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**Non-Strategic  
Nuclear  
Weapons**

By HANS M. KRISTENSEN

# Non-Strategic Nuclear Weapons

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Image: personnel of the 31<sup>st</sup> Fighter Wing at Aviano Air Base in Italy load a B61 nuclear bomb trainer onto a F-16 fighter-bomber (Image: U.S. Air Force).

## About FAS

Founded in 1945 by many of the scientists who built the first atomic bombs, the Federation of American Scientists (FAS) is devoted to the belief that scientists, engineers, and other technically trained people have the ethical obligation to ensure that the technological fruits of their intellect and labor are applied to the benefit of humankind. The founding mission was to prevent nuclear war. While nuclear security remains a major objective of FAS today, the organization has expanded its critical work to issues at the intersection of science and security.

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## Abbreviations

ABM: Anti-Ballistic Missile  
ACDA: Arms Control and Disarmament Agency  
AS: Air-to-Surface  
ASMP: Air-Sol Moyenne Portee (Air-to-Ground Cruise Missile)  
ASMPA: Air-Sol Moyenne Portee Amélioré (Improved Air-to-Ground Cruise Missile)  
ASW: Anti-Submarine Warfare  
CGN: Nuclear-Powered Guided Missile Cruiser  
CONUS: Continental United States  
CRS: Congressional Research Service  
CV: Conventionally-Powered Aircraft Carrier  
CVN: Nuclear-Powered Aircraft Carrier  
DDG: Guided-Missile Destroyer  
DDPR: Deterrence and Defense Posture Review  
DIA: U.S. Defense Intelligence Agency  
DOD: U.S. Department of Defense  
FOI: Totalförsvarets Forskningsinstitut (Swedish Defence Research Institute)  
GAO: Government Accountability Office  
GUMO: Glavnoye Upravleniye Ministerstvo Oborony (12<sup>th</sup> Main directorate)  
HLG: High-Level Group  
ICBM: Intercontinental Ballistic Missile  
JCS: U.S. Joint Chiefs of Staff  
km: kilometer  
MUNSS: Munitions Support Squadron  
NATO: North Atlantic Treaty Organization  
NPG: Nuclear Planning Group  
NPT: Non-Proliferation Treaty  
NPR: Nuclear Posture Review  
NRDC: Natural Resources Defense Council  
RAF: Royal Air Force  
SAM: Surface-to-Air Missile  
SLBM: Sea-Launched Ballistic Missile  
SLCM: Sea-Launched Cruise Missile  
SSBN: Nuclear-Powered Ballistic Missile Submarine  
SSGN: Nuclear-Powered Guided Missile Submarine  
SSM: Surface-to-Surface Missile  
SSN: Nuclear-Powered Attack Submarine  
STRATCOM: U.S. Strategic Command  
Su: Sukhoi  
Tu: Tupolev

## Foreword

Vision and leadership: those are the overarching themes of this insightful FAS Special Report by Hans Kristensen, Director of the Nuclear Information Project at the Federation of American Scientists. As he underscores in this report, about twenty years ago at the end of the Cold War, U.S. President George H. W. Bush, Soviet President Mikhail Gorbachev, and Russian President Boris Yeltsin seized the opportunity to reduce nuclear dangers in a series of unilateral, but mutually reinforcing, steps by taking thousands of non-strategic nuclear weapons off-alert and slating them for dismantlement. Mr. Kristensen argues that the time is ripe for new leadership in both the United States and Russia to take the next steps in phasing out U.S. non-strategic weapons deployed in Europe and in having Russia complete its commitments under the 1991-1992 Presidential Nuclear Initiatives, especially the requirement to eliminate its ground-launched nuclear weapons.

This report also wisely points out that “non-strategic nuclear weapons are neither the problem nor the solution” to NATO European countries’ security concerns. These weapons are anachronistic vestiges of Cold War thinking. The United States keeps non-strategic nuclear weapons in Europe because a few eastern European NATO allies are nervous about Russia, and as a card to play to get Russia to reduce its larger inventory of such weapons. Russia, for its part, maintains a large inventory of mainly outdated non-strategic weapons partly to compensate for what it sees as NATO’s superiority in conventional weapons. Both justifications are poorly suited for the security concerns facing Europe today. Rather, Mr. Kristensen calls for the United States to declare victory in its long-past mission of keeping these weapons in Europe and instead reaffirm that long-range strategic nuclear weapons can provide any nuclear deterrence missions. He advises that reductions and eventual elimination of U.S. non-strategic nuclear weapons from Europe proceed unilaterally but with a nudge to Russia to make reciprocal steps and take part in formal negotiations to reduce its non-strategic nuclear weapons. Both NATO and Russia can and should realign their defense planning such that they recognize that they need not pose military threats to each other. This would further reduce the perceived need for non-strategic nuclear weapons deployed in Europe.

FAS is proud to publish this thoughtful report that provides practical recommendations for resolving the vexing issues of non-strategic nuclear weapons in Europe.

Charles D. Ferguson  
President  
Federation of American Scientists

May 2012

## Introduction

Two decades after U.S. and Russian unilateral nuclear initiatives withdrew most non-strategic nuclear weapons from around the world to storage at home and scrapped most of the weapons, non-strategic nuclear weapons again have risen to the top of the nuclear arms control agenda.

NATO is completing a review of its military posture, including the role and number of non-strategic nuclear weapons, and the United States and Russia are considering how to include non-strategic nuclear weapons in a future arms control agreement.

Russia, the United States, and NATO do not disclose how many non-strategic<sup>1</sup> nuclear weapons they have or where they are deployed. As a result, uncertainty and rumors fuel a debate full of half-truths, exaggerations and worst-case assumptions.

This report estimates that Russia and the United States combined possess around 2,760 non-strategic nuclear weapons in their military stockpiles. Another 2,000-3,000 weapons have been retired and are awaiting dismantlement.

Since 1991, the United States has destroyed about 90 percent of its non-strategic nuclear weapons and devalued them in its military posture. Recently, however, the Obama administration has reaffirmed the importance of retaining some non-strategic nuclear weapons to extend a nuclear deterrent to allies. And the U.S. Congress has made further reductions in U.S. nuclear weapons conditioned on reducing the “disparity” in Russian non-strategic nuclear forces.

Russia says it has destroyed 75 percent of its Cold War stockpile of non-strategic nuclear weapons, but is insisting that at least some of the remaining weapons are needed to counter NATO’s conventional superiority and to defend its border with China. Following a meeting of the NATO-Russia Council on April 19, 2012, Russian Foreign Minister Sergey Lavrov stated: “Unlike Russian non-strategic nuclear weapons, U.S. weapons are deployed outside the country,” and added that “before talks on the matter could begin, the positions of both sides should be considered on an equal basis.”<sup>2</sup>

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<sup>1</sup> There is no universal definition of what a non-strategic nuclear weapon is. During the Cold War, a nuclear weapon was generally considered to be non-strategic (or tactical) if it had a much shorter range than strategic weapons and was intended for battlefield use in a theater of operation. Some consider a nuclear weapon non-strategic if it is not covered by strategic arms control treaties. Others consider all nuclear weapons strategic; the French government, for example, defines its air-delivered cruise missile as strategic even though the aircraft do not have inter-continental range. The Department of Defense Dictionary of Military and Associated Terms defines non-strategic nuclear forces as: “Those nuclear-capable forces located in an operational area with a capability to employ nuclear weapons by land, sea, or air forces against opposing forces, supporting installations, or facilities. Such forces may be employed, when authorized by competent authority, to support operations that contribute to the accomplishment of the commander’s mission within the theater of operations.” U.S. Department of Defense, Joint Chiefs of Staff, *Department of Defense Dictionary of Military and Associated Terms*, Joint Publication 1-02, November 8, 2010 (as amended through October 15, 2011), p. 241, [http://www.dtic.mil/doctrine/new\\_pubs/jp1\\_02.pdf](http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf).

<sup>2</sup> Russia on AMD: “Words not enough,” *Russia Today*, April 19, 2012, <http://rt.com/politics/nato-lavrov-nuclear-defense-460/>



France also possesses approximately 50 short-range cruise missiles that fall into the non-strategic category, although the French government considers all its nuclear weapons to be strategic.

China might also have developed and tested non-strategic nuclear weapons, although there is little evidence that they deploy any today.

Pakistan appears to be developing short-range nuclear weapons that could have non-strategic nuclear missions.<sup>3</sup>

India also has short-range Prithvi and Dhanush missiles that have nuclear capability, as well as nuclear bombs for fighter-bombers.

Israel has an inventory of nuclear bombs for delivery by fighter-bombers that also fall into the short-range or non-strategic category.

It is on this background that NATO in Lisbon in 2010 approved a new Strategic Concept that reaffirmed the importance of nuclear weapons to the alliance's security as long as nuclear weapons exist. After having reduced its non-strategic arsenal unilaterally by more than half since 2000 and insisted that the weapons were not aimed at Russia, the Strategic Concept decided that any further reductions must take into consideration the "disparity" between Russian and U.S. non-strategic nuclear weapons.

A Deterrence and Defense Posture Review (DDPR) is currently underway to translate the Strategic Concept into updated requirements for military forces, and determine, among other things, the appropriate mix of nuclear and conventional forces. The DDPR is expected to be approved at the NATO Summit in Chicago on May 20-21, 2012.

There is no agreed upon definition on what constitutes a non-strategic nuclear weapon. In addition to "non-strategic," frequent terms used to describe this category of weapons include "battlefield," "short-range," "tactical" and "theater" nuclear weapons. All of these terms help clarify but also create some uncertainty.

A widely used definition is that a non-strategic nuclear weapon is a weapon that is not covered by strategic arms control treaties. That may be accurate for delivery vehicles, but existing arms control treaties do not cover thousands of non-deployed strategic warheads.

As mentioned above, another definition relates to the range, implying that non-strategic nuclear weapons have shorter ranges while strategic weapons have long or inter-continental ranges. Again, that may be accurate for delivery vehicles, but some weapons can be carried by both long-range strategic and shorter-range non-strategic delivery vehicles.<sup>4</sup> Moreover, several new nuclear weapons states don't have long-range nuclear weapon systems at all but characterize their shorter-range systems as strategic weapons.

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<sup>3</sup> For a description on the NASR, see: Hans M. Kristensen, "Pakistan's 'Shoot and Scoot' Nukes: FAS Nukes in Newsweek," *FAS Strategic Security Blog*, May 17, 2011, <http://www.fas.org/blog/ssp/2011/05/pakistan.php>.

<sup>4</sup> One example of this is the Russian AS-16 short-range attack missile, which can be delivered by both the long-range Tu-160 Blackjack bomber and the medium-range Tu-22M3 Backfire-C bomber. Likewise, the United States is planning to merge one strategic nuclear bomb (B61-7) and three non-strategic nuclear bombs (B61-3/4/10) into one type (B61-12) that can be delivered by both long-range B-2A and B-52H bombers as well as non-strategic F-35A, F-15E, and F-16C/D fighter-bombers.

“Battlefield” or “theater” terms date back to the Cold War when non-strategic nuclear weapons were deployed or intended for use by regional military commands with responsibility for operations in a limited area or “theater.” These scenarios often seemed like nuclear battles because the weapons would be used to blow up troops, bridges or ships much like non-nuclear weapons. Such “tactical” uses were seen by some as a means to avoid escalation to use of strategic nuclear weapons, while others believed that any nuclear use would automatically escalate to strategic nuclear war.

Today, many argue that there are no non-strategic nuclear weapons at all and that using the term is inappropriate because any use of a nuclear weapon would be strategic in nature and implications. France, for example, describes its short-range cruise missiles delivered by fighter-bombers as strategic weapons. The United States appears to be moving away from having designated non-strategic nuclear weapons in its arsenal and instead rely on use of long- and short-range systems interchangeably. Britain for a period described the role of a portion of its strategic Trident missiles as “sub-strategic,” and NATO did too, but both have since stopped referring to such a mission.

NATO and Russia continue, however, to attribute a unique role to shorter-range systems. While NATO’s Strategic Concept makes it clear that the supreme security guarantee is provided by the *strategic* forces of the United States (and to a lesser extent Britain and France), the alliance continues to deploy U.S. non-strategic bombs in Europe – and equip five non-nuclear NATO countries with the capability to deliver these bombs – for other reasons.

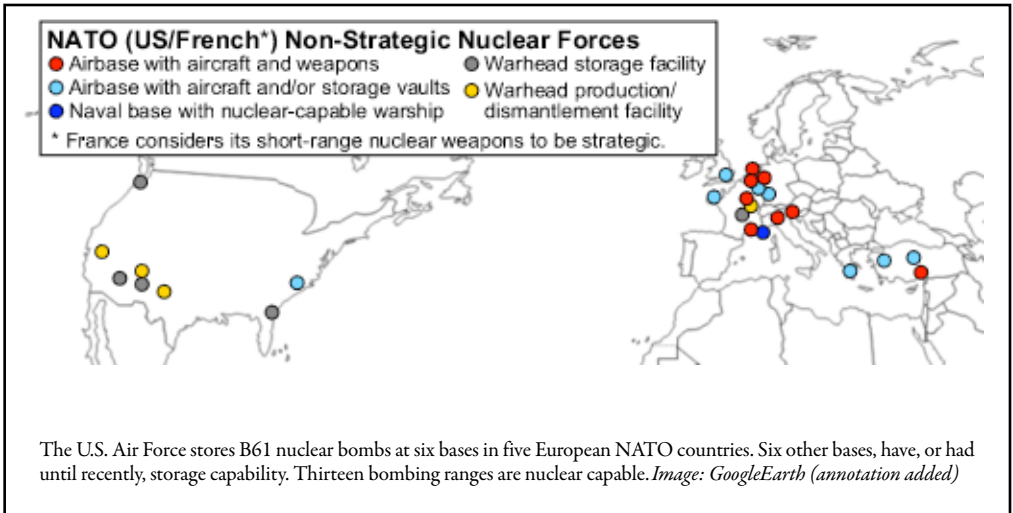
Russia appears to continue to use non-strategic nuclear weapons in “tactical” or “battlefield” scenarios in its planning for naval, ground, and air-defense forces. This role appears to be based on a perception that the weapons are needed to compensate for inferior conventional forces.

This report reviews the status of U.S. and Russian non-strategic nuclear forces and the policies that shape the postures. Conclusions and recommendations described more in detail in the back of the report find that unilateral reductions have been the most effective means to reducing the number and role of non-strategic nuclear weapons and that the United States, NATO and Russia can and should continue this track record by taking additional steps.

Such steps can include reducing and retiring existing weapon systems, withdrawing remaining weapons from forward areas, canceling modernizations, and increasing transparency about the numbers, locations and role of non-strategic nuclear weapons.

Bold and visionary leadership is urgently needed to steer clear of outdated concepts about disparity, reassurance and burden-sharing that perpetuate the role of non-strategic nuclear weapons and instead set a clear path forward that focuses on phasing out this Cold War category of nuclear weapons

## U.S. NON-STRATEGIC NUCLEAR WEAPONS



The United States does not disclose the number of its non-strategic nuclear weapons. The secrecy is partly precipitated by the fact that a significant portion of U.S. weapons is deployed in Western European countries where the public sentiments are overwhelmingly against nuclear weapons.

Keeping the number of non-strategic nuclear weapons secret, however, is inconsistent with U.S. policy. In May 2010, the Obama administration disclosed the size and history of the total nuclear weapons stockpile and has also disclosed the size and location of U.S. strategic nuclear forces counted under the New START treaty.

If it were not for the deployment in Europe, the United States would probably no longer have non-strategic nuclear warheads in its stockpile. The 2010 Nuclear Posture Review (NPR) unilaterally retired the last non-strategic naval nuclear weapon – the nuclear Tomahawk land-attack cruise missile (TLAM/N) – completing the denuclearization of the navy (except for strategic missiles) that began in the late-1990s.<sup>5</sup>

There is still a sizeable inventory of non-strategic gravity bombs in the stockpile (approximately 500), but it has declined significantly over the past two decades. And with the planned consolidation of four versions of the B61 bomb into one as part of a life-extension program, the remaining designated “tactical” bombs will disappear from the stockpile. Once the program is completed in the early 2020s, long-range bombers and short-range fighter-bombers will carry the same bomb: the B61-12.

<sup>5</sup> In 1990, the U.S. stockpile included approximately 2,500 non-strategic nuclear weapons assigned to naval forces, including aircraft carrier bombs, anti-submarine weapons, and cruise missiles. See: William M. Arkin and Robert S. Norris, “Nuclear Weapons at Sea,” Nuclear Notebook, *Bulletin of the Atomic Scientists*, September 1990, p. 49.

## Presidential Nuclear Initiatives

Today's U.S. non-strategic nuclear posture is the result of unilateral presidential initiatives made by four consecutive presidents. The most important is the initiative by president George H.W. Bush on September 27, 1991, where he announced his decision to:<sup>6</sup>

- eliminate all ground-launched short-range, theater nuclear weapons;
- bring home and destroy all nuclear artillery shells and short-range ballistic missile warheads;
- withdraw all tactical nuclear weapons from surface ships and attack submarines;
- withdraw all nuclear weapons associated with land-based naval aircraft.
- under normal circumstances, our ships will not carry tactical nuclear weapons.
- many of these land and sea-based warheads will be dismantled and destroyed. Those remaining will be secured in central areas where they would be available if necessary in a future crisis;
- preserve an effective air-delivered nuclear capability in Europe.

The withdrawal was completed in 1993 and by 1994 the number of nuclear weapons had been reduced from 2,500 in 1991 to 480 in 1994 (all air-delivered bombs). That same year the Clinton administration completed a Nuclear Posture Review (NPR) that denuclearized the surface fleet. The NPR decided to retain the “current strength” of bombs in Europe and retain TLAM/N for attack submarines.<sup>7</sup>

But in 2004, the Bush administration unilaterally cut the U.S. stockpile by almost half. The decision also led to a 50 percent reduction in the European deployment to approximately 200 weapons by 2006. This included the complete withdrawal of U.S. nuclear weapons from Britain. Finally, in April 2010, the Obama administration's NPR decided to retire the TLAM/N.

Within the next decade, the United States will likely further unilaterally reduce its inventory of non-strategic nuclear weapons as a program moves forward to consolidate four existing bombs (three tactical and one strategic versions) into one.

## Reduction Statements

Although the U.S. and NATO do not disclose the number of non-strategic nuclear weapons, officials and agencies have from time to time given statements about percentage reductions.

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<sup>6</sup> President George H.W. Bush, *Address to the Nation on Reducing United States and Soviet Nuclear Weapons*, September 27, 1991, [http://bushlibrary.tamu.edu/research/public\\_papers.php?id=3438&year=1991&month=9](http://bushlibrary.tamu.edu/research/public_papers.php?id=3438&year=1991&month=9)

<sup>7</sup> The 1994 NPR failed to produce a final report but a collection of declassified documents is available here: Hans M. Kristensen, *The 1994 Nuclear Posture Review*, Nuclear Brief, The Nuclear Information Project, July 8, 2005, <http://www.nukestrat.com/us/reviews/npr1994.htm>

A few weeks after President George W.H. Bush's announcement of the unilateral cuts in non-strategic nuclear weapons, the NATO Nuclear Planning Group (NPG) announced that, "The total reduction in the current NATO stockpile of sub-strategic weapons in Europe will be roughly 80 percent."<sup>8</sup>

As the reductions got underway, NATO declared one year later that, "All nuclear warheads from NATO's ground-launched and naval tactical nuclear weapons have now been removed, much earlier than originally envisaged." Moreover, "The reductions in the number of air-delivered nuclear weapons, the only remaining sub-strategic systems to be held by the alliance in Europe, are underway."<sup>9</sup>

When the Clinton administration announced the results of its Nuclear Posture Review in September 1994, it declared that the U.S. inventory of non-strategic nuclear weapons since 1988 had been cut by 90 percent overall and 91 percent in NATO.<sup>10</sup> Compared with 1991, the reduction in Europe was about 10 percent smaller, or approximately 80 percent, the U.S. command-in-chief of European Command disclosed in December 1997.<sup>11</sup> And for overall U.S. non-strategic nuclear weapons the number was also a little smaller, about 75 percent, the Pentagon stated in an internal study from 1999.<sup>12</sup> NATO declared in June 2001 that the 1991 Bush initiative "reduces the number of nuclear weapons available for its sub-strategic forces in Europe by over 85 percent. These reductions were completed in 1993,"<sup>13</sup> and involved the "elimination" of approximately 1,300 artillery and 850 Lance warheads, according to NATO.<sup>14</sup> By 2005, additional reductions apparently had occurred, with the Bush administration declaring at the NPT Review Conference that, "we have reduced our non-strategic nuclear weapons by 90 percent since the end of the Cold War."<sup>15</sup>

Two years later, in 2007, a senior State Department official used similar numbers when he declared that the United States had "dismantled more than 13,000 nuclear weapons since 1988," including "more than 3,000 non-strategic nuclear weapons." He also said that the U.S. has "reduced non-strategic weapons deployed in support of NATO in Europe by 90 percent." This effort had "removed all non-strategic nuclear weapons from surface ships and

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<sup>8</sup> NATO Nuclear Planning Group, "Final Communiqué," October 18, 1991, paragraph 5, <http://www.nato.int/docu/comm/49-95/c911018a.htm>

<sup>9</sup> NATO Nuclear Planning Group, "Final Communiqué," October 21, 1992, paragraph 5, <http://www.nato.int/docu/comm/49-95/c921021a.htm>

<sup>10</sup> U.S. Department of Defense, Briefing, "Nuclear Posture Review," September 22, 1994, slide 29, <http://www.nukestrat.com/us/reviews/dodnprslides092294.pdf>

<sup>11</sup> Msg (S/DECL x4), 121705Z Dec 97, USCINCEUR/ECDC to JCS/J3 et al., "CONUS-based Dual Capable Aircraft (DCA) Readiness Requirements (U)." Partially declassified and released under FOIA.

<sup>12</sup> U.S. Department of Defense, OSD S&TR and Joint Staff J-5, *Theater Nuclear Study: Nuclear Weapons in the Regional Context*, November 12, 1999, slide. 3, partially declassified and released under FOIA.

<sup>13</sup> NATO Press Release M-DPC/NPG-1(2001)87, "Final Communiqué: Ministerial Meeting of the Defence Planning Committee and the Nuclear Planning Group," June 7, 2001, paragraph 8, <http://www.nato.int/docu/pr/2001/p01-087e.htm>

<sup>14</sup> NATO, "NATO Nuclear Forces in the New Security Environment," NATO Issue, June 3, 2004, p. 3, <http://www.nukestrat.com/us/afn/NATOissue060304.pdf>. The 2004 version has since been updated, although it still contains the reference to the reductions. See: [http://www.nato.int/nato\\_static/assets/pdf/pdf\\_topics/20091022\\_Nuclear\\_Forces\\_in\\_the\\_New\\_Security\\_Environment-eng.pdf](http://www.nato.int/nato_static/assets/pdf/pdf_topics/20091022_Nuclear_Forces_in_the_New_Security_Environment-eng.pdf). The 2004 version has since been updated. A copy of the 2004 version is available here:

<sup>15</sup> U.S. Department of State, *Statement by Stephen Rademaker, Assistant Secretary of State for Arms Control, at the 2005 NPT Review Conference, in the General Assembly, May 2, 2005*, USUN PRESS RELEASE #089(05), May 2, 2005, [http://www.archive.usun.state.gov/press\\_releases/20050502\\_089.html](http://www.archive.usun.state.gov/press_releases/20050502_089.html)

naval aircraft,” and “withdrawn from Europe and retired all nuclear artillery shells, Lance missile warheads, and naval nuclear depth bombs. In 2003, the United States dismantled its very last nuclear artillery shell, the W-79 weapon,” he said.<sup>16</sup>

Although he didn’t want to give specific numbers, NATO Deputy Assistant Secretary General Guy Roberts acknowledged in 2007: “We only have a few hundred nuclear weapons, the B61 gravity bomb, U.S. nuclear weapons in Europe today.”<sup>17</sup>

As the Obama administration’s Nuclear Posture Review got underway, Jim Miller, the U.S. Principal Deputy Under Secretary of Defense for Policy indicated to NATO officials during a September 2009 briefing on the review that the U.S. had 180 weapons left in Europe.<sup>18</sup>

The decision to declassify the size and history of the total nuclear weapons stockpile produced a Pentagon fact sheet in May 2010 that stated that the total “number of U.S. non-strategic nuclear weapons declined by approximately 90 percent from September 30, 1991 to September 30, 2009.”<sup>19</sup> The number matched the percentage in a State Department fact sheet from July 2009, that the United States had “reduced non-strategic (tactical) nuclear weapons to less than one-tenth of Cold War levels.”<sup>20</sup>

## The Numbers

Based on these statements, and insight from other sources, this report estimates that the U.S. inventory of non-strategic nuclear weapons today includes approximately 760 warheads, down from roughly 7,600 warheads in 1991.

