



U.S.-Russia Nuclear Reductions—

By Jon Brook Wolfsthal, Carnegie Endowment for International Peace

After the attacks of September 11 and the post-attack rash of anthrax mailings, renewed attention is being paid to the risks posed by weapons of mass destruction (WMD) falling into the hands of additional states and nonstate actors. The vast majority of scenarios involving WMD proliferation invariably stems from the current insecurity characterizing the state of the Russian WMD complex, particularly its nuclear complex.

The U.S. and Russia continue to field massive offensive nuclear arsenals that the leaders of both countries acknowledge do not reflect the changed nature of their strategic relationship. The risks of accidental nuclear exchange and the possible proliferation of Russian nuclear materials, technology, and know-how pose serious threats to global security. The negotiated arms reduction process that showed such promise in the early 1990s failed to fully materialize and make continued

strides in reducing the nuclear arsenals of both countries, due in part to the deteriorating U.S.-Russian relationship. Key to this blocked progress were internal disputes between the executive and legislative branches in both Washington and Moscow, which seemed to thwart repeated attempts to break the arms reduction logjam. This stagnation has left both countries with more deployed nuclear weapons than either side needs or wants. The announcements by

presidents Bush and Putin that both countries will unilaterally reduce their deployed arsenals, while welcome, leave major security risks unaddressed, including the ability to rearm to cold war levels and the ultimate fate of thousands of weapons and tons of nuclear materials. Furthermore, it will be years before these deep reductions are fully implemented.

Even with their oversized stockpiles, however, the two countries have made substantial progress in reducing deployed arsenals from their cold war peaks. The reduction process in Russia has been greatly aided by the innovative U.S. Cooperative Threat Reduction (CTR) program, designed to help Moscow implement its arms control obligations. Not nearly enough has been done, however, to complete this process or to implement steps that would guard against the reconstruction of these arsenals, should the global security picture radically deteriorate.

In 1990, the Soviet Union had 7,652 accountable nuclear weapons on 2,083 launchers. (The term accountable refers to attribution rules established in the

first Strategic Arms Reduction Treaty—START I—signed by the U.S. and Russia on July 31, 1991.) As of January 2001, Russia had 6,094 accountable weapons on 1,266 launchers. (Ukraine—the only other former Soviet state to possess START-accountable launchers—had 56 launchers attributed with 208 warheads as of January, 2001. There are no nuclear warheads, however, in Ukraine.) These numbers do not reflect the full extent of Russian nuclear reductions, however, since Russia possessed other nondeployed missile systems and thousands of other nuclear warheads that were not reflected under the counting rules contained in the START Treaties. Reliable estimates from nongovernmental organizations (no official numbers have ever been provided) suggest that the Soviet Union had just under 12,000 strategic nuclear warheads deployed (that is, mounted on launchers) in 1990. This number has dropped, thanks in part to U.S. assistance, to just over 5,600 actual deployed weapons by 2001.

Numbers are only part of the overall picture on reductions, however. When the Soviet Union collapsed, nearly half of its strategic nuclear arsenal was spread across the territory of three non-Russian republics. Of the 7,600 accountable weapons, some 3,400 were deployed within the borders of Belarus, Kazakhstan, and Ukraine.

This reality presented a serious challenge to the global security and international nonproliferation regimes. An intensive legal, financial, and technical effort by the U.S., assisted by its European allies, however, succeeded in convincing these states to abandon their nuclear weapons. Over the course of the 1990s, the nuclear weapons deployed in the non-Russian republics were returned to Russia, and their associated delivery vehicles were either returned or dismantled (an ongoing process).

Progress in Russia itself has also been remarkable, given the historic legacy of mistrust between Moscow and Washington. With U.S. assistance, Russia has successfully deactivated and/or dismantled 330 land- and sea-based missiles and bombers and 17 strategic submarines as well as 306 Intercontinental Ballistic Missiles (ICBM) silos and submarine-launched ballistic missiles (SLBM) launchers. These missiles were previously loaded with over 1,600 nuclear weapons capable of hitting targets in the United States. The reductions include the elimination of 116 SS-18 missiles, which formed the backbone of the Soviet nuclear force that threatened the U.S. during the cold war, along with 119 older SS-11, 10 SS-17, and 12 SS-19 missiles and 42 heavy bombers. All of these reductions, along with the destruction or planned destruction of missile silos, missile fuel, and associated weapons infrastructure, were implemented with financial assistance from the U.S. Department of Defense.

Key Points

- The U.S. and Russia possess more nuclear weapons than they want or need.
- Deep weapons reductions from cold war peaks have been made, but even more remains to be done.
- Successful reductions require close cooperation, assistance, and transparency between the two countries.

