
Russian Military Modernization *Cause, Course, and Consequences*

Bettina Renz and Rod Thornton

At a time when most Western militaries are contracting and making room for budgetary cuts, the Russian military is going in the opposite direction. Anxious to make its defense capabilities more relevant to the contemporary security environment, the Russian political leadership has pushed for its military to modernize. But many substantial hurdles stand in the way.

THE aim of this article is to examine Russian military modernization; the precise nature of the problems it faces; and the diplomatic, structural, and force-posture changes that are resulting from it. The article concludes that despite serious efforts on the part of the Russian military and civilian leadership, effective modernization of the Russian military is likely to be elusive. *Modernizatsiia*—modernization—is the buzz word of the moment in Russia. As one analyst puts it, “Modernization is the new Russian religion.”¹ While the economy is obviously taking center stage in this process, the modernization of the Russian military is an important facet.²

In what appears to be something of a root-and-branch discarding of old Soviet strategies and structures, the country’s armed forces are currently subject to a process of change that will, if the plan comes to ultimate fruition, leave them smaller, leaner, more deployable, and more effective in contemporary conflict scenarios. This transformation involves moves from conscription to professionalism, from mass to mobility, and from low-tech to high-tech. The head of the Russian armed forces has called the ongoing process “the country’s first serious military reorganization in the past forty years.”³ The hope within the corridors of the Kremlin is that Russia will soon have a “new look” military fit for the twenty-first century. To back this up, spending on the military in Russia is set to increase by some 50 percent over the next three years.⁴

These bold moves—both in progress and planned—are, however, being stymied. They have to face a reality in which new ideas and concepts are meeting the weighty barriers provided by military conservatism, by a weak industrial base, and by economic reality. Naturally,

BETTINA RENZ is lecturer in international security in the Faculty of Social Sciences, University of Nottingham. ROD THORNTON is lecturer in the Faculty of Social Sciences, University of Nottingham.

given the problems inherent in this transformation, the Russian military will, for a certain period into the future, be in a state of flux. It will thus be perceived as weaker. Any major transformation in any military will, at least for a period of time, leave it falling between two stools. As the early twentieth-century Russian military thinker Anton Kersnovskii put it, “the main difficulty of military organizational development lies in the dualism of the task: preparing for tomorrow’s war and at the same time correcting yesterday’s mistakes in case war breaks out today.”⁵ Russia, with a military undergoing a lengthy and painful transformation, is already, and will continue to be, a country feeling vulnerable. Like Israel, another state that feels vulnerable, Russia is more likely to engage in aggressive and preemptive military action to create that element of surprise that can overcome its “weakness.” Thus, we may see the Russian military adopting a very dangerous hair-trigger philosophy.

Initial Moves to Reform

As a general rule, military organizations do not change readily. They are less liable to change than organizations in the civilian world, because they are not subject to the same market or social forces. Historically, therefore, major change in military organizations has always been driven from two principal directions: either exogenously by civilian masters or endogenously after major defeat in war.⁶ Both pressures apply in regard to today’s Russian military. In terms of the first driver of change, Presidents Boris Yeltsin, Vladimir Putin, and Dmitry Medvedev have all tried to update the military and to force it to shake off its Soviet past. But they have always done so against opposition, as with any process of change in military organizations, from some elements in the top military brass. In Russia there is a phalanx of conservative generals, particularly within the bloated General Staff, which has always sought to impede the changes demanded by the country’s post-cold war political leaders.⁷ Such exogenously imposed changes naturally represent a threat, as they undermine the generals’ individual stakes within their organizations and the skill sets that saw them promoted to their exalted rank in the first place. Yeltsin, Putin, and Medvedev have all tried to block opposition by appointing a chief of the General Staff—the head of the military—from outside the mainstream General Staff. The rationale behind this decision is that the appointed officer, lacking a power base within the General Staff, will be more amenable to the wishes of his political bosses. The current incumbent, General Nikolai Makarov, clearly

falls into this category, having been brought in from the Siberian military district. Although such moves have worked to some degree, Russia’s civilian leaders have never, at least until quite recently, managed to impose real change or even to get the pace of Russian military modernization out of first gear.

Discussions about the need for fundamental military reform actually started toward the end of the Soviet era and continued under Yeltsin. He, in particular, wanted to see an end to conscription: both to produce a more efficient military and because it would prove popular with voters. The process of ending conscription never moved as swiftly as he had hoped, though, and it still remains a problematic issue today (see below). The later presidents, Putin and Medvedev, wanted to take military reform yet further. When Putin took over from Yeltsin as president in 2000, the Russian armed forces were in a dire state. From the nuclear submarines slowly rusting at their moorings to the ill-disciplined troops fighting in Chechnya, the Russian military was proving to be but a shadow of its former Soviet self. A number of changes designed to fundamentally modernize the armed forces were introduced by Putin and, in turn, by his successor, Medvedev. Both made use of the growing oil and gas revenues that Russia was beginning to receive in the 2000s. Again, though, the process was sluggish—until, that is, the war with Georgia. This war pointed out starkly to the generals that significant modernization could be delayed no longer.

The War with Georgia

Here is where the second driver of major change comes in. The literature on change in military organizations points to the fact that dramatic change—“innovation,” indeed—can take place only after such organizations have been subject to defeat. “Defeat” is naturally too strong a word to describe what happened to Russian forces in the 2008 conflict with Georgia over South Ossetia. Several domestic observers, however, severely criticized the military’s performance, and the experience did lead to a good deal of navel gazing within the various force structures themselves.⁸ Although the airborne forces were seen to have performed creditably, the rest of the Russian military did not. The ground forces were too slow to react, and ponderous once they did react. The air force was short of suitable platforms to provide close air support, and air/ground cooperation was virtually nonexistent. The navy had the right class of vessel neither to effectively protect the maritime (Black Sea) flank nor to efficiently put ashore reinforcing troops. Overall, Russian forces lacked modern

military equipment—everything from combat radios to assault landing ships.⁹ In particular, C4ISR¹⁰ capabilities—the sine qua non of any self-respecting modern military organization—were lacking.¹¹

The 2008 war with Georgia acted as a catalyst, in the true sense of the word, for change in the Russian military. It drove home the need to deal with a range of problems relating principally to the following issues: conscription; the mobilization military; the ground forces; the air force; the navy; and the defense industry.

