



# **THE UNSETTLING VIEW FROM MOSCOW**

**Russia's Strategic Debate on a Doctrine of Pre-emption**

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## About the Author



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### Cover Photo

The Moscow Kremlin (Yongyuan Dai/Getty)

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## Executive Summary

**A** rising number of Russia's senior military strategists are advocating for the adoption of a doctrine of pre-emption for the defense of their nation. This doctrine would be intended to protect the territorial integrity and vital national interests of the Russian Federation. To achieve these fundamentally defensive aims, Russian military strategists argue that if an attack on Russian vital interests appears imminent, Moscow must be prepared to use strategic non-nuclear or limited nuclear force first in order to deter or defeat the United States or NATO. Pre-emption could occur in crisis or in the early stages of an escalating conflict. Russian advocates of pre-emption argue that the pre-emptive attacks on U.S. or NATO targets could serve one or more of three purposes.

- **Deterrence by cost imposition.** Pre-emptive attacks on countervalue targets could provide a “punch in the nose” that deters U.S. or NATO aggression by communicating to Western policymakers and publics alike that the costs of attacking or escalating a military confrontation with Russia will outweigh any plausible benefits.
- **Deterrence by denial.** Pre-emptive attacks on counterforce targets could degrade U.S. or NATO power projection capabilities, and change the “correlation of forces,” such that Washington and other NATO capitals no longer believe that they can prevail in a major war, at acceptable levels of escalation, against Russia.
- **Pre-emption as a defeat mechanism.** Some advocates argue that pre-emptive attacks on key Western aerospace – and other – capabilities may allow the Russian armed forces to degrade or eliminate U.S. and NATO forces' comparative advantages, such as long-range strike, thereby improving Russia's relative military-operational position.

Russia's potential adoption of a military doctrine based on pre-emption appears to remain in debate. The Kremlin does not yet appear to have shifted to a pre-emptive posture, based on open-source reporting. However, arguments for Russia's shift to pre-emption seem to have gained traction in Moscow since the mid-2000s. And there is a significant likelihood that Moscow may ultimately endorse pre-emption for the defense of the Russian state in the coming decades.

Consideration of a pre-emptive military doctrine is motivated first by Russian policymakers' dismal geopolitical outlook. Moscow sees the United States as the world's sole remaining superpower, intent on maintaining its position by constraining aspirant powers and imposing its own will on other nations – chief among them Russia. The Kremlin has indicated as well its belief that the United States would be willing to use force to impose its will on Russia in the future, if Russia is not prepared to defend itself.

Simultaneously, a growing number of Russian military strategists forecast that defensive or retaliatory operations alone will soon be insufficient to protect Russia's vital interests. They assess that a host of new military technologies are collapsing the battlespace and giving growing advantage to the side that escalates first. These systems will allow both Russia and the United States to act more rapidly across broader geographic expanses than before. Moreover, many of these emerging technologies – including cyber, counterspace, conventional prompt global strike (CPGS), and certain autonomous weapons – may hold Russia's strategic nuclear forces at unprecedented risk in the coming decades.

From a Russian perspective, seizing the initiative will be the key to deterrence or if necessary military defeat of Western aggression in this collapsing battlespace. Pre-emption advocates contend that if Moscow does not escalate first in a future crisis or conflict, then the United

States and its allies will. If that happens, they fear that Russian defenses will be unable to repel or absorb the U.S. or NATO attacks on Russian vital interests. They expect further that the Russian Federation will be unable to seize back the initiative once it is lost. Indeed, if the initial period of this future war is as devastating as many expect, the Russian armed forces may have limited retaliatory options left.

Russia's adoption of a defensive doctrine of pre-emption would severely complicate efforts by U.S. and NATO policymakers to deter Russia or manage a future crisis or conflict on NATO's eastern flank – such as a Baltic contingency – without triggering runaway escalation. It would deny Russian, U.S., and NATO officials the time required to determine whether an attack is actually imminent and enact a proportionate response. The result would be to increase the risk of rapid early military strikes and rampant escalation. This will be especially dangerous in the coming years. In view of the growing perceived fragility of Russian and U.S. nuclear forces, once war begins, it may prove difficult to contain at non-nuclear levels.

The United States should therefore take steps to dissuade Moscow from shifting to a doctrine of pre-emption. It is beyond the scope of this study to offer exhaustive recommendations to this effect. As a starting point, U.S. policymakers should seek to reduce both the expected value of and the perceived need for a doctrine of pre-emption, as seen by Moscow.

To reduce the expected value of pre-emption, as seen by Moscow, the United States should:

- Seek recognition of “rules of the road” for cyber and counterspace operations.
- Prioritize the development of more resilient U.S. and NATO operational concepts.
- Demonstrate NATO's emphasis on resilience in future military exercises.
- Boost investment in cyber resilience.

- Expand investment in space resilience.
- Bolster conventional deterrence in Europe.
- Sustain Third Offset technological, doctrinal, and organizational innovations.
- Reaffirm the United States' intent to respond forcefully to Russian aggression.
- Engage the American public on the costs of inaction in the face of foreign aggression.

To reduce Moscow's perceived need for pre-emption, the United States should take a complementary but distinct set of steps:

- Restore U.S.-Russian military-to-military contacts.
- Sustain engagement with Russia on NATO ballistic missile defenses.
- Consider limitations on U.S., Russian, and Chinese CPGS forces.
- Promote the responsible use of military autonomy.
- Clarify the United States' preference against pre-emption.
- Engage Russia on geopolitical concerns.

This policy approach is not without risks. Yet, the evolving security environment demands a more active U.S. strategy. If the Russian Federation officially adopts a defensive doctrine of pre-emption, it will signify the opening of a deeply concerning chapter in U.S.-Russian relations. That chapter would be defined by more acute fear, hastening timelines, and perilous risk-taking in a security environment defined by uncertainty. It would constitute a return to Cold War-level tensions, only this time with more ways for the United States and Russia to stumble into potentially catastrophic escalation than before.



*The Monument to Minin and Pozharsky stands before St. Basil's Cathedral in the Red Square in Moscow. The monument commemorates Kuzma Minin and Count Dmitry Pozharsky, who assumed prominent roles in Russia's struggle for independence from the Poles in the 17th century. (Wikimedia Commons)*

## The Unsettling View from Moscow

Russian policymakers believe their nation is under siege. The eastward march of liberalism in post-Cold War Europe is seen by the Kremlin to pose an existential threat to the Russian state. Meanwhile, rapid shifts in the military-technological environment are simultaneously exposing Russia to U.S. or NATO military coercion. These trends inform arguments by Russia's top military strategists in favor of what they perceive to be a defensive doctrine of pre-emption.

### A Dismal Geopolitical Outlook

Moscow has identified the United States and its NATO allies as the Russian Federation's greatest threats today and for the foreseeable future.<sup>1</sup> This pronouncement is rooted in Russian policymakers' understanding of U.S. hegemonic intent. Russian officials believe that the United States is actively working to weaken the Russian state in order to fortify its own position as the world's sole remaining superpower.<sup>2</sup>

They cite a host of U.S. policies as evidence of this intent. For instance, Russian officials, including President Vladimir Putin, often characterize NATO expansion in the 1990s and 2000s as an effort to isolate and subordinate Russia.<sup>3</sup> They argue similarly that U.S. activities in Georgia, Ukraine, and Syria are motivated by a desire to cultivate U.S. proxies in Russia's near abroad. Russian analysts say the United States ultimately hopes to use these proxies to stir dissent within Russia itself.<sup>4</sup>

These attempts to co-opt or reorient regional actors to disadvantage Russia are not isolated events, according to Russian analysts. Instead, they sit within a long history of U.S.-backed "color revolutions" in Europe, North Africa, the Middle East, and Central Asia.<sup>5</sup> U.S. analysts often characterize Russian military-operational art as "hybrid warfare." Yet, Russian political-military thinkers are clear in their assessments that it is the United States that is using a combination of political, economic, information, and other non-military instruments to destabilize foreign nations.<sup>6</sup>



*Vladimir Putin speaks in July 2015. He has forcefully criticized what he characterizes as the United States' ongoing efforts to impose its will on weaker nations. (The Kremlin)*

## Russian officials say quietly that ‘Cold War 2.0’ has begun between the United States and Russia.

Lastly, Russian policymakers find little reason to expect that future U.S. interference in other nations’ domestic affairs will remain non-military. The Russian Federation has repeatedly highlighted and condemned what it has seen as the United States’ unlawful use of force to impose its will on weaker nations in the post-Cold War era. Frequent citations to this effect include U.S. actions in Yugoslavia, Iraq, and Libya.<sup>7</sup> The regularity and severity with which Russian officials criticize the United States’ alleged overreliance on military force strongly imply their belief that the United States would be willing to use force to impose its will on Russia, if Russia is not prepared to defend itself.

In this context, some Russian officials believe that President Donald J. Trump’s election may offer new opportunities for bilateral political engagement.<sup>8</sup> Yet Moscow also knows that U.S. skepticism of Russia has strong and lasting bipartisan support. This means that any gains achieved through U.S.-Russian engagement over the next four or eight years may prove limited or subject to reversal after Trump leaves office. As a result, Russian policymakers assess that the United States and its allies will remain a serious and lasting threat to Russian national security for the foreseeable future. Senior Russian officials thus say quietly that “Cold War 2.0” has begun between the United States and Russia.<sup>9</sup>



A U.S. UH-60 Black Hawk circles above Baghdad in 2009. Russian officials argue that the United States has long shown itself willing to use military force to advance its own interests. They frequently cite the U.S. invasion of Iraq to support their allegation. (U.S. Army)

### A Collapsing Battlespace

Rising U.S.-Russian geopolitical tensions are paralleled by rapid shifts in the military-technological environment. Russian strategists forecast that a host of novel or improved military technologies will allow both parties to act more rapidly across broader geographic expanses than before. At the same time, new weapon systems integrating greater autonomy and harnessing new physical principles promise to inject even further uncertainty into the U.S.-Russian correlation of forces. These shifts threaten to erode Russia’s ability to deter or defeat future U.S. aggression by defensive or retaliatory operations alone. In this regard, they constitute a primary reason why a rising number of Russia’s senior military strategists endorse a doctrine of pre-emption.

Russian analysts in *Military Thought* and other outlets consistently forecast that major wars in the future will be fought across all domains – not just in the land, sea, and air.<sup>10</sup> They write that fighting will occur in outer space as adversaries attack one another’s space-based military architectures in order to cripple space-dependent air, sea, and land forces.<sup>11</sup> And fighting will take place in the information domain – a domain unto itself – the “high ground” of modern warfare upon which all else rests.<sup>12</sup>

Russian forecasts stress equally that fighting in these domains will occur at once-unfathomable speeds.<sup>13</sup> As Major General I.N. Vorobyov (Ret.) writes, “Its Majesty Time has sped up its flight.”<sup>14</sup> Novel informational capabilities will allow belligerents to coordinate action by widely dispersed strike units with unprecedented synchrony and precision.<sup>15</sup> At the same time, high-precision weapons – particularly conventional prompt global strike assets – will allow belligerents to strike one another’s vital targets faster than ever.<sup>16</sup> And, as many analysts predict, novel attack methods – leveraging dramatic advances in military autonomy, directed energy, electromagnetics, nanotechnology, genetic engineering, and even the ability to control geological and climatic phenomena – may put the defense at a significant disadvantage relative to an increasingly diverse and deadly array of offensive tools.<sup>17</sup>

Russian authors posit that enemy targets will no longer be engaged successively in major wars.<sup>18</sup> Traditional notions of the front and the rear, strong points, flanks and junctions, and combat-contact lines will be largely outmoded.<sup>19</sup> Where is a nation’s flank when the enemy can hold its entire territory at risk through a combination of an expansive array of advanced sensors; exquisite information networks capable of synthesizing large amounts of targeting data in real time; and a balance of long-range precision strike assets that



Russia's top military strategists expect future wars to be all-encompassing affairs. Militaries will compete for control of the cyberspace, outer space, air, sea, and land domains. (Wikimedia Commons)

outmatch enemy air defense capabilities? Where is the front line when the objective in future wars will be to ensure that no enemy soldiers ever make it close to a defending nation's borders?<sup>20</sup>

Instead, senior Russian military strategists argue that targets will be destroyed simultaneously across the full breadth and depth of the enemy's territory.<sup>21</sup> The pace of engagements will defy human expectation and the human mind's ability to keep up, forcing combatants to rely more heavily on human-machine teaming and autonomous military systems.<sup>22</sup> Lieutenant General V.A. Vinogradov (Ret.) captures this idea well, writing: "[T]he time is not far away when massive employment of new weapons will make a simultaneous rout of the enemy from front to rear the principal method of overwhelming him."<sup>23</sup>

*Military Thought* contributors strongly emphasize that the initial period of major wars will be decisive.<sup>24</sup> They argue that seizing the initiative – and

especially, taking the enemy by surprise – from the very outset of hostilities will be critical if a nation is to prevail.<sup>25</sup> As Lieutenant General S.A. Bogdanov (Ret.) and Colonel S.G. Chekinov write:

The intensity of military operations will peak from the start, with the attacker entertaining the hope of striking a first surprise and most powerful and crippling blow. A country preaching a defensive doctrine may get the short end of the deal in the face of a surprise attack by an aggressor.<sup>26</sup>

Stephen R. Covington's work on the culture of Russian strategic thought highlights how seriously Russian military thinkers have historically taken the element of surprise – and, in particular, how vulnerable they still believe that the Russian armed forces are to being taken by surprise.<sup>27</sup> Russian strategists emphasize that the nation that attacks first in the information realm will

#### MILITARY THOUGHT

*Military Thought*, or *Voyennaya Mysl*, is the in-house journal of the Russian general staff. U.S. analysts widely accept *Military Thought* as a bellwether for Russia's military-strategic discourse. The journal's articles generally reliably reveal how Russia's senior military strategists assess the strategic environment, evaluate military doctrinal and other options, and craft recommendations to advance their nation's strategic interests.

