

Iron Cannot Fight¹ – The Role of Technology in Current Russian Military Theory

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ABSTRACT Contemporary Russian military theory is dominated by three schools of thought: the ‘traditionalists’, the ‘modernists’ and the ‘revolutionaries’. On the role of technology in future warfare, the traditionalists argue for both high tech and massive forces at the same time. The modernists are ready to trade manpower for technology, whereas the revolutionaries give technology full priority. Both the traditionalists and the modernists believe Russia, because of the country’s technological lag and limited resources, should respond asymmetrically to the Western technology challenge. The revolutionaries, on the other hand, maintain that Russia must respond in kind. If not, the country will no longer be able to defend its sovereignty. The currently ongoing radical reform of the Russian military is a partial victory for the modernists, but which model or mix of models that will dominate in the future is first of all dependent on the Russian military’s purchasing power and the state of the domestic defence industry.

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“““““*defence*

This article discusses how the dominating schools in current Russian military theory view the role of technology in future war – a question debated among many modern militaries.² Resources are not unlimited, and with new military platforms and systems getting more sophisticated and expensive, many countries now more than ever face the dilemma of how much resources should be spent on manpower as against on new technology. With its decision to maintain one million

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¹Russian military saying (*Zheleso ne voiuet*).

²See for example Todd Harrison, ‘The New Guns Versus Butter Debate’ (Center for Strategic and Budgetary Assesments 2010); Timothy Edmunds, ‘The Defence Dilemma in Britain’, *International Affairs* 86/2 (2010).

45 men under arms, Russia remains the fifth largest military power in the world in terms of the number of troops. At the same time, the country retains one of the largest military-industrial complexes of the world. Thus, the manpower versus technology dilemma is especially acute in the case of Russia. The aim of the article is to enrich the Western
 50 discussion of this dilemma by exploring the perspectives of the Russian debate, and also briefly to evaluate the impact of these schools of thought on current Russian military policy.

Simply put, current Russian military theory can be divided into three main schools: the *traditionalists*, the *modernists* and the *revolutionaries*.³ The traditionalists claim, in the same way that a growing
 55 number of Western military theoreticians do, that developments within information technologies and precision weapons do not fundamentally change the character of war.⁴ They see little reason why the purchase of new technology should come at the expense of manpower.

60 The modernists agree with the traditionalists that war has not changed essentially because of new technologies, but they still believe the changes warrant a significant reallocation of resources from manpower to technology. Fundamentally, the modernists want Russia to undergo many of the structural changes that Western militaries have gone through since the end of the Cold War.

65 The revolutionaries on the contrary, claim that the changes brought about by new technologies are ground-breaking, because, as will be explained later, they fundamentally change the character of war among modern militaries. In this sense, the revolutionaries are the true successors to the Soviet theorists of a Revolution in Military Affairs (RMA) of the 1980s. In the contemporary Russian debate, the
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75 ³This is the author's own categorization, but it builds on Alexandr Golts' distinction between 'technologists' and 'magicians', and Igor Popov's distinction between 'conservatives' and 'innovators'. See Aleksandr Golts, 'Bremia Militarizma', *Otechestvennyye zapisky*, no. 5 (2005); Igor Popov, 'Voennaia Mysl Sovremennoi Rossii', at <<http://futurewarfare.narod.ru/theoryRF.html>>, accessed 20 June 2011.

80 ⁴For Western scepticism, see for example Jacob W. Kipp and Lester W. Grau, 'The Fog and Friction of Technology', *Military Review* (Sept.–Oct. 2001); Antulio Echevarria, 'Challenging Transformation's Cliches' (Carlisle, PA: Strategic Studies Institute, US Army War College 2006); Colin S. Gray, 'Recognizing and Understanding Revolutionary Change in Warfare: The Sovereignty of Context', (Carlisle, PA: Strategic Studies Institute, US Army War College 2006); Stephen Biddle, 'Speed Kills? Reassessing the Role of Speed, Precision and Situational Awareness in the Fall of Saddam', *Journal of Strategic Studies* 30/1 (Feb. 2007); Christopher M. Schnaubelt, 'Whither the RMA?', *Parameters* (Autumn 2007); John Ferris, 'After the RMA: Contemporary Intelligence, Power and War', in George Kassimeris and John Buckley (eds.), *The Ashgate Research Companion to Modern Warfare* (Farnham, UK: Ashgate, 2010).

revolutionary message is associated first of all with the late General Vladimir Slipchenko (1935–2005). Joining the Western trend of identifying generations of warfare, Slipchenko defines six of these, and claims that future war between modern states will be ‘sixth generation warfare’.⁵ The historical breaking point for Slipchenko and the other revolutionaries was NATO’s 1999 air campaign against Yugoslavia.

Before we proceed with the discussion of the three schools of theory, however, a few caveats needs to be addressed. The division of current Russian military theory into three schools is a construct made for analytical purposes by the article’s author. As such, many of the theorists mentioned would not necessarily themselves have agreed with their own classification if they had read the text. Furthermore, the schools of theory are to be understood as strong trends rather than as mutually exclusive camps. Theorists might easily belong to one camp but at the same time hold views belonging to another camp on specific issues. There are also, as we will see, issues such as network centric warfare, where all three schools are in broad agreement.

The article proceeds as follows. First, there is a short presentation of the Russian military-theoretical inheritance and of the current arenas for military-theoretical debate in Russia. Then, the main body of the article consists of a more detailed analysis of the three main schools of thought. Finally, the article ends by taking a look at the extent to which current Russian military policy reflects the thinking of the three schools, and to what extent their recommendations in the future can be realized under different scenarios for defence spending and for the state of the Russian defence industry.

The Inheritance of Russian Military Theory

Military theory was one of the fields of study where the Soviet Union produced original works of international standing. First and foremost that was true for the theories of ‘deep battle’ in the 1920s and 1930s, and for the Soviet ideas of a Revolution in Military Affairs (RMA) in the 1980s.

