

**THE ATLANTIC COUNCIL
OF THE UNITED STATES**

**What Should Be Done About
Tactical Nuclear Weapons?**

GEORGE LEWIS & ANDREA GABBITAS

WITH ADDITIONAL COMMENTARY BY:
EDWARD ROWNY & JOHN WOODWORTH

OCCASIONAL PAPER

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FOREWORD

Tactical nuclear weapons pose one of the most difficult problems in arms control. The distinction between tactical and strategic nuclear weapons is unclear, and, consequently, dealing with the former in arms reduction efforts has eluded negotiators.

Although the issue may first strike the layman as somewhat arcane, this paper makes clear why a solution to the tactical nuclear weapons problem is important to broader efforts to reduce the risks of nuclear weapons. The authors, George Lewis and Andrea Gabbitas, are scholars familiar with this complex subject. They have sought to distill a practical understanding of what tactical nuclear weapons are and how we should deal with them. In order to assess the relevant policy implications, we are grateful to General Edward Rowny and Ambassador John Woodworth, whose broad experience in these matters over the years offers us a useful perspective on the issue.

This occasional paper is part of the Atlantic Council's project "Further Reins on Nuclear Arms." This is a long-term effort to develop a common vision among international leaders on how to reduce the risks posed by nuclear weapons. It conducts an ongoing assessment of the strategic environment and aims to stimulate rethinking about the context which shapes the purposes, types, numbers, stewardship arrangements and employment plans for nuclear weapons.

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DAVID C. ACHESON
PRESIDENT
THE ATLANTIC COUNCIL

EXECUTIVE SUMMARY

START II, if ratified by the Russian Duma, would reduce U.S. and Russian strategic nuclear forces to no more than 3,500 deployed warheads each by the end of 2007. Moreover, at the Helsinki summit in March 1997, Presidents Clinton and Yeltsin agreed that the follow-on START III treaty would impose a lower limit of 2,000-2,500 warheads by this same date.

However, the START II limit of 3,500 warheads, like the previous START I limits, excludes an important class of U.S. and Russian nuclear weapons – tactical nuclear weapons. Both the United States and Russia have deployable tactical nuclear weapons (TNWs) that do not fall under any treaty limitation. However, the Helsinki Summit Statement (HSS) raised the prospect of bringing these weapons into the nuclear arms control process. The HSS said that, in the context of the START III negotiations, the United States and Russia “will explore, as separate issues, possible measures relating to nuclear long-range sea-launched cruise missiles and tactical nuclear systems, to include appropriate confidence-building and transparency measures.”

The status of TNWs in arms control remains in question. In suggesting ways to deal with them sooner rather than later, this paper considers three key questions with the following proposals:

- **WHAT ARE TNWS?**

TNWs are a very diverse class of weapons – although not as diverse as they once were. Some of these weapons are short-range weapons intended for tactical battlefield use, for example, nuclear torpedoes. Others, such as long-range nuclear sea-launched cruise missiles (SLCMs), have ranges well over a thousand kilometers and have characteristics similar to some types of strategic weapons. Both the U.S. and Russian TNW inventories today include long-range land-attack SLCMs and air-deliverable bombs. The Russian stockpile also includes ship-attack SLCMs, air-launched anti-ship weapons, torpedoes, air-defense weapons, artillery shells, short-range ballistic missiles, and possibly land mines (these last three types should be eliminated by or before 2000 according to commitments made by Russia).

- **HOW ARE THEY CONTROLLED?**

Current and previous arms agreements on strategic weapons only limited the number of warheads or bombs which could be deployed on accountable delivery systems. The warheads and bombs are themselves not limited or regulated. However, limits on TNWs and the verification of these limits will almost certainly include measures focused directly on warheads and bombs. It would be simply impractical to impose numerical limits on, or eliminate, every system potentially capable of delivering a tactical warhead or bomb, such as every tactical bomber or every artillery piece capable of firing a nuclear artillery

shell. The concept of delivery vehicle is not even clearly applicable to some types of TNWs, such as nuclear land mines. In addition, as far as is known, all tactical warheads and bombs are currently in storage, and most or all of these are separated from delivery vehicles.

Some limits on TNW delivery systems still would be useful. Any delivery systems exclusively associated with eliminated tactical warheads also should be destroyed. As another example, the number of nuclear-capable tactical aircraft should be limited to a number commensurate with the number of permitted tactical bombs. Only those tactical bombers declared to be nuclear-capable could be used in nuclear weapons-related training or be based at sites where tactical nuclear bombs are stored.

As noted above, the number of strategic nuclear warheads and bombs themselves is not in any way limited, thus these weapons will also need to be addressed if deep nuclear reductions are to proceed. Although we do not focus on such warheads and bombs here, they have some relevance to the limiting of TNWs. For example, how does one distinguish between a reserve strategic bomb and a tactical bomb in storage? As another example, Russia is apparently concerned that the nuclear warheads from the U.S. ground-launched cruise missiles (GLCMs) that were eliminated by the INF Treaty (these warheads are now part of the U.S. strategic reserve stockpile) could be used to convert conventional Tomahawk SLCMs to nuclear-armed SLCMs. Since the Tomahawk has a modular design and the GLCM was a Tomahawk variant this conversion would not be difficult.

- **HOW SHOULD THEY BE LIMITED?**

Steps to limit TNWs should be undertaken in three phases:

The first phase involves basic data exchanges on the holdings and status of TNWs. These exchanges are necessary to begin any formal negotiations. They also should involve the withdrawal of all TNWs to secure storage, limits on deployments in Europe, and an effective verification regime.

The second phase would involve limiting the number of TNWs to 500 and include specific sublimits on certain types of TNWs, namely long-range nuclear SLCMs.

The third and final phase would lead to total elimination of TNWs as a separate class of nuclear weapons. Russia and the United States either could agree to simple elimination, or they could fold TNWs directly into a post-START III round of strategic arms reductions.

These phases need not occur in succession. A range of methods, from unilateral steps to formal treaties can be used as the situation warrants. However, an alternative approach may involve a “mutual unilateral” round of reductions that bysteps any ratification requirements and moves the process along with more rapid, short-term results.

What Should Be Done About Tactical Nuclear Weapons?

PROBLEMS OF DEFINITION

There is sometimes a distinction made between theater and tactical nuclear weapons. Shorter-range weapons (those with ranges of a few tens of kilometers) have been referred to as tactical weapons while longer-range nonstrategic weapons were called theater weapons. Here we will use the term “tactical” to refer to all nonstrategic nuclear weapons – including long-range nuclear sea launched cruise missiles (SLCMs).

In thinking about how to bring tactical nuclear weapons (TNWs) into the arms control process, it would be useful to have a single workable definition of a TNW. The formulation of such a definition requires considering which features of tactical weapons can be used to differentiate them from strategic weapons. The definitions explored below illuminate many of the important issues and problems that must be faced when integrating these weapons into future arms control treaties. However, most of these potential definitions are impractical, leaving only a default definition— a TNW is any deployable nuclear weapon not regulated under current nuclear arms agreements.

A first possible approach to defining TNWs is by their range. Generally any weapon with the range to be fired from Russia or the United States to the territory of the other has been considered a strategic weapon, while any weapon whose range limits it to battlefield use has been considered a tactical weapon. However, there is a broad gap between these two extremes in which the situation is unclear. For instance, tactical long-range nuclear SLCMs have ranges similar to strategic nuclear ALCMs. Additionally, strategic bombers carrying nominally strategic bombs are quite capable of dropping them on targets at relatively short ranges, while some types of tactical aircraft are capable of delivering their nominally tactical bombs at quite long ranges, particularly with aerial refueling. Thus range is not, by itself, sufficient to distinguish tactical from strategic weapons.

A second possible definition of a TNW is one based on the target against which the weapon is intended to be used. As the name implies, tactical weapons were designed for use against tactical targets on the battlefield or in a theater of war. Conversely, strategic weapons are typically targeted on the enemy country’s homeland – on targets varying from leadership centers to cities to nuclear missile silos. In addition, many tactical weapons were designed to be used against mobile targets while strategic weapons are almost exclusively intended to be delivered to predetermined

geographic points. However, there is some overlap – a naval base or airfield could well be targeted both by strategic missiles and tactical SLCMs, and a strategic bomber is capable, at least in principle, of attacking mobile targets.

In the past, this approach to defining TNWs may have had greater utility since both the United States and Russia had many short-range battlefield weapons that were unambiguously tactical. However, many of these weapons have now been retired. Although Russia still has some weapons that are clearly tactical by this definition (anti-ship missiles, for example), increasingly TNWs are looking more like strategic weapons in terms of their possible targets. Another difficulty with this definition is its focus on the “intended” use of the weapon. Even if originally intended for tactical use, a tactical weapon could be delivered against a strategic target, and vice-versa.

A third possible way to define TNWs is by yield. TNWs are generally regarded as having lower yields than strategic weapons, and this difference might serve as the basis for dividing up the nuclear forces. However, at least for U.S. weapons (for which information on yields is available), there is considerable overlap of yields between tactical and strategic weapons. The highest U.S. TNW yields are a B61 bomb variant with a yield of 170 kt as well as the highest yield selection of the nuclear Tomahawk cruise missile – about 150 kt. Both of these are considerably higher than the lowest strategic ballistic missile warhead yield (100 kt), the lowest ALCM yield selection (5 kt), or the smallest strategic bomb yield (less than 1 kt). Thus at present a definition based on yield alone is not possible.

A fourth way of distinguishing between TNWs and strategic weapons, although perhaps not one appropriate for establishing a definition for arms limitation purposes, might be based on the ownership of the weapons. There are two veins to this argument. First, the classification of nuclear weapons depends on the command structure that owns the weapon. For example, U.S. strategic weapons are operated by the U.S. Strategic Command, while the U.S. Navy and the U.S. Air Force each hold tactical weapons that would fall under the control of theater commanders when deployed.

The second type of ownership is national ownership. For example, though China likely considers much of its nuclear force to play a strategic role, by U.S.-Russia standards most of China’s nuclear weapons would be considered to be tactical weapons. Geographic context is important in deciding whether to define weapons as tactical or strategic, and a definition that has arisen out of the context of negotiations between the United States and Russia may not translate well to other countries. Assuming that nuclear reductions will eventually be worldwide in scope, ill-considered definitions could complicate the process of bringing other countries into existing arms reduction frameworks.

A fifth possible approach would be to classify TNWs by their delivery vehicle. Previous nuclear arms control treaties have been based on this approach, and this definition may have some promise assuming that the two countries could agree on the categorization of each type of delivery systems. However, bombs are likely to be problematic for this approach. While at present each nuclear bomb (or type of bomb) is likely to be assigned exclusively to either strategic or tactical aircraft types, in actual practice a given bomb could likely be delivered by either tactical or strategic aircraft (although the largest strategic bombs might be too large for tactical aircraft). Another possible problem with this approach would be strategic ballistic missile submarines, which are also capable, at least in the Russian case, of launching nuclear anti-submarine weapons, such as torpedoes.