Importantly, the ideas found in *Military Thought* often inform final policy decisions in the Kremlin. But the journal is not itself a perfect predictor of changes to Russian military policy. The Russian uniformed military lacks the authority to unilaterally implement the doctrinal changes reviewed or even widely endorsed in *Military Thought*. That authority is left to the Russian Federation's political leaders, many of whose views are not represented in the journal.



be able to place its opponents' networks under extreme pressure, fracturing regional and global reconnaissance-strike battle networks – and their future iterations, such as reconnaissance-strike swarms – from the start of engagements.<sup>28</sup> As a result, they assess a large first-strike advantage in the information domain and anticipate that the results of ceding the initiative in the information space could be devastating.

Russian military thinkers assess a similar dynamic on the kinetic side of the equation. Strategists expect future adversaries to initiate major wars with massive attacks launched from the aerospace domain.<sup>29</sup> These attacks, much like those described by Vinogradov, will target Russian air and other defenses as well as major economic facilities and civilian and military control systems. Strikes will aim not only to render Russia defenseless against follow-on attacks, but to induce the Russian population to call for its leadership's acquiescence to enemy demands.<sup>30</sup>

**'The time is not far away when massive employment of new weapons will make a simultaneous rout of the enemy from front to rear the principal method of overwhelming him.'**

The chief of the Russian general staff, General Valery V. Gerasimov, argues that traditional distinctions between the strategic, operational, and tactical levels of analysis will become increasingly outmoded as the battlespace collapses.<sup>31</sup> Gerasimov submits that action at the tactical and operational levels will be capable of such unprecedented military effect that even discrete tactical or operational maneuvers could substantially impact the strategic balance between Russia and its adversaries.

Moreover, just as distinctions between the tactical, operational, and strategic will be increasingly outmoded, so too may delineations between local, regional, and “full-scale” wars between two nuclear-armed adversaries. Russian military strategists acknowledge the different levels of conflict in the military-theoretical literature. At the same time, however, there appears in their writing and discussion, both in what is said and what is not, an underlying expectation that should competition between Russia and a major power adversary come to blows in the future, it will be difficult to limit that conflict.



*Directed-energy weapons, such as this Lockheed Martin Airborne Laser turret, may provide U.S. and Russian armed forces with a host of new options for missile defense, space control, and other missions, both defensive and offensive. (Lockheed Martin)*



*The U.S. Navy's X-47B proved that autonomous aircraft could be used for carrier-based operations. Russian strategists assess that autonomous military systems may significantly enhance NATO's non-nuclear military advantage, especially in the aerospace domain. (Wikimedia Commons)*



*Electromagnetic rail guns remain in development. These weapons could significantly enhance NATO conventional strike and missile defense capabilities, thereby intensifying Russia's sense of insecurity. (Wikimedia Commons)*

A rising number of Russia's senior military strategists fear that their nation will be unable to protect itself from U.S. or NATO attacks on Russian vital interests by defensive or retaliatory operations alone. This conclusion underlies mounting calls for Russia to adopt a doctrine of pre-emption. This doctrine would be fundamentally defensive in intent. Its primary objective would be to protect the territorial integrity and vital national interests of the Russian Federation in what Moscow perceives to be an increasingly dangerous threat environment.

### What is a 'Doctrine of Pre-emption'?

This study tracks and analyzes Russian advocacy for a doctrine of pre-emption starting in 2007. Many of these calls appear in *Military Thought*. Others were identified using Russian media sources. These are the best open sources available by which to track the Russian military-strategic discourse on pre-emptive attacks but clearly present only a partial picture of a debate that is undoubtedly also taking place in closed venues in Russia.

Of note, not all of the analyses discussed explicitly name the United States or NATO as the reason for or potential target of Russian pre-emptive attacks. However, Russian policymakers' designation of the United States and its allies as Russia's top national security threat, coupled with a near-exclusive focus on the U.S. threat

in *Military Thought* discussions of major power conflict, strongly suggests that calls for Russia's adoption of a doctrine of pre-emption are primarily motivated by concerns about future U.S. or NATO aggression.

Russian advocacy for a doctrine of pre-emption appears to have gained traction over the past 10 years. Advocates uniformly agree that such a doctrine would serve defensive purposes. At the same time, however, the debate over Russia's shift to pre-emption remains undecided in a number of important ways. For instance, many advocates disagree over whether pre-emptive attacks should use nuclear, strategic non-nuclear, or both types of weapons. Others still differ over whether pre-emptive attacks would function primarily as deterrent or defeat mechanisms against a Russian adversary. This study notes these differences throughout the literature review.

From a definitional standpoint, a "doctrine of pre-emption" would allow for Russia's use of pre-emptive force in crisis or in the early stages of an escalating conflict. This report defines Russian pre-emption as:

The early use of strategic non-nuclear or limited nuclear force by the Russian armed forces to deter or defeat a perceived imminent U.S. or NATO attack on Russia's vital interests.

### RUSSIAN STRATEGISTS ADHERE TO A BROADER CONCEPTION OF 'PRE-EMPTION'

Russian strategists define "pre-emption" as the early use of strategic non-nuclear or limited nuclear force to deter or defeat imminent U.S. or NATO aggression against Russian vital interests. According to Russian sources, pre-emption can take place in crisis or in the early stages of an escalating conflict. That is, pre-emptive attacks could be launched in crisis, or prior to the outbreak of hostilities, if it seemed that U.S. or NATO forces were preparing an attack of their own. Or they could be launched after a conflict had begun, as soon as it appeared that U.S. or NATO forces were preparing to undertake large-scale operations perceived to be undermining Russian vital interests.<sup>32</sup>

For instance, the Kremlin might tolerate ongoing, low levels of hostilities between NATO and Russian forces in the context of a local conflict – perhaps in Eastern Europe, the Caucasus, or the Middle East – that implicated only nonvital Russian interests. However, Russian policymakers' tolerance for strategic risk appears to be low. Therefore, as soon as such a conflict appeared ready to take on a strategic element – that is, as soon as U.S. or NATO forces appeared ready to conduct larger-scale non-nuclear or nuclear operations that could hold Russia's territorial integrity or other vital interests at risk – Moscow might authorize rapid, high levels of escalation using strategic non-nuclear or limited nuclear force to deter or defeat anticipated U.S. or NATO escalation. In this case, the Russian armed forces would not necessarily have shot first. But they would have been the first to use force of strategic consequence, thereby seeking to pre-empt U.S. or NATO use of the same and seizing the strategic initiative.

The Russian discussion of "pre-emption" thus differs from common U.S. or European definitions of the concept. Western analysts often understand "pre-emption" to be the first use of force *in crisis*, strictly prior to the outbreak of armed conflict.<sup>33</sup> This definition is useful, to an extent. But it creates a conceptual vulnerability for U.S. and European strategic planners. They may no longer expect Russia to launch major pre-emptive attacks using strategic non-nuclear or limited nuclear attacks once Moscow has shown its apparent willingness to engage in a local conflict without immediately rapidly escalating against Western targets. Yet Russian pre-emptive attacks on U.S. or NATO vital interests may still be yet to come.

### A Rising Number of Russia's Top Military Strategists Argue for Pre-emption

The idea of a doctrine of pre-emption first appeared in *Military Thought* at least as early as 2007. That year, Major General Alexander I. Malyshev implored Moscow to allow for pre-emptive action in its then-upcoming military doctrine release.<sup>34</sup> As chief of the strategy department at the Russian General Staff Academy at the time, he wrote:

The [Russian] Armed Forces should be employed not only in response to something; preemptive actions must also be envisaged. This is critical because the U.S. leadership looks at the employment of its national armed forces precisely from this perspective.

Malyshev cited Washington's actions in Yugoslavia, Afghanistan, and Iraq, as well as President George W. Bush's 2002 *National Security Strategy*, as evidence of the United States' willingness to act pre-emptively. He emphasized that if the Russian armed forces are to "rebuff an [attack] and ensure the sovereignty and territorial integrity of the Russian Federation," they will have to act before an adversary has the opportunity to bring force to bear against Russia's vital interests. Malyshev did not write whether pre-emptive attacks should be non-nuclear, nuclear, or both.

2008 saw the publication of an important article on non-nuclear deterrence.<sup>35</sup> In it, Major General V.M. Burenok and Colonel O.B. Achasov argued that Russia should prepare to conduct "anticipatory" non-nuclear attacks – interpreted to include pre-emptive action in crisis or conflict – against adversaries' core interests.<sup>36</sup> These actions would be key to convincing aggressors that Russia would escalate further if its own vital interests were attacked and, therefore, that the costs of attacking Russia – or further escalating an ongoing conflict – would far exceed any plausible benefits of aggression. To this effect, Burenok and Achasov wrote:

[N]on-nuclear deterrence should be understood as a demonstration of readiness to carry out a threat of causing by non-nuclear means reciprocal or anticipatory damage to vital interests and targets of potential aggressors, which would consciously exceed the benefits from the aggression itself [*italics added*]."

Importantly, Burenok and Achasov did not specify that Russian anticipatory attacks should target an adversary's strategic assets, or more specifically, its nuclear weapons. The authors recognize that deterrent effects can be achieved by pre-emptive attacks against other "vital interests and targets," such as "nuclear and hydroelectric power stations."

The authors' argument – that *pre-emptive* attacks could actually serve a *deterrent* purpose – reflects two themes in Russian military thought.<sup>37</sup> The first is the omnipresent expectation that Russia is vulnerable to surprise attack by the United States. The second is the belief that "countersurprise" attacks – pre-emptive attacks designed to land before the opponent's surprise attack can materialize – are not inherently offensive operations. According to thinkers like Burenok and Achasov, they may instead be the best or even sole option available for the Russian Federation to *deter* adversary aggression before its attacks are launched.

High-level advocacy for Russia's adoption of a doctrine of pre-emption is not limited to the pages of *Military Thought*. Indeed, soon after Burenok and Achasov's article was released, it appeared that the broader community of pre-emption advocates may have successfully persuaded Moscow to adopt just such a doctrine.

In an interview with the widely read newspaper *Izvestia* in October 2009, Nikolai Patrushev, secretary of the Russian Security Council, said that the 2010 military doctrine would allow for "preventive" – interpreted as synonymous to pre-emptive – *nuclear* strikes in the face of critical threats to Russia's national security.<sup>38</sup> As of this writing, this was the first statement available in the open source by a senior Russian official specifically endorsing pre-emptive *nuclear* strikes.

Patrushev did not delve into the specific prospective targets or use-cases for a preventive nuclear strike. However, inasmuch as his remarks came during a discussion of nuclear deterrence's role in Russia's then-forthcoming doctrine, he seems to have interpreted a preventive nuclear strike as a deterrent, rather than a defeat mechanism. The unclassified version of the 2010



Nikolai Patrushev is secretary of the Russian Security Council. In 2009, he warned that Russia's military doctrine would soon allow for the use of pre-emptive nuclear strikes. (The Kremlin)

document ultimately made no mention of preventive (or pre-emptive) nuclear strikes, whether to endorse them, explicitly “not exclude” them, or prohibit them altogether.<sup>39</sup> Nonetheless, the argument for Russia's adoption of a doctrine of pre-emption appears to have gained support in the years since.

Also in 2010, the president of the Russian Academy of Military Sciences said that Russian success in major wars in the future will require using pre-emptive attacks against enemy air and missile forces.<sup>40</sup> He did not specify whether those attacks should be non-nuclear, nuclear, or both. *Military Thought* articles published in 2011 and early 2012 argued that future military-operational success would depend on Russian forces' use of pre-emptive attacks to achieve information dominance and attack enemy forces. A 2011 article by Lieutenant General A.A. Rakhmanov (Ret.) supported the Russian armed forces' push to adopt a “network-centric” model of warfare that calls, in part, for “achieving information superiority by [the] preemptive destruction (disablement or suppression) of the enemy's information support system.”<sup>41</sup> Rakhmanov's article did not address nuclear operations.

