, the first Borei submarine finally went to sea, giving Russia's SLBM numbers and capabilities a substantial boost. And while no new nonstrategic systems were deployed, Russia continued to up the rhetoric regarding the possibility of arming a variety of newer non-strategic systems with nuclear weapons.

Promises of a new military doctrine, the first in 10 years, therefore brought with them a great deal of speculation, as some senior officials promised a lower nuclear threshold, one which allowed for "pre-emptive" strikes. In the event, however, the doctrine, issued in February 2010, raised the threshold for nuclear use, emphasizing that nuclear weapons were reserved for existential threats (including conventional ones). After that, senior officials toed this new party line in their statements. Meanwhile, the 2010 New START Treaty, a product of the "reset," replaced the SORT Treaty not with a substantially lower total warhead threshold, but with more detailed limitations on specific systems and stronger verification mechanisms.

Table 8.1, below, illustrates how Russia's force posture changed between 2008-2012. As in previous chapters, the arrows indicate trends for each component of the force structure: whether systems were getting more resourcing and programs were successful (arrow up), if systems were deteriorating, whether relatively to others or absolutely (arrow down), or if they were holding even (arrows side to side). Also as before, total numbers are not a primary determinant of the coding,

governed as they are by arms control commitments. Alongside the coding for these years, I have placed the “ideal” or archetypal postures introduced in Chapter One.

Table 8.1: Posture 2009-2012

Forces & Policy		Postures	2009-2012	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Declaratory Policy			Nuclear deterrence of nuclear weapons preferred, First use if needed. Launch on Warning possible	No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↔	✗	✗	✓	✓	✓	✓
	Silo-based ICBMs	↑						✗
Survivable/ second strike	Mobile ICBMs	↑	✓	✓	✗	✗	✗	✗
	SLBMs	↑	✗	✗	✗	✗	✓	
	NSNF	↔	✗	✗	✗	✗	✓	
	Early Warning	↔	✓	✓	✓	✓	✗	
Safeguards		↓	✓	✗	✓	✗	✗	

As was true in the previous periods I examined, Russia’s actual postures for 2009-2012 do not match perfectly any of the archetypes. Russia’s declaratory policy, despite hints that it would shift to strategy that explicitly incorporated a Warfighting Escalatory approach, instead solidified, with the issuing of the 2010 doctrine, as something closer to an Assured or Launch on Warning strategy (a Versatile approach is also not entirely out of line). Specifically, it stated that nuclear weapons were relevant only for other weapons of mass destruction and existential conventional threats. While the last can be read as incorporating a Warfighting Escalatory element, the few countries that could pose an existential conventional threat to Russia would require strategic, not tactical, weapons and have nuclear weapons of their own. This raises some questions, but does not in and of itself suggest a Warfighting Escalatory strategy.

It also appeared very likely that plans to launch missiles on warning of enemy attack remained a component of Russian planning, if not the only option. Russian officials also emphasized the importance of parity. The force structure, in keeping with trends that surfaced at the end of the previous period, began to look

more like an Assured (or Versatile) posture, with substantial growth in the proportion of mobile ICBMs and SLBMs in the force. It also evidenced a leveling out of force numbers, after many years of decline in accordance with arms control commitments.

This said, the posture's match to an Assured posture is hampered by continued emphasis on silo-based ICBMs and the deterioration of space-based early warning. The new SS-18, specifically, looks very much like a first use system. With Russia's substantial numbers of both mobile and SSBN-based missiles, this new missile is contraindicated for an Assured (or Versatile) posture and provides no additional value for any plans to launch on strategic warning. Nor, being new, can its development be ascribed to path dependencies. Russia's continued interest in MIRVed systems is also in line with Strategic Escalatory approaches. In terms of early warning, Russia made notable and substantial progress in its ground-based systems during this period and the out-years. However, space-based early warning continued to atrophy—to nothing in the out-years. Nonstrategic capabilities did not appear to improve particularly, although their dismantlement seemed to have stopped. However, this was not out of line with Russia's declaratory policy.

The two systemic theories developed in Chapters One and Two base their posture predictions on the independent variables of threat environment (for the two systemic theories) and organizational status of the SRF (for the Culture and Bureaucracy theory), as well as the intervening variable of the state of the economy. This period is defined by an economy that took a dive in 2009, but then resumed growth, albeit at a much slower pace than before. Notably, after 2009, defense resourcing grew even faster than during the boom years, suggesting that for my purposes, I can expect behavior in line with strong resourcing. As regards the two independent variables, between 2009 and 2012 the threat environment perceived by Russian leaders was mixed and the SRF remained prominent.

Under these conditions, the Absolute Weapon theory predicts a combination of an Assured and a Warfighting Escalatory posture—something declaratory policy seemed to be leaning towards at the start of the period, but rejected later. By contrast, the Internal Balancing and Prestige theory predicts an Assured posture,

with an emphasis on parity (at least). This is more in keeping with the declaratory policy that emerged. In terms of force structure, the increased development of survivable systems also supports the Internal Balancing theory. However, the increased development of almost all systems (the big exception being space-based early warning) had a “rising tide lifts all boats” quality that may be most in line with the Cultural/Bureaucratic theory’s predictions. These lead us to expect a Strategic Escalatory posture, with emphasis on silo-based systems above others, but with more development of other systems when resources are plentiful. The continued weakness of Early Warning and development of new silo-based missiles seems to align better with this explanation, as well.

Overall, then, the force structure of 2009 to 2012 continues to match Cultural and Bureaucratic theory predictions, but with more support for Internal Balancing and Prestige theory than had been evidenced in the past. The unabated emphasis on force size and parity remains in line with both of these theories. Finally, because declaratory policy is also a match for the Internal Balancing theory, that theory does better than the other two overall, a shift from Russia’s history as described in the preceding chapters

As in Chapters Five, Six, and Seven, this chapter begins with a more detailed description of how Russia’s force posture changed between 2009 and 2012, focusing on each component in turn. It then outlines the conditions under which my three theories predict the postures that are evident and assesses the values for the independent variables relevant to each theory. This makes it possible to judge which of the theories perform best during these years.

Defining Russian Force Posture

As throughout this dissertation, in order to describe Russian force posture, I unpack each component in turn. For declaratory policy, I try to identify elements that address:

1. willingness to use nuclear weapons first in a conflict;
2. willingness and plans to use nuclear weapons against non-nuclear weapon states;

3. whether and under what circumstances nuclear forces are described as tools of deterrence or tools of warfighting, and how this varies from situation to situation, adversary to adversary, and weapon to weapon;
4. attitudes towards parity/minimalism and survivability.

For force structure, I outline the evolution of Russian forces in the force structure categories identified in Chapter 1. These are:

- ICBMs, including less survivable silo-based ICBMs and more survivable mobile ICBMs.
- More survivable SLBMs
- Long-range bombers
- Non-strategic systems
- Early warning capabilities
- Safeguards

Declaratory Policy and Strategy

Discussion of warfighting roles for nuclear weapons resurfaced in both the military literature and in some official statements late in the first decade of the 21st century. There were also some hints of this in military exercises. However, in 2010, a new doctrine appeared to decisively raise the threshold for nuclear use. Meanwhile, officials continued to emphasize the importance of nuclear capability, and parity, in a broader context.

In the literature, the focus was on ways in which local and regional conflicts could escalate to nuclear use. While the analyses published were generally not as doctrinally detailed or as seemingly influential on policy as the Levshin, et. al piece of a decade before, they were notable in talking not just about threats from the United States and NATO, but also about China.⁷⁹³ Perhaps more interesting is the effort to postulate what other countries might pose a danger to Russia and how low-

⁷⁹³ E. S. Sirotinin, "Sderzhivanie Agressii v Kontekste Novoi VoЕННОi Doktriny Rossiiskoi Federatsii," *Voennaia Mysl*, no. 5 (2010).

level scenarios, such as peacekeeping operations, might lead to nuclear use.⁷⁹⁴ Creative thinking about dangers from non-nuclear states is not particularly prevalent, but does surface. One analyst, for example, considered possession of ballistic missile or chemical or biological weapons capability a criterion for inclusion as a possible threat.⁷⁹⁵

Senior officials' statements on nuclear weapons were largely consistent with those of the past. In March 2009, Dmitry Medvedev stated that nuclear forces had to "fulfill all tasks for securing Russia's military security."⁷⁹⁶ But officials at lower levels occasionally made statements that appeared to indicate a return to a "de-escalatory" approach. The most notable were comments by Russian Security Council Secretary Nikolai Patrushev in October and November of 2009. In anticipation of a new military doctrine, he told reporters that the new doctrine would not rule out "preventive" nuclear strikes and would lay out the circumstances under which nuclear weapons could be used to counter conventional might in regional, local, and large-scale war.⁷⁹⁷ On the basis of these statements, Alexei Fenenko speculated that the new strategy would allow for nuclear use in local conflicts with an approach similar to the United States' "flexible response" doctrine of the 1960s, including the concept of escalation management (which has some similarities with Levshin, et al.)⁷⁹⁸ In addition, Oleg Burtsev, Vice Admiral and Deputy Chief of the Russian Navy Main Staff, spoke in 2009 about potentially increasing the role for tactical nuclear weapons for the Navy.⁷⁹⁹

⁷⁹⁴ See discussion in Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*. For specific examples, see Vladimir Lutovinov, "Sistema Voennykh Ugroz Bezopasnosti Rossii: Voenno-Politicheskii Analiz," *Voennye Znaniia*, no. 1 (2009); Leonid Grigor'evich Ivashov, "Politicheskaiia Tsena Iadernoi Bomby," *Nezavisimoe Voennoe Obozrenie*, June 5 2009; Vladlen Malyshev and Eduard Bogatyrev, "Voennye Ugrozy i Ikh Vliianie Na Planirovanie Meropriatii Grazhdanskoi Oborony," *Vennye Znaniia*, no. 5 (2009).

⁷⁹⁵ Lutovinov, "Sistema Voennykh Ugroz Bezopasnosti Rossii: Voenno-Politicheskii Analiz."

⁷⁹⁶ "Dmitri Medvedev Zaiavliaet o Neobkhodimosti Povysheniia Boegotovnosti Iadernikh Sil RF," *Interfax*, March 18 2009.

⁷⁹⁷ Vladimir Mamontov, "Meniaetsia Rossia, Meniaetsia i Ee Voennaia Doktrina," *Izvestiia*, October 14 2009; Timofei Borisov, "Voennaia Doktrina v Tret'em Variante," *Rossiiskaiia Gazeta*, November 20 2009; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁷⁹⁸ Fenenko, "Transformatsiia Sderzhivaniia."

⁷⁹⁹ "RF Budet Uvelichivat' Rol' Takticheskogo Iadernogo Oruzheniia Na Mnogotselovykh APL," *Gazeta*, March 23 2009. This is also cited by Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*. Burtsev's statement,

As in 1999, a lowered nuclear threshold may also have been reflected in two military exercises. Drawing on Polish accounts, a number of Western sources described the September 2009 Zapad exercise, in an echo of Zapad 1999, as including a nuclear strike on Poland.⁸⁰⁰ The exercise scenario was of a defense of Belarus from a NATO attack. Russian sources, although some indicated the possibility of tactical nuclear weapons use prior to the exercise, did not report nuclear weapon involvement during or after. The exercise did include strategic and non-strategic bombers, however. And the SRF conducted a concurrent command and staff exercise.⁸⁰¹

If the Polish reports are true, Russia may have been testing a scenario for nuclear escalation. In addition, the 2010 Vostok exercise which simulated conflict with a non-state actor which to many looked much like China, included the reported use of a nuclear mine of some sort, although details were never made clear.⁸⁰²

However, all of this evidence for a lowered threshold was countered by the actual doctrine that was published in February 2010. Despite the comments by Patrushev, the document in fact raised the publicly stated threshold for nuclear use. It repeated the concept from past doctrinal documents that nuclear weapons were deterrent tools, for preventing nuclear and conventional (large-scale war or regional war) conflicts. However, it also clearly stated that Russia would not use nuclear weapons except in very limited circumstances. These include the use of nuclear or other weapons of mass destruction by an adversary against Russia or its allies and an adversary's use of conventional weapons such that "the very existence of the

although citing different press articles, is also noted by Kipp, "Russian Doctrine on Tactical Nuclear Weapons: Contexts, Prisms, and Connections." and Sokov, "Russian Perspectives on Non-Strategic Nuclear Weapons."

⁸⁰⁰ Matthew Day, "Russia 'Simulates' Nuclear Attack on Poland," *Telegraph.co.uk*, November 1 2009; Roger McDermott, "Belarus and Russia Prepare Zapad 2013 Military Exercise," http://www.jamestown.org/single/?tx_ttnews%5btt_news%5d=40736&tx_ttnews%5bbackPid%5d=381

[files/1056/single.html](http://www.jamestown.org/files/1056/single.html); "Russia's Conventional Military Weakness and Substrategic Nuclear Policy," (Fort Leavenworth, KS: Foreign Military Studies Office, 2011), <http://fmso.leavenworth.army.mil/Collaboration/international/McDermott/Russia-NuclearPolicy.pdf>; Hans M. Kristensen and Robert S. Norris, "Nuclear Notebook: Russian Nuclear Forces, 2016," *The Bulletin of the Atomic Scientists* (2016).

⁸⁰¹ 2009 #972; Viatkin, 2009 #973; 2009 #974; 2009 #975; 2009 #976}

⁸⁰² Egor Sozaev-Gur'ev, "Kazaki i Raketniki Protiv 'Bandgruppy'," *Infox.ru*, July 8 2010; Valerii Usol'tsev, "Boi Na Sergeevskom Poligone," *Suvorovskii Natisk*, July 17 2010.

state is under threat." Thus, this doctrine explicitly narrowed the conditions for nuclear weapon use by Russia.⁸⁰³

Reportedly, a supplementary document, *Foundations of Government Policy in the Area of Nuclear Deterrence Until 2020*, was approved simultaneously with the doctrine. This document, which is classified and thus unavailable, may provide more detail of Russian planning and thinking about nuclear development and use.⁸⁰⁴ But while there is speculation regarding its contents,⁸⁰⁵ it seems unlikely that it fundamentally contradicted the official, unclassified doctrine approved by the President and publicly disseminated. For one thing, two contradictory policies, one classified and one not, would be confusing to Russian military and government personnel holding varying degrees of access. Moreover, given that part of the purpose of a public nuclear doctrine is signaling prospective adversaries to deter them, having a lower threshold than that publicly announced would seem counterproductive.

What, then, happened between Patrushev's statements in 2009, which were notably not challenged by other officials, and the finalization of the doctrine in early 2010? Podvig argues that the seeming disconnect between Patrushev's comments and the published doctrine indicates that several drafts were developed, a view supported by Patrushev's statements that referenced a draft.⁸⁰⁶ It seems plausible that there was a debate on the future of nuclear weapons use, and proponents of a lower threshold, such as Patrushev, lost the fight. This appears to be supported by Patrushev's own comments after the doctrine was released, which echoed its tenets.⁸⁰⁷

⁸⁰³ "Voennaia Doktrina Rossiiskoi Federatsii," (National Security Council of the Russian Federation, Moscow 2010), http://news.kremlin.ru/ref_notes/461. For discussion of the doctrine and its implications see Quinlivan and Olikier, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States* and Arbatov, Dvorkin, and Oznobishchev, *Russia and the Dilemmas of Nuclear Disarmament*.

⁸⁰⁴ "Rossiiskoe Iadernoe Oruzhie: Kriterii Primeneniia," *Natsional'naia Oborona*, no. 2 (2010).

⁸⁰⁵ Ibid.

⁸⁰⁶ Borisov, "Voennaia Doktrina v Tret'em Variante; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸⁰⁷ Matvei Kozhukin, "Iadernoe Oruzhie-Faktor Sderzhivaniia," *Krasnaia Zvezda*, February 10 2010.

After the doctrine was published, some Russian officials continued to talk of the possibility of regional and local conflict escalating to involve nuclear use, as then-General Staff Chief Nikolai Makarov did in November 2011.⁸⁰⁸ Russian scenarios for nuclear weapon use continued to postulate situations where Moscow had no option but first use of nuclear weapons in the face of overwhelming adversary conventional superiority and threat.⁸⁰⁹ All of this is, of course, in line with the new doctrine. Somewhat more confusingly, Defense Minister Anatolii Serdiukov indicated in May 2012 that Russia might “use destructive force ‘pre-emptively,’” if missile defenses were developed and deployed.⁸¹⁰ What exactly this means (a pre-emptive strike on missile defenses?) was unclear, but the intent to sound a threatening tone seems unquestionable.