The ‘deep battle’ doctrine, developed by, among others, Mikhail Tukhachevskii, Vladimir Triandafilov and Georgii Isserson, focused on the need to strike deep behind enemy lines in order to destroy the enemy’s ability to defend his own front. The doctrine also contained progressive ideas about combined arms, and it introduced an

⁵On the Western cottage industry of discovering generations of warfare see Antulio Echevarria, ‘4th, 5th and 6th Generation War’, paper presented at the International Studies Association Annual Convention (New Orleans 2010).

operational level between the tactical and strategic levels.⁶ According to Shimon Naveh, the main effect of the writings of Marshal Tukhachevskii and others was to produce ‘a transformation from a paradigm based on tactical consciousness to a paradigm based on operational art’. He also claims that the American Armed Forces in their ‘conceptual crisis of the late 1970s’ explicitly turned to the Soviet writers of the 1920s and 1930s for inspiration.⁷

The Russian theories in the 1980s on an emerging revolution in military affairs (RMA), seems to have been a case of discovering something about the enemy that the enemy was not able to discover about himself. It was especially Western developments in computer technology and precision weaponry that impressed Soviet military thinkers. When the US domestic RMA-debate took hold in the early 1990s, that was with a direct reference to the Soviet debate. Andrew Marshall at the Office of Net Assessment started in 1992 to circulate ideas within the US military that he had borrowed from his own readings of Soviet military journals, first of all *Voennaia mysl* (Military Thought).⁸

A similar impact on international military theory is difficult to identify from later Soviet and post-Soviet writings, although there are references to Vladimir Slipchenko’s idea of ‘sixth generation’ warfare in David A. Deptula’s work on effect-based operations.⁹

Current Arenas of Russian Military-Theoretical Debate

There are three main arenas of military-theoretical debate in Russia today. The first, and probably most important, is the General Staff. The General Staff has since pre-Soviet times had a leading role in Russian military thinking. Inspired initially by the Prussian military tradition, the General Staff was in Russia both before, during and after the Soviet

⁶Jan Fredrik Geiner, Egil Daltveit and Palle Ydstebø, ‘Trender I Militære Operasjoner’, FFI-rapport 2010/00692, at <http://rapporter.ffi.no/rapporter/2010/00692.pdf>, accessed 20 June 2010.

⁷Shimon Naveh, *In Pursuit of Military Excellence - the Evolution of Operational Theory*, in Gabriel Gorodetsky (ed.), *The Cummings Center Series* (London: Frank Cass 1997), 164. See also Azar Gat, *A History of Military Thought* (Oxford:OUP 2001), 632–9, and Andrei Kokoshin, *Soviet Strategic Thought 1917–91* (Cambridge, MA: The MIT Press 1998), 19–40.

⁸Stephen Peter Rosen, ‘The Impact of the Office of Net Assessment on the American Military in the Matter of the Revolution in Military Affairs’, *Journal of Strategic Studies* 33/4 (Aug. 2010), 469–82.

⁹David A. Deptula, ‘Effects-Based Operations: Change in the Nature of Warfare’, in *Defense and Airpower* (2001) p.30, note 60, the reference is indirect through work done by Mary Fitzgerald, at <www.aef.org/pub/psbook.pdf>, accessed 20 June 2011.

period, seen as ‘the brain of the Armed Forces’.¹⁰ According to Dima Adamsky, predicting international military developments has been as important to the General Staff as preparing and leading military operations.¹¹ Within the General Staff, the Centre for Military-Strategic Studies, established in 1985, has been the key institution in this regard. 180

There has, nevertheless, been considerable conflict over the role and authorities of the General Staff in post-Soviet times, but these have mostly had to do with the powers of the General Staff in day to day work. Few have questioned the responsibility of the General Staff for trying to look into the military crystal bowl. In 2004, there was a reform which transferred many of the powers regarding day-to-day management of the Armed Forces from the General Staff to the Ministry of Defence. The main purpose of this reform was to avoid confusing double leadership, but it was also justified by the fact that the General Staff now would have more time to focus on predicting the future.¹² 185 190

The second arena of debate is the Military Academy. This institution was established by President Boris Yeltsin in 1995, with the specific purpose of providing a state financed but still independent voice into the domestic defence debate. The Military Academy has since its inception been led by the leading traditionalist General Makhmud Gareev. Gareev came directly to the Academy from a high position in the General Staff. There he had been one of the founders of the Centre for Military-Strategic Studies. It was therefore already from the beginning reason to question to what extent the Russian military would be able to establish ‘an independent voice’. 195 200

According to the editorial board of *Nezavisimoe Voennoe Obozrenie* (NVO) – the main independent publication on Russian military affairs – the Military Academy has steadily grown in size and diminished in influence since its foundation.¹³ By 2006, the Military Academy had a staff of 584 full-time and 270 part-time employees.¹⁴ There is reason to believe that much of the military top brass now treats the Military Academy as much with indulgence as they do with respect. For example, the requests to the Academy from the Armed Forces for 205 210

¹⁰Dima Adamsky, *The Culture of Military Innovation* (Stanford, CA: Stanford UP 2010), 49. 215

¹¹Ibid.

¹²Vitalii Strugovets, ‘Genshtab Postavlen Pod Vertikal Vlasti’, *Russkii kur’er*, 15 June 2004.

¹³‘Voennye akademiki ne v favore’, *Nezavisimoe Voennoe Obozrenie*, 18 Jan. 2008.

¹⁴Makhmud Gareev, ‘Itogi Desiatiletnosti Akademii Voennykh Nauk 2001–2005 I Osnovnye Zadachii Akademii’, *Voennaia mysl*, no. 2 (2006). 220

analyses have steadily decreased. According to NVO, the conclusions in studies from the Military Academy have become more and more in line with what the Academy expects that the military top brass wants to hear. This is because the Academy tries in vain to regain its falling status.¹⁵ Despite the declining status of the Academy, however, the same is probably not true for the status of its leader. At the age of 87, General Makhmud Gareev remains one of the most influential and prolific writers within the traditionalist camp. In 2010, he published his most comprehensive work yet, the 900-page-long *Srazhenia Na Voenna-Istoricheskoi Fronte* (Battles on the Military-Historical Front), in which he elaborates the traditionalist view on wars in the past, present and future. Gareev was one of the authors of the 2010 Russian military doctrine. It should also be mentioned that the Academy's annual conference is still seen as a major event in the Russian military debate, attended by a significant portion of the top brass.

The General Staff's monthly journal – *Voennaia Mysl* (Military Thought) – is the main outlet for the ideas generated both in the General Staff and the Military Academy. It is often criticized for a strong bias in favor of the traditionalists. The leading revolutionary, Vladimir Slipchenko, claimed that the majority of the articles in *Voennaia Mysl* just 'go on and on about the wars of the past'.¹⁶ A quick search through the archive of the journal since 1999 shows that Gareev had six articles published, whereas Slipchenko had none. There were further a total of 64 references to works by Gareev, and only 11 to works by Slipchenko. Slipchenko, since he was the leading writer among the revolutionaries, was of course a biased commentator in this regard. However, more neutral observers have also questioned the objectivity of the journal. Igor Popov argues that 'with all respect for the publications in *Voennaia Mysl*, they more or less all belong to the conservative [read traditionalist] school. These authors are all absolutely certain about their own conclusions, which are based on the iron concrete logic of the Soviet military-theoretical school.'¹⁷ Still, there are exceptions. In the period from 2003 to 2010, Slipchenko's revolutionary colleague, General V. V. Kruglov, published a total of four long articles in *Voennaia Mysl* where he argued for the revolutionary point of view.

Finally, the third arena of debate is found in other military media and at conferences organized by different more or less independent

¹⁵'Voennie akademiki ne v favore'

¹⁶Makhmud Gareev and Vladimir Slipchenko, *Budushchaia Voina* (Moscow: Politru OGI 2005), 11.

