



Russian Strategy for Escalation Management: Evolution of Key Concepts

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Abstract

This paper assesses the evolution in Russian military strategy on the question of escalation management, or intra-war deterrence, across the conflict spectrum from peacetime to nuclear war. Russia's overarching approach to deterrence, called "strategic deterrence," represents a holistic concept for shaping adversary decision making by integrating military and non-military measures. Key concepts in Russian military thinking on deterrence include deterrence by fear inducement, deterrence through the limited use of military force, and deterrence by defense. These approaches integrate a mix of strategic nonnuclear and nuclear capabilities, depending on the context and conflict scope. In a conflict, Russian escalation management concepts can be roughly divided into periods of demonstration, adequate damage infliction, and retaliation. Russian strategic culture emphasizes cost imposition over denial for deterrence purposes, believing in forms of calibrated damage as a vehicle by which to manage escalation. This so-called deterrent damage is meant to be dosed, applied in an iterative manner, with associated targeting and damage levels. Despite acquiring nonnuclear means of deterrence, Russia continues to rely on nuclear weapons to deter and prosecute regional and large-scale conflicts, seeing these as complementary means within a comprehensive strategic deterrence system. The paper summarizes debates across authoritative Russian military-analytical literature beginning in 1991 and incorporates translated graphics and tables. The concluding section discusses implications for US and allied forces.

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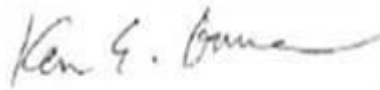
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Executive Summary

In the 1990s, the Russian military debated the ways and means by which to carry out deterrence at different levels of conflict, while faced with a limited toolkit and largely dependent on nuclear weapons. Over time they came to consider deterrence levels, damage types, and the specific political and military measures that could be applied to deter adversaries or manage escalation. These concepts became part of military strategy, and eventually came to be codified in national security concepts in the first decade of the 2000s. After periods of reform and military modernization, the toolkit or means that Russian military strategists envisioned also came to evolve, as did their thinking on the mix of nuclear and nonnuclear means in deterrence. A reasonably mature system of deterrence emerged as the product of decades of debates and concept development, designed to handle the spectrum of Russian security requirements, from peacetime through nuclear war.

Russian military thinkers have articulated a system that some describe as consisting of deterrence by intimidation or fear inducement, deterrence through limited use of force, and deterrence by defense. Russian military thought tends to characterize these types of activities as demonstrative, damage inflicting, and retaliatory. This study focuses on the first two: demonstrative measures intended to manage escalation during the crisis phase, and various approaches to inflicting damage that Russian military thinkers believe will manage an escalating conflict, or result in de-escalation.

The overarching concept for this system at the national level is called “strategic deterrence.” It is a holistic Russian national security concept for managing escalation, and containing adversaries in peacetime, by integrating military and nonmilitary means. As a theory of escalation management and war termination, strategic deterrence approaches communicate to a would-be opponent that the Russian military can inflict progressively higher costs while lowering their expected gains in a conflict. These actions signal to the opponent’s leadership and populations the need to forgo aggression, de-escalate hostilities, and/or terminate the conflict. The strategy suggests that the Russian military, as a strategic culture, has a strong predilection for cost imposition (rather than denial of benefits) in thinking about deterrence and that the operating mechanism is calibrated escalation.

The effects considered are achieved through the coordination of military and nonmilitary means. Nonmilitary instruments are essential for containment, but military or forceful measures predominate in deterrence tasks, concepts rely primarily on the forceful end of the spectrum. Military measures consist of demonstrations of military presence and military

power, raising readiness to wartime levels, deploying forces, threatening to deliver strikes (with conventional or nuclear weapons), and conducting single or grouped strikes (with conventional or nuclear weapons). Such measures could be employed in a threatened period to prevent aggression, and in wartime to manage escalation, or end the war.

Demonstrative military acts can be used as threats and signals during peacetime or escalating tensions. Some also advocate for demonstrative use of force prior to the onset of hostilities. Subsequently Russian military thinking envisions four general conflict archetypes: local war, regional war, large-scale war, and nuclear war. Escalation management is the way by which the Russian military seeks to prevent aggression during a period of perceived threat, and keep conflict from escalating to higher thresholds in wartime. The primary vehicle for managing escalation in conflict is the application of calibrated damage.

Russian forces are divided into general purpose forces and strategic deterrence forces in order to execute specified deterrence tasks, or to force-generate as part of specially devised strategic operations that inflict determined damage levels. They have nonnuclear and nuclear means at their disposal, conceptually organized under two broad levels of deterrence: regional and global. Russian military thinkers have devised a system of nonnuclear deterrence that includes strategic conventional weapons (long-range precision-guided weapons), strategic defensive systems such as integrated air and missile defense, and other capabilities that could shock and disorganize an opponent.

Russian concepts continue to rely on nuclear weapons to deter conflict, and prosecute regional and large-scale conflicts with conventionally superior opponents. Writings in military journals suggest the emergence of a flexible package of capabilities that allows the Russian armed forces to quickly transition from conventional to nuclear employment as part of strategic deterrence efforts to inflict various levels of damage on an opponent. Targeting options continue to be debated, and vary depending on the escalation phase. At times the intent is to inflict subjective damage, limiting collateral impact; at other times the Russian design is to cause an amount of damage that an adversary will find unacceptable.

Russian military analysts tend to divide phases of escalation management into pre-nuclear and nuclear deterrence. Nuclear threats are viewed as not being credible in certain contexts, and may not be authorized by national leadership at those stages. The notion of early Russian nuclear employment in an escalating crisis to “de-escalate” the situation is likely derived from early Russian concepts and debates during the late 1990s and mid-2000s, particularly on the role of nonstrategic nuclear weapons in regional deterrence. Today, Russian strategists consider it important to have all steps on an intrawar “deterrence ladder” in order to facilitate deterrence stability. Such considerations reflect a desire for flexible deterrence options, but are notably different from U.S. perspectives that often argue for the need to match or retaliate

in kind. Escalation management concepts are not tied to matching yield or payload of adversary weapons.

While nuclear employment discussions in military journals revolve around nonstrategic nuclear weapons, analysts also sometimes consider the limited employment of strategic nuclear assets for deterrence and de-escalation tasks in regional and large-scale wars. The intention to use nuclear weapons in select single or grouped strikes as part of a strategy of escalation management does not obviate their utility in theater nuclear warfighting, or strategic nuclear retaliation. In turn, strategic conventional (nonnuclear) weapons are becoming more prominent in the discourse about deterrence and de-escalation in armed conflicts and local wars. Offensive conventional weapons, commonly referenced as long-range precision-guided weapons, are also the preferred choice for executing deterrence tasks during the threatened period of war, early phases of conflict, and conflicts of lesser scope. They are seen to be usable, credible, and lend coercive credibility to any follow-on threats of nuclear escalation.

“Unacceptable damage” remains the byword for strategic nuclear retaliation, but in most cases Russian military thought envisions inflicting a level of “deterrent damage” that would impose a much higher cost on an opponent than any potential gain sought in the conflict. Deterrent damage is meant to be dosed, and applied in an iterative manner. This damage could lead to cascade effects, and also would potentially intimidate or otherwise psychologically affect the opponent. Some Russian military analysts propose new targeting strategies for inflicting damage: those targeting the leadership, and those targeting the population. Each comes with its own prioritization of potential critical objects, including those of economic significance, infrastructure relevant to a nation’s way of life, key military infrastructure, and forces.

Capabilities applied in a ‘dosed’ manner can be employed for warfighting on a larger scale, inflicting ‘assigned damage’ as part of strategic operations. The threat of large-scale escalation is utilized as a psychological amplifier for limited forms of “deterrent damage” that Russian escalation management approaches seek to deliver—i.e., warfighting capabilities contribute to the Russian theory of victory in escalation management. However, deterrence by defense remains primarily a damage limitation strategy, reducing expected costs for Moscow and anticipated benefits for adversaries.

Although this paper explores national-level concepts, it focuses on military strategy and military thought, not political strategy or political intent. These concepts represent inputs into Russian decision-making. The extent to which political leadership will choose the options outlined, or the choices it will make in specific contingencies, remains unknown. Military strategy helps establish the potential courses of action, and offers insight into what political leadership might choose to do, but it does not speak to what political leadership will do, or how much confidence they will have in the military plans that are developed.

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Introduction

The Russian military's views on escalation management have been a subject of considerable interest in US and allied analytical circles. Questions persist about Russia's deterrence concepts, a potentially changed nuclear threshold, or plans to employ nuclear weapons in conflict. Although at times theoretical, this topic is hardly academic; it has direct implications for warfighting and crisis stability. However, much of the recent Western discourse about Russian thought on escalation management has come to be defined by simplistic and erroneous terms, such as "escalate to de-escalate." In reality, Russian military thought on escalation management is far more complex, and its continued evolution is a subject ripe for study and discussion.

Russia's political-military leadership has developed an overarching "strategic deterrence" concept that incorporates nonmilitary and military means for containment, escalation management, and war termination. It serves to integrate the use of military and nonmilitary measures as well as the employment of nonnuclear and nuclear means to deter and counter threats to Russia's national security. "Strategic deterrence" is further buttressed by numerous other concepts that shape Russian military thinking on the tradeoffs between nonnuclear and nuclear capabilities, the scope of conflicts in which these capabilities are brought to bear, and the types of damage Russia intends to inflict on opponents. Damage concepts are tied to their own debates and considerations that, in turn, shape targeting priorities and associated capabilities.

This paper asks, What is the theory of victory behind these concepts? How are Russian military strategists thinking about sequencing, capabilities applied, and the potential menu of targets? Why do they think it will work, and what doubts do they have about such stratagems working? It lays out Russian military views on strategic deterrence, escalation management, and the role of nuclear weapons and strategic conventional weapons in conflict. It provides an overview of the Russian model for escalation management and highlights key escalation management concepts. This report contributes and seeks to expand upon earlier work on this subject by

fellow analysts and experts in the field, notably Dima Adamsky, Dave Johnson, Kristin Ven Bruusgaard, Olga Olikier and numerous others.¹

Methodology

For this project, the CNA team developed a sample of over 700 Russian-language articles from authoritative Russian defense publications that focused on deterrence and/or nuclear issues from 1991 to the present. The sample primarily consisted of articles from military journals, such as *Voennaya Mysl'* (Military Thought), *Strategicheskaya Stabil'nost'* (Strategic Stability), *Vooruzhenie i Ekonomika* (Armaments and Economics), and *Vestnik AVN* (Herald of the Academy of Military Sciences). Also included were limited numbers of analytical opinion and commentary from Russian military thinkers in the publications *Nezavisimoe Voennoe Obozrenie* (Independent Military Review), *Voенно-Promyshlennyi Kur'er* (Military-Industrial Courier), and *Vozdushno-Kosmicheskaya Oborona (Sfera)* (Aero-Space Defense (Sphere)). The study team also analyzed several books, which were referenced by or debated within some of these articles, and consulted a number of official and unofficial Russian military dictionaries.

The authors of the writings in our sample were primarily military officers employed by Russian military think tanks or educational institutions. These included the General Staff (Military Academy) Center for Military Strategic Research, Ministry of Defense Central-Science Research Institutes (TsNIIIs), and Military Academy of the Strategic Rocket Forces (RVSN). Some of the authors were retired researchers from these institutions and, at the time of authorship, were affiliated with the Academy of Military Sciences (AVN) or the Russian Academy of Rocket and Artillery Sciences (RARAN). The sample also included key civilian authors who have had an impact on policy or defense planning and/or have contributed to the debates since 1991.

We combed across disparate sources, including online databases, websites, and libraries for materials across several decades. As a result, the study team believes this sample to represent a significant percentage of authoritative open source materials available on deterrence and nuclear issues, including debates between authors, centers of research, and divergent perspectives. We summarized all 700-plus articles in the sample and coded them based on their assessed relevance and other analytical criteria as part of a living database on the subject.

¹ For other works on this subject see: Dmitry Adamsky, "Nuclear incoherence: deterrence theory and non-strategic nuclear weapons in Russia," *Journal of Strategic Studies*, no. 1 (2014); Kristin Ven Bruusgaard, "Russian strategic deterrence," *Survival*, no. 4 (2016); Olga Olikier, "Russia's nuclear doctrine," CSIS, May 2016; Dave Johnson, "Russia's conventional precision strike capabilities, regional crises, and nuclear thresholds," Livermore Papers on Global Security, February 2018; Katarzyna Zysk, "Escalation and nuclear weapons in Russia's military strategy," *The RUSI Journal*, no. 2 (2018); Nikolai Sokov, "The elusive Russian nuclear threshold," PONARS policy memo, November 2019.

Out of the sample, we identified around 150 articles as being directly relevant to the development of the Russian military's views on escalation management, including the role of nonnuclear weapons, nonstrategic nuclear weapons, and strategic nuclear weapons, along with associated damage concepts.

In this research memorandum we offer our findings on the evolution of Russian military thinking on escalation management and war termination, along with graphics translated from these articles and the concepts they illustrate. This report does not present an exhaustive analysis of all 700-plus articles or directly reference them, but instead uses those which the study team viewed as being representative of the salient views. A companion CNA report, *Russian Strategy for Escalation Management: Key Debates and Players in Military Thought*, provides a brief overview of Russian military debates on escalation management and a primer on the institutions involved.

Why study military writings?

It is important to note that military strategy and operational-level planning support the strategy set by political leadership but they are not one and the same. While a number of the concepts discussed across the Russian military-analytical community, such as “strategic deterrence,” appear developed and refereed at the level of national political leadership, military strategy or planning is not the same as political strategy writ large. Even though these concepts and terms can be found codified in formal documents or doctrines, we do not claim to know what the Russian political leadership will choose to do in a particular contingency. The military is an important stakeholder that develops options and offers courses of action to the political leadership, but it does not necessarily determine the ultimate choices made by political leaders.

Studying the discourse among military scientists and strategists helps inform the origin of key concepts, the problems they were solving for, and theory behind ideas which eventually come to be seen in strategic operations, capability procurement, or exercises. These writings help shed light on the ambiguity which imbues declarations in formal documents. However, the evolution of ideas is hardly linear, and ideas may at times reflect the parochial interests of particular centers or combat branches.

A central limitation of this study is that we do not know the extent to which Russian military thinkers' concepts and plans highlighted here are approved and likely to be put into action by the Russian political leadership. For example, the Russian political leadership may judge some conflict escalation measures carry too much risk, compared to the methodical thinking of Russian military scientists. They may not subscribe to the entirety of modeling and logic

advanced in military thought on the extent to which limited use of force can render escalation control. These issues merit further research, but they are not the focus of this particular open source study.

That said, authoritative military writings are useful for understanding what a military wants to do, plans to do, or debates doing. While they are not representative of political designs, and should not be misinterpreted as such, these writings offer useful insights into the concepts of operations or options the political leadership will likely be presented with. In Russian military writings focused on escalation management, we found a host of mature concepts and ideas, linking ways and means with desired objectives. Some of these continue to evolve, or remain hotly contested, and are discussed with the appropriate caveats in this paper.

Structure of this paper

This paper explores the evolution of Russian strategy for managing escalation, beginning with the national security concept of “strategic deterrence,” military views on escalation management strategies, and relevant damage concepts. It then delves into the essential components of Russian military thought on escalation management, including deterrence levels, the role of nuclear vice nonnuclear deterrence, and target types and potential targeting strategies. The paper concludes with a discussion of implications for US and allied forces. At the end of the report, a glossary and key terms section can be found for reference.

Escalation Management Concepts

Strategic deterrence

A host of Russian concepts and approaches to contain, deter, and inflict different levels of damage on potential adversaries can be grouped under the umbrella term of “strategic deterrence” (*strategicheskoe sderzhivanie*), which has been evolving since the 2000s. In a 2017 speech in Sochi, Russian president Vladimir Putin asserted that Russian defense policy is aimed at “providing guaranteed strategic deterrence, and, in the case of a potential external threat—its effective neutralization.”² **Strategic deterrence**, in the sense used by the Russian president, is a holistic concept that envisions the integration of nonmilitary and military measures to shape adversary decision-making. It encapsulates military-political contexts that can be described as peace, a threatened period, and a spectrum of conflict that proceeds through local, regional, and large-scale wars all the way up to a strategic nuclear exchange.

This concept integrates the state’s nonmilitary instruments of national power, and identifies specific military capabilities that are “strategic” because of the anticipated effects when employed for deterrence purposes. While not a military-specific term, it serves as an important framework for Russian military strategy, influencing operational concepts and investments in specific capabilities, commonly referenced in speeches and statements by senior military leadership.³ Strategic deterrence provides a unifying model for aligning perceptions of the military-political threat environment with the state’s instruments of national power intended to shape that environment positively for Russian interests. In Russian thinking, strategic deterrence represents both a state’s theory of how to attain security in peacetime, and an inclusive national security concept to coordinate the various means at its disposal to manage escalation. The concept is adaptable: it can apply to managing contingencies ranging from local wars with a single state, to regional conflicts against coalitions, to large-scale wars against nuclear-armed global powers such as the United States. Table 1 provides a reference on how the Russian military conceives of conflict phases.

² “Putin praises Russia’s new armaments program,” TASS, Nov. 20, 2017, <https://tass.com/defense/976533>.

³ See Valeriy Gerasimov 2019 speech to the Academy of Military Sciences. Анастасия Свиридова, “Векторы развития военной стратегии,” *Красная Звезда*, Mar. 4, 2019, <http://redstar.ru/vektory-razvitiya-voennoj-strategii/?attempt=1>.

Table 1. Conflict phases and types in Russian military doctrine

Conflict phase/type	Description
Military danger	State of interstate or intrastate relations, characterized by the correlation of factors, which could under certain conditions lead to the appearance of military threat.
Military threat	State of interstate or intrastate relations, characterized by the real possibility of appearance of military conflict between opposing sides, high degree of readiness of any state (group of states), separatist (terrorist) organizations to the use of military force (armed violence).
Armed conflict	Armed conflict of a limited scale between states (international armed conflict) or opposing sides on the territory of one state (internal armed conflict).
Local war	War, in which limited political-military goals are pursued, military actions are conducted within the borders of combating states and which touches primarily on the interests (territorial, economic, political, and others) of just these states.
Regional war	War with the participation of several states from one region, led by national or coalition armed forces, during which the sides pursue important military-political goals.
Large-scale war	War between coalitions of states or largest states of the global society, in which the sides pursue radical political-military goals. Large-scale war could become the result of escalation of an armed conflict, local, or regional war involving a significant number of states from various regions of the world. This war would demand mobilization of all available material resources and spiritual forces of the participant-states.

Source: Военная доктрина Российской Федерации [Russian Federation Military Doctrine], printed in *Rossiyskaya Gazeta*, Dec. 30, 2014, <https://rg.ru/2014/12/30/doktrina-dok.html>.

However, before proceeding further, an important note on terminology is in order. Russian deterrence concepts do not neatly translate into the Western lexicon, which typically speaks to two types of coercive strategies: deterrence and compellence. The most commonly used Russian term for deterrence (*sderzhivanye*) is closer to what is understood in the West as “containment.” It consists of measures of dissuading the adversary that are not necessarily coercive and, though lacking a singular interpretation, it is often taken in Western circles to mean “deterrence.” A more specific Russian term, “forceful deterrence” (*silovoye sderzhivanye*), is better understood as deterrence through the limited use of military force. Meanwhile, deterrence by fear inducement or intimidation (*ustrashenie*) explicitly denotes deterrence

through coercion, the desired effect is discouragement through fear of consequences.⁴ Finally, another Russian term, *prinuzhdenie*, expresses coercion in the form of compulsion to change adversary behavior, rather than deterrence. In this paper, when we discuss forceful deterrence, we focus on deterrence by fear inducement (intimidation) and deterrence through the limited use (or threat) of military force.

Russia's 2015 National Security Strategy defined *strategic deterrence* as a series of interrelated political, military, military-technical, diplomatic, economic, and informational measures aimed at preventing the use of force against Russia, defending sovereignty, and preserving territorial integrity.⁵ The official Russian Ministry of Defense dictionary of military terms defines *strategic deterrence* as "a system of forceful (military) and non-forceful (nonmilitary) measures, intended to restrain the other side from employing force against the Russian Federation, particularly on a strategic scale." Strategic deterrence measures are used continuously—in peacetime not just to deter but to contain, and in wartime for the purpose of escalation management.⁶ Nonmilitary measures include political, diplomatic, legal, economic, ideological, and technical-scientific; the list of military measures is more extensive, demonstrating that this is a concept that primarily relies on the forceful end of the spectrum.

Military measures consist of demonstrations of military presence and military power, raising readiness to wartime levels, deploying forces, demonstrating readiness within the forces and means designated to deliver strikes (including with nuclear weapons), and conducting or threatening to conduct single strikes (which again include nuclear weapons).⁷ Such measures are employed in peacetime to prevent direct aggression or the use of military pressure from being applied against Russian interests. In wartime they are designed to manage escalation and to de-escalate or end the war in early stages on terms favorable to Russia.⁸ It is important to note that de-escalation should be understood as containing escalation, or escalation management, but not necessarily war termination. It may entail limiting combat operations to

⁴ А.И. Туркин, А.В. Оселедько, и А.Л. Хряпин, "Роль сдерживания как фактора сдерживания агрессии," *Стратегическая стабильность*, no. 2 (2008).

⁵ Указ Президента Российской Федерации о Стратегии национальной безопасности Российской Федерации, Dec. 31, 2015. <http://kremlin.ru/acts/bank/40391>.

⁶ Энциклопедия Министерства Обороны РФ, "Стратегическое сдерживание," undated, <http://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=14206@morfDictionary>

⁷ Ibid. This undated entry emphasizes that under current conditions, and in the near future, Russia's response to use of force will depend in general on its nuclear forces, and in part on the Strategic Rocket Forces.

⁸ А.Л. Хряпин и И.В. Брайчев, "Методологические основы стратегического сдерживания военной агрессии," *Стратегическая стабильность*, no. 2 (2008).

an acceptable threshold of conflict. De-escalation is also not to be construed as necessarily winning; an operational pause resulting in negotiations can be considered de-escalation.⁹

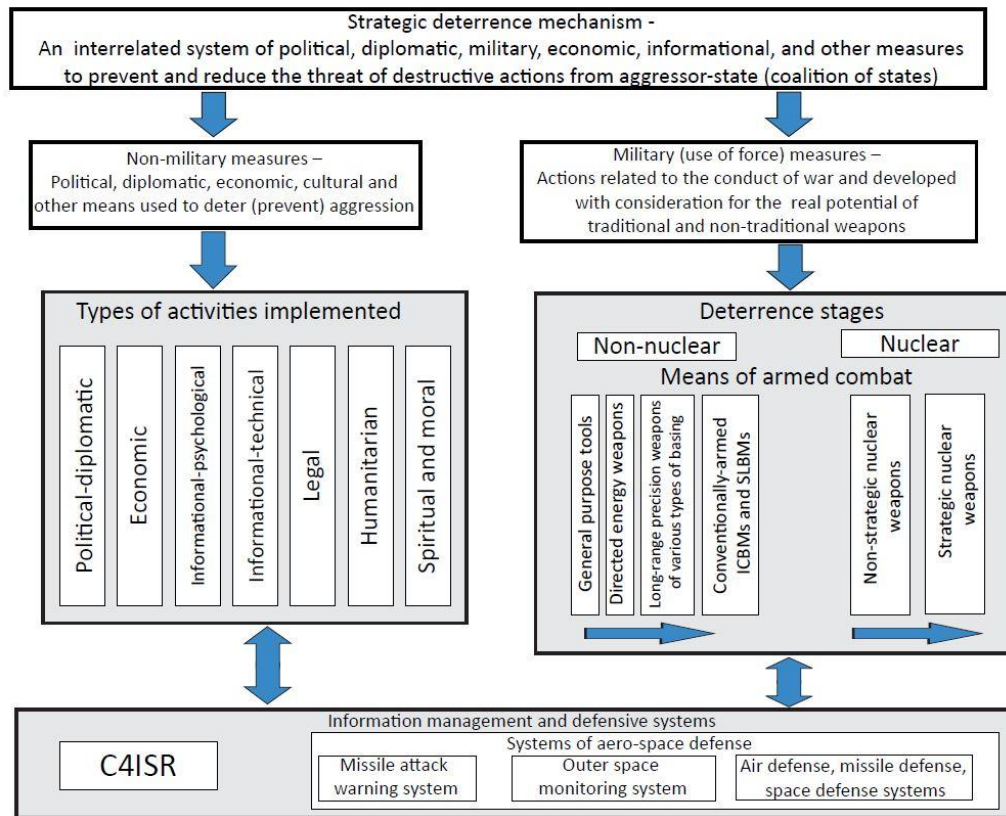
While the strategic deterrence concept may appear to be overly inclusive, it leans heavily towards the military (or forceful) rather than the nonmilitary set of actions—at least in writings in Russian military journals.¹⁰ Despite the demonstrated interest in non-military means, escalation management or intrawar deterrence concepts are consistently posited as being based on forceful measures, relying on force without which other approaches with prove powerless or ineffective.¹¹ Figure 1 is a translation of one analyst’s interpretation of the strategic deterrence concept.

