



Russian Strategy for Escalation Management: Key Debates and Players in Military Thought

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Abstract

This report offers an overview of the main debates in Russian military thought on deterrence and escalation management in the post-Cold War period, based on authoritative publications. It explores discussions by Russian military analysts and strategists on “regional nuclear deterrence,” namely the structure of a two-level deterrence system (regional and global); debates on “nonnuclear deterrence” and the role of strategic conventional weapons in escalation management; as well as writings on the evolution of damage concepts toward ones that reflect damage that is tailored to the adversary. Russian military thinking on damage informs the broader discourse on ways and means to shift an opponent’s calculus in an escalating conflict. The report concludes with summaries of recent articles that reflect ongoing discourse on the evolution of Russia’s strategic deterrence system and key trends in Russian military thought on escalation management.

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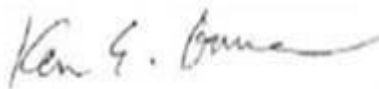
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Executive Summary

The Russian military's views on escalation management are a subject of considerable interest, and debate, in U.S. and allied analytical circles. However, the structure of discussions among Russian military analysts, plus their evolution over time, have not been a focus of significant attention. This paper fills this gap by providing a guide to key articles and players in Russia's military-analytical community when it comes to regional nuclear deterrence, nonnuclear deterrence, and damage considerations. Leveraging a large body of research, this report offers snapshots of "debates" on escalation management approaches in Russian military thought over the last three decades. These are not academic or purely theoretical discussions, but military-analytical exchanges on operational concepts, strategies, doctrine, and relevant capabilities.

The findings reveal that strategic conventional capabilities are growing more important in Russian thinking on escalation management, though some judge them insufficient for deterrence of regional conflict. In Russian military writings, the role of nonstrategic nuclear weapons is not only enduring, but remains prominent in regional contingencies. Russia's nonstrategic nuclear weapons complement conventional, while strategic nuclear capabilities remain relevant at the highest thresholds of conflict. Russian military thought has also moved toward concepts premised on "deterrent damage" or damage that could also be subjectively meaningful to a specific adversary. The approach is iterative, and the desired de-escalatory effect is clear, though opinions diverge on how best to tailor this type of damage.

Some in the Russian military-analytical community still advocate for nuclear use at significantly earlier points in a conflict's escalation, but the consensus across the journals suggests that this remains a losing position in Russian military thinking. Despite the emphasis on the role of nuclear weapons in escalation management, preventive nuclear threats are judged to not be credible in early periods of conflict. Most analysts argue for a means of nonnuclear deterrence that will complement nuclear-based strategies, while equally benefiting from the coercive effect that large nuclear arsenals contribute to calibrated forms of escalation. However the role for nonnuclear deterrence remains a complementary one to that of nuclear weapons, at conflicts of lesser scale such as local wars, or in earlier phases of a regional war. While some debates have clearly been settled, Russian thinking on escalation management and war termination continues to evolve, pricing in new capabilities, integrating added flexibility to the deterrence force structure, and responding to developments in the United States.

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Contents

Introduction	1
Methodology.....	1
Structure of this paper	3
Key Players in the Debates	4
Debates on Escalation Management	6
Regional nuclear deterrence.....	7
Nonnuclear deterrence	12
Damage considerations.....	18
Ongoing Debates on Escalation Management	24
Evolution of Russia’s strategic deterrence system.....	25
Credibility of nonnuclear deterrence.....	27
Conclusion	30
Appendix: Key Players in Russian Debates on Military Concepts	32
Ministry of Defense central science-research institutes (TsNIIs).....	32
The 4 TsNII (Moscow Region).....	32
The 12 TsNII (Moscow Region)	34
The 27 TsNII (Moscow)	35
The 46 TsNII (Moscow)	37
TsNII of Aerospace Forces (Tver’).....	39
Military academies.....	40
General Staff Military Academy’s Center for Military-Strategic Research (Moscow) ..	40
(Peter the Great) Military Academy of the Strategic Rocket Forces (Moscow Region)	41
Nongovernmental professional organizations.....	43
Academy of Military Sciences (AVN).....	43
Russian Academy of Rocket and Artillery Sciences (RARAN)	43
Civilian academic institutions and think tanks	44
Figures	45

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Introduction

The Russian military's views on escalation management have been the subject of considerable interest in U.S. and allied analytical circles. Across Russia's General Staff and Ministry of Defense (MOD) journals, military analysts from the MOD central science-research institutes (TsNII) and military academies have written, and continue to discuss, strategies for escalation management. In these articles they discuss deterrence concepts, damage models, and apply military science to solve for the challenge of managing escalation. Experts and institutes advocate for the roles of nonnuclear weapons, nonstrategic nuclear weapons, or strategic nuclear weapons in approaches to deterrence, escalation management, and warfighting.

In reading Russian military articles, one is often left with the question, how representative are certain opinions or articles of mainstream trends in Russian military thinking? The structure of discussions among Russian military scientists and strategists, remains a gap in our understanding. This report offers an overview of key debates in Russian military thought on escalation management in the post-Cold War period, based on authoritative publications, thereby serving as an intellectual roadmap to the evolution of Russian thinking on this subject matter during the last several decades. This work is intended as a starting point and a resource to other researchers, academics, and analysts who wish to continue exploring this subject.

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 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 (TsNII), 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 that has 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. 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 and nonstrategic nuclear weapons, along with associated damage concepts.

Out of those 150 articles, we selected several dozen authored by members of the Russia military-analytical establishment that were clustered in "debates," or around key themes. The paper defines *debates* as writings by authors from various centers on the same theme within a certain period of time. These writings may or may not reference one another. The themes selected by the study team included regional nuclear deterrence, nonnuclear deterrence, evolution of damage concepts, and ongoing debates about escalation management.

We focused on articles that were written by authors employed in analytical centers in MOD TsNII or military academies, some of which were service-specific, and not on writings across the military services or the nongovernmental community. The former Russian-language writings are understudied because they can be highly technical and more challenging for Western analysts to physically access. It should be noted that, unlike in the US, armed services do not play as prominent a role in procurement or concept development, and they cannot be easily divided. Beyond three main services (Aerospace Forces, Ground Forces, Navy) and two independent combat arms (Airborne and Strategic Rocket Forces), there are numerous directorates of troops, and branches of troops within services. It is not suitable to mirror the service driven debates in the U.S. onto the Russian military system, though we believe the relevant service-specific viewpoints are captured in writings from leading experts at several military academies.

A key challenge in the implementation of this study was the difficulty in identifying the institutional affiliation of all the authors of the relevant articles, particularly in articles from the 1990s because of changes in how the journals presented biographical information, gaps in

the sources, and also difficulty in tracing the career tracks of some authors. Another challenge involved the ability to track and understand the status of restructuring and reform efforts across Russia's vast TsNII network over the last several decades. It is also important to note that, aside from periodic articles summarizing key work of TsNIIs and military academies, not much is known about the day-to-day evolution of their structures or their roles in the policy- or strategy- making process.

In this information memorandum we offer a discussion of escalation management debates and an overview of key analytical centers of military thought. A companion CNA report "Russian Strategy for Escalation Management: Evolution of Key Concepts" provides a discussion of our findings on the shifts in Russian military thinking on escalation management and war termination, along with graphics translated from these articles and the concepts they illustrate.

Structure of this paper

This paper begins with a summary of the key players in Russian debates on deterrence and escalation management, a detailed analysis of which can be found in the appendix. It then proceeds to the debates themselves, beginning with the 1990s and early 2000s, when the conversation revolved around the role of nonstrategic nuclear weapons (NSNW) in regional nuclear deterrence and the construction of Russia's two-level deterrence system: regional and global. The writing then shifts to the subject on nonnuclear deterrence, a debate that has been running through the mid 2000s and into the present.

Alongside those conversations, we explore a third topic which serves as an enabler: the role of damage consideration. A discussion about changing damage requirements informs the broader discourse on the best ways or means shift an opponent's escalation calculus. We then summarize two articles that reflect ongoing discourse on the evolution of Russia's strategic deterrence system, and the credibility of nonnuclear deterrence, to demonstrate the direction and substance of current discussions. The paper concludes with a summary of the key trends in Russian military thought on escalation management, which, in the view of the study team, reflect strong majority opinions among the articles surveyed.

Key Players in the Debates

The Russian Ministry of Defense (MOD) has a number of central science-research institutes (known by their Russian abbreviation of “TsNIIs”) and military academies. The General Staff (GS) also has a research institute—the Center for Military-Strategic Research, currently based in the GS Military Academy. Since Soviet days, these institutes have delivered modeling and analysis of various political, military, and technological aspects of defense and armaments policy. Researchers at these institutes hold military ranks. Some of their unclassified research is published in journals that seek to advance the development of Russian military science. The Russian military, much like the Soviet military, has a robust culture of debates about planning, doctrine, and operational art on the pages of authoritative journals such as *Military Thought*, published by the General Staff. Some TsNIIs and nongovernmental professional organizations also have their own journals.

In this paper, we focus on a handful of key players whose analysts have written on deterrence and escalation management subjects. These include five Russian MOD’s TsNIIs: the 4 TsNII (focused on Strategic Rocket Forces); the 12 TsNII (focused on nuclear weapons and nuclear effects); the 27 TsNII (focused on C2, computation/modeling, forecasting, and information infrastructure); the 46 TsNII (focused on military technology development and state armament program justification); and the Aerospace Forces TsNII (focused on aerospace defense and military space activity). They also included the General Staff Military Academy’s Center for Military-Strategic Research (GS (MA) TsVSI) and the (Peter the Great) Military Academy of the Strategic Rocket Forces. To be clear, these are but a small number of Russia’s vast network of TsNIIs and military academies, but they are the ones we identified as working on key aspects of the escalation management and deterrence issues over the last several decades.

The appendix at the end of this paper explores in detail the structure of the Russian military-analytical community that is involved in research and debates pertinent to deterrence and escalation management. We recognize that analysts from the nongovernmental community have also been involved in some of these debates, and, even though we chose not to focus on their writings in this paper, we included them in our depiction of the broader Russian military-analytical community. For the purpose of brevity, Figure 1 illustrates the structure of this community, dividing it into three categories: TsNIIs, military academies, and nongovernmental organizations. We did not include the individual branches of the Russian armed forces as players in this Figure because the publications of their leaders in key journals usually focus on broader topics that have to do with service missions and only tangentially touch on escalation management and deterrence.

Figure 1. Notional structure of the Russian military-analytical community

**Ministry of Defense
Central Science-
Research Institutes
(TsNIIs)**

- 4 TsNII (strategic rocket forces)
 - 12 TsNII (nuclear weapons and nuclear effects)
 - 27 TsNII (C2, computation/modeling, forecasting, information infrastructure)
 - 46 TsNII (military tech development, state armament program justification)
 - TsNII of Aerospace Forces (aerospace defense and military space activity)
-

**Military
Academies**

- Military Academy of the General Staff's Center for Military-Strategic Research (Center formerly part of the General Staff)
 - (Peter the Great) Military Academy of the Strategic Rocket Forces
-

**Nongovernmental
Organizations**

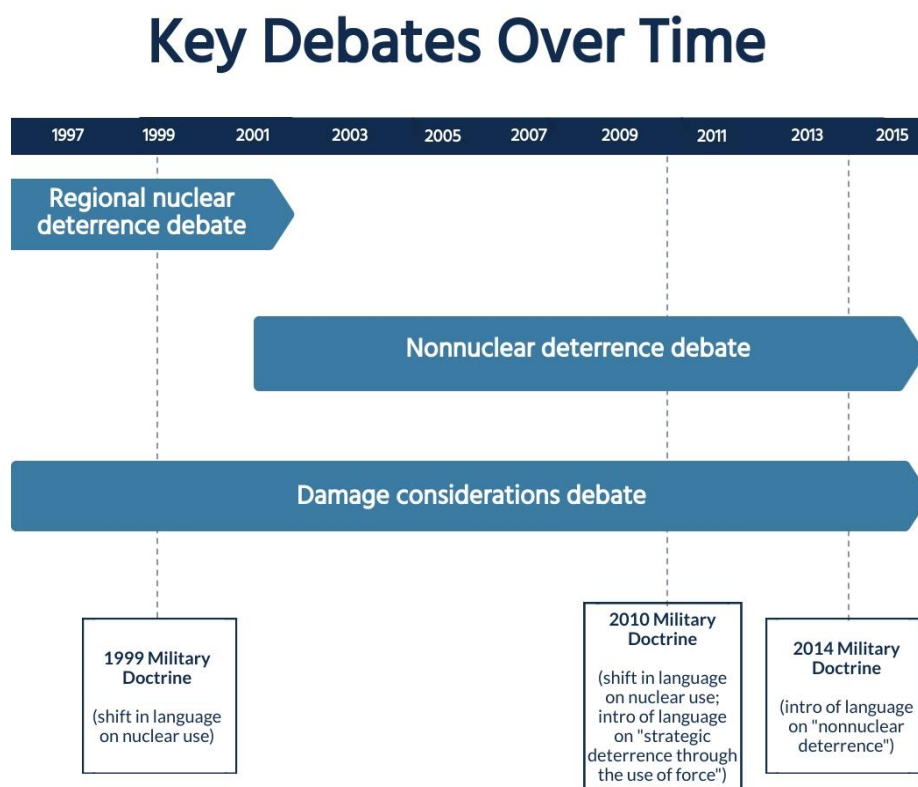
- Academy of Military Sciences (AVN)
 - Russian Academy of Rocket and Artillery Sciences (RARAN)
 - Civilian Academic Institutions and Think Tanks
-

Source: CNA.