Conscription

It has long been realized in the West that the security demands of the contemporary era mean that military organizations can no longer be based on conscript service. Germany is the latest European country to announce that it is abandoning the concept.¹² Modern armed forces should not be operating with a broad mass of badly trained and unmotivated short-service draftees. These conscripts never serve for long enough to gain the requisite expertise or skills necessary to handle today's high-tech equipment or for the practice of contemporary high-tempo expeditionary and maneuver warfare.

Realizing that Russia would have to change if it wanted to remain an effective military power, Russia's political leaders have long pushed for the ending of conscription. The mass that conscription provided was no longer relevant. The previous Soviet philosophy of having a mass of poorly trained conscripts operating cheap and simple equipment could no longer hope to bring victory on a modern battlefield. Moreover, these political leaders were well aware of the popularity of reducing the social burden of conscription. Yeltsin, in an edict of 1996, started the process of bringing conscription to an end. The conscripts were gradually to be replaced by contracted personnel—or *kontraktniki*—in a process of “professionalization.” Eventually, according to this edict, the conscript system would end in 2000.¹³

By 2000, it was clear that Yeltsin's aim would not be achieved. But Putin, when he became president in 2000, took up the mantle of military reform and tried to push it much further than Yeltsin. His particular take, based on an understanding that he could not overcome the military's opposition to the ending of conscription, was to try and draw it down in a step-by-step fashion that would reduce numbers only gradually. Thus, it was decreed that in parallel with the recruitment of more *kontraktniki* would come a reduction in the conscripts' term of service. Originally two years (for the ground forces), it has since 2007

come incrementally down to a more politically acceptable twelve months. Of course, halving the conscript term has meant—to keep the numbers the generals wanted—a doubling of the actual number of young men being called up in the twice-yearly draft (up to between 500,000 and 750,000 per annum). The conscription dragnet has therefore had to be spread ever wider over the last couple of years, and previous exemptions (such as for college students) no longer apply. Then there is the problem of demographics. The Russian population is falling, but the demand for conscripts is rising. For instance, back in 2002, 335,000 men were called up when the total population was 145.2 million. By 2008, the military was pulling in 334,000 out of a population of 142 million. In the next year, and with the new one-year term, the number of conscripts needed mushroomed to 625,000, while the population edged below 142 million.¹⁴ The figures just do not add up.

The natural concomitant of a shorter term of conscript service is that there is an overall drop in skill and experience levels among the conscripts. If even two years was considered too short a time to adequately train service personnel, then just one was clearly not long enough. Many conscripts do not even serve long enough to take part in one of the large annual military exercises.

The saving grace was supposed to become evident when enough professionals had been recruited. Once their skills were embedded and a new, “modernized” military emerged, there would be no need for conscripts at all. But it seems to be the case now that the plan to professionalize the Russian military has officially “failed.”¹⁵ Not enough young men have been tempted to join up, and most of those who did have not found the experience to their liking: the vast majority resigned after the initial three-year term was up, the principal complaint being that promises were not kept in relation to social provisions, such as pay and housing.¹⁶

The Russian military is now caught between two stools. It is neither a conscript military nor a professional one. It has lost the capacity to act like the Soviet-era army, where sheer mass—accompanied by a minimum level of conscript capability—was used to create operational effectiveness. And the Russian armed forces have not yet gained the quality personnel that would give them the ability to act like a truly modern military.

A Mobilization Military

The move away from conscription toward *kontraktniki* has also signaled a move away from the idea of Russia having a mobilization military. Such a military is built on the

idea of recalling—at times of crisis—all the millions of young men who have been through conscription. Russia, since tsarist times, has always relied on this system. The mobilization system is, however, beset by inefficiencies. In order that the twenty million or so recalled conscripts have something to be recalled to, there must be cadre units. These would normally be manned only by a few commissioned and noncommissioned officers serving on innumerable underused and expensive to maintain bases across Russia. All the equipment schedules have to be kept for these notional twenty million men.

After the conflict with Georgia, Defense Minister Anatoly Serdyukov drove through a plan that envisioned the end of the mobilization system. One result was a massive reduction in the number of officers (originally slated to drop from 350,000 to 150,000 by 2012).¹⁷ Most of these redundancies came from the cadre units. By late 2010, the military had lost 180,000 such officers, and a thousand cadre units disappeared.¹⁸ Then came the rethink. Since Russian officers were performing roles that would, in Western armies, be the lot of noncommissioned officers (NCOs), and since the Russian military did not have any NCOs to speak of, people realized that the military needed lots of officers. Thus, in February 2011, seventy thousand of the sacked officers were taken back.¹⁹

It seems clear now, though, that the first post-Georgia flush of enthusiasm to be rid of the mobilization military is waning. As things stand, in time of war, 700,000 reservists are to be recalled (but these having served only one year!). This would take Russia's military strength (army, navy, and air force combined) up to two million—and, after further reductions, up to only 1.7 million by 2012.²⁰ Again, though, the situation is one of falling between two stools. On the one hand, real mass cannot be created; and on the other, neither are the skills apparent that professional militaries use (alongside high-tech equipment) as a substitute for mass.

The Ground Forces

The ground forces were perceived to have been found wanting in the Georgian war. The closest major Russian formation to South Ossetia, the Fifty-Eighth Army, was seen to be too slow to react—even though most of its units had been on exercise not far from the Georgian border just prior to the start of the war. Moreover, once engaged in combat, operational efficiency was hindered by an overall lack of C4ISR capability—exemplified by a severe shortage of drone aircraft and a complete absence of force-tracker facilities. Thus, there were command-

and-control failures, a lack of coordination (interservice, interarm, interformation and interunit), and an inability to direct precision-guided munitions (PGMs) (if any were ever present!) onto targets.²¹

The ground forces' structures were ill suited to the conduct of the type of warfare characterized by the conflict with Georgia. To start with, the traditional Russian division (circa ten thousand personnel) was seen to be a poor basic building block, lacking the adroitness and flexibility to cope with the demands of fast-moving contemporary conflict scenarios. Divisions are structures suited to the type of all-out conventional warfare seen in World Wars I and II, and to the conflict envisaged by all the major potential protagonists during the cold war. Divisions (whether Russian or NATO) traditionally consist of three regiments; and these regiments can be armored, armored infantry, or basic infantry—depending on the type of division. Once the cold war was over, Western armies—such as those of the United States and the United Kingdom—realized that the division was too large and unwieldy a formation for the expeditionary operations that were in vogue post-1989. The United States and the United Kingdom adopted the brigade as the new basic building block during the 1990s. Roughly a third the size of a division and with generally lighter equipment, brigades are more manageable and easier to send abroad on operations.