⁹ Ibid.

¹⁰ For definitions in earlier military thought pieces, outlining components of strategic deterrence see В.И. Полегаев, “Косвенное ядерное воздействие – безопасный способ деэскалации военных действий,” *Стратегическая стабильность*, no. 1 (2008); Хряпин и Брайчев, “Методологические основы стратегического сдерживания военной агрессии.”

¹¹ А.Е. Стерлин, А.А. Протасов, и С.В. Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания,” *Военная мысль*, no. 8 (2019).

Figure 1. Defining strategic deterrence



Source: A.V. Skrypnik, "On a possible approach to determining the role and place of directed energy weapons in the mechanism of strategic deterrence through the use of force," *Armaments and Economics*, no. 3 (2012).

Analysts from the General Staff (Military Academy) Center for Military Strategic Research (GS (MA) TsVSI) and others across the Russian military research community have been assessing the viability of strategic deterrence and its component parts for over 15 years.¹² According to their writings, the operating mechanisms within strategic deterrence involve efforts at containment, fear inducement (intimidation), measures to encourage restraint (dissuasion), and calibrated forms of coercion within a single framework that provides political leaders with

¹² As discussed in our companion report, the Center was initially part of the General Staff, but then was moved to the Military Academy of the General Staff. This move was then reversed, but then carried out again.

flexible options in peacetime and wartime.¹³ In this paper we do not consider the “containment” component of Russian thinking under strategic deterrence, which is designed to leverage nonmilitary means to limit an opponent’s influence and ability to apply pressure, but without resorting to direct military threats.¹⁴

Russian leaders intend to use the options within the strategic deterrence framework to communicate to would-be opponents that Russia is able to inflict progressively greater amounts of damage on critical targets, thereby resulting in the imposition of unacceptable consequences on an opponent. The intent is to signal to the opponent’s leadership and civilian population the need to forgo aggression, de-escalate the hostilities, and/or terminate the conflict.¹⁵ It also includes actions designed to limit the conflict scope, deterring third parties from intervening and escalating a local war into a regional war or large-scale war.

Military measures include use of the general purpose forces and select conventional (or nonnuclear) capabilities that are judged to have strategic effects; if these prove ineffective, measures culminate in the employment of nuclear weapons (nonstrategic and strategic). While general purpose forces have an important role, which we will discuss later, deterrence by defense is given relatively short shrift in Russian thinking; rather, much of the calculus rests on the ability to impose costs by threatening or striking **critically important objects** (military and economic) on the territory of the opposing state. The nuclear component has three principal roles: deterring conflict through threat of escalation, actual employment for the purposes of escalation management, and retaliation or warfighting.¹⁶

Strategic deterrence forces are the primary instrument used to implement the concept, and are divided into defensive and offensive components. They are not a service, branch or combat arm, but rather a collection of forces and capabilities functionally designated with a strategic deterrence mission. It is important to note that, for the purpose of deterrence, or escalation management, Russian forces are not organized along the lines of strategic nuclear forces (SNF) or nonstrategic nuclear weapons (NSNW), but instead functionally delineated between general purpose forces and strategic deterrence forces. The specific combat branch or arm to which the forces belong is not relevant, except to delineate means. It is more essential to understand how the Russian General Staff task-organizes the military to perform two principal roles: general purpose warfighting and strategic deterrence.

¹³ А.Л. Хряпин и В.А. Афанасьев, “Концептуальные основы стратегического сдерживания,” *Военная мысль*, no. 1 (2005). This paper uses “intimidation (fear inducement)” as a translation for *ustrasheniye*.

¹⁴ Хряпин и Брайчев, “Методологические основы стратегического сдерживания военной агрессии.”

¹⁵ Николай Тютюнников, *Военная мысль в терминах и определениях*, vol. 1 (Москва: Перо, 2018), 101-109.

¹⁶ Туркин, Оселедько, и Хряпин, “Роль сдерживания как фактора сдерживания агрессии.”

A good example is an Iskander-M brigade, which in its typical general purpose forces role provides precision strikes in support of a combined arms army within a depth of 500 km. This would be considered tactical-operational depth support, hitting critical military targets as requested by the combined arms army commander. However, when the same brigade is tasked with firing cruise missiles at depths of 500 to 2,000 km against the opponent's vital infrastructure, which could be military or economic (conventional or nuclear), it is operating in its "strategic deterrent force" role. Naturally most units will simply have a general purpose forces functional designation, but certain elements of the force, such as long-range aviation units or ships carrying land-attack cruise missiles, select air and missile defense units, will also be considered part of the strategic deterrence forces. Thus, this grouping of forces could consist of any combination of strategic nuclear forces, nonstrategic nuclear forces, strategic conventional weapons, and strategic defensive and offensive forces.¹⁷

Strategic conventional forces also contribute to deterrence by defense using integrated air defense and missile defense at the operational level. This is not what is commonly understood in Western strategy circles as "deterrence by denial," but rather is meant to reduce the resultant damage of an adversary's attack and to deflect it, by directing the strike at the capabilities themselves versus key targets in Russia.¹⁸ Consistently, Russian military writing indicates that the intent of offensive and defensive operations is to reduce the adversary's expected gains in a conflict while raising their anticipated costs, which would be inflicted by Russia's nonnuclear and nuclear offensive capabilities.

Strategic conventional capabilities of an offensive nature fill an important gap where general purpose forces may not prove a sufficient deterrent, but nuclear threats may not be credible in an attempt to manage escalation or deter aggression. It is broadly accepted in Russian military writing that general purpose forces will not be sufficient to deter a major power such as the United States—i.e., the deterrence approach rests largely on intimidation and consequences realized with specific conventional and nuclear strike capabilities.¹⁹ To be clear, Russia aspires to have ready combat groupings to repel an attack from any strategic direction, but such forces do not appear to be integrated in concrete escalation management approaches. Nor is the Russian conceptualization of deterrence in regional or large-scale wars premised on expectations of their efficacy.

¹⁷ Энциклопедия Министерства Обороны РФ, "Стратегические силы сдерживания," undated, <http://dictionary.mil.ru/dictionary/Terminy-RVSN/item/141804/>; Тютюнников, *Военная мысль в терминах и определениях*, vol. 1, 109.

¹⁸ О.Б. Ачасов, "Проблемные вопросы обеспечения сбалансированного развития компонентов системы ВКО," *Стратегическая стабильность*, no. 1 (2012).

¹⁹ Хряпин и Брайчев, "Методологические основы стратегического сдерживания военной агрессии."

Each level of escalation gains coercive credibility from the psychological effect of consequences that would be suffered at higher thresholds. For example, the threat of nuclear escalation, particularly with nonstrategic nuclear weapons, helps amplify the coercive effect of strategic conventional weapons. Similarly, select use of nonstrategic nuclear weapons benefits from the risks and threat of war escalating to strategic nuclear exchange. Hence, strategic deterrence, and Russian theory of escalation management writ large, is best thought of as a chain with links, each reinforcing the others in terms of adding to its coercive credibility.

Strategic deterrence through the use of military force

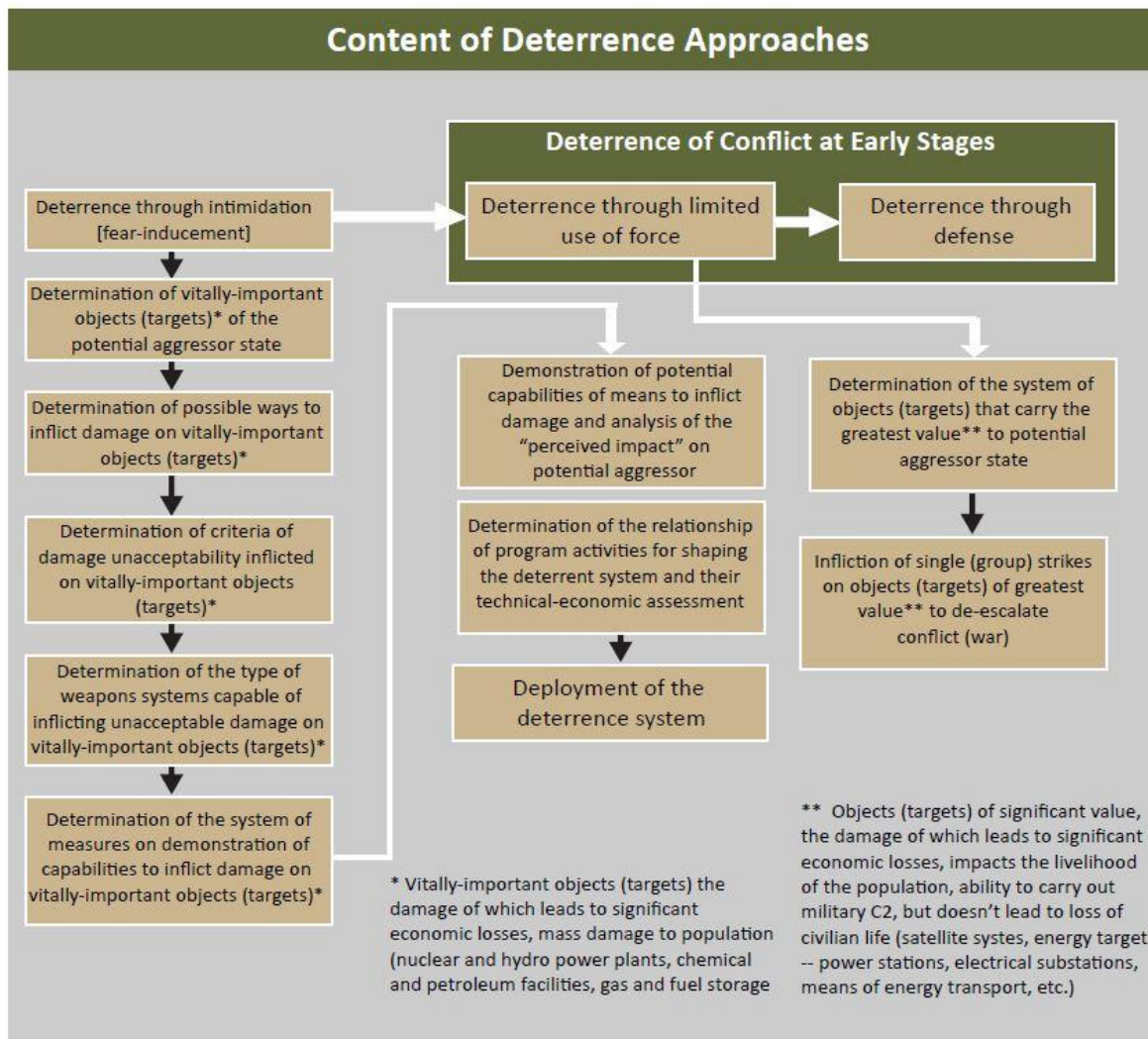
As part of Russia's "strategic deterrence" approach, it is important to discuss the concept of "**strategic deterrence through the use of military force.**" This concept involves the threat of military force and its actual limited employment. It also underpins strategic operations, as discussed later in this paper.

Strategic deterrence through the use of military force is "based on the threat of the use of force to create fear in the opponent and prevent undesirable results."²⁰ It has a nuclear and a nonnuclear component. The threat envisioned operates through deterrence by fear inducement (intimidation), the dread instilled by expected retaliation, and the effects expected from inflicting specific forms of damage.²¹ As seen in Figure 2, translated from a Russian military analyst writings, fear inducement stems from threats aimed at **vitally important objects**, and is maximally employed during peacetime or the threatened period of war.

²⁰ Ю.А. Печатнов, "Анализ отечественных и зарубежных подходов к разработке концептуальных моделей силового стратегического сдерживания," *Вооружение и экономика*, no. 2 (2011).

²¹ Туркин, Оселедько, и Хряпин, "Роль сдерживания как фактора сдерживания агрессии."

Figure 2. Content of deterrence approaches



Source: V.M. Burenok, "Russia's military security—challenges and solutions," *Vozdusho-Kosmicheskaya Oborona*, no. 3 (2008).

A closely related concept, as seen in Figure 2, is deterrence through the **limited use of military force**, which is primarily employed at the outset of hostilities against critically important objects, as illustrated in the diagram above. The envisioned timeframe for the application of limited force is typically during the transition from a threatened period into a state of local war or regional war. This concept was introduced into Russian military doctrine in 2010 as "strategic deterrence of a forceful nature" involving strategic conventional weapons or, more

specifically, long-range precision strike.²² This type of deterrence is carried out via (threats of or) single and grouped strikes using primarily strategic conventional weapons, depending on the phase and scope of conflict, and the stage at which escalation management is being attempted. According to analysts, one key property of conventional precision strike systems is the “selectivity of the damage (losses) inflicted by the weapons on resources and objects of the adversary, which allows to vary the planned levels of such losses in accordance with deterrence tasks or compulsion of the opposing side to halt armed resistance (localize and terminate the conflict).”²³

During the last decade, Russian military analysts have written numerous articles on the limited employment of strategic conventional weapons on an opponent’s critical targets in order to achieve a quantitative measure of damage as well as affect the perception of the conflict in the eyes of that opponent’s leadership and population. As they note, it is important to explore the use of conventional capabilities that have effects similar to those of some nuclear weapons, in order to form “a credible threat on the basis of a lower psychological barrier of the use of conventional forces.”²⁴ (See the following section of this report for a more explicit discussion of damage, targeting, and reflexive control ideas.)

Some analysts describe the Russian Ministry of Defense’s research on the nonnuclear component of strategic deterrence through the use of military force as follows:

At the present time, the theoretical possibility of solving the threat of aggression against Russia with the use of nonnuclear strategic means in the pre-nuclear stage of the development of interstate conflict has been confirmed by the results from studies conducted during a number of years by scientific-research institutions of the Ministry of Defense as well as industry. These show

²² See discussion of *стратегическое сдерживание силового характера* in point 22 in the 2010 military doctrine and point 26 in the 2014 military doctrine as “strategic deterrence of a forceful nature” or *стратегическое сдерживание силового характера*. Военная доктрина Российской Федерации, printed in *Rossiyskaya Gazeta*, Dec. 30, 2014, <https://rg.ru/2014/12/30/doktrina-dok.html>; Военная доктрина Российской Федерации, Feb. 5, 2010, <http://kremlin.ru/supplement/461>.

²³ В.В. Сухорутченко, А. Б. Зельвин, и В. А. Соболевский, “Направления исследований боевых возможностей высокоточного оружия большой дальности в обычном снаряжении,” *Военная мысль*, no. 8 (2009).

²⁴ В.Д. Ролдугин и Ю.В. Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника,” *Стратегическая стабильность*, no. 4 (2014); Ю.А. Печатнов, “Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания,” *Стратегическая стабильность*, no. 1 (2012).

that long-range precision weapons should serve as a basis of the grouping of forces and means of pre-nuclear deterrence.²⁵

There is a perception that strategic conventional weapons are particularly useful for escalation management because nuclear weapons could have low credibility as a deterrent in early phases of a conflict. Some Russian analysts have written that the “well-known consequences of the use of nuclear weapons” may create prohibitive psychological barriers.²⁶ In other words, some may believe that their own political leadership may be self-deterred from employing such means at early phases of a conflict, making it improbable that they would authorize such operations. More commonly, they caution that the reactions of an opponent’s leadership and public to the limited use of nuclear weapons may vary.²⁷ While deterrence through the use of force is not exclusively conventional, it appears to rely primarily on conventional precision strike means, especially in the context of local wars and the early period of regional wars (as noted in Table 1, earlier in this paper, from a Russian perspective, a regional war is a conflict with a coalition of states or an alliance).²⁸

For example, depending on the public perception of the threat of nuclear weapons, Russia’s threat to use, or actual use of, nuclear weapons could either achieve the desired results or cause an adversary to overreact. Some, however, write that, because of the “significant destructive force, measured by the scale of destruction of resources on the territories of large regions, theaters of military action and whole states, [nuclear weapons] can be viewed only as the large argument of states engaged in an uncompromising combat. In armed clashes of local and regional scale, the combating sides will endeavor to achieve intended goals through the use of forces (means) equipped by modern and future nonnuclear weapons.”²⁹ Strategic conventional weapons allow “achieving the same effect of declining macroeconomic indicators of industry [in opponents] with the use of nuclear weapons would inevitably lead to significant excessive

²⁵ Ю.А. Печатнов, “Модель комплексной оценки эффективности боевого применения высокоточного оружия большой дальности в механизме дядерного сдерживания агрессии против Российской Федерации,” *Стратегическая стабильность*, no. 3 (2010).

²⁶ Р.Г. Тагиров, Ю.А. Печатнов, и В.М. Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания,” *Вестник Академии Военных Наук*, no. 1 (2009).

²⁷ Ibid.

²⁸ Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания”; Ачасов, “Проблемные вопросы обеспечения сбалансированного развития компонентов системы ВКО.”

²⁹ Сухорутченко, Зельвин, и Соболевский, “Направления исследований боевых возможностей высокоточного оружия большой дальности в обычном снаряжении.”

losses of material and human resources (population) of the opposing sides, which could lead in turn to further escalation of the armed conflict.”³⁰

In addition to strategic conventional weapons, some Russian military analysts have also argued that aerospace defense forces (VKO) should be viewed as an element of “deterrence through the use of force” because they have a role at every step of the escalation management phase. In this regard, “the use of [these forces] and local employment of precision weapons without nuclear weapons at early stages of conflict could prevent/delay the escalation to nuclear use.”³¹ Table 2 presents a perspective of one military analyst on the role of VKO in a conflict as it progresses.

³⁰ Ibid.

³¹ Ачасов, “Проблемные вопросы обеспечения сбалансированного развития компонентов системы ВКО.”

Table 2. The role and place of the system of aerospace defense (VKO) in the mechanism of strategic deterrence through the use of military force

Main parameters, characterizing the role and place of the VKO system in strategic deterrence through the use of force	Main levels of military conflict escalation					
	Peacetime, threatening period, armed conflict	Local War	Regional War	Large-scale War	Nuclear War	
					Limited nuclear use by opponent	Mass nuclear use by opponent
Direction of strategic deterrence through the use of force	Deterrence of conventional war, provocative actions, and diversions	Deterrence of escalation of conventional conflict			Deterrence of adversary from limited use of nuclear weapons and further escalation of nuclear aggression	Deterrence of potential aggressors from mass nuclear use
Tasks, solved by the VKO system	Global control of launches of WMD launchers. Defense of vitally-important targets of the country from strikes of single (small group) ballistic missiles and air-breathing missiles	Defense of military and civilian targets in the zone of military action from strikes by ballistic missile and air breathing missiles. Provision to C2 of necessarily ISR data	Defense of military and civilian targets in the zone of military action as well as the most important targets of military forces of the RF. Provision of forces with necessary ISR data	Reliable establishment of the fact of attack on the defended territory, of the aggressor-state, and of the scale of the strikes. Defense of main C2	Global control of launches of WMD launchers. Defense of vitally-important targets of the country from strikes of single (small group) ballistic missiles and air-breathing missiles	Defense of military and civilian targets in the zone of military action from strikes by ballistic missile and air breathing missiles. Provision to C2 of necessarily ISR data
Desired outcome of using VKO system	Likely adversary decision to not conduct provocative actions or diversions, halt of preparations for hostilities, resolution of contested issues through talks	Facilitation of effective actions of general purpose forces in the zone of armed conflict, support of quality provision of ISR data to C2 for decision-making, adequate for the military-political environment	Decrease of the scale of loss of most important targets of military-economic potential and military forces, preservation of the ability to assess the evolving military-political environment and C2 decision-making on the command of the armed forces and the country	Preservation of the readiness of main C2 of RF armed forces, ability to form information about an aerospace attack onto a defended territory to a level that guarantees timely decisions about effective response actions by RF armed forces	Likely adversary decision to not conduct provocative actions or diversions, halt to preparations for hostilities, resolution of contested issues through talks	Facilitation of effective actions of general purpose forces in the zone of armed conflict, support of quality provision of ISR data to C2 for decision-making, adequate for the military-political environment

Source: O.B. Achasov, "Challenges with providing support for a balanced development of components of VKO system," *Strategic Stability*, no. 1 (2012).

Russian military stratagems for escalation management

Russian military writings lay out approaches to managing escalation from peacetime, through a threatened period, and into an escalating conflict. They outline three general phases in countering an emerging threat: demonstration, damage infliction, and retaliation. While both military and nonmilitary measures are broadly integrated under the Russian concept of “strategic deterrence,” the lion’s share of activities described in military writings fall into the category of using force. For example, demonstrative actions and verbal threats are distinct from strategic deterrence activities that employ military force for coercion, including singular strikes, or weapons tests for demonstrative purposes. In conflict, they place emphasis on various forms of what some writers describe as “adequate damage infliction,” which occupies much of the intellectual terrain on ways and means, along with the debates related to targeting. Defined target sets and specific damage levels are associated with these actions.

Russian military analysts debate the definitions of the concepts of “assigned damage,” “deterrent damage,” and “unacceptable damage,” as defined in the glossary and discussed later in this paper. In turn, the capabilities chosen to inflict specific levels of damage on an opponent for the purpose of escalation management depend on the scale of the conflict. While some of the operational concepts discussed in the military writings are intended for warfighting, not escalation management, they all are important components of the Russian strategic deterrence system by virtue of the material effects (objective damage levels) and psychological effects (subjective damage perception) they are believed to have on an opponent. Finally, retaliation is generally reserved for the outer edge of the escalation spectrum, when the conflict has resulted in large-scale use of nuclear weapons—particularly SNF. That phase of the conflict, and the debate about the sufficient levels of SNF for retaliation, is not considered in this study, although Russian concerns about maintaining a credible retaliatory potential are frequently encountered in military writings.³²

For Russian military thinkers, escalation management is not necessarily about winning or de-escalation. As a conflict progresses, escalation management approaches are intended to force off-ramps or negotiations that may result in a termination of the conflict on terms favorable to Russia or deter the entry of other participants. They may also keep the conflict going but

³² Марат Валеев и Алесандр Беломытцев, “Сдерживание неопределенностью,” *Военно-Промышленный Курьер*, no. 26, July 12, 2017.

prevent its escalation from a regional to a large-scale war, for example. There are four generally agreed-upon conflict archetypes in Russian military thought (as per Table 1, earlier in the paper): a local war with one state, a regional war against a coalition of states, a large-scale war on multiple fronts against a major power or several powers, and a nuclear war.³³ A fifth, armed conflict, is often considered an internal conflict among opposing groups on the territory of one state.