Debates on Escalation Management

This section of the paper seeks to answer the question, What key “debates” pertinent to escalation management have taken place since 1991? The paper defines *debates* as writings by authors from various centers on the same subject matter within a certain period of time. These writings may or may not reference one another. The Russian military-analytical community continues the Soviet tradition in military thought, debating concepts in military science, operational art, and strategy. Some of the more interesting debates in recent decades have dealt with escalation management strategies and approaches to war termination. The central debates traced in this section include the topics of “regional nuclear deterrence,” “nonnuclear deterrence,” and “damage considerations.” Their timeline is notionally depicted in Figure 2.

Figure 2. Timeline of debates about regional nuclear deterrence and nonnuclear deterrence



Source: CNA.

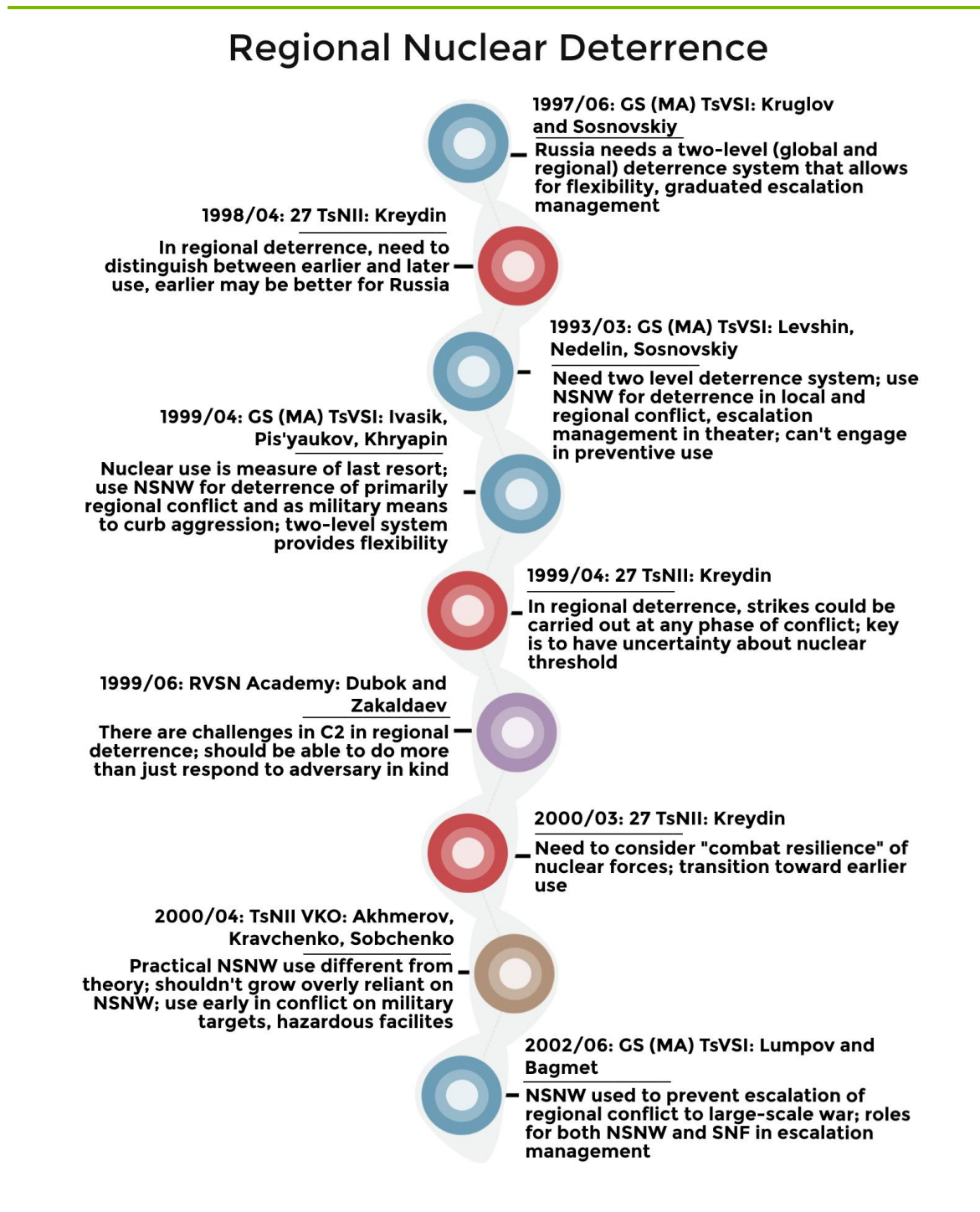
The regional nuclear deterrence debate focused on Russia's development of plans to use NSNW for regional contingencies in the late 1990s. The nonnuclear deterrence debate was a discussion about the challenges and opportunities of long-range precision strike and other conventional capabilities that could also be used for escalation management purposes at various stages of conflict. A third related debate, which has persisted in Russian military thought, centers on the evolution of damage concepts. These have evolved toward a tailored "deterrent damage" concept that involves the employment of strategic conventional capabilities (and potentially even nuclear weapons) on an opponent's critical targets.

Regional nuclear deterrence

Between 1997 and 2002, analysts across the Russian military-analytical community debated a shift toward a two-level nuclear deterrence system (global and regional) that would involve greater reliance on NSNW for the management of escalation in a regional conflict. The study team selected nine key articles from this debate, most of which were published in *Military Thought*. This section provides a brief overview of the debate focusing on the players. For a more substantive overview, please see the companion CNA report "Russian Strategy for Escalation Management: Evolution of Key Concepts."

Figure 3 depicts the central elements of the debate. For each entry, dates, name of institution, and author name(s) are given. Colors depict the various institutional participants (note that the same color scheme is used in the appendix for relevant institutions). A brief analysis concludes the section.

Figure 3. Debate about regional nuclear deterrence



Source: CNA analysis of Russian military journal articles.

- Key ideas about regional nuclear deterrence appeared in the 1997/06 issue of *Military Thought* from GS (MA) TsVSI analysts V.V. Kruglov and M.E. Sosnovskiy. This article proposed a two-level nuclear deterrence system—consisting of strategic nuclear forces (SNF) and NSNW—that would give Russia the “ability to flexibly respond to changes in military-strategic environment through the maneuver of nuclear forces and means.” It outlined specific steps, beginning with NSNW demonstrations and culminating in limited use on military targets that Russia could take in certain conflict scenarios without crossing the threshold for SNF employment.¹
- GS (MA) TsVSI researchers’ key “antagonist” in the debate was S.V. Kreydin from the 27 TsNII. (Kreydin continues his analytical work at the 27 TsNII on deterrence issues today, as discussed in the final section of this paper.) In an article in the 1998/04 issue of *Military Thought*, he distinguished between Russia’s use of NSNW earlier in a conflict and its use later in a conflict. He argued that earlier use—in other words, a shorter nonnuclear period of conflict—is preferable because it would enable Russia to deny sea and air dominance to its adversary and afford longer protection to its own SNF, particularly during an adversary’s aerospace attack.²
- In the 1999/03 issue of *Military Thought*, GS (MA) TsVSI analysts V.I. Levshin, A.V. Nedelin, and M.E. Sosnovskiy expanded the discussion of using NSNW for deterrence in regional and local wars, and for escalation management in the theater of military conflict. They proposed an even greater number of escalation management steps that could be taken once aggression had begun, discussed the circumstances of use and potential targets, and noted that it was important to impact the adversary psychologically. They posited that “dosed, intimidating use of NSNW in combination with [a] demonstration of readiness to use SNF could serve as the most significant motive for [the] adversary to deescalate military actions.”³
- Other GS (MA) TsVSI analysts—V.A. Ivasik, A.S. Pis’yaukov, and A.L. Khryapin—continued the debate in a 1999/04 issue of *Military Thought*, saying that Russia’s economic situation and the weakness of its general purpose forces (GPF) forced it to increase [the political] role of NSNW primarily for deterrence at the regional level.

¹ В.В. Круглов, М.Е. Сосновский, “О роли нестратегических ядерных средств в ядерном сдерживании,” *Военная Мысль*, no. 6 (1997).

² С.В. Крейдin, “О проблемах глобального и регионального ядерного сдерживания крупномасштабной агрессии,” *Военная Мысль*, no. 4 (1998).

³ В.И. Левшин, А.В. Неделин, М.Е. Сосновский, “О применении ядерного оружия для деэскалации военных действий,” *Военная Мысль*, no. 3 (1999).

NSNW would also be used as a “military means” to curb aggression. Russia’s nuclear use needed to be viewed as a measure of last resort aimed at “compelling the aggressor to decline to initiate armed actions or halt them at an earlier stage of development.” They further echoed the phrase that the two-level deterrence system gave Russia the “ability to flexibly respond to changes in [the] military-strategic environment.”⁴

- In another article in the 1999/04 issue, Kreydin argued that Russia should plan to use NSNW for managed escalation chiefly on military targets in order to eliminate the decisive superiority of the adversary’s offensive forces. Such use could involve strikes at any stage of the conflict, and, Kreydin said, it was important that the key principle of regional nuclear deterrence be uncertainty about the nuclear threshold for the aggressor.⁵
- In the 1999/06 issue of *Military Thought*, analysts P.I. Dubok and N.A. Zakaldaeov from the Strategic Rocket Forces (RVSN) Academy reviewed the challenges for the C2 systems that would be involved in the employment of NSNW based on rocket forces and artillery. They also argued that because limited and widespread use of nuclear weapons is possible during any moment of nuclear escalation, one cannot be guided by the principle of adequate measures and only in response to the adversary.⁶
- In the 2000/03 issue of *Military Thought*, Kreydin focused on the particular challenge of combat resilience of nuclear forces and once again argued that Russia should transition away from a purely defensive strategy toward an “active strategy” that envisioned early use.⁷
- In the 2000/04 issue of *Military Thought*, TsNII of Aerospace Forces authors Akhmerov, Kravchenko, and Sobchenko critiqued the approaches of both Ivasik et al. and Kreydin, arguing that the practical employment of NSNW would be much more challenging than their theoretical approaches. They noted the need to use NSNW on military targets at the initial phase of conflict and said that, if that failed, Russia could use NSNW on countervalue targets, potentially even hazardous facilities. Crucially,

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

⁵ С.В. Крейдин, “Глобальное и региональное ядерное сдерживание к системе принципов и критериев,” *Военная Мысль*, no. 4 (1999).

⁶ П.И. Дубок, Н.А. Закалдаев, “О некоторых вопросах управления ракетными войсками и артиллерией при осуществлении регионального ядерного сдерживания,” *Военная Мысль*, no. 6 (1999).

⁷ С.В. Крейдин, “Проблемы ядерного сдерживания боевая устойчивость ядерного потенциала,” *Военная Мысль*, no. 3 (2000).

- they noted the importance of focusing on building up GPF instead of NSNW in order to preserve the “political” function for nuclear weapons.⁸
- The debate generally concluded around the time of issuance of Russia’s military doctrine in 2000. In a 2002 article, GS (MA) TsVSI analysts V.I. Lumpov and N.P. Bagmet reaffirmed the potential importance of the two-level deterrence system, in which NSNW could be used to prevent the escalation of regional conflict to large-scale war. One action would be to increase the readiness of both NSNW and SNF and engage in their limited demonstrative or de-escalatory use. If the situation threatened to escalate to large-scale war or the adversary threatened to use nuclear weapons, Russia could deter the adversary by demonstrating readiness to use all the available potential of its nuclear forces to inflict unacceptable damage on adversary.⁹

The debate about the potential role of NSNW in regional contingencies took place between 1997 and 2002, as Russia was debating the 2000 version of its military doctrine and prioritization of force development.¹⁰ The debate spilled out on the pages of military journals and allowed for a vetting of ideas that were being developed in the General Staff and other military quarters. As a collective body of work, the regional nuclear deterrence debate also sent an important message to the West, given that the Russian military analysts were primarily responding to political-military concerns about Russia’s inability to defend itself against a potential Western aerospace attack.

The analysts who drove the conceptual development were from the GS (MA) TsVSI, while an analyst from the 27 TsNII served as the chief antagonist. Perspectives on the regional nuclear deterrence concept were voiced by other institutes, most notably the TsNII VKO, the RVSN Academy, and the 4 TsNII. The TsNIIs expressed their concerns about the mainstream ideas, proposing alternative NSNW use timelines and target sets based on modeling or other work for their respective constituencies. They encouraged or discouraged an emphasis on NSNW procurement in an environment of limited resources. The conclusion of the regional nuclear deterrence debate coincided with the emergence of strategic conventional capabilities (long-range precision-guided weapons) and interest in nonnuclear deterrence concepts, discussed below.

⁸ Е.Н. Ахмеров, Н.Ф. Кравченко, И.И. Собченко, “О направленности регионального ядерного сдерживания,” *Военная Мысль*, no. 4 (2000).