The current inventory of 760 warheads includes B61-3, B61-4 and B61-10 gravity bombs, of which nearly 200 are deployed in Europe. Another 300 non-deployed bombs are “stored in the United States for possible overseas deployment in support of extended deterrence to allies and partners worldwide.”<sup>21</sup> The remaining 260 warheads include W80-0 warheads for the TLAM/N, which is in the process of being retired.<sup>22</sup>

<sup>16</sup> Christopher Ford, U.S. Special Representative for Nuclear Nonproliferation, “Disarmament, the United States, and the NPT,” delivered at the conference on *Preparing for 2010: Getting the Process Right*, Annecy, France, March 17, 2007, <http://www.hsdl.org/?view&did=234443>

<sup>17</sup> “Guy Roberts: How Nuclear Changes Look to NATO?,” *NATO Review*, 2010, [http://www.nato.int/docu/review/2010/Nuclear\\_Proliferation/Guy\\_Roberts/EN/index.htm](http://www.nato.int/docu/review/2010/Nuclear_Proliferation/Guy_Roberts/EN/index.htm)

<sup>18</sup> James Miller, U.S. Principal Deputy Under Secretary of Defense for Policy, in USNATO 000378 to OSD, “Subject: PDUSDP Miller Consults With Allies on Nuclear Posture Review,” September 4, 2009, paragraph 17. For a description of this document, see: Hans M. Kristensen, “Tac Nuke Number Confirmed?,” *FAS Strategic Security Blog*, December 7, 2010, <http://www.fas.org/blog/ssp/2010/12/tacnukes.php>

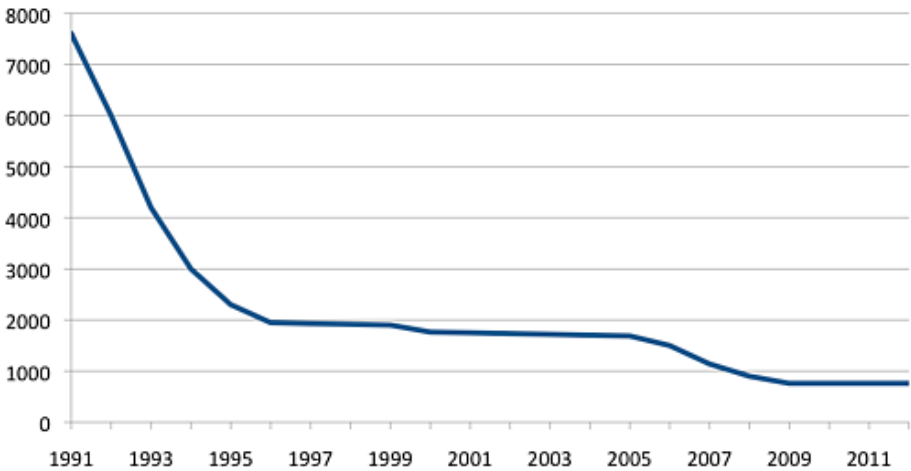
<sup>19</sup> U.S. Department of Defense, *Increasing Transparency in the U.S. Nuclear Weapons Stockpile*, Fact Sheet, May 3, 2010, p. 1, [http://www.defense.gov/npr/docs/10-05-03\\_Fact\\_Sheet\\_US\\_Nuclear\\_Transparency\\_FINAL\\_w\\_Date.pdf](http://www.defense.gov/npr/docs/10-05-03_Fact_Sheet_US_Nuclear_Transparency_FINAL_w_Date.pdf)

<sup>20</sup> U.S. State Department, Bureau of Verification, Compliance, and Implementation, *The Legacy of START and Related U.S. Policies*, Fact Sheet, July 16, 2009, <http://www.state.gov/t/avc/rls/126119.htm>

<sup>21</sup> U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review Report*, April 6, 2011, pp. xiii, 27, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>

<sup>22</sup> The B61-10, all of which are in inactive storage, is a converted W85 warhead, which was previously deployed in Europe on Pershing II intermediate-range ballistic missiles. The W85, in turn, was based on the B61-4 design. See: Robert S. Norris and Hans M. Kristensen, “The B61 Family of Bombs,” Nuclear Notebook, *Bulletin of the Atomic Scientists*, January/February 2003.

Figure 1: U.S. Non-Strategic Nuclear Weapons



The United States has reduced its inventory of non-strategic nuclear weapons by roughly 90 percent since 1991. All reductions have been unilateral and more are expected in the next decade.

## The European Deployment<sup>23</sup>

The U.S. Air Force deploys nearly 200 nuclear weapons in Europe, an arsenal nearly the size of the Chinese nuclear stockpile.<sup>24</sup> Most of the weapons are in Italy and Turkey on NATO's southern flank, reflecting a shift from a decade ago when the majority of the stockpile was based in northern Europe.

The current force level is small compared with the peak of 7,300 tactical nuclear weapons the United States deployed in Europe in the early-1970s. Yet comparison with the Cold War is less relevant today given that the threat that precipitated the deployment of U.S. nuclear weapons in Europe – the threat of a Soviet invasion – no longer exists.

<sup>23</sup> For an earlier study on the U.S. deployment of nuclear weapons in Europe, see: Hans M. Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning*, Natural Resources Defense Council, February 2005, <http://www.nukestrat.com/pubs/EuroBombs.pdf>

<sup>24</sup> For an updated estimate of the world's nuclear arsenals, see FAS's online *Status of World Nuclear Forces 2012*, <http://www.fas.org/programs/ssp/nukes/nuclearweapons/nukestatus.html>

Recent official statements on the force level in Europe include Guy Roberts, NATO's Deputy Assistant General Secretary for Weapons of Mass Destruction Policy: "We only have a few hundred nuclear weapons, B61 gravity bombs, U.S. nuclear weapons, in Europe today." NATO, "How do nuclear changes look to NATO?," *NATO Review 2010: Nuclear proliferation – about to mushroom?*, available online at [http://www.nato.int/docu/review/2010/Nuclear\\_Proliferation/Guy\\_Roberts/EN/index.htm](http://www.nato.int/docu/review/2010/Nuclear_Proliferation/Guy_Roberts/EN/index.htm)



**Figure 2: U.S. Nuclear Weapons in Europe**

Country	Nuclear Weapons
Belgium	10-20
Germany	10-20
Italy	60-70*
Netherlands	10-20
Turkey	60-70*
<b>Total</b>	<b>160-200**</b>

The U.S. Air Force deploys nearly 200 non-strategic nuclear weapons at six bases in five countries. For additional details, see Figure 9.

\* 10-20 of these weapons are for delivery by host country aircraft.  
\*\* The number in the deployment authorization signed by the president can vary by  $\pm$  10 percent.

Following the large withdrawal of U.S. ground-launched and naval weapons from Europe in 1991-1993, the number of bombs was reduced to 700. Withdrawal from several German and Turkish bases and consolidation in the mid-1990s reduced the stockpile to 480.

The Nuclear Posture Review completed in September 1994 decided to "maintain current DCA strength in the continental United States (CONUS) and Europe."<sup>25</sup> That posture reportedly included roughly 480 nuclear bombs in Europe,<sup>26</sup> as well as the 4<sup>th</sup> and 27<sup>th</sup> Fighter Wings at bases in CONUS. In addition, nuclear TLAM/Ns were retained for deployment on selective attack submarines.

The Clinton administration's nuclear weapons employment authorization from December 2000 included 480 weapons, of which 20 were scheduled to be withdrawn from Greece. In 2005-2006, a couple of hundred weapons were withdrawn from Ramstein AB and RAF Lakenheath, leaving nearly 200 bombs in Europe.<sup>27</sup>

Each of the B61 bombs has four selective yields. The B61-3 yield selections range from 0.3 to 170 kilotons. The B61-4 yields have a lower upper range; 0.3 to 50 kilotons.

<sup>25</sup> USSTRATCOM, "Overview of Nuclear Posture Review (NPR) Results," n.d. [ca. September 22, 1994], p. 1. Released under FOIA.

<sup>26</sup> R. Jeffrey Smith, "Clinton Decides to Retain Bush Nuclear Arms Policy," *Washington Post*, September 22, 1994, p. A1.

<sup>27</sup> The timing of the withdrawal from Ramstein AB and RAF Lakenheath is also interesting because it happened despite U.S. public claims at the time that Russia had not entirely fulfilled its promise made in the 1991-1992 Presidential Nuclear Initiatives to eliminate ground-launched non-strategic weapons. See: U.S. Department of State, "Press Roundtable at Interfax: Stephen G. Rademaker, Assistant Secretary of State for Arms Control," October 6, 2004, p. 5.



Figure 3: B61 Characteristics

Type	Yields	Years Built
B61-3	0.3, 1.5, 60 or 170 kt	1979-1990
B61-4	0.3, 1.5, 10 or 50 kt	1979-1990

B61-10 was previously deployed in Europe but was transferred to the inactive stockpile in 2005.

The stockpile in Europe has two categories: those at U.S. bases intended for delivery by U.S. aircraft, and those at “host” or national bases earmarked for delivery by allied aircraft.

The U.S. weapons include approximately 100 bombs deployed at Aviano AB and Incirlik AB. The “host” weapons include 50-100 bombs earmarked for delivery by allied aircraft from Belgium, Germany, Italy, the Netherlands and Turkey.

The “host” weapons at the national bases are under the custody of U.S. Air Force Munitions Support Squadron (MUNSS) in peacetime, but the weapons are stored in underground vaults inside the protective aircraft shelters just a few meters below the wings of the aircraft. In times of war, the weapons would be handed over to the non-nuclear countries if the U.S. president authorized employment of the weapons. But even during peacetime, the U.S. Air Force equips the allied aircraft with the electronic and mechanical interfaces, and trains the pilots to load and employ the weapons.<sup>28</sup>

**Belgium** is estimated to host 10–20 B61 bombs at Kleine Brogel AB for delivery by F-16A/B aircraft of the 10th Tactical Fighter Wing (10W TAC). The weapons are in custody of the U.S. Air Force’s 701st Munitions Support Squadron (MUNSS). Eleven Protective Aircraft Shelters are equipped with underground weapons storage vaults, each capable of storing up to four B61 bombs, for a maximum capacity of 44 weapons. Belgium has not yet decided how to replace its F-16 jet fighters, which are expected to reach the end of their service life around 2025.

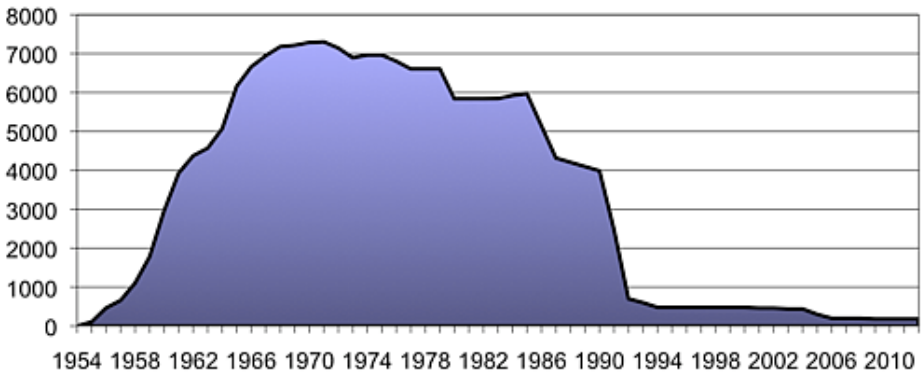
A series of intrusions by unauthorized personnel in recent years has raised serious questions about security at Kleine Brogel. During one intrusion in January 2010, activists from the peace group Vredesactie climbed the fences and walked freely to inspect 15 of the 26 aircraft shelters before being arrested by security personnel. A Belgian defense official stated that the activists “never, ever got anywhere near a sensitive area,” and that it would be “another cup of tea” if they approached “sensitive areas.”<sup>29</sup>

<sup>28</sup> For a description of the custodian process, see: Hans M. Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning*, Natural Resources Defense Council, February 2005, <http://www.nukestrat.com/pubs/EuroBombs.pdf>

<sup>29</sup> Kevin Dougherty, “Belgian base breach sparks nuclear worries,” Stars and Stripes, February 6, 2010, <http://www.stripes.com/news/belgian-base-breach-sparks-nuclear-worries-1.98721>

If so, the activists would have missed the very shelters where the weapons were stored. Another possible explanation is that security personnel was so confident in the intrinsic security provided by the underground vaults that they initially ignore the activists in order not to reveal the actual location of weapons. A third possibility is that Kleine Brogel no longer stores nuclear weapons, but it is highly unlikely that the U.S. Air Force would deploy the expensive MUNSS at the base if the weapons had been withdrawn.

**Figure 4: U.S. Nuclear Weapons in Europe**

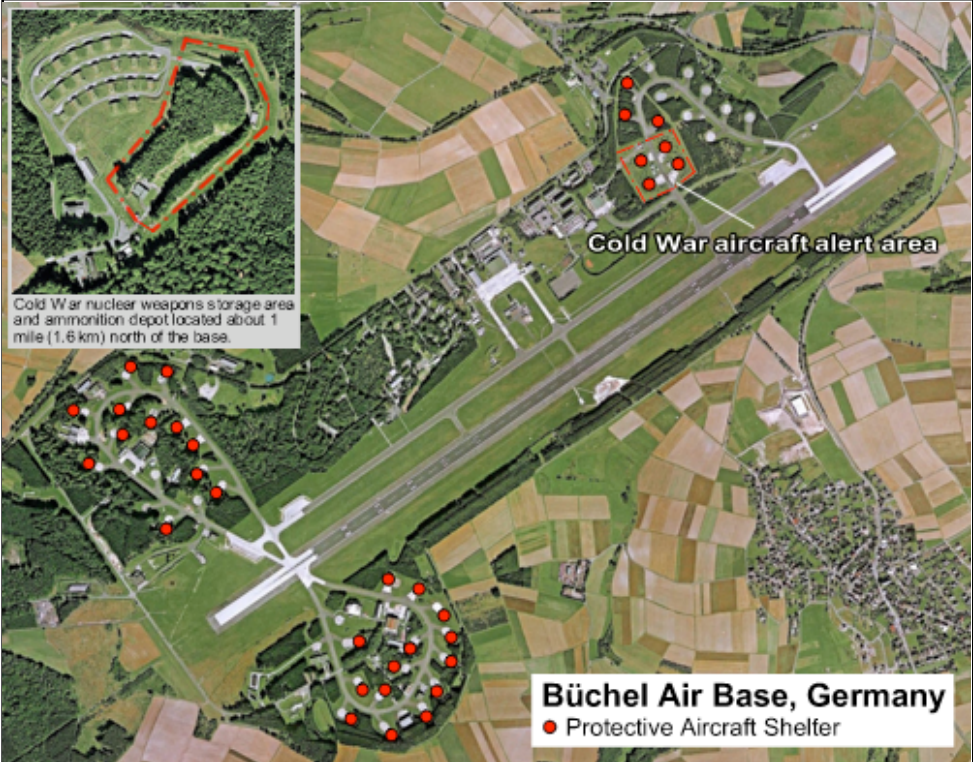


The number of U.S. nuclear weapons in Europe has been reduced unilaterally by 95 percent since 1991 and more than 50 percent since 2000.

**Germany** is host to 10–20 B61 bombs at its Büchel AB (see Figure 5), for delivery by German PA-200 Tornados of the 33rd Fighter Bomber Squadron; the weapons are under custody of the U.S. Air Force 702nd MUNSS. Eleven shelters are equipped with underground vaults for the bombs, with a maximum capacity of 44 weapons. The German government has decided to retain the old Tornado aircraft through 2020. Germany’s next-generation strike aircraft, the Eurofighter, is not equipped to carry nuclear weapons, and Berlin is not believed to have plans to acquire replacement aircraft for the nuclear mission. The German government favors a withdrawal of nuclear weapons from Europe but would prefer that a decision to do so be made as a consensus decision by NATO.

**Italy** hosts an estimated 60–70 B61 bombs at two locations. Roughly 50 of the weapons are stored at Aviano AB for delivery by F-16C/Ds of the U.S. Air Force 31st Fighter Wing. The base has 18 underground vaults for nuclear weapons storage (for a maximum capacity of 72 bombs).

Figure 5: Nuclear Bomber Base at Büchel, Germany



**Büchel Air Base, Germany** (image: April 30, 2001, GeoContent via Google Earth): The base is located in southwestern Germany ( $50^{\circ}10'N$ ,  $07^{\circ}04'E$ ) near the border to Luxemburg. The base has 33 protective aircraft shelters on the base, of which 11 are equipped with WS3 underground storage vaults for nuclear weapons with a maximum capacity of 44. The U.S. Air Force deploys 10–20 B61 bombs at the base under custody of the 702<sup>nd</sup> Munitions Support Squadron (MUNSS) for delivery by German PA-200 Tornado IDS bombers of the JaboG-33 squadron.

Another 10–20 B61s are stored at Ghedi Torre AB, for delivery by Italian PA-200 Tornado aircraft of the 6th Fighter Wing. The weapons are under custody of the U.S. Air Force 704th MUNSS. A decade ago, the base stored 40 bombs, but it is likely that the inventory has been reduced to match the deployment at other national bases.

The Italian government has decided to replace the aging Tornado with the F-35 Joint Strike Fighter (JSF). Italy is tentatively scheduled to receive its first four JSFs in 2014, with additional deliveries slated through 2025. It was initially expected that a total of 131 aircraft

would be purchased,<sup>30</sup> but the financial crisis has forced the Italian government to cut the program to 90 aircraft.<sup>31</sup>

**The Netherlands** hosts an estimated 10–20 B61 bombs at its Volkel AB (see Figure 6). The weapons are earmarked for delivery by Dutch F-16A/Bs of the 1st Fighter Wing and are under custody of the U.S. Air Force 703rd MUNSS. The base has 11 shelters equipped with underground bomb vaults (for a maximum capacity of 44 weapons). The Dutch F-16s are scheduled for replacement by the F-35 JSF. In 2012, the first test aircraft is scheduled for delivery, followed by a second in 2014. Full versions are scheduled to follow through the mid-2020s for a total of 84 aircraft, but financial constraints and delays are likely to curtail the program further.

**Turkey** hosts an estimated 60–70 B61 bombs at Incirlik AB, down from the 2001 level of 90 weapons; however, the posture is unique in NATO. Most of the bombs (approximately 50) are for delivery by U.S. aircraft, but Turkey has denied U.S. requests to deploy a fighter wing based at Incirlik. In a crisis, U.S. aircraft from other bases would have to first deploy to Incirlik to pick up the weapons before they could be used.

The remaining 10–20 bombs at Incirlik AB are earmarked for delivery by Turkish F-16A/Bs. Until 1995, Akinci AB in central Turkey and Balikesir AB in western Turkey stored these weapons for delivery by the 4th Wing and 9th Wing, respectively, but after the U.S. MUNSS at each base was withdrawn, the bombs (about 40 at the time) were moved to Incirlik. Since then, the number of “Turkish” bombs at Incirlik AB has probably been reduced to 10–20 weapons to match the inventories for “host” country air forces, and one of the two wings lost its nuclear mission.

There are conflicting reports about the status of the Turkish nuclear mission. Gen. Ergin Celasin, former commander (until 2001) of the Turkish Air Force, is on record stating that Turkey’s role in the NATO nuclear strike mission ended in the 1990s with the withdrawal of weapons from the national Turkish bases.<sup>32</sup> General Celasin, reportedly explained later that, “no Turkish F-16s had nuclear strike missions to date. Only the F-4, F-100 and F104 aircraft of Turkish Air Force had nuclear strike missions and they have therefore participated in NATO’s exercises in the past.” General Celasin apparently also said that, “no nuclear weapons vaults exist anymore in either Akinci (Murted) or Balikesir air bases.”<sup>33</sup>

<sup>30</sup> U.S. Department of Defense, *JSF PSFD MOU*, December 2010, p. 88, [http://www.jsf.mil/downloads/documents/JSF\\_PSFDMOU\\_-\\_Update\\_4\\_2010.PDF](http://www.jsf.mil/downloads/documents/JSF_PSFDMOU_-_Update_4_2010.PDF)

<sup>31</sup> “Italy cuts order for F-35 combat jets,” *BBC News Business*, February 15, 2012, <http://www.bbc.co.uk/news/business-17042065>

<sup>32</sup> See: Telephone interview with General Ergin Celasin (ret.), former Commander of the Turkish Air Force, February 15, 2010, Ankara, as cited in Mustafa Kibaroglu, “Turkey and Shared Responsibilities,” in *Shared Responsibilities for Nuclear Disarmament: A Global Debate* (American Academy of Arts and Sciences, 2010), p. 27, <http://ais-db.stanford.edu/pubs/22905/GlobalDebate.pdf>

<sup>33</sup> Email, Dr. Mustafa Kibaroglu to Hans M. Kristensen, April 23, 2010.



**Figure 6: Nuclear Bomber Base at Volkel, the Netherlands**



**Volkel Air Base, the Netherlands** (image: AeroGrid 2008): The base is located in the southeastern parts of the Netherlands (51°39'N, 05°43'E). There are 32 protective air shelters on the base, 11 of which are equipped with WS3 Weapons Storage Vaults for nuclear weapons storage with a capacity of 44. The U.S. Air Force deploys 10-20 B61 bombs at the base under custody by the 703<sup>rd</sup> Munitions Support Squadron (MUNSS) for delivery by Dutch F-16A/Bs of the 311<sup>th</sup> and 312<sup>th</sup> squadrons of the 1<sup>st</sup> Wing.

These statements are puzzling because Turkish F-16C/Ds at Akinci (previously Murted) airbase in 1990 were widely reported to have a nuclear strike role.<sup>34</sup> The U.S. Air Force deployed a MUNSS at the base until 1995. After its withdrawal, the weapons were transferred to Incirlik and the U.S. presidential deployment authorization for Europe issued in December 2001 still included 40 “host” weapons for delivery by the Turkish Air Force. U.S. government officials recently confirmed that Turkey currently uses F-16 aircraft for the NATO

<sup>34</sup> William M. Arkin and Robert S. Norris, “NATO Nuclear Weapons in Western Europe, 1990,” *Nuclear Notebook, Bulletin of the Atomic Scientists*, October 1990, p. 49.

nuclear strike mission. In fact, until Turkey acquires a sufficient number of nuclear-capable JSFs over the next 15 years, approximately 30 F-16C/D Block 50s are scheduled to receive a “stop-gap” upgrade to make them capable of carrying the new B61-12 bomb that will replace the B61-3/4 beginning in 2019.<sup>35</sup> Turkey is expected to acquire 100 F-35s through the mid-2020s, with the first two arriving in 2015.<sup>36</sup>

The confusion about the Turkish nuclear status may have to do with the aircraft’s degree of nuclear readiness, which has changed over time, ranging from full alert in the 1980s, to withdrawal from national bases in the 1990s, to today’s “pick up the weapons at Incirlik if needed” posture. During these phases, the aircraft status changed from nuclear-capable, certified, and loaded, to nuclear-capable and certified, to nuclear-capable. Today, the Turkish aircraft are nuclear-capable (according to U.S. sources) but neither loaded nor certified. This, combined with the absence of a U.S. wing at Incirlik AB, underscores the special status of the Turkish posture.

## Nuclear Exercises

Allied and U.S. aircraft regularly conduct nuclear strike exercises where they practice loading and delivering the weapons. These exercises tend to involve the aircraft deploying to one of the nuclear bases to practice nuclear employment from an alternate location.

The Steadfast Noon exercise in May 2010, took place at Aviano AB and involved aircraft from Belgium, Germany, Hungary, Italy, the Netherlands, Turkey and the United States. Most of the aircraft were fighter-bombers from wings with the nuclear mission, but some included air-defense and cargo aircraft.<sup>37</sup>

Sometimes aircraft from countries that used to have a nuclear mission participate. The Steadfast Noon exercise at Büchel AB in March 2007, for example, included Greek F-16s in an air defense role.<sup>38</sup> This function would probably be part of the so-called SNOWCAT (support of nuclear operations with conventional air tactics) program, under which non-nuclear NATO countries that do not have the nuclear strike mission can contribute anyway with conventional forces.<sup>39</sup>

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<sup>35</sup> U.S. Government officials, personal conversations.

<sup>36</sup> “Turkey keeps plan to buy 100 F-35 fighter jets,” *Reuters*, February 23, 2012, <http://www.reuters.com/article/2012/02/23/turkey-f35-lockheed-idUSL5E8DN2IM20120223>

<sup>37</sup> The Hungarian aircraft was a C-17 from Papa Air Base, one of three NATO Strategic Airlift Capability (SAC) aircraft.

<sup>38</sup> Hellenic Air Force, “Participation RSVP the exercise STEADFAST NOON 2007 (SFNN 07),” March 19, 2007, <http://www.haf.gr/el/news.asp?id=1012>

Greek F-16s are not nuclear-capable but participated in the exercise as escorts for the nuclear strike aircraft. Greece previously has a nuclear strike mission with A-7 Corsair aircraft, but the mission ended when nuclear weapons were withdrawn from Araxos AB in 2001.