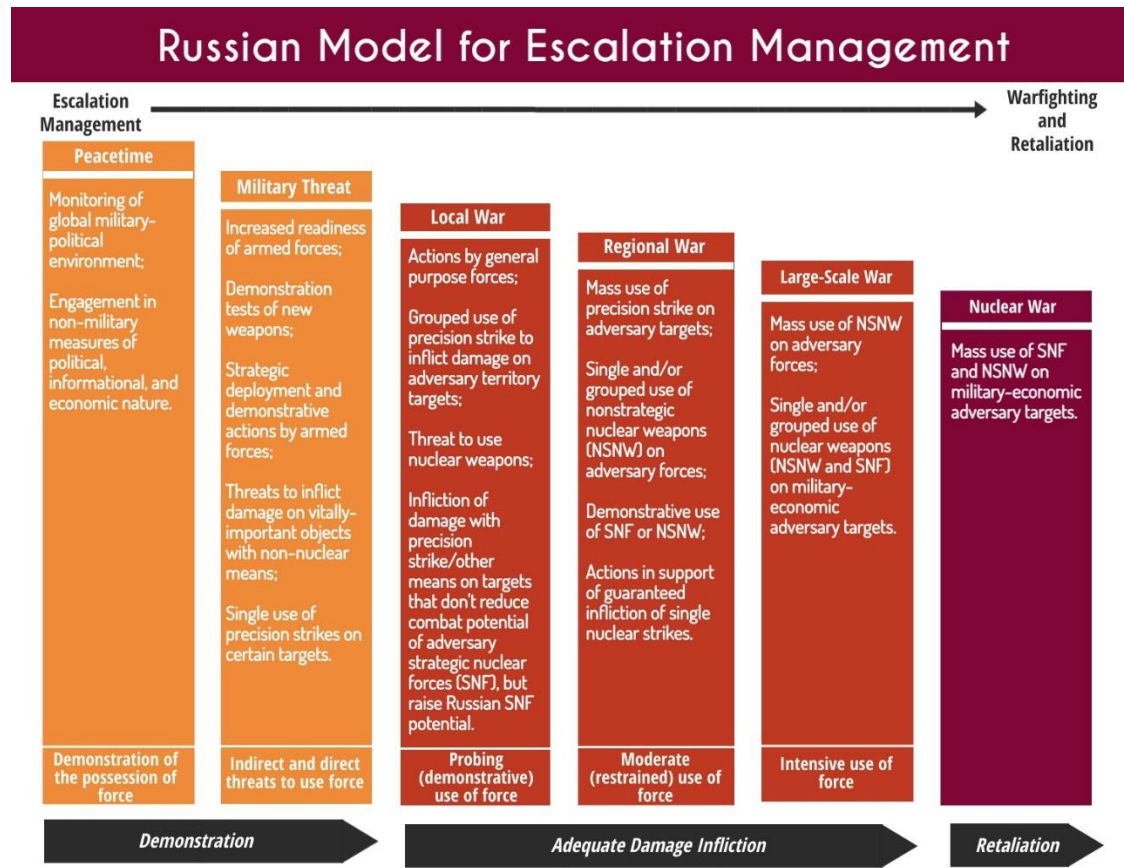
Figure 3 depicts Russia's potential use of strategic deterrence measures as a conflict progresses. The overall progression of these measures is from indirect threats and demonstrations of force, to direct threats and use of force with conventional means, to select employment of nonstrategic nuclear weapons, and eventually to large-scale use of nonstrategic and strategic nuclear weapons. Demonstrative uses of force against critically important economic and military objects are sometimes considered to be "preventive" in nature, and as a sort of "warning" prior to nuclear use.³⁴ The use of nonstrategic nuclear weapons is not taken lightly, and no one suggests that it be taken lightly. Though their impact continues to be the subject of some debate, their role appears largely codified as complementary to that of nonnuclear weapons.³⁵ As the conflict scale and intensity increase, the likelihood of escalation management declines and the measures become more about warfighting or retaliation.

³³ Хряпин и Брайчев, "Методологические основы стратегического сдерживания военной агрессии."

³⁴ Полегаев, "Косвенное ядерное воздействие – безопасный способ деэскалации военных действий."

³⁵ Туркин, Оселедько, и Хряпин, "Роль сдерживания как фактора сдерживания агрессии."

Figure 3. Russian conceptualization for use of force in conflict progression



Sources: Data from A.V. Skrypnik, "On a possible approach to determining the role and place of directed energy weapons in the mechanism of strategic deterrence through the use of force," *Armaments and Economics*, no. 3 (2012); A.V. Muntyanu and Yu.A. Pechatnov, "Challenging methodological issues on the development of strategic deterrence through the use of military force," *Strategic Stability*, no. 3 (2010).

The “**demonstration**” phase is likely to include an increase in the readiness of armed forces, deployments of combat formations from garrisons, demonstrative launches, exercises, combat patrols with visible forces, and weapons tests. Additional measures could involve activating reserves, rebasing aerospace and naval forces, increasing operational deployments to the border, raising the readiness of nuclear forces, and transporting nuclear warheads to where means of delivery are based.³⁶ During a time of imminent military threat, these actions could also include singular strikes and direct threats against the opponent’s critical infrastructure elements, designed to show that real harm will be done to their way of life should they choose to initiate hostilities. Singular strikes could be made against the opponent’s territory, or a third party’s territory.³⁷ Depending on the context, this demonstration phase can transition into an “**adequate damage infliction**” phase, where the Russian military gradually increases the intensity of its use of force and the scale of damage inflicted.

The “adequate damage infliction” phase could begin with low-intensity probing (or “dosing”) actions designed to inflict what some analysts have called “**deterrent damage**.”³⁸ These actions can intensify into the use of strategic conventional weapons against targets of economic or military significance, and potentially even transition into single or grouped nuclear strikes. These conventional or nuclear strikes can initially be away from the opponent’s territory and then progress to strikes on the opponent’s territory itself.³⁹ For example, some have suggested indirect nuclear employment, which is ‘safer’—e.g., offensive nuclear mining of ports or sea lines of communication, and strikes against the territory of a third party that is not the primary aggressor.⁴⁰ The idea here is that effects could be reversible and the time window extended for the opponent’s potential retaliation. When a conflict threatens to escalate to large-scale war or when the adversary itself is threatening nuclear use, a deterrent effect could be achieved by

³⁶ В.И. Ковалев и С.Ю. Малков, “Возможные подходы к формированию «системного конфигуратора» предметной области «невоенные угрозы» безопасности России,” *Стратегическая стабильность*, no. 3 (2016).

³⁷ В.Д. Ролдугин и Д.А. Пеньков, “Методика экспертного оценивания коэффициентов влияния оперативных мероприятий на целевую устойчивость группировки РВСН,” *Стратегическая стабильность*, no. 4 (2011).

³⁸ Хряпин и Брайчев, “Методологические основы стратегического сдерживания военной агрессии”; Туркин, Оселедько, и Хряпин, “Роль сдерживания как фактора сдерживания агрессии.”

³⁹ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника”; А.В. Мунтяну и Ю.А. Печатнов, “Проблемные методологические вопросы разработки механизма силового стратегического сдерживания,” *Стратегическая стабильность*, no. 3 (2010).

⁴⁰ Полегаев, “Косвенное ядерное воздействие – безопасный способ деэскалации военных действий.”

Russia's demonstration of readiness to use all of its available nuclear forces to inflict unacceptable damage on the adversary.⁴¹

Table 3 is a translation of one Russian military analyst's model of how the use of military force could be sequenced against an adversary to achieve the desired effect.

Table 3. The sequencing of the use of force for impacting adversary during a conflict

Stages	Sub-stages	Comments
1. Threat of using force	1.1 Demonstration of possession of force	In essence, an "addressless" [undirected] threat that restrains possible hostile actions
	1.2 Indirect threat of the use of force	Directed low-level threat to achieve a compromise without resorting to the use of force
	1.3 Direct threat of the use of force	Active directed threat in order to demonstrate resolve to use force
2. Use of force	2.1 Probing demonstrative actions with the use of force	Action to demonstrate the seriousness of the intent to use force
	2.2 Moderate use of force	Use of force with potential build-up reserves
	2.3 Intensive use of force	Use of force with maximum possible intensity

Source: A.V. Skrypnik, "On a possible approach to determining the role and place of directed energy weapons in the mechanism of strategic deterrence through the use of force," *Armaments and Economics*, no. 3 (2012).

A knowledge of context is essential for understanding the Russian military's rationale behind the choice and timing of specific capability employment. Without that knowledge, Russia's theory of victory could readily be misinterpreted (and often is). With this in mind, Table 4 is a translation of a Russian perspective around 2010 on an intrawar "deterrence ladder," which aligns the ways and means envisioned for managing escalation within the scale of armed conflict where they are likely to be employed. As the demonstration phase transitions to an adequate damage infliction phase, the emphasis is increasingly placed on conventional weapons prior to the employment of single or grouped nuclear strikes to achieve the desired objectives, and before direct nuclear threats are made. The escalation path need not be linear: a large crisis could escalate from tensions into regional war without any local war involved. If it does, measures used in the local war column could be applied during the early phases of regional conflict, or during the anticipated transition from a period of imminent military threat

⁴¹ В. И. Лумпов и Н. П. Багмет, "К вопросу о ядерном сдерживании," *Военная мысль*, no. 6 (2002).

into regional conflict. If efforts to deter conflict, manage escalation, or end the war fail at earlier stages, the actions envisioned constitute a transition to general warfighting, and, in later stages nuclear war.

Table 4. A threshold model of the “deterrence ladder”

Scale of armed conflict	Deterrent activities	Phases of deterrence
Nuclear war	<ul style="list-style-type: none"> • Mass use of SNF and NSNW on military-economic targets of the adversary 	“Retaliation” phase
Large-scale war	<ul style="list-style-type: none"> • Mass use of NSNW on adversary forces • Single and/or grouped use of nuclear weapons of SNF and/or NSNW on military-economic targets of the adversary 	“Adequate damage infliction” phase
Regional war	<ul style="list-style-type: none"> • Mass use of precision strike • Single and/or grouped use of NSNW on adversary forces • Demonstration use of nuclear weapons by SNF or NSNW 	
Local war	<ul style="list-style-type: none"> • Grouped use of precision strike to inflict damage on targets on adversary territory <ul style="list-style-type: none"> • Actions by general purpose forces 	
Threatened period	<ul style="list-style-type: none"> • Single use of precision strike on certain types of targets • Threats to inflict damage on vitally important objects with nonnuclear means and nuclear weapons <ul style="list-style-type: none"> • Demonstration actions by the armed forces 	“Demonstration” phase
Military threat	<ul style="list-style-type: none"> • Increase of combat readiness of the armed forces • Threat to inflict damage on vitally important targets with nonnuclear means • Conduct of demonstration tests of newest weapons systems <ul style="list-style-type: none"> • Increase of non-forceful measures of political, economic, information nature • Monitoring of the global military-political environment 	

Source: A.V. Muntyanu and Yu.A. Pechatnov, “Challenging methodological issues on the development of the mechanism of strategic deterrence through the use of military force,” *Strategic Stability*, no. 3 (2010).

Russian military thinkers have written extensively about how different types of forces and means could be applied for the purpose of escalation management, or for preventing a conflict from escalating to a higher level. For example, Figure 4, a translation of a 2002 table depicting capability employment in escalation scenarios, is fairly representative of this trend. Much like the rest of Russian military writings, this table must be interpreted within the context of the time when it was written. For example, strategic conventional or nonnuclear capabilities do not figure into the scheme presented in this table, in large part because in the early 2000s Russia had precious few capabilities that could be considered an effective nonnuclear deterrent. Once they emerged, nonnuclear capabilities considered to be “strategic” filled an important role that in 2002 was largely relegated to nonstrategic nuclear weapons during the early phases of conflict escalation. Hence, this now-dated figure illustrates thinking on escalation management during a “stopgap” period in Russia’s force structure and capabilities.

By examining these figures, tables, and concepts, one can see the evolution in Russian military thought and the integration of conventional capabilities, along with the change to their role over time. Despite the presence of conventional capabilities, escalation management overall appears to rest on convincing the adversary of “the futility of pursuing their goals through violence, because of the unacceptable consequences they will suffer as a result of deterrence actions taken.”⁴²

⁴² Хряпин и Брайчев, “Методологические основы стратегического сдерживания военной агрессии.”

Figure 4. An example of main tasks of strategic deterrence forces' components during various escalation scenarios

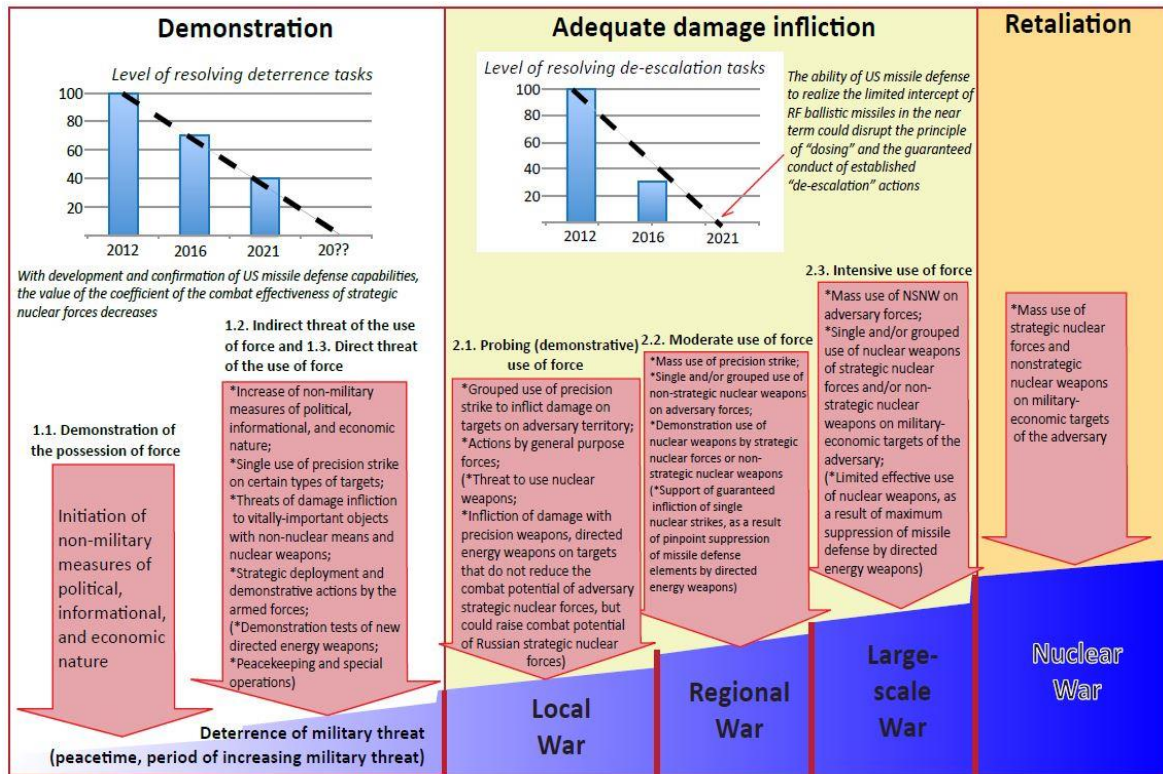
Escalation Stages Strategic Deterrence Forces		Military danger	Direct military threat	Military conflict (MC) and local war (LW)	Regional conventional war (RCW)	Large-scale conventional war (LSCW)	Regional nuclear war (RNW)	Large-scale nuclear war (LSNW)
Politico-diplomatic, Informational and economic structures		Politico-diplomatic and economic issue resolution, restraint from military-political escalation, violation of strategic stability and military-strategic parity with a basis in military, including nuclear, strength.						
RF general purpose forces		Deterring the adversary from using military force	Deterring the adversary from sudden non-nuclear aggression	Deterring MC and LW from escalating into RCW	Deterring RCW from escalating into LSCW	Using general purpose forces		
RF nuclear forces	Non-strategic nuclear forces	Deterring the adversary from using military force	Deterring from starting a sudden non-nuclear aggression	Deterring MC and LW from escalating into RCW	Deterring RCW from escalating into LSCW	Carrying out deterrent (demonstrative and de-escalating) strikes		Using non-strategic nuclear weapons
			Deterring from starting a sudden regional nuclear aggression	Deterring from transitioning to nuclear weapons use in theater	Deterring from transitioning to nuclear weapons use in theater	Deterring from transitioning to nuclear weapons use in theater		
		Using non-strategic nuclear forces in precision strikes						
	Strategic nuclear forces	Deterring the adversary from using military force	Deterring from starting a sudden non-nuclear aggression	Deterring MC and LW from escalating into RCW	Deterring RCW from escalating into LSCW	Using strategic nuclear weapons with non-nuclear warheads		Using strategic nuclear forces in a strategic nuclear forces operation
			Deterring from starting a sudden regional nuclear aggression	Deterring from transitioning to using nuclear forces in theater	Deterring from transitioning to using nuclear forces in theater	Deterring from transitioning to using nuclear forces in theater	Deterring from launching a sudden mass nuclear strike	
			Deterring from launching a sudden mass nuclear strike	Deterring from launching a sudden mass nuclear strike	Deterring from launching a sudden mass nuclear strike	Deterring from launching a sudden mass nuclear strike	Carrying out deterrent (demonstrative and de-escalating) strikes	

Source: V.I. Lumpov and N.P. Bagmet, "On the question of nuclear deterrence," *Military Thought*, no. 6 (2002).

As Russian military thinkers consider the possible integration of newly emerging capabilities, the strategic deterrence spectrum of activities is likely to continue evolving into the future. For example, Figure 5 offers insights from 2012 on the evolution in Russian thinking of employment of directed energy capabilities on escalation management. Recent publications also consider the potentially impact of hypersonic weapons.⁴³

⁴³ С.Г. Брайткрайц, В.А. Евдокимов, и В.В. Бухтияров, "Научно-методический подход к обоснованию рационального облика гиперзвукового оружия," *Вооружение и экономика*, no. 4 (2019).

Figure 5. A visualization of strategic deterrence steps during conflict progression



Source: A.V. Skrypnik, "On a possible approach to determining the role and place of directed energy weapons in the mechanism of strategic deterrence through the use of force," *Armaments and Economics*, no. 3 (2012); A.V. Muntyanu and Yu.A. Pechatnov, "Challenging methodological issues on the development of strategic deterrence through the use of military force," *Strategic Stability*, no. 3 (2010). Also see V.I. Kovalyov and S.Yu. Malkov, "Possible approaches to forming a 'systemic configurator' in the subject area 'nonmilitary threats' to Russia's Security," *Strategic Stability*, no. 3 (2016); V.D. Roldugin, D.A. Pen'kov, "Methodology of expert assessment of coefficients of influence of operational activities at the target resistance of an RVSN grouping," *Strategic Stability*, no. 4, 2011.

As this paper will discuss in subsequent sections, many Russian military analysts subdivide phases of escalation management into nonnuclear (pre-nuclear) and nuclear deterrence. The notion of early Russian nuclear employment in an escalating crisis to "de-escalate" the

situation is likely derived from early Russian concepts during the late 1990s and mid 2000s, particularly on the role of nonstrategic nuclear weapons in regional deterrence.⁴⁴

Today, Russian strategists consider it important to take all the steps on the deterrence ladder in order to facilitate deterrence stability and not allow the adversary to achieve escalation dominance.⁴⁵ This is both to make deterrence by fear inducement, and deterrence via limited use of force more credible, and to reduce the risk of potential unintended escalation resultant from nuclear employment, which is a concern in many analytical works.⁴⁶ Such considerations speak to a strong Russian desire to have flexible deterrence options, but these are notably different from US perspectives that often argue for the need to match or retaliate in kind. For example, escalation management concepts are not tied to yield or payload of weapons, and matching adversary capabilities closely is not a consideration that we have identified in our analysis of military writings. The power of weapons is meaningful, mainly from the standpoint of Russian strategists seeking to avoid any unintended escalation, or adverse consequences such as collateral damage from limited use of force.⁴⁷

In Russian military writings, analysts identify a coercive credibility link between escalation options, with the next step effectively creating a psychological fear of escalation, while the preceding option increases the credibility of more escalatory or intensive uses of force. Russian military thinking suggests that the armed forces must show their willingness to inflict countervalue damage against critically important infrastructure, military and economic, in order to build coercive credibility and retain a degree of proportionality in attempts to manage escalation. Some suggest that escalation management strikes will be fundamentally dual purpose, convincing the adversary to abandon any designs for further escalation but also targeting critically important military objects to reduce the opponent's military potential to sustain such a fight.⁴⁸ Consequently, the strategies considered are countervalue and counterforce. This makes for an emergent hedge strategy in the escalation management approaches considered—i.e., the Russian military will be better positioned for continued conflict should management approaches fail.

⁴⁴ Полегаев, "Косвенное ядерное воздействие – безопасный способ деэскалации военных действий."

⁴⁵ Мунтяну и Печатнов, "Проблемные методологические вопросы разработки механизма силового стратегического сдерживания."

⁴⁶ Туркин, Оселедько, и Хряпин, "Роль сдерживания как фактора сдерживания агрессии"; А.Н. Скоробогатый, "Метод вероятностных показателей развития конфликта," *Стратегическая стабильность*, no. 4 (2009).

⁴⁷ Скоробогатый, "Метод вероятностных показателей развития конфликта."

⁴⁸ Ачасов, "Проблемные вопросы обеспечения сбалансированного развития компонентов системы ВКО."

The prevailing concepts suggest that the Russian military, as a strategic culture, remains oriented towards deterrence by cost imposition (punishment) rather than the denial of benefits (denial). When discussing what approximates denial, Russian strategists usually frame it in terms of a preemptive action that neutralizes the threat as it is forming. This denies the adversary's ability to attack, preemptively, rather than being a defense designed to prevent an adversary from attaining territory. While deterrence by defense remains a component of Russian thinking, and is naturally a component of the system of strategic deterrence, it is not analogous to Western concepts of deterrence by denial. Indeed, *denial* is missing from the Russian strategic lexicon writ large, which is somewhat telling.

Although defense is perfectly viable in smaller conflicts, such as local wars, it is generally viewed as cost-prohibitive.⁴⁹ Hence, defense is given relatively short shrift compared to the efficacy of inflicting (or threatening to inflict) damage on the adversary that is greater than the benefits they desire. Deterrence by defense in practice should be thought of as damage limitation, implemented via strategic operations designed to effectively destroy the adversary's ability to sustain a conflict in theater, to inflict attrition on their forces, and to deflect the damage from Russia's critically important infrastructure. The pillars of Russian thinking on deterrence are built on counterforce and countervalue coercion, rather than on the efficacy of warfighting at the tactical-operational level.⁵⁰

There is the aspiration that general purpose forces will be able to repel an attack, or manage a local war without need for escalation, but much of the Russian thinking about the problem stems from the fear of a massed conventional and/or nuclear US aerospace attack.⁵¹ More importantly, there is the concern that such an attack could be mounted without having to deploy forces in the theater of military operations (TVD)—i.e., it would be conducted in the initial period of war without a substantial percentage of U.S. forces having to deploy to Europe.⁵² Hence the Russian military considers engaging in demonstrative uses of force in an effort to potentially forestall such an operation, or to retaliate for it with more intensive strikes and thereby stop further escalation.⁵³ As the Russian military considers operations during the

⁴⁹ See, for example, В. М. Буренок и О. Б. Ачасов, "Неядерное сдерживание," *Военная мысль*, no. 12 (2007).

⁵⁰ Хряпин и Брайчев, "Методологические основы стратегического сдерживания военной агрессии."

⁵¹ Валеев и Беломытцев, "Сдерживание неопределенностью."

⁵² Ю.И. Маевский, "Концептуальные подходы к формированию пространственно-распределительных систем радиозлектронной борьбы," АО Концерн Радиозлектронные технологии, undated, <http://www.ntc-reb.ru/article9.html>.