Vorobyov and Colonel V.A. Kiselyov argued similarly in 2011 that Russian troops conducting “network-centric action” would need to act pre-emptively across domains in order to keep the adversary on the defensive.<sup>42</sup> Vorobyov wrote again to similar effect in 2012.<sup>43</sup> As with Rakhmanov's article, Vorobyov's and Kiselyov's submissions focused explicitly on non-nuclear operations.

Importantly, unlike other articles, Vorobyov's and Kiselyov's analyses were situated at the operational level. Their analyses are included here because, as Gerasimov argues, traditional distinctions between the tactical, operational, and strategic levels of analysis are increasingly outmoded. As previously mentioned, Gerasimov submits that future actions at the tactical and operational levels will be capable of such unprecedented military effect that even discrete tactical or operational maneuvers could substantially impact the strategic balance between Russia and its adversaries.<sup>44</sup> The strategic consequence of tactical or operational action may be particularly acute in the network-centric conflicts discussed by Vorobyov and Kiselyov, wherein “frontal confrontation,” or traditionally conceived front lines, no longer occurs.

In May 2012, the then-chief of the Russian general staff, General Nikolai Makarov, threatened to use pre-emptive attacks against Eastern Europe-based U.S. ballistic missile defense (BMD) sites in the event of crisis.<sup>45</sup> Makarov did not specify whether counter-BMD pre-emptive attacks would involve nuclear or non-nuclear capabilities.

The next year, Bogdanov and Chekinov argued:

[T]he Russian Armed Forces must be ready to fight new-generation wars in the medium and long terms and to use indirect, arms-length forms of operations. ... Information superiority and anticipatory operations will be the main ingredients of success in new-generation wars.<sup>46</sup>

Lieutenant General Victor A. Vinogradov, a retired commander in the Russian strategic missile forces, wrote similarly in *Military Thought's* final issue of 2013:

The fight to seize and hold the initiative in offensive operations is aimed, above all, at *anticipating the enemy* in fires and in maneuver with forces and capabilities, setting up friendly task forces to *deliver preemptive blows* to defeat the enemy's main forces, and capturing key areas and objectives (holding them in defense). Delays in the employment of weapons ... result in the loss of initiative in modern warfare [*italics added*].<sup>47</sup>

In September 2014, Putin tasked senior military and state officials with revising the Russian military doctrine. In the months thereafter, reports emerged that one or more senior military officials had called on the Kremlin to include a pre-emptive nuclear strike option in the revised document. Initial accounts named General Yuri Yakubov, a senior Defense Ministry official, as the source of these calls.<sup>48</sup> Russian state media and other sources wrote in December 2014 that, according to “a high-placed source on Russia's Security Council ... the military had repeatedly suggested including the possibility of a pre-emptive nuclear strike on potential aggressor nations or blocs.”<sup>49</sup>



Nikolai Makarov served as chief of the Russian general staff until 2012. In 2012, he warned that the Russian Federation would use pre-emptive attacks against U.S. ballistic missile defenses in Europe in the event of crisis. (Wikimedia Commons)

This was only the second openly reported instance of senior official advocacy for the pre-emptive use of *nuclear* force in the last decade. As in 2010, high-level advocacy did not yield the requested changes to the Russian military doctrine, at least not to the unclassified version.<sup>50</sup> General Yuri Baluyevsky, former chief of the Russian general staff and co-author of the 2010 military doctrine, reportedly said in September 2014 that the conditions for Russia's use of pre-emptive nuclear strikes are restricted to the classified policy document.<sup>51</sup>

Advocacy for Russia's adoption of a doctrine of pre-emption continued despite the 2014 unclassified military doctrine's omission of any mention of pre-emption. Indeed, Colonel V.A. Zakharov argued in late 2014 that Russia needed to invest in an "active global defense system" that could not only retaliate against enemy aerospace forces but eliminate them pre-emptively, as soon as an attack on Russian vital interests appeared imminent.<sup>52</sup> He did not specify whether pre-emptive attacks should be reserved for nuclear, non-nuclear, or both types of weapons. A former deputy chief of Russia's air defense science and research center, Zakharov stated that defensive aerospace operations alone would be insufficient to deter or defeat enemy aggression in the future operating environment. He wrote:

Defensive operations alone will hardly set back the aggression. An active defense matching up to the adversary's offensive thrust must be the right option. It makes sense, therefore, to deploy an active global defense system capable of taking on the adversary's aerospace attack weapons by *an anticipatory* or retaliatory strike [italics added].<sup>53</sup>

Arguments to similar effect – that Russian military forces would be defeated in major war if they did not detect and fire upon enemy forces first – continued to appear in multiple issues of *Military Thought* in 2014 and 2015.<sup>54</sup> Of Russian air defense operations, Colonel Anatoly P. Korabelnikov (Ret.) argued:

One should expect these operations to transform first into *retaliatory-opposing* [operations] instead of just *retaliatory*, and eventually, reality will dictate their transformation into the *preemptive* kind [italics original].

One of the most strident arguments yet for Russia's adoption of a doctrine of pre-emption appeared at the end of 2015. In it, Colonel V.I. Polegayev (Ret.) and Colonel V.V. Alferov argued that a "remote adversary" – one such as the United States that is geographically positioned far from

any plausibly disputed territory – can only be deterred from launching a major war by threat or, if necessary, use of pre-emptive nuclear attacks.<sup>55</sup> They posited:

It is highly unlikely that strategic deterrence can be exercised against a country ... identified as a potential adversary ... to restrain it from starting a full-scale or regional war with conventional weapons. It can only [be exercised] under the threat of *preemptive nuclear attack* [italics added].

Polegayev and Alferov wrote further:

It is long [past] time for the decisive significance of the initial phase of war to be given its due. ... The decisive importance in military conflict deescalation is still conferred upon the Armed Forces' capabilities to deliver a preemptive (direct or indirect) nuclear strike at the aggressor and a rapid nonnuclear response to the attack.

This is the first *Military Thought* article specifically endorsing pre-emptive *nuclear* strikes, though Patrushev's and other Russian military advocacy for the same in 2009 and 2014 suggests that robust discussion has occurred on this point for some time in other venues.

### **A Doctrine of Pre-emption: To Deter or Defeat a Russian Adversary?**

In sum, Russia's top military strategists believe that their nation is vulnerable to military coercion by the United States or NATO. This is already true today from the Russian perspective. And the situation is unlikely to improve in the foreseeable future. As the battlespace collapses, Russian analysts expect that their nation's military will be unable to match U.S. or NATO military technological or operational innovations.

Russian strategists acknowledge this dismal outlook and believe that – rather than trying to match U.S. or NATO innovations – their nation must act asymmetrically. Specifically, a rising number of Russia's top military thinkers argue that Moscow must prepare to use force pre-emptively to deter or defeat a future U.S. or NATO attack on Russian vital interests. If the Kremlin does not do so, they fear that Russia's defenses will be unable to repel or absorb the West's initial attacks across the information and aerospace domains. They expect further that the Russian Federation will be unable to seize back the initiative once it is lost. Indeed, if the initial period of major war is as devastating as so many expect, many Russian strategists fear that their nation may have limited retaliatory options left.

Russian advocates of pre-emption thus agree that pre-emption in crisis or the early stages of an escalating conflict – that is, as soon as a U.S. or NATO attack on Russian vital interests appears imminent – is the only way for the Russian armed forces to get ahead of this dangerous curve. Pre-emption, in their view, would serve a fundamentally defensive purpose. Advocates differ, however, as seen in their statements, over *how* pre-emptive attacks should be used to protect Russia's strategic interests. There appear to be three broad schools of thought on this point. It is essential to note, however, that these three “schools” are not mutually exclusive and indeed in some ways may be mutually reinforcing.

#### DETERRENCE BY COST IMPOSITION

The first school of thought emphasizes the utility of pre-emptive attacks for deterrence by cost imposition. That is, the role of pre-emptive attacks should be to *deter* enemy aggression by communicating to Western policymakers and publics alike that the costs of attacking or escalating a military confrontation with Russia will outweigh any plausible benefits.<sup>56</sup> Advocates like Burenok and Achasov propose that non-nuclear pre-emptive attacks should aim for U.S. or NATO vital infrastructure, such as the communications networks underpinning basic economic and other public functions.<sup>57</sup> They note that countervalue operations such as these would need to be carefully calibrated so the costs imposed are sufficient to dissuade Western aggression without backing the adversary into a corner. To that point, they emphasize that pre-emptive attacks should avoid harming civilians, when possible, especially through the use of relatively discriminating anti-satellite (ASAT), precision-strike, and electronic warfare (EW) capabilities. Similarly, other thinkers in the cost-imposition vein, such as Polegayev and Alferov, state that pre-emptive attacks, whether nuclear or non-nuclear, would need to be tailored to global public opinion. That is, barring the direst of circumstances, strategists recognize that pre-emptive attacks should not be allowed to jeopardize Russia's image as a victim of Western aggression in the international community's eyes.<sup>58</sup>

#### DETERRENCE BY DENIAL

The second camp argues similarly that pre-emptive attacks are tools for deterrence. This group includes some members of the first camp. Advocates such as Zakharov hold that the primary objective of pre-emptive attacks should not be cost imposition, or at least not cost imposition alone. Rather, it should be to degrade Western conventional power projection assets so Washington and



*A U.S. Air Force F-22 Raptor taxis on the flight line at Mihail Kogalniceanu Air Base in Romania. Russia may strike U.S. or NATO military assets pre-emptively in order to deter or defeat Western aggression. (U.S. Air Forces in Europe & Air Forces Africa)*

Brussels no longer believe they can prevail in a major war, at acceptable levels of escalation, against Russia.<sup>59</sup> This falls under the rubric of deterrence by denial. In other words, if Moscow can use pre-emptive attacks to deny the West confidence in its ability to win a war against Russia, then the West is far less likely to attack in the first place. Pre-emptive attacks aiming to deter Western aggression by denial would likely prioritize NATO military targets. Russian writings – and past experience – indicate that Russian forces would likely first seek to disrupt and distort the enemy's view of the battlespace and sow discord in its organization and systems.<sup>60</sup> Targets here would include terrestrial sensors and communications arrays as well as components of the adversary's military space architecture.<sup>61</sup> Russian forces would simultaneously use a range of nonkinetic and kinetic attack options in a counterforce capacity to degrade or destroy NATO long-range strike assets directly.<sup>62</sup> Crucially, as previously discussed, Russian military strategists are very unlikely to see pre-emptive attacks in either of these events as offensive operations. While Russia would be striking first, it would be doing so to counter the surprise attack on Russian vital interests it already knew – or believed – that the United States or NATO was about to launch.

**If Moscow can use pre-emptive attacks to deny the West confidence in its ability to win a war against Russia, then the West is far less likely to attack in the first place.**

### PRE-EMPTION AS A DEFEAT MECHANISM

The third school of thought argues that pre-emptive attacks would serve a more strictly purpose. Proponents like Korabelnikov argue that pre-emptive attacks should be used to level the military-operational playing field. By taking offline key Western aerospace – and presumably other – capabilities, the Russian armed forces could deprive the U.S. and NATO militaries of their comparative advantages.<sup>63</sup> This should not be mistaken as a deterrence-by-denial approach. Korabelnikov’s argument is not that pre-emptive attacks would necessarily deter Western aggression against Russian vital interests. Rather, he posits more narrowly that well-targeted pre-emptive attacks would leave Western forces more vulnerable to asymmetric operations that leverage Russia’s own geographic, sociopolitical, and technological advantages over the course of a major war. This, in turn, would improve the Kremlin’s ability to terminate the conflict on favorable terms.

This school of thought does not appear to receive as much support among top Russian military thinkers as the first two. Prominent Russian voices generally acknowledge that Russia is at a significant technological disadvantage vis-à-vis the United States.<sup>64</sup> This limits the country’s ability to reliably and sufficiently disable or destroy key U.S. or NATO capabilities such that the alliance’s overall military superiority is adequately nullified. In an era when the technological advantage – operationalized effectively – will be a deciding factor in future wars, Russian leaders seem unlikely to place their chips on such an uncertain bet.

## Risk

Rising calls for Russia’s adoption of a doctrine of pre-emption are not without precedent. (See Appendix A.) Yet, the military-technological environment in which these calls are being made differs substantially from that which existed when past Russian and U.S. pre-emptive attack doctrines were developed. This change in context has meaningful implications for the risks posed by Russia’s potential shift to pre-emption.

### Escalation Risks in a Collapsed Battlespace

The emerging military-technological environment will be unprecedented in many aspects of its technological scope, geographic breadth, and strategic complexity. The combined newness and interconnectedness of this environment will engender a high risk of miscalculation. That risk, in turn, promises to increase the potential for inadvertent escalation. Simultaneously, present military-technological trends threaten to impede efforts to slow escalation during future crises or conflicts once they begin. They further threaten to undermine attempts to contain future crisis and conflict escalation once it starts.