It had been recognized for some time in Russia that the division had outlived its usefulness. The experience of the Russian military in the August 2008 war with Georgia painfully demonstrated just how necessary the changes were. The Georgians, despite the numerical imbalance apparent between their forces and those of Russia, proved that in a compact theater of operations, and over a limited time period and in a fast-moving war, they were capable of providing a considerable threat. Such encounters called for firm command and control over units, subunits, and support assets in a war of high operational tempo—just the capabilities the Russians, with their division-based structure, lacked. The realization seemed stark: the smaller brigade *was*, even for Russia, the formation of choice.²²

Those Russian generals who wanted to keep the divisions were undermined by the experiences of the Georgian war. With such opposition weakened, Medvedev and Serdyukov immediately grasped the opportunity to try and push through their plans for structural reorganization. In October 2008, Medvedev announced a program to completely overhaul the ground forces, including replacing all divisions with permanent readiness brigades. Some 83 ground forces brigades have now been created from

the 203 old divisions. Although encouraging noises were initially made about the way these new brigades were being formed and about their training going so well, it is difficult to see how such radical structural changes could have bedded in so quickly. Indeed, with the drop-off in *kontraktniki* recruitment and with the conscripts now serving so short a time, these brigades are nowhere near fully manned or appropriately trained. Thus, they are not “permanent readiness” formations. One analyst has even worked out that the Russian army only has five battalions (circa eighteen hundred men) that are capable of immediate deployment anywhere.²³ Again, the two stools scenario is evident. The old divisions have gone, but their replacements are not yet ready. Whatever the encouraging rhetoric, the ground forces have been left significantly weakened in operational terms by *modernizatsiia*—and will probably remain so for some time to come.

The Air Force

The Russian air force, in terms of numbers and on-paper capabilities, is second only to that of the United States. Apart from the United States, Russia is the only country with strategic aviation capabilities that continue to form a pillar of its nuclear triad.

The Russian air force’s performance in the Georgian war was much criticized, and calls for its urgent modernization were made in the aftermath of the conflict. Criticism mostly stemmed from the loss of a Tu-22M3 strategic bomber to Georgian air defenses during a reconnaissance flight on the very first day of the conflict. The Russian air force lost six planes during the conflict, with four shot down by friendly fire. Russian aircraft were shown to be incapable both of suppressing enemy air defenses and of avoiding such friendly fire incidents because of poor air-to-ground and interservice communications. It was not the pilots’ skill and training that were criticized; rather, the predominant weakness was noted as being a complete lack of technologies commonplace in Western analogues. Prominent here would be the lack of effective means to coordinate between forces in the air and on the ground, and the lack of PGMs.

The plans subsequently set in train for modernizing the air force are in line with the rationale for Russian military modernization more broadly. The need for changing and streamlining the personnel structure has been addressed to a large degree, and the conversion of air force units to permanent readiness status has been emphasized. As with other branches of the military, though, the air force has been struggling to recruit pilots and professional person-

nel in sufficient numbers. Also, being the service most dependent on technology, the air force’s most pressing problem is its rapidly aging hardware and weaponry—the result of years of underfunding and neglect, especially during the Yeltsin era.

The Russian air force is now benefiting at least from some extra funding. Long-range patrols of Tu-95 bombers, last seen in 1992, began again in 2007 and caused stir whenever they approached the airspaces of the likes of the United States and the United Kingdom. In 2009, Russian aircraft took part in several large-scale and high-profile joint military exercises; in 2010, during a huge exercise in the Russian Far East—Vostok-2010—combat aircraft were for the first time sent thousands of miles from bases in the west of Russia to operate in the east, and the air force has also contributed transport aviation to United Nations (UN) peacekeeping activities in Sudan, Chad, and the Central African Republic, among others.²⁴ Russian aerospace technology continues to be showcased at air shows on national and international levels, and the maiden flight of the Sukhoi T-50, Russia’s first fifth-generation fighter, caught the attention of the world’s media in January 2010.²⁵ The T-50, however, caught attention in a negative manner when it had to abort a takeoff at its first public outing at Moscow’s MAKS airshow in August 2011.²⁶

Extra funding, however, cannot paper over all the cracks. Dated equipment and critically low maintenance levels are now the air force’s most pressing concerns. Although air force regiments are nominally fully equipped, less than 10 percent of their hardware and weapons could be classed as “modern.”²⁷ Thus, only 40–60 percent of aircraft in most regiments are combat-capable and, according to some analysts, the real figure is probably even lower.²⁸

From 1993 to 2009, the Russian air force received only a handful of new combat aircraft (Su-34s). It did, though, receive a windfall gain in 2010 in the shape of thirty-four MiG-29s that had been originally sold to Algeria. These were returned when they did not meet the customer’s standards.²⁹ Plans are now in place to increase the pace of aircraft procurement, though, again generated by the fallout from the Georgian crisis. The chief of the Russian air force, General Aleksandr Zelin, announced that as part of his service’s modernization program more than 1,500 aircraft would be procured by 2020, including 350 front-line combat aircraft—Su-34s, Su-35s and MiG-29Ks. In all likelihood, the first consignment of T-50s (albeit with technical help from India) will have been delivered by 2020. There are also moves to overhaul and extend the

lives of other aircraft, including the Tu-95 and Tu-160 strategic bombers.³⁰

It is at the very least questionable, though, as to whether these latest ambitious plans are completely realistic, both economically and in terms of the Russian defense industry's capacity to make good on the orders. It is not just a question of the new designs—such as the T-50—appearing on time, or of new Soviet-era models actually being built as promised; it is also a question of making good on the upgrades of existing machines. The modernization of aging strategic aircraft is proving costly and proceeding slowly. The development of a new-generation strategic bomber is unlikely to begin before 2020.³¹

The situation surrounding rotary-wing aircraft is also problematic. The helicopter fleet that had been under command of the ground forces was subordinated to the air force in 2003. Concerns have been expressed that this helicopter force is now suffering from neglect by its new overlords, since it does not fit into an air force culture dominated by the fast jet. Analysts have also questioned whether the planned purchases of new combat, reconnaissance, and transport helicopters are sufficient to meet the requirements of the eighty-three newly created ground forces brigades.³²

Political will alone cannot guarantee that Russia will maintain the world's second most powerful air force. For as with much surrounding the issue of Russian military modernization, in many ways it is not down to the individual services themselves or to the government's financial largesse, particularly where the procurement of new equipment is concerned. These services are beholden to the country's military-industrial complex. Without the defense industry "modernizing" itself and being able to produce the necessary equipment, the *modernizatsiia* of the Russian military will go only so far.