⁵³ Владимир Останков, "Есть ответ и на американские хитрости," *Военно-Промышленный Курьер*, no. 30, August 6, 2013; Ролдугин и Колодько, "Общие положения методики выбора поражаемых комбинаций критически важных объектов противника."

transition from the threatened period to direct conflict, they display a noticeable desire for preemption and an expectation that Russian forces will seek to neutralize the threat as it is forming.

As an example of this line of thinking, in a March 2019 speech, Russia's chief of the General Staff Valeriy Gerasimov suggested the emergence of a "strategy of active defense, based on ... preemptive neutralization of the threats to the security of the state." In his remarks Gerasimov further discussed the "continued relevance of the principle of achieving surprise, decisiveness, and the continuation of strategic actions." He explained, "Acting fast, we must preempt the adversary with our preventive [*preventivnymi*] measures, engage in the timely discernment of his weak spots and create threats of inflicting him [with] unacceptable damage. This provides the capture and the continued possession of strategic initiative."⁵⁴

The role of damage concepts in escalation management

Russian military writings are peppered with references to damage levels. This section provides background for discussion of the term "deterrent damage" (*sderzhivayushii ushcherb*), an essential concept in Russian military discourse on escalation management. It highlights the definitions of three other related concepts: "intolerable damage" (*nedopustimyi ushcherb*), "unacceptable damage" (*nepriemlyi ushcherb*), and "assigned damage" (*zadannyi ushcherb*). These terms are sometimes used interchangeably by Russian analysts, but there are nevertheless some differences that are important to consider. Russian military thinking on damage has evolved from being based on the employment of strategic nuclear forces to encompassing the whole of Russia's strategic deterrence capabilities. It has also shifted toward ideas about tailoring damage levels to the adversary's leadership and society, starting with small levels of damage that could be progressively scaled up for escalation management.

During the Cold War, Soviet military analysts, like their US counterparts, sought to understand what type of "guaranteed" (or assured) military-economic damage could be "unacceptable" to an opponent in retaliation.⁵⁵ Russian military writings, including modern-day ones, suggest

⁵⁴ Свиридова, "Векторы развития военной стратегии."

⁵⁵ See A.A. Кокошин, editor, *Влияние технологических факторов на параметры угроз национальной и международной безопасности, военных конфликтов и стратегической стабильности* (Москва: Издательство Московского университета, 2017), 211-212; В.Е. Ярынич и В.М. Горбылев, "О роли систем управления в проблеме разоружения," *Военная мысль*, no. 9 (1991).

that the evolution of US notions of “**unacceptable damage**” and targeting concepts from the Cold War continue to impact Russian military-analytical debates, particularly on the sufficiency of SNF.⁵⁶ For instance, Russian analysts write about “unacceptable damage” ideas such as the “McNamara criterion” that involved the delivery of 400 strategic nuclear warheads in retaliation and the subsequent reduction of this criterion by US planners to 200 warheads (“Brown criterion”).⁵⁷

Russian military writings suggest that, by the 1980s, there was a faction in the Soviet military-analytical community that grasped the concept of a “nuclear winter,” which contributed to the reduction of “unacceptable damage” notions.⁵⁸ In the late 1980s and early 1990s, there were reportedly efforts in Soviet/Russian research to continue to decrease what was understood as “unacceptable damage” levels that, *inter alia*, facilitated nuclear force reductions under US-Russian arms control agreements.⁵⁹ During the 1990s, an understanding of “unacceptable damage” also began to evolve from “objective” measures that relied on metrics of damage of particular target sets (military, economic, population) toward more “subjective,” or perception-centered, ideas about types of damage that would be unacceptable to a potential aggressor.⁶⁰

The ability to inflict “unacceptable damage” continues to be viewed as a criterion for retaliatory and retaliatory-meeting strikes for Russia’s SNF.⁶¹ Some write that, today, for a retaliatory

⁵⁶ А. Краснов, “Эволюция стратегии ядерного сдерживания США,” *Военная мысль*, no. 11 (2002); Михаил Сосновский, “О ядерном сдерживании в современных условиях,” *Обозреватель*, no. 11 (2004); А.Г. Арбатов, В.З. Дворкин, и С.К. Ознобищев, редакторы, *Россия и дилеммы ядерного разоружения* (Москва: ИМЭМО РАН, 2012); Василий Михайлович Буренок и Юрий Анатольевич Печатнов, “Неприемлемый ущерб,” *Независимое Военное Обозрение*, Feb. 8, 2013; В.М. Буренок и Ю.А. Печатнов, “О критериальных основах ядерного сдерживания,” *Вооружение и экономика*, no. 1 (2013).

⁵⁷ Тагиров, Печатнов, и Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания”; Ю.А. Печатнов, “Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником,” *Вооружение и экономика*, no. 3 (2011).

⁵⁸ See Василий Буренок и Лев Лысенко, “Мифы ядерного разоружения,” *Военно-Промышленный Курьер*, Jan. 29, 2014; Владимир Дворкин, “Ядерный психоз крепчает,” *Независимое Военное Обозрение*, May 19, 2017.

⁵⁹ Буренок и Лысенко, “Мифы ядерного разоружения.”

⁶⁰ Буренок и Лысенко, “Мифы ядерного разоружения”; В. Я. Савченко и С.В. Васильев, “Учет внешних угроз безопасности государства при обосновании допустимого уровня сокращения СНВ,” *Военная мысль*, no. 7 (1993); В.Н. Цыгичко, “О категории ‘соотношение сил’ в потенциальных военных конфликтах,” *Военная мысль*, no. 3 (2002).

⁶¹ See definitions of “unacceptable damage” in Энциклопедия Министерства Обороны РФ, “Неприемлемый ущерб,” undated, <http://dictionary.mil.ru/dictionary/Terminy-RVSN/item/141687/>; (Неприемлемый ущерб в войне) in Дмитрий Рогозин, редактор, *Война и мир в терминах и определениях* (Москва: Вече, 2011), available

strike with SNF, no more than 100 warheads of 1 megaton each would probably be required for the purpose of inflicting unacceptable damage on an opponent's industrial capacity and less well defended targets, including government administration, objects with economic potential, and energy, transportation, and communication nodes.⁶² Others have noted that the number of nuclear warheads to use for unacceptable damage could also be much lower than it was in the past because of the need to consider secondary and tertiary effects of nuclear weapons.⁶³

In more public debates, prominent experts have made the case that for most political leaders, particularly in the United States, even the loss of a single city would be considered unacceptable.⁶⁴ Still others have depicted an environment in which Russia's SNF will face challenges in assuring retaliation because of the US development of missile defense and other capabilities.⁶⁵ In 2015, some analysts also argued that Russia itself did not have a reliable way to ascertain whether an opponent had inflicted unacceptable damage on its strategic deterrence forces and related critical objects during a conflict.⁶⁶

See Figures 6 and 7 for some depictions of "unacceptable damage" common in Russian military articles that discuss, among other topics, the sufficient levels of Russia's SNF in an evolving military-strategic environment. Figure 6 depicts the evolution of various criteria for retaliatory

at http://rulibs.com/ru_zar/ref_dict/rogozin/0/j10.html; also see *Влияние технологических факторов на параметры угроз национальной и международной безопасности, военных конфликтов и стратегической стабильности* 199-219; Тютюнников, *Военная мысль в терминах и определениях*, 114-116.

⁶² В.Ф. Лата, С.В. Голубчиков, В.К. Новиков, и С.В. Аксенов, "О мерах по повышению эффективности стратегических ядерных сил России для решения задачи сдерживания в условиях развертывания национальной противоракетной обороны США," *Вестник Академии Военных Наук*, no. 4 (2015); Also see Лумпов и Багмет, "К вопросу о ядерном сдерживании"; Е.Б. Волков, "Об основных предпосылках обеспечения мира в современных условиях," *Военная мысль*, no. 12 (2005).

⁶³ *Влияние технологических факторов на параметры угроз национальной и международной безопасности, военных конфликтов и стратегической стабильности*, 213; А.А. Кокошин, "О системе неядерного (предъядерного) сдерживания в оборонной политике России," 2012, <http://viperson.ru/articles/o-sisteme-neyadernogo-pred-yadernogo-sderzhivaniya-v-oboronnoy-politike-rossii>.

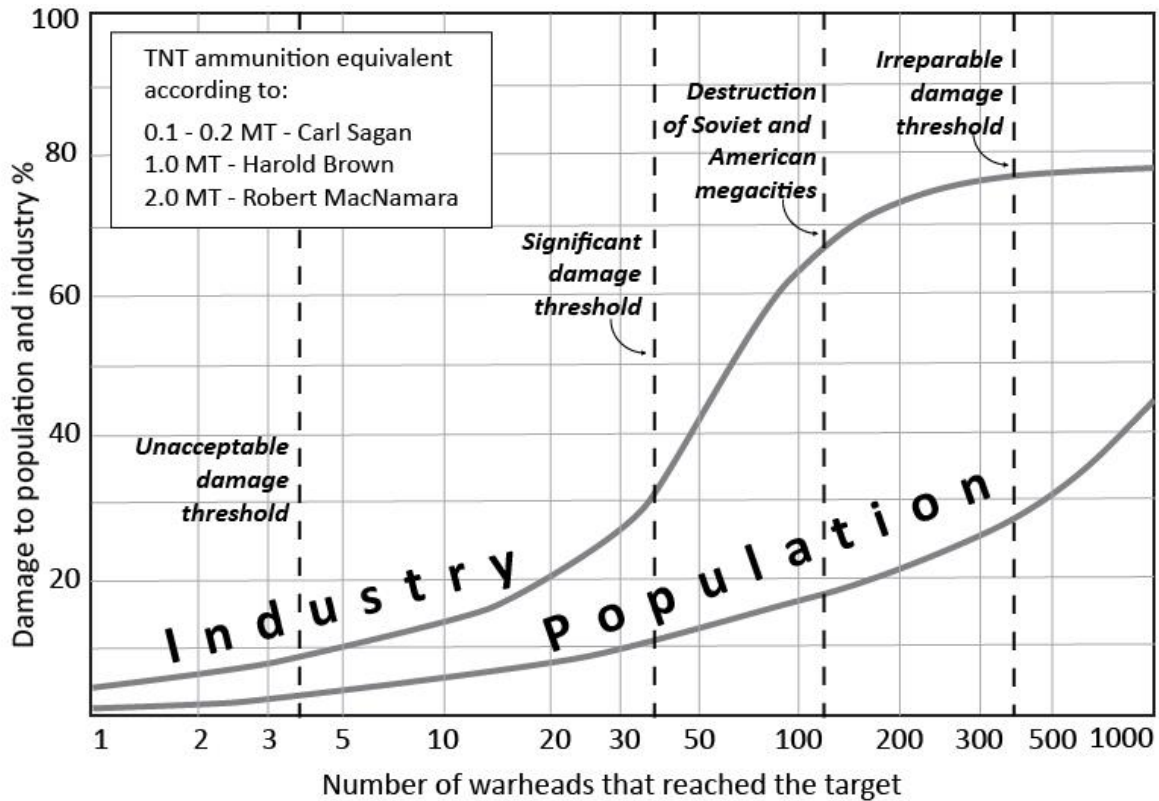
⁶⁴ "Концепция обезоруживающего удара в новую эпоху," круглый стол ПИР Центра, June 14, 2017, <http://www.pircenter.org/media/content/files/14/15003867470.pdf>; Д.Е. Ахмеров, Е.Н. Ахмеров, М.Г. Валеев, "Уязвимость концепции неядерного разоружения стратегических ядерных сил России," *Вестник Академии Военных Наук*, no. 1 (2016).

⁶⁵ В.В. Василенко и А.В. Спренгель, "Особенности поддержания технической основы ядерного сдерживания в условиях договорных ограничений стратегических наступательных вооружений," *Известия РАН*, no. 9 (2019).

⁶⁶ О.Ю. Аксенов, Ю.Н. Третьяков, Е.Н. Филин, "Основные принципы создания системы оценки текущего и прогнозного ущерба важнейшим объектам системы стратегического сдерживания," *Военная мысль*, no. 6 (2015).

strikes. Figure 7 is associated with work that explores levels of damage to a state's economy after a nuclear strike and the time it would take to return to a pre-war state of the economy.⁶⁷

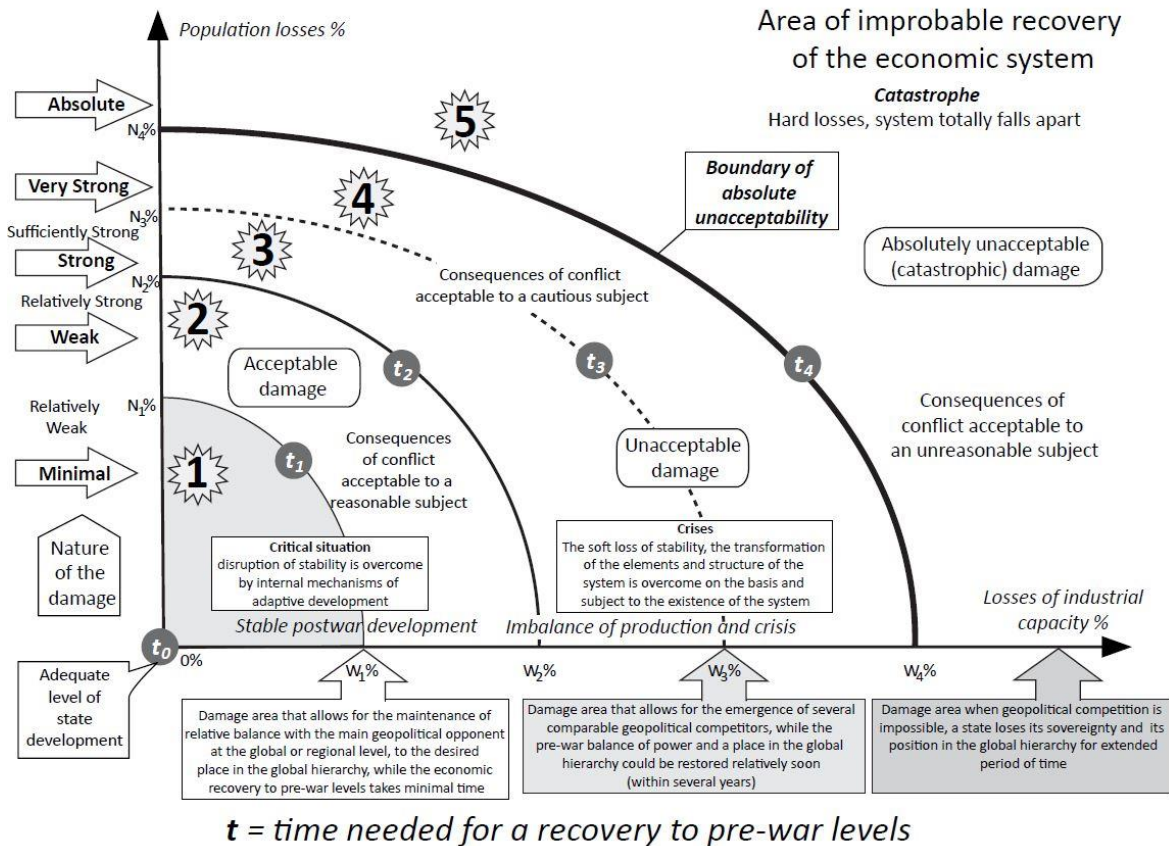
Figure 6. Dependency of the level of damage inflicted on population and industry from the number of warheads, delivered to target



Source: V.F. Lata, S. V. Golubchikov, V. K. Novikov, S, V, Aksenov, "On the measures of raising the effectiveness of strategic nuclear forces of the RF for resolving deterrence tasks in the environment of US deployment of missile defense systems," *Herald of the Academy of Military Sciences*, no. 4 (2015).

⁶⁷ А.В. Радчук, "Методический подход к определению уровней неприемлемого ущерба экономической системе государства," *Военная мысль*, no. 6 (2008).

Figure 7. Possible conditions (in terms of resilience and adaptability) of a state’s economy after nuclear impact



Source: A.V. Radchuk, "Methodological approach to determining levels of unacceptable damage to a state’s economic system," *Military Thought*, no. 6 (2008).

A related concept in Russian military thought is “intolerable (or unallowable) damage,” which has been used sparsely and sometimes interchangeably with “unacceptable damage.”⁶⁸ However, in 2002, one authoritative Russian scholar contrasted the two concepts as follows: “Intolerable damage, in contrast to unacceptable damage (which is determined in advance and

⁶⁸ For interchangeable use, see Лата, Голубчиков, Новиков, и Аксенов, “О мерах по повышению эффективности стратегических ядерных сил России для решения задачи сдерживания в условиях развертывания национальной противоракетной обороны США”; Волков, “Об основных предпосылках обеспечения мира в современных условиях.”

relatively permanent) is not a constant value and depends primarily on the ‘price’ the aggressor wishes to pay to achieve goals in a specific conflict. However, this ‘price’ cannot be greater than the level of unacceptable damage, or a certain determined limit, which touches on vital interests and security of citizens of developed states of the West.” Intolerable damage could be inherently subjective and rely on a certain “civilizational factor” that makes certain actions unacceptable to civil society in an environment of globalization.⁶⁹

The term “**assigned damage**” usually refers to levels of damage “assigned” by the political-military leadership depending on operational or military-planning needs. Russian writings on SNF force structure, as well as military doctrines from the early 1990s, include language on the importance of SNF being able to inflict “assigned damage” on an adversary.⁷⁰ “Assigned damage” levels could be inflicted with any types of weapons, nuclear and conventional alike.⁷¹ In conventional operations, the term is most commonly applied to notions of attrition and loss levels in the opponent’s armed forces and military equipment.

One Russian document from 2003 discussed the concept of “assigned damage” that was envisioned as part of wartime “strategic deterrence” efforts to “de-escalate aggression” against Russia and “halt military actions on terms acceptable” to it. That document defined it as “subjectively unacceptable for adversary damage, which is greater than the benefit that the aggressor wishes to achieve with employment of military force” and envisioned possible “dosed combat employment of select components of strategic deterrent forces.”⁷² By the mid 1990s, across the Russian military-analytical community, some were discussing the need to shift toward more tailored or “deterrent” notions of damage.⁷³

Understanding deterrent damage

The concept of “**deterrent damage**” is important to Russia’s ongoing military-analytical discourse on escalation management. Broadly speaking, this term encompasses the damage

⁶⁹ Цыгичко, “О категории ‘соотношение сил’ в потенциальных военных конфликтах.”

⁷⁰ See, for example, Ярынич и Горбылев, “О роли систем управления в проблеме разоружения”; Лумпов и Багмет, “К вопросу о ядерном сдерживании.”

⁷¹ Хряпин и Афанасьев, “Концептуальные основы стратегического сдерживания.” On conventional applications see, for example, В. Рог, “Стратегическая задача авиации,” *Армейский сборник* no. 7 (2012).

⁷² Министерство обороны Российской Федерации, “Актуальные задачи развития вооруженных сил Российской Федерации,” October 2003.

⁷³ В.К. Потемкин и Ю.В. Морозов, “Военно-стратегическая стабильность XXI века,” *Независимое Военное Обозрение*, no. 27 (1997); С.В. Крейдин, “Глобальное и региональное ядерное сдерживание к системе принципов и критериев,” *Военная Мысль*, no. 4 (1999).

Russian forces seek to inflict as part of countervalue and counterforce operations within the aforementioned escalation management concepts. There is considerable debate today on the scope of damage that this term should cover, but it appears to range from quite limited and reversible effects on the one end, to approaching damage that the opponent would consider unacceptable at the other end of the spectrum. The term differs from “assigned damage” or other damage considerations because of its tailored and adversary-specific nature—i.e., its value is subjective and, as this section will discuss, much of the desired effect is psychological as much as material. No less important is the idea that it is “dosed,” and that calibrated amounts of damage are applied iteratively to the target as opposed to a singular strike. At this stage, the concept is somewhat a moving target relative to other terms.

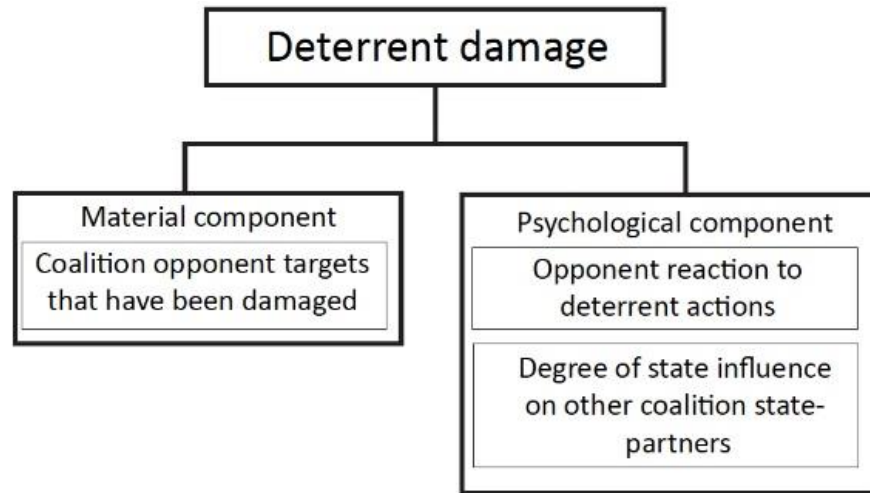
In considering deterrent damage, Russian military thinkers see the deterrence value of nuclear weapons as different from that of conventional weapons based on how the opponent’s leadership and population perceive the likelihood of nuclear weapons being used. Nuclear weapons can only be a credible deterrent if the opponent’s leadership or public believes they are in a situation where nuclear weapons might be used.⁷⁴ In other words, direct threats or use of nuclear weapons for demonstration purposes must fit the context, and cannot simply be employed at any time or in any given conflict scope.

Nuclear weapons carry expectations of incredible coercive power, and are ascribed psychological effects greater than those normally associated with conventional weapons. Given the US superiority in conventional weapons, especially long-range precision-guided munitions, Russian military analysts appear to interpret discussions of reducing the role of and/or eliminating nuclear weapons as an attempt to undermine Russia’s primary means of deterrence. According to this line of thinking, strategic conventional capabilities are not a substitute for nuclear weapons. They instead add force flexibility and options to apply escalation management concepts in a context where nuclear weapons would prove incredible as a threat, overly escalatory, or possibly overkill. These are complementary tools, in managing escalation, though both types of capabilities have warfighting roles beyond the described limited-use-of-force approaches.

In Russian military journals, some analysts have also drawn a distinction between “objective” (material) and “subjective” (psychological) concepts of deterrent damage. In this regard, “material” deals with the actual targets, and “psychological” concerns the effect on the adversary’s will to continue certain actions that the Russian leadership is attempting to deter. This is depicted in Figure 8.

⁷⁴ Тагиров, Печатнов, и Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания.”

Figure 8. Main elements of deterrent damage



Source: V.D. Roldugin, Yu.V. Kolod'ko, "A clarification of the concept of deterrent damage in resolving the tasks of deterrence through the use of force," *Strategic Stability*, no. 4 (2015).

Russian military writing suggests that deterrent damage is meant to inflict cascade effects on the opposing coalition—that is, it would target specific members of a coalition, and select critically important objects of those members to derive the desired psychological impact.⁷⁵ This conversation is continued in the “targeting” section of the report, where further details can be provided on target types, prioritization, and intended effects.

This term “deterrent damage” first appeared in Russian military writings in reference to Cold War efforts by Soviet analysts develop deterrence criteria for SNF. As described in one article, this “deterrent damage” or “Prudnikov criterion” could “operate on the basis of countervalue damage, but not with its absolute unacceptable levels.”⁷⁶ At the time, Russian military analysts

⁷⁵ В.Д Ролдугин и Ю.В.Колодько, “Уточнение понятия сдерживающего ущерба при решении задач силового сдерживания,” *Стратегическая стабильность*, no. 4 (2015).