The risk of miscalculation is driven first by the number of new and interactive domains and methods of warfare that now make up and populate the battlespace. As Russian military thinkers write, trends in the military-technological environment suggest that major wars in the future will – if they are not already – be fought across the information, cyber, and outer space domains, in addition to the ground, air, and sea domains. Operations within individual domains will occur at far faster rates than in the past, especially as states harness cyber, space, and prompt strike capabilities.



*U.S. Air Force officers monitor a simulated electronic warfare test. The inherent complexity of the multidomain battlespace increases the risk of inadvertent escalation. (U.S. Air Force)*



*Astronomers already use laser systems like the U.S. Air Force Research Laboratory's Sodium Guidestar in their study of outer space. The Russian and U.S. militaries are developing the ability to use lasers to disrupt or damage adversaries' satellites. (U.S. Army)*

Novel methods and tools of warfare will simultaneously enter the battlespace, affecting operations in multiple domains. Human-machine teaming, autonomous military systems, and artificial intelligence will likely allow military to pursue entirely new concepts of operation, like active cyber defense, improved tracking of enemy submarines, or robotic swarming.<sup>65</sup> The advent of systems such as electromagnetic rail guns and directed-energy weapons may likewise create unexpected military asymmetries between the United States and Russia, raising each side's sensitivity to potential threats that may or may not materialize. At the same time, emerging cyber, counterspace, autonomous, and other military technologies will make it difficult for Russian, U.S., or NATO officials to rapidly attribute the source, or sources, of future attacks. Enhanced military autonomy may introduce the novel threat of machine-driven escalation.<sup>66</sup>

These developments will make it more difficult for Moscow or Washington to ascertain with high confidence whether an attack on its vital interests is indeed imminent. Both sides face great uncertainty in understanding how – or indeed, if – the other is threatening them in new domains or using new attack methods, and whether the perceived threat merits pre-emptive action. Russian authors rightly note that novel attack methods – especially using cyber, counterspace, or conventional prompt global strike weapons – have made it possible for states to launch attacks in unexpected ways with dangerously little warning. At the same time, “rules of the road,” whether legal or normative, remain to be agreed

upon for the cyber and space domains. The same is true for autonomous military systems, not only blurring the lines between offensive and defensive action, but making it difficult to draw intelligible and credible red lines to shape – or shape one's expectations for – how they will be used.

The ambiguity inherent to much of the as-yet-immature military-technological environment increases the potential for inadvertent escalation in crisis or the early stages of an escalating conflict. As the United States and Russia maneuver about one another in this complex environment, there is a growing likelihood that one will unintentionally cross another's threshold for counterescalation or trigger harsher counterretaliation than might have been anticipated. Moreover, the uncertainty now surrounding many novel military capabilities means that actors themselves may not have determined yet where to set their own red lines. This amplifies the potential for inadvertent escalation, by denying policymakers on both sides of the Atlantic clarity as to where *not* to go as they navigate new escalation dynamics. Likewise, the proliferation of cyber or other weapons may raise the risk of catalytic escalation. Third-party actors may use “false flag” operations to portray the United States as having attacked Russia, or vice versa, thereby triggering unwanted escalation.

At the same time, these conditions also threaten to impede or derail efforts to slow crises or conflicts once they begin. If major war appears imminent, Russian and American policymakers will be forced to make decisions and respond on a severely compressed timeline.



Anticipated first-strike advantages – whether against targets in cyberspace, outer space, or using conventional prompt global strike assets – will press actors to move early. Early-use pressures may be particularly acute for Russian policymakers who have observed the so-called U.S. way of war, which emphasizes early attacks on enemy command-and-control systems. Such pressures limit actors’ abilities to engage in prudent analysis and deliberation prior to launching attacks or otherwise escalating the use of force. They also constrain actors’ abilities to better signal their intentions, especially if escalation incentives are the result of miscalculation – potentially resulting from interactions with unfamiliar military technologies – rather than ill intentions.

In addition, the emerging military-technological environment is replete with new threats to actors’ strategic nuclear forces. The Kremlin argues that ballistic missile defense and conventional prompt global strike systems could be used to neutralize Russia’s nuclear deterrent. (See Appendices B and C for more

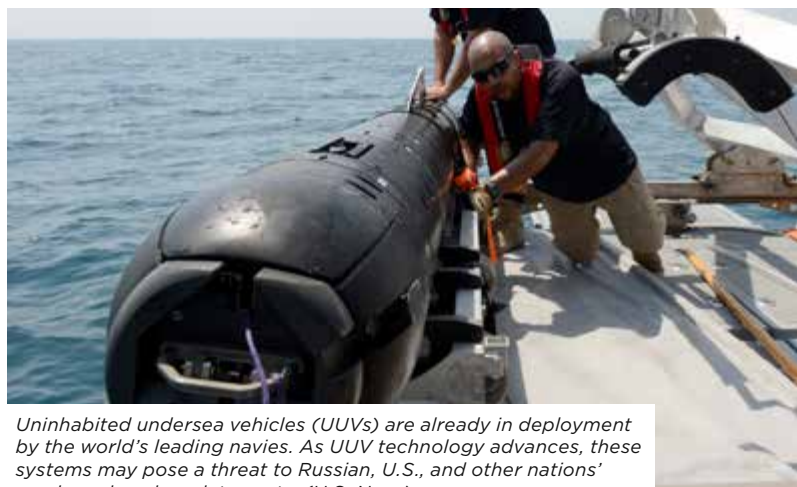
**The growing perceived fragility of Russian and American nuclear forces, coupled with the accelerating pace of conflict, may lead not only to early escalation, but early escalation to nuclear levels.**

in-depth reviews of Russian concerns about NATO ballistic missile defenses and U.S. conventional prompt global strike.) Counterspace weapons might be able to disrupt or degrade an adversary’s space-based nuclear command-and-control systems, thereby retarding or neutralizing its nuclear deterrent.<sup>67</sup> Russian and American nuclear forces are also under threat in the cyber domain. Additionally, in the future, advanced, autonomy-enabled data processing may facilitate tracking and targeting of mobile intercontinental ballistic missiles.<sup>68</sup> Long-endurance uninhabited undersea vehicles may be able to create webs to find and then track adversary nuclear submarines, as well, thereby imperiling the sea-based nuclear deterrent.

This host of threats will intensify already potent “use or lose” incentives, thereby undermining efforts to contain crises or conflicts once they begin. That is, the



*The USS Hopper (DDG-70) launches an SM-3 Block IA missile interceptor in 2009. The Kremlin says that NATO ballistic missile defenses are intended to neutralize Russia’s nuclear deterrent. (U.S. Department of Defense)*



*Uninhabited undersea vehicles (UUVs) are already in deployment by the world’s leading navies. As UUV technology advances, these systems may pose a threat to Russian, U.S., and other nations’ sea-based nuclear deterrents. (U.S. Navy)*

growing perceived fragility of Russian and American nuclear forces, coupled with the accelerating pace of conflict, may lead not only to early escalation, but early escalation to nuclear levels. A similar dynamic may be seen in the cyber domain. States are concealing and will continue to conceal their offensive cyber capabilities, including whether they have already seeded targeted countries’ networks with malicious code that can be activated upon command to sabotage enemy systems. States that do not move early in the information domain as soon as major war appears imminent will not only miss the opportunity to put their enemy on the defensive. They will be highly vulnerable to attacks against which they may be ill-prepared to defend.

### **A Doctrine of Pre-emption Would Compound Escalation Risks in Novel, Dangerous Ways**

Advocates of a Russian doctrine of pre-emption intend to make war less likely by bolstering Russian deterrence of the United States and NATO. Authoritative doctrinal writings show that Russian strategists are focused primarily on the deterrent effects of the use of pre-emptive force, rather than of the doctrine itself. However, Moscow's decision to enact this doctrine – and implement associated force deployments – could itself incentivize both sides not to engage brinkmanship or otherwise risk further escalation in crisis or conflict. Both parties would understand that any such interaction could quickly spin out of control. At the same time, however, Russia's adoption of a doctrine of pre-emption – or the United States' adoption of the same, for that matter – would not only codify but exacerbate the destabilizing effects of ongoing changes in the military-technological environment. The net effect of a Russian shift to pre-emption – its potential deterrent effect notwithstanding – would be to substantially increase the risk of major war between the United States and Russia in the coming years.

To start, it would institutionalize the loss of time available for Russian decisionmakers to weigh intelligence, evaluate the veracity of a perceived threat to Russian vital interests, and formulate proportionate responses to U.S. or NATO action during a crisis or the early stages of an escalating conflict. This would meaningfully increase the chance of inadvertent escalation. For instance, in a time of heightened geopolitical

tensions or limited war – perhaps in the form of a proxy conflict in the Russian periphery – the Kremlin may misperceive a NATO military exercise as the start of a NATO attack on the Russian Federation. A doctrine of pre-emption would direct Russian officials to authorize early strike operations against what then appeared to be imminent surprise attacks by the United States and its allies. The rapid succession of decisions, accelerated first by “first-use” pressures unique to the emerging military-technological environment, and second, critically, by a doctrine of pre-emption, would deny Russian decisionmakers the time required to assess with high confidence whether NATO escalation was indeed imminent.

Likewise, indications that the Russian Federation had adopted a doctrine of pre-emption would accelerate decisionmaking timelines in Washington and other NATO capitals. Faced with the prospect that Russia may undertake pre-emptive action, especially if NATO forces are unprepared to withstand or evade such attacks, U.S. and NATO policymakers may themselves feel pressured to act first. This would also increase the risk of inadvertent escalation, particularly as Russian provocations in the cyber domain escalate, posing a risk to U.S. and NATO strategic non-nuclear and nuclear systems. Furthermore, if the United States and NATO are led to believe that they must pre-empt Russian pre-emption in the event of crisis or conflict, the result may be a cycle of mutual fear that increases the likelihood of even a small crisis or conflict rapidly escalating to major war.

The danger posed by such rapid escalation is underscored by the advent of novel threats to Russian and U.S.



*Vladimir Putin sits alongside Defense Minister Sergei Shoigu and General Valery Gerasimov at the National Defense Management Center. A doctrine of pre-emption would deny Russian policymakers the time required to manage escalation in a future crisis or conflict. (The Kremlin)*



*The North Atlantic Council meets in February 2017. Russia's adoption of a doctrine of pre-emption could impel NATO decision-makers to use force early. (North Atlantic Treaty Organization)*

nuclear forces. The Russian Federation's conventional military disadvantage relative to the United States and its NATO allies has left the country increasingly reliant on its nuclear forces for deterrence and, if necessary, warfighting. If the future military-technological environment does indeed give home to new threats to Russia's strategic nuclear forces – whether in the form of ballistic missile defenses coupled with conventional prompt global strike, novel cyber or counterspace strike capabilities, or certain autonomous weapons – the Kremlin may face strong pressures to escalate quickly to high conventional or even nuclear levels from crisis or early in conflict before its nuclear forces can be disabled by U.S. or NATO attacks. Similar pressures may be present in the United States, as well. Although the United States is not as reliant as Russia on its nuclear forces, the proliferation of new threats to its own nuclear forces may impel or at least lower the barriers to rapid escalation by U.S. policy-makers in the future.

Finally, a Russian defensive doctrine of pre-emption would also increase the risk of escalation by limiting U.S. and NATO abilities to more clearly delineate their own red lines. If Washington, Brussels, or other European capitals became aware that Moscow was indeed prepared to act pre-emptively, they may be less likely to take on the risk attendant to deterring Russian provocations. That is, they may be incentivized to conceal their willingness and ability to engage Russia militarily – or engage them more forcefully – in order to avoid inciting a crisis or escalating an ongoing conflict and thereby triggering pre-emptive attacks. This would amount to softening their deterrent posture toward Russia, whether by reposturing forces in Eastern Europe, limiting certain operations in cyberspace or outer space, or other means.

But deterrence can only be achieved if a state or coalition can credibly communicate its collective will and ability to impose stringent costs on or outright defeat an aggressor. Without these two inputs – resolve and readiness – deterrence risks failure. Therefore, if the United States, a substantial number of its allies, or both opt to soften demonstrations of their resolve to fight off Russian intrusions, NATO's ability to deter this dangerous Russian behavior will suffer. Softening NATO's deterrent posture would, in turn, create space for the very sorts of provocative behaviors that NATO forces were originally charged with deterring. Russia may inadvertently violate a U.S. or NATO red line in seeking to exploit that space, having judged the softening of NATO's deterrent posture as a concession to Russia rather than just an attempt to avoid triggering Russian pre-emption. Should this occur, the United States and NATO may be forced to respond forcefully, setting all the parties involved on a path to crisis or escalated conflict.