The opacity of the exercises that purportedly included tactical nuclear use, the new doctrine, and, importantly, the contrast between Patrushev’s comments before that doctrine was released and after, lead me to conclude that, after some debate, Russia made a conscious choice to shift its declaratory policy to one of nuclear deterrence of nuclear and other weapons of mass destruction primarily, and conventional attack only when it posed an existential threat to the state. Although some analysts argued that Russia needed to maintain nonstrategic capabilities as a counter to the United States and NATO’s greater conventional warfighting capacity,⁸¹¹ no officials made this case. Sokov argues that the new doctrine does not walk away from the notion of de-escalatory nuclear use, but only rejects it in the context of local war, such as the 2008 conflict with Georgia, and that this was the focus of the debate.⁸¹² However, the actual text of the doctrine is difficult to interpret in this way.

However, even if Russia had no intention for nuclear first use under most conditions, the Kremlin’s rhetoric during this period increasingly made clear that

⁸⁰⁸ Kipp, “Russian Doctrine on Tactical Nuclear Weapons: Contexts, Prisms, and Connections.”

⁸⁰⁹ McDermott, “Belarus and Russia Prepare Zapad 2013 Military Exercise”; Kristensen and Norris, “Nuclear Notebook: Russian Nuclear Forces, 2016.”

⁸¹⁰ “Russia Warns on Missile Defense Deal with NATO and US,” *bbc.co.uk*(2012), <http://www.bbc.co.uk/news/world-europe-17937795>.

⁸¹¹ Vladimir D’Iachenko et al., “Paritet Nevozmozhen,” *Natsional’naia Oborona*, no. 5 (2012).

⁸¹² Sokov, “Russian Perspectives on Non-Strategic Nuclear Weapons.”

Russia found nonstrategic nuclear weapons to be a valuable negotiating tool. For example, Russia threatened to move the (probably, see below) nuclear-capable Iskander missiles to Kaliningrad if U.S. missile defense systems were deployed in Europe.⁸¹³ Moscow also pushed back on efforts to move towards new controls on these systems. The withdrawal of every country's non-strategic nuclear weapons to its own soil have long been a Russian prerequisite for negotiations on the size of non-strategic arsenals. Russian officials also often note that discussions of nonstrategic forces would need to include third parties, beyond the United States and Russia, which also possess such weapons. In fact, this phenomenon has led Podvig to argue that arms control focused around these systems would be counterproductive, providing all the more reason for Russia to value nonstrategic nuclear forces.⁸¹⁴ Similarly, Sokov agrees that Russia sees the attention as evidence of the utility of the arsenal.⁸¹⁵

Russian officials also continued to emphasize the importance of the strategic nuclear arsenal, particularly after Vladimir Putin resumed the presidency. This was made particularly evident in October 2012, when Putin personally presided over a large-scale exercise of the whole of Russia's nuclear strategic triad, the largest such exercise since the USSR collapsed.⁸¹⁶ Although this was not widely reported (indeed, accounts emphasized that the exercise had demonstrated the reliability of the system),⁸¹⁷ it appears that the president's first attempt to launch an ICBM failed, and a back-up had to be instituted.⁸¹⁸

Meanwhile, it also seemed that the Kremlin continued to consider it at least plausible that it would be the U.S., not Russia, which first launched nuclear weapons at the other. In such scenarios, it seemed that Russia continued to allow for both ride-out and launch on warning responses. The emphasis officials continued to place

⁸¹³ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸¹⁴ Ibid.

⁸¹⁵ Sokov, "Russian Perspectives on Non-Strategic Nuclear Weapons."

⁸¹⁶ Ellen Barry, "Russia Stages Missile Test, With Putin Taking the Helm," *New York Times*, October 20 2012.

⁸¹⁷ Steve Gutterman, "Putin Flexes Muscle in Big Test of Russia's Nuclear Arsenal," *Reuters*(2012).

⁸¹⁸ Pavel Podvig, "Test Launch of a Topol Missile,"

http://russianforces.org/blog/2012/10/test_launch_of_a_topol_missile_2.shtml.

on overcoming missile defenses (every system, new and old, was lauded for this capability⁸¹⁹) also implied the need to maintain second strike capabilities, suggesting ride-out. However, this makes more sense in the context of mobile systems than silo-based ones. Other statements indicated Russian plans to launch on warning. For example, Deputy Defense Minister Popovkin, in a 2011 discussion of the defense budget and plans for strategic nuclear forces, noted the benefits of the Topol missile family in launch on warning scenarios.⁸²⁰

Russia's continued interest in arms control, moreover, as before reflected less a minimalist approach than the same desire for parity that had been so consistent throughout its history. SRF Chief Nikolai Solovtsov, speaking to the press in 2009, described parity as the highest priority. He took pains to note that parity did not mean mirror-imaging the U.S. posture, but having the same destructive capability.⁸²¹ After New START was signed, some Russian officials expressed concerns about ensuring that they had enough launchers to keep Russia at the top levels of its limits by the time it entered into force, given the expiring service lives of some systems and the historically slow pace of building new weapons.⁸²² Thus, although it is true, as Mathers notes, that Dmitry Medvedev in 2009 explicitly spoke of the "necessary minimum level of nuclear weapons" as the goal of arms control,⁸²³ this by no means meant that Russia would unilaterally seek those levels. Medvedev's statements in 2009 indicated that the Kremlin was willing to discuss further arms control only if the United States agreed to limits on its "upload potential," a ban on space-based offensive weapons, and controls on conventional high-precision

⁸¹⁹ See discussions in Quinlivan and Olikier, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*. See also "Russian Missile Chief Claims Shield-Penetrating ICBM Ready by 2018," *RT.com*(2012), <http://rt.com/politics/russian-missile-forces-new-250/>; Fred Weir, "Russia Claims New Missile Can Overcome Missile Defenses," *Christian Science Monitor Global News Blog* 2012(2012), <http://www.csmonitor.com/World/Global-News/2012/0524/Russia-claims-new-missile-can-overcome-missile-defenses>.

⁸²⁰ A. A. Tikhonov, "Novoi Armii---Novyi Biudzhët," *Armeiskii Sbornik* (2011).

⁸²¹ Dmitrii Andreev, "Paritet - Glavnyi' Prioritet," *Krasnaia Zvezda*, May 8 2009.

⁸²² Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸²³ Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," p. 513, citing "Interview with Serbian Newspaper Evening News," (2009), http://archive.kremlin.ru/eng/text/speeches/2009/10/19/0030_type82916_222250.shtml.

strategic weapons. He also reiterated Moscow's continuing apprehension about the U.S. plans for unilateral development of missile defenses.⁸²⁴

Similarly, it is a stretch to identify the language in the 2009 National Security Strategy which discusses reductions and speaks of sufficiency in military capabilities in general (that is, not specifically in the nuclear context) as evidence of minimalism, particularly in a context when Russia was, in fact building up its military capability.⁸²⁵

More evidence for Russia's continuing interest in parity (at least) can be found in continued discussions of plans for building more, rather than fewer systems. In early 2012 Vladimir Putin promised 400 ICBM launchers by 2022.⁸²⁶ As Podvig noted, this seemed a high number, even given the uptick in production Russia had managed in recent years.⁸²⁷ Moreover, combined with plans for submarine production (discussed below), it raised questions of how Russia planned to stay under New START limits. One cannot help but speculate whether, to some extent, Russia was hedging against the possible failure of arms control, and ensuring that it had some capacity for a new arms race.

ICBMs

The New Look reforms had limited direct implications for Russia's strategic nuclear forces. While the rest of Russia's armed forces were reorganized into brigades, the SRF retained its army-division-regiment structure. Its forces also did not become subordinated, as most other components of Russia's military did, to the military districts. Instead, the SRF maintained its own command structure.⁸²⁸ However, continuing arms control plans meant that the SRF would continue to shrink, eventually reaching eight missile divisions and two (rather than three)

⁸²⁴ Dmitri Medvedev, "Speech at Helsinki University and Answers to Questions from Audience," (Moscow: Kremlin, 2009), <http://eng.kremlin.ru/transcripts/10115>.

⁸²⁵ Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," p. 510

⁸²⁶ "Putin Pledges 400 ICBMs for Russia in Ten Years," *RIA Novosti*(2012), <http://en.rian.ru/russia/20120220/171407962.html>.

⁸²⁷ Pavel Podvig, "New Heavy ICBM Expected to be Ready in 2019," http://russianforces.org/blog/2012/12/new_heavy_icbm_expected_to_be.shtml.

⁸²⁸ "RVSN Segodnia i Zavtra," *Voенно-Promyshlennyi Kur'er*, April 22 2009.

armies. However, at the end of 2012, 12 divisions remained in place.⁸²⁹ Moreover, the changes initiated back when the SORT treaty removed the ban on MIRVed ICBMs were starting to bear fruit.

The first RS-24 Yars missiles, a MIRVed version of the solid-fueled Topol-M, were deployed in 1009 and 2010. They were reported for New START as loaded with six warheads per missile. These missiles were deployed where Topol-M mobile missiles had previously been planned, in place of Topol (SS-25) missiles which continued to be withdrawn (although they were also tested to ensure that they could continue in service). Ten more Topol-M mobile missiles rolled off the assembly line and were deployed between 2009 and 2012, but none joined the force after that. The RS-24s, for their part, were deployed rapidly, especially compared to historical rates. A total of 54 had joined the force by the end of 2014. No new silo-based Topol-Ms were deployed, and the first four silo-based RS-24s, promised in 2012 to take the place of dismantled 100NUTTH/SS-19s, arrived in 2014. Meanwhile, the 100NUTTH/SS-19s underwent at least one test launch during this period, and there was talk of extending their service lives to enable them to stay in service until at least 2019.⁸³⁰

While the new rates of production were impressive, they also remained behind schedule, with between four and 13 new missiles deployed annually (an

⁸²⁹ "Russia," *The Military Balance* 110 (2010).

⁸³⁰ "Russia's Nuclear Forces: Between Disarmament and Modernization; "New Warhead Tested in a UR-100NUTTH/SS-19 Launch," *Russian Strategic Nuclear Forces* (2011); "Topol Might Stay in Service Until 2019," *Russian Strategic Nuclear Forces* (2011); "RS-24 Deployment in Teykovo, Novosibirsk, and Kozelsk," http://russianforces.org/blog/2011/12/rs-24_deployment_in_teykovo_no.shtml; "RS-24 Missiles to Replace UR-100NUTTH in Kozelsk," http://russianforces.org/blog/2012/07/rs-24_missiles_to_replace_ur-1.shtml; "Topol-M and RS-24 Yars Deployment Plans," http://russianforces.org/blog/2012/12/topol-m_and_rs-24_yars_deploym.shtml; "Old Missiles to Get Extension of Service Life," http://russianforces.org/blog/2012/12/old_missiles_to_get_extension.shtml; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2009;" "Nuclear Notebook: Russian Nuclear Forces, 2010;" Kristensen and Norris, "Nuclear Notebook: Russian Nuclear Forces, 2011;" "Nuclear Notebook: Russian Nuclear Forces, 2012," *The Bulletin of the Atomic Scientists* 68, no. 2 (2012); "Nuclear Notebook: Russian Nuclear Forces, 2013," *The Bulletin of the Atomic Scientists* 69, no. 3 (2013); "Nuclear Notebook: Russian Nuclear Forces, 2014," *The Bulletin of the Atomic Scientists* 70, no. 2 (2014); "Nuclear Notebook: Russian Nuclear Forces, 2015," *The Bulletin of the Atomic Scientists* 71, no. 3 (2015). It is also worth noting that based on Kristensen and Norris, Topol (SS-25) numbers go up and down during this period. Since no SS-25s are being built, I cannot explain this, but assume it is a vagary of reporting or something else. The differences are small.

average of eight per year) through 2012. The rates go up in the out-years, with 15 missiles deployed in both 2013 and 2014. Yuri Solomonov of the Moscow Institute of Thermal Technology, designer of the Topol and Yars systems, argued that the consistent failure to meet production goals was at least partly the fault of the MoD and its defense order system.⁸³¹

In addition, Russia began touting the development of a new missile, the “Avangard” missile, which seemed to be based on the Yars (Topol-M) framework.⁸³² Even more notably, in addition to the Topol variants, Russia in 2009 announced plans for a follow-on to the heavy (10 warhead) liquid-fueled SS-18 missile (R-36M2, Voevod in Russian and Satan in its NATO designation). The SS-18, which had undergone several life extensions, was dependent on Ukrainian firms for maintenance and scheduled to go out of service in 2018 (although there were plans to extend it further, to 2022).⁸³³ The tender for the 100-ton, liquid-fueled follow-on, to be deployed by 2018, was won by the Makeev Design Bureau, which has historically produced Russia’s SLBMs.⁸³⁴

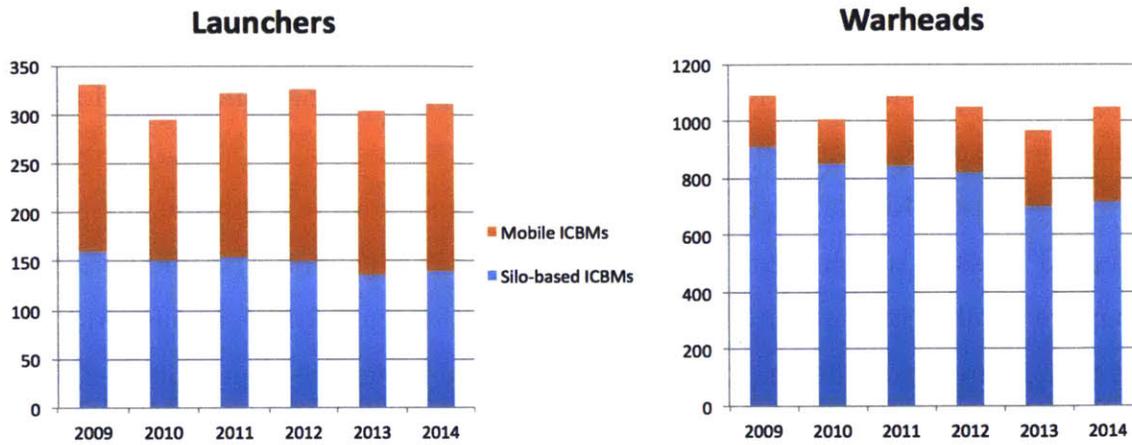
⁸³¹ Alexander Stukalin, “Goszakaz 2011 Goda Uzhe Sorvan--On Uzhe Vypolnen Ne Budet,” *Kommersant*, July 6 2011.

⁸³² Pavel Podvig, “Russia Tests Prototype of a New ICBM,” http://russianforces.org/blog/2012/05/russia_tests_prototype_of_a_ne.shtml; “Deployment of New Solid-Propellant ICBM Expected in 2015 ” http://russianforces.org/blog/2012/11/deployment_of_new_solid-propel.shtml; Aleksei Mikhailov and Dmitrii Bal’burov, “Rossiia Ispytat Strategicheskuiu Raketu ‘Avangard’,” *Izvestiia*, December 7 2012.

⁸³³ Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*; Podvig, “Russia’s Nuclear Forces: Between Disarmament and Modernization; “R-36M2/SS-18 Life Extension,” http://russianforces.org/blog/2012/10/r-36m2ss-18_life_extension.shtml. citing “RVSN Podtverzhdaet Plany Sokhraneniia MBR ‘Voevoda’ Do Kontsa 2018 Goda,” *RIA Novosti*, October 11 2012; “Old Missiles to Get Extension of Service Life”.

⁸³⁴ “New ICBM Contract Reportedly Went to Makeyev Design Bureau,” http://russianforces.org/blog/2011/05/new_icbm_contract_reportedly_w.shtml; “RVSN Podtverzhdaet Plany Sokhraneniia MBR ‘Voevoda’ Do Kontsa 2018 Goda.”

Figure 8.1 ICBM Launchers and Warheads 2009-2014⁸³⁵



These charts illustrate two ways in which this period breaks from the past. Between 2009 and 2014, Russia substantially increased the share of mobile ICBMs in the force vis-à-vis silo-based systems, whether one is counting warheads or silos. This was largely on the strength of newly deployed RS-24s. Second, Russia’s ICBM force, which had been shrinking in line with arms control commitments since before independence, now stabilized to largely maintain numbers.