⁹ В. И. Лумпов, Н. П. Багмет, “К вопросу о ядерном сдерживании,” *Военная Мысль*, no. 06 (2002).

¹⁰ See *Военная доктрина Российской Федерации*, April 21, 2000; Министерство обороны Российской Федерации, “Актуальные задачи развития вооруженных сил Российской Федерации,” October 2003.

After the conclusion of the regional nuclear deterrence debate, sporadic articles by authors from the 27 TsNII and 4 TsNII in key journals argued for the possible limited employment of SNF at the regional level.¹¹ Later writings suggested that while the concept of regional deterrence with NSNW was broadly understood across the military-analytical community, its official adoption may have been challenging in practice. For example, in 2010, analysts from the 46th TsNII noted the absence of widely acceptable criteria for the effectiveness of NSNW as a system.¹² In a 2019 article, discussed later in this paper, 27 TsNII analysts reaffirmed the theoretical existence of a global and regional deterrence system, the latter of which continues to rely on NSNW.¹³

Nonnuclear deterrence

The debate about the role of conventional precision strike in Russia's strategic deterrence system began in the early 2000s and continued over following decade. The study team traced it from 2002 to 2015 across various military journals. We used the terms *nuclear deterrence* and *strategic deterrence through the use of force* (at the pre-nuclear level of conflict) as interchangeable terms. This section provides a brief overview of the debate focusing on the players. For a more substantive overview, please see the companion CNA report "Russian Strategy for Escalation Management: Evolution of Key Concepts."

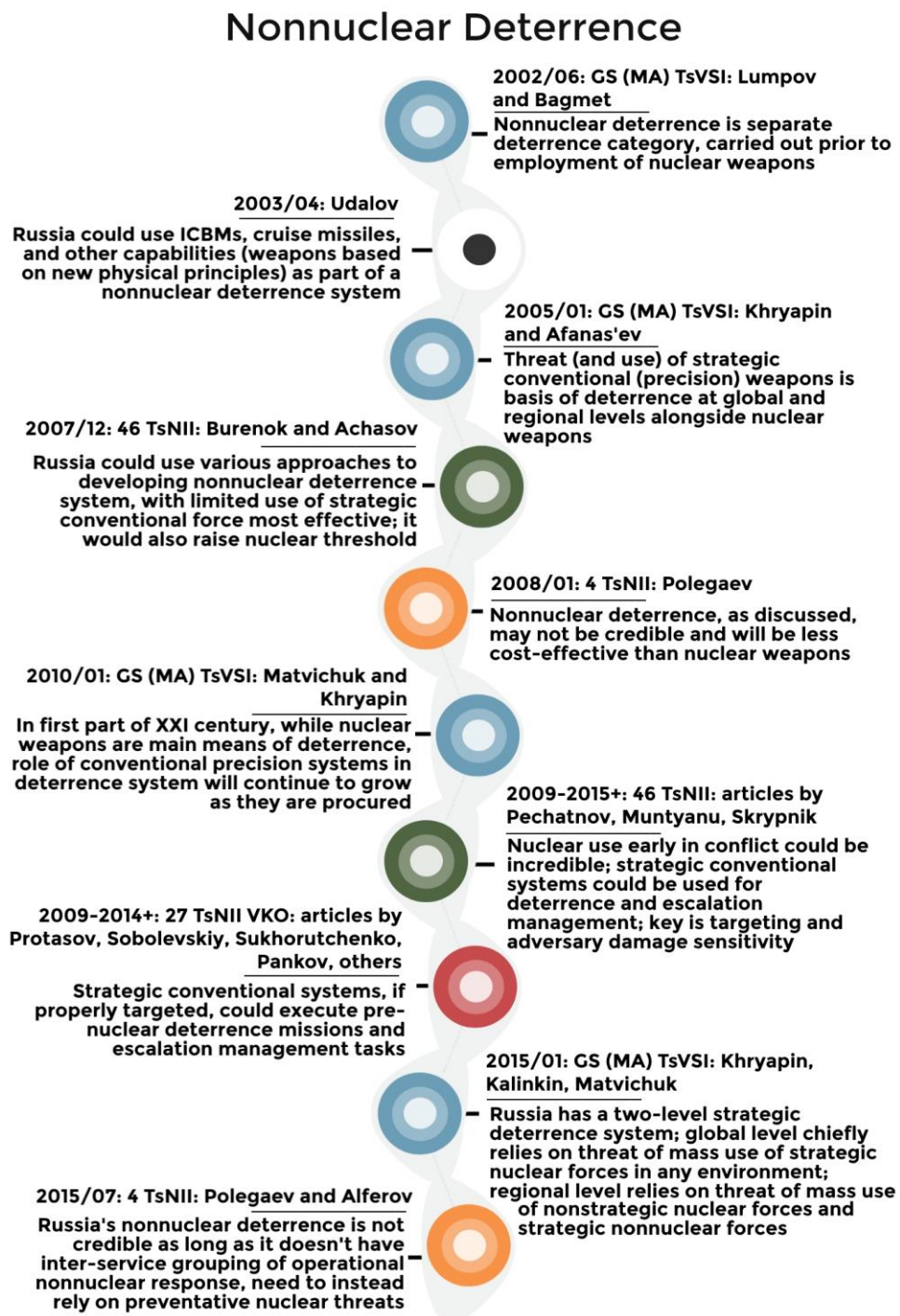
Figure 4 depicts the central elements on the debate. For each entry, dates, name of institution, and author name(s) are given. Colors depict the various institutional participants (note that the same color scheme is used in the appendix for relevant institutions).

¹¹ В. В. Сухорутченко and С. В. Крейдин, "Актуальные аспекты проблем ядерного сдерживания и достаточности ядерных вооружений," *Военная мысль*, no. 7 (2004). В.В. Василенко, "Актуальные проблемы поддержания стратегической стабильности в условиях развертывания США глобальной системы ПРО," *Стратегическая стабильность*, no. 1 (2008).

¹² А.В. Мунтяну, Ю.А. Печатнов, "Проблемные методологические вопросы разработки механизма силового стратегического сдерживания," *Стратегическая стабильность*, no. 3 (2010).

¹³ А.Е. Стерлин, А.А. Протасов, С. В. Крейдин, "Современные трансформации концепций и силовых инструментов стратегического сдерживания," *Военная Мысль*, no. 8 (2019).

Figure 4. Debate about nonnuclear deterrence



Source: CNA analysis of Russian military journal articles.

- In an article in the 2002/06 issue of *Military Thought*, GS (MA) TsVSI analysts V.I. Lumpov and N.P. Bagmet highlighted nonnuclear deterrence (with general purpose forces) as a separate deterrence category and noted that it is carried out prior to the employment of nuclear weapons. Together with nuclear deterrence actions, nonnuclear deterrence actions constitute strategic deterrence actions.¹⁴
- An article in the 2003/03 issue of *Herald of the Academy of Military Sciences* by V.A. Udalov, whose affiliation we have been unable to confirm, is one of the earliest comprehensive discussions on the role that strategic conventional capabilities could play in Russia's nonnuclear deterrence. The author explored the possibilities of preemptively using a range of nonnuclear means, including conventional intercontinental ballistic missiles, cruise missiles, and other capabilities (such as weapons based on new physical principles) for nonnuclear deterrence. He noted that conventionally armed ballistic missiles as well as cruise missiles could be used on a range of opponent targets with coercive purposes. These included the use of single-warhead mobile ballistic missiles with conventional warheads on government targets of special importance— potentially important targets such as nuclear power plants, petro-chemical facilities, or dams. In turn, conventional MIRVed ballistic missiles could target heavy bomber airfields, large naval bases, or administrative locations. He argued that nonnuclear deterrence becomes important because of the “limited capabilities of nuclear weapons in insignificant armed conflicts and in efforts to counter international terrorism” and that the role of nonnuclear deterrence would increase continually. He then discussed various potential principles of nonnuclear deterrence, and the potential of preemptive use of these capabilities.¹⁵
- In the 2005/01 issue of *Military Thought*, leading GS (MA) TsVI analysts A.L. Khryapin and V.A. Afanas'yev described the gradual integration of strategic conventional systems into Russia's two-level deterrence system. This system involves the threat of mass use of conventional and nuclear weapons as deterrence at the global level. At the regional level, it relies on the “threat of employment of conventional and, if needed, nuclear weapons, particularly nonstrategic” ones. The authors noted that the pacing of escalation proceeds from a threat to use, to the actual use of, strategic conventional

¹⁴ В. И. Лумпов, Н. П. Багмет, “К вопросу о ядерном сдерживании,” *Военная Мысль*, no. 6 (2002).

¹⁵ 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).

systems on key adversary targets, and then to the threat of nuclear escalation and the use of actual weapons “until a massive exchange of nuclear strikes [occurs].”¹⁶

- In the 2007/12 issue of *Military Thought*, 46 TsNII analysts V.M. Burenok and O.B. Achasov proposed various approaches to the development of Russia’s nonnuclear deterrence system, based on precision weapons and weapons based on new physical principles, among others. They noted that nuclear deterrence could be “ineffective” in preventing not only local wars but also potentially regional wars. They defined *nonnuclear deterrence* as a “demonstration of readiness to neutralize the threat of inflicting damage in retaliatory or preventive actions on vitally important interests and objects of state potential-aggressors, which is known to exceed benefits from carrying out the aggression.” The article reviewed various approaches to nonnuclear deterrence, including that of Khryapin and Afanas’yev, and noted that Russia could mix various options as it continued to develop its nonnuclear deterrence system.¹⁷
- In the 2008/01 issue of *Strategic Stability*, 4 TsNII’s V.I. Polegaev noted that it is important that nonnuclear deterrence not supplant nuclear deterrence but complement it. He proceeded to critique the article by Udalov, described above, particularly the interest in employment of conventional ICBMs. He argued that the choice of systems and targets would not achieve the desired effects and that, instead, Russia needed to choose targets that would “paralyze the functioning of the adversary system.” Polegaev noted that the approaches Udalov proposed might not be credible or cost-effective and that, in any case, only “a rational proportion” of nuclear and nonnuclear means in the strategic deterrence forces would “guarantee deterrence and (or) de-escalation of military actions.” Escalation would proceed from the threat of use, to the actual use, of first strategic conventional and then nuclear weapons.¹⁸
- In the 2010/01 issue of *Military Thought*, GS(MA) TsVSI analysts V.V. Matvichuk and A.L. Khryapin detailed their views on deterrence. In the same year, Russia’s 2010 doctrine was approved, introducing the concept of “strategic deterrence through the use of force.” The article discussed the “deterrent damage” concept and noted that one main direction of the evolution of RF military capabilities was the introduction of

¹⁶ А.Л. Хряпин, В. А. Афанасьев, “Концептуальные основы стратегического сдерживания,” *Военная Мысль*, no. 1 (2005).

¹⁷ В. М. Буренок, О. Б. Ачасов, “Неядерное сдерживание,” *Военная Мысль*, no. 12 (2007).

¹⁸ В.И. Полегаев, “Неядерное стратегическое сдерживание: мифы и реальность,” *Стратегическая стабильность*, no. 1 (2008).

- strategic conventional weapons as well as weapons based on new physical principles, even though nuclear weapons remain the main means of deterrence.¹⁹
- From 2009 until at least 2014, numerous articles by analysts from the 27 TsNII in *Military Thought* discussed the use of strategic conventional systems for deterrence and escalation management tasks and the institute's work of planning operations with these systems, as well as aspects of targeting, including critical infrastructure.²⁰
 - Also from 2009, until at least 2015, there were numerous articles by analysts from the 46 TsNII, particularly in the TsNII journal *Armaments and Economics*, that focused on both nonnuclear deterrence and "strategic deterrence through the use of force at the pre-nuclear phase of conflict."²¹
 - In the 2015/01 issue of *Military Thought*, published after Russia's 2014 military doctrine introduced the nonnuclear deterrence concept, an article by A.L. Khryapin, D.A. Kalinkin, and V.V. Matvichuk discussed the state of Russia's deterrence system. They noted that Russia's strategic deterrence system includes a pre-nuclear or nonnuclear deterrence component alongside nuclear deterrence, and that Russia's

¹⁹ В.В. Матвичук, А.Л. Хряпин, "Система стратегического сдерживания в новых условиях," *Военная мысль*, no. 1 (2010).

²⁰ See, for example, А.А. Протасов, В.А. Соболевский, В.В. Сухорутченко, А.С. Борисенко, "Методическое обеспечение выработки замысла применения ВТО большой дальности в операциях (боевых действиях)," *Военная мысль*, no. 1 (2011); А.А. Протасов, В.А. Соболевский, В.В. Сухорутченко, Ю.В. Панков, "Военно-экономический анализ потенциала государств в интересах определения задач боевого применения сил (средств) в в планируемых операциях (боевых действиях)," *Военная мысль*, no. 8 (2011); А.А. Протасов, В.А. Соболевский, В.В. Сухорутченко, "Планирование применения стратегических вооружений," *Военная мысль*, no. 7 (2014); and others.