Importantly, many of these strategic dynamics are not unprecedented. U.S. and Soviet policymakers encountered many of these dangers and concerns as they negotiated deterrent-based equilibria throughout the course of the Cold War. However, the complexity of the emerging military-technological landscape means that it may prove easier to trigger inadvertent escalation and harder to slow or control escalation than it was previously. Moscow's adoption of a doctrine of pre-emption would increase these risks, thereby raising the likelihood of major war – and the potential for rapid escalation to nuclear levels – between Russia and the United States.



*U.S. Air Force F-22 Raptors fly over the Baltic Sea. Russia's shift to pre-emption might lead NATO officials to soften the alliance's deterrent posture. (U.S. Air Forces in Europe & Air Forces Africa)*

## Assessing the Likelihood of a Russian Shift to Pre-emption

Russian skeptics of a doctrine of pre-emption may hold the upper hand today. But there is reason to expect that this may not remain the case. Trends in the threat environment may ultimately force Moscow's hand. If this happens, U.S. policymakers may have little warning prior to Russia's shift to pre-emption. That is because Moscow already deploys – or is developing – many of the capabilities that would be used for pre-emptive attacks on the United States or NATO.

### The Russian Opposition to Pre-emption

The Kremlin has thus far opted against officially adopting a doctrine of pre-emption. This is evidenced in part by the strategy's omission from the unclassified version of Russia's military doctrine and, at least equally importantly, by top strategists' continued calls for its inclusion. Moscow's reticence implies that there is strong reluctance or opposition within the Russian government to adopting a defensive military doctrine based on pre-emption. Open sources offer minimal insight as to who constitutes that opposition. Nor does it allow for any definitive conclusions about why opponents reject a doctrine of pre-emption.

Circumstantial evidence suggests a number of possibilities. Russian opponents may deem it prohibitively risky given its potentially destabilizing effects. Alternatively, they may accept its military-strategic utility but resist publicly endorsing pre-emption so as to avoid the potential international political costs thereof. Or opponents may actually support Russia's adoption of a doctrine of pre-emption, but only once ongoing military modernization efforts have matured.<sup>69</sup>

There is a significant chance that any Russian opposition may lose traction in the coming years. The geopolitical landscape is likely to remain unstable from the Kremlin's standpoint. Moreover, the military-technological environment will continue to change in potentially destabilizing ways. These conditions suggest that U.S. and NATO policymakers should expect calls for Russia's shift toward pre-emption to persist. They suggest equally that Moscow may ultimately endorse pre-emption as the most reliable way to deter or defeat U.S. or NATO aggression.

### The United States May Have Little Warning Ahead of Russia's Adoption of a Doctrine of Pre-emption

U.S. policymakers may receive little warning prior to Russia's shift to pre-emption. This is primarily because Moscow is already investing in and exercising the types of capabilities likely to be used in pre-emptive attacks.

The Russian Federation already deploys a number of strike assets that could be used to conduct pre-emptive attacks as part of a deterrence-by-cost-imposition strategy. For instance, the Russian submarine fleet could already be used for pre-emptive attacks against targets of political or psychological value, such as vital undersea communications cables, energy grids, or symbolic land targets.<sup>70</sup> Russian offensive cyber weapons could be deployed to similar effect. Cyberattacks against U.S. or NATO noncritical infrastructure could be manipulated to signal to Western audiences – policymakers and publics, alike – the potential costs of further escalation in a crisis or conflict.<sup>71</sup> Russia also appears to have acquired the ability to conduct limited nuclear strikes from air, land, and sea-based platforms.<sup>72</sup> This ability would be a required input if the Kremlin is to use pre-emptive nuclear strikes to undermine NATO's unity of resolve during a crisis or early on in an escalating conflict without triggering massive retaliation.

### Moscow is already investing in and exercising the types of capabilities likely to be used in pre-emptive attacks.

A Russian pre-emptive attack campaign intended to deter U.S. and NATO aggression by denial would almost certainly be of a larger scale – measured in the number, type, domain, and geographic scope of its targets – than one conducted as part of a deterrence-by-cost-imposition strategy. Today, the Russian armed forces are better structured and positioned to conduct the latter than the former. Nonetheless, some of the capabilities required for Russia to conduct pre-emptive attacks as part of a deterrence-by-denial approach are already in place. In particular, pre-emptive cyberattacks by Russian forces could be used to disrupt, degrade, or destroy adversary military or dual-use infrastructure, preventing NATO from seizing the initiative in a crisis or conflict. Russia's limited nuclear strike capabilities could be employed in a similar capacity to pre-emptively destroy elements of NATO's European military infrastructure. Russia's submarine forces could be likewise used to conduct major



*Russian Tupolev Tu-160 strategic bombers fly over Moscow. The Russian armed forces already deploy many assets that could be used to conduct pre-emptive attacks. (Wikimedia Commons)*

pre-emptive attacks against military targets, such as the aforementioned undersea cables or land-based NATO military infrastructure or units.<sup>73</sup>

At the same time, the Russian Federation is developing an array of advanced military systems that will enable it to conduct pre-emptive attacks in novel ways and against a broader set of targets in the future. Of note, the Kremlin has authorized flight tests for high-speed maneuvering weapons that would enable more reliable pre-emptive strikes, conventional or nuclear, against a wider range of U.S. or NATO air, sea, or land targets.<sup>74</sup> Russia is also testing both kinetic and nonkinetic counterspace weapons.<sup>75</sup> The limited “time in flight” of nonkinetic weapons such as lasers or jammers could make them especially appealing for pre-emptive attacks against U.S. military space constellations. Moreover, counterspace weapons may be particularly attractive pre-emptive attack options because – like offensive cyber weapons – their use is unlikely to cause civilian casualties and thereby increase the potential for Western retaliation.

The fact that Russia already has the capabilities required to conduct pre-emptive attacks – especially attacks designed to impose costs on Western actors, but also ones aimed at deterring U.S. or NATO attacks by the use of denial approaches – may make it difficult for U.S. and NATO analysts to forecast or confirm the country’s adoption of a doctrine of pre-emption. Unless the Kremlin explicitly allows for pre-emption in a future version of its military doctrine, American observers may be left to infer from Russia’s existing military force structure, defense investments, exercises, and any shifts in force posture or operational concepts whether Moscow has authorized a shift to pre-emption.

Shifts in investments, posture, or concepts of operation that emphasize the rapid, far-reaching, and more discriminate use of offensive force, especially in cyber or outer space, may indicate that Russia has shifted to a pre-emptive footing – or will imminently – even if it has not said so publicly. Such shifts may be particularly evident if Russian policymakers prioritize developing the pre-emptive attack capabilities needed for a deterrence-by-denial approach. The degree of planning and exercising required to attempt to degrade Western military forces to the extent required to plausibly deter U.S. or NATO retaliation may prove difficult to hide. However, even these indicators are unlikely to provide certainty about Russia’s pre-emptive disposition, barring more conclusive information about Moscow’s evolving analysis of pre-emptive attacks’ role in Russia’s military doctrine.



*A Russian Northern Fleet Kilo-class attack submarine is underway. The Russian submarine fleet could be used to conduct pre-emptive attacks against a range of U.S. or NATO political or military targets. (U.S. Department of Defense)*

## Policy Options

In view of Russia's existing pre-emptive attack capabilities, U.S. policymakers should adopt a proactive approach to dissuading Moscow from shifting to a pre-emptive footing. As a starting point, U.S. policymakers should take steps to reduce both the expected value of a doctrine of pre-emption, as seen by Moscow, and also the perceived need for pre-emption. These steps would seek to reduce the prospects of misperception, miscommunication, and miscalculation that could lead to war.

It is beyond the scope of this study to offer exhaustive or highly developed recommendations to this effect. Rather, the policy options outlined in this report seek to provide U.S. policymakers with a framework for dissuading Moscow from adopting a doctrine of pre-emption.

Importantly, these policy options are designed first and foremost to disincentivize pre-emption by the Russian Federation. As such, many of them entail tradeoffs in U.S. military dominance in the multidomain battlespace. U.S. policymakers will need to weigh the potential tradeoffs against the stabilizing merits of each recommendation as they undertake to dissuade Moscow from endorsing pre-emption.

### Reduce the Expected Value of Pre-emption

To reduce the expected value of pre-emption, as seen by Moscow, the United States should:

**Seek recognition of "rules of the road" for cyber and counterspace operations.** U.S. and NATO cyber and space-based assets would likely be particularly attractive targets for Russian pre-emption in crisis or conflict because they offer the possibility of degrading U.S. and NATO military capabilities – or imposing economic and social costs – without conducting kinetic strikes in Western territory. U.S. policymakers should redouble efforts to work with Russian officials to build recognition, explicit or implicit, of "rules of the road" for cyberspace and outer space. Increased dialogue about both sides' expectations for operations in these domains – and the likely consequences for certain types of behavior – may help to deter or otherwise disincentivize cyber or counterspace pre-emption.

**Prioritize the development of more resilient U.S. and NATO operational concepts.** U.S. and NATO military forces should focus on the development of operational concepts that emphasize distributed, sustained, and resilient operations in the face of pre-emptive attacks on U.S. or NATO key command, operational, and support nodes. A doctrinal shift toward resilience would seek to dissuade Russian

strategists of their ability to deter U.S. or NATO aggression by denial. That is, it would help to convince Moscow that pre-emptive attacks could not degrade allied forces to the degree that U.S. and NATO decisionmakers no longer believed that they could defeat Russia in a major war.

**Demonstrate NATO's emphasis on resilience in future military exercises.** U.S. and NATO militaries should use future military exercises to test and improve more resilient operational concepts. Future exercises should also be used to signal the Atlantic Alliance's willingness – and ability – to assume risk during a crisis or early on in conflict by waiting to use force until compelling evidence has surfaced of an imminent or ongoing Russian attack on vital U.S. or NATO interests. This may help to ease the Kremlin's fear that Washington is developing its own pre-emptive attack capabilities. It would also help to persuade Moscow that Russian pre-emptive attacks would be unlikely to achieve their desired military effects.

**Boost investment in cyber resilience.** Washington should raise investments in cyber resilience to ensure the continuity of the U.S.-NATO battle network in Europe. Expanded investments should prioritize protecting key nodes and networks from disruption and providing NATO forces with alternative methods for coordination when networks are disrupted. Improved U.S. and NATO cyber resilience would help to disincentivize Moscow's use of pre-emption to deter U.S. or NATO aggression by denial.

**Expand investment in space resilience.** Washington should prioritize investment in the survivability and combat effectiveness of the U.S. space-based military architecture. Key capabilities include:

- Greater space situational awareness.
- More effective battle management concepts, such as the U.S. Strategic Command-led National Space Defense Center.
- More disaggregated military space constellations designed to spread risk over a greater number of less expensive and more easily reconstituted platforms.
- Improved defenses against nonkinetic counterspace capabilities.
- Air-breathing, ground-based, and sea-based complements or, if necessary, substitutes for U.S. space-based military communications and intelligence, surveillance, and reconnaissance systems.

**Bolster conventional deterrence in Europe.** U.S. policymakers should consider forward-deploying and dispersing additional non-prompt, non-nuclear long-range strike assets in Central and Eastern Europe. Such platforms may include F-35As, the U.S. Army's Long Range Precision Fires (planned to enter operations in 2027), and an expanded fleet of *Virginia*-class fast attack submarines. The alliance should further heighten investment in electronic warfare systems designed to protect U.S. and NATO ground forces as they maneuver toward Russian targets. A more robust U.S. and NATO non-nuclear military posture in Europe would complicate the Russian targeting problem, thereby helping to disincentivize Russia's use of pre-emption as part of a deterrence-by-denial strategy.

**Sustain Third Offset technological, doctrinal, and organizational innovations.** The United States should continue to fund and prioritize Third Offset development initiatives. Technologies like electromagnetic rail guns, directed energy, and military autonomy may help U.S. and NATO forces withstand or evade Russian pre-emption in a future crisis or conflict. Novel hard-to-target strike and targeting platforms, such as undersea missile platforms, may also further complicate the Russian targeting problem. These initiatives would thereby help to disincentivize Moscow's use of pre-emption as part of a deterrence-by-denial strategy and could be especially attractive in light of the potentially lower cost of such systems compared with highly costly legacy platforms.

**Reaffirm the United States' intent to respond forcefully to Russian aggression.** Washington should consistently emphasize its readiness and willingness to respond forcefully to Russian aggression against the United States or its NATO allies. Declaratory policy to this effect would publicly tie the United States' credibility in Europe – and other theaters, particularly East Asia – to its willingness to respond forcefully to Russian pre-emption in crisis or conflict. By visibly raising the costs of U.S. inaction, Washington can further augment the credibility of the threat of U.S. retaliation.