⁷⁶ В. В. Сухорутченко и С. В. Крейдин, “Актуальные аспекты проблем ядерного сдерживания и достаточности ядерных вооружений,” *Военная мысль*, no. 7 (2004).

appear to have associated “deterrent damage” not only with a conceptual decrease in what constitutes “unacceptable damage,” but also with the “provision of minimally sufficient nuclear potential.”⁷⁷ Russian military writings suggest an evolution of damage ideas also based on the notion that in the first decade of the 2000s Russia, unlike the Soviet Union and the Warsaw Pact, no longer perceived a state of conventional (and potentially nuclear) parity with the US and NATO. In an environment of limited resources, the Russian military could no longer argue that parity of “relative damage levels” (that could be inflicted on one another) could be compared as had been previously done.⁷⁸ In a 2003-2004 issue of *Military Thought*, there was an exchange between analysts about a “threshold” approach to damage assessment for both Russia and its potential opponents as a construct to help drive armed forces’ sizing and requirements.⁷⁹ Some argued that advanced societies could be deterred if Russia found certain levels of damage that were lower than what was commonly understood to be “unacceptable.”⁸⁰ This was the call, in effect, to potentially quantify subjective damage levels.

Viewed from this perspective on damage infliction, Russia’s NSNW could inflict limited amounts of damage on an opponent, potentially preventing escalation to SNF and thus “unacceptable” levels.⁸¹ As one analyst, a key proponent of regional nuclear deterrence, wrote in 2004,

For a lengthy period of time there have been discussions about the necessity of transitioning to more pragmatic levels of damage (like “deterrent damage”), the likelihood of infliction of which could be more highly likely to deter an attack due to the disadvantage to the aggressor of the correlation between losses and ‘gains.’ The transition from ‘unacceptable damage,’ which, as many experts maintain, is too high, toward “deterrent damage” could allow the avoidance of excessive expenses of resources due to the reduction of forces and means necessary to deterrence. But the determination of the level of deterrent damage is a highly complicated and as of yet unresolved military-scientific problem.

⁷⁷ See A.B. Радчук, “Стратегический наступательный потенциал: необходимость и достаточность,” *Военная мысль*, no. 4 (2003); Сухоручченко и Крейдин, “Актуальные аспекты проблем ядерного сдерживания и достаточности ядерных вооружений.”

⁷⁸ В. В. Барвиненко и Ю. И. Мушков, “О достаточности сил и средств для обеспечения военной безопасности страны,” *Военная мысль*, no. 5 (2003).

⁷⁹ *Ibid.*

⁸⁰ *Ibid.*

⁸¹ Сосновский, “О ядерном сдерживании в современных условиях.”

Available assessments are sufficiently subjective, particularly when it comes to guaranteeing results.⁸²

Some have continued to treat the “deterrent damage” concept as more broadly applicable to mass retaliatory employment of SNF that involves, first and foremost, the losses of industry and, in secondary terms, population and time to restoration of the economy to pre-war levels.⁸³ For example, in 2008, analysts of the GS (MA) TsVSI wrote that the “upper bound of deterrent damage [was] ‘unacceptable damage’” and, as a basis of nuclear deterrence, there was a logical chain “fear-inducement (intimidation)—threat of retaliation—consequences (deterrent damage.)”⁸⁴

Russia’s acquisition of nonnuclear means, some analysts argued, would create opportunities for the (credible threat of) infliction of damage to vital interests and vitally important objects while, among other means, raising the nuclear threshold—or, in other words, increasing the duration of the conventional phase of the conflict.⁸⁵ These nonnuclear capabilities also needed to have the ability to “psychologically break the political leadership and the society of the aggressor-state, to make them give up the continuation of military actions.”⁸⁶

Around 2008, the development of precision strike capabilities focused Russian military analysts’ attention on the possibility of their limited use, with conventional or nuclear warheads, for the purposes of strategic deterrence through the use of military force. In this context, the concept of “unacceptable damage,” connected to absolute levels of loss for the state, was judged by analysts from the 46 TsNII as being excessive. They argued that the more appropriate term was “deterrent damage,” potentially defined as “strictly dosed damage, inflicted by nuclear and/or strategic conventional weapons on vitally important infrastructure of the aggressor state.”⁸⁷ These analysts posited that the level of “deterrent damage” inflicted on an adversary could be progressively increased, “depending on the reaction at previous

⁸² Сосновский, “О ядерном сдерживании в современных условиях.”

⁸³ Хряпин и Афанасьев, “Концептуальные основы стратегического сдерживания”; Ахмеров, Ахмеров, и Валеев, “Уязвимость концепции неядерного разоружения стратегических ядерных сил России.”

⁸⁴ Туркин, Оселедько, и Хряпин, “Роль сдерживания как фактора сдерживания агрессии.”

⁸⁵ Буренок и Ачасов, “Неядерное сдерживание”; Василий Буренок, “Военная безопасность России—проблемы и решения,” *Воздушно-космическая оборона*, no. 3 (2008).

⁸⁶ Буренок, “Военная безопасность России—проблемы и решения.”

⁸⁷ Тагиров, Печатнов, и Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания.”

deterrence measures, as well as with the assessment of the level of damage inflicted on every potential aggressor, considering his views on national values, possibilities in defending national interests, and sensitivity of society and individual personalities toward possible losses” until it eventually reached “unacceptable damage.”⁸⁸

They contrasted “deterrent damage” and “unacceptable damage” as follows:

[The] structure and the composition of the deterrence potential should be oriented toward the guaranteed provision of levels of unacceptable damage (in other words, the destruction of the main institutes of the aggressor-state and his population) in retaliatory actions in any conditions of the environment. In this, there is a need to provide for the possibility of sequential, demonstrative, single and group employment of nuclear and nonnuclear means at early stages of interstate conflicts in corresponding conditions of the environment, oriented at the provision of various levels of deterrent damage, the upper bound definition of which is unacceptable damage.⁸⁹

Writings suggest that determining actual levels, or criteria, of deterrent damage was challenging, though **reflexive control** approaches, discussed later in this paper, offered one possible way forward.⁹⁰ Some looked at the possibility of inflicting objective damage to the aggressor-state’s key system (also called “narrow spaces”) and proposed the possibility of developing criteria of subjective damage that had to do with the leadership and population’s perceptions.⁹¹ At the same time, in discussions of operational employment of precision weapons, some wrote that in target selection, planners had been adopting approaches that viewed the target as a node in a complex system and proposed target ranking approaches.⁹²

Russian military writings focus on “deterrent damage” as a concept that describes the level of damage that could be helpful in escalation management. However, its nuances, and specific

⁸⁸ Ibid.

⁸⁹ Ibid.

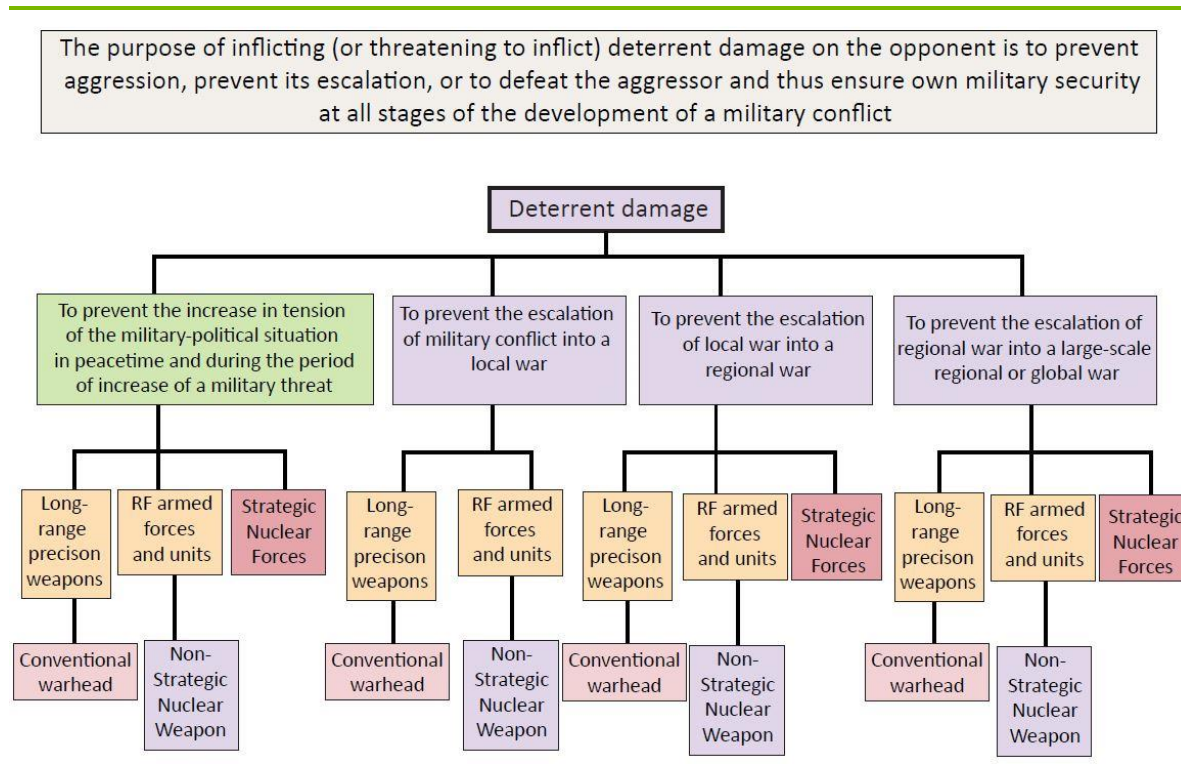
⁹⁰ Тагиров, Печатнов, и Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания”; Мунтяну and Печатнов, “Проблемные методологические вопросы разработки механизма силового стратегического сдерживания.”

⁹¹ Печатнов, “Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником.”

⁹² Сухорутченко, Зельвин, и Соболевский, “Направления исследований боевых возможностей высокоточного оружия большой дальности в обычном снаряжении”; on target ranking see, А.В. Скрыпник, “Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания,” *Вооружение и экономика*, no. 3 (2011); Е.В. Ильинов и В.П. Ярыгин, “К методике ранжирования критически важных объектов противника,” *Вестник Академии Военных Наук*, no. 4 (2012); Н.А. Морозов, “О методологии качественного анализа военно-политических систем,” *Военная мысль*, no. 7 (2014).

definition, continue to be debated. For example, Figure 9 depicts notional deterrent damage and the capabilities involved in its infliction.

Figure 9. A framework for determining deterrent damage in escalation phases of the military-political environment in peacetime and wartime



Source: S.R. Tsyrendorzhiyev, "Methodological approach toward determining the balance of military and nonmilitary measures while resolving the task of strategic deterrence in the prenuclear period," *Armaments and Economics*, no. 4 (2015).

By 2015, the need to be able to inflict “deterrent’ or ‘unacceptable’ damage” became a point of discussion for broader strategic deterrence forces, and not just SNF.⁹³ Some analysts wrote that there was no single decisive definition of deterrent damage across Russian documents and military writings. For example, in contrast to the 46 TsNII’s definition used above, the 2010

⁹³ А.Л. Хряпин, Д.А. Калинин, и В.В. Матвичук, “Стратегическое сдерживание в условиях создания США глобальной системы ПРО и средств глобального удара,” *Военная мысль*, no. 1 (2015).

document *Foundations of Russian Federation Politics in the Nuclear Deterrence Sphere* stated that “deterrent damage is understood as damage that is greater than the benefit which the aggressor expects to receive as a result of using force.”⁹⁴ (Full text of this document is unavailable to the study team as of this writing.)

At that time there appears to have been no scientifically based approach to assessing deterrent damage levels and no basis of how to “dose” deterrent damage. Analysts were working on various damage criteria and some even proposed a new concept, “de-escalation damage,” with regard to subjective damage.⁹⁵ According to another 46 TsNII analyst, “deterrent damage” could be “understood as a minimally-sufficient damage, inflicted on a subject, during which one can achieve the decrease of his abilities to form a military threat to a level, guaranteeing the achievement of RF military security.” For example, during a border conflict with small groupings of forces on both sides, one could prevent a conflict from starting or escalating by striking the most important objects of the other side’s administrative and military command, infrastructure, and material-technical support in the region.⁹⁶ Writings in 2016-2017 suggested that the issue was still unresolved.⁹⁷

⁹⁴ Ролдугин и Колодько, “Уточнение понятия сдерживающего ущерба при решении задач силового сдерживания.”

⁹⁵ Г.Н. Винокуров, “Деэскалационный ущерб как специфическая форма неприемлемости докрупномасштабных этапов военного конфликта,” *Стратегическая стабильность*, no. 4 (2015); Ролдугин и Колодько, “Уточнение понятия сдерживающего ущерба при решении задач силового сдерживания.”

⁹⁶ С.Р. Цырендоржиев, “Методический подход к обоснованию баланса военных и невоенных мер при решении задачи стратегического сдерживания в доядерный период,” *Вооружение и экономика*, no. 4 (2015).

⁹⁷ С.Р. Цырендоржиев, “К вопросу о месте теории стратегического сдерживания в системе военных наук,” *Вооружение и экономика*, no. 2 (2016); Ю.А. Подкорытов, “Метод определения критериальных уровней в фазовом пространстве ущерб среднесуточные потери,” *Стратегическая стабильность*, no. 1 (2017); Е.В. Горгола, В.Л. Гладышевский, и С.Р. Цырендоржиев, “О реалистичной оценке экономических потенциалов субъектов международных отношений в достижении военно-политических целей государства,” *Вооружение и экономика*, no. 3 (2017).

Escalation Management in Practice

This section explores in depth what escalation management looks like in practice, and the levels and types of deterrence involved, along with the scope of conflict in which they are to be applied. Here we consider Russian concepts of regional and global deterrence, along with nuclear and nonnuclear deterrence. As depicted in Table 1 earlier in this paper, Russian military doctrine distinguishes between local, regional, and large-scale (global) conflicts, usually describing the large-scale conflicts as arising from the escalation of a local or regional conflict. Local conflicts between two states become regional with the introduction of outside forces—for example, forces from coalitions or alliances such as NATO. A regional conflict could involve a major power such as the United States in support of a coalition with the potential to escalate into large-scale war. A large-scale (global) conflict is a war between major powers in multiple regions, which, it is implied, could result in strategic nuclear exchange. In turn, military analysts have worked out applications of nuclear and nonnuclear deterrence in these conflicts.

The role of nuclear weapons

The role of nuclear weapons in Russia's strategic deterrence has evolved over several decades, but is concentrated in three categories of thought: global deterrence; regional deterrence; and nuclear threats to induce fear or improve the coercive credibility of nonnuclear weapons. According to a 2005 article by GS (MA) TsVSI analysts, at a "global" level, strategic deterrence is based on a "threat of mass use of strategic conventional and strategic nuclear weapons, the damage from which would be greater than the advantage that the aggressor expects to receive as a result of using military force." At a "regional" level, it is based "on the threat of use of conventional, and, *if needed*, nuclear weapons, primarily nonstrategic in any regional wars, initiated against Russia and its allies"⁹⁸ (emphasis ours).

Earlier Russian writings, discussed in this section, focused much more on the potential limited employment of nuclear weapons during a time when strategic conventional weapons were yet unavailable to Russian military planners. More recently, writing reveals the expectation that nonnuclear weapons will be the primary form of deterrence at the level of local war, and a complementary instrument at the level of regional war, dominating in the early phases of a

⁹⁸ Хряпин и Афанасьев, "Концептуальные основы стратегического сдерживания."

regional-scale conflict.⁹⁹ That is, nuclear weapons have very much come to share the space with strategic nonnuclear weapons at the level of regional nuclear deterrence, with nonnuclear and nuclear forms of deterrence complementing each other, some dominating at particular phases depending on context.¹⁰⁰

Russian military analysts began to debate the limited use of nuclear weapons, particularly operational-tactical nuclear weapons, beginning in the mid 1990s. The debate about the “regional nuclear deterrence” concept took place because of the assessed inadequacy of Russia’s general purpose forces, especially when it came to countering the potential threat of an aerospace adversary (US/NATO airstrikes with precision weapons). Analysts viewed NSNW employment as a way to signal to a would-be opponent the need to halt escalation or terminate a conflict (what would be later understood as “strategic deterrence” goals) or as a means to deny opposing forces’ air and/or naval superiority in the decisive initial period of war. At the time, most of the analysts argued that, once Russia’s own conventional precision strike capabilities were introduced into the armed forces, they would replace some of the missions assigned to NSNW.¹⁰¹

According to reports, researchers from the GS (MA) TsVSI were instrumental in the development of Russia’s policy on NSNW in the 1990s.¹⁰² In their writings, they stressed that limited nuclear use in regional conflict scenarios would be an “extreme” measure to halt aggression against Russia.¹⁰³ NSNW were discussed as tools that could be used primarily to deter or counter an attack, and their preventive (*preventivnyi*) use was described as unacceptable.¹⁰⁴ If “deterrence turned [out] to not be sufficiently effective and the aggression had taken place,” NSNW would be used not just as a means of “inflicting decisive defeat on an

⁹⁹ Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания.”

¹⁰⁰ В. В. Селиванов и Ю. Д. Ильин, “О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах,” *Военная мысль*, no. 7 (2017).

¹⁰¹ For example, Владимир Федорович Сиволоб и Михаил Евгеньевич Сосновский, “Реальность сдерживания,” *Независимое Военное Обозрение*, Oct. 22, 1999; В. В. Круглов и М.Е. Сосновский, “О роли нестратегических ядерных средств в ядерном сдерживании,” *Военная мысль*, no. 6 (1997).

¹⁰² “Центр военно-стратегической мысли,” *Красная звезда*, Jan. 26, 2010, http://old.redstar.ru/2010/01/26_01/2_02.html.

¹⁰³ В.А. Ивасик, А.С. Письякуков, и А.Л.Хряпин, “Ядерное оружие и военная безопасность России,” *Военная мысль*, no. 4 (1999).

¹⁰⁴ Сиволоб и Сосновский, “Реальность сдерживания.”

opponent, but also as a means to de-escalate military actions.”¹⁰⁵ Potential scenarios in which Russia could employ NSNW involved an attack on Russia (or uncovered preparations for such an attack) by an adversary with weapons of mass destruction, strikes by an adversary on Russia’s strategic targets with conventional capabilities, and situations in which Russia’s strategic defenses collapsed during a large-scale incursion on its territory by an adversary.¹⁰⁶ According to these researchers, limited use of NSNW would “eliminate the ‘collapsing’ escalation of nuclear use all the way up to the exchange of mass nuclear strikes, carried out by strategic means.” They wrote that “in this situation, we assume, the most acceptable outcome for an opponent will be a halt to military actions.”¹⁰⁷

On the pages of military journals, analysts such as M.E. Sosnovskiy elaborated a multistep approach to the limited use of NSNW on various adversary targets, with the first phases being demonstrative in nature. The limited nuclear employment would seek to minimize civilian casualties, at least in theory. And, if the use of NSNW failed to achieve desired results in terms of deterring further conflict escalation, Russia could potentially turn to limited use of nuclear weapons “outside of the zones of military action.”¹⁰⁸

As depicted in Table 5, Sosnovskiy and his coauthors’ proposed gradual employment approach acquired more granularity between 1997 and 1999. This time period, associated with the use of US/NATO air assets in the Yugoslav War, was instrumental in the development of Russian military thinking on NSNW. To be sure, the translation of these particular steps into actual Russian planning is debated and difficult to judge from open sources. Also, these writings could have been a part of Russian messaging to Western counterparts.

¹⁰⁵ В.И. Левшин, А.В. Неделин, и М.Е. Сосновский, “О применении ядерного оружия для деэскалации военных действий,” *Военная мысль*, по. 3 (1999).

¹⁰⁶ Круглов и Сосновский, “О роли нестратегических ядерных средств в ядерном сдерживании.”

¹⁰⁶ С.В. Крейдин, “О проблемах глобального и регионального ядерного сдерживания крупномасштабной агрессии,” *Военная мысль*, по. 4 (1998).

¹⁰⁷ Левшин, Неделин, и Сосновский, “О применении ядерного оружия для деэскалации военных действий.”

¹⁰⁸ Круглов и Сосновский, “О роли нестратегических ядерных средств в ядерном сдерживании.” Левшин, Неделин, и Сосновский, “О применении ядерного оружия для деэскалации военных действий.”

Table 5. Evolution of escalation steps in M.E. Sosnovskiy et al.

1997	1999
<p>Low-yield single strikes on opposing forces at operational level to decrease their effectiveness, not causing civilian casualties or significant adversary losses</p>	<p>Demonstration. Single demonstrative nuclear strikes on desert territories (waters), on secondary military targets of adversary with limited or no military personnel</p> <p>Intimidation (Fear inducement)—Demonstration. Single nuclear strikes on transport nodes, engineered structures, and other targets for territorial localization of the area of military actions and/or on separate elements of the opposing forces leading to disrupted control and decreased efficiency of the group engaged in incursion at the operational level and avoiding significant adversary losses</p>
<p>Group strike on main group of opposing forces to liquidate their breakthrough into operational depth of defense</p>	<p>Intimidation (Fear inducement). Group strikes at main group of adversary's forces at one operational direction to change the correlation of forces at this direction and/or liquidate the breakthrough of the adversary into the defense's operational depth</p>
<p>Group strikes on opposing forces in the strategic direction at theater level if the defensive operation at the front is evolving poorly</p>	<p>Intimidation (Fear inducement)—Retaliation. Concentrated strikes in the boundaries of one or neighboring operational directions at groups of adversary forces at the theater of military action during an unfavorable development of a defensive operation to eliminate the threat of defeat of the group of own forces; enact decisive change in the correlation of forces at operational direction(s); liquidate adversary's breakthrough of the defensive boundary of the operational-strategic unit, etc.</p>
<p>Mass strike on opposing forces in the theater of military action and strikes on single targets of military-economic potential, if needed, to destroy opposing forces and shift the military situation into own favor</p>	<p>Retaliation—Intimidation (Fear inducement). Mass strikes at the aggressor's military force grouping in the theater of military action, to defeat it and inflict foundational change on the military environment to one's advantage</p>

1997	1999
<p>Mass strikes on adversary within the boundaries of the whole theater of war with maximum use of all capabilities, coordinated with strategic nuclear forces strikes, if they are being used</p>	<p>Retaliation. Mass strike(s) on the adversary in the boundaries of the whole theater of war (if needed, with the infliction of damage on separate military-economic targets of the aggressor) with maximum use of available forces and means, and in coordination with strategic nuclear forces, if they are being used</p>
	<p>In certain situations, for de-escalation of military actions, there may be a need for single nuclear strike (or salvo of nuclear strikes) on adversary targets that are outside of the zones of direct military action, with the use of operational-tactical nuclear weapons preferable for deterrence at the regional level and the use of operational-strategic or strategic nuclear weapons possible at the global level. For the latter, it is important to seek to eliminate (minimize) population losses and the destruction of nonmilitary targets. The goals of these strikes could be the infliction of damage on military targets, located outside of widely populated regions of the adversary's territory. Therefore, strikes should be inflicted with high precision in order to minimize side effects.</p>

Source: V.V. Kruglov and M.E. Sosnovskiy, "On the role of nonstrategic nuclear means in nuclear deterrence," *Military Thought*, no. 6 (1997); and V.I. Levshin, A.V. Nedelin, and M.E. Sosnovskiy, "On the employment of nuclear weapons for the de-escalation of military actions," *Military Thought*, no. 3 (1999).