²¹ See, for example, А.В. Мунтяну, Ю.А. Печатнов, "Проблемные методологические вопросы разработки механизма силового стратегического сдерживания," *Стратегическая стабильность*, no. 3 (2010); 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); Ю.А. Печатнов, "Анализ отечественных и зарубежных подходов к формированию концепции и механизма сдерживания от развязывания военной агрессии," *Вооружение и экономика*, no. 3 (2010); Ю.А. Печатнов, "Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником," *Вооружение и экономика*, no. 3 (2011); А.В. Скрыпник, "Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания," *Вооружение и экономика*, no. 3 (2011); А.В. Скрыпник, "О возможном подходе к определению роли и места оружия направленной электромагнитной энергии в механизме силового стратегического сдерживания," *Вооружение и экономика*, no. 3 (2012).

deterrence system has two levels: global nuclear and regional (which involves strategic conventional and nonstrategic nuclear).²²

- In the 2015/07 issue of *Military Thought*, an article by 4 TsNII's Polegaev and Alferov again critiqued nonnuclear deterrence concepts. They expressed concerns that nonnuclear deterrence might be displacing nuclear deterrence. They also noted that Russia's nonnuclear capabilities have been overstated and that credible nonnuclear deterrence of an adversary's ability to wage a "distance war" involves Russia's creation of operational nonnuclear response groupings. They contended that in a regional and large-scale conventional conflict, the only credible threat could be the "catastrophic consequences of preemptive [*uprezhdauishchego*] use of nuclear weapons by the side that is losing the conflict" and lamented the rejection of this threat in the 2014 doctrine.²³

The debate about nonnuclear deterrence began in the early 2000s. In that debate, analysts argued that strategic conventional systems could be used for escalation management. The language about "strategic deterrence through the use of military force" by using precision weapons appeared in the 2010 version of the Russian doctrine. As the debate continued, by 2014 the broader term "nonnuclear deterrence" had been added to the military doctrine as well. The debate was premised on the idea that nuclear use early in a conflict could be not credible and that Russia needed conventional capabilities for both deterrence and escalation management purposes. Some were concerned that nonnuclear deterrence could supplant nuclear deterrence, thereby not adequately protecting Russia from shifts in the external threat environment.

In this debate, the concepts laid out by analysts from the GS (MA) TsVSI were operationalized by analysts from the 46 TsNII and the 27 TsNII. Analysts from the 46 TsNII focused on the broader description of the about the potential nature of nonnuclear deterrence, given the need to inform Russia's armament programs, as well as the more applied about the potential use of strategic conventional systems early on in a conflict for purposes of escalation management. They also worked out possible targets and escalation management steps. Analysts from the 27 TsNII focused on operationalizing missions and target sets for strategic conventional weapons for limited escalation management missions as well as for strategic operations. Finally, analysts from the 4 TsNII have continually argued that only preventive nuclear threats—and not necessarily limited impact on key targets of an adversary—would be able to deter the escalation of a conflict.

²² А.Л. Хряпин, Д.А. Калинин, В.В. Матвичук, "Стратегическое сдерживание в условиях создания США глобальной системы ПРО и средств глобального удара," *Военная мысль*, no. 1 (2015).

²³ В.И. Полегаев, В.В. Алферов, "О неядерном сдерживании, его роли и месте в системе стратегического сдерживания," *Военная мысль*, no. 7 (2015).

Damage considerations

Russian military writings are peppered with references to damage levels. By the early 2000s, Russian military analysts began to debate whether damage could be “tailored” to the adversary in specific circumstances.²⁴ This section focuses on the emergence of the “deterrent damage” concept and the ongoing evolution of the discourse about damage.

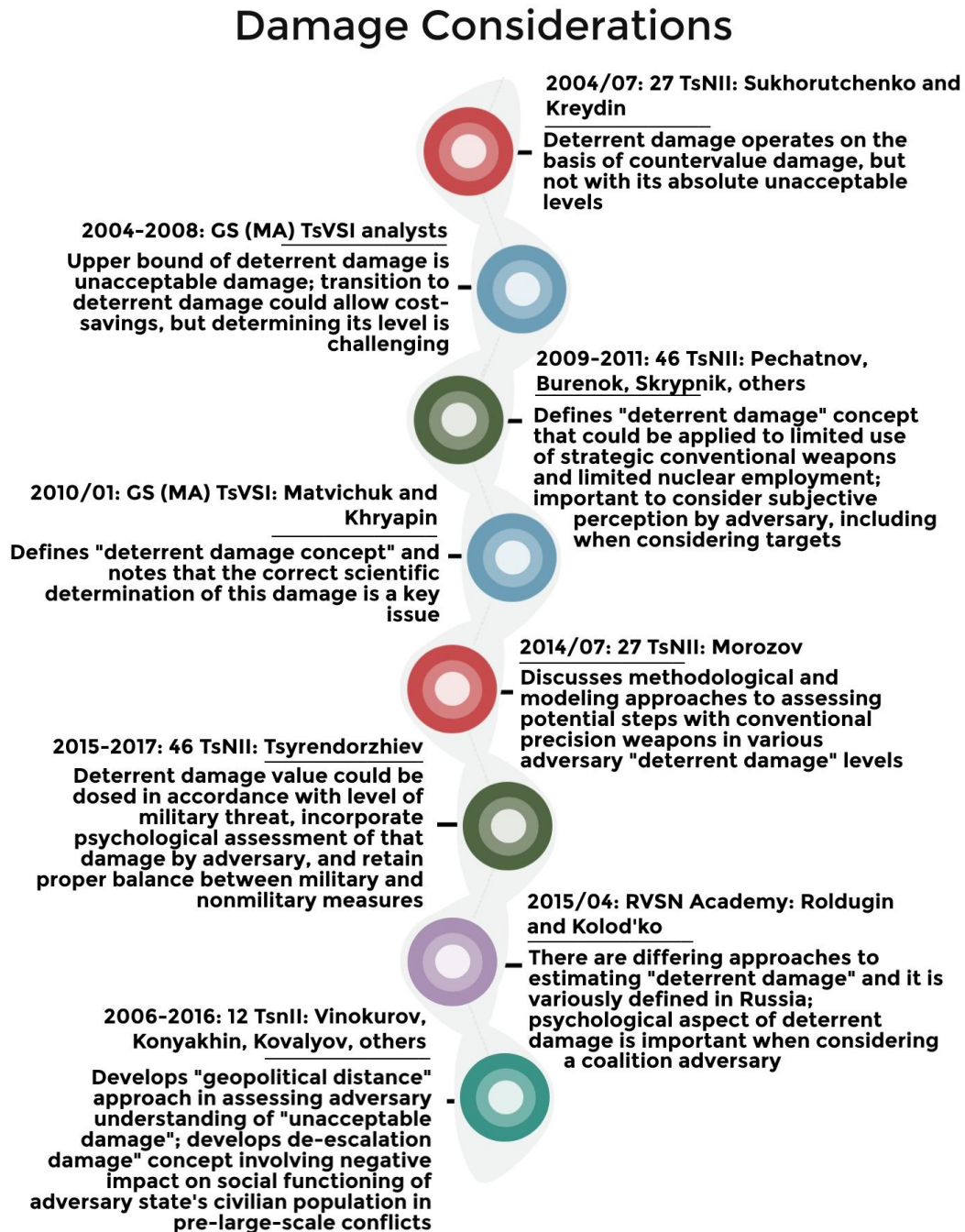
The concept “deterrent damage” is at the heart of current Russian military thinking on limited use of military force, particularly when it comes to strikes with strategic conventional systems, for escalation management purposes. The concept arose out of interests in subjective damage concepts like “intolerable damage” that relied on a certain “civilizational factor” that made certain actions unacceptable to civil society in an environment of globalization.²⁵ For a more substantive overview and a discussion of “unacceptable damage,” “intolerable damage,” and “assigned damage,” please see the companion CNA report “Russian Strategy for Escalation Management: Evolution of Key Concepts.”

Figure 5, below, depicts the central elements on the debate. For each entry, dates, name of institution, and author name(s) are given. Colors depict the various institutional participants (note that the same color scheme is used in the appendix for relevant institutions).

²⁴ В. К. Потемкин, Ю.В. Морозов, “Военно-политическая стабильность XXI века,” *Независимое Военное Обозрение*, no. 27 (1997).

²⁵ В.Н. Цыгичко, “О категории ‘соотношение сил’ в потенциальных военных конфликтах,” *Военная мысль*, no. 3 (2002).

Figure 5. Debate about damage considerations



Source: CNA analysis of Russian military journal articles.

- The “deterrence damage” term first appears in authoritative Russian military writings in reference to Cold-War efforts by Soviet analysts develop deterrence criteria for SNF. As described in a 2004 article by 27 TsNII’s V.V. Sukhorutchenko and S.V. Kreydin, “deterrent’ damage” or “Prudnikov criterion” “operates on the basis of countervalue damage, but not with its absolute unacceptable levels.”²⁶
- During the first decade of the 2000s, GS (MA) TsVSI continued to describe the “deterrent damage” concept as more broadly applicable to mass retaliatory employment of SNF.²⁷ They also wrote in 2008 that the “upper bound of deterrent damage [was] ‘unacceptable damage’” and that, as a basis of nuclear deterrence, there was a logical chain “fear-inducement (intimidation)—threat of retaliation—consequences (deterrent damage.)”²⁸ Former GS (MA) TsVSI analysts also noted that while a transition “toward ‘deterrent damage’ could allow to avoid 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.”²⁹
- One of the most cited articles on deterrent damage is a 2009 article in the *Herald of the Academy of Military Sciences*, in which the 46 TsNII analysts R.G. Tagirov, Yu.A. Pechatnov, and V.M. Burenok wrote of the need for a new term that could be used in pre-nuclear deterrence and in select limited nuclear employment situations, because the use of the term *unacceptable damage* was excessive. They argued the need to introduce the concept of “deterrent damage,” defined as “strictly dosed damage, inflicted by nuclear and/or strategic nonnuclear forces on objects of vitally-important infrastructure of the aggressor-state.” This damage could be objective or subjective, depending on the nature of the adversary.³⁰ Pechatnov and others went on to publish articles in *Armaments and Economics* and *Strategic Stability* that outlined approaches

²⁶ В. В. Сухорутченко и С. В. Крейдin, “Актуальные аспекты проблем ядерного сдерживания и достаточности ядерных вооружений,” *Военная мысль*, no. 7 (2004).

²⁷ А.Л. Хряпин и В.А. Афанасьев, Концептуальные основы стратегического сдерживания,” *Военная мысль*, no. 1 (2005).

²⁸ А.И. Туркин, А.В. Оселедько, А.Л. Хряпин, “Роль сдерживания как фактора сдерживания агрессии,” *Стратегическая стабильность*, no. 2 (2008).

²⁹ Михаил Сосновский, “О ядерном сдерживании в современных условиях,” *Обозреватель*, no. 11 (2004)

³⁰ Р.Г. Тагиров, Ю.А. Печатнов, В.М. Буренок, “К вопросу об определении уровней неприемлемости последствий при решении задачи силового стратегического сдерживания,” *Вестник Академии Военных Наук*, no. 1 (2009).

to determining an adversary's attitudes toward damage and proposed various damage criteria.³¹

- A 2010 article in *Military Thought* by analysts from the GS (MA) TsVSI defined *deterrent damage* slightly differently, noting that it is “damage, which is not comparable to the benefits, which he would seek as a result of using force.” The authors noted that “a relevant problem is the correct scientific determination of the level of deterrent damage.” They also pointed out that “the selection of deterrent damage is a political decision by the highest political leadership of the state.”³²
- Around 2014, the 27 TsNII analyst N.A. Morozov wrote of a methodology developed at the 27 TsNII that analyzed the stability of an adversary's military-political system in order to understand how it could react to strategic deterrence measures, including the employment of strategic conventional weapons early in a conflict.³³
- Another the 46 TsNII analyst S.R. Tsyrendorzhiev cautioned that there was still no scientifically based approach to assessing deterrent damage levels (only functional ones) and no basis of how to “dose” deterrent damage with either conventional precision strike or strategic nuclear weapons. He instead proposed an approach that assessed the level of damage by the need to preserve own security in various conditions of the military-political environment. According to this methodology, “deterrent damage is understood as a minimally-sufficient damage, inflicted on a subject, during which one can achieve the decrease of his abilities to form a military

³¹ See, for example, Ю.А. Печатнов, “Анализ отечественных и зарубежных подходов к формированию концепции и механизма сдерживания от развязывания военной агрессии,” *Вооружение и экономика*, no. 3 (2010); Ю.А. Печатнов, “Методический подход к определению сдерживающего ущерба с учетом субъективных особенностей его восприятия вероятным противником,” *Вооружение и экономика*, no. 3 (2011), and other articles by Pechatnov in that journal. А.В. Скрыпник, “Методический аппарат ранжирования критически важных объектов противника в целях решения задачи силового стратегического сдерживания,” *Вооружение и экономика*, no. 3 (2011); В.М. Буренок и Ю.А. Печатнов, “О критериальных основах ядерного сдерживания,” *Вооружение и экономика*, no. 1 (2013).

³² В.В. Матвичук, А.Л. Хряпин, “Система стратегического сдерживания в новых условиях,” *Военная мысль*, no. 1 (2010).

³³ Н.А. Морозов, “О методологии качественного анализа военно-политических систем,” *Военная Мысль*, no. 7 (2014).