The above approaches attempt to discriminate between tactical and strategic weapons based on differences in the characteristics of these two classes of weapons. That none of these approaches is entirely suitable reflects the overall similarity between some types of strategic and tactical weapons. It also leaves us with a definition by exclusion: TNWs are those nuclear weapons whose deployment is not regulated under the START treaties (and which have not been eliminated as theater weapons by the INF treaty). This definition is in fact the one that discussions of TNW arms control and estimates of TNW stockpiles use by default.

Even this definition is not entirely without complications. In connection with START I, the United States and Soviet Union each declared that they would not deploy more than 880 long-range nuclear SLCMs. In addition, nuclear strategic defense weapons may exist. The only such warheads are the 100 warheads on the interceptors of the Russian ABM system around Moscow, although recent reports indicate that the nuclear warheads may have been removed from this system and the interceptors converted to non-nuclear interceptors.¹ Some types of nuclear air defense weapons (as far as is known, only Russia has such weapons) are sometimes considered to be strategic defense weapons as well, since they could play a role in countering strategic bombers. Here we classify all nuclear air defense weapons as TNWs – note that the Soviets included such weapons in the unilateral initiatives of 1991.

* * * *

Despite these complications, it appears that this default definition of TNWs is the most practical. Thus here we simply define TNWs as those weapons whose deployment is not regulated by the START treaties – with the exceptions for strategic ballistic missile defense weapons (not counted as TNWs) and long-range nuclear SLCMs (counted as TNWs) noted above.

¹ “Newsbreaks,” *Aviation Week and Space Technology*, March 21, 1998, p. 21.

HISTORY OF TACTICAL NUCLEAR WEAPONS

At the peak of its TNW deployments in 1967, the United States had about 20,000 TNW warheads.² Virtually every type of delivery system that could conceivably deliver a nuclear warhead was equipped with one. The United States' TNWs at that time included artillery shells, land mines (atomic demolition munitions), air-defense missiles, short- and intermediate-range ballistic missiles, cruise missiles, bombs, torpedoes, and depth charges. Although the Soviet Union began its deployment of TNWs later, it ultimately fielded a TNW force of roughly equal size and diversity.³

The 1987 INF treaty required the destruction of all U.S. and Soviet ground-based missiles with ranges between 500 and 5,500 kilometers. This eliminated most of the longer-range TNWs held by the two countries, with the exception of long-range nuclear SLCMs. By mid-1991, the U.S. TNW arsenal had declined to about 7,000 weapons, and further decreases seemed likely in the next few years.⁴ The Soviet military, however, remained much more highly nuclearized, retaining roughly 22,000 TNW warheads.⁵

Spurred in large part by concerns over the safety and security of Soviet TNWs in the turbulent situation following the failed coup attempt against Soviet President Mikhail Gorbachev in September 1991, U.S. President George Bush announced large-scale unilateral reductions in U.S. TNWs and called on the Soviet Union to reciprocate.⁶ Specifically, Bush announced that the United States would withdraw and destroy all short-range nuclear missile warheads, all nuclear artillery shells and all nuclear depth charges. All other U.S. naval TNWs (aircraft bombs and nuclear Tomahawk cruise

² Thomas B. Cochran, William M. Arkin, and Milton M. Hoenig, *Nuclear Weapons Databook, Vol. I: U.S. Nuclear Forces and Capabilities* (Cambridge, Mass.: Ballinger, 1984), p. 14.

³ As of 1988, the Soviet arsenal of TNWs was estimated to consist of about 18,000-19,000 warheads, including air defense weapons. Thomas B. Cochran, William M. Arkin, Robert S. Norris and Jeffrey I. Sands, *Nuclear Weapons Databook, Vol. IV: Soviet Nuclear Weapons* (New York: Harper and Row, 1988), pp. 32-33. Later estimates suggest that the number was either larger at that time or subsequently continued to grow: see footnote 5.

⁴ Robert S. Norris and William M. Arkin, "Nuclear Notebook: U.S. Nuclear Weapons Stockpile (June 1991)," *The Bulletin of the Atomic Scientists*, June 1991, p. 49.

⁵ See table 8 (p. 115) of Alexei Arbatov, "Reductions of Tactical Nuclear Weapons: From Unilateral Steps to International Commitments," in *Disarmament and Security, IMEMO Yearbook 1997-1998. Russia and International Arms Control: Development and Decline* (Moscow: Nauka, 1997), pp. 110-116 (in Russian). The same table is reproduced in Alexei Arbatov, "Deep Cuts and De-Alerting: A Russian Perspective," chapter for Deep Cuts Study Group, *The Nuclear Turning Point* (to be published by the Brookings Institution).

⁶ "Remarks by President Bush on Reducing U.S. and Soviet Nuclear Weapons," *New York Times*, September 28, 1994, p. A4. Additional details were subsequently given by Defense Secretary Dick Cheney and Joint Chiefs of Staff Chairman Colin Powell: "Excerpts from Briefing at Pentagon: 'It Will Make the World a Safer Place,'" *New York Times*, September 29, 1991, p. A10.

missiles) would be withdrawn from deployment and placed in storage. These unilateral reductions would leave the United States with only one type of TNW deployed – tactical bombs deployed in the United States, Europe and South Korea for delivery by land-based aircraft. Bush’s announcement also cancelled the only U.S. TNW then in development, an air-delivered short-range attack missile.

In return for these U.S. actions, Bush called on the Soviet Union “to destroy their entire inventory of ground-launched theater nuclear weapons: not only their nuclear artillery, and nuclear warheads for short-range ballistic missiles, but also the theater systems that the U.S. no longer has – systems like nuclear warheads for air-defense missiles and nuclear land mines.” Eight days later, Gorbachev responded by announcing that the Soviet Union would destroy all its nuclear artillery shells, short-range missile nuclear warheads and nuclear land mines. All naval TNWs and all land-based nuclear air defense weapons would be withdrawn and either placed in storage or destroyed.⁷ Russian President Yeltsin subsequently affirmed the measures announced by Gorbachev and announced that half of the Russian Air Force’s TNWs would be withdrawn and destroyed. He further added that one-third of the naval TNWs and one-half of the air defense warheads would be destroyed. All the TNWs to be eliminated were to be destroyed by the year 2000.⁸ According to one estimate, these unilateral commitments would eliminate 13,700 of the 21,700 TNWs the Soviet Union had at the time the initiatives were announced.⁹

Within weeks of Gorbachev’s announcement, the United States announced that it would withdraw all its nuclear weapons from South Korea, and NATO reduction of its deployed tactical nuclear bombs from 1,400 (including 100-200 British weapons) to about 700.¹⁰ By 1998, this number had been further reduced as the United States continued to pull nuclear bombs back to U.S. territory and as all British nuclear bombs were pulled back to Britain and retired.¹¹ According to one estimate, the

⁷ “Gorbachev’s Remarks on Nuclear Arms Cuts,” *New York Times*, October 6, 1991, p. A12.

⁸ In a 1993 speech, Russian General Vitalii Yakolev, Deputy Chief of the Ministry of Defense’s 12th Main Directorate, announced that the naval weapons to be eliminated would be destroyed by 1995, the Air Force and anti-aircraft weapons by 1996, the nuclear land mines by 1998 and the nuclear artillery shells and short-range missile warheads by 2000. See William M. Arkin, Robert S. Norris, and Joshua Handler, *Taking Stock: Worldwide Nuclear Deployments 1998* (New York: Natural Resources Defense Council, 1998), p. 10. Reportedly, about 80 percent of the Russian tactical weapons to be eliminated had been destroyed by April, 1998. British American Security Information Council, BASIC Reports #64, June 4, 1998, p. 4.

⁹ Arbatov, “Reductions of Tactical Nuclear Weapons,” and “Deep Cuts and De-Alerting.”

¹⁰ Don Oberdorfer, “U.S. Decides to Withdraw A-Weapons from S. Korea,” *Washington Post*, October 19, 1991, p. A3; R. Jeffrey Smith, “NATO Approves 50% Cut in Tactical A-Bombs,” *Washington Post*, October 19, 1991, p. A28.

¹¹ These British bombs were formally retired on March 31, 1998. “News Briefs: UK Withdraws Tactical Nukes from Service,” *Arms Control Today*, March 1998, p. 28.

United States now has only about 150 nuclear bombs in Europe.¹² In addition, following the recommendations of the 1994 Nuclear Posture Review, the United States announced that it would eliminate its capability to deploy nuclear SLCMs on surface ships and to deploy nuclear bombs on aircraft carrier-capable aircraft.

THE CURRENT STATE OF TACTICAL NUCLEAR WEAPONS

United States

The United States currently has about 1,000 tactical nuclear weapons of two types — about 650 B-61 bombs for dual-capable aircraft and 320 nuclear Tomahawk SLCMs, which are stored in depots in the United States for possible redeployment on attack submarines.

The B-61 bomb is currently deployed in five variants.¹³ The B61-7 and B61-11 are assigned to the strategic forces. The other strategic bomb, the B-83, is a larger bomb with a maximum yield of 1.2 megatons. The B61-7 has several yield options ranging from “subkiloton” to 350 kt. At least one report states that the minimum yield of the B61-7 is 0.3 kt.¹⁴ The B61-11 is a newly developed version of the B61-7 modified to have an earth-penetrating capability and apparently has the same yield options. The ability of the B61-11 to be delivered by both strategic and tactical forces has been demonstrated by test drops of dummy bombs from B-1, B-2, and F-16 aircraft.¹⁵ Of the roughly 1,000 strategic bombs in the U.S. arsenal, 350 are B61-7s, 50 are B61-11s, and the rest are B-83s.

The other three variants, the B61-3, -4, and -10, are assigned to the tactical forces. All three types have four yield options, with the lowest yield being 0.3 kilotons for each type. Their maximum yields are 170, 45, and 80 kt respectively. It is estimated that the United States currently has about 650 operational tactical bombs, of which 500 are stored in country (at Nellis AFB in Nevada) and 150 are deployed in seven west European countries.¹⁶ An additional 600 B-61 bombs are believed to be in storage at Kirtland AFB in New Mexico, awaiting shipment to the Pantex plant in Texas for dismantlement.

¹² *Taking Stock*, p. 25.

¹³ Unless otherwise noted, details about the bombs are from Robert S. Norris and William M. Arkin, “NRDC Nuclear Notebook: U.S. Nuclear Stockpile, July 1997,” *Bulletin of the Atomic Scientists*, July/August 1997, pp. 62-63.

¹⁴ Greg Mello, “New Bomb, No Mission,” *Bulletin of the Atomic Scientists*, May/June 1997, pp. 28-32

¹⁵ Mello, “New Bomb,” p. 31.

¹⁶ *Taking Stock*, pp. 25, 54.