The Navy

For much of the post-Soviet era, the Russian navy counted itself fortunate if it could put even one reasonably sized vessel to sea. Indeed, besides the few ballistic-missile submarines (SSBNs) that it managed, for deterrence purposes, to keep afloat (see below), Russia had no real operational navy to speak of throughout the 1990s and the early 2000s. Those warships not scrapped were, for the most part, left to quietly atrophy in port for want of repairs or fuel; and those ships that did venture out often attracted the wrong sort of attention. The aircraft carriers *Kiev* and *Minsk*, once proud leviathans of the Soviet fleet, were towed off to China to become, respectively,

a floating casino and the centerpiece of an amusement park. The submarine *Kursk* sank with the loss of 118 lives after an on-board torpedo explosion in 2000. When a minisubmarine got into difficulties in 2005 and sank in the Pacific, the stranded crew had to be rescued by a joint Royal Navy/U.S. Navy operation. In 2008, the newly built nuclear attack submarine *Nerpa* suffered an accidental release of fire-retardant gas while on trials, and twenty-three died. The *Nerpa* itself had been under construction for some fifteen years and was launched just in time for it to become obsolete. It is now being leased to India. Where the Russian navy was concerned, it seemed there was little of which to be proud.

What replacement building programs there were during the majority of the post-Soviet period tended to concentrate either on SSBNs or on small, coastal vessels. With little investment, the navy thus seemed to be adopting only two—rather contrasting—roles: that of nuclear deterrent and of coastal protection force. It was a strange combination.

But the navy has now been given new emphasis. Making use of recently overhauled vessels, Russian flotillas are now being sent on flag-waving, blue-water voyages to South America, India, and the Far East. Russian frigates and destroyers have also, since October 2008, been part of antipiracy patrols off Somalia. Eyes are being cast overseas with negotiations ongoing in relation to obtaining basing rights for Russian warships in Syria, Vietnam, and Yemen.³³

This new emphasis has not just been about getting older vessels out to sea but is also about building new vessels that will provide Russia with a genuine maritime power-projection capability in the future. Here is the true modernization. Russian admirals have talked, since 2007, of laying down six aircraft carriers and their attendant guard ships. This goal, though, is viewed as aspirational in the extreme. Where ships of such a size would even be built is problematic enough. Very large Soviet vessels were always constructed at the port of Nikolayev (Mykolaiv), which is now in Ukraine. This is where the only current Russian aircraft carrier, the *Admiral Kuznetsov*, was built. Other Russian yards, even if they could build slipways of sufficient size, have also not been able to maintain the dockyard skills that are necessary to build such complicated units as aircraft carriers. Even though Russia's economic fortunes have suffered since the admirals' heady talk of building so many carriers, there has still been a genuine desire not to undercut the government's investment in the navy. In October 2009, Medvedev announced: "I am convinced that over the next decade we

can reestablish our navy at the level necessary to our state. . . . We need a powerful fleet."³⁴

Russia has recently signed a contract (\$1.9 billion U.S.) to buy four Mistral-class amphibious assault ships (LHD) from France.³⁵ The need for such a purchase can again be sourced back to the Georgian war. Although the Russian navy could put forces ashore in Abkhazia during the conflict, it did so in a fairly rudimentary manner. The fleet does not possess the LHDs that could land substantial numbers of troops—either in the case of an opposed beach landing or in terms of a heliborne lift. The Russian navy is behind other navies in not having LHDs. Virtually every North Atlantic Treaty Organization (NATO) navy of any size (bar that of Germany) has such ships in their fleets. They are the staple of any maritime power-projection capability.

The current Mistral deal is one whereby a French yard will construct two vessels, while Russian engineers basically watch and learn. Another two Mistral-class ships will then be built in St. Petersburg with French engineers providing direction. Thus, Russia will gain several prized LHDs, while at the same time also acquiring the shipbuilding skills necessary to construct not just LHDs but also other sophisticated warships.

All this talk of Russian naval expansion, of course, may founder on the rocks of economic reality. Even if Russia's economy remains in rude health, the practical problems associated with a wide-ranging naval building program are not insubstantial. These include the fact that Russia's defense industrial base, as in the aerospace field, is not currently fine-tuned enough to outfit large capital ships with all the necessary sophisticated technologies. The whole of the Russian economy, indeed, needs to be modernized, so that aircraft carriers, fifth-generation fighters, PGMs, and all the other cutting-edge military technologies that the Russian military is currently short of can be procured. Herein lies one of the major problems associated with the entire Russian military modernization process: the lack of a military manufacturing base able to deliver the required products.

The Defense Industry

The success or otherwise of Russian military modernization will rely to a large extent on the development and procurement of new weapons and equipment.³⁶ In the aftermath of the Georgian war, Medvedev publicly criticized the Russian arms industry for its failure to engage in the development of new and innovative technologies, indicating that reform of the defense industry would

become a focus of attention in the coming years.³⁷ With all the political will in the world, however, reforming this sector will be a complex task for which there is no quick-fix solution.