SLBMs

The New Look reforms had little discernable impact on the strategic submarine force’s organization and structure. However, the period overall was one of real change for Russia’s SSBNs. After the delays and reversals of prior years, Russia’s beleaguered Borei program finally began to move forward visibly in 2009 as the first of these SSBNs, the Yury Dolgorukiy, finally went to sea for trials. Once

⁸³⁵ Charts my own. Data reflects START accountable numbers as estimated in Kristensen and Norris, "Nuclear Notebook: Russian Nuclear Forces, 2015;" "Nuclear Notebook: Russian Nuclear Forces, 2014;" "Nuclear Notebook: Russian Nuclear Forces, 2013;" "Nuclear Notebook: Russian Nuclear Forces, 2012;" "Nuclear Notebook: Russian Nuclear Forces, 2011;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that these figures are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. Moreover, Topol (SS-25) numbers shift somewhat inexplicably during this period. See fn 818

these were completed, however, it was still waiting for a missile. As discussed in the previous chapter, the Bulava had been failing too many of its flight tests. In 2009, Solomonov resigned as General Director of MITT (he stayed on as General Designer and continued to maintain a high public profile). In 2010, a government-directed assessment blamed the troubles on inadequate manufacturing quality control. Presumably steps were taken to resolve that situation. Regardless, Bulava's record improved.⁸³⁶ The Yury Dolgorukiy began test-launching Bulava missiles in 2011 and completed a salvo launch in 2012.⁸³⁷ The SSBN was accepted for service in 2013, after a few more delays, and joined the Northern Fleet.

Russia planned to build a total of eight Boreis.⁸³⁸ The second, the Alexander Nevsky, had been promised for 2009. It began sea trials in 2011, and joined the Pacific Fleet in late 2013. The third, Vladimir Monomakh, promised for 2012, began sea trials in 2014 and joined the Fleet (first the Northern, but bound for the Pacific) at the very end of that year.⁸³⁹ The fourth Borei, meant to be the start of a new series (the 955-A) and the first to be built from scratch, was laid down in 2012 and has yet to be completed.⁸⁴⁰ The Defense Ministry promised that unnamed problems, discovered in testing, would be fixed.⁸⁴¹

⁸³⁶ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸³⁷ "Successful Salvo Launch of Bulava Missiles,"

http://russianforces.org/blog/2011/12/successful_salvo_launch_of_bul.shtml; "Successful Launch of Bulava from Yuri Dolgorukiy,"

http://russianforces.org/blog/2011/10/successful_launch_of_bulava_fr.shtml.

⁸³⁸ Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2009;" Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*; Pavel Podvig, "Construction of First Project 955A Submarine Formally Inaugurated," http://russianforces.org/blog/2012/07/construction_of_first_project.shtml.

⁸³⁹ Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*; Oleg Maglich, "Eto Nash Vtoroi' "Borei";" *Pravda Severa*, December 24 2013; "Ocherednoi' "Borei" v Belom More," *Voенno-Promyshlennyi Kur'er*, June 11 2014; *ibid*; Nikolai Kutenkikh, "Kniaz'ia s Bulavami Gotoviatsia k Perekhodu Na Tikhii' Okean," *Vladivostok*, January 13 2015; Iuliia Kozak, ""Monomakha" Ekzamenuet Sever," *Krasnaia Zvezda*, January 16 2015.

⁸⁴⁰ Podvig, "Construction of First Project 955A Submarine Formally Inaugurated"; Aleksandr Pinchuk, "Gosoboronzakaz-2012: v Sootvetstvii s Grafikom," *Krasnaia Zvezda*, August 17, 2012 2012;

""Vladimir Monomakh" Zavershil Seriiu Pervykh "Boreev";" *Voенno-Promyshlennyi Kur'er*, October 8 2014.

⁸⁴¹ "Gosoboronzakaz-2012: v Sootvetstvii s Grafikom."

It was reported that the 955As would carry 20 missiles each (the first three carry 16).⁸⁴² Thus, while further delays seemed likely, based on the record and overall defense industry capability, the Borei program appeared to have gotten more or less on track by the end of the out years in 2014.

At that point, Russia's submarine fleet was comprised two Delta IIIs and six Delta IVs, all scheduled to be withdrawn from service, and three Boreis. The Typhoons had already been withdrawn, with one of them retrofitted as a test bed for the Bulava missile. While there had been talk of modernizing the remaining two Typhoons, then in reserve, to carry the Bulava, this was deemed too expensive.⁸⁴³ The R-39 missiles had all been eliminated, as well.⁸⁴⁴

However, Russia did not plan to put an end to the Delta IV program quite yet. Rather, Makeev had developed a new version of the Sineva, the Liner, which can carry the same warhead carried by the Bulava and the Yars missiles.⁸⁴⁵ Makeev's Degtjar' and Kanin wrote in 2012 that the Delta IVs, loaded with Sinevas and/or Liners, can stay in service until 2030 if needed. They further argued that the maintenance of liquid-fueled missile systems for the navy only as back-up (which they argue has been the case since the 1980s and especially in the last decade), results in a less-capable arsenal than Russia needs and could yet have.⁸⁴⁶ Thus, the fight between Makeev and MITT over the future of the submarine fleet was not yet over.

⁸⁴² Podvig, "Construction of First Project 955A Submarine Formally Inaugurated".

⁸⁴³ Viktor Litovkin, "'Akuly' Poidut Pod Nozh," *Nezavisimoe Voennoe Obozrenie*, March 13 2012.

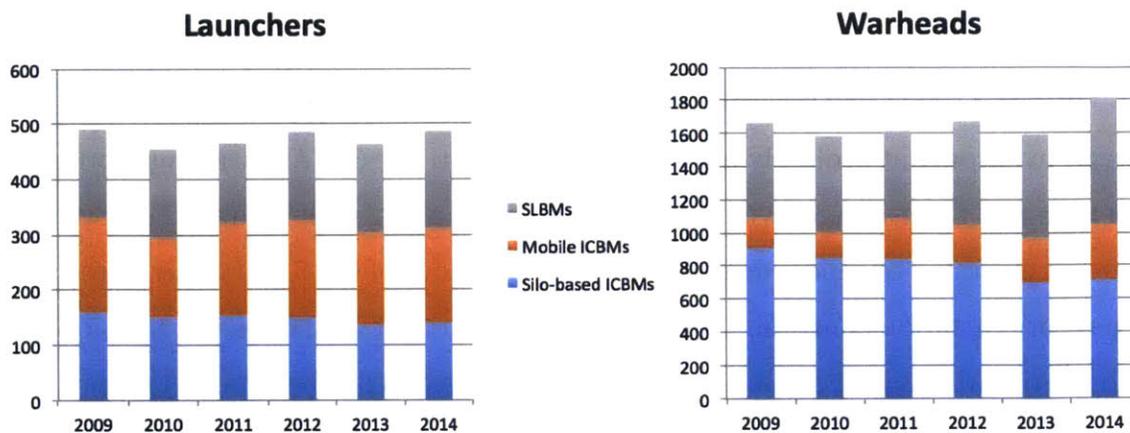
⁸⁴⁴ Pavel Podvig, "Elimination of R-39/SS-N-20 Missiles,"

http://russianforces.org/blog/2012/09/elimination_of_r-39ss-n-20_mis.shtml.

⁸⁴⁵ "Liner SLBM Explained," http://russianforces.org/blog/2011/10/liner_slbm_explained.shtml; Degtjar' and Kanin, "Rakety Startuiut iz Glubiny."

⁸⁴⁶ "Rakety Startuiut iz Glubiny." They describe the Bulava, particularly, as inferior to the US Trident 2 and even Trident 1 missiles.

Figure 8.2 Missile Launchers and Warheads 2009-2014⁸⁴⁷



In summary, the deployment of the Boreis marked a critical change to the future of Russia's SSBN program, so long in trouble. As the charts above show, although ICBMs remained the largest component of the force, the addition of new Borei SSBNs contributed to a substantial rebalancing of the numbers. However, it is also worth noting that despite the progress in construction, Russian SSBN patrols remained low, with perhaps five per year, at best, between 2009 and 2012. This means that Russia most likely did not continuously have an SSBN at sea during these years, and not all SSBNs carried out a patrol every year.⁸⁴⁸ It is not clear whether and how the deployment of the Boreis in the out-years changed patrol rates.

⁸⁴⁷ Charts my own. Data reflects estimates in Kristensen and Norris, "Nuclear Notebook: Russian Nuclear Forces, 2015;" "Nuclear Notebook: Russian Nuclear Forces, 2014;" "Nuclear Notebook: Russian Nuclear Forces, 2013;" "Nuclear Notebook: Russian Nuclear Forces, 2012;" "Nuclear Notebook: Russian Nuclear Forces, 2011;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010." and, beginning in 2014, reports from the Russian press, namely Maglich, "Eto Nash Vtoroi' "Borei"; "Ocherednoi' "Borei"" v Belom More; ""Vladimir Monomakh" Zavershil Seriiu Pervykhkh "Boreev"; Kutenkikh, "Kniaz'ia s Bulavami Gotoviatsia k Perekhodu Na Tikhii' Okean; Kozak, ""Monomakha" Ekzamenuet Sever." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that the "Nuclear Notebook" figures in are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

⁸⁴⁸ Kristensen, "Russian SSBN Fleet: Modernizing But Not Sailing Much".

Bombers

Russia's New Look reforms of 2009 had some organizational impact on strategic aviation, but probably not much beyond that. The 37th Air Army was once again renamed Long-Range Aviation Command. This, along with Military Transport Aviation, continued to report directly to the Commander of the Russian Air Force.⁸⁴⁹ The new organization controlled the same bomber aircraft with the same missions as did the old, although it did lose its control over Russia's Il-78 refueling tankers. However, these were always meant to support the Air Force as a whole.⁸⁵⁰ And although the new commander appointed in September 2009, General-Lieutenant Anatolii Zhikharev, outranked the man he replaced, General-Major Pavel Androsov, this was probably not significant. Androsov had replaced a General-Lieutenant (Igor Khvorov) when he took command in 2007.⁸⁵¹

In 2009, Russia had just under eighty heavy bombers available (some sources say 78, others 75).⁸⁵² By early 2012, according to one source, Russia had only 11 Tu-160 bombers (of 13 on the books) and 55 Tu-95MS bombers (of 59), which reportedly had 200 bombs allocated to them (although they could carry more and are counted under New START as carrying one apiece). A handful of other aircraft were under repair or in service as trainers.⁸⁵³ Later in 2012, it was reported that only 32 Tu-95MS aircraft were actually operational.⁸⁵⁴

Russian plans for strategic aviation during this period called for continued modernization, but no new aircraft. The Tu-160s under construction since Soviet

⁸⁴⁹ "Russia," *The Military Balance* 111 (2011).

⁸⁵⁰ Ibid; "Russia," *The Military Balance* 112 (2012). The Tu-134UBL trainers are also no longer in service with Long-Range Aviation, but this is more likely to do with the removal of the model from service.

⁸⁵¹ Pavel Podvig, "New Commander of the 37th Air Army," http://russianforces.org/blog/2007/05/new_commander_of_the_37th_air.shtml; "Strategic Aviation," <http://russianforces.org/aviation/>.

⁸⁵² Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2009;" "Nuclear Notebook: Russian Nuclear Forces, 2010;" Stukalin, "Bears and Blackjacks Are Back. What Next?"

⁸⁵³ Frolov, "Strateg v Perspektive; Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010."

⁸⁵⁴ Pavel Podvig, "Modernization of Tu-95MS Bombers," http://russianforces.org/blog/2012/09/modernization_of_tu-95ms_bombe.shtml.

days remained unfinished, and seemed likely to stay that way.⁸⁵⁵ Modernization, for its part, was underway, but slowly, with ever-slipping schedules.⁸⁵⁶ As of 2011, the Tu-160s were undergoing overhaul to replace their avionics systems.⁸⁵⁷ Avionics upgrades for the Tu-95s were announced the following year.⁸⁵⁸ In September 2012 both the Tu-95MSs and Tu-160s were promised upgraded avionics, navigation, and command and control.⁸⁵⁹

In an overview of the state of the bomber fleet as of 2010, senior military correspondent Alexander Stukalin noted problems with the integral tank of both Tu-160 and Tu-95MS aircraft, and the need to reinforce the wings of the Tu-95MSs.⁸⁶⁰ He also pointed out that the engines for both aircraft are no longer being produced. While the engines' service life was extended, he wrote, they have required frequent repairs, and engine failures had caused crashes of both a Tu-160 and a Tu-95MS, the former fatal for the entire crew.⁸⁶¹ Moreover, the bombers faced a shortage of refueling tankers. The 37th Air Army requirement was one tanker per bomber, but the actual inventory, intended to support the refueling needs of the entire Russian Air Force, comprised only one squadron, a total of 20 Il-78 and Il-78M aircraft, not all of which were operational.⁸⁶² This remained the case into 2012, although by then there were promises to build about 30 new Il-78 follow-ons (this would be the IL-78MD-90A, a tanker version of the IL-76MD-90A, otherwise known as the Il-476). However, their construction was not expected to be contracted and begun until 2013 or 2014.⁸⁶³ As of the end of 2014, none of these aircraft had been delivered.

⁸⁵⁵ Andrei Frolov and Mikhail Barabanov, "Tysiacha Boevykh Samoletov k 2020 Godu," *Voенно-Promyshlennyi Kur'er* 2012.

⁸⁵⁶ Stukalin, "Bears and Blackjacks Are Back. What Next?"; Viktor Litovkin, "Uzkoe Mesto Gosoboronzakaza," *Nezavisimoe Voенnoe Obozrenie*, February 3 2011.

⁸⁵⁷ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸⁵⁸ "Modernization of Tu-95MS Bombers".

⁸⁵⁹ "Godovoi Otchet Otkrytogo Aktzionernogo Obshchestva 'Moskovskii Institut Elektromekhaniki i Avtomatiki' za 2011 God," (2012), <http://aomiea.ru/documentation/infatsionery/god%20otchet%2029.doc>.

⁸⁶⁰ Stukalin, "Bears and Blackjacks Are Back. What Next?".

⁸⁶¹ Ibid. He also notes that Russian capabilities for rescue in the event one of these aircraft goes down are extremely limited.

⁸⁶² Ibid.

⁸⁶³ Ibid; "Russia; Viktoriia Chernysheva, "'Aviastar' Vypustit 103 'Ila'," *Rossiiskaiia Gazeta*, November 23 2012; Frolov and Barabanov, "Tysiacha Boevykh Samoletov k 2020 Godu."

The bombs for Russia's bombers were also aging. Podvig stated that no information existed about the service life of the Kh-55 cruise missiles which both the Tu-160 and Tu-95MS carried, and which in any case were not generally loaded onto the aircraft.⁸⁶⁴ The new Kh101 (Kh-102 in a conventional variant) cruise missile, in the works since the 1990s, did not materialize by the end of 2014, although some reports indicated that it had been accepted for service before then.⁸⁶⁵

Russian officials during this period promised that the bombers could continue to fly for 3-4 decades longer (life extension efforts aimed to lengthen the warranty on the Tu-95MS until at least 2020 and possibly 15 years more).⁸⁶⁶ Podvig, however, argued in 2011 that the aircraft could not plausibly last longer than another ten years.⁸⁶⁷ Meanwhile, long-in-the-works plan for a new strategic bomber to replace both the Tu-160s and the Tu-95MSs moved forward even more slowly than did modernization of existing aircraft. As discussed in the previous chapter, the plan was announced in 2007. In 2009, a three-year contract was signed with Tupolev. Late that year, Tupolev reported that they anticipated completion of preliminary research and development in 2012 and would have prototypes in 2017. Aircraft production, according to the firm, could begin that same year. In 2010 this project became known as the Prospective Aviation Complex for Strategic Aviation (PAK DA, to transliterate the Russian acronym). The new bomber, with both conventional and nuclear roles, was to be stealth-capable.⁸⁶⁸ Andrei Frolov, the editor in chief of the *Ekspert Vooruzhenii* (Arms Export) journal, speculated that the engines under development (geared turbojet engines NK-65, which would also be incorporated into the An-124) might indicate that the aircraft would be subsonic, comparable to the U.S. B-2A.⁸⁶⁹ However, given the slow pace of construction, repair, and modernization of Russian strategic aircraft in recent years, not a few questioned

⁸⁶⁴ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸⁶⁵ "Strategic Aviation"; Konstantin Sivkov, "Russkii' Global'nyi' Udar," *Voенно-Promyshlennyi Kur'er*, January 22 2014.

⁸⁶⁶ Podvig, "Modernization of Tu-95MS Bombers".

⁸⁶⁷ "TU-95Ms Go Through Modernization," http://www.russianforces.org/blog/2008/07/tu-95ms_go_through_modernizati.shtml; Stukalin, "Bears and Blackjacks Are Back. What Next?"; Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁸⁶⁸ Frolov, "Strateg v Perspektive."

⁸⁶⁹ Ibid.

whether even delayed plans for the PAK-DA would be feasible.⁸⁷⁰ As of 2014, little visible progress had been made.