The 320 nuclear Tomahawk SLCMs are believed to be stored at two bases, the Naval Submarine Base in Bangor, Washington and the Naval Weapons Station Yorktown in Virginia.¹⁷ These missiles could be redeployed aboard U.S. attack submarines, which are capable for launching them through their torpedo tubes and in some cases through vertical missile launchers in the bow of the submarine (about half of the current U.S. attack submarines have such vertical launchers). The nuclear Tomahawk has an operational range of 2,500 km (although it is capable of flying considerably greater distances).¹⁸ Its warhead has a selectable yield of either 5 or 150 kilotons and an accuracy, measured in Circular Error Probable (CEP), of less than 100 meters. The United States has several thousand conventionally-armed Tomahawks, many of which are deployed on U.S. surface ships and submarines. These weapons are nearly identical in appearance to the nuclear Tomahawks.¹⁹

Russia

The current state of Russian TNWs is very unclear, with little official information available. What is clear is that at the beginning of the decade, the Soviet Union had a large number of tactical nuclear weapons (upwards of 20,000), and that all of these weapons were subsequently withdrawn back into Russia. Many of these weapons have apparently been withdrawn from deployment and some destroyed, but little detailed information about this process is available.

Two publicly available estimates both conclude that Russia now has slightly less than 4,000 operational TNWs, but the differences between the two estimates regarding the composition of the Russian TNW force only highlights the uncertainty regarding Russian TNWs – the estimates differ significantly in every category. These two estimates, by the NRDC²⁰ and Alexei Arbatov,²¹ are summarized in the table below. In addition, the NRDC estimates that there could be up to 12,000 additional warheads in reserve or awaiting dismantlement.

¹⁷ *Taking Stock*, p. 54, and Robert S. Norris and William M. Arkin, “U.S. Nuclear Stockpile, July 1998,” *Bulletin of the Atomic Scientists*, July/August 1998, pp. 69-70.

¹⁸ For a discussion of the range of the nuclear Tomahawk, see George N. Lewis and Theodore A. Postol, “Long-range Nuclear Cruise Missiles and Stability,” *Science and Global Security*, Vol. 3, Nos. 1-2, pp. 49-100.

¹⁹ In principle, a visual inspection could distinguish between the types, since conventional land-attack Tomahawks have two apertures for terminal guidance which the nuclear versions lack, and the nosecone shape is different on conventional anti-ship Tomahawks. However, Tomahawks are kept in sealed canisters so that these differences are not readily visible.

²⁰ *Taking Stock*, pp. 26-27.

²¹ Arbatov, “Reductions of Tactical Nuclear Weapons,” and “Deep Cuts and De-Alerting.”

| ESTIMATES OF CURRENT RUSSIAN TNW FORCES | | |
|---|-------------|----------------|
| <i>Type of weapon</i> | <i>NRDC</i> | <i>Arbatov</i> |
| Air defense missiles | 1,100 | 600 |
| Land mines | 0 | 200 |
| Tactical aviation | 1,600 | 1,000 |
| Naval weapons | 1,200 | 2,000 |
| | ----- | ----- |
| TOTAL: | 3,900 | 3,800 |

Other Countries

As noted above, Britain retired the last of its TNWs, air-deliverable bombs, in March 1998, and thus the British nuclear arsenal now consists only of warheads on submarine-launched ballistic missiles (SLBMs), which would be classified as strategic weapons in the U.S.-Russian context. France's nuclear force is based primarily on such SLBMs; however, France also deploys roughly 70 ASMPs – 300 km range air-to-ground missiles intended for delivery by tactical aircraft, and plans to eventually deploy a longer-range version (the ASMP-plus).

Much less is known about the nuclear forces of other countries with nuclear weapons. China is believed to possess several hundred warheads deliverable by ballistic missile or bomber, and all but 10-20 of these have ranges less than what would be considered to be strategic in the U.S.-Russian context. China also may have other types of nuclear weapons specifically intended for battlefield use, such as artillery shell or short-range rockets. Israel may have up to several hundred nuclear weapons, and India and Pakistan a few tens each, all or most of which would likely be classified as tactical weapons by the United States or Russia. However, for these countries as well as China, many of these shorter range weapons undoubtedly are seen as playing strategic roles.

RECENT DISCUSSIONS AND PROPOSALS ON TNWS

Several recent reports have addressed the issue of TNWs, suggesting a variety of approaches. Among the more notable are:

- The 1997 study by the *Committee on International Security and Arms Control (CISAC) of the National Academy of Sciences* on the future of U.S. nuclear weapons policy concluded that U.S. TNWs are no longer needed in Europe but that they should only

be withdrawn after extensive high-level consultations with the NATO allies.²² In arguing for reductions in TNWS, CISAC cited generally less sophisticated controls on the use of TNWS and a greater vulnerability of TNWS to theft or unauthorized use. CISAC argued that TNWS should be left out of START III to avoid complications that could delay the negotiations, but that subsequent negotiations should impose a single limit covering both strategic and tactical weapons.

- *The Canberra Commission* recommended, as an “additional immediate step,” that “the nuclear weapons states should unilaterally remove all non-strategic nuclear weapons from deployed sites to a limited number of secure storage sites on their territory.”²³

- *The Stimson Center Project on Eliminating Weapons of Mass Destruction* (written just prior to the Helsinki Summit in March of 1997) suggested that beginning with START II, “any future negotiated reductions of nuclear weapons would apply to both tactical and strategic weapons.”²⁴

Other proposals by individuals include:

- *William Potter* stresses the dangers posed by a possible loss of control of some Russian TNWS as well as by the increasing Russian reliance on nuclear weapons.²⁵ Among the possibilities for TNW limits Potter raises as being worthy of consideration are a verified freeze on numbers and locations of TNWS in Europe from the Atlantic to the Urals, a nuclear-weapon-free zone in central and eastern Europe, a codification of the U.S.-Russian unilateral initiatives on TNWS, and as a further step, the complete elimination of TNWS from Europe. He argues that the United States will have to take the lead in eliminating TNWS, and suggests that the first steps in this process could be: (1) a U.S. declaration that it will unilaterally withdraw its TNWS from Europe, (2) the codification of the unilateral initiatives, including data exchanges and a formal verification regime, (3) an exchange of data on all other TNWS in Europe west of the Urals (which could be extended to all TNWS globally), and (4) the consolidation of all TNWS in Europe into declared storage sites from which they could subsequently be removed for verified dismantlement.

²² Committee on International Security and Arms Control, U.S. National Academy of Sciences, *The Future of U.S. Nuclear Weapons Policy* (Washington, D.C.: National Academy Press, 1997).

²³ Canberra Commission on the Elimination of Nuclear Weapons, Report, August 1996.

²⁴ *An American Legacy: Building a Nuclear-Weapon-Free World (Final Report of the Steering Committee, Project on Eliminating Weapons of Mass Destruction)*, Henry L. Stimson Center, Report No. 22, March 1997.

²⁵ William C. Potter, “Unsafe at Any Size,” *The Bulletin of the Atomic Scientists*, May/June 1997, pp. 25-27, 61.

- *Matthew Bunn* argues that, given the currently near stagnant state of nuclear reductions, another round of “fast, informal, reciprocal reduction initiatives” like those initiated by President Bush in 1991 is needed.²⁶ He suggests that, assuming Russian reciprocation, President Clinton should announce that almost all unregulated U.S. warheads, including non-deployed strategic warheads and most TNW warheads, would be placed in secure storage. These storage sites would be open to Russian inspection, with a commitment to eventually eliminate the weapons they contain. Taking such a step immediately (leaving some of the technical details to be worked out later as was the case with the 1991 initiatives) would put 70-80 percent of U.S. and Russian warheads in secure storage, reducing U.S. concerns about the security of Russian weapons and Russian concerns about the possible redeployment of U.S. warheads on strategic missiles downloaded under START II.

- *Nikolai Sokov* stresses the problems posed by a resurgent Russian interest in TNWs.²⁷ He concludes that TNWs have serious negative consequences and that unless measures to reduce or eliminate them are taken in the next few years, a new arms race could result. Like Potter, he also argues that the United States must take the initiative on TNWs. As a first step he suggests the codification of the unilateral initiatives to make them legally binding and verifiable. This would be followed by the withdrawal of U.S. and Russian TNWs from Europe, with the withdrawn warheads being verifiably eliminated. Finally, TNWs would be eliminated globally.

- *Alexei Arbatov* states that Russia is caught between wanting to keep TNWs to counter the conventional superiority of both NATO and China and wanting to pursue mutual reduction to get rid of the threat posed by NATO TNWs.²⁸ He further argues that Russia’s force of TNWs soon will decrease sharply – essentially all current Russian TNWs will be obsolete by 2003 – and that relatively few new TNWs will be built because the production facilities will be occupied with dismantling old TNWs. He projects that by 2003 Russia will have only a few hundred or at most one thousand TNWs. He suggests a fully verified reduction to 500 TNWs each, of which no more than 100 could be in Europe. TNWs would be prohibited from central and eastern Europe, from Turkey, and from the western parts of Russia. U.S. and Russian TNWs could subsequently be reduced to 100-200 each. Eventually, assuming relations with China and the non-proliferation regime evolve favorably, TNWs could be eliminated from all nuclear weapons states.

- *Stephen Lambert and David Miller* stress concerns about the security and possible loss of control over Russian TNWs as well as the growing Russian interest in

²⁶ Matthew Bunn, “Act Now, Mr. President,” *The Bulletin of the Atomic Scientists*, March/April 1998, p. 4.

²⁷ Nikolai Sokov, “Tactical Nuclear Weapons Elimination: Next Steps for Arms Control,” *The Nonproliferation Review*, Winter 1997, pp. 17-27.

²⁸ Arbatov, “Reductions of Tactical Nuclear Weapons,” and “Deep Cuts and De-Alerting.”

relying on TNWs to compensate for conventional weakness.²⁹ They propose an Air-Delivered Nuclear Forces Regime that would limit and eventually eliminate all nuclear weapons, tactical *and* strategic, delivered by any type of aircraft. France would be included (but they do not mention China). They argue that air-delivered tactical weapons are more offensive than other, shorter-range, TNWs and thus should be eliminated first, and that Russia was about to make a proposal similar to theirs when it was pre-empted by the Bush announcement of the unilateral initiatives.³⁰

SYNTHESIS

Why Keep TNWs?

Arguments for U.S. TNWs after the Cold War have included:

(1) TNWs are needed to maintain alliance commitments, particularly in Europe.

(2) TNWs are needed to provide a regional nuclear capability that is distinct from the U.S. strategic forces and is thus more credible as a deterrent. By providing a link between U.S. conventional and strategic nuclear forces it is argued that TNWs also make nuclear deterrence more credible.³¹

²⁹ Stephen P. Lambert and David A. Miller, *Russia's Crumbling Tactical Nuclear Weapons Complex: An Opportunity for Arms Control*, INSS Occasional Paper 12, USAF Institute for National Security Studies, U.S. Air Force Academy, April 1997.