Today's Russian defense manufacturers are the remnants of a once-monolithic Soviet military-industrial complex that employed almost 8 million workers in 1990 (around 1.5 million today). With the disappearance of the ready markets of the Soviet and Warsaw Pact militaries, these defense enterprises lost much of their customer base. While the industry has been able to prop itself up through exports during the post-cold war period, little has been reinvested in the research and development (R&D) of new and innovative products. Although government spending on arms procurement orders has risen exponentially in recent years and a sum of 13 trillion rubles—equating to \$420 billion U.S.—has been earmarked for the state armaments program up to 2020, mere cash injections are unlikely to solve the broader problems affecting the Russian defense industry. In fact, there are grave doubts about the industry's actual capacity to fulfill the state armaments program. At a Duma hearing on the state of the Russian defense industry in June 2010, Defense Committee Chairman Viktor Zavarzin spoke of the industry's continuing crisis in spite of the measures so far taken by the government. He expressed reservations, in terms of the requisite quality and quantities, as to the arms manufacturers' ability to complete orders. He highlighted, too, the inadequate pace of R&D as well as structural and personnel issues that appear to be difficult to overcome.³⁸

There are, though, a few bright spots. Parts of the Russian defense industry continue to be successful in certain niche areas and can attract exports. In most cases, these sales relate to updated versions of old Soviet models: fighter jets, armored personnel carriers, and air defense systems, for example. Despite the global financial crisis, Russian defense exports rose to \$7.9 billion U.S. in 2009 (up 10 percent from 2008), and again to \$10 billion U.S. in 2010.³⁹ Aviation-related technologies made up over half these figures.⁴⁰

Unfortunately, the older models that Russia is selling abroad can contribute little to improving the state of the Russian military itself. As the experience of the Georgian war showed, it was not Russia's lack of "legacy systems"—such as aircraft or tanks—that impeded its performance but the lack of more cutting-edge technologies. Included here are computer systems to enhance command, control, and communications (and PGMs) and unmanned aerial vehicles. Lacking also are those technologies seen now as standard in most Western militaries, such as night-vision

aids and radio communications systems for individual infantry soldiers. Critics have cautioned that recently procured equipment hailed as “new” technology—such as the Iskander-M missile complex and the T-90A tank—are merely modernized versions of Soviet-era systems. The T-90A, especially, should be no match for Western main battle tanks.⁴¹

Aleksandr Konovalov of the Institute for Strategic Assessment and Analysis in Moscow, with the Georgian experience in mind, summed up the whole dilemma by asking: “Why do we need new tanks if the commanding general has to request fire support over a mobile telephone when his men come under fire? Why a fifth-generation aircraft if there are no missiles for it to carry that can destroy PVO [air defense] complexes without having to enter their kill zone?”⁴² The Russian defense industry, it is clear, has failed to make the leap from cold war–era “dumb-iron” equipment to twenty-first-century sophistication. There is a hiatus. This means that the Russian Defense Ministry must now increasingly fill this gap by looking abroad to import the technologies it needs: from ships such as the French Mistral to drone aircraft from Israel.⁴³

The Russian defense industry’s problems are not just due to a lack of investment and of R&D over the last twenty or so years. The situation is also exacerbated by serious structural problems that are themselves very difficult to address. One such problem is the industry’s lack of new blood. The workforce is aging, with more than 90 percent of personnel now over fifty years old. There are few incentives to encourage a younger intake.⁴⁴ During the Soviet era, employment in the defense industry was esteemed, but nowadays few young scientists or engineers with relevant technical knowledge and experience are willing to work in this increasingly moribund sector, preferring employment in the more profitable private sector or to take their skills abroad.⁴⁵

What also makes this defense industrial base problem so difficult for the government to deal with is that advances in military R&D cannot be achieved in isolation. They cannot be divorced from the greater malaise affecting science in general in Russia. In October 2009, in an open letter to President Medvedev, dozens of prominent Russian scientists warned of the “looming collapse” of Russian science. They cited inadequate funding, lack of strategic planning, and the decreasing prestige of scientific careers as central concerns that need to be urgently addressed.⁴⁶

Engineering is another problem. The Russian defense industry is affected by a lack of modern equipment required for the production of state-of-the-art military hard-

ware. More than two-thirds of the lathes, and other machine tools in the defense industry have been in service for more than twice their allotted life spans. Even if they were functioning perfectly, they would still not be able to manufacture any of the modern military technologies that, in an ideal world, Russian scientists might develop. Much of the existing machinery requires urgent replacement—a demand that cannot be met by the Russian machine-tool industry itself. Lack of development here is particularly serious in the electronics sector.⁴⁷

In sum, there seems to be a disconnect between the heady rhetoric associated with the modernizing of the Russian military and the defense industry’s actual capacity to deliver the requisite advanced systems required to fight modern war and conflicts.⁴⁸ Some aspects of *modernizatsiia*, such as the move from divisions to brigades, have been (seemingly) implemented with impressive speed. But similarly speedy results will be impossible where reforming the Russian defense industry is concerned. Even if the political leadership is serious about tackling this particular issue, and even if the necessary investments are made, it will still remain a long and drawn-out process. The neglect of twenty years cannot be made up in just one or two.⁴⁹

Nuclear Triad

The fact that the cold war never became “hot” can, in many respects, be put down to the degree of confidence that both superpowers felt in their ability to deter each other through the idea of mutually assured destruction. This idea works, of course, only if the destruction can be more or less assured. The state of today’s Russian nuclear deterrent, however, means that its ability to provide the requisite degree of destruction is questionable.

The nuclear deterrents of the great powers are traditionally based on a triad. This is a system whereby nuclear weapons can be delivered by air, land, or sea, thus increasing the chance that a certain number will always reach their targets. In Russia, the triad system started to break down after the end of the Soviet Union. The air component of nuclear delivery was neutered by a lack of aircrew training time, of basic aircraft maintenance, and of replacement programs. On land, the aging silo-based intercontinental ballistic missiles (ICBMs)—the SS-18, SS-19, and S-25—have had their service lives continually extended. But the static nature of their silos means they will always remain vulnerable to a U.S. nuclear first-strike capability.⁵⁰ This is especially true since the accuracy of U.S. missiles has increased markedly in recent years.

In light of these issues, Moscow has put more faith in developing the mobile (vehicle-mounted), and thus less vulnerable, Topol-M ICBM, and in submarine-launched ballistic missiles (SLBMs). The spending on the SSBNs and the missiles to be launched from them absorbs some 40 percent of Russia's entire defense budget. Although Moscow has always had in place—despite the country's economic woes during the 1990s—a building program to produce at least a few new SSBNs to replace boats that were reaching the end of their operational lives, the rate of construction has been painfully slow. While one new SSBN has just become operational (the *Iurii Dolgorukii*), there are currently only about ten of the older SSBNs left. Of these, few now venture far from port on their patrols for fear of breaking down.