**Engage the American public on the costs of inaction in the face of foreign aggression.** U.S. policymakers should work strenuously not only to better understand the challenges posed by Russia to the United States, but to communicate those assessments to the American public in clear, determined, and bipartisan ways. By strengthening the base of popular support for U.S. deterrence against Russia, Washington would further enhance the credibility of its stated intent to respond.

### **Reduce the Perceived Need for Pre-emption**

To reduce Moscow's perceived need for pre-emption, the United States should take a complementary but distinct set of steps:

**Restore U.S.-Russian military-to-military contacts.** Sustained, high-level U.S.-Russian military dialogue could substantially reduce the risk of inadvertent escalation. This dialogue will be especially important as novel military technologies enter the battlespace, creating new opportunities for misperception or miscalculation. U.S.-Russian military-to-military contacts should be established well before any crisis or conflict if they are to be trusted by Russian military officials.

**Sustain engagement with Russia on NATO ballistic missile defenses.** Moscow fears that if Russia does not attack first in the face of imminent threat to its vital interests, the United States could use BMD and CPGS to neutralize its nuclear deterrent. Washington should continue efforts to address this concern. Once U.S. BMD sites in both Romania and Poland are operational – that is, confronted with a U.S. *fait accompli* – Moscow may determine that reciprocal cooperation on this front would benefit Russia more than abstention or continued opposition. Sustained U.S. engagement may also boost the credibility of prominent Russian strategists who dispute the threat that NATO BMD allegedly poses to Russia's nuclear deterrent, helping to shape the intra-Russia BMD debate favorably.<sup>76</sup> Staying engaged would also allow the United States to prevent Russia from using the BMD issue among U.S. allies and third parties to portray the United States as a destabilizing actor, willing to risk nuclear war in pursuit of its hegemonic ambitions. Russia's manipulation of the BMD narrative in this way would increase the chances of Russian pre-emption fracturing NATO resolve during a future crisis.

**Consider limitations on U.S., Russian, and Chinese CPGS forces.** The deployment of a large U.S. CPGS force could further impel Moscow's shift to a pre-emptive footing by raising the perceived threat to its nuclear deterrent. Washington should evaluate the possibility of arms control negotiations with Russia – and China – to restrict the size of each party's future CPGS forces such that they could not plausibly threaten another signatory's nuclear deterrent. Any treaty restricting the size of the future U.S. CPGS force should be buttressed by cooperative confidence-building measures, including data-sharing on CPGS force capabilities, launch notification protocols, early-warning data sharing, and short-notice inspection regimes, while also protecting sensitive information crucial to such systems' operational effectiveness. Deeper analysis is required for U.S. policymakers to determine with sufficient confidence whether a modestly sized CPGS force will have adequate capacity to perform the full array of prospective CPGS missions.<sup>77</sup>

**Promote the responsible use of military autonomy.**

The United States – and Russia – should carefully consider the use of military autonomy. U.S. officials should seek to open a dialogue with Russia on potential guiding principles and “rules of the road” for the deployment of autonomous military systems. Special attention should be given to restricting ways by which autonomous weapons might be used to threaten Russian or U.S. nuclear deterrents. This initiative will be important to ensuring that future improvements in military autonomy do not exacerbate first-use pressures, thereby further incentivizing Russian – or U.S. – pre-emption in crisis or conflict.

**Clarify the United States' preference against pre-emption.** The United States may be able to weaken the perceived need for a Russian defensive doctrine of pre-emption by signaling more clearly its own preference against pre-emption. Future U.S. strategic documents should clearly state the American government's preference against pre-emption in crisis or early on in an escalating conflict. They should, as appropriate, directly acknowledge the destabilizing effects of growing first-use pressures in the strategic environment.

**Engage Russia on geopolitical concerns.** The seriousness of Russia's geopolitical concerns suggests that geopolitical de-escalation, entailing reciprocal U.S. and Russian concessions, will be an important component of any U.S. effort to dissuade Moscow from adopting a doctrine of pre-emption. If it could be pursued, such de-escalation might increase the possibility for additional dialogues, cooperative confidence-building initiatives, and other measures intended to convince the Kremlin that the United States does not intend to subordinate or break up the Russian state, especially by the use of pre-emptive force. Any attempt at geopolitical de-escalation should be complemented by expanded parallel efforts to reassure NATO allies and fortify deterrence.

**Conclusion**

The 21st century opened with relative quiet in the U.S.-Russian strategic relationship. But that quietude has fallen away sharply in recent years. The Trump administration may find room for cooperation with Russia on certain issues. Yet, this path will be fraught with risk. So too will the decades that follow.

New military technologies are transforming the battlespace in unprecedented ways. High-speed communications and prompt strike weapons leave less time for nations to identify and react to threats. Likewise, growing interconnectedness and long-range strike options allow

states to attack farther than before, especially through the air, cyberspace, and outer space domains. And novel capabilities ranging from autonomous military systems to weapons harnessing new physical principles, as Russian strategists frequently note, promise to inject even further uncertainty into U.S. and Russian military planning.

A rising number of Russia's top military strategists argue that their nation must use force pre-emptively to deter or defeat U.S. or NATO attacks on Russian vital interests in future crises or conflicts. Such a doctrine of pre-emption, its defensive purposes notwithstanding, would deny pragmatic decisionmakers in Moscow and Washington the ability to control or mitigate these destabilizing trends. Instead, it would threaten to hamstring attempts by both nations to avert, slow, or contain future crises or conflicts. The result would be an increased risk of major war between the United States and Russia, possibly at the nuclear level.

The Kremlin does not yet appear to have endorsed a doctrine of pre-emption. This provides U.S. and NATO policymakers with a potential opportunity to shape Russian decisionmaking on this issue. The United States and its NATO allies should prioritize efforts to reduce the value of a doctrine of pre-emption, as measured by Moscow. This includes steps to decrease the likelihood that Russia could use pre-emptive force to fracture U.S. or NATO resolve or severely degrade U.S. and NATO power projection capabilities. The Atlantic Alliance should also undertake efforts to reduce the perceived need for pre-emption, including by signaling its own preference against pre-emption, and in the case of the United States, sustaining efforts to find ways to work with the Russian Federation to secure both sides' nuclear deterrents.

U.S. national security interests – and those of its NATO allies and the Russian Federation – hinge on creating as much time and space as possible for prudent escalation management in the event of crisis or conflict. Russia's adoption of a doctrine of pre-emption, even for defensive purposes, would undermine these goals. Fortunately, the United States and its NATO allies still have options – and time – to prevent this outcome. U.S. policymakers should therefore make it a priority to act soon to dissuade Moscow from adopting a defensive doctrine of pre-emption.



# Appendices

## APPENDIX A

## A Brief History of Pre-emption: Past Calls for Pre-emption by the Soviet Union, Russia, and the United States

Pre-emptive thought on both sides of the U.S.-Russian strategic relationship dates back to the early years of the Cold War. Renewed advocacy for Russia's adoption of a doctrine of pre-emption is not, therefore, without precedent. The military-technological context is, however, in many ways unprecedented. As a result, Russia's shift to pre-emption in the near future would have more deleterious implications for U.S.-Russian strategic stability – and the likelihood of war between the two countries – than past Russian or U.S. doctrines of pre-emption.

### The Soviet Union and Russia

The Soviet Union long adhered to a pre-emptive nuclear strike doctrine. Minister of Defense Rodion Malinovsky articulated this doctrine in 1961.<sup>78</sup> Soviet military leaders opted to pursue pre-emption, as opposed to retaliation, out of concern that their nuclear force would be unable to launch an effective retaliatory strike if NATO seized the initiative. That concern reflected pessimism about the survivability of the Soviet nuclear command-and-control system. It was informed as well by lasting fears that in-silo Soviet intercontinental ballistic missiles (ICBMs) were too vulnerable, and would take too long to prepare and launch on warning, to retaliate effectively. Soviet military officials were also concerned about Moscow's ability to respond rapidly and decisively in the face of a detected NATO attack.<sup>79</sup>

The Soviet military's endorsement of pre-emption met with approval in Moscow until the late 1960s or early 1970s.<sup>80</sup> Then, spurred perhaps by the events at Chernobyl, Soviet political leaders began to grow more and more uncomfortable with the prospects of nuclear war.<sup>81</sup> They were also increasingly persuaded by arguments for nuclear deterrence, or the argument that parity in nuclear arsenals would be sufficient to deter NATO from launching a nuclear attack.<sup>82</sup>

By the late 1970s or early 1980s, Soviet policymakers renounced pre-emption altogether, precipitating the Soviet Union's shift to a retaliatory posture.<sup>83</sup> However, the Soviet military never fully agreed with its political counterparts that

abandoning pre-emptive strikes was in the nation's best interests. Perhaps reflecting this sentiment, the Russian military continued to exercise pre-emptive nuclear strike capabilities throughout this period.<sup>84</sup> Furthermore, U.S. intelligence reports indicated that, while they may have renounced pre-emption as a matter of policy, Soviet officials continued to discuss – if not favor – pre-emption in the event of a conflict with NATO until the mid-1980s.<sup>85</sup>

Soviet policymakers rejected pre-emptive strikes for the remainder of the 1980s. That rejection ultimately made it into Soviet military doctrine itself. Until the early 1980s, Soviet military doctrine was primarily composed by military authors.<sup>86</sup> The 1987 military doctrine broke from this tradition, with Mikhail Gorbachev presiding closely over its contents.<sup>87</sup> According to a Warsaw Pact Political Consultative Committee statement, the 1987 Soviet military doctrine stipulated that:

Military action will never be initiated by the Pact in an attempt to resolve international political problems. ... Pact members will never initiate military action against any state or alliance unless they are themselves the target of an armed attack. ... They are committed to maintaining armed forces and armaments at a state of readiness strictly sufficient for defense and for repelling any possible aggression.<sup>88</sup>

To this end, Gorbachev announced in December 1988 that Moscow would shrink and restructure Soviet forces in Europe such that they were no longer capable of launching a surprise attack against NATO. Interestingly, Gorbachev's rejection of pre-emption may have gained buy-in from the Soviet military leadership by this time, as indicated by a marked shift by Soviet military thinkers away from discussions of pre-emption and toward purely defensive themes.<sup>89</sup>

The trend away from pre-emption in Soviet, and then Russian, political and military circles abated considerably in the early 1990s. The Russian Federation's 1993 military doctrine reintroduced the possibility of pre-emptive strikes. That decision was prompted, at least in part, by Russian military officials' analysis of the U.S. victory in the 1991 Persian Gulf War. Saddam Hussein's defeat in Operation Desert Storm was attributed by Russian military officials, at least in part, to his cession of the initiative to the United States. That is, Russian military observers assessed that his unwillingness to attack U.S. forces pre-emptively contributed to his defeat. This informed a renewed belief that the abandonment of pre-emption would be to Russia's strategic disadvantage.

### The United States of America

The United States also has a history of pre-emptive thought. National Security Council Report 68, or NSC-68, provided an early indication that the United States would consider using pre-emptive strikes against the Soviet Union. Presented to Harry S. Truman in April 1950, the document stipulated the United States would not attack the Soviet Union “unless it is demonstrably in the nature of a counter-attack to a blow which is on its way *or about to be delivered* [italics added].”<sup>90</sup>

The 1950s were characterized by growing emphasis within the U.S. military – and among U.S. policymakers – on the need for pre-emptive strike options to be available in a time of crisis.<sup>91</sup> That emphasis reached an apex during the Berlin crisis in 1959. While briefing congressional leaders on his administration’s strategy for managing the crisis, Dwight Eisenhower remarked: “when we reach the acute crisis period” it may be “necessary to engage in general war to protect our rights.”<sup>92</sup>

The first U.S. nuclear war plan, or Single Integrated Operational Plan (SIOP), was developed during the Berlin crisis. It entered into force in 1961. The plan, titled SIOP-62, provided the president with pre-emptive strike options in the event the United States had strategic warning of a Soviet attack.<sup>93</sup>

John F. Kennedy stated in the years after SIOP-62 was implemented that he did not believe pre-emptive strikes to be a viable option for the United States.<sup>94</sup> The U.S. military continued to develop pre-emptive strike plans, nonetheless.<sup>95</sup> Indeed, three of the five nuclear attack options provided to the National Command Authority – the president and the secretary of defense – in the early 1970s were pre-emptive.<sup>96</sup>

In more recent years, discussions about pre-emption as a U.S. military strategy often begin with the 2002 National Security Strategy. The strategy was put forth by the George W. Bush administration in the aftermath of the 9/11 attacks. It read:

We cannot let our enemies strike first. ... The greater the threat, the greater is the risk of inaction – and the more compelling the case for taking anticipatory action to defend ourselves, even if uncertainty remains as to the time and place of the enemy’s attack. To forestall or prevent such hostile acts by our adversaries, the United States will, if necessary, act preemptively.<sup>97</sup>

The document’s use of the term “preemptive” is better understood as “preventive.” That is, the United States reserved the right to attack enemy targets before a threat was imminent. This rationale informed the 2003 U.S. invasion of Iraq. That invasion, in turn, proved to be a primary motivation for early calls for Russia’s adoption of a doctrine of pre-emption, as seen in Major General Alexander I. Malyshev’s 2007 *Military Thought* article.