¹⁷Popov, 'Voennaia Mysl Sovremennoi Rossii'

think-tanks. Russia has a vibrant community of independent defence journalists and experts. These do not only report on or analyze current military affairs, but also present their own views on the future of military conflict. It is difficult to measure to what extent debate in these independent arenas influence the military establishment, but it is fair to assume they are not totally isolated from each other. 265
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It should also be mentioned here that while some Russian military theorists are familiar with, and do refer to current Western or other foreign works, a clear majority do not. This is probably first of all the result of lacking English skills, but it possibly also stems from an idea that the Russian military-theoretical tradition is so rich that it can do without foreign input. Either way, the main point here is that large parts of the Russian debate becomes very in-house, with all the dangers that this represents for 'group think' and reproduction of misperceptions. In particular, that seems to be the case for many of the traditionalists. 275
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The Traditionalists

The traditionalists essentially reject the view that new technologies have or will revolutionize warfare. According to Igor Popov, the traditionalists seem themselves as defenders of 'pure Clausewitzianism'.¹⁸ This indicates a strong belief in eternal truths about the character of war. 285

In line with this historical long term view they also believe that individual countries have historically inherited traditions and traits of warfighting that it would be wrong to ignore when planning for the future. Nothing good would come from trying to break free of the national strategic and military culture. Dima Adamsky identifies some of the most important axioms of Russian military culture as: 290
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- 'moral superiority in battle', based on a belief that Russia has a comparative advantage in the Russian population's exceptional fighting spirit and willingness to sacrifice;
- insistence on technology only as a mass multiplier, not a means to fight better with fewer soldiers; 300
- the conviction that theory should guide practice, which means that doctrine should dictate demands on technology. Technological progress should not lead to new doctrine.¹⁹ 305

¹⁸Ibid.

¹⁹Adamsky, *The Culture of Military Innovation*, 42–6

310 All three axioms are easily recognized in current traditionalist writings. For example, Gareev discusses the difference between what he calls the American and Russian military schools. He claims that the main distinction is that the Russian school looks to ‘great moral power’ as a decisive advantage.²⁰ Gareev and the traditionalists, however, do not think that just any country can decide to develop ‘great moral power’ as a military capacity. The Russian superiority in this regard is historically determined in the same way that technological pre-eminence is in the case of the United States . We are dealing with historically developed mindsets that change only very slowly if ever. To support this argument, the traditionalists can to some extent point to sociological data. Surveys show that even today, values such as endurance in the face of hardship are central in the approach to life of most Russians.²¹

325 The axiom about technology as only a force multiplier is refound in Gareev’s insistence that Russian efforts to develop high precision weapons should not come at the expense of the planning and training for traditional military operations. The new capacities must come as an addition, not a substitute.²²

330 The axiom about doctrine guiding the development of technology appears to be a military variant of the general Russian preference for top-down management. This preference has roots back to Tsarist times, and can today easily be seen in the Russian leadership’s approach to modernization of the economy. The spinal reflex seems to be for commanding modernization from the top rather than providing supportive conditions and then wait for modernization to grow from below. It is rare, also today, for the Russian military industry to pursue new technologies on its own initiative and then propose them to the Armed Forces. Technological development overwhelmingly comes in response to demand specifications from the military.

340 The traditionalists are mainly interested in state-on-state warfare, although they also recognize, as a secondary concern, the need for an ability to conduct counter-insurgency operations. They see defence against the West, and in the longer run potentially also against China, as the main challenges. Despite the end of the Cold War, Gareev claims that Russia’s security predicament has not been as insecure since 1612 (‘the time of troubles’, when the Rurik dynasty had fallen, Russia was

350 ²⁰Gareev and Slipchenko, *Budushchaia Voina*, 103.

²¹Adamsky, *Culture of Military Innovation*, 42.

²²Makhmud Gareev, ‘Opyt Pobediteliei V Velikoi Voine Ne Mozhet Ustaret’, *Nezavisimoe voennoe obozrenie*, 12 March 2010.

occupied by the Polish-Lithuanian kingdom, and there was widespread civil unrest).²³

In many traditionalist writings this fear of the West takes the form of a mix between fear of military attack, and concern about some kind of a non- or less military cultural/political takeover of Russia by countries with alien values. For example, the two representatives of the Military Academy, General Boris Cheltsov and Colonel Sergei Volkov, in an article discussing the Western concept of effect-based operations, claim that this is something much more than just a concept for how to execute battles. They claim it is something the West is continually engaged in. According to them, the purpose of effect-based operations is 'to deprive all states, peoples, armies and governments of any kind of independence, sovereignty and subjectivity, and turn them into totally controllable and programmable mechanisms'.²⁴ This seems a relatively paranoid example, although if we consider some of the original US justification for introducing network-centric warfare, such as Arthur Cebrowski and Thomas Barnett's idea of the US military as an instrument in the service of globalization by removing recalcitrant regimes, it is possible to understand where some of the paranoia comes from.²⁵ However, also more moderate Russian military than Cheltsov and Volkov have related ideas. For example, Presidential adviser for military policy and former General Staff officer, General Alexander Burutin, believes that

'the threats from abroad have already today lost some of their purely military character and become more complex. This is taking place because military-technical, military-economic, informational and other factors have much more joint effects than they used to. In general, the border between war and peace becomes more and more blurred'.²⁶

The traditionalists' emphasis on many men under arms and Russian prerogatives in fighting spirit and morale, should, however, not be

²³Makhmud Gareev, 'Problemy Strategicheskogo Sderzhivania V Sovremennykh Usloviakh', in R.M. Timofeev (ed.), *Bezopasnost Rossii - 2010* (Moskva: Triumfalnaia Arka 2009).

²⁴Boris Cheltsov and Sergei Volkov, 'Setevye Voyny Xx Veka', *Vozdushno-kosmicheskaiia oborona*, 41/4 (2008).

²⁵Thomas P. Barnett, 'The Pentagon's New Map', *Esquire*, 1 March 2003, at www.esquire.com/features/ESQ0303-MAR_WARPRIMER, accessed 20 June 2011.

²⁶Aleksandr Burutin, 'O Nekotorykh Aspektakh Voennno-Technicheskoi Politiki Gosudarstvo V Novoi Redaktsii VoЕННОi Doktriny Rossiiskoi Federatsii', in A. Yusupov (ed.), *K Novoi Redaktsii VoЕННОi Doktriny Rossiiskoi Federatsii* (Moscow: URSS 2009), 105.

400 interpreted as being ‘anti-technology’. The traditionalists embrace most new technologies and are seriously concerned about the dire state of affairs in many parts of the Russian military-industrial complex. But, they just do not think new technologies will fundamentally change the character of war, and they warn strongly against giving priority to technology at the expense of manpower.

405 Furthermore, most traditionalists – consciously or unconsciously – ignore the economic dimension of the technology versus manpower equation. Western discussions on this topic are to a large extent driven by the obvious realization that under a regime of limited resources you cannot have plenty of both. A similar recognition is hard to come by in the writings of the Russian traditionalists. This is probably a result of a ‘historical hang-over’. Most traditionalists had their formative years in
410 the Soviet military – an organization that had top financial priority. Once you have experienced that the money is more or less always there, it is apparently hard to adapt to the contrary.