An important debate across Russia's military-analytical establishment about regional deterrence was associated with the development of Russia's 2000 military doctrine. The doctrine had been largely developed by the time some Russian military analysts began to discuss the possibility of NSNW and SNF employment in a regional context, particularly in an environment when the United States planned to pursue ballistic missile defense technologies without constraints. For example, in a 2002 article, analysts from GS (MA) TsVSI advocated for the employment of both NSNW and SNF to prevent the escalation of a regional conflict by

“carrying out demonstration and de-escalation strikes [...] with various [presumably, conventional and nuclear] warheads.”¹⁰⁹

Writings of the time reflected growing concerns about the resilience of SNF during an escalating conflict, as well as the challenges of command and control (C2) and the incentives for the integration of strategic and nonstrategic nuclear assets in an operational context.¹¹⁰ In concert with NSNW employment, some analysts viewed SNF as having the ability to “[de-escalate the] regional war through the infliction of preventive [*preventivnykh*] single (group) strikes on the most important military targets and groups of forces of the aggressor through the use of some missile and air-based forces with conventional and nuclear warheads (if the actions of NSNW were unsuccessful).”¹¹¹ That said, by 2010, writings of military analysts from the 46 TsNII suggested that, while the potential of SNF employment could be demonstrated in a regional conflict, their limited use would only come into play in a large-scale conflict.¹¹² This use could be intended, *inter alia*, to control or halt the conflict before it escalated to the mass use of nuclear weapons. This issue of limited SNF employment remains murky.

As part of the “regional nuclear deterrence” debate, there were various views on the length of a nonnuclear period in a conflict with an aerospace adversary. For example, some 27 TsNII analysts advocated early use as part of an “active strategy” of NSNW employment.¹¹³ As evident from a contrast drawn by these analysts between “regional” and “global” (or SNF-based) nuclear deterrence (see Table 6), “regional” deterrence seeks to inflict damage on the military potential of the aggressor, could involve a first strike, takes the form of limited nuclear use, is aimed at largely counterforce targets, and could take place at any stage in the escalation of the aggression.¹¹⁴

¹⁰⁹ Лумпов и Багмет, “К вопросу о ядерном сдерживании.”

¹¹⁰ Сухорутченко и Крейдин, “Актуальные аспекты проблем ядерного сдерживания и достаточности ядерных вооружений.”

¹¹¹ В.В. Василенко, “Актуальные проблемы поддержания стратегической стабильности в условиях развертывания США глобальной системы ПРО,” *Стратегическая стабильность*, no. 1 (2008).

¹¹² Мунтяну и Печатнов, “Проблемные методологические вопросы разработки механизма силового стратегического сдерживания.”

¹¹³ Крейдин, “О проблемах глобального и регионального ядерного сдерживания крупномасштабной агрессии.”

¹¹⁴ Крейдин, “Глобальное и региональное ядерное сдерживание к системе принципов и критериев.”

Table 6. Global and regional nuclear deterrence

Aspects of nuclear threats	Global nuclear deterrence	Regional nuclear deterrence
Goals	Retaliation	Targeting an aggressor's military potential
Forms	Reciprocal nuclear weapons use	First use of nuclear weapons
Scale	Unlimited nuclear weapons use	Limited nuclear weapons use
Targets	Largely countervalue aggressor targets	Largely military targets of the aggressor
Possible implementation timing	At the concluding stages of the aggression	At any stage during the escalation of the aggression

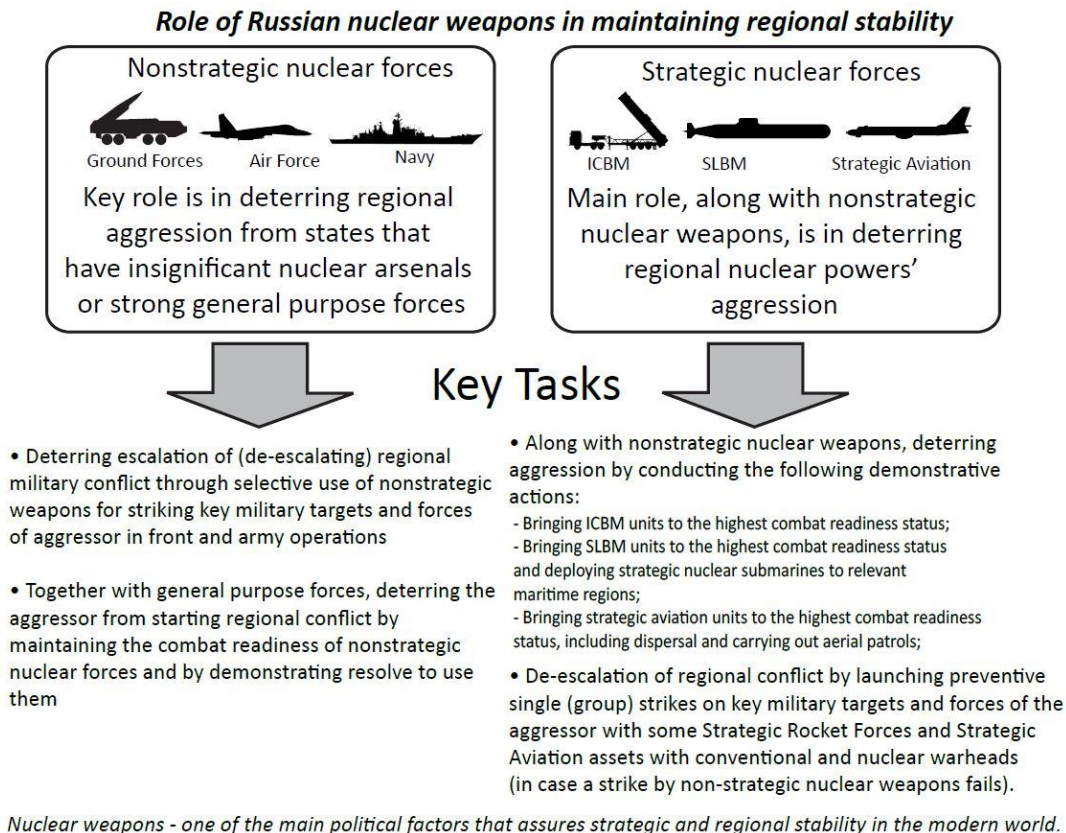
Source: S.V. Kreydin, "Global and regional nuclear deterrence: toward a system of principles and criteria," *Military Thought*, no. 4 (1999).

To be sure, 20 years ago, when Russia's general purpose forces were in a state of disrepair and its nuclear forces had yet to undergo modernization, Russia may have had some version of an "active" strategy proposed by 27 TsNII analysts at the time. However, the discussion suggests a shift of views today based on a positive assessment of the viability of nonnuclear deterrence as a better instrument of early escalation management, seeing preemptive use of nuclear weapons with deep skepticism.

Nuclear weapons remain an important component of Russia's deterrence system, but overdependence on strategic and nonstrategic nuclear weapons appears to have considerably decreased in the last decade, with nuclear use being highly context dependent (and target dependent) rather than being the only tool in the toolkit. According to some analysts, the system of "regional nuclear deterrence" involves escalation to limited use of nuclear weapons, from demonstration strikes (which are possible at any stage in the conflict) to strikes on adversary forces, in regional conflict. Some argue that NSNW, as part of general purpose forces, should "thwart possible offensive operations" (including air operations), prevent an adversary's acquisition of air and sea superiority, and thwart a land invasion by an

adversary.¹¹⁵ Still others outline de-escalatory roles for strategic nuclear forces in regional conflicts.¹¹⁶ This view, from 2008, is depicted in Figure 10.

Figure 10. Role of Russian nuclear weapons in maintaining regional stability



Source: V.V. Vasilenko, "Relevant aspects of maintaining strategic stability in the conditions of US deployment of the global missile defense system," *Strategic Stability*, no. 1 (2008).

In Russian military thought, regional and global nuclear deterrence are interrelated. As some analysts have written, one of the "functions" of SNF could be the "deterrence of conventionally-

¹¹⁵ О.Б. Ачасов и Г.Н. Вылегжанин, "Проблемы обеспечения эффективного решения задач силами общего назначения в современных условиях," *Вооружение и экономика*, no. 1 (2014).

¹¹⁶ Василенко, "Актуальные проблемы поддержания стратегической стабильности в условиях развертывания США глобальной системы ПРО."

superior nuclear states engaged in a conflict from countering with their use of nuclear weapons in response to situationally-determined de-escalatory (demonstrative, limited, mass) use of nonstrategic nuclear weapons.”¹¹⁷ Another function would be to “deter states not participating in the military conflict from interfering in the conflict during Russia's defensive use of NSNW. In case this deterrence fails, and these nuclear states interfere in the conflict, strategic nuclear forces need to be able to perform the function of de-escalation of military actions and carry out a retaliatory strike.”¹¹⁸

In a recent article in *Military Thought*, analysts described this relationship as follows:

The strategy of curbing large-nonnuclear threats [through regional nuclear deterrence] is the superstructure element of the classical mechanism of nuclear deterrence and it works only in the connection with the basis of the effectively-realized strategy of retaliatory action. The superstructure is ineffective without the base. The base strategy of retaliatory action puts a brake on nuclear escalation of aggression. If you take away the foundation, the whole building will lose stability. In addition, a superstructure that isn't solidified by a necessary base, in crisis conditions transforms itself from an instrument of deterrence into its polar opposite and becomes a catalyst of a mutual game of nuclear superiority, where the stimuli of weak and strong sides toward preemptive actions reproduce themselves in a closed circle.¹¹⁹

These theoretical debates about regional nuclear deterrence worked to support NSNW procurement. Military analysts pushed back on US/NATO efforts to bring Russia to the negotiating table on NSNW, arguing that these efforts were a ploy to weaken Russia during a time when US/NATO conventional superiority was bound to persist into the future.¹²⁰ The debates culminated, in effect, in the emergence of a capable NSNW force that could act to resolve strategic deterrence tasks. To be sure, Russia's “global” nuclear deterrence remains based on an overall SNF parity and mutual vulnerability with the United States. However, as one analyst described the posture of Russia's strategic and nonstrategic nuclear weapons, “[It]

¹¹⁷ В.И. Ковалев, “Ядерное оружие и среда безопасности России в XXI веке,” *Стратегическая стабильность*, no. 3 (2014).

¹¹⁸ Ковалев, “Ядерное оружие и среда безопасности России в XXI веке.”

¹¹⁹ Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания.”

¹²⁰ Ачасов и Вылегжанин, “Проблемы обеспечения эффективного решения задач силами общего назначения в современных условиях.”

uses a concept which is based on ideas of mutual assured destruction and limited nuclear war.”¹²¹

Russian military thinkers continue to see no alternative to NSNW and SNF as essential means of escalation management at the regional and global levels, but the point at which they are likely to be used appears to follow the employment of nonnuclear capabilities.¹²² Although analysts representing SNF continue to search for a role in earlier phases of conflict, NSNW seem to dominate thought as an instrument for demonstration, escalation management, and nuclear warfighting at conflict thresholds at or below large-scale war.

Potential triggers for nuclear employment

Russia’s triggers for nuclear first use could include an opponent’s conventional strikes on critical Russian targets (as outlined in the military doctrine¹²³), critical loss levels across forces/key systems in theater, or Russia’s inability to repel an invasion into its interior. Some have described the Russian nuclear threshold as a point when the leadership contemplates whether Russia will exist (“to be or not be”), but this opinion may not be shared widely across the Russian military planning community.¹²⁴ As other analysts have noted, Russia’s nuclear threshold, as declared in the military doctrine, is qualitative and general, and there are insufficient tools to quantify it.¹²⁵

More broadly, the question of triggering events for nuclear use in an escalating conflict is complex: the Russian military views escalation as having periods rather than discrete phases, and see types of war as opposed to phase breakdowns for joint operations. There appear to be two triggers for transition from the period of danger or “threatened period of military conflict” to the actual conflict phases: a massed imminent military threat; and an externally driven political subversion, which, in Russian thinking, is likely to be combined with a credible military threat. Both are qualitative interpretations of the military-political environment,

¹²¹ Печатнов, “Анализ отечественных и зарубежных подходов к формированию концепции и механизма сдерживания от развязывания военной агрессии.”

¹²² Селиванов и Ильин, “О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах”; Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания.”

¹²³ Военная доктрина Российской Федерации, printed in *Rossiyskaya Gazeta*, Dec. 30, 2014, <https://rg.ru/2014/12/30/doktrina-dok.html>.

¹²⁴ Юрий Балуевский, “Новые смыслы военной доктрины,” *Военно-Промышленный Курьер*, Nov. 12, 2014.

¹²⁵ Мунтяну и Печатнов, “Проблемные методологические вопросы разработки механизма силового стратегического сдерживания.”

which Russia's political leadership perceives will mark a transition from the period of danger to the period of imminent threat.

In war, a judgment about the scale of conflict appears to dictate what type of war it is. (For reference, see Table 1 and Figure 3, earlier in this paper.) For example, unsuccessful efforts to "localize" a conflict as a local war could lead to it escalating into a regional war. Regional wars inherently trigger Russian considerations on mass employment of strategic conventional weapons, or select employment of NSNW for attrition of adversary forces. Beyond a conflict's scale, the second primary consideration is level of damage inflicted by the adversary. There are three criteria to consider: damage to Russian economic-military objects that are critically important; damage to forces that are vital for strategic operations (typically consisting of strategic deterrence forces); and damage to the military system's ability to sustain combat operations in the theater of military operations (TVD). The last assumes a large-scale military incursion, as opposed to an aerospace strike.

At some point in the earlier part of the last decade Russian military thinkers had concerns about the potential for the US to conduct a disarming conventional strike against Russian strategic nuclear forces; however, this notion was successfully counterattacked in analytical circles.¹²⁶ The primary concern they settled on is the potential for a massed aerospace strike which could inflict strategic levels of damage against economic, political, or military objects, and substantially degrade the ability of the Russian military to resist in the initial period of war. One consideration is that the US will inherently have a damage limitation strategy, seeking to avoid consequences to its own homeland, and therefore will attempt to end the conflict quickly on its own terms.¹²⁷ Another is that an aerospace strike might not require substantial force deployment to the European theater of military operations (TVD), and therefore would not afford an opportunity to preempt it or interdict such deployment.¹²⁸

As discussed later in this paper, Russia's strategic aerospace operation is one of the primary instruments for "parrying" or deflecting such an attack, and the strategic operation for the destruction of critically important targets is seen as one of the early prospective tools for escalation management.¹²⁹ However, weapons used *en masse* against Russia's critically vital

¹²⁶ Ахмеров, Ахмеров, и Валеев, "Уязвимость концепции неядерного разоружения стратегических ядерных сил России."

¹²⁷ Валеев и Беломытцев, "Сдерживание неопределенностью."

¹²⁸ Маевский, "Концептуальные подходы к формированию пространственно-распределительных систем радиоэлектронной борьбы"; Останков, "Есть ответ и на американские хитрости."

¹²⁹ Ролдугин и Колодько, "Общие положения методики выбора поражаемых комбинаций критически важных объектов противника"; Останков, "Есть ответ и на американские хитрости."

objects—presumably those relevant to the economy, population, or political control— would likely trigger NSNW escalation and/or nuclear retaliation.

The role of strategic conventional (nonnuclear) weapons

Ever since former chief of the Soviet General Staff Marshall Nikolai Ogarkov prophesized the coming “revolution of military affairs,” Soviet and subsequently Russian military writings have been filled with anticipation that the use of conventional precision weapons against critical targets and infrastructure would take on some of the missions of nuclear weapons. By the early 1990s, the Soviet military reportedly even contemplated the potential use of conventional intercontinental ballistic missiles in MIRV configurations.¹³⁰ In turn, the Soviet military paid close attention to the US use of conventional cruise missiles during the Gulf War. Russian military thinking reflects continued adaptation to the “precision revolution,” a process that has been three decades in the making.

In the 1980s, the Soviet General Staff believed that precision would make conventional weapons strategic, eventually shifting nonstrategic nuclear weapons into the role of escalation management or conflict de-escalation. This was driven by a desire to develop an option for independent conventional war—an ability to sustain a conflict with the United States for an extended period of time without necessarily employing nuclear weapons, and the growing perception that conventional weapons would be able to inflict strategic levels of damage (previously considered the domain of nuclear weapons). However, the USSR largely missed out on the precision revolution, and on the information revolution which came to shape Western militaries in the late 1980s and 1990s.

During the 1990s, there was a full-fledged debate among Russian strategists over the role of nuclear weapons. Some argued that a nuclear war could not be won.¹³¹ The work of military analyst Vladimir Slipchenko discussed the potential emergence of “distant, no-contact warfare” with conventional precision weapons that could facilitate the emergence of a post-nuclear era.¹³² Others contended that nuclear weapons could be used without destroying the world, while admitting that conventional precision weapons used against critical targets could create

¹³⁰ Дворкин, “Ядерный психоз крепчает.”

¹³¹ И.Н. Воробьев, “Какие войны грозят нам в будущем веке,” *Военная мысль*, no. 2 (1997).

¹³² В.В. Круглов, “О вооруженной борьбе будущего,” *Военная мысль*, no. 4 (1998).

the perception of potential unacceptable losses for an opponent.¹³³ These debates informed the development of Russia's 2000 military doctrine, which confirmed the inadequacy of Russia's conventional capabilities by elevating the role of nonstrategic nuclear weapons effectively into a "regional nuclear deterrent" role.

In the early 2000s, as military analysts debated the development of the future force, some continued to argue that Russia should de-emphasize nuclear weapons and reallocate efforts and resources to equip its general purpose forces with modern "means of armed struggle," including precision weapons and means of information warfare.¹³⁴ In a 2001 article, longtime military analyst Vitaliy Tsygichko touted the importance of conventional precision strike, writing:

The modern infrastructure of European states is highly vulnerable and only assumptions about possible consequences of the destruction of critically important targets (dams, chemical industry, and nuclear power plants) could halt any combat actions if there was such a threat. In other words, the US and developed European countries in modern times couldn't conduct wars with an opponent capable of inflicting damage on critical targets of industrial infrastructure, because it threatens their whole existence.¹³⁵

Russian military analysts also wrote of the emergence of "distance" wars and the "strike-fire operation" that could include "damage on an opponent with fires, strong electromagnetic and diversionary impact on the forces and most important objects of the opponent's infrastructure."¹³⁶ Still, they believed that while Russia could inflict a significant amount of damage on an opponent with its conventional air-launched cruise missiles, it would have to rely on nuclear weapons for retaliation.¹³⁷

The focus increasingly shifted toward the damage that could be inflicted against one's own, or an opponent's, critical infrastructure with nonnuclear capabilities, well beyond tactical or operational depths. The deterrent derived from ground forces and other tactical formations began to decrease in value as the notion of "distance war"—i.e., the ability of a country with

¹³³ В. М. Захаров, "Ядерное сдерживание в системе военных мер предотвращения войны," *Военная мысль*, no. 2 (1994).

¹³⁴ В.Н. Цыгичко и А.А. Пионтковский, "Возможные вызовы национальной безопасности России в начале XXI века," *Военная мысль*, no. 2 (2001).

¹³⁵ Ibid.

¹³⁶ Тютюнников, *Военная мысль в терминах и определениях*, 268.

¹³⁷ Волков, "Об основных предпосылках обеспечения мира в современных условиях."

standoff capabilities to inflict strategic levels of damage on another country—began to take hold.

During the 1990s, Russian analysts also wrote that Russia needed to increase the role of nonnuclear means in Russia's overall deterrence system because nuclear weapons could not deter or prevent low-intensity conflicts and local wars, which were the most probable types of conflict that the Russian armed forces would face in the future.¹³⁸ Beginning in the early 2000s, their debates shifted to the potential components of the “nonnuclear deterrence” (or “pre-nuclear deterrence”) concept. The intent was to figure out approaches to lengthening the conventional phase of the conflict and improve the ability to signal resolve and threaten consequences in cases where nuclear threats were incredible. Some nonnuclear capabilities were viewed as a way to disorganize an opponent in the initial phases of conflict.¹³⁹ Over the long term, strategic conventional weapons could also help resolve some of the tasks assigned to NSNW in inflicting damage on key offensive force groupings of the opponent.¹⁴⁰

Offensive strategic conventional weapons are typically thought of as long-range precision strike (VTO-BD), directed-energy weapons, and electronic warfare. Defensive capabilities commonly include early warning radar, and aerospace defense components, such as air defense, missile defense, and space defense systems. Offensive strategic conventional weapons are viewed as being ideally suited for coercive purposes. As one article noted, “Their chief aim is to operationally inflict damage of a volume that an adversary would not expect and [a] tendency to increase which would lead [the adversary] to doubt the possibility of achieving the goals of aggression.” These capabilities “are not defensive, but [are] strike weapons of offensive character that are intended to resolve strategic tasks in a ‘distance’ war in the operational and operational-strategic depth of the TVD [theater of military operations] as well as in distant continental areas.”¹⁴¹

Some analysts argue that the ratio of precision fires in modern combat can reach 80 percent of the total munitions used and that both sides can resolve strategic, operational, and tactical

¹³⁸ See, for example, А.Ф. Клименко, “Теоретико-методологические проблемы формирования военной доктрины России. Способы их решения,” *Военная мысль*, no. 3 (1997).

¹³⁹ С.И. Пасичник, “К вопросу о комплексном поражении противника и способах его осуществления при дезорганизации управления,” *Военная мысль*, no. 06 (2017).

¹⁴⁰ О.Б. Ачасов и А.В. Мунтяну, “К вопросу о необходимости расширения военно-технической основы отечественной системы сдерживания,” *Стратегическая стабильность*, no. 1 (2013).

¹⁴¹ Тютюнников, *Военная мысль в терминах и определениях*, 112. From 2015 writings.

tasks through the optimized use of these weapons.¹⁴² Other analysts go even further, arguing that hypersonic weapons could one day make nuclear weapons obsolete.¹⁴³ As it evolved, the concept envisioned the threat of destroying elements of an adversary's infrastructure, C2, and other systems, thereby setting back state development.¹⁴⁴

Russian strategist A.A. Kokoshin had long argued for the development of Russia's nonnuclear deterrence as a complement to nuclear deterrence. He posited that operationalizing this concept was important for the long-term credibility of Russian deterrence.¹⁴⁵ The credibility challenge stemmed from the known effects of nuclear weapons. As one Russian military researcher wrote, "Due to the high costs of nuclear weapons use and, related to it, the great difficulty of the state leadership's decision to use it, the role of nuclear capabilities becomes very problematic as a deterrent at early stages of interstate conflict."¹⁴⁶

Researchers from the 46 TsNII provided perhaps the most comprehensive way to view the nonnuclear deterrence concept. In 2007, they defined it as "a demonstration of readiness [to leadership and their public] to realize the threat of inflicting damage to vitally important interests and targets of the state."¹⁴⁷ Broadly, the system of nonnuclear deterrence was understood to include strike systems (sea- and air-launched cruise missiles and operational-tactical missile complexes), defensive systems, and some capabilities that could shock an opponent ("weapons based on new physical principles").¹⁴⁸ This is depicted in Figure 11.

¹⁴² See И.А. Карпов и А.Е. Гвоздев, "Направления развития высокоточного оружия ракетных войск и артиллерии Сухопутных войск и основные принципы его применения в военных действиях," *Военная мысль*, no. 3 (2011).

¹⁴³ Селиванов и Ильин, "О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах".

¹⁴⁴ Тютюнников, *Военная мысль в терминах и определениях*, 111. From 2007 writings.