- threat to a level, guaranteeing the achievement of RF military security.”³⁴
- Others agreed that the “deterrent damage” concept remained somewhat underdeveloped. As RVSN Academy analysts V.D. Roldugin and Yu.V. Kolod’ko have written, documents and studies have differing definitions of deterrent damage: (1) In the 2010 government document *Foundations of RF politics in the area of nuclear deterrence*, deterrent (unacceptable) damage is understood to be damage that is greater than the benefit that the aggressor expects to receive as a result of using force—similar to the GS (MA) TsVSI analysts’ definition, noted above. (2) RVSN Academy analysts’ work defines it as “damage unacceptable for the aggressor, the preliminary assessment of which compels the adversary to cease to engage in aggressive actions, but at the same time this damage is not irreversible.” (3) In works by the 46 TsNII’s Burenok and Pechatnov, also cited above, it is understood to mean “strictly dosed damage, inflicted by nuclear and/or strategic nonnuclear means at objects of vital importance to the adversary.” Roldugin and Kolod’ko further note that the common thread between these three is that deterrent damage is a type of damage that could be inflicted on an adversary in response to or as a result of deterrence through the use of force, and the degree of which is assessed by the adversary to be unacceptable, and compels the adversary to not initiate or continue military actions. In turn, damage could be objective/material (involving normatives and percentage of various target sets) or subjective, and both need to be considered (and need to consider how different members of a coalition perceive damage and how they impact one another).³⁵
 - Numerous strands of work involving damage concepts came from the 12 TsNII analysts B.A. Konyakhin, V.I. Kovalyov, and G.P. Vinokurov. For example, between 2006 and 2013, they wrote articles about the concept of “geopolitical distance” and how that would be useful in understanding the opponent’s view of “unacceptable

³⁴ 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); Also see 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, С.Р. Цырендоржиев, “реалистичной оценке экономических потенциалов субъектов международных отношений в достижении военно-политических целей государства,” *Вооружение и экономика*, no. 3 (2017); Also see С.Р. Цырендоржиев, С.А. Манин, “Оценка вклада обороноспособности в военную безопасность Российской Федерации,” *Военная Мысль*, no. 1 (2020).

³⁵ В.Д. Ролдугин, Ю.В. Колодько, “Уточнение понятия сдерживающего ущерба при решении задач силового сдерживания коалиционного противника,” *Стратегическая стабильность*, no. 4 (2015).

damage.”³⁶ A more recent concept from the TsNII involves discussion about “de-escalation damage” that involves understanding the potential of a negative impact on the functioning of the adversary state’s civilian population in pre-large-scale conflicts.³⁷ It is not clear whether these will be as influential as some of the ones described above.

Today, the concept of “deterrent damage” relates to tailored, and potentially subjective, damage that could be inflicted on an adversary with Russia’s strategic deterrence forces. Over the last several decades, various institutes have studied what could constitute deterrent damage (and its psychological dimension of impact on the adversary) and there are indications that the concept has been reflected in official documents. While the institutes have taken various approaches to understanding deterrent damage, with some proposing various methodologies and even a new concept of “de-escalation damage,” this issue remains a work in progress and important for analysts to track.

³⁶ Б.А. Коняхин, Ю.А. Подкорытов, Г.Н. Винокуров, “Методический подход к исследованию некоторых аспектов глобальной стратегической стабильности на основе математического моделирования динамики геополитических статусов государств,” *Стратегическая стабильность*, no. 1 (2006); Б.А. Коняхин, В.И. Ковалёв, Г.П. Винокуров, “Геополитические аспекты неприемлемости крупномасштабного вооруженного противоборства государств,” *Военная Мысль*, no. 06 (2013);

³⁷ Г.Н. Винокуров, “Деэскалационный ущерб как специфическая форма неприемлемости докрупномасштабных этапов,” *Стратегическая стабильность*, no. 4 (2015); Г.Н. Винокуров, Б.А. Коняхин, И.А. Рябченков, “Социальные последствия как основа методологии формирования критериев деэскалационного ущерба для докрупномасштабных этапов военного конфликта,” *Стратегическая стабильность*, no. 2 (2016).

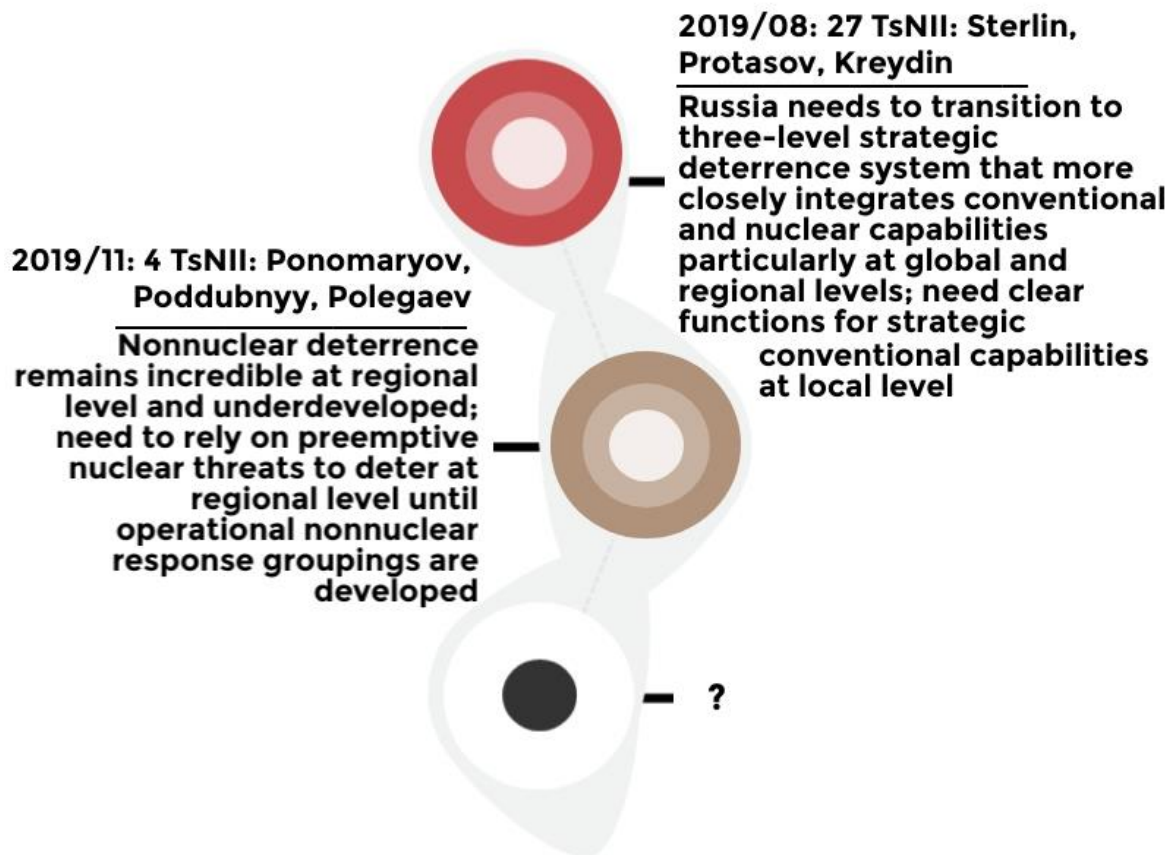
Ongoing Debates on Escalation Management

The final section of this paper seeks to answer the question, What do ongoing debates about escalation management suggest about the potential future evolution of Russian doctrine and operational planning? The section highlights two articles that focus on the ongoing evolution of Russia's strategic deterrence. They discuss the following topics: proposals to transition toward a three-level deterrence system that incorporates strategic conventional capabilities, and concerns about the credibility of nonnuclear deterrence versus potential reliance on preventive nuclear threats. These articles offer useful insights into how Russian policy and planning may evolve into the future. For additional thoughts on this topic, please see the companion CNA report "Russian Strategy for Escalation Management: Evolution of Key Concepts."

Figure 6 depicts the central elements in the current debate. For each entry, dates, name of institution, and author name(s) are given. Colors depict the various institutional participants (note that the same color scheme is used in the appendix for relevant institutions as well).

Figure 6. Ongoing debates about escalation management

Ongoing Debates About Escalation Management



Source: CNA.

Evolution of Russia's strategic deterrence system

In an article titled "Modern transformations of the concepts and forceful instruments of strategic deterrence," in the August 2019 issue of *Military Thought*, A.E. Sterlin, A.A. Protasov,

and S.V. Kreydin from the 27 TsNII write about the need to transition toward a deterrence system with greater integration of Russia's strategic conventional capabilities, and discuss the potential evolution in Russian strategic operations.³⁸ As the previous sections of this paper have highlighted, analysts from the 27 TsNII have participated in all of the key debates about the evolution of Russia's strategic deterrence system. Further, the 27 TsNII has played an important role in developing approaches to the employment of strategic conventional arms. This article may thus serve to express its perspectives on the ongoing debates within the GS and MOD on the upcoming military doctrine and the evolution of policies and plans. The article also makes the following points:

- The authors argue for the evolution of the existing two-level (global and regional nuclear) deterrence system into a more general (not nuclear-focused) three-level deterrence system (global, regional, local) that also incorporates a varied mix of capabilities and outlines concrete roles for strategic conventional weapons.
- At the local level of this proposed deterrence system, the goal would be to employ strategic conventional weapons to deter threats from nonnuclear adversaries and “if needed—curbing their aggression against Russia or its allies with minimal losses of armed forces, armaments, and military equipment.” This would be like Russia's experience in the Syrian conflict.
- At the regional level of this proposed deterrence system, strategic conventional weapons could focus on escalation management tasks in the nonnuclear phase of the conflict and “soften the suddenness of the transition from a failure of deterrence of threats during a crisis toward countering them with the means of last resort.” Strategic conventional weapons could also further increase the flexibility of strategic deterrence and give additional chances for de-escalation before crossing the nuclear threshold in regional wars.
- At the global level, strategic conventional capabilities could help create “nonnuclear keep out zones for the deployment of the opponent's [primarily naval] strategic forces and missile defense,” and “the control, through the use of force, of their military capabilities in order to ensure the proper level of Russia's retaliatory strategic nuclear force strikes.” The capabilities could also help conduct “managed countervalue escalation” on an opponent's targets such as fuel and energy infrastructure, the impact on which is characterized by the “infliction of dosed damage.”

³⁸ А.Е. Стерлин, А.А. Протасов, С. В. Крейдin, “Современные трансформации концепций и силовых инструментов стратегического сдерживания,” *Военная Мысль*, no. 8 (2019).

- However, the authors also posit that nonnuclear weapons cannot be as cost-effective as nuclear weapons, so Russia will continue to rely on nuclear weapons to deal with threats at the global and regional levels.
- In turn, criteria for sufficiency for strategic conventional capabilities “must be limited by the resolution of key tasks of local wars.” These include the “achievement of strategic initiative in the air and at sea; the isolation of the zone of combat actions; the disorganization of command of force groupings of the adversary, the infliction of damage on key objects of military infrastructure, and others.”
- The authors call for greater integration across the conventional and nuclear domains and discuss the potential convergence of prospective strategic operations—operation of strategic deterrence forces and operation of general purpose forces—into one strategic operation in order to “optimize the use of all systems and means of armed combat to provide for effective resolution of tasks of global, regional, and local strategic deterrence of aggression, and if needed—to localize its scale and neutralize it.”
- The article offers views on the 2018 Nuclear Posture Review, noting that the United States in effect has a three-level deterrence system that incorporates missile defense and strategic conventional weapons, and that US/NATO nuclear strategy involves the possibility of first use of nuclear weapons and uncertainty about the nuclear threshold.
- The authors also propose potential steps that Russia could take on arms control. These include (1) declining any offers from US and NATO (which are conventionally dominant over Russia) to negotiate on nonstrategic nuclear weapons, given Russia’s regional deterrence needs, and (2) proposing legally binding limits on strategic conventional weapons to counter Western initiatives on nonstrategic nuclear weapons and neutralize the competitive advantages of US nonnuclear strategic conventional capabilities.