<sup>39</sup> The final report of the Albright Expert Group also referred to participation of non-nuclear NATO countries in nuclear operations: “Broad participation of the non-nuclear Allies is an essential sign of transatlantic solidarity and risk sharing. Participation by the non-nuclear states can take place in the form of nuclear deployments on their territory or by non-nuclear support measures.” NATO, *NATO 2020: Assured Security; Dynamic Engagement*, May 17, 2010, p. 43. Available at

Figure 7: NATO Nuclear Exercise 2011



The Steadfast Noon exercise in September 2011 took place at Volkel AB and included aircraft from Belgium, Germany, Italy, the Netherlands, Turkey and the United States. As usual, most aircraft were from wings with nuclear missions but several transport aircraft from Italy and Turkey and one NATO AWACS also took part.

The nuclear exercises include practicing “generation” of aircraft, during which the aircraft simulate taking off in strike formation with air-defense aircraft and conduct a simulated strike at a bombing range. There are about a dozen bombing ranges in Europe and Northern Africa that are designated as nuclear-capable. They include four in the United Kingdom, two in Germany, and one each in Belgium, France, Italy, the Netherlands, Tunisia, and Turkey.

## Nuclear Modernization

NATO’s nuclear posture is scheduled to undergo a significant modernization over the next decade that involves upgrading both the nuclear weapons and delivery vehicles.

The B61-3 and B61-4 nuclear bombs currently deployed in Europe will be shipped back to the United States during the next decade and converted to a new modification known as the B61-12. This is part of the so-called life-extension program for the B61 bomb that involves consolidating four existing versions (B61-3, -4, -7 and -10) into one: the B61-12. Disassembly of existing B61s begins in 2016 and the first B61-12 is scheduled for delivery in 2019.

Figure 8: Increasing B61 Accuracy



The B61-12 is an enhanced weapon with increased military capabilities compared with the B61-3 and B61-4. The nuclear explosive package will reuse the primary and secondary of the B61-4, which has a maximum yield of 50 kilotons. But because the B61-12 also needs to meet the mission requirement of the B61-7, a strategic bomb with a much larger maximum yield of 360 kilotons, the B61-12 will be equipped with a tail kit to increase the accuracy. With greater accuracy, a 50-kt bomb can hold at risk the targets that currently require a 360-kt bomb.

Initially, the new design apparently was mainly a U.S. interest and getting NATO's approval took some efforts and coordination. NATO's Supreme Headquarters, Allied Powers Europe (SHAPE), reportedly did not submit its requirements until six months after the design study began, and the initial submission didn't even include the specific requirements. U.S. European Command (EUCOM) then led a DOD-wide effort throughout early 2010 to resolve key issues with certain NATO allies. Finally, in April 2010, the DOD and the NATO allies reached agreement on the key military characteristics of the bomb, including the yield, that it be capable of freefall (rather than parachute-retarded) delivery, its accuracy requirements when used on modern aircraft, that it employ a guided tailkit section, and that it have both midair and ground detonation options.<sup>40</sup>

They reportedly also agreed that the weapon should be capable of being carried by both existing and modernized fighter aircraft, including the F-35, and be compatible with the weapon storage vaults in Europe. EUCOM and SHAPE also agreed to a U.S. STRATCOM requirement for a different yield. U.S. officials said getting the OK from NATO was a significant achievement because if the Europeans had opposed the guided tailkit, the whole plan to consolidate four weapons into one might have not have worked.<sup>41</sup>

<sup>40</sup> U.S. Government Accountability Office, *Nuclear Weapons: DOD and NNSA Need to Better Manage Scope and Future of Refurbishments and Risks to Maintaining U.S. Commitments to NATO*, GAO-11-387, May 2011, p. 5, <http://www.gao.gov/assets/320/317883.pdf>

<sup>41</sup> Ibid



**Figure 9: U.S. Non-Strategic Nuclear Weapons, 2012**

Country	Air Base	Custodian/Unit	Platform	Deployment		Remarks
				WS3 WSVs	Weapons	
<i>Overseas</i>						
Belgium	Kleine Brogel	701st MUNSS	Belgian F-16s (10th Wing Tactical)	11	10–20	
Germany <sup>d</sup>	Büchel	702nd MUNSS	German Tornados (33rd Fighter Bomber Squadron)	11	10–20	
	Nörvenich			11	0	Vaults possibly in caretaker status.
	Ramstein			55	0	Vaults possibly in caretaker status.
	Spangdahlem	52nd Fighter Wing	US F-16s	0	0	Possible secondary strike role for weapons stored at Incirlik AB.
		52nd Munitions Maintenance Group	n.a.	0	0	Provides support to MUNSSs and Belgian, Dutch, German, and Italian air forces for the NATO nuclear strike mission.
Greece <sup>b</sup>	Araxos			11	0	Vaults possibly in caretaker status.
Italy	Aviano	31st Fighter Wing	US F-16s	18	50	
	Ghedi Torre	704th MUNSS	Italian Tornados (6th Fighter Wing)	11	10–20	Weapons probably reduced to match size in other host countries.
Netherlands	Valkel	703rd MUNSS	Dutch F-16s (1st Fighter Wing)	11	10–20	
Turkey	Akinci		Turkish F-16s (4th Wing) <sup>e</sup>	6	0	Vaults possibly in caretaker status; wing might have lost nuclear mission.
	Balikesir		Turkish F-16s (9th Wing) <sup>e</sup>	6	0	Vaults possibly in caretaker status; weapons stored at Incirlik AB.
	Incirlik	39th Air Base Wing	Rotating US aircraft from other wings as needed	25	60–70 <sup>g</sup>	No permanent Fighter Wing and no aircraft “generation” at the base.
United Kingdom <sup>d</sup>	Lakenheath	48th Fighter Wing	F-15Es	33	0	Vaults possibly in caretaker status.
<i>Continental U.S.</i>						
	Bangor, WA	SWFPAC	n.a.	0	?	Naval nuclear weapons storage facility. <sup>f</sup>
	Kings Bay, GA	SWFLANT	n.a.	0	?	Naval nuclear weapons storage facility. <sup>f</sup>
	Kirtland, NM	708th Nuclear Sustainment	n.a.	0	?	Service Logistics Agent for all weapons deployments, movements, and Limited Life Components management.
		KUNSC	n.a.	0	?	Joint nuclear weapons storage facility.
	Nellis, NV	896 <sup>th</sup> Munitions Squadron	n.a.	0	?	Joint nuclear weapons storage facility.
	Seymour Johnson, NC	4 <sup>th</sup> Fighter Wing	F-15Es	0	0	Possible back-up nuclear role.
<b>5 Countries<sup>g</sup></b>	<b>6 Bases<sup>g</sup></b>			<b>87<sup>h</sup></b>	<b>150–200<sup>i</sup></b>	

<sup>a</sup> Nuclear weapons were withdrawn from Nörvenich AB and Memmingen AB (which closed in 2003) in 1995 and from Ramstein AB in 2005.

<sup>b</sup> Nuclear weapons were withdrawn from Araxos AB in 2001. Greek F-16 fighters occasionally participate in NATO Steadfast Noon nuclear exercises as air-defense escorts for allied nuclear strike aircraft.

<sup>c</sup> The stockpile at Incirlik AB includes an estimated 10–20 weapons earmarked for delivery by Turkish F-16 aircraft. Although former Turkish officials say the F-16s have never had a nuclear role, the Pentagon says they currently do. Nuclear weapons were withdrawn from Turkey's Akinci AB and Balikesir AB in 1995, and some of the weapons were transferred to Incirlik. In 2001, 40 of 90 weapons at Incirlik AB were “host” weapons for the 4th and 9th Wings. Since then, one of the wings (possibly 4th Wing at Akinci) may have lost its nuclear mission and the weapons inventory at Incirlik reduced accordingly. Turkey has rejected a US request to deploy a fighter wing at Incirlik, making the weapons deployment at the base unique.

<sup>d</sup> Nuclear weapons were withdrawn from Royal Air Force Lakenheath in 2006. The F-15E is still considered nuclear-capable but not with a primary nuclear mission.

<sup>e</sup> The United States used to have two dual-capable tactical fighter wings in the United States, the 4th Fighter Wing at Seymour Johnson Air Force Base (AFB) in North Carolina and the 27th Fighter Wing at Cannon AFB in New Mexico. The 27th FW has been disbanded and 4th FW no longer is kept fully nuclear certified, though it F-15E bombers are still considered nuclear capable.

<sup>f</sup> Stores nuclear Tomahawk sea-launched cruise missiles (TLAM/N). The weapon, the last non-strategic naval nuclear weapon, is being retired.

<sup>g</sup> Only Europe is included in the total.

<sup>h</sup> The 87 WS3 WSVs each can store up to four bombs for a total maximum of 348 weapons. Normally only one or two weapons are present. Vaults at some other bases that used to store nuclear bombs might still be maintained in a caretaker status for potential dispersal contingencies.

<sup>i</sup> All bombs are B61-3/4s; the B61-10 was placed in the inactive stockpile in 2005. Bombs stored in the United States could augment the European deployment (and contingencies in other regions) as needed.

Key: KUNSC = Kirtland Underground Nuclear Storage Complex; MUNSS = Munitions Support Squadron; n.a. = not applicable; SWFLANT = Strategic Weapons Facility Atlantic; SWFPAC = Strategic Weapons Facility Pacific; WS3 = weapons storage and security system; WSV = weapons storage vault.

U.S. and NATO officials insist that the B61-12 will not have improved military capabilities compared with the current B61 versions. This may be accurate in terms of the warhead yield (although STRATCOM apparently requested a different yield) and because the maximum capacity will not exceed that of the B61-7 – the most powerful of the four types that will be consolidated. But it is not accurate for the weapon as a whole. Since the B61-7 is not currently deployed in Europe, the B61-12 will significantly improve the target kill capability of the European arsenal; B61-3s and B61-4s will figuratively speaking return to Europe as B61-7s and broaden the range of targets that can be held at risk from Europe.<sup>42</sup>

With the increased accuracy, destruction of targets that previously required a large yield can now be done with a smaller yield, thereby reducing radioactive fallout and making the weapon more “useable.”

<sup>42</sup> For an analysis of the B61-12 capabilities, see: Hans M. Kristensen, “B61 LEP: Increasing NATO Nuclear Capability and Precision Low-Yield Strikes,” *FAS Strategic Security Program*, June 15, 2011, <http://www.fas.org/blog/ssp/2011/06/b61-12.php>

In addition to increasing the capability of the bombs in Europe, some of the delivery vehicles are also slated for a significant modernization. The F-35 Lightning II, also known as the Joint Strike Fighter (JSF), will replace the F-16 as carrier of the B61 nuclear bomb. The F-35 has significantly greater capabilities than the F-16, including stealth. Each F-35 will be able to carry two B61-12s internally. Delivery was initially scheduled to begin in 2014,<sup>43</sup> but the NPR delayed it to 2017. Due to delays caused by budget constraints and development issues, the Air Force now “intends to deliver nuclear capability to all JSFs in Europe in the 2020 time frame via the Block IV upgrade.”<sup>44</sup>

## The Cost

There are no official figures for how much the European deployment costs. Some costs are likely covered by joint NATO accounts, others by the United States, while the five host nations probably pay for other expenses. But since there are no official numbers, it is difficult to make a cost-benefit assessment of whether deployment of U.S. nuclear weapons in Europe is worth the cost and whether, or to what extent, NATO gets any security benefits for the investment.

Whatever the budget is, it has to cover a wide range of expenses: maintenance of weapons, aircraft, storage vaults and service vehicles; base security facilities and equipment; U.S. Air Force Munitions Support Squadron (MUNSS) personnel and operations; command and control facilities, personnel and operations; transportation; exercises including jet-fuel; inspections and certifications; headquarters support and management; and warhead surveillance and life-extension programs. Just to mention a few.

The 52<sup>nd</sup> Munitions Maintenance Group (MMG) at Spangdahlem Air Base in Germany is responsible for overseeing the four MUNSS unit deployed at the national bases: the 701 MUNSS at Buechel AB in Germany; the 702 MUNSS at Kleine Brogel AB in Belgium; the 703 MUNSS at Volkel AB in the Netherlands; and the 704 MUNSS at Ghedi Torre AB in Italy. The 52<sup>nd</sup> MMG has a staff of 14 and “oversees ownership, custody, maintenance and release of a \$2.5 billion US weapon stockpile and manages a \$1.1 million annual budget.”<sup>45</sup>

Each of the four MUNSS units includes approximately 140 personnel, for a total of more than 550 active duty U.S. Air Force personnel from 26 categories of skills (Specialty Codes) to oversee the nuclear weapons at the four national bases.

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<sup>43</sup> U.S. Department of the Air Force, *RDT&E Budget Item Justification*, PE 0207142F: Joint Strike Fighter Squadrons, February 2010, R-1 Line Item #135, p. 4 of 10,

<sup>44</sup> Joint Statement for the Record, The Honorable Madelyn Crendon, Assistant Secretary of Defense for Global Strategic Affairs, and The Honorable Andrew Weber, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, On Fiscal Year 2013 National Defense Authorization Budget Request for Department of Defense Nuclear Forces Programs, Before the Strategic Forces Subcommittee Committee on Armed Services, U.S. Senate, March 28, 2012, 13, [http://www.senate.gov/~armed\\_services/statemnt/2012/03%20March/Crendon-Weber%2003-28-12.pdf](http://www.senate.gov/~armed_services/statemnt/2012/03%20March/Crendon-Weber%2003-28-12.pdf).

<sup>45</sup> U.S. Air Force, “Fact Sheet: 52D Munitions Maintenance Group,” [as of October 21, 2010], accessed April 19, 2012, available at <http://www.spangdahlem.af.mil/library/factsheets/factsheet.asp?id=7950>

The 701<sup>st</sup> MUNSS at Kleine Brogel AB consists of 137 active duty personnel from 19 separate USAF Specialty Codes to “provide custody operations for a level one stockpile and an annual budget of \$200K.” The cost of maintaining the property occupied by the MUNSS personnel is paid for by the Belgian Air Force.<sup>46</sup> The unit oversees a “\$5.5 million weapons storage and security system,<sup>47</sup> and “is responsible for more than \$2.5 million in security vehicles, munitions, and other equipment providing direct support to NATO’s strike mission.” The Custody Flight Training Section manages “\$135.000 worth of arms, ammunition and equipment,”<sup>48</sup> and the MUNSS maintains “two \$250.000 weapons maintenance trucks.”<sup>49</sup>

The 702<sup>nd</sup> MUNSS at Buechel AB has approximately 139 active duty military personnel from 20 USAF Specialty Codes, as well as eight other employees. The unit is responsible for “ownership, custody, maintenance, and release of a level 1 stockpile with an annual budget of \$200K.” The German Air Force pays for the property occupied by the U.S. personnel.<sup>50</sup>

The 703<sup>rd</sup> MUNSS at Volkel AB consists of 140 active duty personnel from 24 USAF Specialty Codes.<sup>51</sup> The unit provides security “and custody for a half-billion dollar special weapons stockpile and maintains continuous custody of Air Force resources through the operation of a \$6.5 million weapon storage and security system.”<sup>52</sup>

The 704<sup>th</sup> MUNSS at Ghedi Torre AB in Italy includes approximately 134 personnel and has an annual budget of \$200,000. Unlike the other three national bases, Ghedi does not have personnel support facilities or billeting for U.S. forces.<sup>53</sup> It is unclear how this affects security at the base. Around 2005, Ghedi was said to have “\$100 million in US weapons and related hardware” and a “\$20 million Weapon Security Storage System (WS3).”<sup>54</sup>

It is unknown how much each of the four host countries spends on maintaining the nuclear bases and fighter aircraft and personnel required to perform the NATO nuclear strike mission. But cost is a significant issue now because all of the national aircraft are reaching the end of their service life and need to be replaced in the near future. Due to the financial crisis and its effects of overall defense budgets, it is highly unlikely that national

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<sup>46</sup> U.S. Air Force, “Fact Sheet: 701ST Munitions Support Squadron,” [as of May 11, 2007], accessed April 19, 2012, available at <http://www.spangdahlem.af.mil/library/factsheets/factsheet.asp?id=8419>

<sup>47</sup> U.S. Air Force, “52<sup>nd</sup> Munitions Maintenance Group,” Eifel Salutes, *Eifel Times*, June 15, 2007, p. 2.

<sup>48</sup> U.S. Air Force, “Top Saber Performer,” and “Top Saber Team,” Eifel Elite, *Eifel Times*, September 2, 2005, p. 3.

<sup>49</sup> U.S. Air Force, “Eifel Salutes: 38<sup>th</sup> Munitions Maintenance Group,” Eifel Elite, *Eifel Times*, January 28, 2005, p. 3.

<sup>50</sup> U.S. Air Force, “Fact Sheet: 702<sup>nd</sup> Munitions Support Squadron,” [as of October 21, 2010], accessed April 19, 2012, available at <http://www.spangdahlem.af.mil/library/factsheets/factsheet.asp?id=8418>

<sup>51</sup> U.S. Air Force, “Fact Sheet: 703<sup>rd</sup> Munitions Support Squadron,” [as of May 11, 2007], accessed April 19, 2012, available at <http://www.spangdahlem.af.mil/library/factsheets/factsheet.asp?id=8417>

<sup>52</sup> “38<sup>th</sup> Munitions Maintenance group,” Eifel Elite, *Eifel Times*, June 10, 2005, p. 3.

<sup>53</sup> U.S. Air Force, “Fact Sheet: 704<sup>th</sup> Munitions Support Squadron,” [as of May 11, 2007], accessed April 19, 2012, available at <http://www.spangdahlem.af.mil/library/factsheets/factsheet.asp?id=8416>

<sup>54</sup> Resumé, *Frederich F. Noecker II*, n.d. [2005?], p. 3.

parliaments will agree to pay millions of dollars extra on aircraft and facilities for a nuclear mission that is no longer essential for NATO security.

Italy, for example, is already planning significant reductions, including a 30 percent cut in the overall operational, logistical and headquarters network spending over the next 5-6 years. The number of new F-35s scheduled to replace the current fleet of Tornados (including nuclear mission aircraft) reportedly will be cut by about a third.<sup>55</sup> The Air Force's annual flying hours dropped from 150,000 in 1990 to 90,000 in 2010, and Air Force training reportedly declined by 80 percent from €104.6 million in 2005 to only €21.2 million in 2011. Because the priority is on real-world missions such as Afghanistan, this means that training for other operations has been "pared to the bone," according to one defense official.<sup>56</sup>

The U.S. Air Force plans to spend hundreds of millions to make the new Joint Strike Fighter (F-35) nuclear-capable. Adding nuclear capability to the Block IV version will cost approximately \$339 million.<sup>57</sup> Nuclear certification of the aircraft for the European countries that plan to buy the aircraft (Italy, the Netherlands and Turkey) will likely cost extra. The new tail-kit being developed for the new B61-12 bomb will cost in the order of \$800 million,<sup>58</sup> and the warhead life extension program that will produce the B61-12 is currently estimated at approximately \$4 billion.

## The Nuclear Mission

NATO has significantly reduced the military mission of U.S. nuclear weapons in Europe. The 1999 Strategic Concept declared, that NATO had instigated "a significant relaxation of the readiness criteria for nuclear-armed forces; and the termination of standing peacetime nuclear contingency plans." The Strategic Concept declared, "NATO's nuclear forces no longer target any country."<sup>59</sup>

A NATO paper subsequently provided a little more detail about the changes.<sup>60</sup>

"During the Cold War, NATO's nuclear forces played a central role in the alliance's strategy of flexible response. To deter major war in Europe, nuclear weapons were integrated into the whole of NATO's force structure, and the alliance maintained a variety of targeting plans which could be executed at short notice. This

<sup>55</sup> Luca Peruzzi, "Italian force cuts hit JSF numbers," *Jane's Defence Weekly*, February 22, 2012, p. 14.

<sup>56</sup> Tom Kington, "Training Cuts Could Hurth Italian Readiness," *Defense News*, November 29, 2010, p. 12.

<sup>57</sup> Rebecca Grant, "Nukes for NATO," *Air Force Magazine*, July 2010, pp. 44-45, <http://www.airforce-magazine.com/MagazineArchive/Documents/2010/July%202010/0710nato.pdf>

<sup>58</sup> U.S. Government Accountability Office, *Nuclear Weapons: DOD and NNSA Need t Better Manage Scope and Future Refurbishments and Risks to Maintain U.S. Commitment to Europe*, GAO-11-387, May 2011, p. 30.

<sup>59</sup> North Atlantic Treaty Organization, *The Alliance's Strategic Concept: Approved by the Heads of State and Government participating in the meeting of the North Atlantic Council in Washington D.C.*, April 24, 1999, paragraphs 11, 64

<sup>60</sup> North Atlantic Treaty Organization, *NATO's Nuclear Forces in the New Security Environment*. NATO Issues, June 3, 2004, p. 5, <http://www.nato.int/issues/nuclear/sec-environment.htm>. The issue paper has since been updated several times but subsequent version continued the initial language.

role entailed high readiness levels and quick- reaction alert postures for significant parts of NATO's nuclear forces.

In the new security environment, NATO has radically reduced its reliance on nuclear forces. Its strategy remains one of war prevention but it is no longer dominated by the possibility of nuclear escalation. Its nuclear forces are no longer targeted against any country, and the circumstances in which their use might have to be contemplated are considered to be extremely remote. NATO's nuclear forces continue to play an essential role in war prevention, but their role is now more fundamentally political, and they are no longer directed towards a specific threat.”

Among the detailed changes, the paper listed no pre-planned targets and drastically reduced readiness levels of dual-capable aircraft:

*No Pre-planned Targets:* “With the end of the Cold War, NATO terminated the practice of maintaining standing peacetime nuclear contingency plans and associated targets for its sub-strategic nuclear forces. As a result, NATO's nuclear forces no longer target any country.

*Numbers and Readiness Levels of Dual-Capable Aircraft:* “Taking further advantage of the improved security environment, NATO has taken a number of steps to decrease the number and readiness levels of its dual-capable aircraft. At the height of the Cold War, NATO maintained a portion of these aircraft, together with other nuclear systems, on peacetime quick-reaction alert, capable of launching within minutes. During crisis or conflict, much larger numbers of nuclear delivery systems could be placed on alert. In 1995, in a first major step of relaxation, the readiness posture of dual-capable aircraft was greatly reduced, so that nuclear readiness was measured in weeks rather than in minutes. In 2002, in a second step, the readiness requirements for these aircraft were further reduced and are now being measured in months.”

Just what the targets were for NATO's non-strategic nuclear bombs after the Warsaw Pact dissolved is not clear, but a fighter-bomber with air-refueling can reach deep into Russia and Iran.

A hint about potential targets for nuclear fighter-bombers comes from the mid-1970s when the United States shared with NATO a portion of its Poseidon-equipped SSBNs in support of the alliance. “Since the RVs are relatively ineffective against hard targets,” U.S. Defense Secretary James Schlesinger stated in his report to Congress on the theater nuclear forces posture in Europe, “other systems are required, such as...tactical aircraft with a higher yield capability and greater accuracy. Because of its relatively low yield, Poseidon will produce a low level of collateral damage except when deployed against military installations collocated with urban areas. Here, the weapons with lower yields and greater

accuracies such as those currently deliverable by tactical aircraft would be used,” Schlesinger explained.<sup>61</sup>

So bombs delivered by non-strategic aircraft had utility against hard targets with high yield and against urban targets with low yield. But today there seems to be no unique military role for the non-strategic nuclear weapons in Europe. During a conference on the Nuclear Posture Review in April 2010, then Vice Chairman of the Joint Chiefs of Staff and former Commander of STRATCOM General James Cartwright was asked about the mission in Europe:

**Question:** In terms of the U.S. nuclear weapons in Europe, “is there a military mission performed by these aircraft-delivered weapons that cannot be performed by either U.S. strategic forces or U.S. conventional forces?”

**Cartwright:** No.<sup>62</sup>

According to a recent U.S. Government Accountability Office report, “neither NATO nor U.S. European Command, in accordance with the NATO Strategic Concept, have prepared standing peacetime nuclear contingency plans *or identified targets involving nuclear weapons*.”<sup>63</sup> (Emphasis added).

The plans may not be “standing” but that doesn’t mean there are no contingency plans. Today’s nuclear strike planning uses what is known as adaptive contingency plans that are less complete but can be brought up to full status within days or weeks if necessary. Although the aircraft are not on alert as they used to be during the Cold War, the nuclear tasked wings in Europe still “are required to maintain the ability to be on alert for nuclear operations within a 30-day, 180-day, or 365-day period.”<sup>64</sup>

## Nuclear Burden Sharing and Consultation

Short of a military mission, NATO says that the role of U.S. nuclear weapons in Europe is political; to illustrate the U.S. protection of NATO and provide allies a way to share the deterrence burden carried by the United States.