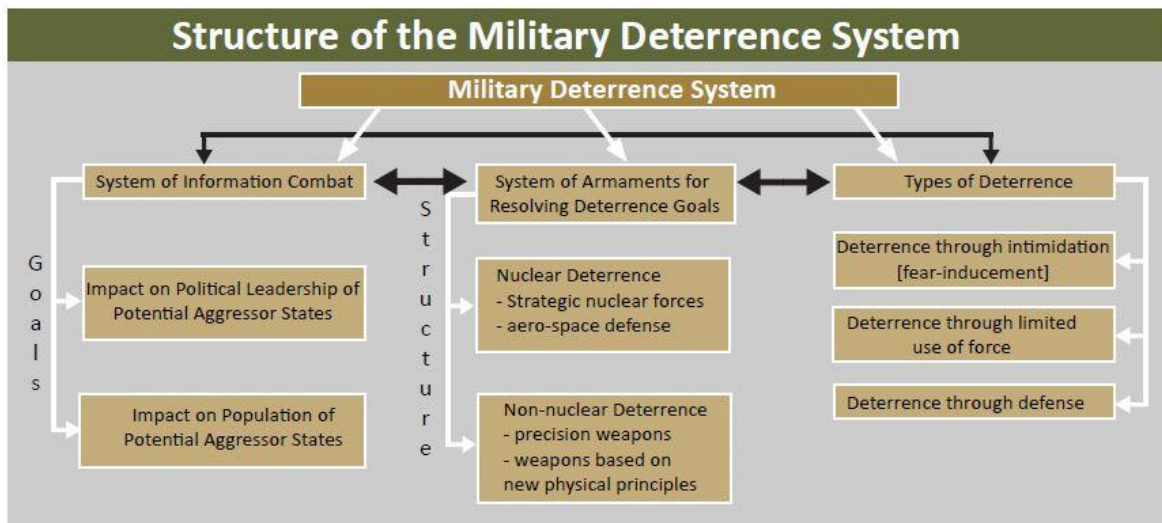
¹⁴⁵ А.А. Кокошин, "Стратегическое ядерное и неядерное сдерживание: приоритеты современной эпохи," *Вестник Российской академии наук* 84, no. 3 (2014).

¹⁴⁶ Печатнов, "Анализ отечественных и зарубежных подходов к формированию концепции и механизма сдерживания от развязывания военной агрессии."

¹⁴⁷ Буренок и Ачасов, "Неядерное сдерживание."

¹⁴⁸ Ibid. Also see В.А. Удалов, "Проблемные вопросы развития разнородных сил и средств в интересах реализации механизма неядерного стратегического сдерживания. Предложения по их реализации," *Вестник Академии Военных Наук*, no. 4 (2003).

Figure 11. Structure of the military deterrence system



Source: V.M. Burenok, "Russia's military security—challenges and solutions," *Vozdusho-Kosmicheskaya Oborona*, no. 3 (2008).

According to 46 TsNII analysts, nonnuclear deterrence could work through several conceptual mechanisms: deterrence through intimidation (fear inducement), deterrence by force demonstration, and deterrence by defense. They argued that the most viable approaches for Russia were the first two options, while the third one (alone) was cost-prohibitive for Russia.

The credibility of nonnuclear deterrence signaling was viewed as being buttressed by the ability to signal an impending transition to nuclear use. As Kokoshin wrote, nonnuclear deterrence needed to be "properly 'furnished' politically as the act of final warning during the war that precedes the selective use of relatively low-power nuclear weapons."¹⁴⁹ And, according to 46 TsNII analysts, "If nonnuclear means [were] unable to deter [the opponent] from initiation of or continuation of aggression, then the transition to the use of nuclear weapons [would be] lawful and unavoidable."¹⁵⁰

Today, Russian military thinkers believe that strategic conventional capabilities give Russia the flexibility to inflict a specific or tailored amount of damage on various structural elements

¹⁴⁹ Кокошин, "Стратегическое ядерное и неядерное сдерживание: приоритеты современной эпохи."

¹⁵⁰ Буренок и Ачасов, "Неядерное Сдерживание."

of an adversary, critically important objects that underpin their military and economic systems, in order to achieve a level of strategic deterrence. As they became available, conventional weapons proved more attractive as a means by which to inflict this type of deterrent damage against an adversary, particularly in conflicts short of large-scale war.

These conclusions are the logical evolution of earlier views that nuclear weapons were ill suited to deterring several types of conflict, and that their best purpose was intrawar deterrence in high-intensity conventional conflicts.¹⁵¹ Among some experts, expectations run high that nonnuclear weapons can form a “system of nonnuclear deterrence,” especially once hypersonic weapons come online, and that nuclear weapons will move further into the background in terms of relevance.¹⁵² Certainly nuclear weapons have been displaced in local war, and are apparently being pushed out of their role in early phases of regional war.¹⁵³

To be sure, the nonnuclear deterrence concept has not been without critics. For example, some analysts from the 4 TsNII have criticized the desire to increase reliance on precision strike capabilities, arguing that those capabilities are not as cost-effective as nuclear weapons and are less credible than preventive nuclear threats in regional conflicts.¹⁵⁴ NSNW in particular are often commended as an asymmetric tool from the standpoint of competitive strategy. Furthermore, those who work at Strategic Rocket Forces research centers naturally continue to search for a role for Russia’s SNF in strategic operations and earlier phases of conflict.¹⁵⁵

With regard to targets for strategic conventional systems, Kokoshin proposed the possible signaling with limited use of strategic conventional weapons on important military targets (such as intelligence and command-and-control centers). He hypothesized that, in continuing stages of this “pre-nuclear” phase, one could also strike civilian infrastructure, but not nuclear power plants, in an effort to minimize civilian losses.¹⁵⁶ He also noted that nonnuclear deterrence could include kinetic strikes on space assets. Other analysts have cautioned against

¹⁵¹ Туркин, Оселедько, Хряпин, “Роль сдерживания как фактора сдерживания агрессии.”

¹⁵² Селиванов и Ильин, “О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах.”

¹⁵³ Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания.”

¹⁵⁴ В.И. Полегаев, “Неядерное стратегическое сдерживание: мифы и реальность,” *Стратегическая стабильность*, no. 1 (2008).

¹⁵⁵ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника.”

¹⁵⁶ Кокошин, “Стратегическое ядерное и неядерное сдерживание: приоритеты современной эпохи.”

the use of force on civilian targets. As an analyst from the 46 TsNII has written, “Even small civilian losses, which would accompany the strikes with nonnuclear means of strategic deterrence, need to be deeply thought through in terms of necessity and timeliness of the use of such means.”¹⁵⁷

Some have written that nonnuclear deterrence could potentially be more flexible and effective because tasks could be implemented not from the center (like nuclear deterrence) but from regional commands at strategic directions.¹⁵⁸ Russian forces are echeloned under joint strategic commands (OSK), fielding units in a particular “strategic direction,” which represents a functionally delineated theater of military operations. For example, each military district is a joint strategic command as a wartime command whose job is to take in and field forces along a strategic direction or vector. The argument is essentially whether control over nonnuclear deterrence should lie at the top with the General Staff, or whether the mission is best implemented at the level of the joint strategic command.

Strategic operations

The Russian military, like the Soviet military before it, employs the construct of “strategic operations” which are best thought of as joint operational concepts. Such operations evolve in accordance with force development, and ideas about the changing character of war, they are splintered, combined, and reorganized depending on the need and the salient military thinking at the time.¹⁵⁹ Strategic operations bring different services and combat arms together in order to attain strategic effects in combat, and most importantly to make a strategic impact on the adversary’s ability or will to sustain the war. Although strategic operations are very much about warfighting, they form an essential element in Russian stratagems to manage escalation.

¹⁵⁷ С.Р. Цырндоржиев, “О количественной оценке степени военной безопасности,” *Военная мысль*, no. 10 (2014).

¹⁵⁸ “Ответ на глобальный удар может быть неядерным, но умиротворяющим,” *Военно-Промышленный Курьер*, Dec. 17, 2014.

¹⁵⁹ See definitions of strategic operations in Энциклопедия Министерства Обороны РФ, “Стратегическая операция,” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=14374@morfDictionary> and “Стратегическая операция,” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=10378@morfDictionary>. Also see “Операций стратегических ВС Система,” in Рогозин, *Война и мир в терминах и определениях*, http://rulibs.com/ru_zar/ref_dict/rogozin/0/j4.html; М.А. Гареев, “Характер современных военных и невоенных угроз безопасности России и организация обороны страны,” *Вестник академии военных наук*, no. 4 (2013).

According to Russian military writings, the Russian military plans to employ strategic deterrence capabilities in the following strategic operations:

- Strategic aerospace operation (SVKO)
- Strategic operation for the destruction of critically important enemy targets (SOKVO)
- Strategic nuclear forces operation (SOYaS)
- Strategic operation in a theater of military operations (SOTVD)¹⁶⁰

At the heart of the **strategic aerospace operation** is the Russian military concern that U.S. forces could conduct a massed aerospace attack against Russian forces, or critically important infrastructure.¹⁶¹ An operation for the deflection of aerospace attack appears to be a defensive component of this strategic aerospace operation, with offensive and defensive components. This strategic operation has been described in the Ministry of Defense dictionary as an operation in which the aerospace and other forces:

Counter (deflect) an aerospace attack of an adversary; achieve dominance in the air and strategic space zone; inflict damage on opponent aerospace forces and means in the aerospace sphere, on land (and at sea); defend main points of state and military command, objects of economic, infrastructure of state and force groupings; disrupt state and military command of the opponent; thwart strategic operation and operational deployment of forces; halt the interdicting maneuver between theaters of operation; decrease of military and economic potential. Strategic aerospace operation includes: air operations; combat actions of long-range aviation with the use of conventional means of damage infliction; combat actions of forces in countering aerospace attack and damage

¹⁶⁰ А.А. Протасов, В.А. Соболевский, В.В. Сухорутченко, и А.С. Борисенко, “Методическое обеспечение выработки замысла применения ВТО большой дальности в операциях (боевых действиях),” *Военная мысль*, no. 10 (2011).

¹⁶¹ В.В. Кругликов, Н.П. Шеховцов, и С.В. Кругликов, “Способы и пути борьбы с высокоточными средствами поражения,” *Стратегическая стабильность*, no. 4 (2009); И.Г. Быстрова, В.В. Кретинин, и Н.И. Шенцев, “Электромагнитные боеприпасы противовоздушной обороны,” *Стратегическая стабильность*, no. 2 (2010); В.В. Карякин, “Воздушно-космическо-морская операция—поколение войн высоких технологий,” *Стратегическая стабильность*, no. 1 (2013); О.Б. Ачасов и А.И. Буравлёв, “Аналитическая модель оцени эффективности воздушно-космической обороны в условиях глобального удара высокоточным оружием,” *Вооружение и экономика*, no. 2. (2014); В.В. Андреев, Ю.Л. Козирацкий, А.Т. Албузов, и А.В. Иванцов, “Модель процесса нанесения внезапного массированного удара средствами воздушного нападения,” *Вестник академии военных наук*, no. 1 (2017).

infliction of the adversary on other directions, information-surveillance-reconnaissance (support) and combat actions of other units...¹⁶²

Another operation, SOKVO (often translated as the **strategic operation for the destruction of critically important enemy targets** or SODCIT), serves as a scalable mechanism by which Russian forces can deliver damage via nonnuclear and nuclear means. This operation is described by some Russian analysts as follows:

The purpose of SOKVO is the creation of conditions to counter threats and prevent aggression and, in the case of the beginning of military action, the infliction on the adversary (the coalition) of damage, during which they would give up the continuation (escalation) on conditions beneficial to Russia. The infliction of necessary damage to the adversary could be achieved through damaging key targets of military and military-economic potential of the adversary to a level, the achievement of which the adversary could discontinue (the escalation of) military actions.¹⁶³

Russian military analysts note that SODCIT targets should be selected in a way that does not cause significant civilian casualties, “[does not] lead to an ecological disaster, and does not provoke further escalation.”¹⁶⁴ Russian thinking here is keen to avert inadvertent escalation, or the strengthening of political resolve that comes from civilian casualties. The possibility of secondary or synergistic effects, which could result in unacceptable levels of damage, weighs heavily as a consideration. Here target selection and warhead selection are relevant factors.

Russian military analytical institutes have developed software packages to plan the use of precision fires.¹⁶⁵ According to some writings, SODCIT targets could include “military objects,

¹⁶² Энциклопедия Министерства Обороны РФ, “Стратегическая воздушно-космическая операция,” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=10372@morfDictionary>; Тютюнников, *Военная мысль в терминах и определениях*, 265. This description is from 2005.

¹⁶³ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника”; Also see Печатнов, “Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания.” Some analysts also write that in extreme conditions, strategic conventional weapons could be used at initial phases of operation of strategic deterrence forces to counter the threat of the escalation of conventional military conflict into a nuclear conflict and to compel the adversary to de-escalate and halt combat. Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания”; Also see Протасов, Соболевский, Сухорутченко, и Борисенко, “Методическое обеспечение выработки замысла применения ВТО большой дальности в операциях (боевых действиях).”

¹⁶⁴ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника.”

¹⁶⁵ Сухорутченко, Зельвин, и Соболевский, “Направления исследований боевых возможностей высокоточного оружия большой дальности в обычном снаряжении.”; Протасов, Соболевский,

objects of the system of command of state, armed forces, and force groupings; ISR and communications centers, key objects of economics, infrastructure and quality of life (including nonnuclear power plants, defense industry, civilian airpower, rail and road bridges, and ports), objects of communal infrastructure, and objects of mass public information.”¹⁶⁶

The Russian Ministry of Defense dictionary discusses a **strategic nuclear forces operation** (SOYaS) as being aimed at “de-escalation (halt) of aggression, initiated against Russia and its allied states and the destruction of the aggressor, who has employed or is ready to employ nuclear other types of WMD on Russia.”¹⁶⁷ They note that its scale depends on the nature of conflict and further continue:

The operation carries a global character, and reaches to all of several strategic aerospace directions, could be carried out at the intercontinental range. It will likely take place for 3-5 days or more. The foundation of the operation is a first massive nuclear strike by strategic nuclear forces as well as first mass nuclear strikes of strategic units at the theater of military actions (strategic direction), inflicted by all or most of available means. Subsequent nuclear strikes in the context of SOYaS are carried out by the order of the commander in chief as the environment is ascertained, the results of the nuclear strike are assessed, and nuclear forces return to combat readiness. SOYaS includes: nuclear strikes and military actions of SNF; nuclear strikes and military actions of units, which have nonstrategic nuclear weapons that are based in the land, air, and sea, including the employment of nuclear mines by engineering forces, as well as the actions of Space Forces and other forces...”

Other sources describe the operation as “in a global scale or at a certain theater of conflict, could begin from a mass nuclear strike or initial select strikes by limited means in selected regions (zones).” The operation is intended to destroy political, industrial, and military targets takes advantage of both primary and secondary explosive factors and has catastrophic consequences. They note that this operation could lead to a global ecological disaster and a

Сухорутченко, и Борисенко, “Методическое обеспечение выработки замысла применения ВТО большой дальности в операциях (боевых действиях).”

¹⁶⁶ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника.”

¹⁶⁷ Энциклопедия Министерства обороны РФ, “Стратегическая операция ядерных сил (СОЯС),” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=14375@morfDictionary>; Энциклопедия Министерства обороны РФ, “Стратегическое применение РВЧН,” undated, <http://dictionary.mil.ru/dictionary/Terminy-RVSN/item/141806/>.

“nuclear winter” effect.¹⁶⁸ It appears to be the operation governing scalable nuclear employment and retaliation.¹⁶⁹

In terms of other strategic operations, Russian military writings also reference several informal or general strategic operations in specific contexts: geographical and functional, for example the **strategic operation in the continental theater of military operations (TVD)** versus the ocean TVD.¹⁷⁰ More broadly, the aforementioned four strategic operations seem to overlap in practice. For example, Russian analysts also discuss actions with strategic conventional weapons that would compel an adversary to make peace and that are carried out at the same time as countering an aerospace attack.¹⁷¹ Some also propose more active participation by aerospace forces in SODCIT.¹⁷² Others advocate for the use of RVSН assets in SODCIT with both single and MIRV’ed warheads and with nuclear and conventional warheads alike.¹⁷³ In turn, the Ministry of Defense dictionary notes that RVSН assets could be used in the strategic aerospace operation and the strategic operation in a theater of military operations, and both of those operations could involve precision weapons with either conventional or nuclear warheads.¹⁷⁴

Strategic operations remain a moving target in terms of proposals and conceptualization, a number are referenced commonly indicating that they have been formally adopted i.e. they are discussed as discrete operations that exist, while others are perhaps contemplated for the future and remain under development. For example, Russian analysts discuss prospective strategic operations that merge other operations conceptually, like a **strategic deterrence**

¹⁶⁸ Рогозин, *Война и мир в терминах и определениях*, http://rulibs.com/ru_zar/ref_dict/rogozin/0/j4.html.

¹⁶⁹ Энциклопедия Министерства Обороны РФ notes both first strikes and retaliatory SNF strikes. See Энциклопедия Министерства Обороны РФ, “Эффективность ракетно-ядерного удара,” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=13875@morfDictionary> and Энциклопедия Министерства Обороны РФ, “Ядерный удар,” undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=13814@morfDictionary>; Энциклопедия Министерства Обороны РФ, “Ведение боевых действий частями и соединениями РВСН,” undated, <http://dictionary.mil.ru/dictionary/Terminy-RVSN/item/141587/>.

¹⁷⁰ Рогозин, *Война и мир в терминах и определениях*, http://rulibs.com/ru_zar/ref_dict/rogozin/0/j4.html.

¹⁷¹ Тютюнников, *Военная мысль в терминах и определениях*, vol.1, 114, 265.

¹⁷² Андрей Гончаров, “В перспективе-противокосмическая операция,” *Воздушно-космическая оборона*, no. 3 (2014).

¹⁷³ Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника.”

¹⁷⁴ Энциклопедия Министерства Обороны РФ, “Стратегическое применение РВСН,” undated, <http://dictionary.mil.ru/dictionary/Terminy-RVSN/item/141806/>.

forces operation and a **strategic operation of general purpose forces**. From their standpoint a further reduction is desirable, while perhaps adding others such as a strategic space operation.¹⁷⁵ Some analysts also argue for the importance of the information dimension, even positing the possibility of a strategic operation at the theater of information combat.¹⁷⁶

Writings in Russian military articles suggest a shift toward the operational integration of conventional and nuclear forces. Before the advent of strategic conventional systems, integration involved the potential use of NSNW and SNF in strategic operations, with NSNW focused particularly on an opponent's missile defense infrastructure. Since 2011, there has been a trend toward discussing integrated employment of conventional and nuclear precision strike systems in an operational context. In a recent article in the journal *Military Thought*, for example, analysts from the 27 TsNII described the current components of Russia's "strategic deterrence" system as potentially trending toward the following state of operational integration:

- "Strategic nuclear forces (SNF) with the support of nonstrategic nuclear weapons (NSNW) and strategic conventional weapons provide global nuclear deterrence based on the effective retaliatory potential of strategic nuclear forces in any conditions of the strategic environment.
- "Nuclear weapons (SNF and NSNW) working together with strategic conventional weapons play the role of deterrence, de-escalation, and curb of large [regional] nonnuclear threats, including those from a coalition.
- "Strategic conventional weapons complement the nuclear deterrence mechanism, contribute to the achievement of goals of [thwarting] local nonnuclear threats to military security and support the impossibility of a [downward] crawl of the nuclear threshold into the sphere of local wars and armed conflicts."¹⁷⁷

¹⁷⁵ Стерлин, Протасов, и Крейдин, "Современные трансформации концепций и силовых инструментов стратегического сдерживания"; Рогозин, *Война и мир в терминах и определениях*, http://rulibs.com/ru_zar/ref_dict/rogozin/0/j4.html.

¹⁷⁶ С.А. Модестов, "Стратегическое сдерживание на театре информационного противоборства," *Стратегическая стабильность*, no. 1 (2009).

¹⁷⁷ Стерлин, Протасов, и Крейдин, "Современные трансформации концепций и силовых инструментов стратегического сдерживания."

The prospective **strategic operation of strategic deterrence forces**, noted above, is a prime example of potential conventional-nuclear integration. One unofficial military dictionary defines it as:

A prospective type of strategic actions of armed forces using strategic strike capabilities with conventional warheads, as well as a strictly limited number of strategic nuclear strikes to inflict unacceptable damage on the aggressor and deter him from dangerous actions. Could be carried out by a small component of forces to warn and thwart preparations for a readying attack in the form of demonstrating strategic might or through the full-scale use of all means in case of the beginning of aggression. [...] The system of this operation in perspective could employ nuclear means with limited explosive yield as well as conventional precision weapons of various basing types, as well as strategic reconnaissance-strike systems.¹⁷⁸

When considering conflict thresholds escalating from large-scale war to nuclear war, some Russian analysts also write of the need to learn from the US experience of integrating strategic offensive and defensive operations. The deployment of US missile defenses also weighs heavily on the minds of Russian planners in considering the likely utility and effectiveness of their own strategic nuclear forces as part of such operations. As the same analysts from the 27th TsNII write, “these particulars need to be considered, including when improving the methodological approach to assessing the effectiveness of retaliatory actions of SNF in the conditions of the development of US global missile defense and prompt global strike.”¹⁷⁹ There is perhaps a misperception here, in that while it may be presumed missile defense is not a threat to Russian strategic capabilities, nuclear and nonnuclear, from the standpoint of a direct exchange, they are very much considered as a factor when looking at limited employment in theater. Considering that escalation management approaches utilize calibrated force, single and grouped strikes, including proposals to integrate strategic nuclear forces into that mix, theater missile defense is a fixation for Russian military strategists for understandable reasons.

Strategic operations remain the principal vehicle for executing Russian military plans to manage escalation, whether demonstrative strikes with nonnuclear weapons, grouped strikes against critically important infrastructure, or the employment of nuclear weapons. Such operations inflict scalable damage, and in particular are the vehicle by which ‘deterrent damage’ is dosed against the adversary. They are also warfighting concepts, offensive and defensive components of the strategic aerospace operation are intended to deflect and suppress a large scale U.S./NATO aerospace assault, while other forces inflict assigned damage

¹⁷⁸ Рогозин, *Война и мир в терминах и определениях*, http://rulibs.com/ru_zar/ref_dict/rogozin/0/j4.html.

¹⁷⁹ Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания.”

such that the military campaign can no longer be sustained in theater. The ability of these forces to carry out strategic operations, that is their viability to succeed in a strategic aerospace operation or SODCIT, may constitute one of the criteria Russian military science uses to determine whether or not to escalate to nuclear use.

Evolution of views on targeting

Precision-guided weapons—together with new means of intelligence, surveillance, target acquisition, and reconnaissance—have afforded the Russian military the ability to target key elements of an adversary’s critical infrastructure. The emphasis is placed on targets whose destruction has the potential to create cascading effects on the system as a whole. The ultimate point of using conventional weapons against particular types of critical targets is to affect escalation management, creating a specific level of psychological coercion that will convince an adversary of the futility of further conflict, given any continued or potential escalation in damage. Of course targets may, and likely will, include those that have both a deterrent effect and practical military value should the conflict continue; that is, there are targets which may be considered dual purpose.

Military writings generally divide targets based on their strategic significance and collateral effects. For example, “vitaly important objects” are understood to be targets the damage to which leads to significant economic losses and population loss (such as hazardous industries, hydrocarbon facilities, and hydro and nuclear power plants).¹⁸⁰ These targets could be engaged, or threatened, for the purposes of intimidation (fear inducement) to convince an adversary of the unacceptable costs of continuing a conflict with Russia.¹⁸¹ In contrast to vitaly important targets, “targets of significant value” are military-economic targets the damage to which can create significant economic losses, affecting the livelihood of the population and military command and control, but which will not lead to a significant loss of life (these include satellite systems, power stations, electrical substations, and others).¹⁸²

¹⁸⁰ Буренок, “Военная безопасность России—проблемы и решения”; Ролдугин и Колодько, “Общие положения методики выбора поражаемых комбинаций критически важных объектов противника”; Селиванов и Ильин, “О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах.”

¹⁸¹ Буренок, “Военная безопасность России—проблемы и решения.”

¹⁸² Стерлин, Протасов, и Крейдин, “Современные трансформации концепций и силовых инструментов стратегического сдерживания”; Буренок, “Военная безопасность России—проблемы и решения.”