³⁰ In fact, the Russian proposal they describe seems to differ significantly from their proposal. It would have covered all tactical weapons, would not have included strategic bombers, and would not have involved France or Britain (which at that time had nuclear bombs).

³¹ Cf: Deputy Secretary of Defense John Deutch at press conference announcing results of nuclear posture review, September 22, 1994:

Q: What's the purpose of nuclear Tomahawks? Nuclear weapons on Tomahawk missiles?

A: Because in a hypothetical situation where you have an exchange or reach of nuclear weapons that do not involve the homeland of either the United States or Russia, or which involve— you can argue how realistic this is today, historically— the security of NATO. The way you deter that from happening is to have an ability to respond on a regional basis

And, Under Secretary of Defense, Walter Slocombe, written response to a question from Senator Glenn, Subcommittee on International Security, Proliferation and Federal Services of the Senate Committee of Governmental Affairs, February 12, 1998:

Q: What is the official military mission of the nuclear-armed Tomahawk?

A: The nation's Non-Strategic Nuclear Force (NSNF) is available to be deployed to or tasked to support theater nuclear requirements and thereby link conventional forces to the full nuclear capability of the United States. The Tomahawk missile, in particular, since it is carried aboard our attack submarines, gives the ability, in a crisis, to hold at risk key targets from a stealthy, offshore position.

(3) TNWs are needed for use in situations where very low yield nuclear weapons might be needed, e.g., attacks on deeply buried shelters or counter-proliferation missions targeting chemical or biological weapons facilities.

(4) TNWs are needed to deter and/or respond to the use of weapons of mass destruction by third world countries, particularly the use of chemical and biological weapons.

(5) TNWs are needed as a “last resort” measure to protect U.S. forces overseas should some crisis arise that could not be dealt with by other military means.

(6) TNWs are needed to counter Russian TNWs.

These arguments for U.S. TNWs appear to be very weak:

(1) There is no longer any technical or military need for U.S. TNWs in Europe. The 1997 National Academy of Sciences study concluded that there was no longer a need for U.S. TNWs in Europe and argued that NATO’s conventional superiority, the U.S. strategic nuclear forces, and British and French nuclear forces were more than adequate to assure European security.³² However, many European leaders apparently view these weapons as a stabilizing influence which they believe is desirable to retain over the near- to mid-term.³³ Nevertheless, their withdrawal is unlikely to have any serious repercussions provided that it is coordinated with a withdrawal of Russian weapons from western Russia. In particular, it is implausible that, as is sometimes argued, any of the allies would seek their own nuclear weapons in response.³⁴ There was little negative reaction when the United States pulled its nuclear weapons out of South Korea or when it removed the nuclear capability from U.S. Navy surface ships based in Japan, and both of these countries face greater external security threats than do the United States’ NATO allies. Nor has there been any significant negative reaction as the United States has reduced the number of TNWs it deploys in Europe by about 90 percent over the last few years. Clearly such a withdrawal should not be an abrupt pullout, but should be preceded by discussion within NATO. Nevertheless, the only way to determine with certainty the Europeans’ reactions will be to raise with them the issue of withdrawing the TNWs.

³² *The Future of U.S. Nuclear Weapons Policy*, p. 39.

³³ Andrew J. Goodpaster, C. Richard Nelson, and Steven Philip Kramer, *Nuclear Weapons and European Security*, Policy Paper, The Atlantic Council of the United States, April 1996.

³⁴ The country that is most often cited as being likely to do so is Germany. For a strong argument on why this is essentially impossible for Germany, see Harald Mueller, “A View from Germany,” in *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-Alerting of Nuclear Weapons* (to be published by Brookings). The National Academy study similarly argues that such a concern about Germany is of “dubious validity.” *The Future of U.S. Nuclear Weapons Policy*, p. 39.

(2) The argument that TNWs are needed as a regional deterrent or as a link to the strategic nuclear forces hinges on the idea that, by using tactical rather than strategic weapons, a nuclear conflict can be limited to a single theater and will not escalate to attacks on U.S. territory. (Or equivalently, that the response of a victim of a nuclear attack depends on the point of origin of the attack or what type of delivery system was used). This argument was suspect even in the context of matching U.S. and Soviet TNW forces, and it makes even less sense now, when most potential nuclear targets will not have nuclear forces that are neatly divided into strategic and tactical forces. Moreover, with the possible exception of Russia, it is unlikely that the victim of a U.S. nuclear attack would even be able to identify whether the weapon that struck it was a strategic or tactical one — this is particularly evident in the case of an attack by cruise missiles.

(3) The argument that TNWs are needed for their lower yields appears to be simply wrong. It cannot apply to a nuclear SLCM, since its lowest yield is the same as that of a strategic nuclear ALCM. While the smallest yield of the U.S. tactical bombs (0.3 kt) *may* be smaller than that of the smallest strategic bomb (less than 1 kt, and possibly the same 0.3 kt), the difference is at most not large. Moreover, if there is a difference it can be eliminated entirely simply by taking some of the tactical bombs and putting them in the bomb stock for the strategic bombers.³⁵

(4) A strong case can be made that the United States does not need nuclear weapons to deter or respond to the use of chemical and biological weapons, since it has overwhelming conventional capabilities. Moreover, the actual use of nuclear weapons in retaliation could do serious damage to the United States' long-term security interests by undermining the nuclear non-proliferation regime. In any event, as the discussion in points (2) and (3) above make clear, if nuclear weapons are really needed for this role, TNWs do not provide any significant capability that cannot be provided by the strategic forces.³⁶ In fact, the only U.S. nuclear weapon that might bring a unique capability to this role is the earth-penetrating B61-11, which is classified as a strategic weapon.

(5) To the extent that nuclear weapons might someday be needed as a “last resort” weapon, it is clear from the above discussion that strategic weapons could fill this role as well as, or better than, tactical weapons.

³⁵ As discussed above, it has already been demonstrated that at least one of the B-61 bomb variants can be delivered by both strategic and tactical aircraft, so it is unlikely there would be any great difficulty in dropping the tactical variants from strategic bombers.

³⁶ The argument is sometimes made that the nuclear SLCM provides a unique capability because it can be covertly launched from a submarine close to a target country and fly deep into it undetected. However, the strategic Advanced Cruise Missile (ACM) has a much greater range than the Tomahawk and thus can reach the same targets while being launched so far from the target country that there is little chance of its launching platform (currently B52 bombers) being detected. Moreover, the ACM is stealthier than the Tomahawk, and so is even less likely to be detected.

(6) U.S. TNWs do not appear to be particularly well suited to countering Russian TNWs. Many types of Russian TNWs, such as anti-ship or air-defense weapons, have no U.S. nuclear counterparts. In addition, this argument depends on the idea that Russia will view the use of U.S. TNWs as different from the use of strategic weapons, and therefore will respond differently to their use. However, U.S. nuclear SLCMs are viewed by Russia as strategic weapons, and U.S. forward-deployed nuclear-armed aircraft are viewed by Russia as a threat to its strategic forces.

Arguments for Russian TNWs include:

(1) TNWs compensate for the weakness of Russia's conventional forces. In particular, TNWs are seen as the only way to equalize Russian forces with those of China and NATO, especially as NATO expands eastward. TNWs are also seen as countering NATO's advantage in precision-guided weapons. In general, TNWs are seen as necessary to deter conventional aggression against Russia.

(2) If deterrence fails and Russia is attacked, TNWs are seen as the only way Russia can successfully defend itself.

(3) TNWs are needed to counter U.S. TNWs, which not only threaten Russian conventional forces but also their strategic nuclear forces.³⁷

(4) TNWs are needed to counter the threat of proliferation of weapons of mass destruction, including chemical and biological weapons.

(5) TNWs might be useful in preventing or localizing regional conflicts.

The Russian rationales for TNWs seem more substantial than those of the United States. Russian conventional forces are considerably weaker than those of NATO and possibly those of China. This issue is of great concern because, as the Chechnya experience showed, Russian conventional forces may not even be capable to deal with some types of military problems with smaller neighboring countries (although it is difficult to see how nuclear weapons could be useful in a Chechnya-type conflict). Thus, an interest in reliance on tactical nuclear weapons to compensate for conventional military weakness is not surprising, especially given the prior U.S. reliance on TNWs for this very reason.

It is not as clear as in the U.S. case how well Russian strategic forces could substitute for their tactical nuclear forces. The AS-16 short-range attack missiles on the Blackjack bombers may be able to carry out any required missions against land targets. However, the collapsing state of the Russian strategic bomber force may limit its ability to substitute for TNWs. Moreover, some types of Russian TNWs —

³⁷ According to Russian General Vladimir Dvorkin, up to 50 to 60 percent of Russian strategic facilities are within range of NATO TNW, and this would increase to 70 to 80 percent if TNWs were deployed in the new NATO countries (cited in Sokov, "Tactical Nuclear Weapons Elimination," p. 20).

such as anti-ship and anti-submarine TNWs, which are seen as having key roles in countering U.S. naval forces – could not be easily substituted by current strategic forces. On the other hand, Russian TNWs may not be well suited for some of the roles that have been proposed for them. Most of them have short ranges and thus would not be well suited to countering U.S. TNWs, all of which can reach Russian territory if forward deployed – and which thus might be better countered by the Russian strategic forces. Russian strategic forces should also be able to provide some degree of deterrence against a major attack on Russia or against chemical and biological weapons attacks.

The belief within Russia that its conventional weakness requires it to increasingly rely on nuclear weapons, and TNWs in particular, for its security may be the greatest barrier to significant progress in reducing or eliminating TNWs. This belief has been reinforced by the expansion of NATO and will almost certainly be further strengthened by U.S. deployments of advanced theater missile defenses and the increasingly likely U.S. deployment of a national missile defense system (NMD) (and the weakening or elimination of the ABM treaty that such a deployment would require).

The U.S. deployment of a NMD system covering the entire country would violate the ABM treaty, and thus would require either significantly modifying the treaty or withdrawing from it. Given that Russian agreement on modifying the treaty is likely to be difficult to obtain, such a deployment is likely to become an irritant in U.S.-Russian relations. Moreover, it would pose a direct threat to U.S.-Russian strategic arms control as Russian ratification of START II, if it occurs, is likely to be conditioned on U.S. adherence to the ABM treaty and on the non-deployment of a NMD system. U.S. theater missile defense deployments, which are specifically intended to be effective against the type of short-range missile Russia is reportedly considering deploying as a TNW, also could increase Russian reluctance to limit TNWs by threatening the effectiveness of a small Russian TNW missile force.

While it will be up to proponents of nuclear reductions within Russia to convince the Russian leaders and Russian citizenry that TNWs are not essential to Russian security (or at least that many fewer of them are needed), the U.S. treatment of Russia on a wide range of issues can have a significant influence on any debate over the future roles of Russian nuclear weapons.

Why Limit TNWs?