Credibility of nonnuclear deterrence

In an article titled “Criteria and indicators of nonnuclear deterrence: the military aspect,” in the November 2019 issue of *Military Thought*, S.A. Ponomarev, V.V. Poddubnyi, and V.I. Polegaev argued that because Russia’s ability to retaliate with its strategic conventional weapons was not sufficient to prevent regional or large-scale wars, Russia needed to rely on preventive (*preventivnye*) nuclear threats.³⁹ As the previous sections of this paper have

³⁹ С.А. Пономарев, В.В. Поддубный, В.И. Полегаев, “Критерии и показатели неядерного сдерживания: военный аспект,” *Военная Мысль*, no. 11 (2019).

highlighted, analysts from the 4 TsNII have participated in some of the key debates on escalation management, and they have consistently argued that nonnuclear deterrence concepts—particularly those that involve the limited use of strategic conventional capabilities on an opponent’s critical infrastructure for escalation management—are not credible. Theirs appears to be a consistent dissenting voice that critically references the work of analysts from the 46 TsNII. At the same time, because their primary remit is work for the Strategic Rocket Forces, their arguments need to be taken with a certain grain of salt. The article also makes the following points:

- Historically, “no one has ever prevented a regional or large-scale conflict by threatening the retaliatory consequences of nonnuclear forces and means.” This is why some argue for a “nuclear component in the operation of strategic offensive forces,” but this would then no longer constitute nonnuclear deterrence.
- In the opinion of the authors, only “readiness to engage in the limited use of nuclear weapons” could deter conventional regional or large-scale war. “But this would significantly lower the threshold of unlimited [nuclear] use, and the aggressor may not have a nonnuclear alternative to exit the armed conflict.”
- Russia’s normative criteria for nonnuclear deterrence need to focus on “detering the United States and other NATO countries from initiating armed conflicts and local wars.”
- There are circumstances in which the maximum level of nonnuclear damage that could be inflicted on an opponent would not deter him from the initiation of the conflict; and the “potential aggressor could be deterred only by consequences, greater than the acceptable to him level of damage, or the consequences of sudden and unacceptable actions in response,” though these actions need to ensure that the opponent has nonnuclear options for exiting the conflict and they need to be guaranteed and implemented by rapidly available deterrence forces.
- The authors argue that, in a regional war, damage unacceptable to an opponent can only be achieved by escalation management actions that are global in scale; however, Russia is unable to create strategic conventional potential on such a scale. Thus, only preventive (*preventivnye*) nuclear threats could halt escalation in this case.
- Like in some of the previous writings by Polegaev et al., the article’s key argument is that Russia needs to create “operational nonnuclear response groupings” that could inflict damage at a regional level in order to deter conflicts at a local level.
- The authors also propose new normative values for damage on adversary targets for this nonnuclear response grouping. In this regard, “qualitative indicators of effectiveness ... could be based on the estimates of unacceptable damage to the military potential of the aggressor, inflicted by de-escalation strikes.” This damage would be

determined by the scale of damage on military equipment and industry, as well as potentially by the consideration of indirect damage, including ecological consequences, that would result from the strikes.

- Russia currently does not have the nonnuclear means and capabilities to inflict unacceptable damage on an adversary that is able to conduct “distance wars.” These capabilities need to be increased alongside the development of the proposed force grouping in order to be able to deter an opponent from initiating an armed conflict or a local war.

Conclusion

Taken together, these articles suggest several trends for the evolution of Russian military views about escalation management. First, strategic conventional capabilities are becoming more important in Russia's strategic deterrence and operational planning, though some judge them insufficient for escalation management at higher thresholds of conflict, particularly regional and large-scale war. Nonnuclear deterrence remains a work in progress at the operational level, and as an escalation management strategy requires greater investment in means. Some continue to doubt whether nonnuclear capabilities will prove cost effective, compared to nuclear weapons, but the trajectory appears to be towards a balanced force with a mix of both capability types.

Second, there is an enduring role for nonstrategic nuclear weapons in regional contingencies, and an ongoing debate about the role that strategic conventional weapons could play in the escalation management dynamic. Russia's nonstrategic nuclear weapons complement the conventional and strategic nuclear capabilities, but none will substitute for the other. Strategic nuclear forces remain in the conversation, with some arguing for their use to deliver select conventional or nuclear strikes in support of nonstrategic nuclear weapons, though their role seems to be concentrated at the level of large-scale war.

Third, there is an important debate about the definition of deterrent damage, and how to "dose" it against an adversary. While opinions diverge on what deterrent damage should constitute, the general current is to transition from unacceptable damage, calculated as some degree of counterforce or countervalue destruction visited upon an adversary, to inflicting some degree of calibrated damage, with conventional or nuclear weapons, in an iterative fashion against an adversary. The range appears to cover limited damage with reversible effects to thresholds of pain approaching "unacceptable" to the adversary in question. As of this writing, it's not clear that subjective concepts of deterrent damage have been transplanted from the pages of military journals and into official planning.

Finally, an undercurrent in the Russian military-analytical community continues to advocate for nuclear threats at significantly earlier points in the conflict than the consensus across the journals, and the statements of military and political leaders, may suggest. However, this remains a minority opinion relative to the overall view that nuclear threats are not likely to be credible in the early period of conflict or in conflicts of relatively smaller scope. Much of the writing suggests that the utility of nuclear weapons in escalation management is context based, and there is a preference to use conventional means, nuclear threats, or demonstrations first in most contexts.

To understand the future evolution of Russian doctrine and operational planning, Western analysts may want to pay particular attention to writings by authors from four military-analytical centers—the General Staff (Military Academy) Center for Military-Strategic Research (GS (MA) TsVSI), the 4 TsNII, the 27 TsNII, the 46 TsNII, and the RVSN Academy—because military analysts from these institutes have been at the heart of the most important exchanges on the evolution of Russia’s approaches to escalation management.

While the existence of debates does not provide proof of the actual operational concepts and plans, many writings do indeed reference the current state of forces and the strategic operations for their employment, and provide clear markers of official doctrine or strategy. These writings are also punctuated by officially released military doctrines, national security strategies, and other documents that reveal some of the winners and losers. Furthermore, the sides in these debates may be decidedly uneven, and the existence of an ongoing conversation among Russian military thinkers or researchers should not be miscast as incoherence or the absence of formally adopted doctrinal concepts. On the contrary, they confirm that a host of conceptual debates have been settled from previous decades, and allow readers to understand the evolution of discourse in Russian military circles by paying attention to the topics being currently debated.

Appendix: Key Players in Russian Debates on Military Concepts

Ministry of Defense central science-research institutes (TsNIIs)

Five of the Russian MOD's TsNIIs have taken part in analytical work pertinent to escalation management: the 4 TsNII (focused on Strategic Rocket Forces); the 12 TsNII (focused on nuclear weapons and nuclear effects); the 27 TsNII (focused on C2, computation/modeling, forecasting, and information infrastructure); the 46 TsNII (focused on military technology development and state armament program justification); and the Aerospace Forces TsNII (focused on aerospace defense and military space activity). Below, we discuss each of these key players. (The list of articles for each TsNII are intended to be representative of their participation in the debates and not comprehensive. Please see the debates section above for additional sourcing.)

The 4 TsNII (Moscow Region)

The 4 TsNII (4 Центральный научно-исследовательский институт МО РФ) is one of the oldest of the RF MOD research institutes. Its research focuses on issues related to Russia's Strategic Rocket Forces (RVSN) and nuclear missile weapons.⁴⁰ Created in 1946 as NII-4, the institute played a central part in developing the Soviet Union's ballistic missile program and its C2 system, and in ensuring the survivability of the Soviet nuclear deterrent. It has at various points in time been a part of the RVSN.⁴¹ As described by 4 TsNII officials, during the "period of achievement of nuclear-missile parity with the USA and to the collapse of the Soviet Union, main efforts of the institute were directed at scientific support of ways to maintain parity."⁴²

Since 1991, the 4 TsNII has also focused on Russia's approaches to US deployment of missile defenses, cybersecurity issues, and the development of space navigation systems. Its current

⁴⁰ "4 ЦНИИ," RF Ministry of Defense, undated, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=13926@morfDictionary>.

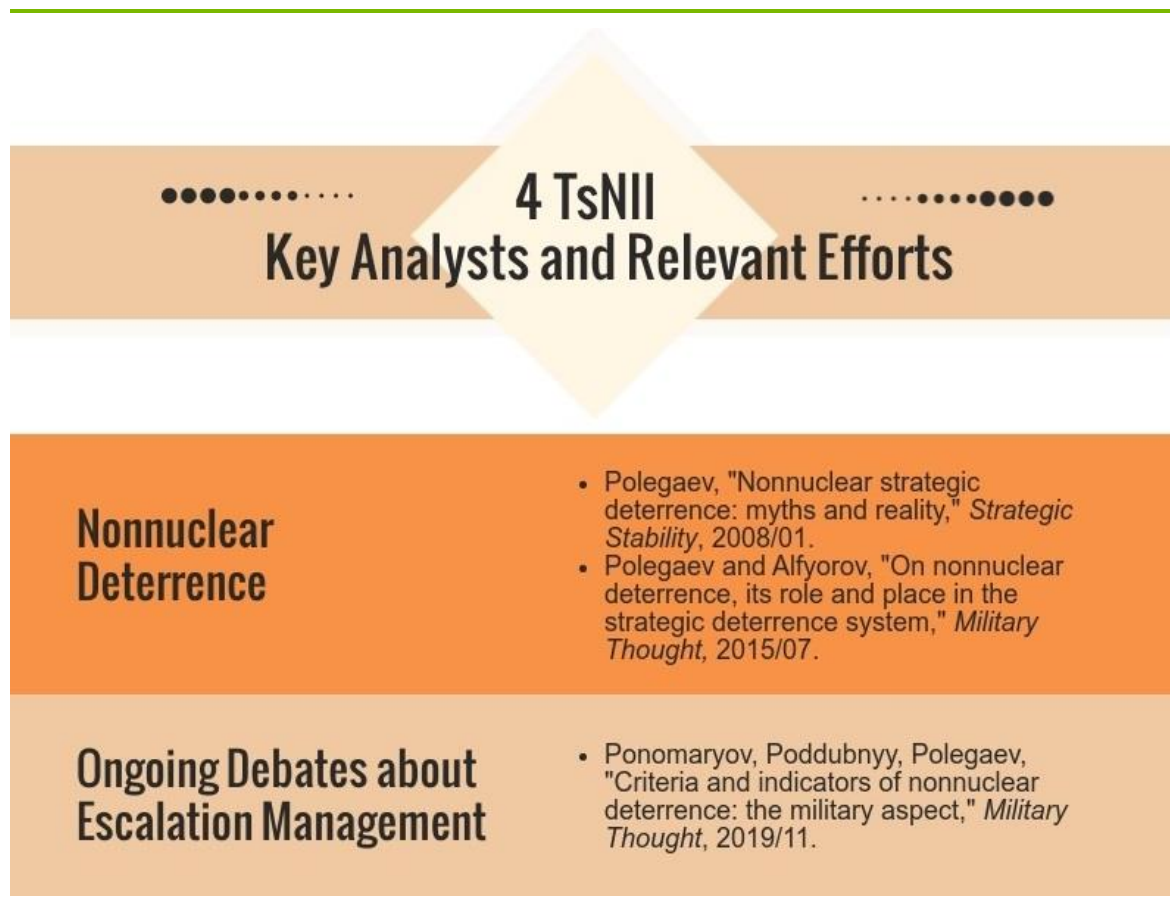
⁴¹ Ibid.

⁴² С.Е. Таразевич, "4 ЦНИИ – ровесник ракетно-космической отрасли страны," *Военная Мысль*, 2016/06.

primary focus is on the support of RVSN. As a result of numerous structural reforms since 1997, the 4 TsNII subsumed several other TsNIIs focused on space and aerospace issues and then saw these TsNIIs taken out of its structure in 2014. During multiple waves of restructuring and threats of relocation, the institute lost a significant number of its staff and was once again brought into RVSN.⁴³

Among the authoritative writings reviewed were numerous articles written by 4 TsNII analysts, most of whose publications focused on RVSN-related issues. The articles most relevant for the escalation management problem set focused on critiques of nonnuclear deterrence and ongoing conversations about escalation management, as depicted in Figure 7.

Figure 7. Relevant research from 4 TsNII



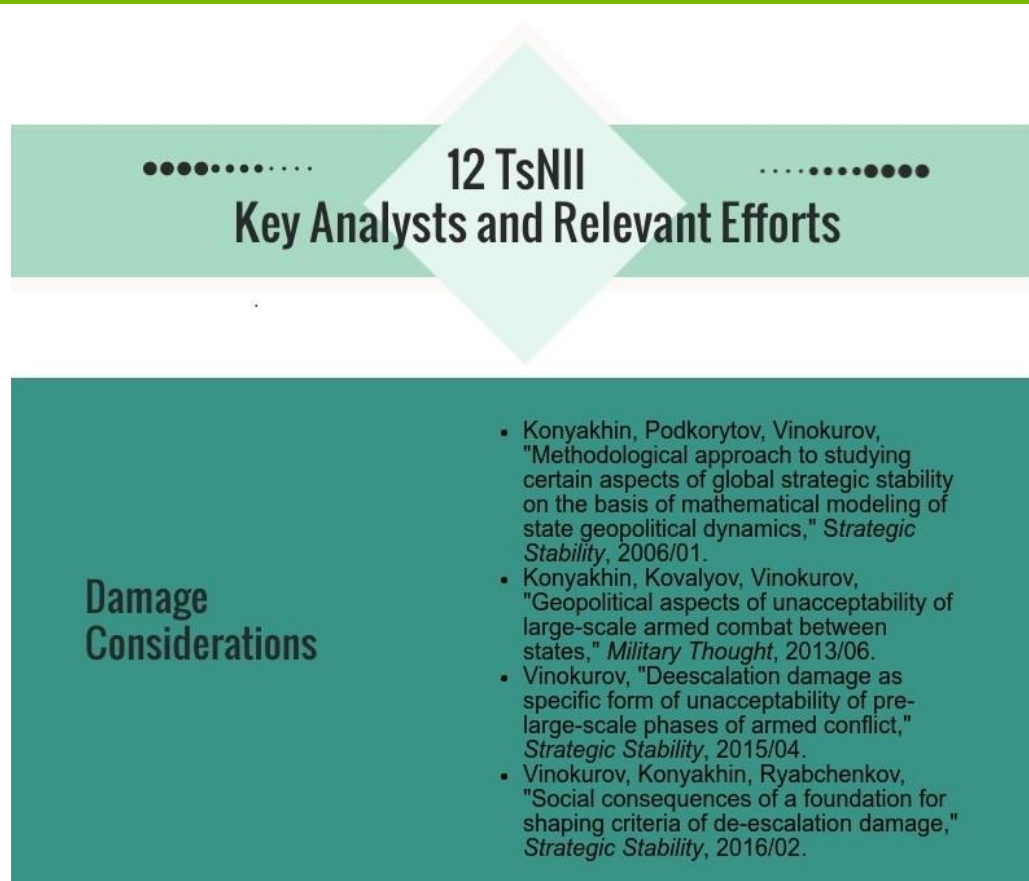
Source: CNA.