The five European NATO countries (Belgium, German, Italy, the Netherlands and Turkey) that have U.S. nuclear weapons on their territory also participate actively in the nuclear strike mission by assigning some of their national aircraft and train their pilots to deliver U.S. nuclear weapons. Some argue that this gives these countries a special influence

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<sup>61</sup> James R. Schlesinger, Secretary of Defense, *The Theater Nuclear Force Posture in Europe*, A Report to Congress in Compliance with Public Law 93-365, May 1975, p. 18, [http://www.dod.mil/pubs/foi/operation\\_and\\_plans/NuclearChemicalBiologicalMatters/237.pdf](http://www.dod.mil/pubs/foi/operation_and_plans/NuclearChemicalBiologicalMatters/237.pdf)

<sup>62</sup> Transcript, “Nuclear Posture Review,” Council on Foreign Relations, April 8, 2010, <http://www.cfr.org/proliferation/nuclear-posture-review/p21861>

<sup>63</sup> U.S. Government Accountability Office, *Nuclear Weapons: DOD and NNSA Need to Better Manage Scope and Future of Refurbishments and Risks to Maintaining U.S. Commitments to NATO*, GAO-11-387, May 2011, p. 5, <http://www.gao.gov/assets/320/317883.pdf>

<sup>64</sup> Ibid



on the nuclear mission that other NATO countries do not have. This controversial arrangement – of preparing non-nuclear weapons states party to the nuclear Non-Proliferation Treaty (NPT) to deliver U.S. nuclear weapons – dates back to the Cold War before the NPT entered into effect, but today it seems inappropriate.

Some have argued that for these countries to renounce nuclear weapons and advocating their withdrawal is incompatible with the principle of nuclear burden sharing: “The problem with Germany piously stepping first in line to renounce nuclear weapons on its territory is that the country has not concurrently renounced nuclear deterrence. It wants to continue to enjoy the protection of America’s nuclear umbrella, without sharing the burden of risk associated with stationing weapons in Germany. In other words, the country wants others to risk nuclear retaliation on its behalf, but it would rather not be a target itself.”<sup>65</sup>

**Figure 10: German Nuclear Strike Planning**



U.S. supervisors observe German personnel load a B61 nuclear bomb trainer onto a German Tornado fighter-bomber that would be used by a German pilot to deliver U.S. nuclear weapons in war. This nuclear sharing arrangement was accepted during the Cold War but is incompatible with non-proliferation standards in the 21st century.”

*Image credit: German Air Force*

<sup>65</sup> Franklin Miller, et al., *Germany Opens Pandora’s Box*, Briefing Form, Centre for European Reform, February 2010, p. 2, [http://www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/bn\\_pandora\\_final\\_8feb10-245.pdf](http://www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/bn_pandora_final_8feb10-245.pdf)



Yet most NATO member countries, by far, do not have nuclear weapons on their territory nor do they assign national aircraft to the nuclear strike mission. Indeed, only five of the 25 non-nuclear NATO member countries are directly involved in the nuclear strike mission. Nor are they seen to have renounced nuclear deterrence by refusing to have nuclear weapons on their territory; in fact, most NATO countries do not allow nuclear weapons on their territory in peacetime, which is entirely compatible with NATO membership.

Eastern European NATO member countries, some of which are sometime said to oppose a withdrawal of U.S. nuclear weapons from Europe due to security concerns about Russia,<sup>66</sup> are subject to NATO nuclear policy first stated by the alliance in 1996: “Enlarging the alliance will not require a change in NATO’s current nuclear posture and therefore, NATO countries have no intention, no plan, and no reason to deploy nuclear weapons on the territory of new members nor any need to change any aspect of NATO’s nuclear posture or nuclear policy - and we do not foresee any future need to do so.”<sup>67</sup>

Therefore, other than tradition, there is nothing that requires NATO countries to have U.S. nuclear weapons on their territory or assign national aircraft to the nuclear mission, or renounce nuclear deterrence if they don’t. On the contrary, all NATO member countries (except France) participate in the Alliance’s Nuclear Planning Group (NPG) and its subgroup, the High-Level Group (HLG). The NPG is the ultimate authority within NATO on nuclear policy issue.<sup>68</sup> The alliance-wide nuclear consultation in the NPG is a contrast to the small elite-group represented by the five non-nuclear countries involved in the nuclear strike mission.<sup>69</sup>

NATO member countries would still be able to conduct close nuclear consultation in the NPG if NATO phased out the nuclear sharing arrangement. And U.S. and British (and to some extent French) long-range nuclear forces could still provide extended nuclear

<sup>66</sup> For reviews of the positions of individual NATO members, see: Andrew Summerville, et al., Poland, NATO and Non-Strategic Nuclear Weapons in Europe, Royal United Services Institute (RUSI), Occasional Paper, February 2012, <http://www.rusi.org/downloads/assets/Poland-NATO-and-NSNW-120217.pdf>; Susi Snyder and Wilbert van der Zeijden, *Withdrawal Issues: What NATO Countries Say About the Future of Tactical Nuclear Weapons in Europe*, IKV PAX Christi, March 2011, <http://www.nonukes.nl/media/files/withdrawal-issues-report-nospread.pdf>; Jeffrey A. Larsen, The Future of U.S. Non-Strategic Nuclear Weapons and Implications for NATO: Drifting Toward the Foreseeable Future, NATO Public Diplomacy Division, October 31, 2006, <http://www.nato.int/acad/fellow/05-06/larsen.pdf>

<sup>67</sup> NATO, *Final Communiqué: Issued at the Ministerial Meeting of the North Atlantic Council*, Press Communiqué M-NAC-2 (96)195, December 10, 1996, <http://www.nato.int/docu/pr/1996/p96-165e.htm>

Note that NATO has reiterated this policy several times since, including in the Founding Act on Mutual Relations, Co-operation and Security between the North Atlantic Treaty Organization and the Russian Federation in 1997. At the 2002 NATO-Russia Summit in Rome, when establishing the NATO-Russia Council, NATO and Russia’s heads of state and government declared the continued validity of the Founding Act and reaffirmed the goals, principles and commitments set forth therein. NATO, NATO’s Nuclear Forces, NATO Topic, last updated March 5, 2012, [http://www.nato.int/cps/en/SID-3E740024-DF9945BD/natolive/topics\\_50068.htm](http://www.nato.int/cps/en/SID-3E740024-DF9945BD/natolive/topics_50068.htm)

<sup>68</sup> NATO, “The Nuclear Planning Group (NPG),” NATO Topic, updated October 13, 2011, [http://www.nato.int/cps/en/natolive/topics\\_50069.htm](http://www.nato.int/cps/en/natolive/topics_50069.htm)

<sup>69</sup> For insightful analysis of the nuclear burden sharing and consultation issues, see: Karl-Heinz Kamp and Robertus C.N. Remkes, “Options for NATO Nuclear Sharing Arrangements,” in Steve Andreasen and Isabelle Williams (ed.), *Reducing Nuclear Risks in Europe: A Framework for Action*, Nuclear Threat Initiative, November 2011, [http://www.nti.org/media/pdfs/NTI\\_Framework\\_full\\_report.pdf?\\_id=1322694001](http://www.nti.org/media/pdfs/NTI_Framework_full_report.pdf?_id=1322694001); Malcolm Chalmers and Simon Lunn, NATO’s *Tactical Nuclear Dilemma*, RUSI Occasional Paper, March 2010, [http://www.rusi.org/downloads/assets/NATOs\\_Nuclear\\_Dilemma.pdf](http://www.rusi.org/downloads/assets/NATOs_Nuclear_Dilemma.pdf);

deterrence, just as they have done in the Pacific for two decades since the withdrawal of forward deployed nuclear weapons from South Korea in 1991. Moreover, the Obama administration's Nuclear Posture Review decided to retain a dual-capable fighter (F-35) to "ensure that the United States will retain the capability to forward-deploy non-strategic nuclear weapons in support of its alliance commitments."<sup>70</sup>

For the overwhelming majority of NATO's security issues, however, it would not be nuclear weapons but conventional forces and other means that would require the attention of the alliance. Therefore, it would benefit the alliance if it adjusted its thinking on burden sharing and consultation to reflect the reality of security in Europe today.<sup>71</sup>

## The Nuclear Posture Review

The current U.S. non-strategic nuclear posture in Europe is the product of decades of planning and tradition that have helped shape the Strategic Concept and DDP. But even before the review of the Strategic Concept got underway, many of the assumptions and principles underpinning it were established by the Obama administration's Nuclear Posture Review (NPR) in April 2010:

"Although the risk of nuclear attack against North Atlantic Treaty Organization (NATO) members is at an historic low, the presence of U.S. nuclear weapons – combined with NATO's unique nuclear sharing arrangements under which non-nuclear members participate in nuclear planning and possess specially configured aircraft capable of delivering nuclear weapons – contribute to alliance cohesion and provide reassurance to allies and partners who feel exposed to regional threats. The role of nuclear weapons in defending alliance members will be discussed this year in connection with NATO's revision of its Strategic Concept. Any changes in NATO's nuclear posture should only be taken after a thorough review within – and decision by – the alliance."<sup>72</sup>

The references to forward deployment and nuclear sharing appeared to preempt the NATO review but probably more reflected the language of the old Strategic Concept from 1999. While committing to provide a nuclear security guarantee to allies, the NPR also included important commitments to reducing the role of nuclear weapons as part of enhanced regional security architectures, working towards a "sole purpose" nuclear mission, and the eventual elimination of nuclear weapons.

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<sup>70</sup> U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review Report*, April 2010, p. 27, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>

<sup>71</sup> For an excellent analysis of the challenges and opportunities for updating NATO's posture, see: George Perkovich, et al., *Looking Beyond the Chicago Summit: Nuclear Weapons in Europe and the Future of NATO*, Carnegie Endowment for International Peace, April 2012, [http://carnegieendowment.org/files/beyond\\_chicago\\_summit.pdf](http://carnegieendowment.org/files/beyond_chicago_summit.pdf)

<sup>72</sup> U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review Report*, April 2010, p. 32, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>

## The Tallinn Meeting

Two weeks after the NPR was published, NATO's foreign ministers assembled in Tallinn, Estonia, for an "informal meeting" on April 22-23, 2010. The alliance formally agreed "to take forward the alliance's nuclear posture" in the new Strategic Concept scheduled for completion at the Lisbon summit in November 2010.<sup>73</sup>

The meeting – which was the first time in more than a decade that NATO's foreign ministers officially discussed the nuclear issue – revealed that some old thinking prevailed. On the first day, NATO Secretary General Anders Fogh Rasmussen said, "I do believe that the presence of American nuclear weapons in Europe is an essential part of a credible deterrent."<sup>74</sup> Since this requirement was part of what the review had to examine, many officials privately expressed surprise that Rasmussen essentially sided with status quo. Several NATO members reportedly made clear to Rasmussen that they did not agree.<sup>75</sup>

At the meeting, U.S. Secretary of State Hillary Clinton presented the U.S. position – fresh from the NPR released in the beginning of April:

- "as a nuclear alliance, sharing nuclear risks and responsibilities widely is fundamental;"
- a "broad aim is to continue to reduce the role and number of nuclear weapons" while "recogniz[ing] that in the years since the Cold War ended, NATO has already dramatically reduced its reliance on nuclear weapons;"
- "Allies must broaden deterrence against the range of 21st century threats, including by pursuing territorial missile defense;" and
- "in any future reductions, our aim should be to seek Russian agreement to increase transparency on non-strategic nuclear weapons in Europe, relocate these weapons away from the territory of NATO members, and include non-strategic nuclear weapons in the next round of U.S.-Russian arms control discussions alongside strategic and non-deployed nuclear weapons."<sup>76</sup>

This list would strongly influence the content of NATO's new Strategic Concept adopted at the Lisbon Summit – the last bullet point was included almost verbatim. U.S. officials privately said these principles could accommodate a wide range of nuclear postures.

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<sup>73</sup> NATO Press Release, "Ministers discuss future of NATO's nuclear policy and prospects for missile defence," April 23, 2010, [http://www.nato.int/cps/en/natolive/news\\_62852.htm](http://www.nato.int/cps/en/natolive/news_62852.htm)

<sup>74</sup> "Press Conference by NATO General Secretary Anders Fogh Rasmussen at the Informal Meeting of NATO Foreign Ministers – Tallinn, Estonia," NATO Transcript, April 22, 2010, [http://www.nato.int/cps/en/natolive/opinions\\_62810.htm](http://www.nato.int/cps/en/natolive/opinions_62810.htm)

<sup>75</sup> For an insightful review of the Tallinn meeting, see: Oliver Meier, "NATO Chief's Remark Highlights Policy Rift," *Arms Control Today*, May 2010, [http://www.armscontrol.org/act/2010\\_05/NATO](http://www.armscontrol.org/act/2010_05/NATO)

<sup>76</sup> Oliver Meier, "NATO Chief's Remark Highlights Policy Rift," *Arms Control Today*, May 2010, [http://www.armscontrol.org/act/2010\\_05/NATO](http://www.armscontrol.org/act/2010_05/NATO)

## The Albright Expert Group

In preparation of the Lisbon Summit, NATO commissioned an expert group chaired by former U.S. Secretary of State Madeleine Albright to produce a study with policy recommendations for the new Strategic Concept review. The study, *NATO 2020: Assured Security; Assured Engagement*, included recommendations about NATO's nuclear policy. It included the first bullet point from Clinton's Tallinn speech, that as long as nuclear weapons remain a reality in international relations, the alliance should retain a nuclear component to its deterrence strategy. Yet the study was surprisingly vague about the need for continued deployment of U.S. nuclear weapons in Europe. It concluded that, "Under current conditions, the retention of some U.S. forward-deployed systems on European soil reinforces the principle of extended deterrence and collective defence."<sup>77</sup>

But "systems" rather than "weapons" is not a clear endorsement of continued forward deployment of nuclear *weapons* in Europe. A "system" could also be an empty nuclear weapons vault where weapons could be redeployed if necessary. Or a "system" could also be nuclear-capable aircraft deployed without nuclear weapons. Likewise, the study recommended that, broad participation of the non-nuclear Allies is an essential sign of transatlantic solidarity and risk sharing and that such participation "can take the form of nuclear deployments on their territory or by non-nuclear support measures."<sup>78</sup>

Again, the recommendation did not presume deployment of nuclear weapons in Europe but stated pretty clearly that even non-nuclear support measures might be sufficient for burden sharing and consultation. The study recommended that the non-nuclear NATO Response Force should be prepared to undertake Article V missions and "should be a central participant when Article V exercises are conducted."<sup>79</sup>

Finally, the study advocated the elimination of non-strategic nuclear weapons altogether through an ongoing dialogue with Russia that "should help set the stage for the further reduction and possible eventual elimination of the entire class of non-strategic nuclear weapons."<sup>80</sup> This recommendation went beyond the NPR, which did not explicitly endorse the elimination of non-strategic nuclear weapons.

In seeking to demonstrate a reduction of nuclear weapons and provide an incentive for non-nuclear countries to refrain from developing them, the study recommended that, "NATO should endorse a policy of not using or threatening to use nuclear weapons against non-nuclear states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear non-proliferation obligations."<sup>81</sup>

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<sup>77</sup> Madeleine Albright (chair), *NATO 2020: Assured Security; Assured Engagement*, NATO, May 17, 2010, p. 43.

<sup>78</sup> Ibid.

<sup>79</sup> Ibid., p. 39.

<sup>80</sup> Ibid., p. 43.

<sup>81</sup> Ibid

This recommendation is virtually identical to the Obama administration's strengthened negative security assurances,<sup>82</sup> and the intention of the expert study appears to have been to create consistency between U.S. and NATO nuclear declaratory policy.

Yet such a policy would have significant implications for NATO. On the one hand, it would appear to enable the alliance to help provide an incentive for potential proliferators not to pursue nuclear weapons. On the other hand, to have anything real to offer such countries, it would obviously require that NATO creates nuclear strike options against them in the first place. The implications of such an expanded nuclear doctrine were not explained by the Albright study but should be carefully considered by NATO before it is adopted.

## NATO's Strategic Concept

The Lisbon Summit in November 2010 adopted NATO's new Strategic Concept, *Active Engagement, Modern Defense*, an update of the previous Strategic Concept from 1999. The new version included important modifications of the sections relating to nuclear forces.

The Strategic Concept importantly "commits NATO to the goal of creating the conditions for a world without nuclear weapons," something the 1999 version did not. At the same time, the new Strategic Concept declares that, "as long as there are nuclear weapons in the world, NATO will remain a nuclear alliance,"<sup>83</sup> the first point from Secretary Clinton's Tallinn speech.

Overall, the new Strategic Concept is less explicit than the 1999 version about what the role of nuclear weapons is. The previous document explicitly described the role "to preserve peace and prevent coercion and war of any kind...by ensuring uncertainty in the mind of any aggressor about the nature of the Allies' response to military aggression," and "demonstrate that aggression of any kind is not a rational option."<sup>84</sup> The new version, in contrast, describes the role of nuclear weapons in very general terms, essentially with no specifics, and as part of an overall mix of nuclear and conventional capabilities.

The new Strategic Concept repeats the language from the previous version that the circumstances in which any use of nuclear weapons might have to be contemplated are "extremely remote." But the 1999 declaration that "NATO's nuclear forces no longer target any country" is gone from the new document. And the 1999 statement that NATO "does not consider any country to be its adversary" has been changed to: "The alliance does not consider itself to be any country's adversary." Gone is the previous language about U.S. tactical nuclear weapons based in Europe providing "an essential political and military link" between Europe and North America, or that sub-strategic forces provide an escalation link with strategic forces.

The new Strategic Concept does pledge to "ensure the broadest possible participation of Allies in collective defence planning on nuclear roles, in peacetime basing of nuclear forces,

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<sup>82</sup> For the text of the Obama administration's negative security assurance, see: U.S. Department of Defense, *Nuclear Posture Review Report*, April 2010, p. viii.

<sup>83</sup> NATO, *Active Engagement, Modern Defense, Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization*, adopted by the Heads of States and Government in Lisbon, November 19, 2010, pp. 1, 4. <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>

<sup>84</sup> NATO, *The Alliance's Strategic Concept: Approved by the Heads of State and Government participating in the meeting of the North Atlantic Council in Washington D.C.*, April 24, 1999, section 62, [http://www.nato.int/cps/en/natolive/official\\_texts\\_27433.htm](http://www.nato.int/cps/en/natolive/official_texts_27433.htm)

and in command, control and consultation arrangements.”<sup>85</sup> But the language is vague and two entire paragraphs that used to specify the specific nature and role of the U.S. non-strategic nuclear weapons in Europe are not included in the new version.

Instead, the new Strategic Concept repeats the language from the previous version that it is the *strategic* forces of the United States (and to some extent Britain and France) that provide the “supreme guarantee of the security of the alliance.”<sup>86</sup> This is not the role of the U.S. non-strategic nuclear weapons in Europe.

In terms of the role of U.S. nuclear weapons in Europe, the Strategic Concept is more interesting for what it doesn’t say anymore than for what it says. The much less explicit commitment to a continued deployment of U.S. non-strategic nuclear weapons in Europe may make it easier for NATO to change the posture.

The Lisbon Summit also ordered a review of NATO’s military posture to implement the new Strategic Concept. The Summit declaration stated that the review, formally known as the Deterrence and Defense Posture Review (DDPR), “would include the range of NATO’s strategic capabilities required, including NATO’s nuclear posture, and missile defense and other means of strategic deterrence and defense.”<sup>87</sup>

The planning principles for the DDPR, as outlined by the U.S. Department of Defense, are:

- Retaining an appropriate mix of both conventional and nuclear capabilities;
- Sharing the risks and burdens of nuclear deterrence in tangible ways;
- Maintaining the minimum number of nuclear capabilities needed to ensure effective deterrence;
- Emphasizing up-to-date security measures at U.S. and Allied bases;<sup>88</sup>
- Encouraging Russia to better secure and reduce its arsenal of non-strategic nuclear weapons; and
- Maintaining undiminished security for all alliance members.<sup>89</sup>

<sup>85</sup> NATO, *Active Engagement, Modern Defense, Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization*, adopted by the Heads of States and Government in Lisbon, November 19, 2010, p. 5. <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>

<sup>86</sup> *Ibid.*, p. 4.

<sup>87</sup> NATO, *Lisbon Summit Declaration: Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Lisbon*, Press Release (2010) 155, November 20, 2010, paragraph 30, [http://www.nato.int/cps/en/natolive/official\\_texts\\_68828.htm](http://www.nato.int/cps/en/natolive/official_texts_68828.htm)

<sup>88</sup> James Miller’s listing of “up-to-date security measures at U.S. and Allied bases” follows the U.S. Air Force Blue Ribbon Review in 2008 concluding that “most sites” used for deploying U.S. nuclear weapons in Europe did not meet DOD security requirements.” (See: Hans M. Kristensen, “USAF Report: ‘Most’ Nuclear Weapon Sites in Europe Do Not Meet US Security Requirements,” *FAS Strategic Security Blog*, June 19, 2008, <http://www.fas.org/blog/ssp/2008/06/usaf-report-%E2%80%9Cmost%E2%80%9D-nuclear-weapon-sites-in-europe-do-not-meet-us-security-requirements.php>). The Dutch government later dismissed the Blue Ribbon Review finding (see: Hans M. Kristensen, “Dutch Government Rejects Blue Ribbon Review Findings,” *FAS Strategic Security Blog*, July 1, 2008, <http://www.fas.org/blog/ssp/2008/07/dutch.php>), and a U.S. Senate delegation to the European sites, according to one of the members, found no security issues except what would be expected and normally corrected from time to time. Yet following a series of intrusions by peace groups into Kleine Brogel Air Base in Belgium in 2010, NATO in February 2011 requested upgrades to nuclear weapons storage sites in Europe and the U.S. Air Force in October 2011 awarded a contract to the Atlantic Comm Tech Corp. for interior intrusion detection systems for protective aircraft shelters (see DOD contract announcement October 13, 2011, <http://www.defense.gov/utility/printitem.aspx?print=http://www.defense.gov/contracts/contract.aspx?contractid=4642>).

<sup>89</sup> James Miller, U.S. Principle Deputy Secretary of Defense for Policy, Statement Before the House Committee on Armed Services, November 2, 2011, p. 4, [http://armedservices.house.gov/index.cfm/files/serve?File\\_id=faad05df-9016-42c5-86bc-b83144c635c9](http://armedservices.house.gov/index.cfm/files/serve?File_id=faad05df-9016-42c5-86bc-b83144c635c9)



Four so-called scoping papers were prepared during the summer-fall of 2011, which analyzed the main issues for the review. According to officials, the issues were:

1. The threats facing NATO;
2. The alliance's strategic mission;
3. The appropriate mix of military forces;
4. NATO's arms control and disarmament policy.

The DDPR report, which is being prepared by the North Atlantic Council for final approval at the May 2012 NATO summit in Chicago, will include, according to Miller, a discussion of the role and size of NATO nuclear forces, as well as a discussion of the possibility for future nuclear reductions.<sup>90</sup> Other U.S. officials say they hope the DDPR will bring coherence between NATO's nuclear policy and the NPR.

Unfortunately, the Lisbon Summit Declaration also included language that significantly constrains the scope of the DDPR. Rather than full-scope, the Declaration states that the review of NATO's nuclear posture "only applies to nuclear weapons assigned to NATO."<sup>91</sup> This constraint – apparently added at the insistence of France to prevent its strategic nuclear forces from being included – means that the review will only examine the contribution from the relatively small number of U.S. non-strategic nuclear weapons in Europe, but ignore the deterrence effect from the larger strategic nuclear forces of the United States, Britain and France.<sup>92</sup>

This constraint, if followed by the DDPR, could result in a lopsided review that over-emphasizes the role and importance of U.S. non-strategic nuclear weapons deployed in Europe, and under-emphasizes the contribution that the combined inventories of thousands of U.S., British and French strategic nuclear warheads obviously would have on the deliberations of any adversary contemplating an attack on NATO.

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<sup>90</sup> Ibid

<sup>91</sup> NATO, *Lisbon Summit Declaration: Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Lisbon*, Press Release (2010) 155, November 20, 2010, paragraph 30, [http://www.nato.int/cps/en/natolive/official\\_texts\\_68828.htm](http://www.nato.int/cps/en/natolive/official_texts_68828.htm)

<sup>92</sup> A portion of British warheads on strategic Trident submarines used to be assigned a sub-strategic role in support of NATO to compensate for the elimination of British air-delivered bombs. NATO's Strategic Concept from 1999 explicitly referred to such a role, but the 2010 Strategic Concept does not. Furthermore, the British government stated in 2007 that it had decided to cease using the sub-strategic term because any use of its nuclear weapons would be strategic in intent and in effect. Although not "assigned" to NATO, the government said that UK's nuclear weapons remain committed to the defence of NATO as before...."