415 A final point is that the traditionalists believe Russian conventional military technological development should stop striving for parity and/or similarity with the military technological development of the West – in particular the USA. The idea of developing an asymmetric technological response – popular in many nations with more or less strained relations with the West – has become a truism among the Russian traditionalists. The main reason is the realization that the
420 Western lead is too great to catch up with. In addition, even if the Russian economy successfully modernized, the disappearance of the Soviet Union means that the significantly smaller Russian state cannot alone restore the rough parity that existed between the USA and the Soviet Union. According to the former mentioned presidential adviser for military policy, General Alexander Burutin,
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430 a crucial element in our plans for the development of new armaments must be an orientation towards an asymmetric response to the development and entering into service of the expensive new systems of the developed foreign countries.²⁷

435 The traditionalists do not seem to have dived very systematically into what an asymmetric strategy actually might look like, but three features seem to stand out from their writings. Asymmetric technologies should: (1) have a disruptive effect on new Western technologies, (2) be developed in areas where the domestic military industry has particular advantages, and (3) be much cheaper to develop and produce than new Western technologies. Boris Cheltsov and Sergei Volkov from the
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²⁷Ibid., 111.

Military Academy, have for example discussed the possibility of developing ‘swarms of mini or micro robot based countermeasures’ to disrupt Western network capabilities.²⁸ They do not detail how this could be done technically, but the example illustrates the asymmetric thinking. 445

Some Russian discussions of asymmetric technologies also indicate an understanding of the concept similar to the concept of ‘anti-access’ capabilities. Anti-access here means any technology whose primary purpose is to defend against intruders, and which is not at the same time very suitable for offensive purposes. Stationary air defence would be a prime example, but also mines, land based anti-ship cruise missiles and many other systems would serve the anti-access purpose. However, the exact relationship between asymmetric technologies and anti-access capabilities remains for the time being unclear. 450

There is every reason to believe that the traditionalist view by far has the most adherents within the Russian military today. Their views dominate not only *Voennaia Mysl*, but also most other military periodicals. The dominance can probably be explained both by intellectual inertia, and by the fact that many officers have had a personal interest in maintaining the status quo. In particular, the traditionalist preference for many men under arms can partly be explained by the self-interest of officers who with fewer men to command could become superfluous. 455 460

The Revolutionaries 465

The revolutionaries claim that war has changed fundamentally and irrefutably. They also claim that those states not willing to change their Armed Forces accordingly, will in the future be unable to defend their sovereignty. The leading theorist of this school was, until his death in 2005, General Vladimir Slipchenko. He and Gareev are seen as two of the most prominent and influential post-Soviet military theoreticians in Russia. For several years, these two held respectively the positions of Vice-President and President of the Military Academy. Slipchenko, despite the fact that he and Gareev ended up with opposite views of the future of warfare, still referred to Gareev as his teacher.²⁹ Slipchenko’s works are present at the desks of most Russian officers who sympathize with the revolutionary school.³⁰ 470 475

The turning point for the Russian revolutionaries was the NATO air campaign against Yugoslavia in 1999. According to Slipchenko, this 480

²⁸Cheltsov and Volkov, ‘Setevye Voyny Xx Veka.’

²⁹Popov, ‘Voennaia Mysl Sovremennoi Rossii’. and Gareev, *Budushchaia Voina*, 9.

³⁰Popov, ‘Voennaia Mysl Sovremennoi Rossii’.

485 campaign had in reality no other purpose than for the US to be able to
 test her new precision weapons. Slipchenko sees this war as the first
 example of a sixth generation war. According to him, war through
 history has evolved through the following generations:

490 As seen in the lower right cell of the table, Slipchenko believes that war
 between modern states in the future will take place with little if any
 physical contact between the warring parties. He also assumes that the
 new precision weapons will be directed mostly at civilian targets. The
 purpose will be to break the enemy’s resolve to continue fighting by
 incurring unacceptable economic and civilian losses. Taking this baseline
 495 scenario as his point of departure, Slipchenko reaches the following
 conclusions about how future wars will differ from the past:

- The importance of nuclear arms will gradually wither. They will still
 be around for a long time, but conventional long-distance precision

500 **Table 1** Slipchenko’s Generations of Warfare³¹

Generation	The character of war	The purpose of war
505 First generation: 500 BC to AD 900	Hand-to-hand combat with primitive arms	Destruction of the enemy and take-over of his weapons
Second generation: 900 to 1700	Firearms, battle at some distance, and sea battles in the littoral	Destruction of the enemy and submission of his territory
510 Third generation: 1700 to 1800	Increased firepower and precision, trench warfare and battles on the world oceans	Destruction of the enemy, his economy and political system
515 Fourth generation: 1800 to 1945	Automatic weapons, battle tanks and air battles	Destruction of the enemy’s military forces, his economy and political system
Fifth generation: 1945 to 1990	Nuclear weapons and the balance of terror	Political goals unachievable by the use of nuclear weapons
520 Sixth generation: 1990 →	Precision weapons and defence against these, information warfare and electronic warfare	Destruction of the enemy’s economy with the help of long distance no-contact warfare

525 *Source:* See note 32.

³¹Vladimir Slipchenko, *Voiny Novogo Pokolenia - Dstantsionnye I Bezkontaktnye* (Moscow: Olma-Press, 2004), 32–34.

weapons will gradually take their place. These new weapons will turn out to have a greater deterrent effect [than nuclear arms] because of their higher credibility of being used.³² 530

- Wars will generally be much shorter than they used to be.³³
- Countries worried about their future will transform the structure of their Armed Forces from the traditional army, navy and air force, to 'strategic attack forces' and 'strategic defence forces'.³⁴ 535
- The twenty-first century will be the century of sea power. This is because naval platforms will be preferred as launchers for the new precision weapons.³⁵
- The tactical level of warfare will lose much of its significance, and the strategic level will become even more important.³⁶ 540
- To the extent that land forces will survive, land and air forces will swap roles, the main task of the land forces will now be to support the air forces.³⁷

Based on this image of future war, Slipchenko also has a long range of suggestions for reform of the Russian Armed Forces: 545

- Maximum priority should be given to air defence, including defence against space based weapons. All air defence capacities should be united into one service (a decision to do this was made by President Medvedev in December 2010). Air defence should stop being narrowly anti-aircraft, and instead develop capacities against any air- and space-based weapons systems. New air defence systems should be able to destroy targets out to about 3,000 kilometres from Russia's borders. All new air defence systems should also be able to detect targets by other means than radar.³⁸ 550
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- Tanks, artillery, radar based air defence and many other current military systems and platforms will become redundant.³⁹ No one will ever again contemplate attacking Russia over land.⁴⁰
- Fighter planes, including fifth generation, will have little use in future wars. On the other hand, tankers and planes that can stay in 560

³²Slipchenko and Gareev, *Budushchaia Voyna*, 42 and 54.