An additional problem here has been with the missiles that are slated to be launched from the new SSBNs. The latest Russian SLBM, the Bulava (based on the Topol-M), is currently undergoing tests. Early firings of this missile were producing a failure rate of more than 50 percent. Part of the problem here was, again, that the defense industry had not moved on and that the sector devoted to missile development in particular was suffering from a lack of R&D.⁵¹ There was talk, indeed, of the whole Bulava program being scrapped, but this would have been unlikely given that there are no other Russian SLBMs under development.⁵² Recent (up to August 2011) tests of the Bulava, however, have been more successful; and even a “salvo launch” (one immediately after the other) is planned for October 2011.⁵³

Overall, Russia has reason to be nervous about the current effectiveness of its nuclear deterrent. While the numbers on paper look impressive, there is something of the Potemkin village about the whole system. There is a feeling, moreover, that Russia's nuclear arsenal is not now comprehensive enough to overcome any potential future U.S. ballistic missile defense (BMD) shield. Such a shield, if built, would fundamentally undermine Moscow's nuclear deterrence capability and add to a general sense in Russia that the country is militarily weak.⁵⁴ Although this is a fear that might have been manufactured, or at least exacerbated, by Kremlin spin, Russians as a whole do see the single biggest threat to their country as coming, not from Chechen/Islamist terrorism but rather from the proposed U.S. BMD shield.⁵⁵ The only way that this shield can be overcome is either by overwhelming it through a mass launch of Russian missiles—which the country simply does not have—or by enhancing the capabilities of the missiles it does have: upgrading through modernization. In this regard, and in announcing the

2009–10 defense budget, Deputy Prime Minister Sergei Ivanov referred to yet another “priority.” “Priority,” he said, “will be given to the nuclear triad . . . it would incur large expenses, but we do not have a choice.”⁵⁶ Putin confirmed this view in December 2010. In announcing the State Armaments Program for 2011–20, he said, “the main focus [for military spending] should be placed on the strategic nuclear forces.”⁵⁷

The perceived weakness of this triad means that the Kremlin was pleased with the START agreement of March 2010. The treaty limits favor Moscow in that it does not have to cut any of its own nuclear warheads or delivery systems—the numbers of ICBMs and warheads in its own triad are actually below the negotiated caps. Only the United States has had to bring its numbers down.⁵⁸ Normally, in the arranging of such international security treaties, negotiating from a position of military weakness—as Russia was—is not conducive to the ability to drive a hard bargain. Moscow has been lucky, however, in that Washington seems not to be too interested in the shape of Russia's current and future nuclear arsenal. Rather, in terms of perceived security threats, Washington has its eye more on the terrorist ball than on the Russian one. Additionally, under START, Russia does not have to reduce the number of its tactical nuclear weapons. It has more of these than the United States. These are prized and important assets to Moscow, and they have become even more prized and important as Russia's conventional military has become weaker. They are seen more and more as the fallback option if Russia one day faces some sort of defeat in a conventional conflict—against the likes of Georgia or China. In the largest Russian military exercise held since the end of the cold war—conducted recently in the Russian Far East—tactical nuclear weapons (i.e., mines) were notionally “exploded” as part of the exercise play.⁵⁹ This fact alone seems to confirm that Russia's conventional military weakness has led to a reduction in its nuclear-use threshold.

Conclusion

The current modernization in the Russian military is long overdue. Because it is long overdue, it has to be completed in a rushed, haphazard fashion and against a backdrop of a military-industrial complex unable to fulfill its role in the process.

Traditionally, military modernization is not achieved lightly, given the bureaucratic inertia and cultural norms that are always present. When, as in the current situation in Russia, such barriers to change are aided and abetted

by any number of additional problems (not to mention the rampant corruption that is endemic across all levels of Russian state institutions, including the military), then it must be expected that Russia's armed forces will be striving for some time to become truly "modern."⁶⁰ In essence, what should have been accomplished as an evolution over many years, and should have begun during the Yeltsin era, is now being attempted as a revolution in the post-Georgian war era. As with any revolutionary change, a good deal of disruption and disaffection has been created.

Moreover, the current Russian military is a weakened military. The psychology of the tsarist/Soviet/Russian military has always been that numbers counted, that mass would prevail. Numbers inspired confidence, and numbers could deter. But the current Russian military is losing numbers while not making up for them by creating smaller, more professional forces equipped with the requisite technologies. Quality is not replacing quantity.

The military is in a state of flux. Russian politicians and military figures both now lack a genuine confidence in the armed forces' ability to deter. This can have two consequences. Either Russia takes large steps to avoid the possibility of military confrontation by stressing diplomatic solutions to possible threat scenarios (as the tsarist government did in 1914), or it goes the opposite way, fearing that if any state is threatening military action against Russia then the hair trigger comes into operation (Israeli-style). That is, the mentality of the first, preemptive strike becomes paramount—taking advantage of surprise—and using what assets Russia now has. The alternative is to take the risk of waiting to be attacked and maybe "losing."

What is clear is that, with its armed forces currently weakened by the process of change, the sense of vulnerability generated has led Russia, in classic confirmation of the security dilemma concept, to magnify the threats it faces, or thinks it faces. Conscious of its vulnerability to threats, real or imagined, Moscow may begin to look more and more toward the inflexible tool of its tactical nuclear weapons as its principal defense mechanism. While no one really supposes that such weapons will be used in any confrontation with the West, the same cannot be said of any possible conflict with the Chinese. Ironically, Beijing's military still relies on mass. The best modern military counter to mass is to employ either PGMs or tactical nuclear weapons. The Russian military has hardly any of the former but plenty of the latter. Hair triggers and tactical nuclear weapons are not comfortable bedfellows.

Notes

1. Nikolai Zlobin, "The Eternal Modernization Oxymoron," *Moscow Times* (December 11, 2009), p. 8.

2. Caroline Vendil Pallin, *Russian Military Reform: A Failed Exercise in Defense Decision Making* (Abingdon, UK: Routledge, 2009).

3. General Nikolai Makarov, quoted in Aleksandr Golts, "A Military Spoiler Doctrine," *Moscow Times* (December 16, 2008), p. 6.

4. Military procurement is due to increase from \$12.7 billion U.S. in 2010 to \$32.7 billion in 2013. Investment in research and development will grow from \$3.6 billion in 2010 to \$6.2 billion in 2013. See Pavel Felgenhauer, "Russia Procures Western Technology While Struggling to Manufacture Modern Weapons," *Eurasia Daily Monitor* 7, no. 185 (October 14, 2010), at www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D, accessed November 14, 2010.