More recently still, the U.S. Department of Defense’s development of the AirSea Battle operational concept – since reconceived as the Joint Concept for Access and Maneuver in the Global Commons, or JAM-GC – indicated to many observers that the United States had shifted more firmly to a pre-emptive footing. The operational concept relied heavily on the use of early attacks to dismantle the enemy’s “kill chain,” or the combination of sensors and weapons required to find and engage its targets. That reliance suggested to many that pre-emption was on the table for the United States in the event of a future major power conflict.<sup>98</sup>

## APPENDIX B

## NATO Ballistic Missile Defenses: U.S. and NATO Responses to Russian Opposition

### Russian Opposition to NATO Ballistic Missile Defenses

NATO's ballistic missile defense (BMD) network is designed to intercept a limited ballistic missile attack from Iran.<sup>99</sup> The U.S. Aegis Ashore missile defense system – capable of intercepting short- and intermediate-range ballistic missiles – was recently activated in Romania and is scheduled for activation in Poland in 2018.<sup>100</sup>

Moscow argues that Iran does not pose a ballistic missile threat to NATO or the United States.<sup>101</sup> It asserts instead that Europe-based BMD systems are intended for use against Russia.<sup>102</sup> Some Russian officials also argue that these systems could be used to intercept Russian intercontinental ballistic missiles (ICBMs). They posit as well that the United States could eventually use ballistic missile defenses along with conventional prompt global strike (CPGS) weapons to conduct a strategic disarming first attack.<sup>103</sup> Lastly, they argue that Aegis Ashore sites could be used to launch Tomahawk cruise missiles against Russia.<sup>104</sup>

The empirical veracity of Moscow's claims is rightly disputed. Nonetheless, Russian fears appear to be at least in substantial part genuine.<sup>105</sup>

### Proposed Cooperative Confidence-Building Measures

U.S. and allied officials regularly assure their Russian counterparts that U.S. BMD capabilities in Europe are neither intended to nor capable of threatening Russia's nuclear deterrent.<sup>106</sup> The Obama administration provided high-level unclassified briefings to Russian officials on U.S. BMD technical capabilities.<sup>107</sup> In addition, the George W. Bush and Barack Obama administrations proposed a host of cooperative confidence-building measures. Proposals included early-warning data-sharing; reciprocal inspections of Europe-based U.S. and Russian BMD; keeping Europe-based BMD systems nonoperational until an Iranian missile threat had materialized; a joint operational center for U.S. and Russian missile defenses; and a joint U.S.-Russian initiative to research, design, and operate a missile defense system protecting all of Europe.<sup>108</sup> NATO extended similar offers in recent years, as well.<sup>109</sup>

Russia has proved unreceptive to these proposals. The Russian government has repeatedly rejected technical evidence that Europe-based interceptors pose little to no threat to Russian strategic nuclear forces.<sup>110</sup> At the same time, Russia has made a number of counterproposals to deal with the BMD impasse. Yet, those proposals – such as the adoption of a “sectoral approach” to BMD – have proved unacceptable to the United States and NATO.<sup>111</sup>

### Reasons for Russian Opposition to NATO Ballistic Missile Defenses

Many Russian officials likely believe that U.S. BMD systems in Europe currently threaten Russia's nuclear deterrent. Others are more concerned about the future. They fear that NATO's current BMD architecture could be updated – perhaps with additional or faster interceptors – in a way that does threaten Russia's deterrent.

This concern is exacerbated by the Russian perception that U.S. ballistic missile defense policy can change quickly and unpredictably.<sup>112</sup> It is aggravated further by the Russian Federation's conventional military inferiority relative to U.S. and NATO forces. This conventional imbalance has left Russia reliant on its nuclear forces to deter or, if necessary, defeat U.S. or NATO aggression.

Moreover, nuclear weapons form not only the bedrock of Russia's national security, but in many ways, of its sense of national identity. From this standpoint, the very perception that U.S. BMD capabilities could threaten Russia's nuclear forces is not only strategically destabilizing but a dire threat to Russia's “historic identity as a great state.”<sup>113</sup>

In addition, Russian officials may see the missile defense issue as strategic bargaining leverage that can be used to portray the United States as a destabilizing actor, sow division within NATO, and cultivate international support for the Russian position. Lastly, Russian policymakers are likely concerned that pivoting away from the strong rhetoric they have historically used to condemn U.S. BMD efforts could be politically costly at home.

## APPENDIX C

## U.S. Conventional Prompt Global Strike: Russian Views and Potential Ways Forward

### Russian Opposition to U.S. Conventional Prompt Global Strike

Conventional prompt global strike (CPGS) weapons would allow the United States to attack time-critical targets anywhere worldwide in as little as an hour.<sup>114</sup> Early U.S. efforts to develop CPGS weapons sought to mount conventional warheads on intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs).<sup>115</sup> More recent efforts have focused on nonballistic CPGS options, such as hypersonic boost-glide systems.<sup>116</sup> These U.S. CPGS programs are still inchoate.

Early Russian Federation opposition to U.S. CPGS development focused on the issue of “warhead ambiguity,” or the potential for a launch of conventional ICBMs or SLBMs to be misinterpreted as a nuclear attack.<sup>117</sup> More recently, Russian officials have argued that CPGS is part of a U.S. plan to develop the ability to neutralize Russia’s nuclear deterrent. They posit that the United States would use CPGS weapons to destroy most of Russia’s land-based ICBMs, long-range nuclear bombers, and submarines in port. Then, U.S. missile defenses in Europe, the American homeland, and perhaps the Pacific would intercept any “leakers” that escape the initial barrage.<sup>118</sup>

There is little evidence that Washington has seriously considered using CPGS against Russia’s nuclear forces.<sup>119</sup> Simultaneously, the United States is not alone in developing CPGS weapons. Russia – and China – are developing like capabilities.<sup>120</sup> Russian officials say that their country’s pursuit of these weapons is driven by the need to counter expanding U.S. ballistic missile defenses.<sup>121</sup>

### CPGS and the New START Treaty

Moscow entered New START negotiations seeking to ban the deployment of conventional warheads on ICBMs or SLBMs.<sup>122</sup> Washington rejected the proposed ban. Instead, the United States agreed to count against the treaty limits any weapon – conventional or nuclear – that followed a ballistic trajectory for over half of its flight path. This limits the number of conventionally armed ICBMs or SLBMs the United States can deploy before subtracting from its own nuclear deterrent.<sup>123</sup>

The Obama administration also emphasized that CPGS – including hypersonic boost-glide systems not counted against New START limitations – would be retained solely as a “niche” capability. It would be sized so as not to “perturb [the U.S.] strategic relationship with Russia.”<sup>124</sup> This reflects the finding by the National Research Council of the U.S. National Academies in its congressionally mandated report released in 2008 that it would take hundreds of U.S. CPGS weapons to plausibly threaten Russia’s nuclear deterrent. The report argued further that if CPGS weapons were used in small numbers, a foreign nation would be unlikely to misinterpret their launch as an imminent nuclear attack.<sup>125</sup>

### U.S.-Russian Cooperative Confidence-Building Measures

Over the past decade, U.S. officials and analysts proposed additional cooperative initiatives to bolster Russia’s confidence in the survivability of its nuclear deterrent.<sup>126</sup> Proposed measures included reciprocal early-warning data-sharing and launch notification protocols to ease the Kremlin’s concerns about a U.S. CPGS-enabled surprise attack.

Furthermore, U.S. official documents have proposed deploying CPGS weapons to bases such as Vandenberg Air Force Base that have “no nuclear capability or association.” U.S. analysts have also suggested the use of reciprocal short-notice inspections to assure U.S. and Russian policymakers that both countries’ CPGS weapons were kept in non-nuclear configurations.

In addition, many have proposed that the United States take steps to better inform Russia about the size, attack capabilities, and doctrine for its CPGS force’s use. Such steps might include U.S.-Russian reciprocal data exchanges on the size and attack potential of each side’s CPGS weapons or inviting Russian officials to observe U.S. CPGS test launches. U.S. analysts have also suggested that making CPGS accountable to future arms control treaties may ease Russian concerns about the survivability of its nuclear deterrent.

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13. Rakhmanov, "Network Centric Control Systems"; Vinogradov, "Trends in the Conduct of Operations in a Major War"; Chekinov and Bogdanov, "The Nature and Content of a New-Generation War"; Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century"; and Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations."
  14. I.N. Vorobyov, "Analysis of Theoretical and Mathematical Development of Netcentric Warfare," *Military Thought*, 2 (2012).
  15. Rakhmanov, "Network Centric Control Systems"; Vorobyov, "Analysis of Theoretical and Mathematical Development of Netcentric Warfare"; Chekinov and Bogdanov, "The Nature and Content of a New-Generation War"; and Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations."
  16. V.V. Matvichuk and A.L. Khryapin, "A Strategic Deterrence System Under New Conditions," *Military Thought*, 1 (2010); Vorobyov and Kiselyov, "On the Innovative Development Concept in the Armed Forces"; Chekinov and Bogdanov, "The Nature and Content of a New-Generation War"; and Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations."
  17. Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century"; Rakhmanov, "Network Centric Control Systems"; Vorobyov and Kiselyov, "On the Innovative Development Concept in the Armed Forces"; Chekinov and Bogdanov, "The Nature and Content of a New-Generation War"; Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations"; Chekinov and Bogdanov, "A Forecast for Future Wars"; Vorobyov and Kiselyov, "Analysis of the Effectiveness of Defensive Operations"; Matvichuk and Khryapin, "A Strategic Deterrence System Under New Conditions"; and Vorobyov, "Analysis of Theoretical and Mathematical Development of Netcentric Warfare."
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  20. Chekinov and Bogdanov, "The Nature and Content of a New-Generation War."
  21. Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century"; and Rakhmanov, "Network Centric Control Systems."
  22. Rakhmanov, "Network Centric Control Systems."
  23. Vinogradov, "Trends in the Conduct of Operations in a Major War."
  24. Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century"; Vinogradov, "Trends in the Conduct of Operations in a Major War"; Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations"; Chekinov and Bogdanov, "The Nature and Content of a New-Generation War"; and Chekinov and Bogdanov, "A Forecast for Future Wars."
  25. Top Russian strategists are emphatic that Russia must seize the initiative to win future wars. See A.P. Korabelnikov, "Promising Trends in the Development of Aerospace Defense Forms and Methods in Russia," *Military Thought*, 4 (2015); V.I. Polegayev and V.V. Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System," *Military Thought*, 3 (2015); Vinogradov, "Trends in the Conduct of Operations in a Major War"; and Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations." They also emphasize how important achieving the surprise will be to securing the initiative. See Vinogradov, "Trends in the Conduct of Operations in a Major War"; Chekinov and Bogdanov, "A Forecast for Future Wars"; Vorobyov and Kiselyov, "Analysis of the Effectiveness of Defensive Operations"; Lumpov and Karpov, "Analysis of the U.S. Strategic Triad"; and A.I. Malyshev, "Military Strategy of the Russian Federation in the Early 21st Century," *Military Thought*, 3 (2007). Underlying Russian military thinkers' push for their nation's military to attack first by surprise is a recognition that once a war has started, the speed and destructiveness of modern weapons will leave Russia very little time to take back the initiative if Moscow does not seize it from the very outset. See I.N. Vorobyov and V.A. Kiselyov, "'Time' and 'Space' As Strategic Categories of Contemporary Wars," *Military Thought*, 3 (2008); I.N. Vorobyov and V.A. Kiselyov, "From Present-Day Tactics to Network-Centric Action," *Military Thought*, 3 (2011); Vorobyov, "Analysis of Theoretical and Mathematical Development of Netcentric Warfare"; and Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century."
  26. Chekinov and Bogdanov, "The Nature and Content of a New-Generation War."
  27. Stephen R. Covington, "The Culture of Strategic Thought Behind Russia's Modern Approaches to Warfare" (Belfer Center for Science and International Affairs, October 2016), 13-26, <http://belfercenter.ksg.harvard.edu/files/Culture%20of%20Strategic%20Thought%203.pdf>.