Despite all of their problems, however, Russia's bombers remained the most active component of its nuclear triad, albeit generally in conventional roles. Their use in large-scale exercises, discussed in the previous chapter, continued, as did patrols over the Atlantic and Pacific Ocean.⁸⁷¹ The latter, of course, spurred intercepts by U.S., Canadian, U.K, Japanese, and other Air Forces.⁸⁷²

Because of complicated counting rules for bombers, which changed between START I and START II, and then again as a result of New START, I do not include a comparative launcher or warhead count of bombers compared to SLBMs and ICBMs. Specifically, under START I, some Russian heavy bombers (those equipped to carry long-range nuclear ALCMs) were attributed with eight warheads each while others, equipped for gravity bombs or short-range missiles), were attributed with one warhead. START II attributed the numbers for which the bombers were equipped to each bomber. New START, for its part, attributed one warhead to each heavy bomber.⁸⁷³ By following Norris and Kristensen's assignment of bombs to bombers, I

⁸⁷⁰ Oleg Vladykin, "Iubileinyi Polet Fantazii," *Nezavisimoe Voennoe Obozrenie*, July 20, 2012 2012.

⁸⁷¹ Roger McDermott, "Russian Strategic Bomber Flights: Long Range Deception," *Jamestown Foundation Eurasia Daily Monitor* 6, no. 220 (2009), [http://www.jamestown.org/single/?no_cache=1&tx_ttnews\[tt_news\]=35782](http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=35782). A number of the exercises are described and discussed in both Olikier et al., *Russian Foreign Policy: Sources and Implications* and Quinlivan and Olikier, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*, including Table 3.3 on p. 60 in the latter. They are not all-inclusive.

⁸⁷² e.g., "Dutch Jets Intercepted Russian Bombers Flying in Dutch Airspace," <http://www.dutchdailynews.com/dutch-jets-intercepted-russian-bombers-flying-in-dutch-airspace/files/1108/dutch-jets-intercepted-russian-bombers-flying-in-dutch-airspace.html>; Brian Lilley, "Canadian Jets Repel Russian Bombers," http://www.torontosun.com/news/canada/2010/07/30/14874221.html?utm_source=facebook&utm_medium=recommend-button&utm_campaign=Canadian+jets+repel+Russian+bombers files/1110/14874221.html; *USAF F-15s From Alaska Intercept Russian Tu-95 Bear*, (AviationNewsPortal, 2012); Tony Renell, "'Scramble! Scramble! Russian Nuclear Bandits at 12 O'clock!': The Kremlin's Taunting Britain With Blackjack Bombers," <http://www.dailymail.co.uk/news/article-1263840/The-Kremlins-taunting-Britain-Blackjack-bombers.html> files/1115/The-Kremlins-taunting-Britain-Blackjack-bombers.html; *Japanese Jets Scramble to Deal With Russian Plane Incursion*, (Ntdtv, 2010).

⁸⁷³ "Strategic Arms Reduction Treaty Text (START I)" (1991, <http://www.state.gov/t/avc/trty/146007.htm>); "Treaty Between the United States of America and the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms (START II)," (1993, <http://www.state.gov/t/avc/trty/102887.htm#treatytext>); "Background Information: START

calculate that Russia's bombers vacillated between 13 and 14 percent of its launchers and remained at roughly 1/3 of its warhead count between 2009 and 2014 (to allow for two out-years).⁸⁷⁴ However, as the discussion above indicates, it was not always clear how many bombers Russia had, or what condition they were in. Moreover, most vacillation is due to changes in other systems, as bomber numbers on record remain roughly stable.

In summary, the situation for Russia's strategic bombers changed little during this period by most counts. They remained a very visible part of the force, but modernization proceeded slowly and plans for new aircraft even more so.

Early Warning and Missile Defense

The New Look Reforms called for the reunification of air and space defenses in a single command. In April of 2010, President Medvedev approved the "Concept for the building and development of Russian Federation Armed Forces to 2020" which included the creation of air-space defense. Apparently, there was foot-dragging, as in late November that same year Medvedev again called on the Defense Ministry to unify air and missile defenses. Later statements from Academy of Military Sciences chief Makhmut Gareev and General Staff chief Nikolai Makarov indicated that plans to do this were under development. Makarov's statements

II Ratification," (1996, <http://fas.org/nuke/control/start2/docs/strtrat.htm>; "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)," (United States Department of State, 2010), <http://www.state.gov/t/avc/newstart/index.htm>.

⁸⁷⁴ Data reflects estimates in Kristensen and Norris, "Nuclear Notebook: Russian Nuclear Forces, 2015;" "Nuclear Notebook: Russian Nuclear Forces, 2014;" "Nuclear Notebook: Russian Nuclear Forces, 2013;" "Nuclear Notebook: Russian Nuclear Forces, 2012;" "Nuclear Notebook: Russian Nuclear Forces, 2011;" Norris and Kristensen, "Nuclear Notebook: Russian Nuclear Forces, 2010." and, beginning in 2014, reports from the Russian press, namely Maglich, "Eto Nash Vtoroi' "Borei""; "Ocherednoi' "Borei"" v Belom More; ""Vladimir Monomakh" Zavershil Seriiu Pervykh "Boreev"; Kutenkikh, "Kniaz'ia s Bulavami Gotoviatsia k Perekhodu Na Tikhii' Okean; Kozak, ""Monomakha" Ekzameniuet Sever." Data is believed to provide estimates for late the prior year or early in the publication year. For my purposes, I use it for late the prior year, which is what my charts reflect. Moreover, note that the "Nuclear Notebook" figures in are based on a combination of START accountability and assessments of actual numbers. As a result, they may or may not reflect actual numbers of warheads and launchers. For example, all R-36 (SS-18) missiles are counted as though they carrying the maximum possible 10 warheads per missile, although they can carry fewer. In the SLBM context, the Project 667BDR's R-29R missile could be armed with between three and seven warheads. It is counted as carrying three.

suggested that air defenses and space-based defenses would become a new organization, reporting directly to the General Staff, with both space-based systems and missile defense systems subordinate to that new command.⁸⁷⁵

In April 2011, the Defense Ministry announced that the Space Forces would be replaced by the Air-Space Defense forces, a move affirmed by Medvedev in May. In November of that year, the president named General-Lieutenant Oleg Ostapenko, the former Space Forces commander, commander of the new organization. In December, it was formally announced as the new, independent Air-Space Command. It comprised the Space Command, the Moscow ABM system and three air defense brigades.⁸⁷⁶ This new structure was more comprehensive than past efforts at realignment, combining missile defense, space forces, and some air defense, along with early warning and the Moscow missile defense system. The air defense brigades subordinate to this new structure were those that previously comprised the Operational-Strategic Air Space Command in the Air Force, covering the central industrial region and including 12 regiments (32 divisions).⁸⁷⁷ Other air defense components remained part of the Air Force, and as such subordinate to Military District Commands. These included fixed wing aircraft and some other units.⁸⁷⁸

In March 2012 then Air Force Commander General-Colonel Aleksandr Zelin spoke out against the split structure, arguing that all air defenses should be under unified command. Zelin was relieved of duty on April 27, leaving service one year before reaching retirement age.⁸⁷⁹ Others also voiced concerns about the effectiveness of integrating such disparate structures while leaving both

⁸⁷⁵ "Transcript: Prime Minister Vladimir Putin Meets With Experts in Sarov to Discuss Global Threats to National Security, Strengthening Russia's Defences and Enhancing the Combat Readiness of its Armed Forces," (premier.gov.ru via Johnson's Russia List 2012); Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁸⁷⁶ "Russia; "Transcript: Prime Minister Vladimir Putin Meets With Experts in Sarov to Discuss Global Threats to National Security, Strengthening Russia's Defences and Enhancing the Combat Readiness of its Armed Forces; Stukalin, "Russian Air and Space Defense Troops: Gaping Holes; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany; Zaretskii, Alekhin, and Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia; Roger McDermott, "The Brain of the Russian Army: Futuristic Visions Tethered by the Past," *Journal of Slavic Military Studies* 27, no. 1 (2014).

⁸⁷⁷ "Transcript: Prime Minister Vladimir Putin Meets With Experts in Sarov to Discuss Global Threats to National Security, Strengthening Russia's Defences and Enhancing the Combat Readiness of its Armed Forces; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁸⁷⁸ Zaretskii, Alekhin, and Kutsenko, "Voiska PVO Strany: Vzlety i Padeniia."

⁸⁷⁹ Vladykin, "Iubileinyi Polet Fantazii."

administrative and operational control divided and, in some cases, not clearly defined.⁸⁸⁰

Organizational changes aside, the early warning complex underwent some improvements between 2009 and 2012. However, the effects were seen far more in ground-based systems than in the space-based complex. As of November of 2012, Russia had four operational early warning satellites: three in high elliptical orbit and one in geostationary.⁸⁸¹ According to Esin, these systems had only “limited coverage...with substantial temporal gaps.”⁸⁸² Podvig agreed that they were insufficient to identify all possible land and sea launch sites but noted that Russia’s geostationary satellite was, as of November 2012, positioned to see the northern Pacific Ocean, not previously covered. Moreover, the defense order for 2012 (to 2020) included a unified space system to be provided by the Kometa enterprise, long responsible for missile defense and reconnaissance satellite development and production.⁸⁸³

But the fact that Russia was planning to revamp the system did not solve the problems it had in the meantime. The out-years saw further degradation of Russian space-based early warning. As table 8.2 shows, by the end of 2014, Russia had no functioning early warning satellites in orbit.

⁸⁸⁰ I. M. Kuptsov, "Okhrana Gosudarstvennoi' Granitsy v Vozdushno-Kosmicheskom Prostranstve," *Voennaia Mysl*, no. 10 (2012); Esin, "Breshi i Okna v Protivoraketnom Zontike Strany; McDermott, "The Brain of the Russian Army: Futuristic Visions Tethered by the Past."

⁸⁸¹ Podvig, "Early Warning".

⁸⁸² Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁸⁸³ Oleg Vladykin, "Ni Shaga Vpravo, Ni Shaga Vlevo," *Nezavisimoe Voennoe Obozrenie*, August 17, 2012 2012.

Table 8.2 Early Warning Satellite Launches and Losses 2009-2014

	HEO		GEO		complement at end of year	
	launches	losses	launches	losses	HEO	GEO
2009	0	0	0	1	3	1
2010	1	0	0	1	4	0
2011	0	0	0	0	4	0
2012	0	1	0	0	3	0
2013	0	1	1	0	2	1
2014	0	2	0	1	0	0

Thus, as of 2014, Russia's early warning capabilities were dependent on ground-based early warning. This had improved substantially. By the end of 2012 Russia had a completed new radar in Belarus, and an upgrade at Lekhtusi station to the newest Voronezh-M radar. Recall that initial tests for this system began in 2005. It was placed on full combat duty in February of 2012, and in so doing finally made up in part for the loss of the Skruna radar.⁸⁸⁴

This meant that in late 2012, Russia's ground-based system consisted of six functioning independent radar nodes. Four of these (Olenogorsk, Pechora, Mishelevka, and Lekhtusi) were in Russia⁸⁸⁵ and two (Gul'shad and Gantsevichi/Baranovichi) abroad in former Soviet countries.⁸⁸⁶ Russia vacated an additional site, Gabala in Azerbaijan, on December 10, 2012 when the lease ran out and negotiations for renewal fell through.⁸⁸⁷ The radars varied in their age and capability; Olenogorsk, Mishelevka, and Gul'shad had the aging Dnepr-M radar stations, while Pechora had the more modern Dar'ial (as did Gabala). Gantsevichi/Baranovichi has the newer Volga system and Lekhtusi the newest

⁸⁸⁴ "Russia; Vasilii Sychev, "Polnoe Prikritye Garantiruem," *Voенно-Promyshlennyi Kur'er*, December 28 2011; Podvig, "Radar in Lekhtusi Begins Combat Duty".

⁸⁸⁵ Olenogorsk is in the Murmansk Oblast'; Pechora is in the Komi Republic; Mishelevka is in Irkutsk Oblast' and Lekhtusi is in Leningrad Oblast'

⁸⁸⁶ Gul'shad in Kazakhstan near Balshad and Gantsevichi in Belarus, near Baranovichi

⁸⁸⁷ "Azerbaijan, Russia Agree to Extend Gabala Radar Lease - Source," *Azernews*, September 28 2012; "MID Rossii Podtverdil Zakrytiie Gabalinskoi RLS v Azerbaidzhane," *Kommersant*, December 11 2012.

Voronezh-M. The Belarus site is Russian property, the other two are leased, but all are serviced by Russian personnel.⁸⁸⁸

Russian officials expected the system to continue to improve. In August 2012 Deputy Defense Minister Aleksandr Sukhorukov reported that the construction of ground-based early warning facilities by the firm RTI-Systems was on schedule.⁸⁸⁹ Somewhat surprisingly in light of the history of Russian promises along these lines, he was right. The out-years saw even more forward momentum: Voronezh radars became operational, to varying degrees, at Armavir (the one earlier predicted to be operational in 2009⁸⁹⁰), Kaliningrad, Eniseysk, and Barnaul. They also replaced older systems in Mishelevka, helping fill the gaps caused by the loss of radars in Ukraine and the northeastern blind spot. A new radar was also being developed near Orsk, in Orenburg province.⁸⁹¹

Other components of Russian early warning and missile defense did not fare as well. The A-135 Moscow missile defense system remained degraded as of late 2012, in part because the anti-ballistic missiles themselves were either no longer in use (the 51T6 Gorgon, for faraway targets), or past their service life (the 53T6 Gazelle).⁸⁹² Plans for a modernized, A-235 system had been in the works since before the USSR collapsed. As discussed in previous chapters, there had been some reports that this would move forward first in 2002, after the United States withdrew

⁸⁸⁸ Esin, "Breshi i Okna v Protivoraketnom Zontike Strany;" See also Podvig, "Early Warning". Although some sites are identified differently in these two sources, they refer to the same radars and are in alignment substantively.

⁸⁸⁹ Pinchuk, "Gosoboronzakaz-2012: v Sootvetstvii s Grafikom." See also RTI-Systems, "Radar and Missile Technology page," <http://www.rtisystems.ru/products/radarcomplexes/>.

⁸⁹⁰ Pavel Podvig, "Two Radars at Armavir," http://russianforces.org/blog/2009/02/two_radars_at_armavir.shtml.

⁸⁹¹ "Voronezh-DM Radar Near Kaliningrad is Operational," http://russianforces.org/blog/2011/11/voronezh-dm_radar_near_kalinin.shtml; Esin, "Breshi i Okna v Protivoraketnom Zontike Strany; Podvig, "Radar in Lekhtusi Begins Combat Duty"; "Status of the Russian Early-Warning Radar Network,"

http://russianforces.org/blog/2013/01/status_of_the_russian_early-warning.shtml; "Updated Map of Russian Early-Warning Radars,"

http://russianforces.org/blog/2014/09/updated_map_of_russian_early-w.shtml; "Early Warning,"

<http://russianforces.org/sprn/>; "Four Early-Warning Radars Began Combat Duty in 2014,"

http://russianforces.org/blog/2014/12/four_early-warning_radars_bega.shtml; "Voronezh-M Early-Warning Radar in Orsk Located," http://russianforces.org/blog/2014/09/voronezh-m_early-warning_radar.shtml; "Stroitel'stvo NovykhRLS v 2013 g Nachnetxia v Trekh Rossiiskikh Regionakh," *RIA Novosti*(2013), http://ria.ru/defense_safety/20130106/917210790.html.

⁸⁹² Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

from the ABM treaty and later in around 2007. But there was little evidence of progress then. In 2012, it did seem that this was in train, although the program was said to be behind schedule by at least five years (what that schedule was is not clear).⁸⁹³ Promises of updates were made in December of that year.⁸⁹⁴ However, no progress had been made as of the end of 2014.⁸⁹⁵

The new Air-Space Forces commander assured the public in 2011 that Russian early warning capabilities were perfectly adequate.⁸⁹⁶ Pavel Podvig has also argued that Russia did not rely sufficiently on its space-based systems to miss them, once a strong network of ground-based radars was in place.⁸⁹⁷ However, throughout this period, many Russian specialists doubted that, even with the improvements to ground-based radars, Russian early warning capability was sufficient. Many of them voiced their concerns in the specialized press, especially (although not only) in the journal dedicated to air and space defense issues, *Vozdushno-Kosmicheskaiia Oborona* (Air-Space Defense). Their arguments discussed the limitations of Russia's second strike capacity without sufficient warning, and the instability that could result from an inadequate system. Several of these authors argued that aside from coverage gaps, and the even shorter time-horizon afforded by only a ground-based system, another challenge was posed by incompatibilities between the information control systems used by the Air Force, air defense, and missile defense organizations. With the system as configured, ballistic missile targets, once identified, may not be intercepted because the targeting information cannot be usefully shared.⁸⁹⁸

⁸⁹³ Ibid; Stukalin, "Russian Air and Space Defense Troops: Gaping Holes; Honkova, "Current Developments in Russia's Ballistic Missile Defense".

⁸⁹⁴ "Moscow to Get Updated Missile Defenses-Minister," (2012), http://en.rian.ru/military_news/20121211/178069194.html.