5. Quoted in Boris Podoprigrora, "The Costs of Russian Military Reform," *Nevskoe vremia* (February 24, 2010), BBC Monitoring World Media Monitor (hereafter BBC) Mon FS1 FsuPol 260210 nn/osc.

6. See, e.g., Deborah Avant, *Political Institutions and Military Change: Lessons from Peripheral Wars* (Ithaca: Cornell University Press, 1994); Elizabeth Kier, *Imagining War: French and British Military Doctrine Between the Wars* (Princeton: Princeton University Press, 1997); Kimberley Zisk, *Engaging the Enemy: Organization Theory and Soviet Military Innovation, 1955–1991* (Princeton: Princeton University Press, 1993); and Jeffrey Legro, *Cooperation Under Fire* (Ithaca: Cornell University Press, 1995).

7. Pavel Felgenhauer, "Russia's Imperial General Staff," *Perspective* 16, no. 1 (October–November 2005), at www.bu.edu/iscip/vol16/felgenhauer.html, accessed May 20, 2010.

8. The criticism came from, among others, Viktor Baranets, "Kavkazskie uroki: god spustia" (Lessons from the Caucasus: A Year Later), *Komsomolskaia pravda* (August 6, 2009), at www.kp.ru/daily/24339/3/529558, accessed January 30, 2011; Iurii Gavrilov, "Bitye karty" (Weak Cards), *Rossiiskaia gazeta* (September 9, 2008), at www.rg.ru/2008/09/09/nogovicyn.html, accessed December 11, 2010; and Aleksandr Golts, "Krugom—Marsh!" (Turn About—March!), *Novoe vremia* (August 31, 2009), at <http://newtimes.ru/articles/detail/4915>, accessed January 25, 2011.

9. Stephen Blank, "Georgia: The War Russia Lost," *Military Review* (November–December 2008): 39–46.

10. Command, control, communications, computers, intelligence, surveillance, and reconnaissance.

11. Roger McDermott, "Russian Military Quietly Adopts Network-Centric Warfare," *Eurasia Daily Monitor* 7, no. 41 (March 2, 2010), at [www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=36102&tx_ttnews\[backPid\]=484&no_cache=1](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=36102&tx_ttnews[backPid]=484&no_cache=1), accessed September 6, 2011.

12. "German Army 'To Suspend' Conscription," BBC News Online (November 22, 2010), at www.bbc.co.uk/news/world-europe-11817312, accessed February 2, 2011.

13. Mikhail Iakovlev, "Razryv kontrakta: Otkazhentsia li Minoborony ot perekhoda k professionalnoi armii?" (Breach of Contract: Does the Ministry of Defense Withdraw from Professionalization?), *Versia* (March 1, 2010), at http://versia.ru/articles/2010/mar/01/professionalnaja_armija, accessed December 15, 2010.

14. Nikolai Poroskov, "Prizyvnoi punktik" (Draft Obsession), *Vremia novostei* (March 31, 2010).

15. Golts, "Krugom—Marsh!"

16. Iakovlev, "Razryv kontrakta."

17. Pavel Felgenhauer, "Slashed Russian Officers Recalled to Military Service and Promised Double Pay," *Eurasia Daily Monitor* 8, no. 24 (February 3, 2011), at www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=37451, accessed February 5, 2011.

18. Aleksandr Golts, "U.S. Not a Threat After All," *Moscow Times* (November 18, 2008), p. 5.

19. Dmitry Gorenburg, "Walking Back Serdyukov's Personnel Policies (Part I)," *Russian Defense Policy* (February 3, 2011), at <http://russiandefpolicy.wordpress.com/2011/02/03/walking-back-serdyukov%e2%80%99s-personnel-policies-part-i>, accessed August 24, 2011.