See: U.S. House of Commons, Defence Committee, *The Future of the U.S. Nuclear Deterrent: the White Paper: Government Response to the Committee's Ninth Report of Session 2006-07, Eleventh Special Report of Session 2006-07*, May 22, 2007, p. 18, <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmdfence/551/551.pdf>; NATO, *The Alliance Strategic Concept: Approved by the Heads of State and Government participating in the meeting of the North Atlantic Council in Washington, D.C., April 24, 1999*, Section 64, [http://www.nato.int/cps/en/natolive/official\\_texts\\_27433.htm](http://www.nato.int/cps/en/natolive/official_texts_27433.htm); NATO, *Final Communiqué, Press Communiqué M-DPC/NPG-1(95)57*, June 8, 1995, Section 23, <http://www.nato.int/docu/comm/49-95/c950608a.htm>

## The Disparity Distraction

The Strategic Concept also introduced a formal link between NATO and Russia's non-strategic nuclear postures: "Any further steps" in reducing non-strategic nuclear weapons in Europe "must take into account the disparity with the greater Russian stockpiles of short-range nuclear weapons."<sup>93</sup> Although Secretary Clinton's Tallinn speech also recommended seeking reductions in Russian non-strategic nuclear weapons, the use of "disparity" in the new Strategic Concept as a condition for "any further steps" appears to go one step further. A formal link between NATO's nuclear posture in Europe and Russian non-strategic nuclear forces was normal during the Cold War, but policymakers have avoided doing so for two decades in an attempt to break the "us versus them" mentality. NATO has insisted that the U.S. weapons in Europe were not directed against Russia, and the United States has repeatedly reduced its deployment in Europe regardless of the size of the Russian arsenal.

In 2005-2006, the Bush administration unilaterally cut the European stockpile by more than 50 percent compared with the Clinton administration's deployment, from 440 bombs to approximately 200. This reduction included the complete (but quiet) withdrawal from the United Kingdom<sup>94</sup> – the first time since the 1950s that the United States did not have nuclear weapons in the United Kingdom – and the removal of all nuclear weapons from Ramstein Air Base in Germany.<sup>95</sup> Nothing was said about these reductions and NATO did not demand Russian reciprocity or express concern over disparity.

One month after the Strategic Concept was approved by NATO the issue of disparity also found its way into the U.S. Senate's advice and consent resolution for the New START treaty. The resolution called on the administration to seek to initiate within one year negotiations with Russia "on an agreement to address the disparity" between Russian and U.S. non-strategic nuclear weapons.<sup>96</sup>

The rise of non-strategic nuclear weapons disparity to the top of the nuclear agenda was acknowledged by James Miller in his testimony to the House Armed Services Committee when he explained that the Strategic Concept is "consistent with Senate language in the New START resolution of ratification that any further steps must take into account the

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<sup>93</sup> North Atlantic Treaty Organization, *Active Engagement, Modern Defense, Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization*, adopted by the Heads of States and Government in Lisbon, November 19, 2010, p. 8, <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>

<sup>94</sup> The withdrawal from the United Kingdom was first report here: Hans M. Kristensen, "U.S. Nuclear Weapons Withdrawn From the United Kingdom," *EAS Strategic Security Blog*, June 26, 2008, <http://www.fas.org/blog/ssp/2008/06/us-nuclear-weapons-withdrawn-from-the-united-kingdom.php>

<sup>95</sup> Hans M. Kristensen, "United States Removes Nuclear Weapons From German Base, Documents Indicate," *EAS Strategic Security Blog*, July 9, 2007, [http://www.fas.org/blog/ssp/2007/07/united\\_states\\_removes\\_nuclear.php](http://www.fas.org/blog/ssp/2007/07/united_states_removes_nuclear.php)

<sup>96</sup> U.S. Senate, *Resolution of Advice and Consent to Ratification of the New START Treaty*, December 22, 2010, <http://www.state.gov/t/avc/rls/153910.htm>



disparity between the non-strategic (tactical) nuclear weapons stockpiles of Russia and the United States.”<sup>97</sup>

Linking the two non-strategic nuclear postures is a significant policy shift that to some extent reinstates the bi-polar mindset from the 1980s. The shift partly reflects an interest in seeking reductions in Russian non-strategic nuclear weapons. But it has also been precipitated by officials, who were not required to think about non-strategic nuclear weapons for the past two decades, borrowing policy language from the 1980s to redesign a nuclear arms control agenda for the 2010s. An important source for the focus on disparity was the report published by the Congressional strategic posture commission, which concluded that the non-strategic nuclear weapons “imbalance favoring Russia is worrisome, including for allies, and it will become more worrisome as the number of strategic weapons is decreased. Dealing with this imbalance is urgent and, indeed, some commissioners would give priority to this over taking further steps to reduce the number of operationally deployed strategic nuclear weapons.”<sup>98</sup> Another factor has been a busy briefing effort of the new NATO members in Eastern Europe by former officials previously intimately involved in the nuclear mission in the 1980s and 1990s, who oppose a withdrawal of U.S. nuclear weapons from Europe.

The disparity policy replaces the dynamic unilateral initiatives of the 1990s and 2000s with a much more cautious and bureaucratic arms control approach that essentially hands over the initiative to the Kremlin by conditioning further U.S. reductions in Europe on Russian agreement to reduce its posture. But since Russia’s justification for its larger non-strategic nuclear posture is not based on the number or composition of U.S. non-strategic nuclear weapons deployed in Europe or elsewhere, but primarily justified as compensating for its inferior *conventional* forces, making further reductions in U.S. nuclear weapons in Europe dependent on reductions in Russia’s non-strategic nuclear forces seems disconnected.

Although the disparity issue is now a principal policy condition for “any” further reductions, NATO and the United States have yet to explain whether this means they are seeking parity with Russia on non-strategic nuclear weapons or how much disparity is acceptable. Obviously there is a legitimate interest to reduce non-strategic nuclear forces, but the undefined disparity condition could become a roadblock rather than an opportunity.

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<sup>97</sup> James Miller, U.S. Principle Deputy Secretary of Defense for Policy, Statement Before the House Committee on Armed Services, November 2, 2011, p. 3, [http://armedservices.house.gov/index.cfm/files/serve?File\\_id=faad05df-9016-42c5-86bc-b83144c635c9](http://armedservices.house.gov/index.cfm/files/serve?File_id=faad05df-9016-42c5-86bc-b83144c635c9)

<sup>98</sup> *America’s Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States*, United Institute of Peace Press, May 2009, p. 67, [http://www.usip.org/files/America's\\_Strategic\\_Posture\\_Auth\\_Ed.pdf](http://www.usip.org/files/America's_Strategic_Posture_Auth_Ed.pdf)

## Increasing Transparency

Mindful of the difficulty of trading Russian reductions of its non-strategic weapons (which are justified to compensate for inferior *conventional* forces) for reductions in U.S. non-strategic nuclear weapons in Europe (which are no longer essential), some officials in Europe and Washington are now focusing more on increasing transparency as a useful first step in the process. Opponents of reductions support this approach as a way to prevent, or at least delay, a withdrawal of non-strategic nuclear weapons from Europe.

The Strategic Concept states – echoing Secretary Clinton’s speech in Tallinn – that in “any future reductions, our aim should be to seek Russian agreement to increase transparency on its nuclear weapons in Europe and relocate these weapons away from the territory of NATO members.”<sup>99</sup>

In line with this policy, four NATO countries – Germany, the Netherlands, Norway and Poland – in April 2011 circulated a “non-paper” inside NATO that correctly pointed out that lack of transparency is a source of insecurity. The paper, which was also supported by Belgium, the Czech Republic, Hungary, Iceland, Luxembourg and Slovenia, proposed a series of steps to increase transparency and confidence to “paving the way for concrete reductions.”<sup>100</sup>

Specifically, the 4+6 paper recommended that NATO and Russia consider:

- exchanging information on tactical nuclear weapons. Starting with declaring numbers, the exchange should successively also include locations, operational status and command arrangements, as well as level of warhead storage security;
- a standard reporting formula for the tactical nuclear weapons inventories;
- notifying, on a voluntary basis and in good faith, within the NATO-Russia Council, of any plans to move tactical nuclear weapons;
- an exchange of visits by military officials;
- starting initial exchanges of conditions and requirements for gradual reductions of tactical nuclear weapons in Europe, beginning with clarification of the number of weapons that have already been eliminated and/or put into storage by the U.S. and Russia as a result of the Presidential Nuclear Initiatives of 1991-1992; and
- holding a seminar in the first quarter of 2012 on nuclear doctrines, with special emphasis on the role of tactical nuclear weapons.<sup>101</sup>

<sup>99</sup> North Atlantic Treaty Organization, *Active Engagement, Modern Defense, Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization*, adopted by the Heads of States and Government in Lisbon, November 19, 2010, pp. 7-8, <http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>

<sup>100</sup> *Non-Paper Submitted by Poland, Norway, Germany and the Netherlands on increasing transparency and confidence with regard to tactical nuclear weapons in Europe*, April 14, 2011. A copy of the paper is available online at <http://www.fas.org/blog/ssp/2011/04/natoproposal.php>

<sup>101</sup> For complementary and additional transparency and confidence-building measures relating to non-strategic nuclear weapons, see: *Addressing Non-Strategic Nuclear Forces*, Euro-Atlantic Security Initiative, Carnegie Endowment for International Peace, February 2012, [http://carnegieendowment.org/files/WGP\\_AddressingNSNW\\_FINAL.pdf](http://carnegieendowment.org/files/WGP_AddressingNSNW_FINAL.pdf)

Yet the paper also endorsed the disparity focus and bluntly rejected further unilateral reductions. Despite the U.S. NPR decision to unilaterally retire the nuclear Tomahawk cruise missile and following two decades of unilateral reductions in Europe, the paper concluded that further reductions “should not be pursued unilaterally,” and the process should be based on “the assumption of reciprocity between NATO and the Russian Federation.”<sup>102</sup>

## The Importance of Unilateral

The rejection of unilateral reductions and the new focus on disparity and bilateral negotiations with Russia to reduce non-strategic nuclear weapons is curious because it is unilateral initiatives – not negotiations – that have produced all the changes in non-strategic nuclear forces for the past two decades.

The unilateral reductions by presidents George H.W. Bush, Bill Clinton, George W. Bush and Barack Obama have resulted in unprecedented withdrawals and destructions of non-strategic nuclear weapons without negotiations - without undermining U.S. or NATO security.

The so-called Montebello decision in 1988 unilaterally withdrew 1,400 warheads from Europe (in addition to the 1,000 withdrawn during the previous decade), leaving nearly 4,000 U.S. warheads in Europe by 1990. George H.W. Bush's Presidential Nuclear Initiatives (PNIs) further reduced the number to approximately 600 by 1993. The Clinton administration's Nuclear Posture Review (NPR) in 1994 decided to retain 480 bombs in Europe and remove nuclear capability from surface ships, including the ability to launch nuclear weapons from aircraft carriers. In the mid-1990s, non-strategic nuclear weapons were withdrawn and consolidated from bases in Germany and Turkey, and in 2001 nuclear weapons were withdrawn from Greece. During the George W. Bush administration non-strategic nuclear weapons in Europe were unilaterally reduced by more than 50 percent, including the complete withdrawal of nuclear weapons from the United Kingdom – a historic decision that was never even announced or used to get Russian reciprocal reductions.

Likewise, dual-capable fighter wings in the United States intended to provide back-up to NATO and extended nuclear deterrence in the Pacific were unilaterally cut or lost their nuclear certification, leaving nuclear fighter wings in Europe as the only remaining non-strategic fighters with an active nuclear mission.<sup>103</sup>

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<sup>102</sup> *Non-Paper Submitted by Poland, Norway, Germany and the Netherlands on increasing transparency and confidence with regard to tactical nuclear weapons in Europe*, April 14, 2011. A copy of the paper is available online at <http://www.fas.org/blog/ssp/2011/04/natoproposal.php>

<sup>103</sup> Although it is not as active a posture as the one in Europe, “a small number of nuclear weapons [are] stored in the United States for possible overseas deployment in support of extended deterrence to allies and partners worldwide.” U.S. Department of Defense, Office of the Secretary of Defense, *Nuclear Posture Review Report*, April 6, 2011, pp. xiii, 27, <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>

Finally, in 2010, the Obama administration's NPR decided to unilaterally retire the nuclear TLAM/N, a weapon that had provided extended nuclear deterrence to allies in Europe and the Pacific.

Russia has responded to these initiatives by withdrawing non-strategic nuclear weapons from Eastern Europe, offloading weapons from ships and attack submarines and eliminating half of the warheads, eliminating warheads for artillery shells, mines, and nearly all for ground-launched tactical missiles, eliminating almost two-thirds of warheads for air defense weapons, and eliminating half of air-delivered weapons. Most of the remaining warheads are in excess of the capacity of its non-strategic nuclear delivery vehicles and are slated for destruction. The remaining non-strategic warheads are not deployed but in central storage and retained, not because of U.S. non-strategic nuclear weapons, but to compensate for inferior conventional forces. And even those remaining Russian non-strategic nuclear weapons are likely to be reduced significantly over the next decade – with or without negotiations.

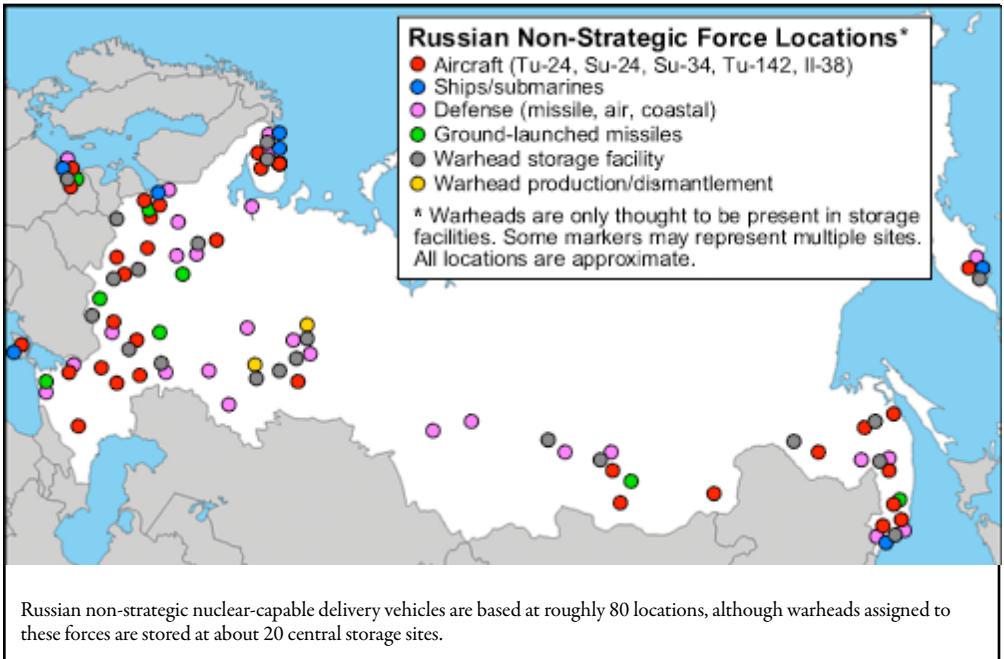
But according to one senior NATO official, “countries that have argued for or espoused the idea of removing nuclear weapons from Europe have done so in the context of an arms control process, a process of working with Russia to get an agreement to remove all of tactical nuclear weapons out of Europe. That should be done as part of an arms control process. In that way we can enhance our security. But unilateral reductions most nations see as putting our security at jeopardy.”<sup>104</sup>

Yet the record is overwhelming: it is unilateral initiatives – not negotiations – that have produced results in the efforts to reduce non-strategic nuclear forces. Rather than putting NATO security at jeopardy, these unilateral initiatives have significantly increased the security of the alliance. That doesn't mean that negotiations should be rejected, but neither should unilateral cuts.

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<sup>104</sup> Guy Roberts, “How do nuclear changes look to NATO?,” *NATO Review 2010: Nuclear proliferation – about to mushroom?*, available online at [http://www.nato.int/docu/review/2010/Nuclear\\_Proliferation/Guy\\_Roberts/EN/index.htm](http://www.nato.int/docu/review/2010/Nuclear_Proliferation/Guy_Roberts/EN/index.htm)

## RUSSIAN NON-STRATEGIC NUCLEAR WEAPONS



Like the United States and NATO, Russia does not disclose the numbers or locations of its non-strategic nuclear weapons, and the United States and NATO do not disclose how many they think Russia has. As a result, uncertainty sustains a public debate full of rumors, half-truths and worst-case assumptions.

On the few occasions that Russian officials have provided information, the statements are vague and imprecise. They may state that weapons have been “eliminated” or “removed,” leaving doubt about what remains. Or the remaining inventories may be said to be in “central” storage, without explaining what a central storage facility is or where it is located.

Statements made by U.S. officials can be equally vague and confusing. In 2010, during a Senate hearing on the New START treaty, then Defense Secretary Robert Gates stated: “Their tactical number [sic] weapons outnumber ours, thousands to one, basically, in Eastern Europe – I mean, in the western United States – in the western Russia...”<sup>105</sup>

<sup>105</sup> Robert Gates, U.S. Secretary of Defense, statement before the Senate Foreign Relations Committee May 18, 2010, in *The New START Treaty (Treaty Doc. 111-5)*; Hearing Before the Committee on Foreign Relations, United States Senate, U.S. Government Printing Office, 2010, p. 70, [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_senate\\_hearings&dodocid=f62467.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_senate_hearings&dodocid=f62467.pdf)

This report estimates that Russia has approximately 2,000 non-strategic nuclear weapons assigned to non-strategic nuclear-capable delivery vehicles. This inventory has declined significantly since the end of the Cold War and is likely to continue to decline in the next decade – with or without a new arms control agreement - due to age and limited funding.

## Presidential Initiatives<sup>106</sup>

The reduction of Russian non-strategic nuclear weapons has occurred as a result of the unilateral Presidential Nuclear Initiatives (PNIs) by Presidents Gorbachev and Yeltsin in 1991-1992. On November 5, 1991, in response to unilateral initiatives announced by President George W.H. Bush on September 27, 1991, President Mikhail Gorbachev announced several steps to reduce Russian non-strategic nuclear forces:

- Eliminate nuclear warheads for non-strategic missiles, artillery, and mines;
- Offload non-strategic nuclear weapons from ships, general-purpose submarines, and naval aircraft, and place in centralized storage. Some warheads would be eliminated;
- Remove nuclear warheads from operational anti-aircraft weapons and place in central storage. Some warheads would be eliminated;
- Non-strategic nuclear weapons for tactical aircraft would be moved to central storage, if the United States did the same.

Following the collapse of the Soviet Union in December 1991, Russian President Boris Yeltsin moved quickly on January 29, 1992, to reaffirm and broaden Gorbachev's initiative:

- All nuclear warheads for tactical missiles, artillery shells, and mines would be eliminated. Production had recently been terminated;
- All non-strategic naval nuclear weapons for surface ships and general-purpose submarines would be offloaded and placed in storage. One-third would be eliminated;
- Nuclear warheads for anti-aircraft units would be removed and stored. Half would be eliminated;
- Half of non-strategic warheads for tactical aviation would be eliminated, and the remainder would be moved to central storage if the United States did the same.

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<sup>106</sup> For descriptions of Russian presidential nuclear initiatives, see: Joshua Handler, *Russian Nuclear Warhead Dismantlement Rates and Storage Site Capacity: Implications for the Implementation of START II and De-alerting Initiatives*, Woodrow Wilson School, Princeton University, CEES Report No. AC-99-01, February 1999; Eli Corin, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies, *Presidential Nuclear Initiatives: An Alternative Paradigm for Arms Control*, Issue Brief, Nuclear Threat Initiative, March 2004, [http://www.nti.org/e\\_research/e3\\_41.html](http://www.nti.org/e_research/e3_41.html); Amy Woolf, *Non-Strategic Nuclear Weapons*, Congressional Research Service, Order Code RL32572, September 9, 2004.



But even before these announcements, the Soviet Union started withdrawing non-strategic nuclear weapons from Eastern European countries. The last non-strategic nuclear weapons were withdrawn from Czechoslovakia in March 1990, from Poland in the first half of 1990, from Hungary in the summer of 1990, and from East Germany during June-July 1991.<sup>107</sup> The last tactical nuclear weapon deployed outside the Soviet Union was withdrawn to Russia in June 1992.<sup>108</sup>

## Reduction Statements

The Russian government and officials have occasionally given statements about the progress made in implementing the reductions promised by the PNIs.<sup>109</sup> In June 1996, only four years after President Yeltsin's declaration, Colonel General Evgeniy Maslin, then the chief of the 12<sup>th</sup> Main Directorate, which is responsible for storage of nuclear weapons, reported that Russia had "eliminated half of the nuclear warheads in its tactical weapon and air defense systems, and has reduced by one-third its tactical sea-based complexes."<sup>110</sup>

By February 2002, a decade into the process, the U.S. intelligence community observed that, "Moscow is significantly reducing its non-strategic nuclear stockpile."<sup>111</sup> Two months later, the Russian delegation to the first session for the preparatory committee for the 2005 Non-Proliferation Treaty review conference gave a fairly detailed account of the status of the reductions:<sup>112</sup>

- All NSNW [non-strategic nuclear weapons] had been offloaded from surface ships and multiple-purpose submarines, as well from ground-based naval air force and placed in centralized storage; more than 30 percent of nuclear

<sup>107</sup> For a chronology of the Soviet withdrawal from Eastern Europe, see: Joshua Handler, *Russian Nuclear Warhead Dismantlement Rates and Storage Site Capacity: Implications for the Implementation of START II and De-alerting Initiatives*, Woodrow Wilson School, Princeton University, CEES Report No. AC-99-01, February 1999, pp. 39-41.

<sup>108</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, February 2002, p. 5, [http://www.dni.gov/nic/PDF\\_GIF\\_otherprod/russiannucfac.pdf](http://www.dni.gov/nic/PDF_GIF_otherprod/russiannucfac.pdf)

<sup>109</sup> For a useful study on Russia's non-strategic nuclear forces, see: Gunnar Arbmán and Charles Thornton, *Russia's Tactical Nuclear Weapons Part II*, February 2005, <http://www.foi.se/upload/english/reports/foi-russias-tactical-nuclear-w2.pdf>; Gunnar Arbmán and Charles Thornton, *Russia's Tactical Nuclear Weapons Part I*, November 2003, <http://www2.foi.se/rapp/foir1057.pdf>

<sup>110</sup> Colonel General Yevgeniy P. Maslin, remarks on U.S. and Russian Perspectives on the Cooperative Threat Reduction Program, in *Walking the Walk: Controlling Arms in the 1990s, Summary of the Fifth Annual International Conference on Controlling Arms*, Defense Special Weapons Agency/U.S. Department of Defense, June 3-6, 1996, p. 32, <http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA320453>

<sup>111</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, February 2002, p. 5, [http://www.dni.gov/nic/PDF\\_GIF\\_otherprod/russiannucfac.pdf](http://www.dni.gov/nic/PDF_GIF_otherprod/russiannucfac.pdf)

<sup>112</sup> Ministry of Foreign Affairs of the Russian Federation, *Statement Of The Delegation Of The Russian Federation At The First Session Of The Preparatory Committee For The 2005 (sic; the year should be 2002) NPT Review Conference Under Article VI Of The Treaty*, April 11, 2002, <http://www.partnershipforglobalsecurity.org/Official%20Documents/Russian%20Government/Ministry%20of%20Foreign%20Affairs/821200310127PM.html>

munitions of the total number designed for tactical sea-launched missiles and naval air force had been eliminated;

- Production of nuclear munitions for tactical ground-launched missiles, nuclear artillery shells and nuclear mines had been completely stopped; the destruction of nuclear reentry vehicles for tactical missiles and nuclear artillery shells, as well as nuclear mines continued;
- 50 percent of nuclear air bombs have been destroyed;
- 50 percent of nuclear warheads for surface-to-air missiles had been destroyed;
- All Russian non-strategic nuclear weapons were deployed only within the national territory;
- All tactical nuclear weapons previously deployed outside Russia had been brought back to her territory and were being eliminated.

In summary, Russia declared that it had “practically implemented all the declared initiatives to reduce NSNW with the exception of elimination of nuclear weapons of the Army. The elimination of nuclear reentry vehicles for ground-launched missiles, nuclear artillery shells and nuclear land mines is meanwhile restrained by insufficient financing, as well as by non-fulfillment of the treaty provisions on the elimination and reduction of conventional arms, strategic offensive arms (START I) and elimination of chemical weapons.”