³³Slipchenko, *Voiny Novogo Pokolenia - Distantzionnye I Bezkontaktnye*, 51.

³⁴Ibid., 329.

³⁵Ibid., 335.

³⁶Vladimir Slipchenko, 'K Kakoi Voine Dolzhny Gotovitsia Vooruzjennye Sily', *Otechestvennye zapisky*, No. 8 (2002), 4.

³⁷Slipchenko, *Voiny Novogo Pokolenia - Distantzionnye I Bezkontaktnye*, 325.

³⁸Ibid., 318–20

³⁹Ibid., 323.

⁴⁰Slipchenko and Gareev, *Budushchaia Voyna*, 13.

the air for a very long time, especially close to enemy launch platforms, will increase in importance⁴¹

- The Army should be abolished, and the remaining ‘land tasks’ such as border control and smaller local conflicts should be left to interior and border forces.⁴²
- The Navy’s main function should be to serve as a platform for precision weapons.⁴³
- Sixth generation warfare makes it superfluous to think about who could become your enemy and structure your Armed Forces according to that particular threat. Threats can emanate from anywhere in the world in the new scenario.⁴⁴

With regards to the fundamental question asked here, the priority of technology in relation to manpower, the revolutionaries are obviously on the side of technology. In Slipchenkos mind, the new technologies are a matter of survival. Those who do not give the new technologies absolute priority, can in the future have no hope of defending their sovereignty. This idea has spread beyond the small camp of revolutionary theorists. It is for example reflected in a 2010 statement by the Head of the Centre for Military-Strategic Studies in the General Staff, Colonel Sergei Chekinov, that the 1991 Iraq War changed the character of war fundamentally, by demonstrating that a technologically superior country can nullify a quantitatively superior force.⁴⁵ In contrast to the traditionalists, however, the trade-off between technology and manpower is recognized, and thus Slipchenko for example suggests abolishing the manpower-intensive army.

Slipchenko’s ideas about sixth generation warfare and his ideas about how the Russian Armed Forces should be reorganized are clearly the most radical military-theoretical message emerging from post-Soviet Russia. As such, Slipchenko is probably the military theoretician who most closely has lived up to the ideal of the Soviet General Staff of refraining ‘from mechanical extrapolation of existing trends into the future, apply laws of unity and the struggle of opposites, and seek out the root causes of change in forms and means of warfare’.⁴⁶ At the

⁴¹Slipchenko, *Voiny Novogo Pokolenia - Distantсионnye I Bezkontaktные*, 323.

⁴²Ibid., 325 and Slipchenko and Gareev, *Budushchaia Voina*, 44.

⁴³Slipchenko, *Voiny Novogo Pokolenia - Distantсионnye I Bezkontaktные*, 326 and 335.

⁴⁴Ibid., 328.

⁴⁵Sergei Chekinov, ‘Prognozirovanie Tendentsii Voennogo Iskusstva V Nachalnom Periode Xxi Veka’, *Voennaia mysl*, No. 7 (2010), 22.

⁴⁶Adamsky, *Culture of Military Innovation*, 48.

same time, the radicalism of Slipchenko could suggest that he might not warrant the attention given to him in this study. His most radical proposals for reform, such as abolishing the Army as a branch of the Armed Forces, have extremely few adherents. 620

However, his idea about sixth generation contactless warfare has attracted widespread attention, even among military planners who would not subscribe to many of his other ideas. Sixth generation warfare is regularly referred to by current top military leaders, even if they do not take many of his other radical ideas too seriously. Chief of the General Staff, General Nikolai Makarov, for example, stated in an article in September 2008 that: 625

our military theoreticians are now developing the concepts for a new, sixth generation warfare. In this type of warfare neither nuclear weapons nor people will do the brunt of the fighting. The focus is on conventional high precision weapons, and other weapons based on new physical principles'.⁴⁷ 630

In a similar fashion, Chief of the Air Force, General Alexander Zelin, stated in March 2010 that in the period up to 2030 many countries, the USA first among them, will be technologically capable of launching 'coordinated and precise attacks against any target in Russia that they might want to hit'.⁴⁸ According to the modernist Aleksei Arbatov, there is now a concerted campaign taking place in Russia with the aim of lifting the kinds of threats Slipchenko talked about to the status of 'the greatest threat to Russian security'. Arbatov continues by warning the US military establishment against ignoring the growing Russian concern over the development of new US conventional long-range precision-guided systems.⁴⁹ 635 640 645

The central role in future warfare of long-distance precision munitions is also recognized by the traditionalists and modernists. Gareev identifies them as 'the decisive weapons systems' in future war among modern states, but at the same time he also sees them as constituting only the first stage of these wars. He differs sharply from Slipchenko in that he believes the long- distance precision bombing will be followed first by air mobile and special forces, and then by regular 650

⁴⁷The quote from Makarov is reprinted in Mikhail Rastopshin, 'Voennaia Mysl Protiv Generalnogo Shtaba', *Nezavisimoe Voennoe Obozrenie*, 12 March 2010. 655

⁴⁸Andrei Kisliakov, 'Ballisticheskie Rakety I Glonass V 'Bardachke', *Nezavisimoe voennoe obozrenie*, 12 March 2010.

⁴⁹Aleksei Arbatov, *Advancing US - Russian Security Cooperation*, (Washington DC: Carnegie Endowment for International Peace,2010), 6. 660

army forces.⁵⁰ Slipchenko claims future wars will both start and end with the use the new long-distance conventional precision weapons.

Slipchenko does not use the concept ‘network centric warfare’ often, but he is very clear on the critical role of communications and situational awareness in future wars.⁵¹ He is as clear about this as the traditionalists and modernists, but because of his heavy focus on the strategic level, he does not really discuss network-centric warfare much at the tactical and operational levels. There are other Russian military theorists, such as for example Alexandr Kondratyev, who identify network-centric warfare as revolutionary, but in the context of this article the concept cannot be portrayed as a unique contribution to the Russian debate by the revolutionary school of thought.⁵² Rather, it is a concept and an ability that has many adherents within all three schools, although they might see the ability’s usefulness in slightly different ways.⁵³ To the extent that there is resistance to the concept, however, that is mostly within the traditionalist camp.

Slipchenko’s opponents have in particular made two types of criticism with regard to sixth generation warfare. First, they point out that air defence covering all or even most of Russia’s vulnerable civilian targets is just not possible because of the size of the country. Second, they reject that the US would ever contemplate an attack on Russia with conventional ballistic missiles as long as the country retains its nuclear capability.⁵⁴ On this second point, however, there is an increasing feeling of uneasiness in Russia. Slipchenko’s skepticism about the real deterrent effect of nuclear arms against conventional threats has roots back to the Cold War period. Already in the early 1980s, leading Soviet military thinkers started to believe that a major war could come to be fought without the use of nuclear weapons.⁵⁵ Also today many in the Russian military do not feel totally safe behind the country’s nuclear shield. This is probably part of the explanation for the strongly negative Russian reactions to the US plans for

⁵⁰Makhmud Gareev, *Srazhenia Na Voenno-Istoricheskome Fronte* (Moscow: INSAN Publishers 2010), 607.