TNWs are the only deployable U.S. and Russian nuclear weapons not subject to formal arms control limits. As the strategic arms control process moves towards ever-lower numbers, it is important that *all* U.S. and Russian nuclear weapons be included in the reductions process. Leaving a large class of nuclear weapons out of this process would undermine the entire regime. The impact of deep U.S.-Russian reductions to, for example, a few hundred strategic warheads (or even a thousand warheads) would be severely diluted if each country also retained roughly one

thousand or more tactical nuclear weapons as they do today. Some TNWs, such as long-range SLCMs or bombs for tactical aircraft, could in fact directly fill some of the roles and missions of eliminated strategic weapons. This possibility will become increasingly important as the number of strategic warheads is reduced.

The need to include TNWs in the nuclear reduction process is even more evident when the participation of other nuclear nations is considered. The attainment of deep reductions in the U.S. and Russian arsenals will eventually require the participation of China in particular, but China has made it clear that its participation requires U.S. and Russian reductions to levels roughly comparable to China's arsenal. When China counts U.S. and Russian weapons it will undoubtedly include their TNWs, and indeed most of China's nuclear weapons would be classified as TNWs in the U.S.-Russia context. The retention of U.S. and Russian TNWs at their current level would alone almost certainly be sufficient to preclude Chinese participation in nuclear reductions.

TNWs may also present nuclear dangers that are in some ways even greater than those associated with strategic weapons. TNWs deployed with operational forces may run risks of accidents or other incidents. This danger should not be overstated, since at present it is believed that all U.S. and Russian TNWs are in storage. However, even TNWs not deployed with operational units may be at greater risk of unauthorized use or theft than strategic weapons.³⁸

Because TNWs are explicitly designed and intended for use at less than a strategic level, they may be viewed as more usable than strategic weapons and thus increase the possibility that a non-nuclear conflict could escalate to nuclear use. Since they would generally be used earlier in a conflict than strategic weapons, they raise the risk of starting a nuclear war that would have otherwise remained non-nuclear.³⁹ In order to use TNWs effectively in a conflict (or for the sake of credibility to give the appearance that TNWs might actually be used in a crisis) it might be necessary to release use authority and weapons-unlock codes to relatively low levels, increasing the risk of a nuclear use that might have otherwise been avoided. Further, forward-deployed TNWs could become entangled in a conventional conflict and find themselves in a "use it or lose it" situation.

In addition, simply by the nature of the missions they are intended for, TNWs may erode the principle that nuclear weapons are only to be used to deter the use of other

³⁸ Potter, "Unsafe at Any Size," emphasizes that older types of Russian TNWs may not have effective permissive action links and that TNWs for Russian tactical aircraft are not kept at central storage sites.

³⁹ Even if no nuclear use is intended, because TNWs are often operated by units with conventional roles, TNWs could result in nuclear-armed units getting involved in conventional military operations, raising the possibility of unintended nuclear incident. For example, TNWs were apparently deployed on British ships during the 1982 Falklands war (Rebecca Johnson, *British Perspectives on the Future of Nuclear Weapons*, Occasional Paper #37, The Henry L. Stimson Center, January 1998, p. 8).

nuclear weapons. The retention of such war-fighting nuclear weapons by the United States and Russia may provide legitimacy or incentives for other countries seeking to acquire nuclear weapons.

Why Now?

Following the ratification of START II by the Russian Duma, the United States and Russia are committed to a prompt beginning of negotiations on START III, and it is possible that a framework agreement setting the terms of START III could emerge shortly after the ratification of START II. It now appears that TNWs will be discussed in separate negotiations concurrent with the START III negotiations. It is important that these negotiations on TNWs produce results in the near term rather than over many years.

The current state of the Russian TNWs provides a potentially unique opportunity for limiting TNWs. Russia's entire TNW force is aging. While Russia now has several thousand TNWs, by roughly 2003 all or nearly all of these weapons will have exceeded their design life and be due for retirement. Although it will be possible to extend the lifetimes of at least some of these weapons, it is clear that if Russia wishes to maintain significant numbers of TNWs, it will soon have to commit to new production programs for TNWs. Once such programs begin to yield notable deployments, it may be much more difficult to get Russia to agree to significant limitations on TNWs. On the other hand, an agreement sharply limiting TNWs could turn the approaching block obsolescence of Russian TNWs into an advantageous situation for both countries. The United States avoids a Russian buildup of new TNWs (and possibly a politically generated need to respond in kind); Russia not only saves money and resources by foregoing a buildup of TNWs but also trades obsolete TNWs for relatively newer U.S. weapons.

Just as important is the idea that Russia needs nuclear weapons, and TNWs in particular, to compensate for conventional military weakness. Russia might soon take steps that could undermine the prospects for limiting TNWs and could even lead to a new competition in TNWs.⁴⁰ For example, Russia reportedly has tested and soon may deploy a new nuclear-armed tactical ballistic missile with a range of about 400 km.⁴¹ While former Russian Atomic Energy Minister Viktor Mikhailov's suggestion that Russia could deploy 10,000 low-yield tactical nuclear weapons is viewed as extreme, many Russians might agree with the general idea of using such weapons to improve Russia's military capabilities.⁴² A Russian deployment of significant

⁴⁰ Sokov "Tactical Nuclear Weapons Elimination," in particular argues this point.

⁴¹ Martin Sieff, "Cash-Strapped Russian Forces Increase R&D Spending Sixfold," *Washington Times*, May 14, 1997, p. 8.

⁴² Viktor Mikhailov, Igor Andryushin, and Alexander Chernyshov, "NATO's Expansion and Russia's Security," *Vek*, September 20, 1996.

numbers of new TNWs in support of a nuclear-oriented defense doctrine would be a serious setback for nuclear arms control efforts. Moreover, a Russian program of TNW redeployment could prevent the United States from further reducing its TNW forces in Europe. A prompt agreement on limits on TNWs could head off these adverse possibilities.

As noted above, some TNWs may pose greater risk of accident, theft or unauthorized use than strategic weapons, and in the event of a serious conflict involving a nuclear-armed nation, the presence of TNWs can increase the risk of nuclear use. Reducing the absolute numbers and the number of types of such weapons could reduce these risks. The sooner this is done the better.

It is clear that efforts to limit TNWs still face significant obstacles. Even basic information regarding the number and status of Russian TNWs is lacking, in contrast to the detailed data exchanges on strategic weapons that now regularly take place between the United States and Russia. Limits on TNWs are also likely to raise crucial verification problems. Some types of TNWs are much more difficult to observe unilaterally by national technical means, and many of them are dual capable or exist in both conventional and nuclear variants. For some types of TNWs, direct monitoring of warheads may be necessary for effective verification. Resolving these issues will take time, and it is possible that some or all of them will need to be resolved before significant negotiated reductions in TNWs can be accomplished. Thus it is important to begin to make progress on these issues with some urgency.

Finally, both countries now would like to achieve certain objectives relating to TNWs, thereby creating the potential for an agreement. The United States would like to see the Russian unilateral reductions codified and made irreversible, greater transparency on the status of Russian TNWs and further reductions in the number of Russian TNWs. Russia would like to see further limits on U.S. long-range nuclear SLCMs⁴³ (or even better yet, their elimination) and the withdrawal of U.S. TNWs from Europe.

A SPECIFIC PROPOSAL

The United States and Russia/Soviet Union have significantly reduced their TNW stocks from their peak holdings. All of these reductions have occurred either through unreciprocated unilateral reductions or through the mutual unilateral initiatives of 1991. The great advantage of such mutual unilateral steps is that they can be carried out very quickly by the presidents, without a lengthy or complex negotiation process or the need for ratification, leaving details to be filled in later. Why not simply continue this unilateral process? A number of issues need to be kept in mind when considering such an approach, including:

⁴³ As mentioned earlier, one concern seems to be that the U.S. could take the W84 warheads built for the ground-launched cruise missiles eliminated by the INF Treaty and put them on Tomahawks.

First, the previous TNW reductions were essentially limited to weapons that neither country had any important interest in keeping (of course, this has been true in most, if not all, nuclear reductions to date). It is not clear that either country, and Russia in particular, is immediately willing to part unilaterally with all its remaining TNWs.

Second, the effectiveness of some types of unilateral reductions could be limited by the great asymmetry that now exists between Russian and U.S. TNWs (of which there are only two kinds). For example, consider a unilateral U.S. elimination of its nuclear Tomahawk SLCMs: While Russia could conceivably eliminate all its naval TNWs in return, this seems unlikely, given the perceived Russian need for these weapons to counter the U.S. Navy. Thus the U.S. initiative might be met by some more limited step such as a Russian elimination of its nuclear Tomahawk counterpart, the SS-N-21 long-range nuclear SLCM. Such an exchange would eliminate all U.S. naval TNWs while affecting only a small portion of Russia's naval TNWs, leaving little incentive for Russia to consider further limits on its naval TNWs.

Third, as the previous example illustrates, some significant types of U.S. unilateral reductions, such as reductions in SLCMs or the withdrawal of TNWs from Europe, could interfere with reductions by reducing Russian incentives to negotiate. The U.S. could put pressure on Russia by threatening to reverse such steps if Russia does not respond, but at the risk of a major setback for TNW arms control if it was actually necessary to carry out this threat. A particularly difficult dilemma could be posed if Russia responded, but with a move that fell short of U.S. expectations.

Finally, unilateral commitments are not legally binding and may be viewed as more easily reversible than a treaty commitment. Moreover, unilateral reductions may not involve verification or even data exchanges. Despite the 1991 initiatives, only very rough information about Russian holdings of TNWs is currently available, and doubts are sometimes raised about whether Russia is in full compliance with its unilateral commitments. Any uncertainty created by the potential reversibility and lack of verification of any measures on TNWs will likely become more important as strategic weapons are further reduced in number.

None of the above issues means that reciprocal unilateral reductions are undesirable or unachievable. They do suggest that any such initiative not focus on individual types of TNWs but rather span the whole category and that any initiative should not immediately call for the complete elimination of all TNWs. It would be desirable for the presidents to agree informally in advance on actions and responses. In addition, it would be useful for the initiative to have some provisions for verification. Finally, any reciprocal unilateral initiatives should be followed up by formal agreements that are both binding and verified. The completion of such a formal agreement would likely take much longer than the implementation of the reciprocal unilateral steps, but it is desirable to consolidate the gains produced by the unilateral steps with formal agreements.

There are a number of substantial political, technical and practical obstacles standing in the way of TNW reductions that need to be taken into account in deciding how to proceed in limiting TNWs. These factors include:

- Lack of information on the current status and future plans for Russian TNWs.
- Problems posed by verification of TNW agreements.
- Lack of Russian interest in (or outright opposition to) limiting most types of TNWs.
- Perceived need for TNWs for certain missions in both countries, particularly in Russia.
- Concern by U.S. allies about the possible withdrawal of U.S. TNWs from Europe.
- Possible difficulties with ratification in both the Senate and Duma (which will depend strongly on exactly what limits are placed on TNWs).