⁸⁹⁵ Podvig, "Early Warning".

⁸⁹⁶ Vladimir Kudelev, "Rossiia Meniaet Kosmicheskii Karaul," *Voenno-Promyshlennyi Kur'er*, October 12 2011.

⁸⁹⁷ Pavel Podvig, "Russia Lost All Its Early-Warning Satellites," http://russianforces.org/blog/2015/02/russia_lost_all_its_early-warn.shtml.

⁸⁹⁸ e.g., Evgenii Akhmerov, Oleg Bogdanov, and Marat Valeev, "Neopkhodimosti v Zenitnom Raketnom Prikrytii RVSN Net," *Vozdushno-Kosmicheskaiia Oborona*, no. 3 (2009); Arkadii Borzov, "VKO: Pora Prekratit' Terminologicheskie Diskussii," *Vozdushno-Kosmicheskaiia Oborona*, no. 4 (2010); Sukhanov, "VKO Eto Zadacha, a Ne Sistema," *Vozdushno-Kosmicheskaiia Oborona*, no. 2 (2010); Igor Morozov, Sergei Baushev, and Oleg Kaminskii, "Kosmos i Kharakter Sovremennykh

In summary, this period saw substantial improvement in Russia's ground-based radar network. However, space-based early warning continued to deteriorate, meaning that while Russia had good coverage, it had very limited warning time. Most experts agreed that overall, the network was not sufficient to meet Russia's requirements.

Non-Strategic Nuclear Forces

Generally speaking it seems plausible that Russia has met the commitments made by Gorbachev and affirmed by Yeltsin in 1991 and 1992, respectively. Foreign Minister Sergei Lavrov, for example, indicated in 2010 that total nonstrategic stockpiles were a quarter of the number inherited from the USSR.⁸⁹⁹ But since the Soviet legacy comprised some 20,000 weapons, this allowed for up to 5000 warheads in the stockpile. Indeed one of the larger challenges for analysts looking at Russia's nonstrategic arsenal between 2009 and 2012 was estimating how large it was and what it comprised. A single 2012 edited volume included a very broad range of estimates. In that book, Hudson cited a range of 3000-6000 in one chapter and 2000 in another (the latter was co-authored with Buzhinsky) while Sokov noted that estimates ranged from 2000 to 700, and stated that he favored the lower number.⁹⁰⁰ Separately, Podvig agreed with the 2000 weapons figure, surmising that some 600 of those were deployed.⁹⁰¹

Smaller estimates tended to come from assessments of the old arsenal combined with what was known about reductions. Igor Sutyagin, however, in what was probably the most comprehensive assessment of those available, started from a

Voennykh Deistvii," *Vozdushno-Kosmicheskaiia Oborona*, no. 4 (2009); Sirotinin, "Sderzhivanie Agressii v Kontekste Novoi Voennoi Doktriny Rossiiskoi Federatsii; Aleksei Arbatov, "Potivoraketnye Debaty: v Poiskakh Soglasii," *Vozdushno-Kosmicheskaiia Oborona*, no. 4 (2012); Iurii Krinitskii, "VKO: Rossii: Priznaki Budushchei Sistemy," *Vozdushno-Kosmicheskaiia Oborona*, no. 2 (2012); Esin, "Breshi i Okna v Protivoraketnom Zontike Strany."

⁸⁹⁹ Kipp, "Russian Doctrine on Tactical Nuclear Weapons: Contexts, Prisms, and Connections."

⁹⁰⁰ George E. Hudson, "Russian Perspectives on Tactical Nuclear Weapons," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, and Jeffrey D. McCausland (Carlisle, PA: Strategic Studies Institute, 2012); George E. Hudson and Evgeny Buzhinsky, "Influences on Russian Policy and Possibilities for Reductions in Non-Strategic Nuclear Weapons," in *Tactical Nuclear Weapons and NATO*, ed. Tom Nichols, Douglas Stuart, and Jeffrey D. McCausland (Carlisle, PA: Strategic Studies Institute, 2012); Sokov, "Russian Perspectives on Non-Strategic Nuclear Weapons."

⁹⁰¹ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

count of Russia's nuclear capable systems. Based on this, he estimated that as of the middle of 2012 Russia had between 860 and 1040 operationally assigned non-strategic warheads and perhaps 900 more that are not assigned a role (and thus cannot be used rapidly) but that are still stockpiled.⁹⁰² These weapons comprise naval capabilities, including submarine-launched land attack cruise missiles, surface-based anti-submarine missiles, coastal anti-ship missiles, depth bombs, and seaborne anti-ship and air defense missiles. They also include air defense surface-to-air missiles and air-delivered bombs and missiles. Sutyagin noted continuing speculation that nuclear weapons deployed with the ground forces might also still exist.⁹⁰³ However, this last seems fairly unlikely, as discussed in previous chapters.

It was also not known how much attention was paid to modernizing these systems and keeping them maintained. There was no clear evidence of financing for non-strategic nuclear munitions. Most of the units and forces that retained nuclear or dual-use capabilities, such as the Air Defense forces, did so as part and parcel of other systems, such as the Moscow Missile Defense Shield (although, as Sokov points out, nuclear explosions over Moscow as a way of defending the city seem somewhat counterproductive).⁹⁰⁴ The exception may be the Navy. Sokov wrote that surface ship and submarine crews were trained to deploy and use nuclear weapons in part to make up for limited conventional capabilities.⁹⁰⁵ If so, this would mean that the Navy retained the capacity to deploy tactical nuclear weapons if needed. Moreover, Burtsev's 2009 comments, noted above, suggested that tactical naval capabilities were improving in accuracy, which would seem to indicate continuing work on these systems. However, he also spoke of increasing the range of the weapons in the future, which would raise potential concerns about treaty compliance.⁹⁰⁶

Thus, and as was discussed in the last chapter, there were and remain a substantial number of Russian systems that are dual-capable and could have nuclear

⁹⁰² Sutyagin, *Atomic Accounting*.

⁹⁰³ *Ibid.*

⁹⁰⁴ Sokov, "Russian Perspectives on Non-Strategic Nuclear Weapons."

⁹⁰⁵ *Ibid.*

⁹⁰⁶ "RF Budet Uvelichivat' Rol' Takticheskogo Iadernogo Oruzheniia Na Mnogotsel'nykh APL."

weapons assigned to them, although they are deployed without them. As already discussed above, Russian officials continued to leverage Western concerns about these capabilities while eschewing explicit nuclear threats, for example by threatening to move Iskander missiles to Kaliningrad if U.S. missile defense systems were to be deployed in Europe.⁹⁰⁷ Aside from Iskander, dual-capable systems of concern include the sea-based Kalibr missile, first deployed in 2012,⁹⁰⁸ and the Tu-22M3 bomber (or a follow-on for it).⁹⁰⁹ New systems, like an SS-20 follow on, were also discussed (though that one in particular would violate the INF agreement). However, most dual-capable systems were either old, or new but long-in-development, like the Iskander.

The deployment of these systems, and the rhetoric around them makes it difficult to clearly judge the trend for non-strategic forces in Russia. On the one hand, Moscow continued to abide by the commitment to keep the vast majority of these weapons centrally stored (except in the case of units like air defense and ballistic missile defense forces which maintain permanent combat readiness or ships on combat patrol). This means that it was neither instantaneous nor effortless to actually use a non-strategic weapon.⁹¹⁰ However, the emphasis on dual-use systems does increase Russia's non-strategic nuclear capability, whether it is intended to be used in this way, or not.

In summary, it appears that NSNF dismantlement continued into this period, but may have stopped at some point in its course. The evidence that Russia was actively developing new non-strategic nuclear capabilities was limited, but there was reason to think that Moscow had, at the least, decided to hold on to these assets for the foreseeable future, and to continue to exploit Western nervousness about dual-use systems. The latter were coming on-line comparatively rapidly, especially if the out-years are taken into account.

⁹⁰⁷ Podvig, "Russia's Nuclear Forces: Between Disarmament and Modernization."

⁹⁰⁸ "V Chernom More - "Dagestan"," *Voennyi Vestnik Iuga Rossii*, June 2 2012.

⁹⁰⁹ Frolov, "Strateg v Perspektive."

⁹¹⁰ *Ibid.*

Safeguards

Safeguard prospects remained for the most part moribund through this period. The one uptick was some discussion of the much agreed to but never implemented Joint Data Exchange Center. It was raised once again in 2010-2011 in the context of efforts to restart the dialogue on missile defense.⁹¹¹ However, this went nowhere.

Posture 2009-2012

Russian posture from 2009 to 2012 witnessed some shifts from the past. Declaratory policy looked as though it might be moving towards a lowering of the nuclear threshold until early 2010, when a newly released nuclear doctrine instead drew a clear line at a higher point than ever before in post Soviet Russia. It indicated that nuclear weapons were meant to deter other nuclear weapons (and other weapons of mass destruction), and to deter conventional weapons only in the event of an existential threat. Meanwhile, a number of long-standing force structure trends were reversed or altered, particularly when the out-years of 2013 and 2014 are incorporated into the assessment. Despite continued emphasis on and plans for silo-based ICBMs, for the first time there was substantial progress made in SLBM forces, and real growth in the mobile ICBMs that had been promised in the past, but not delivered. The trend in regard to nonstrategic nuclear forces is harder to judge. It appears that Russia stopped the process of dismantling these weapons, maintaining numbers substantially lower than what had been estimated in the past, and continued to take advantage of rhetoric about nonstrategic capabilities that appeared to upset the United States and its allies. Progress in early warning was mixed: although the Russian ground-based radar network improved substantially, the space-based satellite system deteriorated to nothing by the end of 2014, resulting in an inadequate capability.

As in the preceding three chapters, I provide a chart outlining how Russia's posture during this period compares to the "ideal types" of posture presented in

⁹¹¹ Gienger, "Russia, U.S. May Share Missile-Defense Data, Gates Says; Collina, "Russia, U.S. Working on Joint Launch Notification."

Chapter One. The table is identical to Table 8.1, presented earlier in this chapter. As before, the arrow up, down, or sideways coding for force structure components signifies whether systems were improving, whether relatively to others or absolutely, and programs were successful (up); if systems were deteriorating, (down); or if they were holding even (side to side). Early in this period, Russia was continuing to cut its overall strategic nuclear force numbers. Although this stopped by the end of the period, I find that comparison of trends and proportions between systems, rather than total numbers, still provides the better indicator.

Table 8.3 Posture 2009-2012

Forces & Policy		Postures	2009-2012	Assured	Versatile	Launch on Warning	Strategic Escalatory	Warfighting Escalatory
Declaratory Policy			Nuclear deterrence of nuclear weapons preferred, First use if needed. Launch on Warning possible	No first use Intent to retaliate	First use, intent to retaliate	No first use, intent to launch on warning	First use, launch on warning if needed	First use
Offensive/ first strike	Bombers	↔		✗	✗	✓	✓	✓
	Silo-based ICBMs	↑						✗
Survivable/ second strike	Mobile ICBMs	↑		✓	✓	✗	✗	✗
	SLBMs	↑						
	NSNF	↔		✗	✗	✗	✗	✓
	Early Warning	↔		✓	✓	✓	✓	✗
	Safeguards	↓		✓	✗	✓	✗	✗

As in every other time period I have examined, Russia’s posture between 2009 and 2012 is not identical to any of the ideal postures. But, just as in prior historical periods, key areas of alignment and misalignment are instructive. The declaratory policy remains best aligned to an Assured or Launch on Warning posture. Indeed, this is arguably even more the case than in the past, with a doctrine that very narrowly limits the conditions for first use (which is also compatible with a Versatile posture, although the specifics of Russian intentions are not clear).

Meanwhile, Launch on Warning is likely at least a planning parameter. For the first time, the force structure also looks more like something other than a Strategic Escalatory posture. The increased emphasis on mobile ICBMs and submarines fits with an Assured posture. The increased rhetoric on non-strategic

systems, if it is interpreted as significant, might push this posture towards one that also adds Warfighting Escalatory elements, although that is out of line with official doctrine after 2010. There are a few additional disconnects. One is the continued development of silo-based ICBMs, including a brand new heavy missile.⁹¹² Another is the continuing limitations of Russia's early warning capabilities: Although improvements to ground-based radars are indicative of a real shift, satellite-based systems' deterioration (to nothing in the out-years) is incompatible with Launch on Warning approaches and contra-indicated for Assured (or Versatile) ones, as well. This is particularly puzzling given Russia's reliance on mobile ICBMs, which need to be flushed in order to be survivable. Of course, the most effective flushing would be done on political warning, as there is a limit to how far road-mobile missiles can get in half an hour. However, half an hour is still better than fifteen minutes, particularly if Russia truly fears a surprise attack.

In summary, this is a period during which almost all strategic systems made some progress, with the bombers and early warning lagging, and non-strategic nuclear forces difficult to judge. Importantly, throughout these years Russia maintained an unquestionable interest in keeping up force size. In accordance with this, as its strategic force numbers started to approach treaty limits, Russia actually ended up bolstering overall numbers, rather than continuing the decades-long downward trajectory for its strategic forces.

Explaining Russian Force Posture

Is the Russian 2009-2012 trendline towards an Assured posture (which still allowed for Launch on Warning) predicted by the theories introduced in the earlier chapters of this dissertation? Insofar as the force posture veers off from the Assured model, do the theories help us understand why?

An Assured posture is predicted by both systemic theories if the economy is doing well and the state is worried primarily about nuclear threats. Even if the

⁹¹² Russian analysts also noted this. Arbatov, Dvorkin, and Oznobishchev argued that the decision to develop such a missile "seems to be an obvious strategic miscalculation." (Arbatov, Dvorkin, and Oznobishchev, *Russia and the Dilemmas of Nuclear Disarmament*.)

economy is doing poorly, under such circumstances, an Assured posture can emerge, unless a Launch on Warning posture is cheaper (which it likely will be). When conventional and nuclear threats are present, both theories make the same predictions, but the Absolute Weapon theory also predicts the development of Warfighting Escalatory capabilities. The Internal Balancing theory does too, but only if resources are constrained.

The Cultural/Bureaucratic theory never predicts an Assured posture, but it does predict some aspects of what is evident during this period, under certain conditions. Specifically, it predicts that with more resources, and given an unchallenged SRF, more funds will flow to other components of the force, even as the overall posture remains largely aligned with a Strategic Escalatory emphasis on land-based missiles.

So, do the conditions match those required by these theories for these postures to emerge? The Russian economy rallied comparatively quickly after a sharp-drop-off in 2009, although it did not return to the heights of growth enjoyed before the crisis. Moreover, as discussed in Chapter Four, resourcing for defense went up substantially during this period. How, then, would we code the threat environment and the power of the SRF?

Threat Environment

In 2009, Russia had just fought a war with its neighbor Georgia. President Dmitry Medvedev made very clear that he saw the former Soviet states on Russia's borders as a region of "privileged interest" for Russia and, as evidenced by Georgia, places where Russia would fight to protect those interests.⁹¹³ However, just because Russia retained the right to fight did not mean it would. When unrest in Kyrgyzstan turned violent in 2010, Russia rejected the Kyrgyz government's request for Russian peacekeepers.

There is no question that Russia continued to see proximate causes for war as local and conventional. However, even in those contexts, there was a nuclear

⁹¹³ Medvedev, *Interview to Television Channels Channel One, Russia, NTV*".

shadow, because analysts and officials alike saw a U.S. (and NATO, which continued to be seen by Moscow as part and parcel of U.S. power) hand behind many of the factors that they thought might drive their military action in their neighborhood. Although the 2009 “reset” of relations between the U.S. and Russia, and its significant accomplishments, including the new START agreement and mechanisms to help the United States move people and supplies into and out of Afghanistan, Russia was soon disappointed by the relationship. Moscow saw U.S. steps as insufficient, even as Washington felt it was working hard to find areas of cooperation.⁹¹⁴ Very importantly, it saw U.S. policy towards the countries on its borders as threatening. The Kremlin’s fear of, and belief in Western responsibility for, the so-called “Color Revolutions” only heightened during these years. Russia felt that these could lead to instability and unrest, and with Moscow and Washington on opposite sides, allowed for the possibility of escalation. The situation grew even worse after the 2011-2012 protests in Russia itself. Driven in part by Vladimir Putin’s imminent return to the Presidency, these protests, although comparatively small, were seen by Putin as part of a U.S.-backed plot.⁹¹⁵

Moreover, as Quinlivan and I have written previously, Russian analytical writing demonstrated a very common (although not universal) view among both civilian and military analysts that the United States, whether or not it planned to launch a nuclear attack, surely sought the means to prevail in one, for instance by being able to launch a debilitating first strike against Russia. Whether or not this is true is beyond the purview of this dissertation, but the Russian perception was important regardless. Russians particularly feared that this capability could give the United States the power to coercively influence Russian behavior and policies, at home and abroad. Their fear, then, was less of the use of military force than of the

⁹¹⁴ Stent, *The Limits of Partnership: U.S.-Russian Relations in the Twenty-First Century*, Chapter Nine.