Problems with Current U.S. Policy

It is clear, by any accounting, that the U.S. and Russia have made tremendous progress in reducing their nuclear arsenals. As noted earlier, however, these impressive reductions in the area of deployed weapons leave both countries in possession of thousands of nonregulated weapons and nuclear materials sufficient to produce tens of thousands of nuclear weapons. Progress is desperately needed in the following areas:

Eliminating Fissile Materials from Nuclear Weapons—The two countries are successfully implementing—despite numerous complications—an agreement to dilute and use in nuclear reactors 500 metric tons of weapons-usable highly enriched uranium (HEU). As of November 2001, the U.S. Enrichment Corporation had purchased the equivalent of 137 metric tons of HEU, enough to produce over 5,400 weapons. Although this progress is significant, it is estimated that Russia possesses as much as 1,000 additional metric tons of HEU, much of which may not be adequately protected against theft or diversion.

Not one gram of the 50 tons of Russian weapons-usable plutonium declared excess, however, has yet been eliminated or rendered less usable in weapons. U.S. efforts to dispose of its own material are also in serious doubt due to Bush administration concern over the cost and timeline associated with the program. International financial support for Russian disposition efforts has, to date, been completely inadequate to spur major disposal of this proliferation-prone material.

Monitoring Warhead Elimination—Despite all of the progress made in dismantling launch platforms, it is impossible to verify that one single warhead has been eliminated as a result of the negotiated arms reduction process. Both countries have held extensive discussions about how monitoring might be implemented, but all efforts have run afoul of concerns regarding the classified nature of information about nuclear weapons. Any program to effectively control the size of nuclear arsenals and limit their potential future magnitude and scope will require a more comprehensive regime that includes monitoring of warhead dismantlement and materials elimination as well as launcher destruction. Artificial barriers to sharing information could be overcome if the decision was made in both countries that monitoring warhead reduction was more important than protecting the information both sides already possess. To be sure, safeguards would need to be established,

so that classified warhead information was not lost to any third countries, but the benefits of warhead elimination should be apparent to both states.

Downsizing the Russian Weapons Complex—During the cold war, the Soviet Union developed the largest nuclear weapons production capability on earth. At one point it actively employed over one million people in ten secret cities and dozens of research facilities. The end of the superpower nuclear arms race resulted in a dramatic decline of fortunes for the people and places formerly engaged in the production and maintenance of this nuclear arsenal.

Now, instead of providing for Russia's security, these cities and experts present a major security challenge both for Russia and for other countries concerned about the proliferation of weapons technology and material. Unlike the U.S. nuclear weapons complex, which has been significantly reduced in size over the past decade, the Russian complex remains largely unchanged in size and mission since the end of the cold war. Moreover, it is now accepted even in Russia that the country can no longer afford the cost of maintaining such a large nuclear weapons infrastructure. For its part, the U.S. would like to see Russia reduce this complex both as a way of shrinking Russia's ability to reverse the current process of reductions in its nuclear arsenal in order to provide greater predictability to the future of the bilateral nuclear relationship.

Although the U.S. and other Western nations have embarked on efforts to employ Russian scientists and redirect Russian facilities to civilian research, these efforts have been short on cash and have not produced enough visible successes to engender broad political support. Weapons complex conversion should receive high-priority funding and be combined with more innovative inducements such as debt-for-security swaps and tax incentives for U.S. companies that utilize former Russian weapons experts in their international ventures.

Key Problems

- The current U.S. intention to withdraw from the ABM Treaty unilaterally threatens to prevent the cooperation needed to implement deep offensive reductions.
- U.S. opposition to formal, negotiated agreements will make achieving deep and lasting nuclear reductions harder to achieve.
- Not enough U.S. assistance is available for key areas of security concerns in Russia.

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Foreign Policy in Focus is a joint project of the Interhemispheric Resource Center (IRC) and the Institute for Policy Studies (IPS). The project depends on sales and subscription income, individual donors, and grants from foundations and churches. *In Focus* internships are available, and we invite article queries and comments. ISSN 1524-1939

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Toward a New Foreign Policy

The U.S. and Russia are on schedule to implement the terms of the START I treaty by the implementation deadline of December 31, 2001. The terms of START I, however, leave both countries with 6,000 accountable deployed weapons and a multitude of uncounted but activated weapons. Moreover, Russia and the U.S. have negotiated and signed the START II Treaty. This agreement, though signed in January 1993, has not yet

entered into force for either country due to the uncertainty regarding Washington's interest in developing national missile defenses. The terms of the agreement limit each country to no more than 3,500 deployed strategic warheads. These cuts, if implemented, would be deeper than they appear, since the treaty eliminates the somewhat-misleading counting rules contained in START I and would result in actual deployed arsenals on both sides to no more than 3,500 weapons.

Key Recommendations

- The U.S. and Russia should immediately follow up their unilateral decision to reduce deployed arsenals with formal negotiations on a new agreement to regulate both deep offensive nuclear reductions and the future of missile defense deployment.
- U.S. assistance to Russia—for weapons elimination, nuclear material disposition, and reducing the Russia nuclear complex—should be greatly expanded.

But with the joint decisions announced at the November 2001 summit between presidents Bush and Putin, START II was bypassed. Instead of seeking verifiable reductions through a treaty arrangement—which would also limit the types and numbers of deployed weapons—the two leaders have decided for now to announce unilateral cuts. President Bush announced that the U.S. would reduce its arsenal to between 1,700 and 2,200 weapons by the end of the decade, and President Putin announced his intention to make similar, but unspecified, reductions.