⁵¹Slipchenko, *Voiny Novogo Pokolenia - Distantсионnye I Bezkontaktnye*, 211–30.

⁵²Alexandr Kondratyev, ‘Stavka Na Voyny Budushchego’, *Nezavisimoe voennoe obozrenie*, 27 June 2008.

⁵³For a detailed study of the Russian perspectives on network-centric warfare, see Roger N. McDermott, *Russian Perspective on Network-Centric Warfare*, (Ft Leavenworth, KS: Foreign Military Studies Office 2010), at <http://fmso.leavenworth.army.mil/Collaboration/international/McDermott/Network-Centric-Warfare.pdf>, accessed 20 June 2011.

⁵⁴See for example Aleksei Arbatov, ‘Strategicheskii Siurrealizm Somnitelnykh Konseptsii’, *Nezavisimoe voennoe obozrenie*, 5 March 2010.

⁵⁵Adamsky, *Culture of Military Innovation*, 29.

developing long-distance conventional precision missiles (Prompt Global Strike – PGS). 705

The Modernists

The modernists are a less unified group than the two previous ones. What they have in common is that they want to break with the Soviet military model, and adopt a balanced approach between technology and manpower. Like the revolutionaries, but in contrast to the traditionalists, the modernists also fully acknowledge the financial trade-off between technology and manpower. For example, the modernist Aleksei Arbatov has suggested that to afford a reasonably technologically updated military, manpower should be cut from one million to between 500,000 and 600,000, and at the same time military expenditure should rise to 3.5 percent of GDP.⁵⁶ 710 715

Other influential modernists include among others Vitalii Shlykov and Andrei Kokoshin. They are together with Arbatov influential both in terms of their writings and of their positions. Vitalii Shlykov had a life-long career in the military intelligence service GRU. He was one of the founders of the semi-official Council for Foreign and Military Policy in the early 1990s, and is currently a member of the defence ministry's civilian advisory council. Andrei Kokoshin was Deputy Minister of Defence 1992–1997, secretary of the Security Council in 1998, and has been a Duma deputy for United Russia since 1998 (deputy leader of the party faction since 2008). Aleksei Arbatov was in the Duma's Defence Committee from 1993 to 2003 (from 1995 as deputy chairman), and has later held several positions as adviser to the Russian government on military policy in addition to various academic positions. In terms of the positions they have held or currently hold, all three can be labelled *okolovlastnye* (close to those in power), but at the same time they show great independence of thought in their writings. They can be sharp in their criticism of military policy, but are generally careful in their criticism of the political regime. 720 725 730 735

How influential they are is of course difficult to determine, but as an example, Vitalii Shlykov is by many considered to be the ideological father of the 2008 initiated radical restructuring of the Russian Armed Forces, the so-called Serdiukov-reforms (Anatolii Serdiukov is the Russian defence minister).⁵⁷ The main purpose of the Serdiukov 740

⁵⁶ Author's interview with Aleksei Arbatov, Moscow, Sept. 2007, and Aleksei Arbatov, *Uraunenie Bezopasnosti* (Moscow: RODP 'Yabloko', 2010), 163. 745

⁵⁷ General impression from talks with Russian military experts and journalists in Moscow in June 2010.

750 reforms has been to transform the Russian military from a mobilization
 based to a standing structure. In addition, several efficiency enhancing
 elements such as a radical downsizing of the officer corps, introduction
 of NCOs, changes to the command structure, ‘humanizing’ of the
 755 military service and others have been implemented. Renewal of
 hardware and weapons systems and better control over military
 finances are also central elements of the reform.

Shlykov focuses in particular on four points in his writings: (1) the
 necessity of learning from others, first of all the US, (2) introduction of
 non-commissioned officers, (3) disbanding of the extremely extensive
 760 Soviet mobilization system, and (4) that the military organization needs
 to be controlled by a largely civilian ministry of defence. He believes the
 last point is crucial, because unless this happens military policy will
 never be anything more than the outcome of never-ending battles
 between the military branches.

765 More than the others, the modernists are concerned about the here
 and now and the near to medium future. They have little patience both
 with the historical arguments of the traditionalists and the futuristic
 arguments of the revolutionaries. This also means that threats to
 Russian security close to the country’s borders are more important for
 the modernists than for the other schools. The modernists are
 770 significantly more concerned with the political instability of the
 Caucasus and Central Asia. On the issues of the West and China as
 security threats, they differ somewhat in their views. Some see very little
 potential for conflict, especially with the West, whereas others are more
 concerned.

775 Andrei Kokoshin is probably the modernist who most consistently
 has written about future war, as the titles of some of his recent
 publications indicate: *On the Political Understanding of Victory in
 Current War* (2004), *Political Science and Sociology in Military
 Strategy* (2005), *On the Revolution in Military Affairs in History
 and Today* (2006), and *Innovative Military Forces and the
 Revolution in Military Affairs* (2008) (all in Russian).⁵⁸ Because of
 780 his position as Deputy Chairman of the United Russia Party in the
 State Duma, he is also the modernist closest to the inner political
 circles in Russia.

785 In the same way as the traditionalists, Kokoshin also argues that
 Russia should opt for technological renewal without falling into the

⁵⁸ Andrei Kokoshin, *O Politicheskom Smysle Pobedy V Sovremennoi Voine* (Moscow: URSS 2004), *Politologia I Sotsiologia Voennoi Strategii* (Moscow: URSS 2005), *O Revoliutsii V Voennom Dele V Proshlom I Nastoiashchem* (Moscow: URSS 2006), *Innovatsionnye Vooruzhennyye Sily I Revoliutsia V Voennom Dele* (Moscow: URSS 2008).

trap of what he calls ‘vulgar technological determinism’.⁵⁹ He further agrees with the traditionalists that the technological renewal should in no way seek technological parity with the West. Russia should strive to create asymmetric countermeasures to the new Western technologies rather than replicas.⁶⁰ As an example, Kokoshin points to Soviet efforts in the 1980s to create asymmetric countermeasures against Ronald Reagan’s star wars plans (SDI).⁶¹ 795

Kokoshin also writes about Russian military culture, but here he is in quite strong disagreement with the traditionalists. While the latter praise the inherent strength of Russian military traditions, and claim that it would be wrong for Russia to break them, Kokoshin believes this in several instances it is absolutely necessary. In contrast to the traditionalists, who hail the Russian soldier’s willingness to sacrifice his life for the fatherland, Kokoshin writes deplorably about the destructive Russian tradition of *chelovecheskaia zatratnost* – namely the dispensability of human life.⁶² Similarly, Aleksei Arbatov maintains that ‘the mass heroism and willingness to sacrifice’ has more often than not been nullified by stupidity of command, unpreparedness of the oversized military organization and the irresponsibility of the political leadership.⁶³ 800 805 810