⁹¹⁵ Ibid., Chapters Five and Nine; Miriam Elder, "Vladimir Putin Accuses Hillary Clinton of Encouraging Russian Protests," <http://www.theguardian.com/world/2011/dec/08/vladimir-putin-hillary-clinton-russia> files/1138/vladimir-putin-hillary-clinton-russia.html.

capacity for effective political pressure that an adversary's military capacity may enable.⁹¹⁶

Moreover, Russians who espoused these views found evidence that the United States seeks such coercive capacity in the combination of U.S. government statements about maintaining military supremacy, military practices such as submarine patrols and intercepts of Russian aviation (ignoring the fact that these were responses to Russian activity), and, importantly, the historical record of Washington's efforts to affect Russian policy over the last two decades. Moreover, U.S. insistence that its forces and planning were not in fact targeted against Russia were seen as invalidated by the size and structure of those forces.⁹¹⁷ Concern about a U.S. bolt-from-the blue nuclear attack also remained a theme in Russian writing and was at the core of a number of arguments for improvements to Russian early warning capability.⁹¹⁸

But it wasn't just nuclear capability that Russians felt gave the United States coercive power. The concerns about U.S. conventional might remained critical, albeit with a nuclear shadow. This took two forms. The first was speculation that America's greater combat power meant that Washington would have a lower threshold for strategic conventional use against Russia. Russia, however, was described as more limited in its response options, not having such strategic conventional capabilities, and able to retaliate only with nuclear weapons, raising the spectre of escalation. This led one Russian military analyst to speculate that conventional war with the United States was impossible. The second, somewhat overlapping, worry lay in the potential of U.S. strategic conventional capability to

⁹¹⁶ Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*, pp. 24-31. Tsyarkin, "Russian Politics, Policy-making, and American Missile Defense." also points out the importance of Russian concerns about U.S. exertion of the power that nuclear supremacy would give it.

⁹¹⁷ Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*, pp. 24-31. Tsyarkin, "Russian Politics, Policy-making, and American Missile Defense." also points out the importance of Russian concerns about U.S. exertion of the power that nuclear supremacy would give it.

⁹¹⁸ Akhmerov, Bogdanov, and Valeev, "Neopkhodimosti v Zenitnom Raketnom Prikrytii RVSN Net; Sukhanov, "VKO Eto Zadacha, a Ne Sistema; Sergei Nesterov and Sergei Volkov, "Eschche Raz o Sisteme VKO," *Vozdushno-Kosmicheskaja Oborona*, no. 4 (2010); Borzov, "VKO: Pora Prekratit' Terminologicheskie Diskussii; Krinitskii, "VKO: Rossii: Priznaki Budushchei Sistemy; Arbatov, "Potivoraketnye Debaty: v Poiskakh Soglasiiia."

target Russia's nuclear retaliatory capability. Russian analysts postulated that the United States might do this in part to prevent a Russian nuclear response, although analysts disagreed on how effective this would be.⁹¹⁹

These concerns were exacerbated by U.S. continued development of what it termed a "prompt global strike" capability and strategic conventional capabilities (including dual-capable platforms armed with conventional weapons).⁹²⁰ As discussed in previous chapters, Russian military analysts knew that the U.S. had long ago outpaced Russia's own capacity to develop such systems, and they had long been discussing the dangers posed by U.S. superiority in this and in the integration of information and weapons technologies.

Russian officials also remained apprehensive about U.S. missile defense plans, as discussed in the previous chapter, even though the Obama administration placed far less emphasis on such programs. For the most part, these concerns were the same as before. Both independent analysis and officials continued to insist that Russian forces were, in fact, capable of overcoming existing missile defenses. Russia's concern was always about the future evolution of systems.⁹²¹ However, at least one analyst postulated that missile defense rockets in Europe could be used to strike directly at Russian soil.⁹²² Russian officials continued to try to convince the

⁹¹⁹ Viktor Ruchkin, "V Poiskakh Paradigmy Stabil'nosti," *Krasnaia Zvezda*, April 16 2009; Akhmerov, Bogdanov, and Valeev, "Neopkhodimosti v Zenitnom Raketnom Prikrytii RVSN Net; Sirotinin, "Sderzhivanie Agressii v Kontekste Novoi Voennoi Doktriny Rossiiskoi Federatsii; Aleksandr Khramchikhin, "Udar Po Rossii: Mif Ili Real'nost'?", *Natsional'naia Oborona*, May 2011.

⁹²⁰ "Bezopasnost' Rossii Ili Ocherednoe Otstuplenie," *Voенно-Promyshlennyi Kur'er*, February 24 2010; V. N. Konyshv and A. A. Sergunin, "Strategiia Natsional'noi Bezopasnosti Baraka Obamy: Staroe Vino v Novykh Mekhakh?," *SShA - Kanada. E'konomika, Politika, Kul'tura* (2011); Anatolii Kulikov, "Kogda Sravnenie Ne V Pol'zu Moskvu," *Vozdushno-Kosmicheskaiia Oborona*, no. 6 (2011); Georgii Lopin, Mikhail Tsurkov, and Vladimir Ogloblin, "Ugrozhaiushchaia Perspektiva," *Vozdushno-Kosmicheskaiia Oborona*, no. 6 (2011); A. A. Protasov et al., "Metodicheskoe Obespechenie Vyrabotki Zamysla Primeneniia VTO Bol'shoi' Dal'nosti v Operatsiakh (Boevykh Dei'stviakh)," *Voennaia Mysl* (2011); Khramchikhin, "Udar po Rossii."

⁹²¹ Quinlivan and Oliker, *Nuclear Deterrence in Europe: Russian Approaches to a New Environment and Implications for the United States*; Aleksandr Pinchuk, "Obshchestvennyi Sovet--Na Baze RVSN," *Krasnaia Zvezda*, June 17 2009; Stukalin, "Goszakaz 2011 Goda Uzhe Sorvan--On Uzhe Vypolnen Ne Budet; Weir, "Russia Claims New Missile Can Overcome Missile Defenses"; Oleg Nekhai, "Bulava Missile to Overcome Any Missile Defence System," *The Voice of Russia*(2012).

⁹²² V. V. Vasilenko, "K Kakoi Voine Gotovitsia?," *Vozdushno-Kosmicheskaiia Oborona*, no. 3 (2010).

United States to find ways to cooperate in the missile defense realm, but without much success, further heightening Russian worries.⁹²³

The New START Agreement was partially meant to help alleviate both Russian worries about U.S. strategic conventional capability and the long-standing fear of missile defenses. The agreement restricted conventionally armed strategic launchers and included language regarding the both “the impact of conventionally armed ICBMs and SLBMs on strategic stability” and the “interrelationship between strategic offensive arms and strategic defensive arms.” The treaty’s note that “current strategic defensive arms do not undermine the viability and effectiveness of the strategic offensive arms of the Parties” can be read to suggest that future developments could undermine that viability, and should thus be avoided.⁹²⁴

The language in the treaty was not sufficient to reassure Moscow. Russia’s Duma ratified the treaty with a substantial caveat—a legally binding provision that Russia would withdraw from the treaty, would not be bound by it, if the U.S. moved forward on missile defense plans that could undermine (in Russia’s view) Moscow’s deterrent. The Duma also reiterated Russian plans to modernize its nuclear arsenal (just as the U.S. Senate did for the U.S. in its ratification).⁹²⁵ Even before ratification, Medvedev had indicated that the Kremlin was willing to discuss further arms control only if the United States agreed to limits on its “upload potential,” a ban on space-based offensive weapons, and controls on conventional high-precision strategic weapons. He also reiterated Moscow’s concerns about unilateral developments of missile defenses.⁹²⁶ In November 2011, Dmitry Medvedev

⁹²³ Mathers, “Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010,” p. 514.

⁹²⁴ “Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms,” (United States Department of State, 2010), <http://www.state.gov/t/avc/newstart/c44126.htm>; Podvig, “Russia’s Nuclear Forces: Between Disarmament and Modernization.”

⁹²⁵ “State Duma Ratifies New START | News,” *The Moscow Times*, January 26; Fred Weir, “With Russian Ratification of New START, What’s Next for US-Russia Relations?,” *Christian Science Monitor*, January 26 2011.

⁹²⁶ Medvedev, “Speech at Helsinki University and Answers to Questions from Audience.”

reiterated that U.S. missile defense developments could prompt Russia to withdraw from the treaty.⁹²⁷

Thus, Russia was concerned both with local conflicts, such as the ones it was actually fighting, and conflict with the United States and its NATO allies. But if the first set of scenarios was conventional, Russia perceived the United States as posing both conventional and nuclear, and saw the two as closely linked.

Bureaucratic Strength of the Strategic Rocket Forces

As noted in Chapter Four, Russian defense spending went up substantially between 2009 and 2012, despite an overall slowing of Russia's economic growth. As always, it is difficult to parse just how much of this went to nuclear systems. Mathers argues that Russia's continued slow movement in regards to nuclear modernization from 2008 onwards, along with the general commitment to defense reform in that period, reflects a greater focus on conventional forces.⁹²⁸ This assessment, however, does not accurately reflect Russian allocations. As the discussion above shows, nuclear modernization went forward far more substantially than it had in the past. In terms of budgets, while she is right that conventional forces also got their share of the pie, there is no reason to think that nuclear forces did not. In fact, Russia's defense spending plan from 2011-2020, which allocated 20 trillion rubles to defense over that time-frame, reportedly prioritized strategic nuclear capabilities, defined to include early warning.⁹²⁹

Russian defense expenditure data is inconsistent in when and how it includes funds spent on nuclear forces. When they do appear, nuclear programs can be found in a variety of categories, with no clear explanation of how they combine and overlap. One of the few areas where there is some consistency in this period, if not in others, is a line item for the nuclear weapons complex which appears in Finance Ministry reporting on Russian budgetary expenditures starting in 2010 (it also appears occasionally prior to that). This information is of limited value because we

⁹²⁷ Fenenko, "Sovremennye Kontseptsii Iadernogo Sderzhivaniia."

⁹²⁸ Mathers, "Nuclear Weapons in Russian Foreign Policy: Patterns in Presidential Discourse 2000-2010," p. 511

⁹²⁹ Viktor Litovkin, "Dvadzat' Trillionov na Desiat' Let," *Nezavisimoe Voennoe Obozrenie*, July 23 2010.

do not know what it does and does not encompass, and have no data for how it breaks out, or relates the strategic nuclear forces or the various services. However, assuming that it is consistent with trends for spending on Russian nuclear weapons, it is instructive to see how it changes. As shown in Table 8.4 below, it increases from year to year during this period, but remains comparatively small as a share of the defense budget. Moreover, the increases are less impressive when numbers are converted into constant rubles.

Table 8.4 Defense Expenditures 2010-2012⁹³⁰

	2010	2011	2012
Total defense expenditure (current year billions of rubles)	1276.4	1516	1812.4
Nuclear weapons complex expenditure (current year billions of rubles)	18.8	27	27.5
Total defense expenditure (2008 billions of rubles)	1096.0	1123.0	1249.1
Nuclear weapons complex expenditure (2008 billions of rubles)	16.1	20.0	19.0
Nuclear weapons complex expenditure as percent of total defense expenditure	1.5	1.8	1.5

In direct contradiction to this data, and demonstrating the difficulty of parsing it accurately, are statements such as that of Deputy Defense Minister Popovkin in 2011, saying that 10 percent of Russia's weapons budget will go to funding the modernization of the Strategic Rocket Forces.⁹³¹ However, there is not much else to go on. In contrast to prior periods, there was less discussion of budget breakdowns, and the share the strategic forces got, in the military press. The complaints about underspending on the Navy, for example, were largely absent, replaced by satisfaction with increased spending allocations: 23 percent of the defense armaments order, according statements by Vladimir Putin in 2012.⁹³² As always, it is difficult if not impossible to parse what these numbers actually mean.

⁹³⁰ "Annual Report on Budget Expenditures," (Federal Treasury of the Russian Federation, Moscow 2005-2014), <http://old.roskazna.ru/federalnogo-byudzheta-rf/yi/>. Ruble deflators used for conversion to 2008 rubles from "Statisticheskii Ezhegodnik," (2011); "Indeksy--Defliatory Valovogo Vnutrennego Produkta," (2014).

⁹³¹ Oleg Falichev, "My Ne Mozhem Pozvolit' Sebe Zakupat' Plokhoe Vooruzhenie," *Voenna-Promyshlennyyi Kur'er*, March 2 2011.

⁹³² Andrei Garavskii, "Krepit' Status Morskoi Derzhavy," *Krasnaia Zvezda*, August 1 2012.

But there is some evidence that if strategic naval forces did get more funds, and the SRF continued to do well, strategic aviation did not. The Air Force as a whole was modernizing, but chose not to invest in a new bomber, as discussed above.⁹³³ This may suggest a persistence of traditional views of the bombers as the least of the triad components, and also perhaps that the Air Force did not fight for Strategic Aviation. Particularly in light of the emphasis on the bomber fleet in exercises, however, it is notable.

In sum, while we can surmise that strategic bombers fared worse, we do not have clear evidence based on budgets alone of which of the other components of Russia's nuclear forces were particularly successful in accruing funds between 2009 and 2012. However, what evidence exists suggests that both the SRF and naval forces did not lose out vis-à-vis other components, nuclear and conventional, and that they benefited, no less than others and certainly more than some, from the overall increase in defense spending.

To attempt to determine how the SRF fared vis-à-vis other parts of the force, I thus turn to other indicators, specifically what is known about bureaucratic shifts. As already noted, the New Look Reforms had little impact on either the SRF or the strategic naval forces in and of themselves, and a minimal impact on the bomber force. The biggest shifts were for early warning capabilities, discussed above, but these did not have any identifiable impact on how the SRF was doing compared to other forces.

Some evidence for the SRF's continued predominance can be found in some discussion of opposition in the Defense Ministry as a whole to those same plans to develop a new strategic bomber. Evidently, some opponents argued that its development could take resources away from the ground-based missile force, and should therefore be eschewed. In June 2012, in much the same time frame that President Putin called for development of such a system, Deputy Prime Minister Dmitri Rogozin, head of Russia's military industrial commission, publicly expressed (and later posted on Twitter) his doubts about the usefulness of the new bomber,

⁹³³ Dmitry Gorenburg, "Russian Air Force Procurement Plans," *Russian Military Reform* (2012), <http://russiamil.wordpress.com/2012/10/25/russian-air-force-procurement-plans/>.

citing the air defense capabilities (presumably of prospective enemies such as the United States) which would prevent it reaching its likely targets.⁹³⁴

Also interesting to note are reports in 2012 that the Defense Ministry had again considered unifying its strategic nuclear arsenal under a single command, and had once again rejected the proposal. In a newspaper account, expert Aleksandr Konovalov was quoted suggesting that the services may have fought the move, seeking to remain independent.⁹³⁵

Although none of this is particularly decisive, the absence of any visible challenge to the SRF also serves as evidence. After all, if there was a fight, both past experience and continuing discussions of other issues suggests that it would have been at least somewhat public. I therefore conclude that the SRF was not particularly challenged during this period. Although the Ground Forces, Navy, and other components of the armed forces as a whole were doing better from a budgetary standpoint, this did not threaten the rocket forces, which got at least their share of the pie. And efforts at reorganization, if any, were short-lived, demonstrating a general satisfaction with the status quo.

How the Theories Perform

How well do the theories do at predicting the posture that developed in the years between 2009 and 2012? Above, I outlined Russia's posture during these years as leaning towards an Assured posture, with a larger share of survivable systems than ever before, and with a declaratory policy that preferred nuclear deterrence of nuclear weapons, but allowed for launch on strategic warning and included some ambiguous discussion of non-strategic capabilities. It also allowed for first use under very narrow conditions. On the one hand, this actually aligns with a Versatile posture, which none of the theories predict. However, given that the most likely existential conventional threat is from the United States, a country with a large and survivable nuclear arsenal, first use against it would surely risk, if not

⁹³⁴ Vladykin, "Iubileinyi Polet Fantazii."

⁹³⁵ Ivan Konovalov, "Edinogo Komandovaniia Iadernymi Silami Rossii Ne Budet," *Izvestiia*, September 24 2012.

guarantee, a nuclear response (see the discussion of damage limitation approaches in Chapter One). I therefore surmise that the existential threat language reflects more desire to maintain some element of ambiguity than a clear, thought-out intent. Finally, Russian officials maintained a continued emphasis on force size parity with the United States. This conclusion is hampered by two factors, however. One is the continued emphasis on silo-based ICBM systems, including brand new capabilities. This means that this was not simply a matter of maintaining parity on the cheap, since the new programs cost more than maintaining old systems would have. The other is the failure of the satellite-based early warning system, although the ground-based radar network improved.