The loss of the START II treaty and Helsinki summit provisions is unfortunate for several reasons, not the least of which is that START II banned the deployment of land-based missiles with multiple warheads. These missiles are considered very destabilizing, since they pose attractive targets to a would-be attacker. Banning such weapons would also help limit the potential future growth of arsenals, should political circumstances change radically. Moreover, the Helsinki statement pledged both sides to work toward agreement on monitoring warhead elimination and to discuss controlling tactical nuclear weapons. It is not yet known if the announcements of November 2001 will be codified in a treaty (preferred by Russia, resisted by the U.S.) and implemented under any meaningful system of verification.

Although President Putin did not make a specific announcement of what reductions would be made in the Russian nuclear arsenal, below is a summary of the types of reductions that can be expected based on the rapidly aging nature of the Russian strategic arsenal. It is important to keep in mind, however, that if international circumstances worsen, Russia could deploy an arsenal of almost 4,000 weapons, some four times larger than envisioned under the cuts described below.

ICBMs—Russia currently deploys 738 ICBMs of 5 different types. Due to aging, all but one of these sys-

tems—the SS-27 Topol-M—will be retired from service by the end of the decade. This means that Russia needs to eliminate over 700 currently deployed ICBMs by 2010. The number of new missiles Russia will deploy, and the number of warheads mounted on those missiles, will depend on the overall relationship between the U.S. and Russia. Russia currently lacks the resources to carry out this elimination mission on its own, and the CTR program has plans to assist with the elimination of missiles, missile fuel, and silos—provided the program is funded and the cuts are required by the terms of arms reduction agreements. CTR also intends to assist Russia in retiring additional nondeployed missiles. Overall CTR plans would result in the elimination of 1,473 ICBMs by the year 2007 (including systems already retired).

SLBMs—Russia now has 284 submarine-launched ballistic missiles deployed on 17 submarines. Given the poor condition of the Russian Navy, few of these missiles are on station and ready to launch at any given time. Moreover, the pace of retiring submarine-launched missiles is accelerating, and Russia is likely to only possess 116 missiles on 7 submarines by the end of the decade. Elimination of submarines is another important activity of the CTR program; one that is now entering a contract elimination phase where U.S. monies are being expended to hire Russian companies to destroy submarines and missile launch tubes. CTR efforts could result in the elimination of 41 submarines and 661 missiles, if the program is funded and implemented as planned.

Bombers—This component of the Russian nuclear triad is the most likely to remain stable over the course of the next 10 years. By extending the service lives of current aircraft, Russia is likely to deploy some 80 strategic bombers throughout the coming decade.

If the U.S.-Russian strategic relationship stabilizes and an agreement can be reached on the future of missile defenses, Russia's nuclear arsenal could dip to as low as 1,000 weapons by the end of 2010. This would allow the U.S. to pursue deep cuts of its own. It is unlikely, however, that Washington's current position on missile defenses, the ABM Treaty, or negotiated arms control will create the environment needed for these reductions to materialize. Instead, Russia could end up deploying three times as many strategic warheads, with all of the associated risks for strategic stability that accompany such an expansion. This is especially worrisome given the state of the Russian early warning radar system and the country's overall security situation.

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Sources for More Information

For complete information on the past, current, and future size of the Russian nuclear arsenal, refer to Chapter 1 of the *Nuclear Status Report: Nuclear Weapons, Fissile Materials, and Export Controls in the Former Soviet Union* (joint publication by the Carnegie Endowment for International Peace and the Monterey Institute of International Studies: 2001—can be found at <http://www.ceip.org/npp/>).

Extensive details on each and every Russia weapon system can be found at the website of the **Federation of American Scientists**, <http://www.fas.org/nuke/guide/russia/index.html>.

The best unofficial estimates of U.S. and Russian nuclear arsenals throughout the nuclear age are available at the web site of the **Natural Resources Defense Council** at

<http://www.nrdc.org/nuclear/nudb/datainx.asp>. Also see *NRDC Nuclear Notebook*, Bulletin of the Atomic Scientists, May/June 2001.

For details on the full extent of U.S. non-proliferation assistance, refer to *Nuclear Status Report*, Chapter 3, to Matt Bunn, "The Next Wave: Urgently Needed Steps to Control Warheads and Fissile Materials" (Joint publication of Harvard University and the Carnegie Endowment for International Peace: 2000) and to the **Cooperative Threat Reduction** office's web page at http://www.dtra.mil/ctr/ctr_index.html.

For comprehensive details about Bush administration policies regarding Russia, including threat reduction programs and plans to deploy missile defenses, refer to the **Carnegie Non-Proliferation Project's** web page at <http://www.ceip.org/npp/>. A complete summary of counting rules can be found at

<http://www.ceip.org/files/projects/npp/resources/tart1text.htm#III>.

For information on Russia's potential deployment arsenal, see Joseph Cirincione and Jon B. Wolfsthal, "What If the New Strategic Relationship Goes Bad?" *Arms Control Today*, November 2001.

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