Funding did not improve to complete destruction of ground-launched warheads. In April 2004, the head of the Russian delegation to the third session for the Preparatory Committee for the 2005 Review Conference of the nuclear Non-Proliferation Treaty (NPT), H.E. Anatoly Antonov, repeated that Russia had “practically completed” its non-strategic nuclear weapons reductions, “except for eliminating the Army’s nuclear weapons.” He hinted that the elimination of these weapons was still the goal but that limited dismantlement capacity and funding hampered the process: “Elimination of nuclear warheads for land-based tactical missiles, nuclear artillery shells and nuclear mines is pursued on the basis of technological capabilities of the nuclear weapon complex and actual financing.”<sup>113</sup>

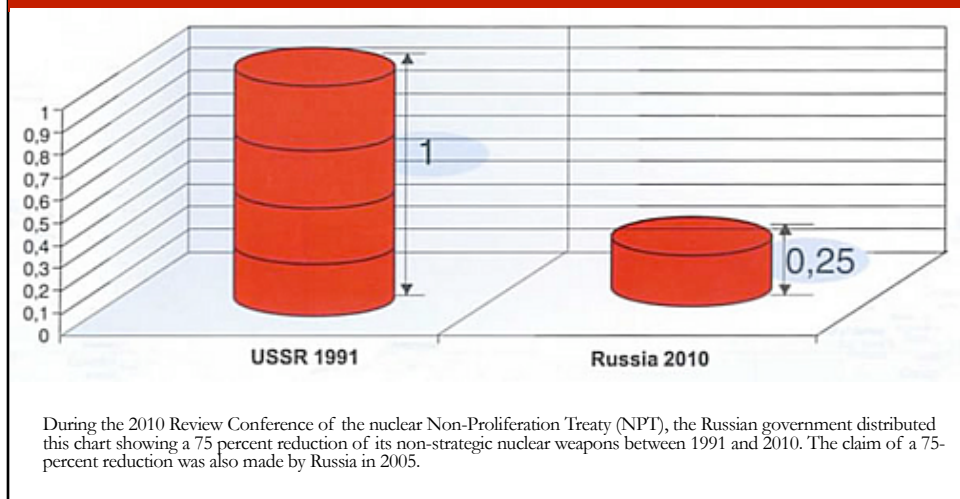
The Russian reductions were challenged by the Bush administration when Assistant Secretary of State Stephen Rademaker stated at a press conference in Moscow in October 2004, that it was the view of the U.S. government that “considerable concern exists that the Russian commitments have not been entirely fulfilled.”<sup>114</sup> The Russian Ministry of Foreign Affairs countered that it was wrong to talk about “commitments” because the unilateral initiatives were goodwill gestures and not a treaty. The ministry stated that Russia had “practically carried out in full” all of the reductions it promised, including “more than 50 percent of the total nuclear ammunition for sea-based tactical missiles and naval aviation, antiaircraft

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<sup>113</sup> Permanent Mission of the Russian Federation to the United Nations, *Statement by H.E. Anatoly Antonov, Ambassador-at-Large, Head of the Delegation of the Russian Federation at the Third Session of the Preparatory Committee for the 2005 Review Conference of the Parties to the Threat on Non-Proliferation of Nuclear Weapons*, April 27, 2004, p. 3.

<sup>114</sup> U.S. Department of State, “Press Roundtable at Interfax: Stephen G. Rademaker, Assistant Secretary of State for Arms Control,” October 6, 2004, <http://2001-2009.state.gov/t/isn/rls/rm/37275.htm>

Figure 11: Russian Non-Strategic Nuclear Weapons, 1991 and 2010



missiles and nuclear aviation bombs has been liquidated." And reductions were continuing.<sup>115</sup>

Apparently, some of the reductions had still not been completed (and the naval reduction seemed inflated). Even so, the reductions were considerable, and at the NPT Review Conference in May 2005, then Deputy Foreign Minister Sergey Kislyak reportedly stated that Russia's "non-strategic nuclear forces" had been reduced "by four times" since 1991, to one-quarter the number back then.<sup>116</sup>

<sup>115</sup> Ministry of Foreign Affairs of the Russian Federation, "Alexander Yakovenko, the Spokesman of Russia's Ministry of Foreign Affairs, Answers a Russian Media Question at Press Conference at IRA Novosti Concerning Russia's Initiatives for Reducing Tactical Nuclear Weapons," October 7, 2004 (unofficial translation), <http://www.partnershipforglobalsecurity.org/PrinterFriendly.asp?Doc=1072004124807PM.html#11>.

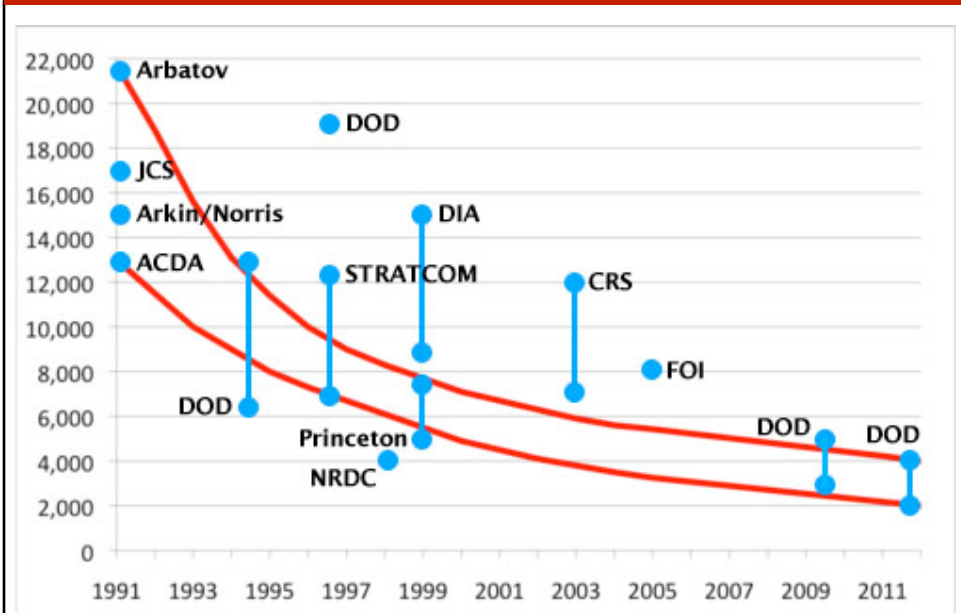
In a statement released to *Arms Control Today*, the U.S. State Department subsequently toned down the language, saying: "We believe that Russia, for the most part, has been implementing its PNI pledges, but the U.S. will continue to keep this issue under review." Wade Boese, U.S., Russia Debate Tactical Nuclear Arms, *Arms Control Today*, November 2004, [http://www.armscontrol.org/act/2004\\_11/Tactical\\_Nukes](http://www.armscontrol.org/act/2004_11/Tactical_Nukes)

<sup>116</sup> "Senior Diplomat Says Russia Abides By Nonproliferation Commitments," *ITAR-TASS*, May 3, 2005, <http://www.partnershipforglobalsecurity.org/Projects%20and%20Publications/News/Nuclear%20News/2005/552005111653AM.html#1D>

ITAR-TASS' report on Ambassador Kislyak's statement is sometimes misunderstood as saying Russia had reduced its non-strategic nuclear weapons stockpile by more than five times. See Mark Schneider, *The Nuclear Force and Doctrine of the Russian Federation*, National Institute Press, Publication Number 0003, National Institute for Public Policy, p. 16, <http://nipp.org/National%20Institute%20Press/Current%20Publications/PDF/Russian%20nuclear%20doctrine%20-%20NSF%20for%20print.pdf>

In contrast, the actual ITAR-TASS story reads: "To date, Russia has reduced its non-strategic nuclear forces by four times. In comparison with 1991 the total amount of nuclear combat stock was reduced by more than five times." The ITAR-TASS text is available at <http://www.partnershipforglobalsecurity.org/Projects%20and%20Publications/News/Nuclear%20News/2005/552005111653AM.html#1D>

Figure 12: Estimated Russian Non-Strategic Nuclear Weapons, 1991-2012



Estimates made by various sources underscore the uncertainty about how many non-strategic nuclear weapons Russia has. These data points and Russian statements about reductions suggest that the total inventory included 3,700-5,400 warheads in 2005. The Pentagon recently indicated the number had dropped to 2,000-4,000 warheads. This report estimates that 2,000 warheads are assigned to non-strategic delivery vehicles. Additional warheads are retired and awaiting dismantlement.

In April 2006, during a visit to Moscow, Stephen Rademaker repeated his assertion from 2004, that “Russia has not completely fulfilled the Russian side of the Presidential Nuclear Initiatives” and “no Russian official with responsibility for this matter has ever claimed to me that Russia has fully implemented the Presidential Nuclear Initiatives. Certainly, there have been steps taken by Russia, very important steps, in the direction of fulfilling the Presidential Nuclear Initiatives. But those steps fall short in certain key respects of full implementation.”<sup>117</sup>

That same month, the U.S. National Intelligence Council (NIC) reported to Congress that Russia had “eliminated a major portion” of the non-strategic nuclear warheads it retired under the 1991 initiative. Under the initiative, the NIC concluded, “Moscow

<sup>117</sup> “Press Conference with Stephen Rademaker, Acting Assistant Secretary of State for Security and Nonproliferation Issues,” *Kremlin International News Broadcast*, April 12, 2006, <http://www.partnershipforglobalsecurity.org/Projects%20and%20Publications/News/Nuclear%20News/2006/414200623353PM.html#1K>

consolidated most of its non-strategic nuclear warheads in central depots....”<sup>118</sup> The NIC did not define “central depots” but some weapons apparently were elsewhere, probably at air force and navy depots.

The following year, in September 2007, *ITAR-TASS* reported that Colonel-General Vladimir Verkhovtsev, the head of the 12<sup>th</sup> Main Directorate, stated that 60 percent of the tactical nuclear weapons were done away with in the Russian anti-aircraft defense forces, 50 percent in the air force, 30 percent in the navy, and 100 percent in the land forces. “Today, there are no tactical nuclear weapons at all on our surface craft and submarines,” the general stressed.<sup>119</sup>

The news agency also included General Verkhovtsev’s statement in a report published in late October 2007, but that report included a direct quote that Russia had “committed itself to removing tactical nuclear weapons from ground forces completely. Those weapons were also cut by 50 percent in the Air Force, by 60 percent in missile defense troops and by 30 percent on nuclear submarines of the Russian Navy.”<sup>120</sup> General Verkhovtsev’s use of the word “removing” weapons from ground forces as opposed to “cuts” in the other branches hinted that elimination of nuclear warheads for ground forces had still not been completed. The cut in nuclear warheads for missile defense troops, by contrast, was said to be 60 percent – 10 percent more than Yeltsin had promised.

Finally, during the 2010 NPT Review Conference, the Russian government distributed a pamphlet with a chart showing the relative reduction in its non-strategic nuclear weapons between 1991 and 2010 (see Figure 11). The pamphlet stated that, “the Russian arsenal of non-strategic nuclear weapons is reduced four times in comparison with the USSR arsenal.”<sup>121</sup> This 75 percent reduction was the same number reported by Kislyak in 2005. Whether the 2010 pamphlet simply repeated Kislyak’s statement from 2005 or implied that there had been no or little additional reduction in the previous five years is unknown. But the latter seems unlikely and it did not appear to include the 10 percent extra cut in missile defense warheads reported by Colonel-General Verkhovtsev in 2007.

## Current Inventory

Estimates about Russian non-strategic nuclear weapons vary considerably and depend to a considerable extent on estimates of how many the Soviet Union possessed in 1991. Statements by various U.S. and Russian officials and sources suggest that the inventory at the end of the Cold War included some 15,000-21,700 warheads.

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<sup>118</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, April 2006, p. 5, [http://www.dni.gov/electronic\\_reading\\_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf](http://www.dni.gov/electronic_reading_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf)

<sup>119</sup> “RF Ready to Negotiate Reduction of Nuke Tactical Arms,” *ITAR-TASS*, September 3, 2007. Translation by Open Source Center via World News Connection.

<sup>120</sup> “Russian determined to keep tactical nuclear weapons for potential aggressors,” *Pravda*, October 31, 2007, [http://english.pravda.ru/russia/kremlin/99911-nuclear\\_arms-0](http://english.pravda.ru/russia/kremlin/99911-nuclear_arms-0)

<sup>121</sup> President of the Russian Federation, *Practical Steps of the Russian Federation in the field of nuclear disarmament*, May 2010, p. 8.

In *The Nuclear Turning Point* (Brookings, 1999), Alexei Arbatov, who at the time was a member of the State Duma of the Russian Federation Defense Committee, estimated that the Soviet Union in 1991 possessed 21,700 non-strategic nuclear weapons.<sup>122</sup>

General Colin Powell, then U.S. Chairman of the Joint Chiefs of Staff, stated in September 1991 that the Soviet Union had approximately 17,000 non-strategic nuclear weapons.<sup>123</sup> At about the same time, the authors of the *Nuclear Notebook* put the number at approximately 15,000 weapons.<sup>124</sup> And the U.S. Arms Control and Disarmament Agency (ACDA) estimated in late-1991 that the inventory included “over 13,000±” non-strategic nuclear weapons.<sup>125</sup>

The wide range of these estimates reflect the significant uncertainty about the inventory at the time, but may also reflect that some counts included retired weapons while others only counted stockpiled weapons. Using the estimates provided by Arbatov and ACDA as the high and low, the statements by the Russian government in 2005 and 2010, that it had reduced the inventory four times since 1991, would suggest that Russia by then had some 3,200-5,400 non-strategic warheads.

Reductions have continued since then, and in November 2011, James Miller, the U.S. Principal Deputy Under Secretary of Defense for Policy, testified before the House Armed Services Committee that open sources set the Russian arsenal at “4,000-6,500 total nuclear weapons, of which 2,000 to 4,000 are non-strategic tactical nuclear weapons.”<sup>126</sup> The Pentagon repeated this estimate in March 2012.<sup>127</sup> The use of the open source estimates might reflect agreement with internal U.S. government estimates.

This report estimates that Russia has approximately 2,000 non-strategic nuclear warheads assigned to its non-strategic delivery vehicles. The estimate is based on analysis of the Russian order of battle of forces and a nominal warhead loading for each delivery platform. The remaining weapons are retired and awaiting dismantlement.

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<sup>122</sup> Alexei Arbatov, “Deep Cuts and De-Alerting: A Russian Perspective,” in Harold A. Feiveson (ed.), *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-Alerting of Nuclear Forces* (Brookings Institution Press, 1999), p. 319.

<sup>123</sup> General Colin Powell, Chairman, Joint Chiefs of Staff, Transcript of Pentagon News Briefing, Office of the Assistant Secretary of Defense (Public Affairs), September 28, 1991, 10:00 a.m., p. 8.

<sup>124</sup> Robert S. Norris and William M. Arkin, “Estimated Soviet Nuclear Stockpile (July 1991),” *Bulletin of the Atomic Scientists*, July/August 1991, p. 48.

<sup>125</sup> U.S. Arms Control and Disarmament Agency, “Reponses by the Arms Control and Disarmament Agency to Additional Questions Submitted by the Subcommittee,” in *Recent United States and Soviet Arms Control Proposals*, Subcommittee on Arms Control, International Security and Science, and on Europe and the Middle East, House Foreign Affairs Committee, November 5, 1991, p. 68.

<sup>126</sup> James Miller, Principal Deputy Under Secretary of Defense for Policy, Statement Before the House Armed Services Committee, November 2, 2011, p. 2.

<sup>127</sup> Joint Statement for the Record, The Honorable Madelyn Creedon, Assistant Secretary of Defense for Global Strategic Affairs, and The Honorable Andrew Weber, Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs, On Fiscal Year 2013 National Defense Authorization Budget Request for Department of Defense Nuclear Forces Programs, Before the Strategic Forces Subcommittee Committee on Armed Services, U.S. Senate, March 28, 2012, [http://www.senate.gov/~armed\\_services/statemnt/2012/03%20March/Creedon-Weber%2003-28-12.pdf](http://www.senate.gov/~armed_services/statemnt/2012/03%20March/Creedon-Weber%2003-28-12.pdf)



Figure 13: Estimated Russian Non-Strategic Nuclear Forces, 2012

Delivery Platform	Number Deployed	Years Deployed	Nuclear Capability	Estimated Warheads
<i>Air Forces<sup>a</sup></i>				~730
Tu-22M3 Backfire-C	150	1986	AS-4 Kitchen, AS-16 Kickback, bomb	
Su-24M Fencer	260	1974	Bomb	
Su-34 Fullback	20	2011	Bomb	
<i>Navy</i>				~700
Borey SSBN*	(1)	2012	SS-N-15?, torpedo	
Delta IV SSBN*	6	1984-1990	SS-N-15, torpedo	
Delta III SSBN*	3	1979-1982	Torpedo	
Oscar II SSGN	8	1988-1996	SS-N-19, SS-N-16, SS-N-15, torpedo	
Akula I/II SSN	10	1988-2001	SS-N-21, SS-N-16, SS-N-15, torpedo	
Severodvinsk SSN	(1)	2012	SS-N-15, torpedo	
Sierra I/II SSN	3	1987-1993	SS-N-21, SS-N-16, SS-N-15, torpedo	
Victor III SSN	4	1988-1992	SS-N-21, SS-N-16, SS-N-15, torpedo	
Kilo SS	15	1981-	Torpedo	
Kuznetsov CV	1	1990	SS-N-19, DB	
Kirov CGN	2	1980-1998	SS-N-19, SS-N-16, SA-N-20, DB	
Slava CG	3	1982-1990	SS-N-12, SA-N-20, DB	
Sovremenny DDG	7	1980-1993	SS-N-22	
Udaloy II DDG	1	1999	SS-N-22, DB	
Udaloy DDG	8	1982-1991	DB <sup>b</sup>	
Krivak I FFG	2	1980-1981	DB <sup>b</sup>	
Neustrashimyy FFG	2	1993-2009	SS-N-16, SS-N-15	
Nanuchka I/III FSG	14	1970-1991	SS-N-9	
Tarantul III FSG	18	1986-1995	SS-N-22	
Dergach PHM	2	1995-1997	SS-N-22	
<i>Army</i>				~170
SS-21 Scarab (Tochka)	150	1981	SS-21 Scarab	
SS-26 Stone (Iskander)	24	2005	SS-26 Stone	
<i>Defense</i>				~430
A-135 ABM	68	1989/1986	Gorgon, Gazelle	
S-300	~1,000	1980/1986	SA-10 Grumble, SA-12 Gladiator/Giant	
Coastal	34	1973	SSC-1B Sepal	
<b>Total</b>				<b>~2,000</b>

KEY: ABM = anti-ballistic missile; AS = air-to-surface; ASM = air-to-surface missile; ASW = anti-submarine warfare; CG = guided missile cruiser; CGN = nuclear-powered guided missile cruiser; CV = aircraft carrier; DB = depth bomb; DDG = guided missile destroyer; FF = frigate; FSG = corvette guided missile; kt = kiloton; mm = millimeter; N = naval; PHM = patrol hydrofoil missile; SA = surface-to-air; SAM = surface-to-air missile; SLCM = sea-launched cruise missile; SS = surface-to-surface; SSN = nuclear-powered attack submarine; SSBN = nuclear-powered ballistic missile submarine; SSGN = nuclear-powered guided missile submarine.

\* Although these are strategic platforms, they are thought to be assigned non-strategic anti-submarine weapons.

a. Other aircraft sometime rumored to have nuclear capability include Su-25 Frogfoot, MiG-27 Flogger, MiG-29 Fulcrum and MiG-30 Flanker.

b. Some believe the SS-N-14 for these ships has nuclear capability.

In terms of numbers, most of this reduction has taken place in the ground forces, where “practically” all warheads have been dismantled. But some apparently remain, including warheads for the SS-21 Sepal (Tochka) short-range ballistic missile. The SS-26 Stone (Iskander) might also have nuclear capability but the status is less clear. This report estimates that less than 200 warheads remain for ground forces.

The nuclear air-defense force has undergone a 60 percent cut since 1991, leaving an estimated 430 warheads for the S-300 and A-135 ABM systems in the current inventory. This reduction is 10 percent greater than what President Yeltsin promised in 1992.

The tactical air force has had its nuclear stockpile slashed in half in the same time, of which an estimated 730 warheads are assigned to bombers. The navy arsenal has been reduced by 30 percent, of which an estimated 730 warheads are assigned to ships, submarines, and maritime aircraft.

This remaining inventory of approximately 2,000 non-strategic warheads represents a nominal loading for the available nuclear-capable non-strategic delivery platforms. None of these warheads are deployed on the delivery platforms but thought to be in storage. Additional warheads in excess of the nominal loading are probably awaiting dismantlement.

Most of Russia’s non-strategic nuclear weapon systems are old and many will probably be retired within the next decade. Several high-profile platforms are being converted to carry non-nuclear missiles. The Oscar-class SSGN and the Kirov-class CGNs, for example, are rumored to be scheduled to undergo conversion to carry the SS-N-26 (Oniks) and the SS-N-27/30 (Sizzler) cruise missiles.<sup>128</sup>

<sup>128</sup> Both the SS-N-26 and SS-N-27 have relatively small warheads (around 200 kg), so it is unclear if the platforms will lose their nuclear capability or some back-up capability will be retained.

## Services Profiles<sup>129</sup>

The Russian inventory of non-strategic nuclear forces includes a wide variety of delivery platforms and weapon types: cruise missiles, surface-to-air missiles, anti-submarine rockets, torpedoes and depth bombs for delivery by warships, submarines, and aircraft; air-to-surface missiles and bombs for delivery by tactical aviation aircraft; interceptors and cruise missiles for delivery by air-defense, missile-defense and coastal defense forces; and surface-to-surface missiles for delivery by army forces.

Figure 14: Tu-22M3 Loadout



Six AS-16 short-range attack missiles hang on a rotary launcher in the bomb bay of a Tu-22M3 Backfire-C bomber. Two AS-4 Kitchen air-to-surface cruise missiles can be seen hanging under the wings.

*Image: Russian Air Force/Web*

<sup>129</sup> The U.S. government used to publish overviews of Soviet military forces and identify those with nuclear capability, but doesn't do so for Russia. See for example the Defense Intelligence Agency publications *Soviet Military Power*, [http://www.fas.org/irp/dia/product/smp\\_index.htm](http://www.fas.org/irp/dia/product/smp_index.htm)

## Air Force Weapons

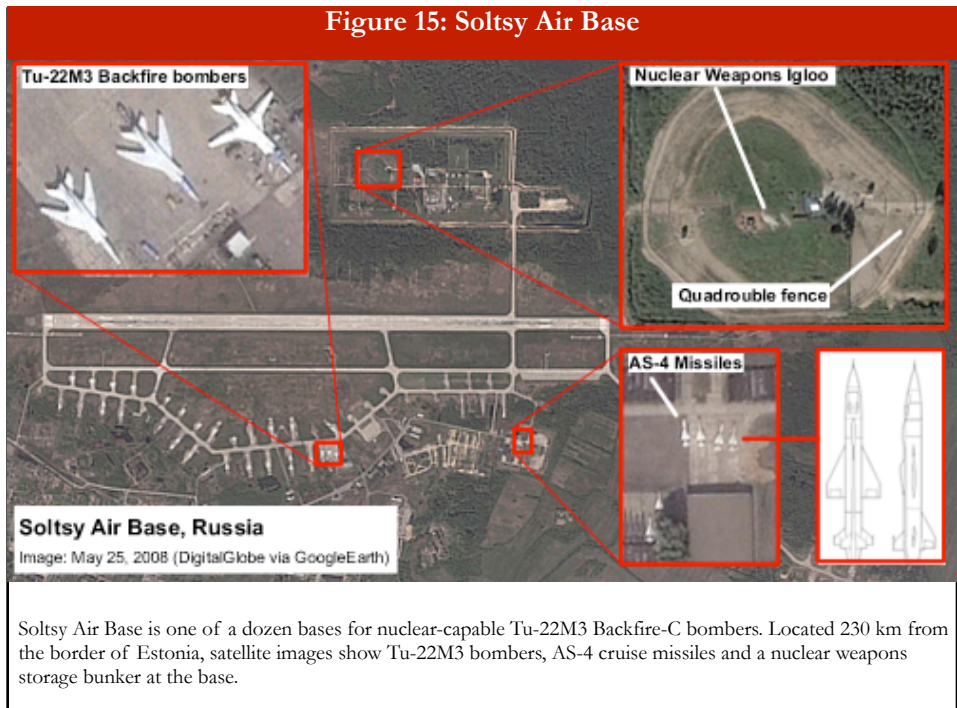
The inventory of non-strategic nuclear weapons for delivery by tactical aircraft has been cut by 50 percent since 1991. It is estimated that 730 of those are assigned to non-strategic aircraft, with the rest in line for dismantlement.

The air force operates at least two nuclear-capable non-strategic aircraft: the Tu-22M3 Backfire-C medium-range bomber, and the Su-24M Fencer fighter-bomber. The Tu-22M3 can deliver cruise missiles and gravity bombs; the Su-24M only gravity bombs.