As already discussed, after the crisis of 2009, the period is defined by slowed, but continued economic growth, with substantial resourcing going to defense. Throughout this period, Russia was concerned about conventional conflicts in its neighborhood and both conventional and nuclear threats from the United States. Its declaratory policy indicated that its nuclear forces were meant to deter those high end threats posed by Washington and its allies. Meanwhile, the SRF did not appear to face any real challenges from within the rest of the defense establishment or outside it. Although other components of the armed forces, and, indeed, the strategic nuclear forces, got increased resources in this period, the SRF appeared to maintain a predominant role.

Under these conditions, the Absolute Weapon theory predicts a minimalist Assured posture combined with a Warfighting Escalatory posture, with emphasis on both survivable and non-strategic systems. The Internal Balancing and Prestige theory, by contrast, predicts a maximalist Assured posture, without the Warfighting Escalatory component. The Culture and Bureaucracy theory predicts a Strategic Escalatory posture, but with more investment in systems other than the ICBM force, although silo-based systems should remain dominant. It also predicts as big a force as is feasible and allows for a certain disinclination to build effective early warning.

Table 8.5, below, presents these predictions, along with what we actually saw in Russia during this period.

Table 8.5: Predictions and Reality 2009-2012

Years	Absolute Weapon	Internal Balancing and Prestige	Cultural/ Bureaucratic	Actual Posture
2009-2012	Assured + WE; minimal size	Assured; parity+	SE; maximal size	Declaratory: Assured/LoW, parity + Force structure: → Assured, but without effective early warning

Overall, then, the Internal Balancing theory appears to perform best during this period, with the first general alignment between declaratory policy and force structure seen in this dissertation. However, the continued development of new silo-based systems and, to a lesser extent due to ground-based radar progress, the failure of the space-based early warning system are out of line with its predictions. These are all in line with the predictions of the Cultural/Bureaucratic theory, which allows for the development of the submarine forces and certainly more emphasis on mobile ICBMs, as long as silo-based ICBMs are not forgotten, and predicts that Russia will build as large a force as it can afford.⁹³⁶ It also predicts the emphasis on MIRVed land-based systems, also in evidence. Thus, while the Internal Balancing theory performs better, the Cultural/Bureaucratic theory is not out of line with this time period. Indeed, it predicts certain aspects of force posture in 2009-2012 which the other theories do not. This said, if there were more to the rhetoric surrounding non-strategic capabilities, the Absolute Weapon theory would also find some confirmation in this time period.

Conclusion

Russia's economy crashed in 2009, then rallied back into growth, albeit slower growth than of the boom of the previous decade. Between 2009 and 2012,

⁹³⁶ It is important to acknowledge that this is not the only possible explanation for this emphasis. Podvig, for instance, attributes Russia's continued development of systems that would seem unnecessary at least in part to lobbying by and efforts to maintain prominent design and construction firms (Pavel Podvig, "What Was the ICBM That Crashed in Plesetsk," http://russianforces.org/blog/2011/09/what_was_the_icbm_that_crashed.shtml; "Russia Tests Prototype of a New ICBM"). However, this begs the question of why some systems are privileged over others.

Moscow changed its President, with Vladimir Putin resuming the role, and attempted a brief “reset” with the United States which led to a new arms control agreement but failed to eliminate distrust and fear. The United States and its policies around the world remained at the core of Russia’s threat perception, with the Kremlin worrying both about its conventional and nuclear capability, as well as also planning for conventional wars closer to home. Indeed, Russia began a comprehensive revamp of its armed forces in the wake of disappointing (if successful) performance in the 2008 war with Georgia. But if Russia was putting more resources into conventional capabilities, this did not mean that nuclear forces got short shrift. To the contrary, Russia’s Strategic Rocket Forces had a series of boom years with missiles rolling off the production lines. Even the Navy finally managed to get its first Borei submarine to sea, finally armed with the beleaguered Bulava missile. The bomber fleet, although still very active in exercises and patrols, continued to deteriorate. Meanwhile, Russia appeared to have completed the planned elimination of a large portion of non-strategic systems begun two decades before and sought opportunities to leverage Western concern about dual-capable systems in its arsenal. In terms of overall force size, Russia sought to maintain its capabilities near the top line of treaty limits—and, indeed, looking ahead, seemed to be running the risk of exceeding those limits if all plans were implemented.

Under circumstances such as these, with a growing economy and mixed threat environment, the Absolute Weapon theory predicts force posture that combines Assured and Warfighting Escalatory elements, and a minimal approach to sizing. The Internal Balancing theory predicts an Assured posture, with an emphasis on parity—at least. What we see is closer to the second, although with an allowance for first use in some circumstances (perhaps in keeping with a Versatile posture, predicted by none of the theories. However, it is difficult to understand exactly how Russia envisions strategic first use against the United States), and deteriorating space-based (if not land-based) early warning. The Cultural/Bureaucratic theory predicts a Strategic Escalatory posture, but with more emphasis on additional capabilities to those needed for that posture, as long as the SRF stays in the lead

(which it did). It also predicts as large a force as possible. The evidence of this period is also in line with these predictions.

This time period is thus the first one in which the predictions of the Internal Balancing theory are closer to being borne out. Still, there are elements of other theories' predictions here, too. The increased investment in survivable systems, including mobile ICBMs and submarines that we saw between 2009 and 2012 is in line with either an Assured (or a Versatile) posture, but Russia's rhetoric about possible use of nonstrategic capabilities, although vague, is in line with a Warfighting Escalatory approach. While developments through 2012 do not allow for that coding, if Russia were to invest more in those systems, and emphasize them, the predictions of the Absolute Weapon theory (with the exception of minimalism) would be supported. Moreover, Moscow's continued emphasis on systems that are unnecessary according to both systemic theories (most notably a follow-on to the heavy silo-based SS-18 missile) and the otherwise very puzzling failure to invest adequately in space-based early warning, which deteriorated to nothing, suggests that the Cultural/Bureaucratic theory also has some explanatory power.

Chapter Nine: Findings and Implications

Introduction

My goal in this dissertation was to explain why Russia builds the nuclear force posture it does and, more broadly, to explore what factors serve as the primary determinants of Russia's (and potentially other states') nuclear force posture choices. To do this, I developed three theories that could explain Russian posture, and tested them against the realities of Russia's nuclear posture since the collapse of the USSR.

Not surprisingly, I am not able to reach a definitive, unquestionable, conclusion that fully confirms one of my theories and disproves the others and any alternatives. As discussed in Chapter Four, I knew from the start that at best, I could establish correlation, and thus the plausibility of these theories. With the methodology I use, I cannot determine causality. I also had comparatively few discrete variations in the combinations of the independent variables from period to period. Although I identified eight discrete sub-periods marking various sorts of changes to the independent and dependent variables, they together provided only four different combinations of the independent variables to consider.

This said, the evidence of these two decades does suggest several things about the validity of my theories and about Russian posture and policy. First, it appears that the Cultural/ Bureaucratic theory that I developed in Chapter Three has substantial potential to explain Russian choices, albeit with some gaps. Furthermore, the Internal Balancing/ Prestige theory, developed in Chapter Two, while a poor predictor of force structure except in the most recent time-period under examination, predicts Russian declaratory policy with some consistency and may also help explain how Russian leaders think about force size requirements, if not broader posture. Moreover, the fact that it is better aligned with force structure today than it was in the 1990s may suggest that its predictions, if they continue to hold up in the future, are actually viable—and perhaps because studies such as these need longer time lags than I was able to incorporate.

The Absolute Weapon theory, for the most part, performs worst of the three. However it finds some support in rhetoric in the early 1990s and again in recent discussions of and attitudes towards non-strategic weapons. Here, too, the future of Russian force posture may yield more definitive conclusions.

The fact that there is a sharp disconnect between force structure and declaratory policy is also notable. While my theories cannot explain it, it is possible to postulate a number of reasons, ranging from cynicism on the part of officials to, as noted above, much longer time lags for the implementation of policy than I had assumed.

Regarding Russia specifically, the importance of prestige to Russian policy choices is striking, and should be expected to continue to drive a desire for larger numbers, regardless of force structure. Moreover, it appears that the cultural and bureaucratic predisposition towards MIRVed ICBMs will be difficult to overcome, with important implications for strategic stability. This may be related to another unnerving factor—the persistent insistence on launch on strategic warning as a planning parameter for Russian forces—whether or not Russia has the early warning capabilities to sustain it. This said, it will bear watching to see if the increased emphasis on more survivable systems after 2009 is, in fact, a sign of a real shift in Russian thinking.

In the balance of this chapter, I first lay out how my theories performed over the course of the two decades in question. I then consider these findings in more detail, first in the context of force structure and then declaratory policy. After this, I discuss what these findings might mean for the relationship between the two. I conclude with some thoughts about the implications of my analysis, first for further study of force posture and second for what we might expect from Russia's nuclear force posture in the years to come.

Which Theories Performed Best

As Table 9.1 shows, the Cultural/Bureaucratic theory performed best in all of the time periods under consideration except for the last, 2009-2012. Even in that

period, it predicted aspects of force posture that the other theories could not. It is thus strongly supported by the evidence of this dissertation.

Table 9.1 Theory Performance⁹³⁷

	1992-1994	1994-1997	1997-1998	1999-2000	2000-2002	2003-2006	2006-2008	2009-2012
Theory Best Supported	CB	CB	CB	CB	inconclusive	CB	CB (poss→AW)	IB/CB

However, the strong performance of this theory can be attributed in part to the fact that the evidence of the last two decades demonstrates a sharp disconnect between declaratory policy, or rhetoric, and force structure. None of my theories predict this disconnect. The Cultural/Bureaucratic theory, however, allows for it. It does not require that force structure and declaratory policy align in large part because it makes no conclusive predictions for the latter. Thus the Cultural/Bureaucratic theory performs well because it consistently predicts force structure, and makes no predictions at all about Declaratory policy.

Table 9.2, below, presents which theory did the best job of predicting Russian force structure and declaratory policy, considered individually, in the periods and sub-periods this dissertation has examined.

Table 9.2 Theory Performance Divided Between Declaratory Policy and Force Structure

	1992-1994	1994-1997	1997-1998	1999-2000	2000-2002	2003-2006	2006-2008	2009-2012
Declaratory Policy	IB/AW	IB/AW	IB/AW	IB	IB	IB	IB (poss→AW)	IB
Force Mix	CB	CB	CB	CB	inconclusive	CB	CB (poss→AW)	IB/CB

As noted, the Cultural/Bureaucratic theory is very consistent in accurately predicting Russian nuclear force structure for the two decades under consideration. Meanwhile, it is the Internal Balancing theory that does best at predicting Russia’s declaratory policy, even though it is not a good predictor of force structure until the last time-period in this study. It is also notable that the Absolute Weapon theory also appears to explain some aspects of declaratory policy in the 1990s and of both declaratory policy and force structure a decade later. This is worth unpacking:

⁹³⁷ CB signifies the Culture and Bureaucracy theory, AW signifies the Absolute Weapon theory, IB signifies the Internal Balancing and Prestige theory.

between 1992 and 1998, both systemic theories predicted the same type of posture, with the only difference between them being their predictions of Russian force size goals. The Absolute Weapon theory predicted minimalism, the Internal Balancing theory, parity or maximalism. In fact, Russian officials talked about both during these years, supporting both theories, but built a force that tended towards maximal size, as predicted by both the Internal Balancing theory and the Cultural/Bureaucratic theory.

Even more striking is that both Russia's declaratory policy and its force structure began to appear more in line with the Internal Balancing theory by 2009-2012. This final time period is the only one in which declaratory policy and force structure can be described as in alignment, so it is notable that the Internal Balancing theory is the one they both most look like. The alignment is not perfect. First, Russia continues to maintain an emphasis on parity in force size, reflected in both declaratory policy and fielded forces. This is predicted by the Internal Balancing theory and the Cultural/Bureaucratic theory, but not the Absolute Weapon theory. It also continues to build offensive capabilities and fails to develop an adequate early warning system, despite improvements in the latter. This is only predicted by the Cultural/ Bureaucratic theory. The fondness for at least rhetorical emphasis on non-strategic systems, continued from the previous period, is in line with Absolute Weapon theory. Finally, both the force structure and the declaratory policy could also be viewed as compatible with a Versatile posture, which none of the theories predict, although this would require us to take seriously the prospect of Russian strategic first use, which is underdefined in Russian rhetoric. In summary, one can find a little of everything in Russia's force posture between 2009 and 2012, although the predictions of the Internal Balancing theory hold up best and those of the Cultural/Bureaucratic theory are in no way countered.

It is also notable that while the Cultural/Bureaucracy theory overall performs well, it is not supported in one sub-period. Importantly, this is the one time period in which the critical independent variable for this theory, the strength of the SRF, has a different value than it does in any of the other time-periods. The theory predicts posture changes in response to changes in the status of the SRF. It

holds that such changes will not be lasting absent concomitant changes in overall strategic culture, but it does predict some shifts.

In fact, however, even when the SRF's status changes, posture stays the same. When the SRF is successfully challenged, the rhetoric regarding force structure shifts to a preference for SLBMs, but the actual fielded forces do not. Thus, while there are moves towards the predictions of the Cultural/Bureaucratic theory, the reality is a force posture that is not predicted by any of my three theories.

Force Structure

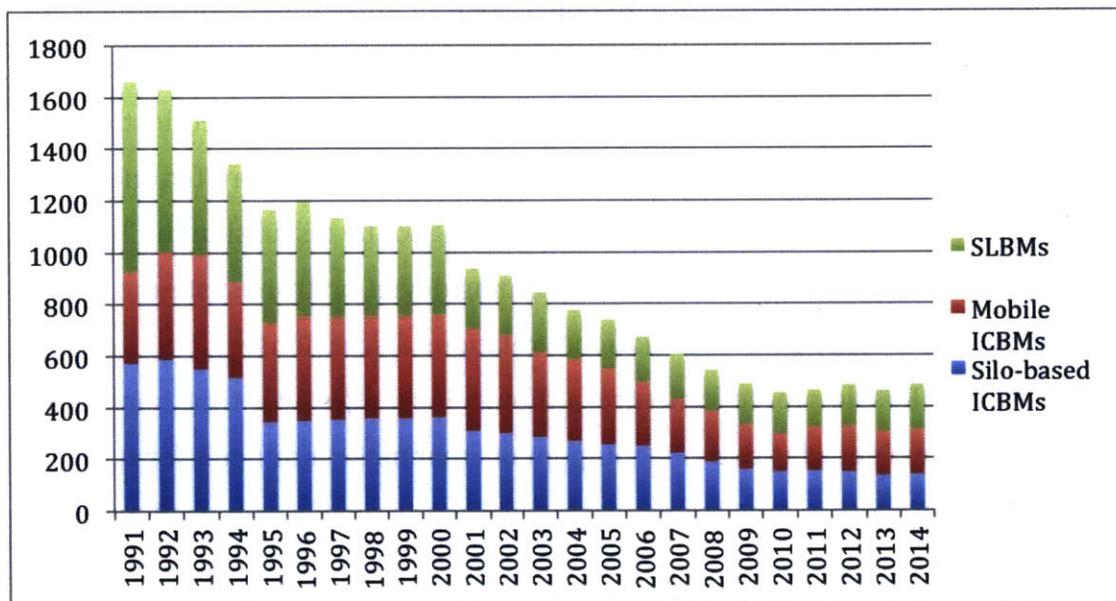
Aside from not predicting declaratory policy, the Cultural/Bureaucratic theory's predictions also differ from those of the two systemic theories in that they predict a force posture approach that doesn't quite make sense: one that assumes a large-scale first strike, something that is suicidal when faced with an adversary armed with survivable nuclear forces. This is because the two systemic theories have inherent logics regarding the foreign policy roles of nuclear weapons which are reflected in the predictions of the two systemic theories. The Cultural/Bureaucratic argument follows a logic based on other factors, specifically cultural predilections reinforced by bureaucratic supremacy. As a result, it predicts a posture that need not, from a strategic standpoint, make sense. Returning to the discussion in Chapter Three, culture and bureaucracy are, again, explaining deviation from systemic predictions, as they usually do in international relations discussions.