Thus, the modernists agree with the traditionalists on the need for technological renewal without reverting into technological determinism, and on the point about an asymmetric technological response to the Western technological lead. What differentiates them most is a dissimilar interpretation of Russian military traditions, and the fact that the modernists recognize that resource constraints lead to a trade-off between technology and manpower. 815

The modernists further agree with the revolutionaries (and also some traditionalists) on the necessity of introducing network-centric warfare. Network-centric warfare has in fact become a buzz-word in the Russian military, especially after the introduction of the Serdiukov reforms. It has long been recognized that command and control has been a particular Russian weakspot. This was confirmed again during the 2008 Russia–Georgia War.⁶⁴ There is a genuine fear that lack of 820 825

⁵⁹Aleksandr Golts, ‘O Revoliutsii V Voennom Dele V Proshlom I Nastoiaschem - Interviu S Andreiem Kokoshinym’, *Otechestvennye zapiski*, No. 5 (2005). 1.

⁶⁰Ibid., 8. 830

⁶¹Kokoshin, *Innovatsionnye Vooruzhennye Sily I Revoliutsia V Voennom Dele*, 7.

⁶²Golts, ‘O Revoliutsii V Voennom Dele V Proshlom I Nastoiaschem - Interviu S Andreiem Kokoshinym’, 8.

⁶³Aleksei Arbatov, ‘Voennaia Reforma V Svete Chuzhykh Oshibok’, *Nezavisimoe voennoe obozrenie*, 23 May 2003.

⁶⁴Carolina Vendil Pallin and Fredrik Westerlund, ‘Russia’s war in Georgia: lessons and consequences’, *Small Wars & Insurgencies* 20/2 (2009), 407–8. 835

840 technological progress in this area could seriously hamper Russian military capability in the future. Thus, in this particular instance, similarity rather than asymmetry with the West seems to be sought both by traditionalists, modernists and revolutionaries.

845 Kokoshin also argues strongly for the introduction of network capabilities, but at the same time he sees the danger that this could become a case of ‘vulgar technological determinism’. This is because of what he sees as another unfortunate Russian military tradition – the tendency to neglect the leadership aspect of military operations. Unless this habit is changed, he thinks the introduction of new network technologies could be of little use. Kokoshin is especially worried that the extremely hierarchical Russian tradition of command will collide with the implicit assumption in network-centric warfare of decentralized authority. He chides internal Russian military studies of network-centric warfare for rarely or never discussing the demands that the introduction of new technology will place on the adaptability of the personnel and of organizational procedures and routines.⁶⁵

855 Some Russian writers tend to think that network-centric capabilities should be limited to the strategic and operational levels. The former mentioned idea of a blurring of the border between peace and war has, for example among many traditionalists, led to an interpretation of the concept of network-centric warfare as something taking place mostly at the highest strategic levels.⁶⁶ Thus, they have a tendency to underestimate the potential benefits of network centrality at the tactical level.⁶⁷ Many Russian military think, in contrast to Kokoshin, that officers at tactical levels should only have access to tactical information.⁶⁸

865 Thus, the modernists are in general more concerned with the human-technology interface than the two other schools. Still, they differ internally with regard to what consequences this interface should have for the system of recruitment and education/training. Arbatov argues that especially the 2003 war in Iraq demonstrated that only a professional military is able to take full advantage of the possibilities given by new technologies.⁶⁹ Shlykov, on the other hand, thinks that

⁶⁵Kokoshin, *Innovatsionnye Vooruzhennye Sily I Revoliutsia V Voennom Dele*, 5.

875 ⁶⁶Alexandr Kondratiev, ‘Borba Za Informatsiu Na Osnove Informatsii’, *Nezavisimoe voennoe obozrenie*, 24 Oct. 2008.

⁶⁷Kokoshin, *Innovatsionnye Vooruzhennye Sily I Revoliutsia V Voennom Dele*, 198–199.

880 ⁶⁸See for example A.E Kondratiev, ‘Problemnye Voprosy Issledovania Novykh Setentsentricheskikh Konseptsii Vooruzhennykh Sil Vedushchikh Zarubezhnykh Stran’, *Voennaia mysl*, No. 11 (2009), 63.

⁶⁹Arbatov, ‘Voennaia Reforma V Svete Chuzhykh Oshibok.’

the Russian Army has to be filled mainly by conscripts also in the future. His argument is that military efficiency depends mainly on the education and quality of the officer corps, and on the introduction of a well functioning body of non-commissioned officers. Given good officers, the Russian Army will be an efficient political instrument independent of whether it is filled by conscripts or professional soldiers.⁷⁰ 885

Military Theory and the Course of Russian Military Reform 890

Finally, we will take a look at the relationship between the different schools and actual military policy today and in the future.

Generally, it can be said that the two decades from the end of the Soviet Union to the start of the Serdiukov-reforms mostly reflected the ideas of the traditionalists. There were many statements and also policy initiatives along modernist lines, but very few were implemented. It is probably also fair to say that bottom-up lobbying had a strong – possibly the strongest – explanatory power on military policy throughout this period. The most prominent example here was the struggle to secure resources for their ‘home branches’ between General Igor Sergeev from the Strategic Rocket Forces, Defence Minister between 1997 and 2001, and Army General Anatolii Kvashnin, Chief of the General Staff from 1997 to 2004. 895 900

The initiation of the Serdiukov reforms from late 2008, however, radically shifted the reform to the modernist perspective. As stated above, the modernist Vitalii Shlykov is by many seen as the ideological father of the reforms. Chief of the General Staff, General Nikolai Makarov, stated explicitly in June 2009 that ‘our military theory is outdated [referring here to the traditionalists], since the 1980s the West has transformed its military capacities to fight the wars of the future, but we have not done the same’.⁷¹ 905 910

One explanation for the modernists coming out on top could be their closeness to the political leadership. However, it is questionable whether the modernists were any closer to political decision-makers than many of the traditionalists were *before* the initiation of reform. The main drawback for the traditionalists in the struggle over the content of reform, has probably been their strong association with military unwillingness to change since 1991. Further, it seems likely that the political leadership at least at some level bought the modernists’ ideas of primary (Caucasus and Central Asia) and 915 920

⁷⁰Interview with Vitalii Shlykov at the radio station *Ekho Moskvy*, 28 Feb. 2010.

⁷¹Pavel Felgengauer, ‘Russian Military Weakness Increases Importance of Strategic Nuclear Forces’, *Eurasia Daily Monitor*, 11 June 2009.

925 secondary (NATO and China) threats. The conventional forces, in
particular the Army, is now being structured first of all to deal with
threats close to Russia's borders. Deterrence of larger potential foes,
such as NATO and China, is largely left to the nuclear forces.