The Tu-22M3 Backfire-C is a medium-range bomber that is capable of delivering nuclear AS-4 Kitchen cruise missiles, AS-16 Kickback short-range attack missiles, and gravity bombs. Although old and increasingly outdated, and without refueling capability, approximately 150 Tu-22M3s are in widespread use at bases in western and eastern Russia. About 50 of the Backfires were transferred to the air force from Naval Aviation in 2011. An updated version may be underway, known as Tu-22M5.<sup>130</sup>

The AS-4 Kitchen (Kh-22 Burya) was first deployed in 1967 and can deliver a 200-kt warhead to a range of 310 km. Each Backfire-C can carry up to three missiles but normal

Figure 15: Soltsy Air Base



<sup>130</sup> For nuclear capability, see: *Jane's Aircraft Upgrades 2010-2011* (Jane's Publishing Group: 2010), pp. 589-590.

configuration is one AS-4 under each wing. Despite its age, the missile is in widespread use at Backfire bases. In September 2011, Tu-22M3 bombers from Shaykovka Air Base in western Russia conducted a 1,200-km range cruise missile attack at the P-500 range in Astrakhan Region.<sup>131</sup>

There have been reports that an upgraded version of the AS-4, know as Kh-32, was under development. Development of the possibly dual-capable 500-km range missile began in 1995 with a rumored in-service date of 2005, but nothing has happened and the program may have been delayed or canceled.<sup>132</sup>

The AS-16 Kickback (Kh-15) is a dual-capable short-range attack missile with a range of 150 km and a 350-kt warhead. Each Backfire-C can carry six missiles internally in a rotary launcher and four more under each wing for a total of 10 missiles per aircraft. One source stated in February that the AS-16 has been retired,<sup>133</sup> although this has not been confirmed elsewhere.

The Su-24M Fencer-D, Russia's main tactical bomber, is capable of delivering nuclear gravity bombs. It has a combat range of approximately 1,000 km and is widely deployed at bases along Russia's borders. Part of the 1970s-vintage Su-24M fleet is being upgraded; the upgrade is known as Su-24M2.

Gradual replacement of the Su-24M is underway with the Su-34 Fullback; the first was deployed to Voronezh Air Base in western Russian in December 2011. The new Su-34 bomber might inherit a nuclear mission from the Su-24M, although there is no confirmation of this.

Other aircraft that had nuclear capability in the Soviet air force include the MiG-27 Flogger and Su-22 Fitter. These aircraft are getting old and their current nuclear capability is uncertain.<sup>134</sup>

Information about Russian non-strategic nuclear gravity bombs is scarce. One source lists a wide range of versions with yields ranging from 20 to 1,000 kilotons for delivery by a wide range of aircraft: Tu-22M Backfire-C medium-range bombers, Il-38 May and Tu-142 Bear-F anti-submarine aircraft, and fighter-bombers such as Su-24 Fencer, MiG-27 Flogger, Su-27 Flanker, and MiG-29 Fulcrum.<sup>135</sup>

Russia is also working on a new nuclear cruise missile, known as the Kh-102. Because the Kh-102 is being developed in parallel with a conventional version (Kh-101), there is some confusion as to whether the nuclear version will only be deployed on the strategic

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<sup>131</sup> "Russian strategic bombers hit mock targets in training launches," *Interfax-AVN*, September 7, 2011 (translation by Open Source Center via World News Connection).

<sup>132</sup> "Offensive weapons, Russian Federation," *Jane's Strategic Weapon Systems*, August 24, 2011.

<sup>133</sup> Piotr Butowski: "New Lease on Life for the Tu-22M3," *Air & Cosmos*, February 22, 2012. Translation by Open Source Center via World News Connection.

<sup>134</sup> Note that Jane's Aircraft publications continue to credit the MiG-27 and Su-22 with nuclear capability.

<sup>135</sup> See: "Offensive Weapons: Russian Federation," *Jane's Strategic Weapon Systems*, August 24, 2011, p. 68.

A Russia source says there are no nuclear gravity bombs for the Tu-95MS and Tu-160 aircraft. Pavel Podvig, "Test of a Kh-555 cruise missile," *russianforces.org*, May 26, 2005, [http://russianforces.org/blog/2005/05/test\\_of\\_a\\_kh555\\_cruise\\_missile.shtml](http://russianforces.org/blog/2005/05/test_of_a_kh555_cruise_missile.shtml)

bombers (Tu-95 Bear and Tu-160 Blackjack) or also on non-strategic systems such as the Tu-22M3 Backfire.<sup>136</sup> The Kh-102 is most likely only for strategic bombers.

### Naval Weapons

The navy's inventory of non-strategic nuclear weapons has been reduced by a third since 1991. Of those, it is estimated that 700 are assigned to naval forces, with the rest awaiting dismantlement. The reduction has followed a significant decline in the number of nuclear-capable warships – from approximately 400 in 1990 to less than 120 today.

Still, the naval non-strategic arsenal is by far the most diverse of the Russian military services, incorporating land-attack cruise missiles, anti-ship cruise missiles, anti-submarine rockets, anti-air missiles, torpedoes and depth bombs. The most significant group is the cruise missiles:

*SS-N-9 Siren* (P-120 Malakhit): A dual-capable cruise missile with a yield of 200 kt and a range of 110 km. For use by Nanuchka-I and -III class corvettes.<sup>137</sup>

*SS-N-12 Sandbox* (P-500, Bazalt): Dual-capable anti-ship cruise missile with 350-kt warhead for Slava class cruisers. The navy reportedly is considering moving one of the Slava-class cruisers (*Marshal Ustinov*) from the Northern Fleet to the Pacific Fleet.<sup>138</sup>

*SS-N-19 Shipwreck (Granit)*: Dual-capable anti-ship cruise missile with 500-kt warhead for Oscar-class submarines, the Kuznetsov-class aircraft carrier, and Kirov-class cruisers. The missile is aging and a replacement is said to be under consideration.<sup>139</sup> Yet there were reports in 2011 that Oscar-class SSGNs and Kirov-class CGNs would be converted to carry the non-nuclear SS-N-26 (Onyx) and SS-N-27/30 (Caliber) missiles.<sup>140</sup>

<sup>136</sup> One source reports: “The Kh-101/-102 missiles are expected to be cleared for carriage on Tu-160 ‘Blackjack’ (12 missiles), Tu-95MS16 ‘Bear-H’ (eight missiles), Tu-22M3/5 ‘Backfire C’ (four missiles), and Su-27IB (Su-32) ‘Flanker’ (two missiles) aircraft.” See: “Kh-101/-102 (Russian Federation), Offensive Weapons,” *Jane’s Strategic Weapon Systems*, August 24, 2011, <http://articles.janes.com/articles/Janes-Strategic-Weapon-Systems/Kh-101102-Russian-Federation.html>

<sup>137</sup> Some modified Nanuchka-IIIs may carry the non-nuclear SS-N-26 (Oniks) instead.

<sup>138</sup> Dmitry Litovkin, “Marshal Ustinov Relocates to the Kurils,” *Izvestiya Online*, April 24, 2011. Translation by Open Source Center via World News Connection.

<sup>139</sup> *Jane’s Fighting Ships 2010-2011* (Jane’s Information Group, 2010), p. 656.

<sup>140</sup> “Project 949 Nuc Subs to Rearm with Onyx and Caliber Cruise Missiles,” *rusnavy.com*, December 12, 2011, [http://rusnavy.com/news/navy/index.php?ELEMENT\\_ID=13841](http://rusnavy.com/news/navy/index.php?ELEMENT_ID=13841); “Russia to refit Admiral Nakhimov nuclear cruiser after 2012,” *RIA Novosti*, December 3, 2011, [http://en.rian.ru/military\\_news/20111203/169272925.html](http://en.rian.ru/military_news/20111203/169272925.html)



Figure 16: SS-N-19 Launch



An SS-N-19 Shipwreck (Granit) launch from a Kirov-class nuclear-powered cruiser. The dual-capable missile can deliver a 500-kt warhead to a range of 500 km, but is old and there are rumors that it may be replaced with a non-nuclear missile. *Image: Russian Ministry of Defense*

***SS-N-21 Sampson*** (RK-55 Granat): Dual-capable land-attack cruise missile with a 200-kt warhead and range of 2,400 km. The SS-N-21 can be carried on Akula, Sierra and Victor-III class submarines.<sup>141</sup>

***SS-N-22 Sunburn***: Dual-capable anti-ship cruise missile with a 200-kt warhead for use by Sovremenny and Udaloy II class destroyers, and Tarantul III class corvettes.

Most of the cruise missiles are intended for use against other naval forces, and only one type (SS-N-21) is a designated land-attack weapon. Yet some of the longer-range anti-ship cruise missiles have ranges that potentially give them a limited land-attack capability.

Another significant category includes anti-submarine weapons, ranging from rockets to torpedoes and depth bombs. The depth bombs can be delivered by anti-submarine helicopters on major ships or from land-based maritime aircraft, and most submarines are thought to be assigned torpedoes. Two types of anti-submarine rockets can be launched from both submarines and ships:

***SS-N-15 Starfish*** (RPK-2/81R, Vyuga): Dual-capable anti-submarine rocket with 35-km range and 200-kt warhead for Akula, Oscar II, Sierra, Victor III-class

<sup>141</sup> There are also rumors that the new Severodvinsk-class (Yasen) will be equipped with the SS-N-21, but they have not been confirmed. Instead, it appears to be equipped with the non-nuclear SS-N-27.

There have been suggestions that Russia does not consider long-range cruise missiles such as the SS-N-21 as non-strategic nuclear weapons, but that appears to be incorrect. See: Pavel Podvig, “No, Russian submarines do not carry tactical nuclear weapons,” *russianforces.org*, September 25, 2006, [http://russianforces.org/blog/2006/09/do\\_russian\\_attack\\_submarines\\_c.shtml](http://russianforces.org/blog/2006/09/do_russian_attack_submarines_c.shtml); Pavel Podvig, “Do Russian attack submarines carry nuclear weapons?,” *russianforces.org*, September 15, 2006, [http://russianforces.org/blog/2006/09/do\\_russian\\_attack\\_submarines\\_c.shtml](http://russianforces.org/blog/2006/09/do_russian_attack_submarines_c.shtml)

Figure 17: SS-N-22 Loading



An SS-N-22 is loaded onto a Dergach-class patrol boat at the Russian base at Sevastopol in Ukraine (the ship is at coordinates 44°37'24.61"N, 33°32'44.82"E).

*Image: Russian Ministry of Defense*

submarines, Kirov-class cruisers, Udaloy II-class destroyers, and Neustrashimyy-class frigates. The rocket can also be carried on Delta IV SSBNs.

***SS-N-16 Stallion*** (RPK-6/86R, Vodopad): Dual-capable anti-submarine rocket with 50-km range and 200-kt warhead for deployment on Akula, Oscar II, Sierra, Victor III class submarines. It might also be deliverable from Kirov-class cruisers, Udaloy II-class destroyers, Neustrashimyy-class frigates, and Delta IV SSBNs.

Soviet warships once were equipped with several nuclear-capable surface-to-air missile systems. Most of these have been retired, with the possible exception of the SA-N-20 Gargoyle on the Kirov- and Slava-class cruisers. But even with this system there is considerable uncertainty as to whether it still has a nuclear option or if naval air-defense weapons have been denuclearized altogether.

The navy occasionally exercises its non-strategic nuclear weapons. On April 23, 2010, as part of a V-Day Parade rehearsal, a Pacific surface group that included a destroyer (probably a Sovremenny class DDG) and two Tarantul class corvettes (probably Tarantul III) launched several supersonic cruise missiles (probably SS-N-22) against a target 70 km

away in the Sea of Japan.<sup>142</sup> Likewise, in July 2011, two Tarantul III class corvettes from Vladivostok Naval Base conducted an exercise that involved launching SS-N-22 missiles.<sup>143</sup>

Many of the navy's non-strategic weapon systems are old and probably approaching retirement. With conventional weapons becoming more capable it is likely that new warships will enter service with fewer nuclear weapon systems. The ones that are left might be modified. Vice Admiral Oleg Burtsev, deputy head of the Navy General Staff, told RIA Novosti in 2009 that, "Probably, tactical nuclear weapons [on submarines] will play a key role in the future...Their range and precision are gradually increasing." He concluded that, "There is no longer any need to equip missiles with powerful nuclear warheads. We can install low-yield warheads on existing cruise missiles."<sup>144</sup>

This statement caused some to speculate that Russia was about to develop a whole new class of low-yield naval non-strategic nuclear weapons, but there is no indication of that yet. Similarly, a statement made in September 2006 by then Defense Minister Sergei Ivanov, that Russia at that time had eight submarines at sea (including five strategic and three multipurpose submarines) ready to launch nuclear weapons, caused some to speculate that Russia was still deploying non-strategic nuclear weapons at sea in peacetime. But Mr. Ivanov appears to have been referring to the ability of the strategic submarines to launch, as all non-strategic nuclear weapons are in storage on land.

## Defense Weapons

Under the Presidential Nuclear Initiatives, the air-defense forces were slated to be reduced by 50 percent, but appear to have been cut by 60 percent. Non-governmental experts estimated 4,000 air-defense warheads in 1988,<sup>145</sup> and perhaps 3,000 remaining in 1991.<sup>146</sup> Many of those warheads were for the SA-5 Gammon, which has since been retired. It is estimated that approximately 400 warheads are assigned to defensive forces, with more in queue for dismantlement.

Non-strategic warheads for defensive forces fall into three categories: missile defense, air-defense and coastal defense. The missile and air-defense weapons are often referred to as strategic defense weapons, but since they are not offensive strategic nuclear forces and Russia has included anti-aircraft weapons in declarations about the Presidential Nuclear Initiatives, they are included here as non-strategic nuclear forces.

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<sup>142</sup> *Zvezda Television*, April 23, 2010, 18:05 GMT; U.S. Open Source Center, "Russian TV military reports: Navy missile launches, V-Day parade rehearsal," NewsEdge Document Number 201004241477.1\_947400ac5b657830, April 23, 2010.

<sup>143</sup> *Moscow Rossiya 24*, July 19, 2011, 7:45 GMT; U.S. Open Source Center, "TV shows navy missile launch in Russia's Far East," NewsEdge Document Number 201107191477.1\_558d0023b959e145, July 19, 2011.

<sup>144</sup> "Russia should focus on tactical nuclear weapons for subs," *RIA Novosti*, March 23, 2003, <http://en.rian.ru/russia/20090323/120688454.html>

<sup>145</sup> Thomas B. Cochran, et al., *Nuclear Weapons Databook: Volume IV: Soviet Nuclear Weapons* (Harper & Row, 1989), p. 32.

<sup>146</sup> Alexei Arbatov, "Deep Cuts and De-Alerting: A Russian Perspective," in Harold A. Feiveson (ed.), *The Nuclear Turning Point* (Brookings Institution Press, 1999), p. 319.

Figure 18: S-300/SA-10 Launcher



Some of the SA-10 Grumble interceptors for the S-300 air-defense system are thought to have a secondary nuclear role. *Image: Russian Ministry of Defense*

Missile defense forces are limited to the A-135 ballistic missile defense system around Moscow. It was completed in 1989 with 100 interceptors in two systems: 32 long-range Gorgon (SH-11) interceptors at four launch complexes and 68 Gazelle (SH-08) at five launch-complexes. The Gorgon had a range of 350 km and carried a 1-megaton warhead. Two of the Gorgon sites have been disbanded and missiles removed from the other two.

The Gazelle has a range of 80 kilometers and is equipped with a 10-kiloton warhead. It is still operational and frequently flight-tested, but the warheads may have been removed from the interceptors and placed in central storage.<sup>147</sup> Missile defense forces were not explicitly included in the Presidential Nuclear Initiatives, but some officials have included the category in implementation statements.

Details about the nuclear capability of Russian air-defense missiles are hard to come by, including which interceptors have nuclear capability and where they are deployed. The U.S. intelligence community reported in the 1980s that the SA-10 Grumble interceptor for the

<sup>147</sup> For a description of the A-135 system and how it featured in U.S. nuclear planning, see: Hans M. Kristensen, et al., "The Protection Paradox," *Bulletin of the Atomic Scientists*, March/April 2004, pp. 68-79.

S-300 air-defense system probably had nuclear capability,<sup>148</sup> and Jane's credits both the S-300 (SA-10/20) and 300V (SA-12) systems with nuclear capability.<sup>149</sup> It is assumed that about a third of the S-300 systems have a secondary nuclear capability.

The S-300 launchers are deployed along Russia's periphery, near high-value bases and factories, or around major cities. Moscow is surrounded by nearly 30 sites, each with eight launchers, each with four missiles, and several reloads in storage. The S-300 is starting to be replaced by the S-400. Whether its more capable SA-21 interceptor will also have nuclear capability or result in the air-defense forces being denuclearized remains to be seen.

Russia also deploys the SSC-1b Sepal (Redut) coastal defense missile, which has a secondary nuclear capability. The weapon is deployed in the Baltic Sea Fleet and Pacific Fleet areas and is capable of delivering a 350-kt warhead to a range of 500 km. The number of SSC-1B defense warheads was estimated at 100 in 1988,<sup>150</sup> and there are probably less than half left today.

**Figure 19: Possible SS-26 Launchers Near Luga Base**



The 26<sup>th</sup> Missile Brigade at Luga in western Russia is upgrading from the SS-21 Scarab (Tochka) missile to the SS-26 Stone (Iskander). This satellite image from 2010 shows what might be a shipment of launchers at a nearby rail station. The SS-21 is nuclear-capable and the SS-26 might be too although it is uncertain at this point. *Image: May 12, 2010 (GeoEye via GoogleEarth)*

<sup>148</sup> For U.S. assessments, see for example: U.S. Director of Central Intelligence, *Air Defense of the USSR*, December 1985, p. 10.

<sup>149</sup> "Offensive Weapons: Russian Federation," *Jane's Strategic Weapon Systems*, August 24, 2011, pp. 174-192 of print version.

<sup>150</sup> Thomas B. Cochran, et al., *Nuclear Weapons Databook Volume IV: Soviet Nuclear Weapons* (Harper & Row, 1989), p. 37.



Figure 20: SSC-1b Sepal Launch



The SSC-1b Sepal (Redut) coastal missile defense system is thought to be operational with a secondary nuclear role. *Image: Russian Ministry of Defense*

### Army Weapons

Russia promised with its unilateral Presidential Nuclear Initiatives in 1991/1992 to eliminate all nuclear warheads for non-strategic missiles, artillery, and mines. This plan was followed until 2004 when Russian officials began to refer to industrial and financial constraints as the reason why the army dismantlement had not been completed.<sup>151</sup> One possibility might have been the military's interest on keeping some non-strategic ground-launched weapons to compensate for inadequate conventional force capabilities.

It is estimated that approximately 150 warheads have been retained for the SS-21 Scarab (Tochka) short-range road-mobile ballistic missile. The dual-capable weapon is capable of delivering a nuclear warhead (10 or 100 kt) to a maximum range of about 70 km. A modified version (Tochka-U) was introduced in 1989 with an extended range of 120 km that is also reported to have nuclear capability.<sup>152</sup>

The SS-21 units are deployed mainly in western Russia and the Far East. In Kaliningrad, the 152<sup>nd</sup> Missile Brigade is deployed in Chernyakhovsk and occasionally conducts test launches at the Pavenkovo range approximately 50 km to the west. One such test launch occurred in October 2009. Overall, more than a dozen SS-21 test launches are conducted each year.

<sup>151</sup> For analysis of Russian implementation of the PNIs, see: Alexander Pikayev, "Tactical Nuclear Weapons," research paper commissioned by the International Commission on Nuclear Non-Proliferation and Disarmament, 2009, [http://icnd.org/Documents/Pikayev\\_Tactical\\_Nuclear\\_Weapons.pdf](http://icnd.org/Documents/Pikayev_Tactical_Nuclear_Weapons.pdf)

<sup>152</sup> "Offensive Weapons: Russian Federation," *Jane's Strategic Weapon Systems*, August 24, 2011, p. 71 of print version.



The SS-21 is being replaced with the SS-26 Stone (Iskander). The new missile might be nuclear-capable but the status is uncertain. Back in the late-1990s, various reports circulated that President Boris Yeltsin had signed several decrees regarding nuclear weapons, one of which allegedly concerned operationalizing the SS-26 with a nuclear warhead.<sup>153</sup> These decrees have widely been interpreted since as showing an increased Russian reliance on nuclear weapons.<sup>154</sup>

There are no signs from commercial satellite images that SS-26 deployment has begun in Kaliningrad, but the weapon system is being deployed in western Russia, starting with the 26<sup>th</sup> Missile Brigade base (58°44'56.23"N, 29°49'21.66"E) outside Luga some 130 km south of Saint Petersburg. The base is being upgraded from SS-21 to support the SS-26 and a satellite image from May 12, 2010, shows what might be a shipment of mobile launches at a nearby rail station.

The chief of Russia's ground forces, Colonel General Alexander Postnikov, said in February 2010 that it was "planned to equip a brigade of the Leningrad Military District with the Iskander advanced missile systems this year." But he insisted that the deployment was not linked to the deployment of the U.S. missile defense system in Poland.<sup>155</sup>

## Nuclear Weapons Storage Sites

According to the Russian government, "all Russian non-strategic nuclear weapons are concentrated in centralized storage bases exclusively ob [sic] the national territory."<sup>156</sup> The U.S. intelligence community agrees: "In peacetime all nuclear munitions except those on ICBMs and SLBMs in alert status are stored in nuclear weapons storage sites."<sup>157</sup>

The Russian government has not defined what types of facilities constitute "centralized storage bases," and the assertion by the U.S. intelligence community that "most" of Russia's non-strategic nuclear warheads are in "central depots" suggests that some weapons

<sup>153</sup> For sources on a nuclear capability for the SS-26, see: Alexei Arbatov, "A Russian Perspective on the Challenge of U.S., NATO and Russian Non-Strategic Nuclear Weapons," in Steve Andreasen and Isabelle Williams (ed.), Gunnar Arbman and Charles Thornton, *Russia's Tactical Nuclear Weapons: Part II: Technical Issues and Policy Recommendations*, Swedish Research Defense Agency, FOI-R—1588—SE, February 2005, p. 50.

[Indent] Other sources do not agree the Iskander-M has been equipped with nuclear capability. Jane's Strategic Weapons Systems, states that the Iskander-M "has been considered to have the potential to carry a tactical nuclear warhead, or a chemical warhead, but there are no reports about these options being developed." Jane's Strategic Weapon Systems, 2010-2011 (Jane's Information Group, 2010).

<sup>154</sup> The reports about a nuclear capability for the Iskander appear to be based on a small number of newspaper articles and interviews. For description, see: Gunnar Arbman and Charles Thornton, *Russia's Tactical Nuclear Weapons: Part II: Technical Issues and Policy Recommendations*, Swedish Research Defense Agency, FOI-R—1588—SE, February 2005, pp. 2, 14, 25, 44, 50, 51, and 52.

<sup>155</sup> "Iskander plan in NW Russia not linked to U.S. deployment in Europe," *RIA Novosti*, February 25, 2010, [http://en.rian.ru/military\\_news/20100225/158004472.html](http://en.rian.ru/military_news/20100225/158004472.html)

<sup>156</sup> President of the Russian Federation, *Practical Steps of the Russian Federation in the field of nuclear disarmament*, May 2010, p. 8.

<sup>157</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, April 2006, p. 5.

[http://www.dni.gov/electronic\\_reading\\_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf](http://www.dni.gov/electronic_reading_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf)

Figure 21: Naval Storage Site on Kola Peninsula



This apparent naval nuclear weapon storage site ( $69^{\circ}0'40.14''\text{N}$ ,  $33^{\circ}39'1.21''\text{E}$ ) is located 10 kilometers southeast of the Northern Fleet base at Severomorsk.

*Image: August 14, 2010 (GeoEye via GoogleEarth)*

are in less central depots.<sup>158</sup> This ambiguity probably reflects that some storage sites controlled by the 12<sup>th</sup> Main Directorate (GUMO) are former navy and air force sites that are located near bases with nuclear-capable delivery vehicles.

<sup>158</sup> For the U.S. assessment that “most” of Russia’s non-strategic nuclear warheads are in central depots, see: U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, April 2006, p. 5.