⁴³ Ibid.

The 12 TsNII (Moscow Region)

Created in 1949, the 12 TsNII (Двенадцатый центральный научно-исследовательский институт МО РФ имени В.А. Болятко) conducts research related to issues of “development and maintenance of high combat readiness and effectiveness of nuclear weapons of all types of the Armed Forces of the RF.”⁴⁴ Its key focus has traditionally been on understanding nuclear effects, which means that it took an active part in conducting measurements and assessments of Soviet nuclear testing, as well as civil defense issues. Our sample included numerous articles written by analysts of the 12 TsNII. The articles most relevant for the escalation management problem set focused on damage considerations, as depicted in Figure 8.

Figure 8. Relevant research from 12 TsNII



Source: CNA.

⁴⁴ "12 Цнии," RF Ministry of Defense, undated, https://encyclopedia.mil.ru/encyclopedia/dictionary/details_rvsn.htm?id=12994@morfDictionary.

The 27 TsNII (Moscow)

Created in 1954, the 27 TsNII (27-й Центральный научно-исследовательский институт МО РФ) focuses on issues related to (automated) C2 systems, the information infrastructure of the Russian armed forces, communications systems, and geodesic and navigational support.⁴⁵ It conducts extensive computational and modeling work for the Ministry of Defense, including on forecasting the steps and outcomes in potential conflicts, and assists in the development of concept documents. It also has created the Special Mathematical and Programmatic Support (SMPO) software, which is used for the planning of strategic weapons employment. Like many other TsNIIs, the 27 TSNII was faced with restructuring and staff losses beginning in 2010.⁴⁶

The articles most relevant for escalation management from the 27 TsNII focused on regional nuclear deterrence, nonnuclear deterrence, damage considerations, and ongoing conversations about escalation management, as depicted in Figure 9.

⁴⁵"27 Цнии," RF Ministry of Defense, undated, <https://ens.mil.ru/science/SRI/infrmation.htm?id=10992@morfOrgScience>.

⁴⁶ А.А. Протасов, "Институт автоматизации и совершенствования управления войсками (силами): история и современность," *Военная Мысль*, 2014/07.

Figure 9. Relevant research from the 27 TsNII



Source: CNA.

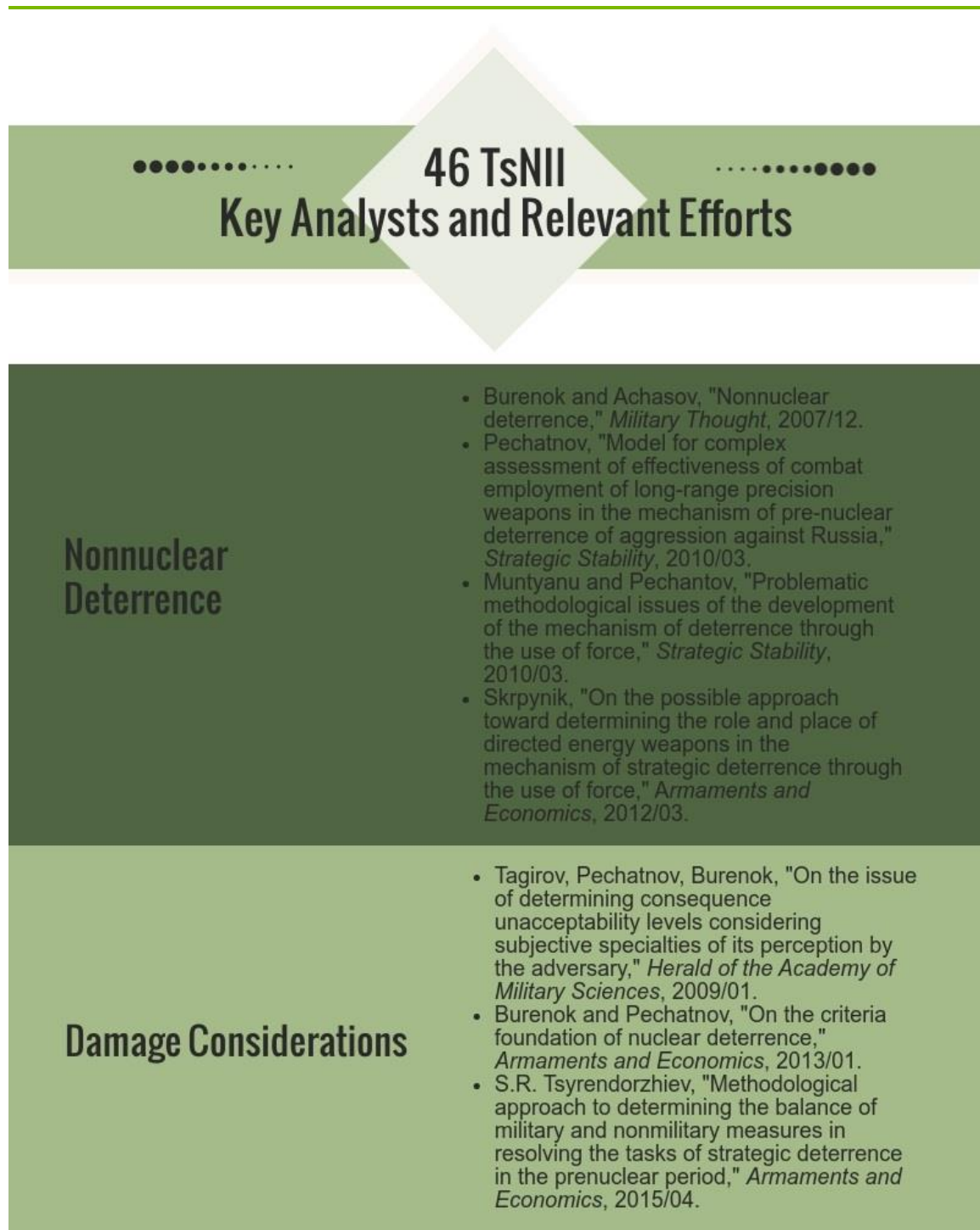
The 46 TsNII (Moscow)

In 1977, the 46 TsNII (46 Центральный научно-исследовательский институт МО РФ) was created out of a branch of the 27 TsNII to focus on the development and justification of military technology procurement and state armament programs.⁴⁷ Today, it also focuses on standardizing military equipment, developing the technological base, developing a justification for science-intensive projects in defense industry, and other areas.⁴⁸ Jointly with the nongovernmental organization RARAN, discussed below, the 46 TsNII publishes the journal *Vooruzhenie i Ekonomika* (*Armaments and Economics*). Its articles generally cover issues related to nonnuclear deterrence and damage considerations, as depicted in Figure 10.

⁴⁷ “Поздравления коллег 46 институту,” *Военная Мысль*, no. 12 (2007).

⁴⁸ “46 Цнии,” RF Ministry of Defense, undated, <https://ens.mil.ru/science/SRI/infrmation.htm?id=11391@morfOrgScience>.

Figure 10. Relevant research from the 46 TsNII

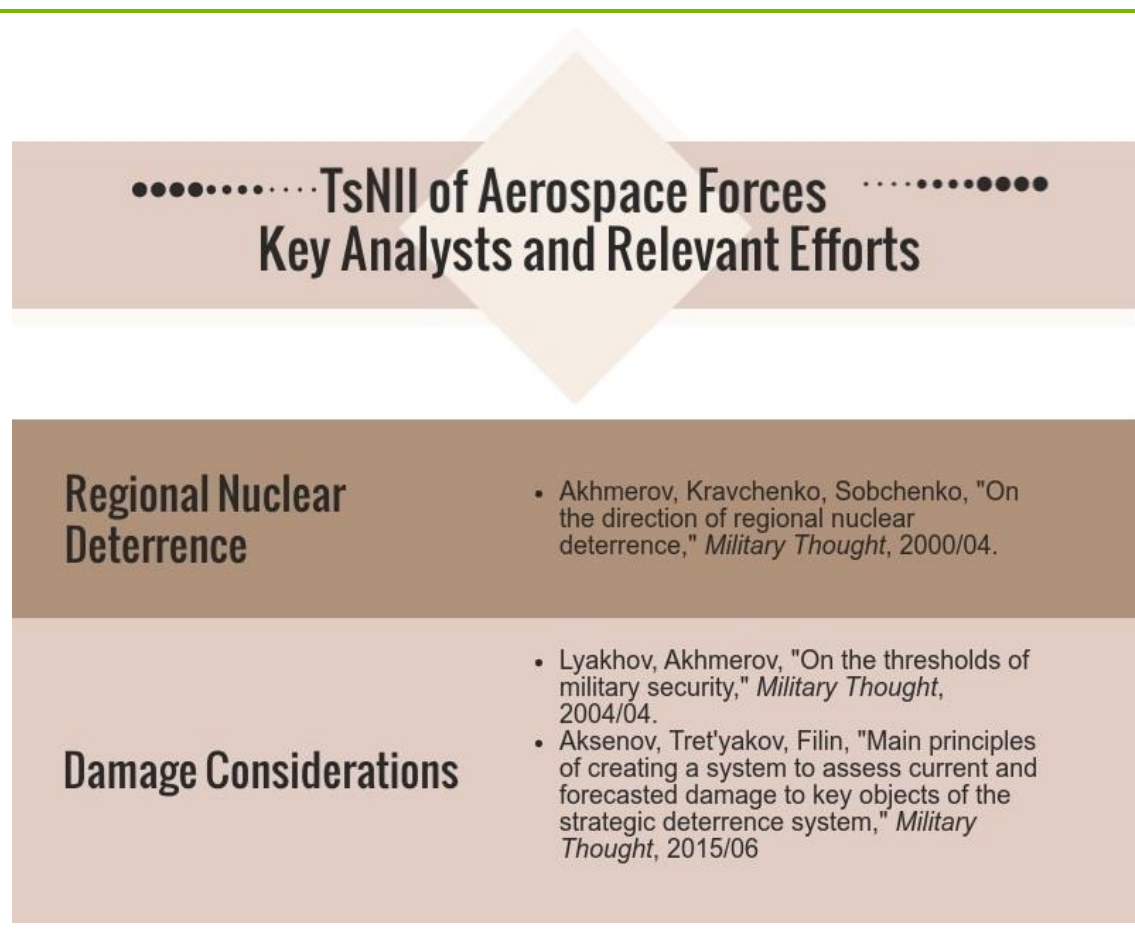


Source: CNA.

TsNII of Aerospace Forces (Tver')

The TsNII of the Aerospace Forces Institute (НИЦ ЦНИИ Войск ВКО) conducts research on the issues of aerospace defense and military-space activity of the Russian Federation, and the development of systems and means of the Aerospace Forces (in particular aerospace defense). Structurally, it consists of several research centers that were brought together in 2014.⁴⁹ The articles reviewed tend to focus on regional nuclear deterrence and damage considerations, as depicted in Figure 11. (Note that the articles presented in the damage considerations section in the Figure below do not appear in the debates section of this paper because they do not focus on deterrent damage. However, we thought that it was important that they be included here.)

Figure 11. Relevant research from the TsNII of Aerospace Forces



Source: CNA.

⁴⁹ "ЦНИИ ВКО," RF Ministry of Defense, undated. <https://ens.mil.ru/science/SRI/inframation.htm?id=12279@morfOrgScience>.

Military academies

General Staff Military Academy's Center for Military-Strategic Research (Moscow)

Created in 1985, the Center for Military-Strategic Research (abbreviated GS (MA) TsVSI, based on the Russian Центр военно-стратегических исследований (ЦВСИ) (Военной Академии) ГШ ВС РФ), carries out research at the strategic level, develops conceptual documents, and formulates the scientific basis for Russia's high-level military-political decisions.⁵⁰ It coordinates studies and provides scientific-methodological and information support to the MOD. Structurally, during the last decade, it has been moved back and forth several times from the General Staff to the General Staff Military Academy; it currently resides in the academy.⁵¹

According to reports, the GS (MA) TsVSI helped develop the concept of RF national security, the concept of nuclear deterrence, the concept of Russian policy on nonstrategic nuclear weapons, and Russia's military doctrines of 1993 and 2000, among others.⁵² Its staff has also reportedly been involved in the development of planning and training for key operations such as the Strategic Operation on the Destruction of Critical Targets.⁵³ The articles most relevant to escalation management focus on regional nuclear deterrence and nonnuclear deterrence, as depicted in Figure 12.