Targets of significant value are commonly referenced as “**critically important objects.**” Critically important military objects have been described as “a key element of critical infrastructure or the grouping of forces, the damage of which could significantly lower the military and military-economic potential of the state and the combat potential of the force grouping” or an “element of the critical interrelation of the objects of the system.” In the latter case, damage could make the system (military or economic) critical and lead to loss of system principles and functioning.¹⁸³ In short, vitally important objects are better for deterrence via fear inducement, involving demonstrative actions.

Critically important objects are selected for actual application of deterrent damage, within the framework of strategic deterrence through use of military force. Russian military analysts developed an appreciation for the vulnerability of critical infrastructure to nonnuclear attacks in the first decade of the 2000s. For example, a 2006 Russian Academy of Sciences study argued that “conducting large-scale military conflicts with conventional and/or mass use of nuclear weapons is becoming pointless because the consequences of destroying infrastructure nodes (even singular) could lead to unexpected consequences.” As examples, the study discussed the potential implications of damaging critical infrastructure such as nuclear power plants or hydroelectric plants.¹⁸⁴

In 2009, Russian military analysts described research that showed the importance of finding key nodes (or, as others have called them, “narrow spaces” or “keystones” of key systems) of elements of the opponent’s industrial systems that could serve as targets for conventional precision strike.¹⁸⁵ A 2010 article discussed the need for greater intelligence on target sets and further work on ranking targets.¹⁸⁶ By 2011, military researchers were developing frameworks

¹⁸³ Тютюнников, *Военная мысль в терминах и определениях*, 301-302.

¹⁸⁴ В. Н. Цыгичко, Г. Л. Смолян, и Д. С. Черешкин, *Обеспечение безопасности критических инфраструктур в США*, ИСА РАН, 2006.

¹⁸⁵ “The directed (pointed) infliction of damage (destruction) by precision weapons means of various (and limited) parts of the most important (key) elements of resource-producing macroindustries of the state could lead to noticeable and continually manifesting deformation of the industrial system while excluding unplanned, excessive losses of other objects and population of states participating in armed conflicts. The achievement of a similar effect in reducing macroeconomic indicators through the use of nuclear weapons would lead to large-scale excessive losses of material and labor resources (populations) of states participating in armed conflict, which could lead to further destructive escalation of the armed conflict.” See Сухорутченко, Зельвин, и Соболевский, “Направления исследований боевых возможностей высокоточного оружия большой дальности в обычном снаряжении.”

¹⁸⁶ Мунтяну и Печатнов, “Проблемные методологические вопросы разработки механизма силового стратегического сдерживания.”

of critically important military, civilian, and economic targets and ranking them.¹⁸⁷ Some argued for targeting objects specific to the adversary's decision-making community (such as summer homes or assets), or targets that guarantee a high quality of life and spiritual development for the population, with limited conventional precision strike systems as part of "strategic deterrence through the use of force."¹⁸⁸

Although different articles have different lists, they appear to overlap considerably. Political, economic, and military-related targets often include nonnuclear power plants, administrative centers (political), civilian airports, roads and rail bridges, ports, key economic objects related to livelihood, important components of the defense-industrial complex, and sources of mass media and information. Military targets tend to include command and control centers; space-based assets; key communication nodes; systems for reconnaissance, targeting, navigation, and information processing; and targets where means of delivery for ballistic or cruise missiles are based.¹⁸⁹

These "strategic" targets are not to be confused with operational-level targets as determined by Russian general purpose forces in combat, which are warfighting determinations. At the tactical-operational level, the importance of a target is determined by its relevance to combat operations and the perceived threat derived from it, which is context based. In this sense, experts define a "critically important object" as one that will make combat operations, particularly offensives, difficult to sustain.¹⁹⁰ Consideration is also based on the extent to which their destruction degrades offensive potential, firepower, and the efficacy of the opponent's kill chain.¹⁹¹ From a military perspective, such targets are assigned levels of damage, classified as defeat (50-60% destruction), suppression (30-35% destruction), weakening (10-15%

¹⁸⁷ Ильинов и Ярыгин, "К вопросу о методике ранжирования критически важных объектов противника."

¹⁸⁸ Скрыпник, "Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания"

¹⁸⁹ Стерлин, Протасов, и Крейдин, "Современные трансформации концепций и силовых инструментов стратегического сдерживания"; Селиванов и Ильин, "О выборе приоритетов при разработке кинетического оружия для решения задач в военных конфликтах"; Ролдугин и Колодько, "Общие положения методики выбора поражаемых комбинаций критически важных объектов противника."

¹⁹⁰ В. Литвиненко "Цели для артиллерии," *Армейский сборник* no. 4 (2019).

¹⁹¹ Рог, "Стратегическая задача авиации."

destruction), and delay.¹⁹² They too can include bridges, rail hubs, runways, airlift, air bases, command points, and elements of the opponent's recon-strike system.¹⁹³

In 2011, an article written by a young 46 TsNII researcher highlighted some of the potential directions of the evolution of targeting in the future. His approach divides military targets into two categories: **active** and **passive**:

- Military active objects: strategic nuclear forces and strategic nonnuclear forces
- Military passive objects: strategic government and military command posts, launch control posts, air and missile defense objects, ISR and communication nodes, space reconnaissance elements, armament storage
- Economic objects: industry and administrative buildings, hydrocarbon facilities, chemical industry, power stations (hydro and nuclear power plants, electric grid)¹⁹⁴

The researcher also proposes an additional category of “unquantifiable targets.” These objects could include objects important to the elites or leadership of the country, such as country homes, trade or industrial assets, or objects of specific relevance to the individuals in charge (unquantifiable targets 1, in Figure 12). Another subset of targets includes those objects that provide high standards of living and spiritual development—e.g., cultural centers, religious buildings, and historical monuments. These (unquantifiable targets 2, in Figure 12, below) are meant to psychologically affect the population.¹⁹⁵ Broadly speaking, these two targeting strategies exist which are not mutually exclusive: targets that impact the leadership, and those that impact the civilian population. Targets within these sets are prioritized, as depicted in Figure 12, developed by CNA based on the article. To be clear, this article is only one example, and is not necessarily representative of the net sum of Russian thinking on targeting strategy.

¹⁹² В. Литвиненко “Цели для артиллерии,” *Армейский сборник* no. 4 (2019).

¹⁹³ Рог, “Стратегическая задача авиации.”

¹⁹⁴ Скрыпник, “Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания.”

¹⁹⁵ Ibid.

Figure 12. Potential approaches to subjective targeting (CNA graphic)



Source: A.V. Skrypnik, "Methodological approach to ranking critically-important objects of the adversary to resolve the task of strategic deterrence through the use of force," *Armaments and Economics*, no. 3 (2011)

Other Russian military writings further break down critical industry systems (information, communication, fuel, energy, space, aviation, sea, road, and rail) into their component parts. This is presented in Table 7.

Table 7. Types of critical infrastructure and their elements

Element name	Information	Communication	Fuel	Energy	Space	Transport			
						Aviation	Sea	Road	Rail
Dispatch centers (C2 centers)	Computer network C2 centers	Communication system C2 centers	Fuel line dispatch centers	Energy network dispatch centers	Orbital control centers	Air Ops Center/ (airbase)	C2/dispatch centers of ports (naval base)	C2/dispatch centers of auto-transport nodes	Dispatch centers of regional and rail roads and nodes
Networking tools	Routers	Switches	Fuel flow distributors	Transformer substations	Satellite hubs	Airports (air bases)	Ports (naval bases)	Car park	Rail stations
Channeling means	LAN adapters, modems	Radio links with transceivers, wire lines (incl. fiber-optic)	Pipelines with compressor stations	Power lines	Satellite orbits	Air corridors	Waterways	Roadways	Railroads
Means of providing services (terminal equipment)	Workstations, special calculators (sensors, actors)	Transceiver means (phones, radio stations, modems)	Fuel terminals, gas stations	Means (points) of connection to the power supply system	Functional means on board moving objects				
Resource storage	Database servers	Communication power sources	Fuel storages	Accumulators	Fuel, energy, and information storages				
Backup facilities (to ensure smooth operation)	Mirror, archive servers, fault tolerant systems	Reserve systems (channels) of communication	Reserve pipelines	Reserve bypasses, diesel power plants	Reserve satellites and command centers	Reserve aircraft and air bases	Reserve ships and docks	Reserve roads	Backup tracks
Objects moved (via the critical infrastructure)	Fragments of information flows	Fragments of signal flows	Fragments of fuel flows	Fragments of electricity flows	Satellites	Aircraft	Ships	Automobiles	Trains
Objects generation (creation) points	Users	Users	Extraction and processing enterprises	Thermoelectric power station, gas power station, nuclear power plant	Scientific-industrial complex enterprises	Scientific-industrial complex enterprises	Scientific-industrial complex enterprises	Scientific-industrial complex enterprises	Scientific-industrial complex enterprises

Source: "Combat with infrastructures as a form of confrontation in the conditions of global technosphere," in *Impact of technological factors on the parameters of threats to national and international security, military conflicts, and strategic stability*, ed. A.A. Kokoshin (Moscow: Moscow State University, 2017), 48.

According to Russian military writings, efforts to inflict objective damage on an adversary can involve an understanding of vitally important objects on adversary territories, analysis of possible approaches to damaging them, development of criteria for “unacceptable” damage inflicted, and determination of the nomenclature and characteristics of means that are capable of inflicting “unacceptable damage.” Efforts to inflict subjective damage can involve, first and foremost, an understanding of the state’s political system that makes the decisions.¹⁹⁶

Subjective damage concepts incorporate reflexive control mechanisms and intend to affect populations and leadership decision-making.¹⁹⁷ For example, one military analyst has argued that non-quantifiable targets such as those specific to decision-makers (summer homes, assets) or targets that pertain to a high quality of life and spiritual development (cultural centers, monuments) could be most significant.¹⁹⁸ Another one advised in 2011 that Russia needed to focus on a countervalue strategy based on subjective criteria of unacceptability, thus employing reflexive control.¹⁹⁹

As discussed in Russian military thought, “**reflexive control**” is a process in which the controlling side targets select decision-makers within an opponent’s leadership structure and deliberately conveys a select set of information that compels these actors to carry out actions in line with its own intent.²⁰⁰ This essentially involves a process of first seeking to understand the motivations and desires of the adversary, then developing a strategy related to the adversary’s behavior, and finally transmitting information in line with the adversary’s thinking and interests that guides it toward behaviors advantageous to the controlling side.²⁰¹

¹⁹⁶ *Влияние технологических факторов на параметры угроз национальной и международной безопасности, военных конфликтов и стратегической стабильности*, 214-215.

¹⁹⁷ Тагиров, Печатнов, и Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания”; Печатнов, “Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания.”

¹⁹⁸ Скрыпник, “Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания.”

¹⁹⁹ Печатнов, “Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником.”

²⁰⁰ Александр Раскин и Михаил Сорокин, “Рефлексивное управление в парадигме современной войны,” *Стратегическая стабильность*, no. 3 (2008).

²⁰¹ Печатнов, “Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания.”

While reflexive control is employable in the pre-conflict period, Russian articles describe it as being of maximum usefulness when a situation threatens to escalate into full military conflict, meaning that it is useful for causing an adversary to take actions advantageous to the side exercising the reflexive control during the initial period of military operations.²⁰² Hence, the concept is more applicable to demonstrations taken during a threatened period of conflict, particularly direct threats to vital infrastructure.

Because there are limits and complexities inherent in dealing with real people's thoughts and behaviors, and because different actions could potentially lead to opposite results (depending on the adversary), a thorough study of the target's psychology is necessary for success.²⁰³ The strategy developed from such an analysis will be situational—i.e., it will depend on the specific conflict at hand and aimed more at affecting short-term behaviors than at affecting long-term ones.²⁰⁴ Because conflicting parties make decisions based on the image of the situation available to them at a given time, and decide when to move into the military phase of conflict based on such images, the ability to manipulate and create these images can prove beneficial for adjusting an adversary's behavior and even cause it to take actions against its best interests.²⁰⁵ These Russian military ideas about impacting an opponent's psychology for the purposes of escalation management require further study and attention from the US and allied analytical communities.

²⁰² Раскин и Сорокин, "Рефлексивное управление в парадигме современной войны"; Печатнов, "Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания."

²⁰³ Печатнов, "Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником"; Печатнов, "Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания."

²⁰⁴ Печатнов, "Научно-методический подход к формированию показателя эффективности механизма силового неядерного сдерживания."

²⁰⁵ Раскин и Сорокин, "Рефлексивное управление в парадигме современной войны"; Юрий Подкорытов, "Методический аппарат прогнозирования поведения военно-политического руководства государств в ходе военной фазы конфликта," *Стратегическая стабильность*, no. 4 (2017).

Conclusion: Implications for US and Allied Forces

In planning for great power contests, political-military leaders need to consider their strategies for deterrence of conflict, for warfighting operations should deterrence fail, for escalation management, and for war termination. Planners typically focus on warfighting, while strategists invest much of their time on postures aimed at deterring conflict in specific contingencies. Preciously little attention is paid to the question of escalation management, which should take priority in contests between major nuclear powers. Thinking on war termination is similarly nascent. This gap is in part born of a sustained great power interregnum since World War II, but also stems from the lack of attention given this subject in the post-Cold War period.

The political leadership of any state entering a crisis with a nuclear peer will inevitably wish to be assuaged that a reasonably plausible strategy exists for escalation management and war termination. Otherwise, when faced with the potential for uncontrolled nuclear escalation, they might be self-deterred, or as the Russian leadership might suspect, vulnerable to manipulation of risk. This is especially so in cases where the US does not have vital interests at stake or is unclear about the interests at stake. Although we cannot predict what choices Russia's political leadership might make, it is less likely to be self-deterred if its military establishment has developed several plausible options for escalation management and war termination from crisis to large-scale war. These employ flexible means, many of which are usable because they are either conventional or non-forceful in nature, while others represent an iterative approach to nuclear escalation which inherently eschews the notion that it may be uncontrolled.

Hence, the Russian political leadership may consider a conflict, even against a superior adversary, as a risky but ultimately manageable affair. We do not know Russian confidence levels in such strategies, but their development and codification in national security concepts points to some degree of high-level adoption. A system of deterrence exists in Russian military strategy, and whether or not political leadership is briefed of its component plans, they appear to echo the overarching concepts such as "strategic deterrence." The more confident the Russian leadership is in the ability to manage escalation, and in the existence of workable war termination strategies in each possible type of war (local, regional, and large-scale), the more likely they are to engage in activities short of war or competitions in risk taking. That is, perceived stability at higher thresholds of conflict may result in instability at lower levels because of the perceived ability, by at least one party, that it can manage escalation.

By developing an interlinked series of approaches that range from intimidation to inflicting calibrated damage for the purpose of escalation management, the Russian military has not traded warfighting for intra-war deterrence. The means involved, and the operational concepts for their employment, afford a suitable hedge strategy to be used in theater warfighting with precision conventional or nonstrategic nuclear weapons. Therefore, there is both a general purpose force for warfighting, and the ability to employ a pre-designated strategic deterrence force to deliver deterrent damage. These capabilities are equally applicable in peacetime, during which they perform demonstrative actions intended to contain the United States and induce restraint in Russian adversaries.

The US lags in developing such concepts; it focuses on warfighting capabilities while a tremendous cognitive gap remains on the question of escalation management and war termination. The absence of a theory of escalation management or approaches that could affect war termination, remains a significant deficit in strategy for great power war. Warfighting by itself is an inadequate hedge strategy should deterrence fail, when envisioning that such a war would be fought against a peer nuclear adversary. It fails to account for the challenge of controlled escalation stratagems employed by adversaries, the prospect that an adversary's plan for cost imposition or systemic destruction might prove effective, and the risk of uncontrolled escalation resulting from misperceptions.

By understanding the assumptions and targeting requirements involved in Russian planning for escalation management, US planners could invest better in defense, resilience, and approaches that would alter the adversary's calculus. In any strategy, the other side gets a vote. Presumably the Russian military must force-generate assets during different periods of escalation, making both the forces involved and their potential targets predictable, whether it is seeking to inflict "deterrent damage" in efforts to manage escalation or "assigned damage" in warfighting.

Russian thinking is increasingly clear on the role and utility of nonstrategic nuclear weapons, including the timing of their employment and their likely targets. Russian writings offer a good glimpse into when, how, and against what targets nuclear weapons might be used. Russian deliberations on the threat posed by theater US missile defense to these calibrated escalation approaches also telegraph one of the likely potential counters to single or grouped strikes. In general, the US should seek to deter specific escalation approaches either by shaping the means the Russian military intend to use, the resilience of the targets their stratagem seeks to attack, or their confidence levels.

Russian military strategies offer important insights into potential triggers for escalation, thresholds which the adversary believes relevant for transition in either the period of conflict or the type of war they are fighting. These are useful in considering US escalation management

strategies. How the US chooses to employ its own “strategic conventional” arsenal will prove of immense consequence in the Russian leadership’s selection of their available courses of action. US target selection remains a driving factor, as does the choice to widen or reduce the actual scope of any potential war.

Similarly, knowing and understanding the psychological elements of adversary strategy, such as deterrence by intimidation, can help reduce the coercive effect of such actions during a threatened period of conflict resultant from a political or military crisis. Much of the Russian theory behind single or grouped strikes, and inflicting dosed damage, does not rest so much on the material damage caused as on the psychological effect it will have on adversary’s leadership and the population. This is especially relevant in an alliance context, as the damage applied is meant to create cascade effects on a coalition by targeting specific members. Hence, both damage to the target and damage to its role within a coalition are calibrated.

Much can also be done in how the US chooses to engage Russian counterparts on this subject. Telling the opponent that their strategy won’t work, or is dangerous because of the potential for uncontrolled escalation, is likely to confirm their thinking about the benefits of such stratagems. An informed dialogue, that reflects knowledge of the calculus behind Russian planning, may serve better in shaping the other side’s confidence levels.

In thinking about escalation management, it does not appear that the Russian military is articulating a theory of victory in the same way that US doctrine envisions defeating an adversary. While Russian strategies aspire to terminate the conflict on favorable terms, the concepts underpinning Russian thinking on escalation management have several objectives: managing escalation at existing levels, keeping the conflict bounded, deterring additional participants from joining, and reducing the cohesion of opposing coalitions.

Russian deterrence and warfighting concepts are extensions of a particular set of security and geopolitical concerns; they seek to deter hostilities, terminate a conflict, or prevent its escalation more than they seek to win it. During these attempts, the Russian state would seek to communicate to the United States and NATO the potential costs and ultimate futility of continuing armed aggression against Russian core security interests. Signaling is an important, though often overlooked, component of escalation management, and it will contribute to avoiding misperceptions.

As a conflict escalates, stakes mount beyond the initial interests—and as pain is suffered, the potential political aims increase. The superior side, presumably and optimistically the United States in this case, will be challenged to communicate limited aims in an escalating conflagration. By conceptualizing and testing ways in which it could signal more limited aims, or developing operational concepts for limited use of force, the United States would increase its chances to control both intended and unintended escalation.

Appendix: Key Terms and Glossary

Key terms

Table 8. Key Terms

Term	Translation
Возмездие	Retaliation
Высокоточное оружие (большой дальности) ВТО (БД)	(Long-range) precision weapons
Глобальное (ядерное) сдерживание	Global (nuclear) deterrence
Дозированный ущерб	Dosed or tailored damage
Заданный ущерб	Assigned damage
Критически-важный объект	Critically-important object (target)
Недопустимый ущерб	Intolerable (unallowable) damage
Неприемлемый ущерб	Unacceptable damage
Неядерное или предъядерное (доядерное) сдерживание	Nonnuclear or pre-nuclear deterrence
Ответно-встречный удар	Retaliatory-meeting strike
Ответный удар	Retaliatory strike
Принуждение	(Deterrence as) compellence
Превентивный удар	Preventive strike
Противоценностный удар	Countervalue strike
Региональное (ядерное) сдерживание	Regional (nuclear) deterrence
Сдерживание	Deterrence/containment
Сдерживание путем защиты	Deterrence through defense
Сдерживание путем ограниченного применения силы (силовое сдерживание or стратегическое сдерживание силового характера)	(Strategic) deterrence through the (limited) use of military force
(Сдерживание через) устрашение	(Deterrence as) fear inducement (intimidation)

Glossary

Adequate damage infliction phase	Russian military term that refers to a phase of conflict in which Russian armed forces conduct active warfighting operations.
Assigned damage	Russian military term that reflects the degree of damage a particular weapon (warhead) is supposed to inflict on a target (set) during combat operations.
Critically important objects	Russian military term that refers to an opponent's critical target set
Demonstration phase	Russian military term that refers to a phase of conflict in which Russia engages in military and nonmilitary actions for purposes of deterrence prior to the beginning of active warfighting operations.
(Strategic) deterrence through the use of military force	Russian military term that refers to deterring an opponent through the limited employment of military force such as strike systems.
Deterrent damage	Russian military term that refers to damage that could be inflicted on an opponent in order to deter them from taking certain military actions. Used by some analysts as a reference to dosed damage inflicted with strategic conventional weapons and limited nuclear employment on critical infrastructure of the opponent.
General purpose forces	Russian military term that refers to a component of the Russian armed forces intended for conducting military operations with conventional weapons, or tactical nuclear weapons, in the theater of military operations (excludes types of strategic nuclear forces).
Nonnuclear or pre-nuclear deterrence	Russian military term that refers to the stage of conflict that precedes nuclear escalation. Nonnuclear deterrence may also be used broadly to describe a system of capabilities, including strategic conventional weapons, air/missile defense, and other capabilities intended to disorganize an opponent. (Some also use

Objective damage	nonnuclear or pre-nuclear deterrence to refer to conventional precision strikes on an opponent in the stage of conflict that precedes nuclear escalation.) Russian military term that refers to quantifiable levels of damage on an opponent's targets (as opposed to subjective damage, below).
Reflexive control	Russian term and analytical tool that refers to an approach that involves strategic manipulation of an opponent's perceptions
Regional (nuclear) deterrence	Russian military term that refers to the phase of conflict where nonstrategic nuclear weapons are used, particularly in a regional conflict.
Retaliation phase	Russian military term that refers to a phase of conflict in which Russia engages in retaliatory strategic nuclear strikes after efforts to manage escalation during the adequate damage infliction (warfighting) phase have been unsuccessful
Retaliatory strike	Russian military term that refers to the launch of strategic nuclear weapons after confirmation that an opponent's weapons have struck Russian territory
Retaliatory-meeting strike	Russian military term that refers to the launch of strategic nuclear weapons after confirmation that an opponent has launched own weapons.
Strategic conventional (nonnuclear) weapons	Conventional long-range precision strike.
Strategic deterrence	Russian military term that refers to approaches and capabilities that would allow Russia to communicate to opponents that it is able to inflict increasing amounts of damage on critical targets, in order to signal to the opponent the need to forgo aggression, de-escalate the hostilities, and/or terminate the conflict.
Strategic deterrence forces	Russian military term that refers to conventional and nuclear (long-range) strike, defensive systems, and related systems of early warning and command and control
Subjective damage	Russian military term that refers to levels of tailored damage on an opponent's targets that are not easily

Unacceptable damage

quantifiable and are primarily aimed at leadership and population perceptions (as opposed to objective damage, below).

Russian military term that reflects the level of damage (usually with strategic nuclear weapons) that an opponent may find unacceptable.

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Abbreviations

C2	Command and Control
GS (MA) TsVSI	General Staff (Military Academy) Center for Military Strategic Research
ISR	Intelligence, surveillance, reconnaissance
MIRV	Multiple independently targetable reentry vehicles
NSNW	Nonstrategic nuclear weapons
SNF	Strategic nuclear forces
SODCIT	Strategic operation for the destruction of critically important enemy targets
TVD	Theater of military action
VKO	Russian Aerospace Defense system

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