At the same time there are also factors that could motivate efforts to limit TNWs:

- Potential dangers posed by TNWs (such as a loss of control).
- Collapsing state of Russian TNWs.
- U.S. interest in securing and reducing the still large number of Russian TNWs.
- Russian interest both in getting U.S. nuclear weapons out of Europe and in limiting long-range nuclear SLCMs.

These considerations point to several conclusions regarding TNW arms control:

- The collapsing state of Russian TNWs presents an important opportunity to greatly reduce the number of TNWs. It is important both to take advantage of this opportunity and to not settle for too little in terms of limits on TNWs. For example, if only the “appropriate confidence-building measures and transparency measures” referred to in the Helsinki Statement are achieved on the time scale of START II and III, a significant opportunity could be lost.

- Nevertheless, problems posed by lack of data and the need for adequate verification could make immediate agreement on significant reductions in TNWs very difficult to achieve. Thus the first objectives of TNW arms control should be measures that aim to reduce as rapidly as possible the immediate dangers posed by TNWs and clear the way for future reductions.

- The perceived need for TNWs, particularly in Russia, makes the elimination of TNWs implausible in the near term. Thus the next objective should be significant reductions in TNWs rather than their elimination.

- There is likely to be significant Russian resistance even to reductions, and the United States will likely have to offer incentives – the obvious candidates for negotiation being withdrawal of TNWs from Europe and limits on long-range nuclear SLCMs. Financial assistance could also be important.

- Once TNWs have been sharply limited, their ultimate disposition, whether elimination, merger with strategic weapons, or some other approach, can be considered.

The above considerations suggest the following three-phase approach to limiting TNWs. In this approach, unilateral steps would play at most a relatively minor supporting role, although many of the phase 1 objectives could be achieved with agreements less formal than treaties. After discussing this three-phase approach, an alternative approach based on initial unilateral steps will be outlined.

PHASE 1:

The phase 1 measures are steps that could be taken relatively easily to reduce immediate dangers posed by TNWs and to set the stage for more significant limits on TNWs. By “relatively easily” we do not imply that these steps will necessarily be easy to achieve, but only that they may be easier to reach agreement on than other limits on TNWs. By “rapidly” we mean that these steps could be completed within a few years, so that the follow-on phase 2 measures could be implemented on the same time scale as the START II and III agreements — by the end of 2007. Many of these steps have areas of overlap and not all of these measures might be needed.

(1.1) *Data exchanges on holdings and status of TNWs.* Such data exchanges are almost certainly necessary for beginning any formal negotiations on limiting TNWs. In particular, the very large uncertainties regarding Russian holdings of and plans for TNWs could be a significant obstacle to reducing these weapons. The importance of an early data exchange in moving TNW arms control along cannot be overemphasized and it should take place at the very beginning of any negotiations.

A minimal set of information to be exchanged might include the number, status, and location of operational and inactive TNWs, as well as TNWs awaiting dismantlement. Additional data exchanges might include future plans for TNW dismantlement and production, historical data on TNW production and dismantlement, and information on TNW delivery systems. Russia may be reluctant to participate in such a data exchange, both for historical/organizational reasons and possibly also because of concerns that revealing the locations of TNWs may increase their vulnerability to attack. Moreover, this is virtually a unilateral step by Russia since there is little not known about U.S. TNW deployments. Nevertheless, such data exchanges are an essential prerequisite to TNW arms control and thus to achieving objectives of interest to Russia, such as the withdrawal of U.S. nuclear weapons from Europe.

(1.2) *An agreement to withdraw all TNWs to secure storage, from which they could not be removed without informing the other country.* Withdrawing all TNWs into a relatively small number of secure storage sites would help to relieve concerns about the safety and security of these weapons. It would also facilitate the implementation of any verification measures for TNWs. There would be no prohibition against subsequently

removing these weapons, which could ease Russian concerns, both about their vulnerability and about the possible need to deploy them against future threats. Since all U.S. and Russian TNWs are already believed to be in storage, either in central facilities or at military bases, in actual practice this would be a very modest step. Nevertheless, a formal and announced move to full storage of TNWs would be an important symbolic step, further emphasizing the lack of utility of these weapons. If there are TNWs currently not in secure storage, then this move would be an important step towards ensuring their safety and security.

(1.3) *Formalization of Bush/Gorbachev/Yeltsin unilateral initiatives on TNWs.* This would be aimed at clarifying the initiatives and making them legally binding, formally bringing many TNWs into the nuclear arms reductions process. Such a formalization also could clarify some of the ambiguities involved with the initiatives. For example, while Russia committed to eliminating all of its existing short-range nuclear missiles, as mentioned previously, it is reportedly developing a new one. Would the deployment of such new missiles violate Russia's commitments under the initiatives? Formalizing the initiatives would also make it much more politically costly for either country to pull out and thus make the initiatives more irreversible.

It appears that the U.S. government is interested in pursuing this approach. According to Robert Bell, special assistant to the President for National Security, speaking about START III: "Certainly, we expect scrupulous Russian reaffirmation and adherence to the unilateral tactical nuclear reduction commitments that were made in 1990 and 1991 by Gorbachev and Yeltsin, which, in the aggregate, could produce about a two-thirds drawdown."⁴⁴ Although some concerns about Russian compliance have been expressed, Russian leaders have insisted that they are in full compliance with the initiatives, so an agreement on formalizing the unilateral initiatives might not be too difficult to achieve.

(1.4) *Preliminary limits on TNW deployments in Europe — including European Russia.* It could be counterproductive for the United States to remove all of its TNWs from Europe without gaining limits on Russian TNWs significantly beyond a matching withdrawal from European Russia, since doing so could remove much of the Russian incentive for further reductions. Nevertheless, there are more limited steps on TNWs in Europe that might be useful during the early steps. One such possibility would be an agreement to freeze the numbers and locations of all TNWs in Europe from the Atlantic to the Urals (as suggested by Jonathan Dean). Such a freeze would provide greater assurance to Russia that U.S. TNWs would not be deployed to the new NATO countries and forestall a possible buildup of Russian TNWs in European Russia; it thus could be of interest to both countries. In addition, the negotiations associated with such a freeze might prove to be a useful mechanism for the United States to conduct discussions with its allies over the role of its TNWs in Europe as a preparatory step towards their ultimate withdrawal.

⁴⁴ Robert Bell, "Strategic Agreements and the CTB Treaty: Striking the Right Balance," (speech delivered on 18 February 1998), *Arms Control Today*, January/February 1998, pp. 3-10.

(1.5) *Verification measures in association with any of the above steps.* Any of the above steps could be taken without cooperative verification measures, and any of these steps would be still be useful (for example, the unilateral reductions of 1991 were certainly useful, even if unverified). Indeed, to bring about a data exchange as rapidly as possible, it might even be desirable for an initial data exchange to be unverified. However, the addition of cooperative verification measures would strengthen each of these measures and thus would be highly desirable.

Verification of TNWS almost certainly will be built around more intrusive measures than for strategic weapons, where verification has been focused on the large, easily-identifiable, and single-purpose delivery systems that could be monitored by national technical means. In contrast, TNWS and their delivery systems are much smaller and often exist in both conventional and nuclear versions. Verification of TNWS is likely to be built around inspections of individual facilities and monitoring of individual weapons or warheads. In these respects, the verification issues associated with TNWS resembles the verification problems associated with very deep reductions, or even the elimination of nuclear weapons, and the verification approaches developed for such regimes would likely be applicable to TNWS.⁴⁵

The withdrawal of all TNWS to a limited number of secure storage sites would, however, simplify verification. Moreover, for the initial measures discussed above, a full-fledged verification regime may not be needed, particularly given that both sides would still retain several thousand strategic weapons. A small number of short-notice inspections to declared TNW storage sites as well as to former TNW deployment sites might be sufficient and might avoid the delays that could be associated with developing a more rigorous verification scheme.

TNWS might also make a good testbed for the development of verification procedures that subsequently might be used for more rigorous verification of TNWS as well as in verification of deep reductions in strategic weapons. The same considerations that might make it possible initially to accept less than completely rigorous verification of TNW declarations also potentially make them good subjects for such verification “experiments.” Measures and procedures that might be tested out on TNW stockpiles include tagging and perhaps “fingerprinting” individual warheads, establishing chains of custody from storage sites to dismantling sites and challenge inspections for non-declared TNWS.

(1.6) *The United States and Russia could take mutual unilateral actions to help move along a negotiated process of TNW reductions.* In particular, unilateral measures related to measures (1.1) through (1.5) could be useful, such as a unilateral provision of data on TNWS, a unilateral freeze on deployments (perhaps in conjunction with a nuclear-

⁴⁵ See Steve Fetter, *Verifying Nuclear Disarmament*, Occasional Paper No. 29, The Henry L. Stimson Center, October 1996, and *The Report of the Canberra Commission on the Elimination of Nuclear Weapons*, Annex A: *Verification*.

free-zone in central and eastern Europe), or unilateral measures relating to verification of TNWs.

(1.7) *A related possibility would be the establishment of transparency/verification measures on the TNWs that are being dismantled.* It is at least possible and perhaps likely that the next phase of TNW reductions will involve verified dismantlement of at least some of the eliminated nuclear weapons. In addition, the Helsinki Statement established that START III would include “measures related to the transparency of strategic nuclear warhead inventories and the destruction of strategic nuclear warheads,” and such measures relating to warhead dismantlement could similarly be applied to TNWs. This would provide useful experience for designing verification measures for subsequent reductions in TNWs (and strategic weapons) and might also enhance confidence that the unilateral reductions are being carried out.

However, while such verification of dismantlement may ultimately be necessary, it is not as central to the main short-term objectives of securing TNW stockpiles and laying the groundwork for future numerical reductions in TNWs as are the measures in (1.1)-(1.5). Moreover, such dismantlement/transparency measures could take a substantial amount of time to work out. Thus while it is important, useful and ultimately necessary to achieve such verification of dismantlement, the accomplishment of this objective should not be allowed to impede the completion of measures such as those in (1.1)-(1.5) above.

PHASE 2:

By the end of the phase 1 process outlined above, the United States and Russia would have a clear understanding of each other’s TNW forces, all of which would be in secure storage. In the second phase, the United States and Russia would agree to important numerical and geographic limitations on their TNWs. In essence, phase 2 would involve large Russian reductions of mostly obsolescent TNWs in exchange for smaller U.S. reductions of more modern TNWs and a withdrawal of TNWs from Europe.

(2.1) *A relatively low numerical limit, perhaps 500, would be placed on the total number of TNWs held by each side.* As in phase 1, these permitted TNWs would all be in storage. Such a separate agreement would be consistent with the Helsinki Summit Statement’s provision that TNWs would be discussed as separate issues in the context of START III negotiations.