930 Then again, one should probably be careful not to infer too much
military-strategic thinking on the part of the political leadership in this
context. An alternative, or additional, explanation for the modernist
ascent could be that the political leadership basically just wanted a new
935 team at the helm of military policy in order to get more out of the
money being spent. In this interpretation, the politicians had only
limited interest in theories about future threats and what type of armed
forces that would best meet them. Anyhow, once Serdiukov had been
given political backing for being tough on the military in terms of how
they spent their money, there was also an opening for people with ideas
940 about future war to put these into effect. In this interpretation; the
intellectual impact of the modernists largely took place beneath the
political radar.⁷²

There is, nevertheless, as of today, no complete victory for the
modernist school. Especially, the decision to maintain standing Armed
945 Forces of one million men – many of whom will be conscripts – goes
against the wishes of most modernists. Their main victories were (1) the
scrapping of most of the old Soviet mobilization system, (2) the
reorganization of the army from divisions to brigades, (3) the
introduction of a non-commissioned officer corps, and (4) a radical
cut in the overall number of officers. However, a partial setback for the
950 modernists came with the new military doctrine adopted in February
2010. The ideas presented in the doctrine, especially its focus on NATO
as a major challenge and the importance attached to the maintenance of
a strong mobilization capability, were very much in line with the
thoughts of the traditionalist school. It might be the case, however, that
955 the writing of the military doctrine to some extent was thrown as a
bone to the traditionalists as compensation for their losses in forming
the content of the actual military reform. It is indicative of the
doctrine's limited importance as a steering document that it was
adopted one and a half years after radical reform had begun. Thus, the
960 doctrine can emphasize mobilization capacity all it wants, but that does
not change the fact that the actual reform did away with much of it.

The partial victory of the modernists is further moderated by a few
'revolutionary' break-throughs. First, the Russian military's embrace of
network-centric warfare suggests significant impact from the revolu-
965 tionary school. This move does not necessarily mean an acceptance of

⁷²This is the interpretation for example of Russian military expert Ivan Safranchuk.
Author's interview with Safranchuk, Moscow, April 2010.

network-centric warfare as changing the character of war, but the enthusiasm for the idea suggests that its implementation is seen as crucial. Second, the already mentioned strongly increasing concern for the US development of long-range precision ballistic missiles, suggests that the idea of 'sixth generation warfare' has gained substantial ground. It is too early to see very significant results of this growing concern in actually implemented policy, but the proposed higher priority for air defence systems in the defence order and the December 2010 decision to create an integrated air and cosmic defence command, suggest that the priorities associated with 'sixth generation warfare' thinking are beginning to be felt within the military organization.

Another indication is that the new short-distance air defence system *Pantsyr*, originally planned as army air defence, is now instead to be used as protection for the new long distance air defence system S-400. That is, long distance air defence of civilian and central military targets is given priority over air defence for the ground troops.⁷³ A much more significant indication is the early 2011 announcement that 70,000 new officer positions were to be created within air and cosmic defence. The Serdioukov reforms originally contained a provision for reducing the total number of officers from about 350,000 to 150,000. After the 2011 announcement the total figure is now 220,000, with all the new positions going to air and cosmic defence.

In summary, the Russian Armed Forces are currently reforming mostly in conformity with the modernist school of military theory. However, significant elements from the traditionalist school still linger on, and increasingly the ideas of the revolutionary school are taken seriously, especially in terms of arms procurement.

For the future of Russian military policy, however, there are two factors that are even more decisive than the relative standing of the three different schools of thought, namely military purchasing power and the state of the Russian defence industry. Military purchasing power should here be understood as a combination of the level of state revenues and of political willingness to spend on defence. It is obvious that all three schools, if they could decide military policy, would be able to spend any sums of additional money that came their way. However, the elasticity of their models is markedly different if purchasing power was to stagnate or decline. Basically, both the modernist and the revolutionary models, because of their higher demands on high tech and soldier professionalization, presuppose significantly higher defence spending than at present. Both the presently planned increases in defence spending until 2020, and probably also their continuation beyond that

⁷³Viktor Miasnikov, 'Pantsyr-S Vstaniet Na Zashchitu S-400', *Nezavisimoe voennoe obozrenie*, 26 March 2010.

time, would be necessary in order to implement the modernist and revolutionary models.

1015 The traditionalist model, on the other hand, can most likely be
accommodated with the present or even lower levels of defence
spending. This is true even if, as earlier stated, the traditionalists are the
only ones not willing to recognize budget constraints. The main reason
1020 is that the traditionalist model is the only one that is compatible with
the relatively speaking cheap option of a conscript army. Conscript
armies can come in both cheap and expensive versions, high tech and
highly professional ones cannot.

For the modernist and revolutionary models to work, however,
ability and willingness to spend on defence would still not be enough.
1025 Their high tech focus also presupposes an arms industry that is able to
convert the money into state of the art weapons in sufficient quantity.
Currently, that is not the case. The majority of Russian defence
enterprises suffered a blow in the 1990s and early 2000s from which
they have yet to recover. State orders for weapons were more or less
1030 absent for most of the time. Some branches, notably air-defence, fighter
aircraft, cruise missiles and a few others, were able to survive and even
develop on the basis of export contracts, but for most of the industry
that was not the case. The Russian arms industry is today troubled by
high levels of corruption, lack of qualified personnel, old production
1035 equipment, archaic and inefficient management styles and considerable
red tape and unhelpful meddling from the state bureaucracy. Thus,
ability and willingness to spend on defence is not enough to make a
modernist or revolutionary model possible, also a thorough reform of
the defence industry is needed. If money is just thrown at the industry in
1040 the state of which it is today, there is every chance that the industry will
just eat the funds and still deliver little both in terms of quantity and
quality.

In order to achieve a revitalization of the arms industry, Russian
authorities are promising to start a major structural reform in the near
1045 future. In addition, in May 2011 it was announced that the country in
the years until 2020 will spend 3,000 billion roubles on modernization
of the arms industry's means of production.⁷⁴ This figure comes on top
of the 19,000–20,000 billion roubles already set aside for defence
procurement for the armed forces until 2020. Sceptics claim that unless
1050 the whole of the Russian political economy is reformed, an isolated
attempt at modernizing the arms industry is not likely to succeed either.
Others point out that branches within the Russian arms industry
function reasonably well already today, and that many others with
some assistance should be able to achieve the same. Independent of
1055

⁷⁴ <<http://premier.ru>>, 20 April 2011.

who is right, success here seems to be a necessary precondition for the modernist or revolutionary models. Arms import, despite a recent upward trend, is for economic and political reasons not a sufficient alternative.

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Thus, the conclusion to this study is that with military purchasing power at the current level or lower, and with an arms industry not successfully reformed, the Russian military is likely to resemble one or another version of the traditionalist model independent of which of the military theoretical schools that dominate decision-making. If, on the other hand, Russia is able and willing to spend even more on defence, and the arms industry is at least partially successfully reformed, then the struggle between the three schools takes on real importance.

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