Specifically, Russia's force structure, although it changes over time, maintains throughout these two decades two key components that make it difficult for it to align with any force posture other than a Strategic Escalatory posture predicted only by the Culture and Bureaucracy theory. The systemic theories predict that Russia's concern about other nuclear weapon threats will lead to an emphasis on retaliatory capability to deter a first strike. This includes at least some capacity for early warning (this is not the case during a very brief period in the early 1990s, when Russia tends to discount such threats, but not at any other time). Into the early 2000s, one can make path-dependency-based arguments for the failure to effectively invest in these capabilities. However, by the end of that decade, with

other capabilities making substantial progress, that case becomes harder to make. The two systemic theories also predict at various times, that if Russia can afford it, it will shift investment from silo-based systems to more survivable mobile ICBMs and SLBM capabilities. However, even when, towards the end, more resourcing is going towards these systems, Russia never ceases to build heavy silo-based ICBMs, and, importantly, begins development of an expensive new follow-on to the SS-18, unnecessary for parity alone. Again, this is only explained by the Cultural/Bureaucratic theory.

The two figures below show the extent to which Russia’s force structure continued to favor silo-based ICBMs.⁹³⁸ As shown in Figure 9.1, the launcher numbers on their own would seem to tell a story of a force shrinking in accordance with arms control commitments, with an under-attention to SLBMs, but an equalization of mobile and silo-based missiles.

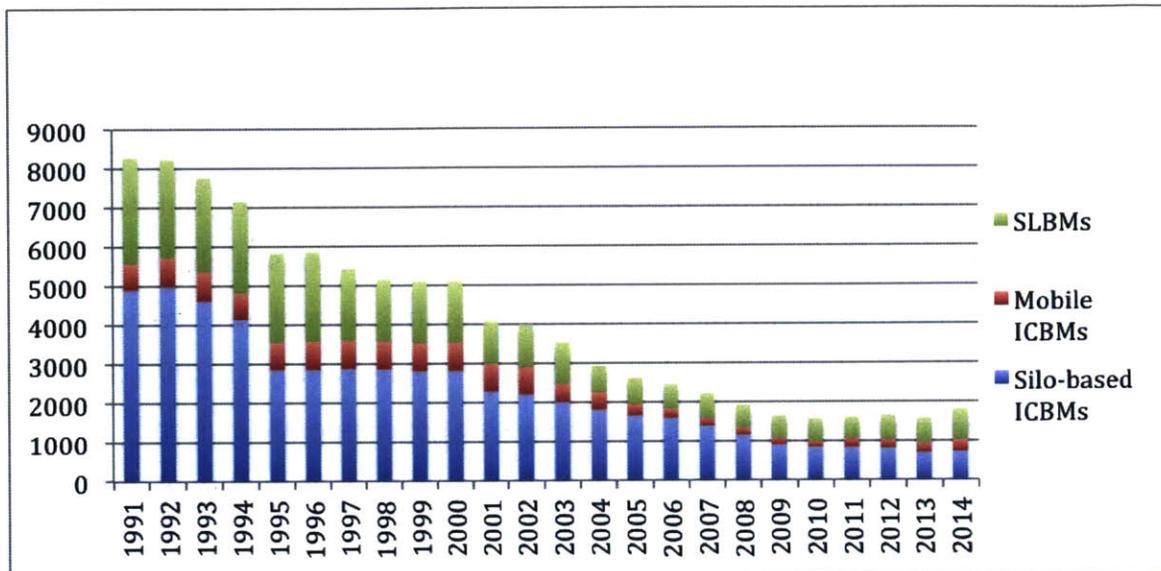
Figure 9.1 Missile Launchers 1991-2014



This story, however, is called into question by the warhead numbers, which are shown in Figure 9.2.

⁹³⁸ These charts do not include bombers, for all the reasons discussed in Chapters Five through Eight.

Figure 9.2 Missile Warheads 1991-2014



This emphasis on silo-based ICBMs, as well as the MIRVing that helps create such disparity between launcher and warhead ratios for ICBMs, is precisely what is predicted by the Cultural/Bureaucratic theory. The Internal Balancing and Prestige theory, while it predicts an emphasis on force size, might also allow for MIRVs. It, however, would expect to see them on new mobile, survivable missiles. Instead, while the submarine proportions do not change much, this figure shows a continuing emphasis on silo-based systems and only a slight growth in mobile systems as a proportion of the force over these years. Even when Russia begins to build more survivable forces, it never stops building silo-based capabilities, including new ones—something that cannot be explained by path dependency. What these figures of course do not show is the series of decisions that almost led Russia to lose its SLBM capability entirely in the 1990s, or the civilian intervention that was required to maintain the assembly lines to build these missiles.

The Cultural/Bureaucratic theory roots this preference for MIRVed, silo-based ICBMs in overall Russian views of warfighting, which privilege offensive and surface-based systems over others. Moreover, the rhetoric repeated throughout

these years supports this explanation. Russian senior officials consistently describe the missile forces as the most important component of Russia's nuclear deterrent. The exception to this is a brief period between 2000 and 2002, when nuclear supremacy in general is challenged by the General Staff, leading to a shift in emphasis to conventional forces. During this time, the rhetoric shifts somewhat to favoring the SLBM force—but nuclear force structure, as discussed above, does not.

Also as discussed above, this weakens the theory's performance, but does not falsify it. I can postulate, as I did in Chapter Six, several reasons this might be the case that are consistent with this theory, including the stickiness of force structure and the limited time in which the challenge was truly viable. Writing in 2002, Sergei Sokut warned that repeated shifts in how the Russian government views and prioritizes its strategic nuclear forces could be detrimental to the quality of the force, as production lines need more time to adjust than do bureaucratic (or strategic) imperatives.⁹³⁹ Interestingly, although the shifts were many, this does not actually seem to have played out as Sokut predicted. While Russian defense industry certainly weakened through the 1990s, and this has had an impact on the tempo of construction of key systems which continues to this day, the problems Russia has had do not seem particularly related to the changes in course over the last two decades. This may, of course, be largely because the changes rarely involved getting rid of systems.

Overall, then, the evidence in support of the Cultural and Bureaucratic theory is strong. Not only do this theory's predictions generally tend to match Russian choices, there are aspects of Russian posture that cannot easily be explained by the other theories.

Declaratory Policy

The ability of the Internal Balancing theory, particularly, to predict Russia's declaratory policy, and of the Absolute Weapon theory to challenge it periodically, suggests that these theories, even if they do not consistently predict force structure, do predict the logic Russian officials rely on to think about and discuss nuclear

⁹³⁹ Sokut, "Russia Changes Its Conception for Building Nuclear Forces."

strategy. The fact that there is evidence for both of these theories in the 1990s and at several point since even suggests that there was something of a debate in Russia that followed the central difference between them. Proponents of reliance on minimal numbers of nuclear forces in that period were making an Absolute Weapon argument. They held that Russia could put off investments in its conventional capabilities because nuclear forces could deter the full range of threats. Those who disagreed with them tended to think more in line with Internal Balancing theory—they felt that nuclear weapons were not an effective deterrent of conventional threats and that Russia needed to invest in conventional capabilities. In keeping with that theory, many of them allowed for the need to rely on nuclear weapons when funds were tight, but once more resources were available, they wanted to back away from this. This second group won the fight in 2000, with a clear shift away from a first use policy just as economic growth was becoming more stable. The fight appears to have re-emerged in 2009 and 2010, albeit without as visible a minimalist component. Then, too, those who doubted the advantages of relying on nuclear weapons to deter all forms of aggression won out, with a new Russian nuclear doctrine that raised rather than lowered the nuclear threshold.

It is also very important to underline the continuing and consistent disconnect between declaratory policy and force structure throughout most of these two decades. This is starkly illustrated by two things. One is the persistence of official statements regarding the intent to launch on strategic warning. Almost every time officials talked about how nuclear weapons would be used, that possibility was, at least, included. While that is in keeping with the high proportion of non-survivable missiles in the Russian arsenal, it is deeply disconnected from the continuously deteriorating early warning capacity of the Russian Federation. The second is the forces Russia built during times when nuclear weapons were, ostensibly, relied on to deter conventional threats. If Russia was really planning to deter conventional conflict with its nuclear weapons, it should have developed or husbanded weapons appropriate to that task—smaller, non-strategic capabilities. It did not do this in the 1990s, instead continuing to dismantle the non-strategic arsenal and focusing its force development on ICBMs. In 2009, when Russian

rhetoric again emphasized the possibility of first use, government statements flirted with the idea of non-strategic capabilities, this time rooted in newer, if long-in-development, dual use systems. It is true that a large inherited non-strategic arsenal, combined with these capabilities, meant that not much investment was needed, and greater reliance on it would be in keeping with the predictions of the Absolute Weapon theory. However, the way that Russia deployed these systems did not allow for their easy use in the postulated scenarios.

Nonetheless, the rhetoric of 2009 had an impact on Western audiences, and since that time, while official statements were careful not to threaten nuclear use, Russia has been more than willing to exploit Western concerns with ambiguous statements about its nuclear capabilities. This also fits well with the predictions and underlying assumptions of the Internal Balancing/Prestige theory. Specifically, Russia was looking to leverage the prestige afforded by being a nuclear power to increase its global clout, without trying to actually threaten the use of such weapons, which is not sufficiently credible against a broad range of threats.

Indeed, the prestige theme in this theory is very well-supported by Russian declaratory policy, and not just in the non-strategic context. While both the Internal Balancing theory and the Cultural/Bureaucratic theory predicted that Russia would seek at least parity in force sizing, the reasons Russian officials gave for their interest in larger numbers often explicitly invoked prestige. Nuclear weapons, they argued, guarantee Russia's great power status, which requires a force size equal to that of the United States. While this is not out of line with the Cultural/Bureaucratic theory, which holds that officials will find some reason to explain why they want more weapons and does not venture a particular view as to what that might be, it is also strikingly in line with Internal Balancing theory. Moreover, the way that Russia talks about its nuclear systems also invokes prestige goals: New systems are always described as the most capable in the world, able to overcome U.S. missile defenses,⁹⁴⁰ and so forth. Even the attention to dual-capable systems from late 2008

⁹⁴⁰ Which do not, at least at present, require that much capacity to overcome.

onwards seems to be looking to leverage Russia's nuclear status to increase other states' perceptions of it as a powerful and important state.

The Relationship Between Declaratory Policy and Force Structure

What explains the disconnect between declaratory policy and force structure? The systemic theories don't predict it. The Cultural/Bureaucratic theory allows for it, and argues that declaratory policy will seek to justify the force structure. If this is correct, it suggests that the reason that systemic theories predict declaratory policy is that officials believe that variations on them will make sense to domestic and foreign audiences. They understand the strategic logic, but they do not, themselves, follow it.

An alternative explanation for the divergence is that officials are not quite so cynical. Rather, it is possible that declaratory policy reflects state interests and priorities, but force structure, because it takes longer to build, lags. I sought to account for this possibility in this dissertation by including a two-year lag for force structure. However, it is possible that the true lag time is even longer. If so, it is not possible to test in the Russian case until a few more years, or perhaps decades, have passed. It is also plausible that Russian officials have disagreed on whether the tenets of something like one of the two systemic theories applied, and thus declaratory policy vacillated back and forth between them. Force structure, which is more difficult to shift, lagged, and only began to look like one of those theories after twenty years of changes. This narrative is further supported by the fact that when force structure and declaratory policy do align, as they do between 2009 and 2012, they are in line with Internal Balancing and Prestige theory.

Implications

This dissertation has demonstrated the viability of a cultural/bureaucratic explanation for Russian nuclear force posture. Its findings also suggest that declaratory policy may adjust to the international threat environment faster than force structure, and that force structure may not adjust at all. The ambiguity of results in the key time-period of 2000-2002, when the SRF was challenged and force

posture did not change, and, to a lesser extent, in the final period of 2009-2012, when both force structure and declaratory policy shifted to fit the predictions of the Internal Balancing and Prestige theory, but with elements of both of the other two theories, prevents this analysis from being as conclusive as I might like, but the results as they stand are striking.

Further study may be needed to evaluate the strength of these findings, and whether or not they can be extrapolated beyond Russia, for instance to the United States and other nuclear powers. Might a similar approach explain the U.S. focus on damage limitation approaches during the Cold War, for example? Indeed, examining the extent to which other nuclear states' postures behave in similar ways could go a long way in determining the strength of these theories. The examination of cases that include real shifts in strategic culture would be very helpful to refining the theory, as well. Doing this would require the development of different Cultural Bureaucratic approaches for each of the other states in question. Notably, if all of their predictions look similar (that is, if strategic cultures the world over look much the same, as has been postulated in regard to military culture⁹⁴¹), then this would raise questions for the relevance of the cultural component of that theory.

If it is viable, Cultural/Bureaucratic theory will also have broader uses. The analysis carried out to define predictions for nuclear force posture draws on a much broader assessment than is needed for just that component of the Russian military. This theory, and its core tenets, could be used as a means to develop hypotheses for other branches of Russia's armed forces and their likely development. These, too, could be tested against systemic predictions of Russian force posture to determine which theories hold up best.

What do these findings mean for Russia itself? Overall, they suggest that Russia will continue to seek high numbers of weapons and to put a great many of them on silo-based systems, whether or not funding is available. The developments after 2009 do indicate the possibility that survivable systems will continue to get attention, but if it is the Cultural and Bureaucratic theory, rather than the Internal

⁹⁴¹ Discussed in Chapter Three. See Posen, *Sources of Military Doctrine*; Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914*.

Balancing and Prestige theory, that best explains Russia's future, survivable systems will only get attention when funds are plentiful. Less funding will mean continued attention to first-use systems to the detriment of others. Russia may also continue to underinvest in early warning capabilities, particularly if resources are constrained. Insofar as it invests in non-strategic systems, any investments will likely continue to be in the dual-use family: investing in conventional systems that can also carry nuclear weapons. This enables Russia to take advantage of both developing its conventional capabilities and falling back on the "prestige" effects of nuclear weapons.

Russia's desire to keep its numbers up appears to stem from both its prestige goals and the bureaucracy's desire to keep resources flowing. If the United States moves forward with missile defense plans in Europe, it is plausible that Russia, which already has more strategic warheads deployed than the U.S., will pull out of New START. The provision that it would do so under those conditions was, after all, part of the Duma's ratification package for the treaty. If Russia does not pull out of New START, it will have to reconcile the treaty's limits on deployed warheads with the MoD's plans for both submarine and ICBM deployments. It can do this, in part, by simply putting fewer SLBMs on its SSBNs. This is what the United States does, and if Russia follows this course, it will have its very own "upload potential. However, this is somewhat contraindicated by the fact that Russia's interest in parity, as predicted by both the Internal Balancing theory and the Cultural Bureaucratic theory, will evolve into an interest in supremacy if the opportunity presents itself. The option to jettison the New START Treaty and let the arsenal grow may well prove tempting for Russia. Even though U.S. resources to maintain an arms race are far greater than their own, the importance of prestige to Russian policymakers can lead to just such folly.

All of this is worrying, in that it implies that Russia, particularly if it is cash-strapped, will maintain a large number of less-survivable forces, which it will be inclined to launch at least that component of its force on strategic warning, while not having particularly good warning capabilities. Meanwhile, the emphasis on dual-use systems in the non-strategic realm will make it difficult for potential adversaries

to know whether they face a nuclear or a conventional threat. Russia may enjoy the ambiguity this creates, but the result could be that other states will seek to invest in non-strategic nuclear capabilities to match it.

If Russia has more funds, and can build a more balanced force, some of these worries are mitigated. But insofar as its force posture choices are guided by cultural and bureaucratic prerogatives, rather than strategic goals, Russia is prone to force structures that are threats, rather than contributors, to overall strategic stability. If other countries, and especially the United States, make choices in the same ways, the potential for instability, especially in crisis, is high.

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Appendix: Transliteration and Sources

My transliteration approach is a slightly modified version of the International Civil Aviation Administration (ICAO) rules for transliteration of travel documents. I use this approach because it is one of the simplest and clearest Cyrillic to Latin transliteration approaches available. It requires no diacritical marks but enables very good phonetic fidelity to the original Russian. The one adjustment I make is that I use an apostrophe (') to signify both the hard sign (Ѣ) and soft sign (ѣ). ICAO uses "IE" for the first and has nothing listed for the second. I follow this system consistently with two exceptions. First, when an alternative transliteration of the names of individuals, weapon systems, and so forth is standard, I use that standard transliteration (e.g., "Yeltsin" rather than "El'tsin," "Olga" rather than "Ol'ga," "Yury Dolgorukiy" rather than "Iurii Dolgorukii"). Second, when I cite English language sources that use a different transliteration system and I am reproducing text as published (e.g., author names in a translated volume) I reproduce the transliteration from that source.

I use a large number of Russian language sources. These fall primarily into three categories:

1. Academic journals
2. Specialty (military) press, local and national
3. Mass media

I have not chosen to translate the titles of articles or the names of journals and newspapers. This is because transliteration better enables readers to find the sources themselves. Where I am citing articles or other material written by individuals whose knowledge or position is relevant to their credibility on the topic (not simply journalists), I have sought to identify that this is the case. For events, I often cite newspaper articles, local and national, specialized and not. If I have doubts about the credibility of the reporting or argument, I note that.