20. Golts, "U.S. Not a Threat."
21. Blank, "Georgia: The War Russia Lost."
22. "Military Secret," Russian Ren TV Program (November 1, 2008), quoted in "Russian TV Report Questions Military Reform Blueprint," at http://news.monitor.bbc.co.uk/profile/cgi/save_as_profile.pl, accessed 15 November 2010.
23. Pavel Felgenhauer, "Russia's Five-Battalion-Strong Army," *Eurasia Daily Monitor* 8, no. 14 (January 21, 2011), at [www.jamestown.org/single/?no_cache=1&tx_ttnews\[tt_news\]=37382](http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=37382), accessed February 23, 2011.
24. "Khraniteli neba" (Protectors of the Skies), interview with Chief of the Air Staff Aleksandr Zelin, *Krasnaia zvezda* (April 4, 2010), at www.redstar.ru/2010/04/10_04/1_01.html, accessed June 20, 2010; Roger McDermott, "Reflections on Vostok-2010: Selling an Image," *Eurasia Daily Monitor* 7, no. 134 (July 13, 2010), at www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=36614, accessed December 15, 2010.
25. "Russia Unveils Its First Stealth Fighter Jet," *BBC News* (January 29, 2011), at <http://news.bbc.co.uk/1/hi/8486812.stm>, accessed January 15, 2010.
26. Roland Oliphant, "T-50 Fighter Aborts Takeoff During MAKS Demonstration," *Moscow Times* (August 22, 2011), p. 3.
27. Vadim Volkovitskii, "Otrazit napadenie, nanesti udar" (Deflect the Attack and Deal a Blow), *Voenna-promyshlennyi kurer*, no. 13 (April 7, 2010), at www.vpk-news.ru/13-329/army/otrazit-napadenie-nanesti-udar, accessed June 21, 2010.
28. Ivan Konovalov, "Towards the Restoration of Russian Air Power," *Moscow Defense Brief*, no. 1 (2008), at <http://mdb.cast.ru/mdb/1-2008/item2/article3>, accessed August 19, 2009.
29. Viacheslav Blaznin, "Trishkin kaftan 'reform,'" (The Trishkin Caftan of "Reform"), *Zavtra* (March 3, 2010), at <http://zavtra.ru/cgi/veil//data/zavtra/10/850/42.html>, accessed June 17, 2010.
30. Ilya Kramnik, "The Future of the Russian Air Force: Ten Years On," RIA Novosti (March 10, 2010), at <http://en.rian.ru/analysis/20100317/158228523.html>, accessed January 25, 2011.
31. Konovalov, "Towards the Restoration of Russian Air Power."
32. Blaznin, "Trishkin kaftan 'reform.'"
33. "The navy should reflect the national interests and economic potential of our country," interview with Admiral Vladimir Vysotskii, commander of the Russian navy, *Moscow Defense Brief*, no. 1 (2010), p. 23.
34. Jacob Kipp, "The Shifting Strategic Priorities of the Russian Navy," *Eurasia Daily Monitor* 6, no. 195 (October 23, 2009), at [www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=35646&cHash=7052eee93a](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=35646&cHash=7052eee93a), accessed January 25, 2011.
35. Anon., "France, Russia Sign Landmark *Mistral* Contract," *Moscow Times* (January 28, 2011), p. 6.
36. Anatolii Serdyukov (March 17, 2009), quoted on the Russian Ministry of Defense Web site, at www.mil.ru/847/851/1291/12671/index.shtml?id=60047, accessed July 3 2009.
37. Excerpts from the transcript of the Meeting on the Defense Industry's Development (October 26, 2009), at <http://news.kremlin.ru/transcripts/5825>, accessed November 13, 2009.
38. Interfax-AVN Web site (June 3, 2010), BBC Mon FS1 FsuPol 05432 pl/osc.
39. "Russian 2010 Arms Sales Total \$10 Billion," RIA Novosti (December 14, 2010), at <http://en.rian.ru/russia/20101214/161755181.html>, accessed February 3, 2011.
40. "Russia Builds Up Arms Exports," ITAR-TASS (January 30, 2010), at www.sras.org/russia_builds_up_arms_exports, accessed January 15, 2011.
41. Mikhail Rastopshin, "Oruzhie novogo oblika: blef i realnost'" ("New Look" Weapons: Bluff and Reality), *Nezavisimoe voennoe obozrenie* (September 4, 2009), at http://nvo.ng.ru/armament/2009-09-04/1_weapon.html, accessed June 2, 2010.
42. Anastasiia Novikova et al., "Armiia segodnia ne takaia, kak vchera" (Today's Army Is Not How It Used To Be), *gzt.ru* Internet News (December 1, 2009), at www.gzt.ru/print/274555.html, accessed January 25, 2011.
43. "Russia Confirms Spy Drone Deal with Israel," RIA Novosti (April 10, 2009), at <http://en.rian.ru/russia/20090410/121045416.html>, accessed January 15, 2011.
44. Julian Cooper, "Developments in the Russian Arms Industry," in *SIPRI Yearbook* (Oxford: Oxford University Press, 2006), pp. 431–32.
45. Richard Lourie, "It's Not Rocket Science," *Moscow Times* (March 1, 2010), p. 4.
46. Phil Baty, "Once a Science Superpower, Russia Is Now a Fading Light," *Times Higher Education* (February 4, 2010), pp. 20–22.
47. Cooper, "Developments in the Russian Arms Industry."
48. Nikolai Poroskov, "Armiu pustiat v razkhod" (The Army Is Being Dispatched), *Novoe vremia* (August 11, 2009), at www.vremya.ru/2009/143/4/234529.html, accessed January 11, 2011.
49. Alexander Golts, "Prigovor rossiiskomu VPK" (Denunciation of the Russian MIC), *Ezhenedelnyi zhurnal* (August 31, 2009), at www.ej.ru/?a=note&id=9403, accessed November 10, 2010.
50. Margarete Klein, "Russia's Military Capabilities: 'Great Power' Ambitions and Reality," *Stiftung Wissenschaft und Politik*, Research Paper 12 (October 2009), at www.swp-berlin.org/fileadmin/contents/products/research_papers/2009_RP12_kle_ks.pdf, accessed November 14, 2011.
51. Another problem here is that the Soviet Union's large missiles were mostly produced at a plant that is now in Ukraine.
52. Aleksei Stepanov, "Zato my delaem rakety" (Then Again, We Are Producing Rockets), *Nasha vlast* 1–2, no. 104 (February 2010), at http://nashavlast.ru/article_description/112/1248.html, accessed October 10, 2010.
53. Dmitry Gorenburg, "Bulava Success," *Russian Defense Policy* (August 27, 2011), at <https://russiandefpolicy.wordpress.com/2011/08/27/>, accessed September 3, 2011.
54. Vladimir Mukhin, "Katastroficheskie oblik rossiiskoi armii" (The Catastrophic Look of the Russian Army), *Nezavisimoe voennoe obozrenie* (January 18, 2011), at www.ng.ru/nvo/2010-01-18/2_rosarmy.html, accessed October 10, 2010.
55. In answer to the question, posed by the Levada Center, "What is the biggest threat to Russia's national security?" 55.4 percent picked the choice of the U.S. missile defense shield. Quoted in Michael Bohm, "The Kremlin's Shock Troops," *Moscow Times* (May 6, 2010), p. 5.
56. "Russia to Continue Modernizing Its Nuclear Deterrent—Deputy PM," RIA Novosti (February 25, 2009), at <http://en.rian.ru/russia/20090225/120296193-print.html>, accessed January 25, 2011.
57. "Russian State Armaments Program to Focus on Nuclear Forces—Putin," ITAR-TASS (December 13, 2010), quoted on BBC MonFS1 FsuPol ibg.
58. Aleksandr Golts, "Strategic Schizophrenia," *Moscow Times* (July 9, 2009), p. 4.
59. Jacob Kipp, "Vostok-2010 and the Very Curious Hypothetical Opponent," *Eurasia Daily Monitor* 7, no. 133 (July 12, 2010), at [www.jamestown.org/single/?no_cache=1&tx_ttnews\[tt_news\]=36610](http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=36610), accessed February 23, 2011.
60. *Novaia gazeta* in June 2011 rated the Ministry of Defense as the most corrupt state institution: "Reiting korrumpirovannosti ministerstv i vedomstv Rossii" (Corruption Rating of Russian Ministries and Offices), online version posted on June 28, 2011, at <http://novayagazeta-nn.ru/2011/191/reiting-korrumpirovannosti-ministerstv-i-vedomstv-rossii-ot-novoi-gazety.html>, accessed September 6, 2011.

To order reprints, call 1-800-352-2210;
outside the United States, call 717-632-3535.

Copyright of Problems of Post-Communism is the property of M.E. Sharpe Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.