28. Vinogradov, "Trends in the Conduct of Operations in a Major War"; Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations"; and Chekinov and Bogdanov, "A Forecast for Future Wars." For an introduction to reconnaissance-strike swarms, see Paul Scharre, "Robotics on the Battlefield Part II: The Coming Swarm" (Center for a New American Security, October 2014), <https://www.cnas.org/publications/reports/robotics-on-the-battlefield-part-ii-the-coming-swarm>.
29. Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System"; and V.A. Zakharov, "Antiaircraft Forces in a Global Active Defense System," *Military Thought*, 4 (2014).
30. Gorbunov and Bogdanov, "Armed Confrontation in the 21st Century."
31. Gerasimov, "The Value of Science Is in the Foresight." See also Charles Bartles' excellent review of Gerasimov's article. In it, he addresses not only Gerasimov's understanding of the operational environment, but the central role he plays as chief of the Russian general staff in preparing the armed forces for future wars. Charles K. Bartles, "Getting Gerasimov Right," *Military Review* (January-February 2016), 30-39, [http://usacac.army.mil/CAC2/MilitaryReview/Archives/English/MilitaryReview\\_20160228\\_art009.pdf](http://usacac.army.mil/CAC2/MilitaryReview/Archives/English/MilitaryReview_20160228_art009.pdf).
32. I am grateful to Celeste Wallander for this valuable insight. This observation also reflects the 2014 Russian military doctrine, which reads: "The Russian Federation shall reserve the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and/or its allies, as well as in the event of aggression against the Russian Federation with the use of conventional weapons when the very existence of the state is in jeopardy." See "The Military Doctrine of the Russian Federation," December 25, 2014.
33. Karl P. Mueller, Jasen J. Castillo, Forrest E. Morgan, Negeen Pegahi, and Brian Rosen, "Striking First: Preemptive and Preventive Attack in U.S. National Security Policy" (Rand Corp., 2006), [http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND\\_MG403.pdf](http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG403.pdf).
34. Malyshev, "Military Strategy of the Russian Federation in the Early 21st Century."
35. V.M. Burenok and O.B. Achasov, "Non-Nuclear Deterrence," *Military Thought*, 1 (2008).
36. Burenok and Achasov are unclear as to whether they believe anticipatory attacks should be used *prior* to crisis or solely in crisis or in the early stages of an escalating conflict. The broader discussion among senior Russian military strategists, in *Military Thought* and other venues, focuses on pre-emption as it is understood by Russian analysts. If Burenok and Achasov are suggesting that Russia consider attacking *prior* to crisis or conflict, they would represent an outlier in the present debate over Russia's adoption of a doctrine of pre-emption, based on open-source analysis. For reference, the seminal Rand monograph, *Striking First: Preemptive and Preventive Attack in U.S. National Security Policy*, defines "anticipatory attack" as a "supercategory" that includes both "preventive attack" and "pre-emptive attack." According to the Rand analysis, "preventive attacks" occur when a threat is not imminent. A state launching a preventive attack does so not for fear of an imminent attack, but under the belief that a conflict is likely at some point in the future and that fighting sooner would be more advantageous than delaying. "Preemptive attacks," by contrast – and reflecting the traditional U.S. and European understanding of pre-emption – are undertaken under the perceived threat of an imminent attack. A state would conduct a pre-emptive attack in the belief that attacking first in crisis would offer it greater advantage than waiting for the opponent to act first. The Rand analysts write of anticipatory attack: "Anticipatory attacks – both preemptive and preventive – are offensive strategies carried out for defensive reasons. More specifically, they are based on the expectation that the adversary will – or, is unacceptably likely to – commit armed aggression in the future, and are launched in order to reduce or eliminate the threat by initiating the conflict on terms relatively favorable to the attacker. ... The scope of anticipatory attack extends across a continuum ranging from narrowly preemptive attacks, in which the attacker seeks to strike the first blow against an enemy that is itself about to attack, to preventive attacks intended to address less immediate threats before the opportunity to do so deteriorates." For more, see Mueller, Castillo, Morgan, Pegahi, and Rosen, "Striking First."
37. Covington, "The Culture of Strategic Thought Behind Russia's Modern Approaches to Warfare," 13–26.
38. Patrushev's full statement – specifically, that preventive nuclear strikes not be ruled out "in critical national security situations" – indicates that an expectation of imminent attack on Russian vital interests would be required before authorizing a pre-emptive strike. This suggests that his use of the term "preventive" might be better understood as "pre-emptive." If Patrushev was indeed endorsing the use of nuclear strikes prior to crisis or conflict, he would be an outlier in the ongoing Russian debate on pre-emption. Find Patrushev's statement at Vladimir Mamontov, "Russia is Changing and So Must Its Military Doctrine," *Izvestia*, October 14, 2009, <http://izvestia.ru/news/354178>; Sergey Turchenko and Peter Vladimirov, "Nikolai Patrushev – Russia Has the Right to Conduct a Preemptive Nuclear Strike," *Svpressa.ru*, October 14, 2009, <http://svpressa.ru/society/article/15470/>; and "Russia Has Allowed Itself to Use Preventive Nuclear Strikes," *Lenta.ru*, October 14, 2009, <https://lenta.ru/news/2009/10/14/prevent/>.
39. "The Military Doctrine of the Russian Federation," approved by Russian Federation Presidential Edict on February 5, 2010, [http://carnegieendowment.org/files/2010russia\\_militaryDoctrine.pdf](http://carnegieendowment.org/files/2010russia_militaryDoctrine.pdf).



40. Vestnik Akademiyi voyennykh nauk, 4 no. 33 (2010), in Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System."
41. Rakhmanov, "Network Centric Control Systems."
42. Vorobyov and Kiselyov, "From Present-Day Tactics to Network-Centric Action."
43. Vorobyov, "Analysis of Theoretical and Mathematical Development of Netcentric Warfare."
44. Gerasimov, "The Value of Science Is in the Foresight."
45. Andrew E. Kramer, "Russian General Makes Threat on Missile-Defense Sites," *The New York Times*, May 3, 2012, <http://www.nytimes.com/2012/05/04/world/europe/russian-general-threatens-pre-emptive-attacks-on-missile-defense-sites.html>; and "General Staff: Russia May Use Preemptive Strikes Against the Missile Defense System," RBC.ru, May 3, 2012, <http://www.rbc.ru/politics/03/05/2012/5703f6e59a7947ac81a6793a>.
46. Of note, Bogdanov and Chekinov's use of the term "anticipatory operations" may allow for the early use of force prior to crisis as well as during crisis or early on in an escalating conflict. If that is the case, the authors would appear to be outliers in the current debate. Their advocacy would, nonetheless, be concerning in view of such a policy's implications for strategic stability. Chekinov and Bogdanov, "The Nature and Content of a New-Generation War."
47. Vinogradov, "Trends in the Conduct of Operations in a Major War."
48. "The Russian Federation's Military Doctrine to List the United States as Russia's Top Threat," Interfax.ru, September 3, 2014, <http://www.interfax.ru/russia/394742>; and "Russian General Calls for Preemptive Nuclear Strike Doctrine Against NATO," *The Moscow Times*, September 3, 2014, <https://themoscowtimes.com/articles/russian-general-calls-for-preemptive-nuclear-strike-doctrine-against-nato-39016>.
49. "Preemptive nuclear strike omitted from Russia's new military doctrine – reports," RT.com, December 10, 2014, <https://www.rt.com/politics/213111-russia-nuclear-preemptive-strike/>; and "Russia Refused to Allow for Preemptive Nuclear Strikes in Its Military Doctrine," RBC.ru, December 10, 2014, <http://www.rbc.ru/politics/10/12/2014/54881218cbb20f794c4c4e01>. Other prominent Russian defense experts made similar arguments. See Alexander Stepanov, "Changes in the Russian Military Doctrine – The Right to a Preemptive Nuclear Strike," MKRU, September 2, 2014, <http://www.mk.ru/politics/2014/09/02/izmeneniya-v-voennoy-doktrine-rossii-pravo-na-preventivnyy-yadernyy-udar.html>; and Alexander Zhilin, "Russia's Right to a Preemptive Strike in Response to the Economic War," Regnum.ru, December 20, 2014, <https://regnum.ru/news/polit/1878927.html>.
50. "The Military Doctrine of the Russian Federation," December 25, 2014.
51. "Russia classifies information on pre-emptive nuclear strikes – military," BBC Monitoring Former Soviet Union, September 5, 2014.
52. Zakharov, "Antiaircraft Forces in a Global Active Defense System."
53. Zakharov's use of the term "anticipatory" strike might be better understood as "pre-emptive." The author's focus is on the use of force immediately preceding the outbreak of armed conflict.
54. Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations"; and Korabelnikov, "Promising Trends in the Development of Aerospace Defense Forms and Methods in Russia."
55. Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System."
56. Burenok and Achasov, "Non-Nuclear Deterrence"; and Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System."
57. Burenok and Achasov, "Non-Nuclear Deterrence."
58. Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System."
59. Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System"; and Zakharov, "Antiaircraft Forces in a Global Active Defense System."
60. Litvinenko and Rusanov, "Basic Trends in Firepower Employment in Modern-Day Operations." Similar effects took place in Georgia in 2008, albeit on a much smaller scale. See John Arquilla, "Cyberwar is Already Upon Us," *Foreign Policy* (February 27, 2012), <http://foreignpolicy.com/2012/02/27/cyberwar-is-already-upon-us/>.
61. A.L. Khryapin, D.A. Kalinkin, and V.V. Matvichuk, "Strategic Deterrence Against the U.S. Global ABM System and Prompt Global Strike Capabilities," *Military Thought*, 1 (2015); Vinogradov, "Trends in the Conduct of Operations in a Major War"; Korabelnikov, "Promising Trends in the Development of Aerospace Defense Forms and Methods in Russia"; and Chekinov and Bogdanov, "The Nature and Content of a New-Generation War."
62. Polegayev and Alferov, "Non-Nuclear Deterrence in the Strategic Deterrence System."
63. Korabelnikov, "Promising Trends in the Development of Aerospace Defense Forms and Methods in Russia."
64. Vorobyov and Kiselyov, "Analysis of the Effectiveness of Defensive Operations"; Burenok and Achasov, "Non-Nuclear Deterrence"; and O.Yu. Aksyonov, Yu.N. Tretyakov, and Ye.N. Filin, "Strategic Defense Systems to Deter Armed Aggression," *Military Thought*, 2 (2015).

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70. Eric Schmitt, "Russia Bolsters Its Submarine Fleet, and Tensions with U.S. Rise," *The New York Times*, April 20, 2016, [https://www.nytimes.com/2016/04/21/world/europe/russia-bolsters-submarine-fleet-and-tensions-with-us-rise.html?\\_r=0](https://www.nytimes.com/2016/04/21/world/europe/russia-bolsters-submarine-fleet-and-tensions-with-us-rise.html?_r=0).
71. The Russian Federation has long demonstrated its ability to use cyber weapons to disrupt and degrade targets' energy, financial, communications, transportation, and other infrastructure. It has also shown its ability to target these systems for deterrent effect. See David M. Hollis, "Cyberwar Case Study: Georgia 2008," *Small Wars Journal*, January 6, 2011, <http://smallwarsjournal.com/jrnl/art/cyberwar-case-study-georgia-2008>.
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76. Colonel-General Viktor Yesin (Ret.) and Major General Vladimir Dvorkin (Ret.) are among the Russian strategists who dispute the allegation that NATO ballistic missile defenses, coupled with CPGS weapons, could neutralize Russia's nuclear deterrent. For more, see International Institute for Strategic Studies, "Major General Vladimir Dvorkin – 'Prospects for NATO-Russia Cooperation on Missile Defence,'" YouTube, May 24, 2011, <https://www.youtube.com/watch?v=5jO4ukVzTFs>; "TRANSCRIPT: Prime Minister Vladimir Putin meets with experts in Sarov to discuss global threats to national security, strengthening Russia's defences and enhancing the combat readiness of its armed forces," February 24, 2012, <http://www.russialist.org/archives/russia-putin-transcript-security-military-486.php>; Viktor Yesin, Pavel Zolotarev, Valentin Kuznetsov, and Sergei Rogov, "Russia and the USA at a Fork in the Road: Obama's Initiatives and Moscow's Reactions" (Russian Council on International Affairs, July 26, 2013) [www.russiancouncil.ru/inner/?id\\_4=2156](http://www.russiancouncil.ru/inner/?id_4=2156); and Vladimir Dvorkin, "Risky Contradictions: Putin's Stance on Strategic Arms and Missile Defense" (Carnegie Moscow Center, October 2, 2016), <http://carnegie.ru/commentary/?fa=62719>. See also Keir Giles and Andrew Monaghan, "European Missile Defense and Russia," (Strategic Studies Institute, July 2014), 28–30, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1219.pdf>.
77. Past U.S. official statements have indicated that these missions would include pre-empting nuclear launch by a "rogue" state such as Iran or North Korea; striking time-critical terrorist targets; destroying enemy anti-sat-

- elite weapons; or, in a very limited capacity, disabling critical nodes or links in adversary anti-access/area denial (A2/AD) infrastructure. See James M. Acton, “Silver Bullet?: Asking the Right Questions About Conventional Prompt Global Strike” (Carnegie Endowment for International Peace, May 2013), 9–20, <http://carnegieendowment.org/files/cpgs.pdf>.
78. Jonathan Haslam, *Russia's Cold War: From the October Revolution to the Fall of the Wall* (New Haven: Yale University Press, 2012), 199.
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