The total number of TNWs permitted in principle could be at any level, but should be no higher than current U.S. numbers (~1,000). To avoid requiring only Russia to reduce, the limit should be lower than this number. The figure of 500 suggested here would require large U.S. reductions but would still leave enough weapons to provide each country with a significant capability for whatever TNW requirements it might still see as necessary.

Moving to a level of 500 weapons each would require large asymmetric Russian reductions. However, such reductions are not as one-sided as they might first appear. Virtually all Russia's TNWs are obsolescent and due for retirement in the near future. Thus, in effect, Russia would simply be accepting a limit on future TNW production. A limit of 500 might not be far from what Russia would actually end up with in the absence of such a limit (alternatively, it would save Russia from the expense of building large numbers of new TNWs). On the other hand, some or all of the TNWs that the United States would have to eliminate have considerable remaining service lives.

The overall numerical limit might also include specific sublimits on certain types of TNWs, such as long-range nuclear SLCMs. The attainment of such lower limits on SLCMs might be a strong incentive for Russia to agree to an overall low limit on TNWs.

This agreement would presumably involve very rigorous verification. Given that all the TNWs will be in storage sites, verification of the status of permitted TNWs should not be difficult. A more difficult problem would be the possibility that either country had kept hidden, non-declared TNWs. A program of suspect site inspections might help mitigate this problem, but would not be able to provide complete confidence that hidden stocks of TNWs did not exist. Ultimately, this problem will be closely tied to the problem of undeclared strategic weapons under a deep cuts regime, and the overall solution might well include comprehensive monitoring of nuclear weapons production and dismantling facilities coupled with the passage of time to ensure that no functional nuclear weapons exist outside the permitted and monitored nuclear stockpiles. A rigorous regime aimed at detecting non-declared TNWs thus should probably be deferred until an overall regime on all nuclear warheads, both strategic and tactical, both deployed and nondeployed, is put in place.

(2.2) The United States and Russia would agree to withdraw all TNWs from Europe, including European Russia. If such a withdrawal were not acceptable at this time, a more limited step towards complete withdrawal could be a TNW-free-zone in central and eastern Europe. More generally, the deployment of TNWs beyond national borders could be prohibited.⁴⁶

PHASE 3:

In phase 3, TNWs would be eliminated as a separate class of nuclear weapons. This could be done in several ways: by directly eliminating all TNWs, by folding them into the strategic arms negotiations (so that all nuclear weapons would be covered), or by eliminating some of them and folding the others into the strategic arms negotiations.

⁴⁶ At the April 1996 Nuclear Safety Summit, Russian President Yeltsin proposed that all nations restrict their nuclear weapons to their own territory, although this proposal was apparently aimed primarily at public opinion within Russia. Michael Gordon, "Summit in Moscow Urges A-Test Ban," *New York Times*, April 21, 1996, p. 1.

It is anticipated that this would occur as limits on strategic weapons and their verification shifted increasingly toward directly monitoring warheads and bombs. It is certainly not necessary to make a decision now on which of these approaches would be best, but it nevertheless might be useful to review some of the options.

(3.1) *TNWS could be directly folded into the post-START III round of strategic arms reductions.* These reductions would impose a limit of perhaps 1,000 warheads covering all warheads, both strategic and tactical. This approach recognizes that there is currently little practical difference between strategic weapons and TNWS, at least in the U.S. case. (And moving to adaptive targeting for strategic forces, as some have suggested, may further blur the distinction by making strategic weapons more like TNWS.) By allowing both sides freedom to choose their force structures, it might allow Russia to maintain parity in total nuclear forces more easily despite the collapsing state of its nuclear forces. This approach avoids the problem of how to define the difference between strategic and tactical weapons. It would also establish a structure which would be consistent with incorporating France and particularly China into this or the next round of reductions. However, unless battlefield TNWS were explicitly eliminated before this approach was adopted, this approach might end up legitimizing the continued possession of such weapons.

(3.2) *The United States and Russia could agree to eliminate all TNWS.* This would be a very significant step that eliminated all U.S. and Russian nuclear weapons intended for battlefield use, leaving only strategic weapons primarily intended to deter nuclear attack. However, it may raise concerns both within Russia and among U.S. allies. Given the crumbling state of its strategic bomber force, Russia may well feel it is essential to retain some shorter-range nuclear-armed aircraft. In addition, problems could be raised when China and France are brought into reductions, since both countries have forces that they regard as strategic but which would be classified as non-strategic in the U.S.-Russia context.

(3.3) *The United States and Russia could blend the two above approaches and agree to ban certain types of TNWS and fold the remaining TNWS into an overall limit on all nuclear weapons.*⁴⁷ For example, all nuclear weapons that could only be used at short ranges (and are thus primarily usable against battlefield targets) could be banned. Air-delivered TNWS (whose range of delivery depends at least in part on the type of aircraft which would

⁴⁷ Some steps along this line could have been taken earlier. For example, Russia is having great difficulty maintaining its strategic bomber force and may at some point even abandon it altogether. At the same time, Russia is likely to have to struggle to deploy enough strategic weapons to even reach the START III limits of 2,000-2,500 warheads. Concurrently, Russia has a large number of relatively recent production medium-range bomber aircraft such as Backfires. Russia could seek to redefine some or all of these Backfires as strategic aircraft, while eliminating most or all of its current strategic bombers. This could both allow Russia to deploy more strategic weapons, thereby coming closer to the START ceilings, while simultaneously removing the Backfires (which are seen as relatively important tactical delivery systems) from potential future limits on TNWS.

deliver them) and possibly tactical missiles above a certain range would be permitted, but would be counted against a nation's overall limit on nuclear weapons.

AN ALTERNATIVE APPROACH

An approach based on another round of mutual unilateral reductions, along the lines of that suggested by Bunn,⁴⁸ could achieve the same long-term results, but with even more rapid short-term results. In addition, since such unilateral steps would not need to be ratified, this approach may be more feasible given the current conservative makeup of both the Duma and Senate. In such an approach, Presidents Clinton and Yeltsin would each announce (after some private consultation) that all their tactical nuclear weapons were now in storage, provide details on the numbers and types of these weapons, and invite the other country to send inspectors to the storage facilities to confirm these declarations. Further, they would announce a commitment to reduce to a given number of TNWs, again perhaps 500, by a given date, perhaps 2003. They also might announce an agreement to cooperate on developing verification procedures and technologies that would support more rigorous future verification of TNWs, including verification of weapons destruction and the disposition of fissile material.

The details of inspections and which weapons were to be eliminated would take time to resolve. While weapons eliminations are carried out, verification approaches would be developed to support more rigorous verification of the remaining tactical weapons. The successful completion of such a mutual unilateral program would roughly correspond with the completion of phase 2 above, with the possible exception that some weapons might remain in Europe. At this point a negotiated agreement could formalize these reductions, and negotiations on elimination (as in phase 3 above) could be launched. Alternatively, the elimination of these weapons might then be sought by a second round of mutual unilateral initiatives.

⁴⁸ Bunn *op. cit.* Bunn's proposal also includes non-deployed strategic weapons.

ADDITIONAL COMMENTARY

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This paper by George Lewis and Andrea Gabbitas is well written and based on solid research. It arrives at a way to define TNWs and, based on implicit and explicit assumptions, develops approaches on how agreements can be reached which limit and reduce TNWs.

What the paper fails to do is to make a convincing case that agreements on TNWs are worth pursuing. It fails to take into account the facts that the Cold War is over and that Russia is in a parlous military state. The article assumes that, because it is in the interest of the United States and Russia to limit strategic and intermediate nuclear forces, TNWs also should be limited or reduced. However, since TNWs exist to enhance or make up for the lack of conventional forces, there is no reason for the United States or NATO to include such weapons in their arsenals. With the collapse of the Soviet Union and the demise of the Warsaw Pact, NATO has sufficient conventional forces with which to defend itself and thus has no need for TNWs. The arguments of Russian strategists that their conventional forces are too weak to withstand an attack by NATO are based on the irrational assumption that NATO has any reasons to employ conventional forces against Russia. The Russian stockpile of TNWs is approaching obsolescence and within ten years can be expected to completely atrophy. To the extent that the apparent Russian need for TNWs is a psychological one, if Russia feels the need to modernize its aging stockpiles of TNWs, it can do so. However, it will be expending scarce resources and in no way enhance its conventional capabilities to the point where they can be decisive over NATO's conventional forces. For the foreseeable future, NATO can call on the United States to employ its strategic weapons to counter any use or threat of use of Russian TNWs. Accordingly, initiatives on the part of the United States to seek limits on TNWs will serve no useful purpose. Worse, by proposing such initiatives, the United States will place itself in the position of being the demandeur, thus giving the Russians reason to believe that they can extract concessions of one kind or another from the United States.

There is only one real purpose that could be achieved by reducing TNWs. It is the same reason for getting Russia to ratify START II and to pursue START III. This reason is that reducing nuclear weapons stockpiles makes it easier to control remaining nuclear weapons and excess weapons or fissile materials so that they do not fall into the hands of rogue states or other third powers.

The worthwhile goal of non-proliferation can, however, be pursued in other ways which do not include the costly and potentially negative effects of pursuing arms

control on TNWs. Russian TNWs are now in storage under conditions which are arguably sufficient to keep them under tight controls. The United States and NATO can enter into a dialogue with the Russians on the wisdom of keeping nuclear weapons or materials under such tight controls and offer advice and perhaps assistance in achieving this goal.

While the above discussion covers the great bulk of Russian and U.S. TNWs, there are two classes of such weapons which require arms control agreements. One class is submarine-launched cruise missiles (SLCMs) and the other is nuclear bombs carried on tactical aircraft. However, these two classes of weapons can be included in rounding out the details of START III and not under new TNW agreements. Otherwise, proposing arms control initiatives for TNWs should be avoided. The objective of assisting non-proliferation goals can be pursued through discussions between NATO and Russian military officers in Brussels under the arrangements set up by the Founding Act of 1997. Non-proliferation also can be pursued by the United States and Russia under the continuation of the previous Gore-Chernomyrdin talks by Gore and Primakov.

This paper amply demonstrates the great difficulties in defining and limiting TNWs. Moreover, it only begins to touch on the extreme difficulties of verifying compliance with any agreements which might be reached. We are thus compelled to ask the basic question: What useful purposes could be accomplished by applying arms control to TNWs? Since there are none, with the one exception of furthering non-proliferation, the United States would best apply its energies at completing strategic arms agreements and not dissipate its efforts and risk the probable negative effects of pursuing useless and unverifiable agreements on TNWs.

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Arms control negotiations on U.S. and Soviet strategic and non-strategic nuclear weapons during the Cold War were driven by goals of sustaining deterrence and enhancing stability. Ten years into the post-Cold War era, however, the problems of nuclear arms control with Russia have evolved. Earlier goals remain important but new concerns have emerged. Particularly with respect to tactical nuclear weapons, these concerns include proliferation dangers, reinforcing the viability of prospectively low START ceilings, confidence-building, and strengthening cooperative security in Europe. These concerns and the changing strategic environment create circumstances where traditional approaches to nuclear arms control, at least with respect to TNWs, are not likely to offer optimal approaches for meeting the most important challenges ahead.