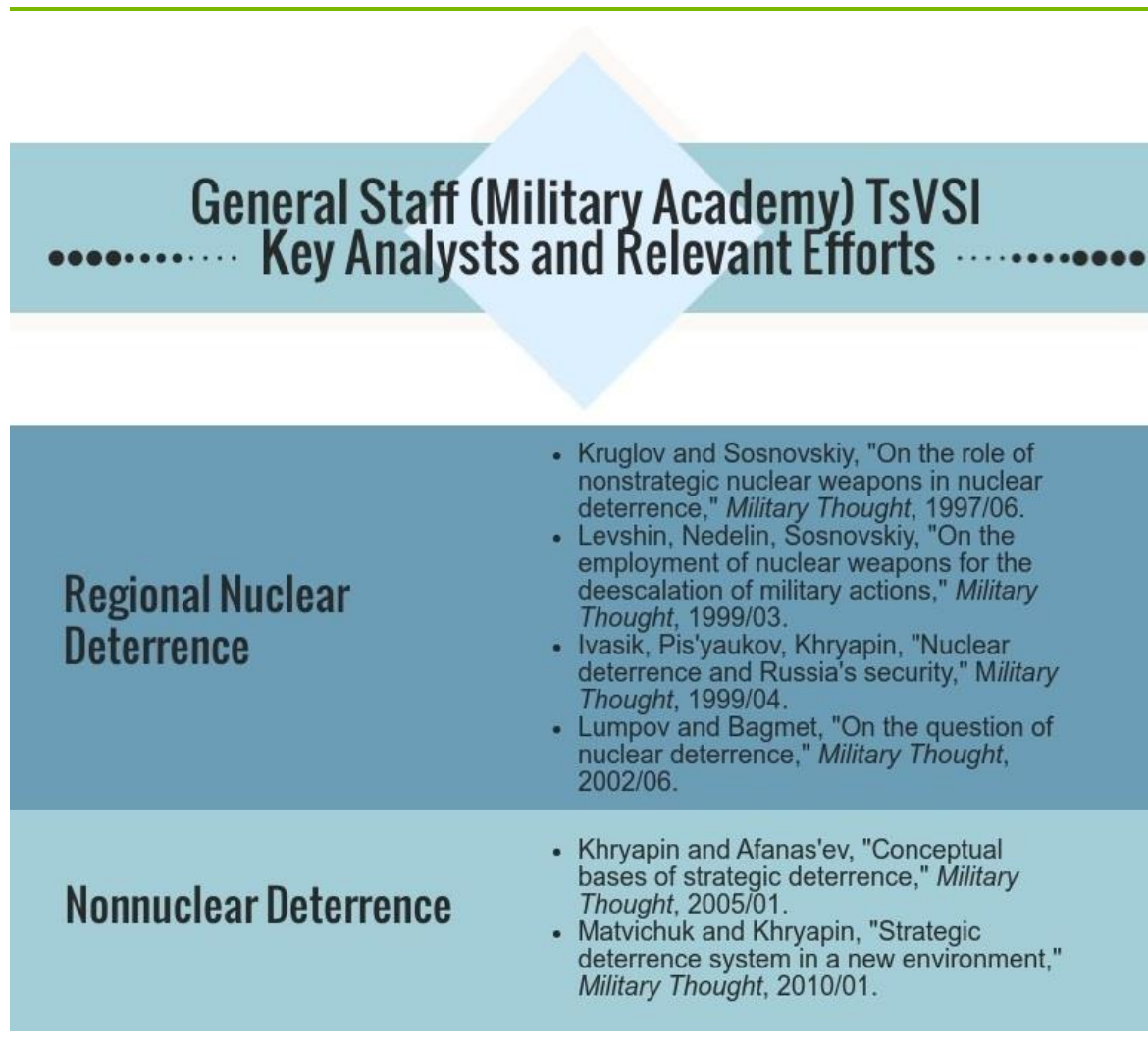
⁵⁰ И.С. Даниленко, В.К. Копытко, С.В. Чарков, "Передовая фабрика военной мысли России: прошлое, настоящее, будущее," *Военная Мысль*, no. 12 (2017).

⁵¹ В.К. Копытко, "О роли и месте военной академии генерального штаба в системе военного образования," *Военная Мысль*, 2010/11.

⁵² "Центр военно-стратегической мысли," *Красная звезда*, January 26, 2010, http://old.redstar.ru/2010/01/26_01/2_02.html; С.Г. Чекинов, "Центр военно-стратегических исследований генерального штаба Вооруженных Сил Российской Федерации: история и современность," *Военная Мысль*, 1/2010/01.

⁵³ "Сержантов Александр Владимирович," MCA.LIFE, October 5, 2016, <http://mca.life/2016/10/serzhanov-aleksandr-vladimirovich/>.

Figure 12. Relevant research from the GS (MA) TsVSI



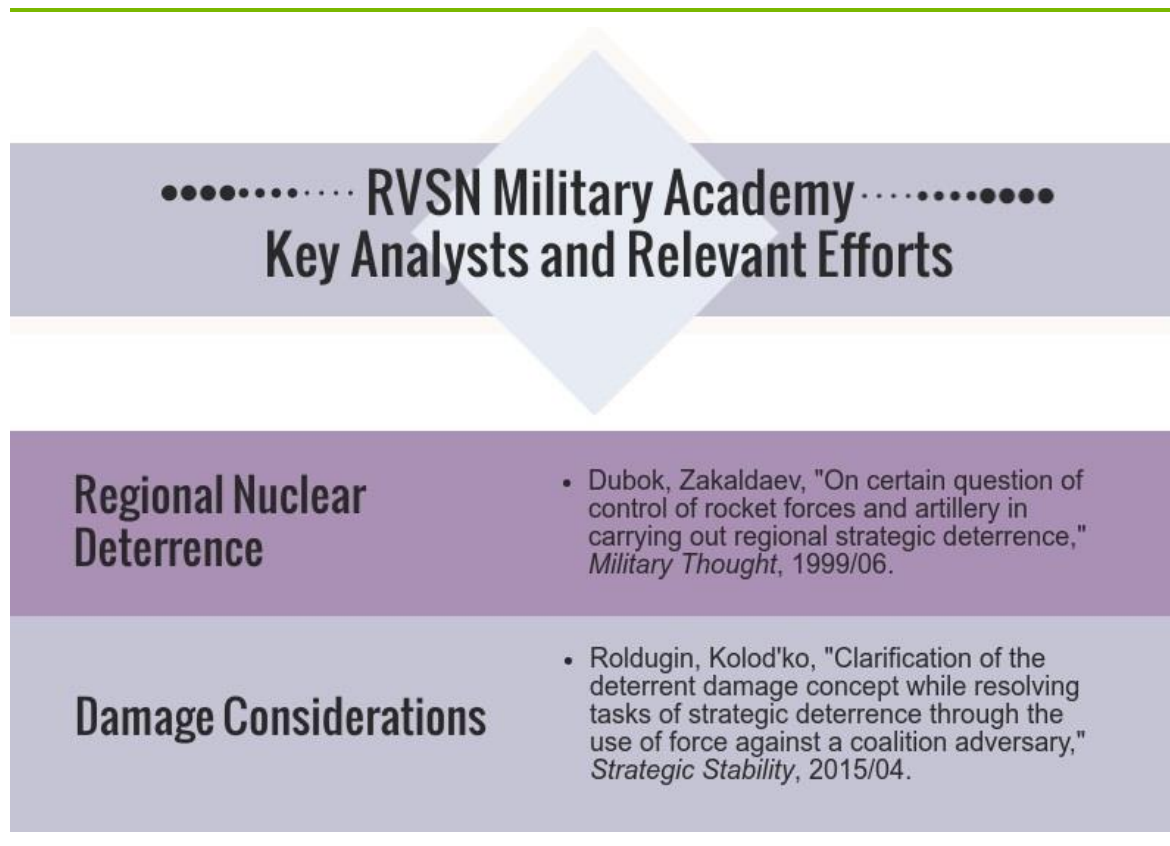
Source: CNA.

(Peter the Great) Military Academy of the Strategic Rocket Forces (Moscow Region)

One of the oldest Russian professional military-technical institutions, the RVSN Military Academy (ВА РВСН имени Петра Великого), conducts research to create the scientific justification for main directions of the development of the Strategic Rocket Forces, as well as to shape and implement requirements for new models of armaments and solve other science

and practical tasks for RVSN and other services.⁵⁴ The academy was moved to the facilities of the Russian MOD Military-Technical University in Balashikha in 2015.⁵⁵ The study team selected articles focused on regional nuclear deterrence and damage considerations, as depicted in Figure 13.

Figure 13. Relevant research from the RVSN Military Academy



Source: CNA.

⁵⁴ See its website at <https://varvsn.mil.ru/>.

⁵⁵ The move was set in motion by a directive signed by Anatoly Serdyukov in December 2007 to create a commission to determine the relocation site for the VA RVSN. This change was only one aspect of Serdyukov's broader set of reforms, which sought to relocate many military higher education facilities. Some observers allege that this effort was motivated by a desire to capitalize on the high property values of existing facilities in larger cities, and accusations were raised in the media that the MOD planned to sell the VA RVSN facilities for 120 billion rubles. Сергей Ищенко, "Тень Сердюкова накрыла и Академию РВСН," *Свободная Пресса*, March 25, 2015, <https://svpressa.ru/war21/article/116472/>.

Nongovernmental professional organizations

Academy of Military Sciences (AVN)

The Academy of Military Sciences or AVN (Академия военных наук) was created in 1994 by presidential decree at the urging of Russian military science leaders. With about a dozen regional branches, AVN focuses on all aspects of military science and defense policy.⁵⁶ From its founding until his death in December 2019, its president was the legendary Gen. Makhmut Gareev. AVN publishes the *Vesnik-AVN (Herald of the Academy of Military Sciences)* journal and co-publishes the journal *Strategicheskaya Stabil'nost' (Strategic Stability)*, which contributes a portion of our RMSP sample. Many current and retired researchers from the TsNIIs and military academies are AVN members and publish using that affiliation, and we have many of their writings in the RMSP sample. We chose not to focus on authors whose primary affiliation was with AVN and not with a TsNII or a military academy, because of the challenges in parsing the degree of authoritativeness of ideas of retired military thinkers. However, because AVN plays an important role by providing various platforms for debate, it is an important component of the Russian military-analytical community.

Russian Academy of Rocket and Artillery Sciences (RARAN)

The successor to the Academy of Artillery Sciences, which had existed since 1946, is the Russian Academy of Rocket and Artillery Sciences, or RARAN (Российская академия ракетных и артиллерийских наук). It was formally established in 1994 by presidential decree to provide for “the resurrection of traditions of Russian military science and the development of research in the country’s defense complex” after the collapse of the Soviet Union.⁵⁷ RARAN’s president since 2011 has been Vasiliy Burenok, former head of the 46 TsNII, and author of a key book on strategic deterrence issues. RARAN publishes two journals relevant to the debate: *Vooruzheniye i Ekonomika (Armaments and Economics)* and *Izvestiya RARAN (RARAN Herald)*, articles from which are included in our RMSP sample. Some current and retired researchers from TsNIIs and military academies are RARAN members. We chose not to focus on those whose *primary* affiliation was with RARAN, because of the challenges in parsing the degree of authoritativeness of ideas of retired military thinkers. However, because RARAN plays an influential role by providing various platforms for debate, it is an important component of the Russian military-analytical community.

⁵⁶ See its website at <http://www.avnrf.ru>.

⁵⁷ See its website at <http://guraran.ru>.

Civilian academic institutions and think tanks

Our sample of RMSP articles included writings by analysts and scholars affiliated with academic and other analytical centers, particularly those affiliated with the Russian Academy of Sciences, or RAS. This was because they were participants in the policy process and played a role in some of the debates described. For example, the work of Alexey Arbatov and Vladimir Dvorkin of IMEMO RAS has been instrumental in various debates about regional nuclear deterrence and levels of sufficiency for strategic nuclear forces. Similarly, Moscow State University's Andrey Kokoshin was instrumental in debates about nonnuclear deterrence. Another key expert was Vladimir Dvorkin, also of IMEMO RAS. The study team did not include them in this particular analysis. However, we noted their contributions in the respective sections, because they represent important civilian voices and thus need to be acknowledged.

Figures

Figure 1.	Notional structure of the Russian military-analytical community.....	5
Figure 2.	Timeline of debates about regional nuclear deterrence and nonnuclear deterrence.....	6
Figure 3.	Debate about regional nuclear deterrence	8
Figure 4.	Debate about nonnuclear deterrence.....	13
Figure 5.	Debate about damage considerations.....	19
Figure 6.	Ongoing debates about escalation management.....	25
Figure 7.	Relevant research from 4 TsNII.....	33
Figure 8.	Relevant research from 12 TsNII.....	34
Figure 9.	Relevant research from the 27 TsNII	36
Figure 10.	Relevant research from the 46 TsNII	38
Figure 11.	Relevant research from the TsNII of Aerospace Forces	39
Figure 12.	Relevant research from the GS (MA) TsVSI.....	41
Figure 13.	Relevant research from the RVSN Military Academy	42

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