The TNW problem, simply put, centers around the prevailing situation of Russia holding on to an untenably large number of TNWs as a legacy of the Cold War. In contrast, the United States and its allies have abandoned the bulk of their TNW capabilities. The resulting imbalance, combined with new goals and strategic opportunities, make notions of traditional bargaining over each sides' TNWs not only of dubious efficacy but also potentially dysfunctional.

To get at the heart of the TNW problem – getting rid of the large number of Russian TNWs while at the same time overcoming adversarial legacies of the Cold War – there could be distinct advantages to pressing for solutions that directly reinforce the broad strategic goal of bringing Russia into a security partnership with the United States and the West. Getting to this goal will involve construction of expanding networks of cooperation that reflect and contribute to growing common interests. TNWs could be made a deliberate part of this process.

GOALS AND INTERESTS

The U.S. goal of greatly reducing or even eliminating the excessive numbers of Russian TNW has nothing to do with gaining strategic advantage nor even of reinforcing some nuclear *modus vivendi* in Europe. Rather, specific key objectives have to do with clearing away some dangerous and counter-productive “underbrush” from the Cold War. These include:

- *Reducing warheads:* U.S. and Russian policymakers have recognized in the 1997 Helsinki statement that even in the context of strategic arms, warheads must now be addressed. This is all the more true with TNW, where delivery systems are essentially all dual-capable and serve conventional needs. This makes controlling warheads the only meaningful way to get at the TNW problem. Moreover, Russian retention of large numbers of TNW warheads that can be used

“strategically” as well as “tactically” will undercut agreements, significantly lowering U.S. and Russian strategic arms.

- *Controlling proliferation risks:* The U.S. and other countries are rightfully concerned about the proliferation dangers posed by the large number of Russian TNWs. These concerns are heightened in direct proportion to doubts about the effectiveness of Russian control and security not only of warheads but also of nuclear materials and components from weapons it is dismantling. Unfortunately, Russian good intentions on these problems are not reassuring because of dangers of disorder and criminal behavior.
- *Removing destabilizing threats:* Russia’s current excess of TNW will remain an existential threat to its neighbors, especially in Europe. Even with the decline of the saliency of nuclear weapons in East-West relations and the absence of public controversy today compared to earlier periods, Russian TNW can only chill possibilities of fully integrating Russia into a cooperative security partnership. Russia must be brought to realize this.

As for Russia’s possible objectives and interests concerning TNW, the apparent growing attachment to nuclear weapons accompanying the sharp decline of its conventional military capabilities could dampen Russian willingness to eliminate a significant part of its TNW. Still, Russia will almost certainly draw down some of these nuclear weapons if for no other reasons than costs and obsolescence. At the same time, it would seem reasonable to assume that Russia would share concerns about proliferation dangers in general and would be interested in cooperation to lessen them. Whatever its motivations, though, Russia will predictably try to bargain hard for any TNW reductions. They will seek to maximize US financial help for nuclear safety and security measures. Beyond this, US nuclear SLCM and NATO dual-capable aircraft will almost certainly prove irresistible objects of Russian negotiating ploys. But, since these systems have now been reduced to bare minimums, it will be hard to paint them credibly as dire threats, which is not to say they should be excluded from future solutions. More generally, in the wrong context, Russia could be tempted to play the TNW issue to leverage various political goals, the most obvious being its current objection to NATO enlargement.

Ultimately, how and whether these different interests and objectives can be reconciled will depend more than anything else on the direction of internal change in Russia and the players who exercise dominant influence there. Nonetheless, success in dealing with TNW and with achieving broader objectives could be influenced importantly by how the issue is approached.

APPROACHES

For a variety of reasons, approaching the TNW issue as a matter of defense and security cooperation rather than through traditional arms control negotiations could

afford important advantages for advancing broader US and NATO policy goals toward Russia. This approach could be strongly in Russia's interest as well.

We may need to turn ultimately to traditional nuclear arms control negotiations, out of necessity if not choice, for dealing with TNW. Such negotiations could take various forms, e.g., separate US-Russian negotiations on TNW; folding TNW into negotiations on strategic arms; or multilateral negotiating venues. These alternatives are far from being equal in their implications, but what they share from Cold War experience is their use as tools in helping to manage adversarial relations between nuclear rivals.

Today, however, it is precisely because we are working to move away from the adversarial relations of the past that relying on traditional arms control negotiations for TNW could be out of step with our main goals. The very dynamics of negotiations in this form reinforce the adversarial nature of the proceedings. Trust is not presumed, nor is it necessarily sought. Once underway, opportunities for capitalizing on more productive forms of cooperation could be lessened. The temptation to indulge in political grandstanding reminiscent of INF could be present. Moreover, such negotiations will play to Russian proclivities to bargain relentlessly and sometimes obsessively. Results could be prolonged or delayed indefinitely. While traditional arms control negotiations should certainly not be foreclosed, there would be distinct advantages to an approach that could represent progress toward a qualitatively new stage in working with Russia.

What, then, are the features of an approach that seeks to emphasize activities of defense and security cooperation rather than negotiations? The most useful model are the kind of planning processes found in NATO. Under this approach, the practical outcomes that would be sought with TNW would remain much the same and hard bargaining could be part of the process, just as in NATO planning. But such activity would be conducted in a framework of cooperative rather than adversarial rules-of-the-road. Emphasis would be on reconciling and reinforcing mutual security goals. Results would be sought in practical forms of cooperation. Transparency would be a constant feature.

A variety of measures and activities could be pursued under this approach, building on past efforts while also breaking new ground. Some could be undertaken in a NATO or NATO-related framework (e.g., the Russian-NATO Permanent Joint Council), others through supporting bilateral or other discussion channels. Such measures and activities could include:

- A sustained discussion of doctrine, force structure and planning.
- Data exchanges, moving emphasis to warhead numbers, types and locations.
- Consolidation and inspection of storage sites, at minimum initially for warheads withdrawn from operational inventories.
- Joint measures for accounting for warhead dismantlement.

- Joint measures for storage and control of nuclear materials.

This approach would build on steps that have already been made, such as the Bush-Gorbachev unilateral reductions of 1991-92, the U.S.-Russian Joint Working Group (JWG) experience during 1994-95 and the first airings of the TNW issue in the Permanent Joint Council (PJC) in 1997. These undertakings have fallen far short of expectations, e.g., Russia's lack of accounting for its unilateral TNW reduction, absences from the JWG, and lack of openness in the PJC). But it would seem premature at this stage to write off more productive possibilities in the future.

The suggested approach does not operate on the premise of the rigidities of equal arms control ceilings. It acknowledges that the United States, NATO and Russia may have different nuclear roles, requirements and priorities that are not linked to each other's forces. However, it does imply the necessity of transparency and accountability as an intrinsic part of an evolving security relationship, and it does aim toward the major reduction and perhaps virtual elimination of TNW. The prospects for this are not necessarily dim. As noted, Russian officials and commentators have variously cited the need for Russia to reduce greatly its nuclear forces due to costs and obsolescence. There are no plausible threats that would justify Russian retention of large TNW nuclear forces; one of the goals of the approach suggested here is to convince them of this. Moreover, TNW reductions could significantly benefit Russian interests by facilitating the cooperation it needs with the West.

The relationship of TNW to U.S. and Russian strategic arms will be important. As indicated, strategic arms reductions on the order of those envisioned in START III will heighten the significance of TNW and make their reduction of greater importance. Since warheads are expected to become a subject of discussion under START III, there are real questions about how or even whether TNW and strategic warheads can or should be dealt with separately. However, there is no reason to presume that the suggested approach for TNW could not interface nor indeed even integrate with measures relating to control and accountability of warheads under a future strategic arms agreement.

Ultimately, the object of this approach would be not only to secure desired outcomes on TNW but also to use the issue as an integral part of a strategy of engaging Russia in an expanding partnership. There could be many ancillary benefits, not least being help in overcoming Russia's misplaced concerns *vis-à-vis* NATO.

CAVEATS AND OBJECTIONS

It would be fatuous to suggest that the approach sketched above would be easy, practicable, or certain of outcome. Cold War habits of mind die hard, and suspicions of U.S. and NATO motives run deep with many Russians. Ultimately, adverse developments in Russia could thwart any hope of progress. But these uncertainties ought not to be allowed to stunt ambitious efforts to move to a qualitatively different

stage in relations with Russia. Optimum policy should focus on creating the openings and generating the inducements for cooperation. This holds true on the TNW issue as in other areas.

One could fairly question the prospects of mounting a “security cooperation” approach to TNW given the less-than-encouraging role that Russia has played on many nuclear issues in recent years. The lack of assurances concerns implementation of its 1991 commitments to unilateral TNW reductions, uneven cooperation in nuclear safety and security talks, and disappointing response to date to efforts to vet the TNW issue in the PIC framework. Other developments, like the stalemate on START II, and continuing development and production of new nuclear weapons, add to concerns. While the picture is clearly mixed, it nonetheless remains possible to see strong incentives for Russia to favor cooperation. Regression to old patterns of hostility offer Russia nothing for breaking out of its deeply serious current troubles.

Could a “security cooperation” approach which seeks to foster transparency fail to provide the precision, obligations and accountability that an arms control verification regime might otherwise provide? Are legally binding agreements essential? The question and its underlying skepticism are reasonable. Getting verification on warheads, in all the dimensions this would involve, poses daunting challenges no matter how the problem is approached. A network of transparency measures might need a formal and comprehensive character. The problem could well be tackled on several fronts that reinforce each other. The overlap or even integration of approaches to the control and accountability of strategic and TNW warheads together (with or without combined ceilings) warrant detailed consideration.

GLOSSARY

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| ABM | Anti-Ballistic Missile |
| ACM | Advanced Cruise Missile |
| AFB | Air Force Base |
| ALCM | Air Launched Cruise Missile |
| ASMP | <i>Air-Sol Moyenne Portée</i> (Air-to-Ground Middle Range Missile) |
| CEP | Circular Error Probable |
| CISAC | Committee on International Security & Arms Control |
| CTB | Comprehensive Test Ban (Treaty) |
| GLCM | Ground Launched Cruise Missiles |
| INF | Intermediate Range Nuclear Forces (Treaty) |
| PJC | Permanent Joint Council |
| JWG | Joint Working Group |
| kt | Kiloton |
| NATO | North Atlantic Treaty Organization |
| NMD | National Missile Defense |
| NRDC | National Resources Defense Council |
| SLBM | Submarine Launched Ballistic Missiles |
| SLCM | Sea Launched Cruise Missiles |
| START I | Strategic Arms Reduction (Treaty) |
| TNW | Tactical Nuclear Weapon |

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