[http://www.dni.gov/electronic\\_reading\\_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf](http://www.dni.gov/electronic_reading_room/AnnualReportOnSafetyAndSecurityOfRussianNuclearFacilitiesAndMilitaryForces.pdf)

**Figure 22: Russian Nuclear Weapons Storage Sites\***

<b>Name</b>	<b>Location</b>	<b>Coordinates</b>
Abrek Bay	Primorskiy Kray	42°56'14.75"N, 32°20'42.22"E
Belgorod-22	Belgorod	50°33'45.36"N, 35°44'17.03"E
Bryansk-18	Bryansk	53°33'41.49"N, 33°58'21.09"E
Irkutsk-45	Irkutsk	53°26'2.52"N, 102°36'21.93"E
Khabarovsk-47	Khabarovsk	48°11'8.18"N, 135° 2'45.90"E
Krasnoyarsk-26	Krasnoyarsk	56°17'6.71"N, 93°35'11.72"E
Komsomolsk-31	Khabarovsk	50°16'8.60"N, 137°28'10.30"E
Mozhaysk-10	Moscow	55°25'18.59"N, 35°46'2.77"E
Olenegorsk-2	Kola	68°14'19.84"N, 33°51'55.79"E
Saratov-63	Saratov	51°11'5.62"N, 46° 1'11.33"E
Sebezh-5**	Pskov	56°12'57.73"N, 28°18'36.91"E
Svobodny-21**	Amurskaya	51°14'54.76"N, 128° 0'15.21"E
Vilyuchinsk	Kamchatka Krai	52°57'14.56"N, 58°22'31.72"E
Vologda-20	Vologda	59° 6'7.00"N, 38°38'34.70"E
Voronezh-45	Voronezh	51°22'8.66"N, 41°53'57.62"E

\* The 12<sup>th</sup> Main Directorate (GUMO) is responsible for storage of nuclear weapons. Non-strategic and strategic nuclear weapons are thought to be co-located at the storage sites.

\*\* The site may have closed.

The number of storage sites, which also stores strategic warheads, has been reduced significantly since 1991. Shortly before the break-up of the Soviet Union in 1991, there were roughly 500 nuclear storage facilities. By the mid-1990s, the number had declined to

approximately 250, and by the end of the 1990s, there were fewer than 100 left.<sup>159</sup> By 2009, Russia was estimated to be storing its nuclear weapons at approximately 50 sites, which is still thought to be the case.<sup>160</sup>

Each of those sites includes half a dozen separated bunkers within a larger perimeter. Nine sites have had their security features upgraded by the United States under the Material Protection Control and Accounting (MPC&A) Program.<sup>161</sup> The reduction of storage locations has occurred primarily because of the dismantlement of more than 20,000 nuclear weapons since 1991 and consolidation of the remaining weapons at fewer locations. In 1997, the 12<sup>th</sup> GUMO reportedly “closed a nuclear weapons storage site due to hunger strikes by the workers.”<sup>162</sup> It is possible, but not certain, that this facility was Svobodny-21 (51°14'54.76"N, 128° 0'15.21"E) near the Chinese border in the Amurskaya district.

Upgrades of storage sites made with U.S. assistance have generally improved physical protection, but irregularities are occasionally reported. In 2011, the chief of a missile-artillery service of the Military Unit 23227 at the Karabovsk-47 national-level nuclear weapon storage site was found guilty of illegally dumping blocks of chemical explosives and detonators in a small lake near the site. Tons of fuel reportedly had also disappeared from the unit, and inspectors found excess firearms ammunition in the missile-artillery warehouse.<sup>163</sup>

The storage capacity of each facility is unknown, but the U.S. intelligence community estimated during the Cold War that Soviet storage sites in Eastern Europe could each store an average of 90-170 non-strategic nuclear weapons.<sup>164</sup> Each national-level storage site probably has a capacity of 300-500 nuclear warheads, depending on size and configuration. Former STRATCOM commander General Eugene Habiger visited the Saratov-63 national-level storage facility near Berezovka in 1998 and was shown the inside of one of the five weapons storage igloos:

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<sup>159</sup> See: U.S. Department of Defense, Office of the Secretary of Defense, *Proliferation: Threat and Response*, November 1997, p. 43; William M. Arkin, et al., *Taking Stock: Worldwide Nuclear Deployments 1998*, Natural Resources Defense Council, March 1998, pp. 26-38.

In contrast with the *Proliferation: Threat and Response* estimate of fewer than 100 sites, Susan Koch, the Deputy Assistant Secretary of Defense For Threat Reduction Policy, testified before Congress in 2000 that Russia had 123 nuclear weapons storage locations. See: Senate Armed Services Committee Subcommittee on Emerging Threats and Capabilities, March 6, 2000, p. 2.

<sup>160</sup> Robert S. Norris and Hans M. Kristensen, “Worldwide deployments of nuclear weapons, 2009,” *Nuclear Notebook, Bulletin of the Atomic Scientists*, November/December 2009, pp. 86-87, <http://bos.sagepub.com/content/65/6/86.full.pdf+html>

<sup>161</sup> U.S. Department of Energy, *FY2013 Congressional Budget Request: National Nuclear Security Administration*, February 2012, p. 413.

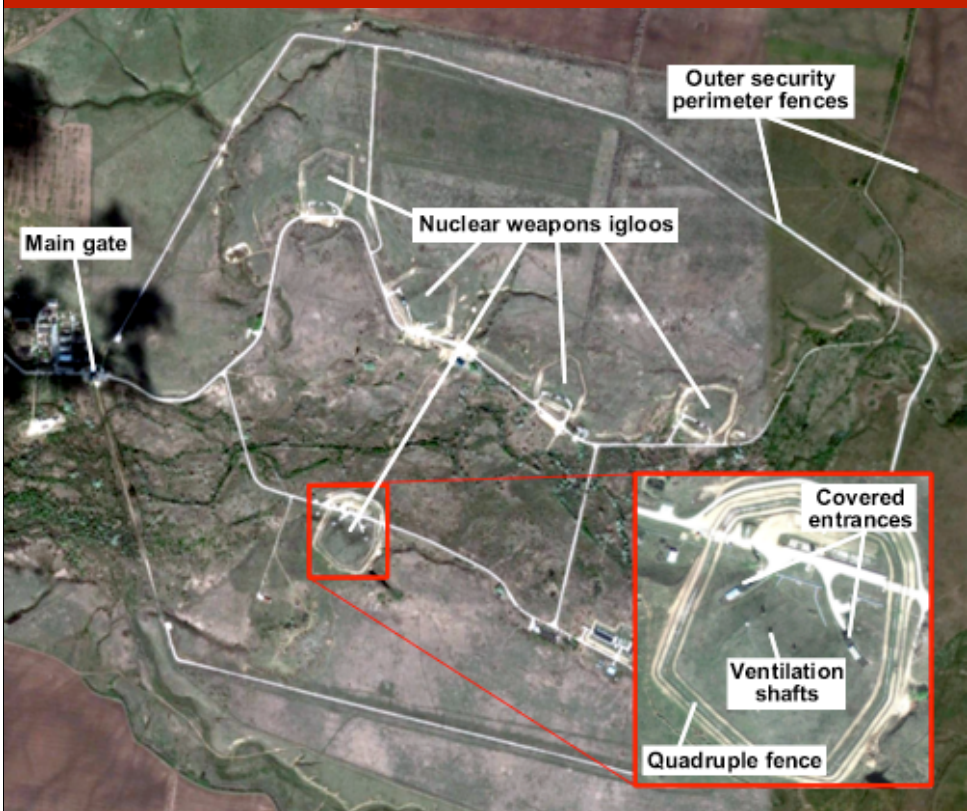
<sup>162</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, February 2002, p. 7, [http://www.dni.gov/nic/PDF\\_GIF\\_otherprod/russiannuclfac.pdf](http://www.dni.gov/nic/PDF_GIF_otherprod/russiannuclfac.pdf)

<sup>163</sup> Sergey Sklyarov, “Major Dumps Excess TNT in Lake,” *Kommersant Online*, October 11, 2011 (translation by Open Source Center via World News Connection).

<sup>164</sup> U.S. Central Intelligence Agency, *Warsaw Pact Forces Opposite NATO*, National Intelligence Estimate 11-14-79, Volume I: Summary Estimates, January 31, 1979, p. 45. Partially declassified and released under FOIA. Available online at [http://www.foia.cia.gov/docs/DOC\\_0000278537/DOC\\_0000278537.pdf](http://www.foia.cia.gov/docs/DOC_0000278537/DOC_0000278537.pdf)

“We went to Saratov, a national nuclear weapons storage site, where I saw not only strategic weapons, but tactical weapons....And they took me into the side of a mountain, a hill, where we went behind two doors that were each several thousands of tons in weight. And you had to open up one door at a time, these sliding, massive doors, in order to get into the inner sanctum. In the inner sanctum, there were five nuclear weapon storage bays. They took me into one of those bays, and we had an interesting discussion.”<sup>165</sup>

**Figure 23: Saratov-63 National-Level Nuclear Weapons Storage Site**



The large Saratov-63 national-level nuclear weapons storage site (51°11'5.62"N, 46° 1'11.33"E) near Beresovka in the Saratovskaya region contains five underground igloos. Former STRATCOM commander General Eugene Habiger visited the site in 1998 and was shown the inside of one of the igloos which he later said had five chambers with both strategic and non-strategic nuclear weapons.  
*Image: May 4, 2010 (GeoEye via GoogleEarth)*

<sup>165</sup> See: General Eugene Habiger, Commander in Chief, U.S. Strategic Command, “Interview with Defense Writer’s Group,” Washington, D.C., March 31, 1998; General Eugene Habiger, “Department of Defense News Briefing,” June 16, 1998.

## CASE STORY: THE KALININGRAD DISTRICT

Figure 24:  
Estimated Nuclear-Capable Forces and Facilities in Kaliningrad Region



It is unknown if there are nuclear warheads present in the Kaliningrad region, but several nuclear-capable weapon systems are deployed there. This includes ships and submarines, fighter-bomber aircraft, S-300 air-defense systems, and a coastal-defense missile system. Storage facilities north of Chkalovsk Air Base include features that are similar to those seen at nuclear weapons storage sites elsewhere in Russia.

Over the past decade, several news stories and statements by named and anonymous officials have claimed that Russia deploys non-strategic nuclear weapons in the Kaliningrad district. While there are several delivery platforms based in the region that are capable of launching nuclear weapons, those platforms are dual-capable and can also launch conventional weapons. There is no public evidence that nuclear *warheads* for those weapons are present in Kaliningrad.

As the Bush administration entered office, the *Washington Times* reported in January 2001 that Russia had moved non-strategic – or “battlefield” - nuclear weapons “into a military base” in the Kaliningrad district. The movement apparently was detected in June 2000. The article stated it could not identify what kind of nuclear weapons had been



moved, but quoted “some defense officials” speculating it might be “a new short-range missile known as the Toka” with a range of about 44 miles.<sup>166</sup>

In a follow-up article, the *Washington Post* appeared to confirm the thrust of the report, quoting unnamed “senior U.S. officials.”<sup>167</sup> *The New York Times* carried an *Associated Press* report identifying two anonymous “senior American officials with access to intelligence reports on the subject” saying there had been “recent indications of movement of Russian nuclear weapons to Kaliningrad.” The officials would not identify numbers or types but said “some weapons might have been there a year or longer.”<sup>168</sup> Details were scarce, however, with one official reportedly telling *Reuters*: “we don’t know how many, we don’t know what type and we don’t know why.”<sup>169</sup>

The reported nuclear weapons movement put the Russian government on the defensive and it didn’t help its credibility that President Putin dismissed the reports as “rubbish,” or that the Foreign Ministry claimed that “none of the Baltic Fleet’s naval, air force or land facilities located in the Kaliningrad region has ever had any tactical nuclear weapons.”<sup>170</sup> Clearly an inaccurate statement.

A statement by the Russian Ministry of Defense said the *Washington Times* article “does not conform with reality” and that Russia’s tactical nuclear warheads are at their “permanent stationing sites and have not been transferred anywhere.”<sup>171</sup>

Two months after the story first broke, Russian Defense Minister Sergey Ivanov declared during a visit to Sweden in March 2001 that there were no nuclear weapons present in Kaliningrad. Yet he said, “Russia does not have an obligation not to deploy nuclear arms anywhere on its territory.”<sup>172</sup>

In response to the U.S. plan to deploy ballistic missile defense interceptors in Poland, Russian President Dmitry Medvedev in November 2008 threatened to deploy new SS-26

<sup>166</sup> Bill Gertz, “Russia transfers nuclear arms to Baltics,” *Washington Times*, January 3, 2001, [www.washingtontimes.com/news/2001/jan/3/20010103-020441-2511r/print](http://www.washingtontimes.com/news/2001/jan/3/20010103-020441-2511r/print)

There is no Russian short-range missile designated Toka. The officials might have referred to the nuclear-capable Tochka (SS-21 Scarab), a Cold War missile that began replacing the Frog missile in the early 1980s. See: <http://www.fas.org/man/dod-101/sys/missile/row/ss-21.htm>

<sup>167</sup> Walter Pincus, “Russia Moving Warheads; Tactical Nuclear Arms Going to Kaliningrad Base,” *Washington Post*, January 4, 2001, p. A16. A reprint of this article is available here: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/01/04/MN179997.D1L>

<sup>168</sup> “A Russian Base in the Baltic is Reported to Have Nuclear Arms,” *New York Times*, January 4, 2001, <http://www.nytimes.com/2001/01/04/world/04MILL.html>

<sup>169</sup> “U.S. yet to query Moscow on nukes,” *Washington Times*, January 4, 2001, <http://www.washingtontimes.com/news/2001/jan/4/20010104-020454-1623r/print/>

<sup>170</sup> Patrick Tyler, “Putin Dismisses U.S. Reports That Russia Shipped Nuclear Weapons for Baltic Fleet,” *New York Times*, January 7, 2001, <http://www.nytimes.com/2001/01/07/world/putin-dismisses-us-reports-that-russia-shipped-nuclear-weapons-for-baltic-fleet.html>

<sup>171</sup> Walter Pincus, “Russia Moving Warheads; Tactical Nuclear Arms Going to Kaliningrad Base,” *Washington Post*, January 4, 2001, p. A16. A reprint of this article is available here: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/01/04/MN179997.D1L>

<sup>172</sup> “Moscow Reserves Right to Put Nukes in Kaliningrad,” *ITAR-TASS*, March 9, 2001. For references to Ivanov’s statement, see: <http://www.nti.org/db/nisprofs/russia/weapons/tacnukes/tacdevs.htm>; <http://www.rferl.org/content/article/1142359.html>

Stone (Iskander) short-range ballistic missiles to Kaliningrad.<sup>173</sup> Although a new system with a possible nuclear capability, the threat of deploying ballistic missiles in Kaliningrad was somewhat hollow because Russia had been deploying the nuclear-capable SS-21 Scarab (Tochka) short-range ballistic missiles in Kaliningrad for years.

A few months after making the threat, the Russian government said the plan would not be implemented.<sup>174</sup> The commander of the Russian navy, Admiral Vladimir Vysotsky, later declared, “We do not have and never had tactical missiles in the Kaliningrad region,”<sup>175</sup> a statement that appeared to contradict the deployment of naval cruise missiles and the army’s SS-21 missiles to the region. Russia formally backed away from deployment of SS-26 in Kaliningrad after the Obama administration canceled the Bush administration’s missile defense system, but the Obama administration’s own missile defense system plans later reignited the dispute and Russian threats to take countermeasures.<sup>176</sup>

Accusations about Russian non-strategic nuclear weapons in Kaliningrad continued in February 2010, when Swedish foreign minister Carl Bildt and Polish foreign minister Radek Sikorski published an article in the *New York Times* urging Russia to commit to withdrawing “nuclear weapons from areas adjacent to European Union member states,” including “the Kaliningrad region and the Kola Peninsula, where there are still substantial numbers of these weapons. Such a withdrawal could be accompanied by the destruction of relevant storage facilities,” the foreign ministers said.<sup>177</sup> The letter discussed *weapons* that are designed to deliver non-strategic nuclear warheads, rather than the *warheads* themselves.

An article in the *Wall Street Journal* in November 2010 was more explicit about warheads, claiming that U.S. intelligence had concluded that “Russia had moved short-range tactical nuclear *warheads* to facilities near North Atlantic Treaty Organization allies as recently as this spring” (emphasis added). Yet none of the “warhead” references were direct quotes by intelligence officials. In terms of non-strategic nuclear weapons, the article claimed a U.S. assessment found that “Russia has expanded tactical nuclear deployments near NATO allies several times in recent years.” Unnamed officials were said to believe that the most recent movements of Russian tactical nuclear weapons at the time took

<sup>173</sup> “Russia to move missiles to Baltic,” *BBC*, November 5, 2008, <http://news.bbc.co.uk/2/hi/europe/7710362.stm>

<sup>174</sup> “Russia ‘halts missile deployment,’” *BBC*, January 28, 2009, <http://news.bbc.co.uk/2/hi/europe/7855216.stm>

<sup>175</sup> “Russian never placed Iskander missiles in Kaliningrad – Navy chief,” RIA Novosti, October 1, 2009, [http://en.rian.ru/military\\_news/20091001/156314306.html](http://en.rian.ru/military_news/20091001/156314306.html)

Admiral Vysotsky apparently did not use the word “Iskander” in his statement, which was added by the newspaper: “We do not have and never had [Iskander] tactical missile in the Kaliningrad region.”

<sup>176</sup> Will Englund and William Wan, “Medvedev threatens to target U.S. missile shield in Europe if no deal is reached,” *Washington Post*, November 23, 2011, [http://www.washingtonpost.com/world/russia-will-target-us-missile-shield-in-europe-if-no-deal-is-reached-medvedev-says/2011/11/23/gIQAT14ZKoN\\_story.html](http://www.washingtonpost.com/world/russia-will-target-us-missile-shield-in-europe-if-no-deal-is-reached-medvedev-says/2011/11/23/gIQAT14ZKoN_story.html)

The countermeasures announced in 2011 did not include SS-26 deployment in Kaliningrad, although the missile system will probably eventually replace the SS-21 currently deployed there.

<sup>177</sup> Carl Bildt and Radek Sikorski, “Next, the Tactical Nukes,” *New York Times*, February 1, 2010, <http://www.nytimes.com/2010/02/02/opinion/02iht-edbildt.html>

place in late spring 2010. But officials also said warheads were stored separately from their launchers.<sup>178</sup> The 2010 report could have, although it is not clear, referred to the movement of SS-26 launchers to Luga south of Saint Petersburg.

Again in February 2011, *AFP* reported that Lithuanian Defence Minister Rasa Jukneviene claimed that Russia had deployed short-range nuclear “warheads” in Kaliningrad. But the quote included in the report did not use the word *warheads* but instead referred to *weapons*: “It’s no secret that such [nuclear] weapons are deployed near us, in Kaliningrad. And to our east as well,” Jukneviene reportedly told Lithuanian public radio.<sup>179</sup> A report by the *Lithuania Tribune* also did not use “warheads” but referred to “weapons.”<sup>180</sup>

In February 2012, RUSI and ELN published a report that said “officials at the highest level of the Polish government” told the authors “that Russia had already exercised the deployment of non-strategic nuclear weapons to Kaliningrad and had upgraded the infrastructure necessary for their storage there.”<sup>181</sup> This statement also discusses *weapons* rather than *warheads* and appears to indicate that the warheads were not yet there but could be moved to and stored in Kaliningrad if Russia decided to do so.

In late March 2012, Lithuanian Defense Minister Rasa Jukneviene reportedly said at a press conference that the “S-400 has been deployed and it’s changing the defense potential in this region. Modern submarines are also being deployed in Kaliningrad region, and there are also plans to soon deploy a complex of surface-to-surface type of missiles Iskander.” And she added: “Tactical nuclear weapons are also being maintained, and the installations are in Kaliningrad region.”<sup>182</sup>

Jukneviene would not disclose evidence that nuclear weapons were deployed in the Kaliningrad region, but she added: “We are convinced that the Russian Federation has all means to deploy them there. It’s reality, it’s nothing new, these are inherited things from the Soviet period. (...) In fact the abundance of nuclear weapons in the Russian Federation is a problem, and the international community should be concerned about that.”

The statement is accurate – provided Jukneviene is referring to nuclear-capable *delivery vehicles* rather than nuclear *warheads*.

<sup>178</sup> Adam Entous and Jonathan Weisman, “Russian Missiles Fuel U.S. Worries,” *Wall Street Journal*, November 30, 2010, <http://online.wsj.com/article/SB10001424052748704584804575645212272670200.html>

<sup>179</sup> “Lithuania claims Russian deployed warheads near border,” *spacewar.com* (AFP), February 8, 2011, [http://www.spacewar.com/reports/Lithuania\\_claims\\_Russia\\_deployed\\_warheads\\_near\\_border\\_999.html](http://www.spacewar.com/reports/Lithuania_claims_Russia_deployed_warheads_near_border_999.html)

<sup>180</sup> “Russia has tactical nuclear weapons in Kaliningrad – Lithuanian DefMin,” *The Lithuania Tribune*, February 8, 2011, <http://www.lithuaniatribune.com/2011/02/08/russia-has-tactical-nuclear-weapons-in-kaliningrad-lithuanian-defmin/>

See also: Nikolai Sokov, “Second Sighting of Russian Tactical Nukes in Kaliningrad,” James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies, February 15, 2011, [cns.miis.edu/stories/110215\\_kaliningrad\\_tnw.htm](http://cns.miis.edu/stories/110215_kaliningrad_tnw.htm)

<sup>181</sup> Andrew Sommerville, et al., *Poland, NATO and Non-Strategic Nuclear Weapons in Europe*, Royal United Institute for Defence and Security Studies (RUSI) and European Leadership Network (ELN), Occasional Paper, February 2012, pp. 3–4, <http://www.rusi.org/downloads/assets/Poland-NATO-and-NSNW-120217.pdf>

<sup>182</sup> “Neither Baltic States nor NATO Plan Such Military Capabilities as Being Developed in Kaliningrad,” *Baltic News Service*, March 26, 2012 (translation by Open Source Center via World News Connection).

The statement by Polish officials that Russia has “upgraded the infrastructure” necessary for storage of nuclear weapons in Kaliningrad also appears to be accurate because it matches developments seen on commercial satellite images. The images show recent upgrades to what appears to be a nuclear warhead storage facility located approximately 17 km northwest of Kaliningrad city, only five miles from Chkalovsk Air Base. Sometime between September 2002 and June 2010, the security perimeter around the facility was significantly upgraded and vegetation cleared (see Figure 25).

**Figure 25:**  
**Upgrade of Nuclear Warhead Storage Facility in Kaliningrad**



Commercial satellite images show that a possible nuclear warhead storage facility (54°50'12.51"N, 20°21'12.82"E) north of Chkalovsk Air Base was upgraded between September 2002 (left) and June 2010 (right). *Images: DigitalGlobe (left) and GeoEye (right) via GoogleEarth*

The facility has several features that are typical for known nuclear weapons storage facilities elsewhere in Russia. The most telling is a 50x100 meter triple-fenced perimeter around what appears to be a dirt-covered weapons storage igloo. Two other igloos appear to have similar features. The three igloos are clustered around service buildings inside the 770x860 meter double-fenced perimeter. Access is through a security checkpoint at the main gate to the west.

While it is unknown if nuclear warheads are present in Kaliningrad, it is clear that several nuclear-capable non-strategic delivery vehicles are deployed in the region. This includes naval vessels, aircraft, short-range ballistic missile launchers, air-defense systems, and a coastal defense missile.

Naval systems include Sovremenny-class destroyers capable of launching nuclear SS-N-22 cruise missiles, Nanushka- and Tarantul-class corvettes capable of launching nuclear SS-N-9 and SS-N-22 cruise missiles, respectively, and Kilo-class attack submarines capable of launching nuclear torpedoes.

Aircraft with nuclear capability include Su-24M Fencer fighter-bombers. Naval aviation attack aircraft such as the Su-24Ms at Chakalovsk Air Base were transferred to the air force in late-2011.

Army weapons include the SS-21 Scarab (Tochka) road-mobile ballistic missile, and air-defense forces include the S-300 system with SA-10/12 interceptors. There is also a single regiment with the SSC-1B Sepal coastal defense missile.

There is a significant potential nuclear capability present in the Kaliningrad district. But it is not clear how much of this is a leftover from what used to be in the area during the Cold War, how many of the nuclear-capable systems are assigned a nuclear mission today, or whether any nuclear warheads are present in what appears to be an active nuclear weapons storage facility.

## The Mission

The mission of Russia's non-strategic nuclear weapons has been debated extensively since the end of the Cold War. But it is often unclear whether the debate is about non-strategic nuclear weapons or the mission of nuclear weapons in general. The public version of Russia's latest military doctrine is not clear about the role of non-strategic nuclear weapons.<sup>183</sup>

Nonetheless, statements made by Russian officials and assessments published by the U.S. intelligence community seem to agree that the demise of general purpose military forces after the collapse of the Soviet Union has prompted the Russian military to see nuclear weapons, and perhaps particularly non-strategic nuclear forces, as an equalizer against NATO — and to some extent China's — conventional forces.

The U.S. intelligence community concluded in 2002 that “Moscow – because of its concern over deteriorating conventional capabilities – probably will retain several thousand non-strategic nuclear warheads through at least 2015.”<sup>184</sup>

A Russian defense white paper published in October 2003, officially known as “Immediate Tasks for the Development of the Armed Forces of the Russian Federation,” indirectly acknowledged that Russia's weak conventional forces meant that it would not be able to face an advanced adversary or a coalition of adversaries without resorting to use of nuclear weapons. Defense Minister Sergei Ivanov reportedly stated that Russia might have to revise its military planning, including nuclear weapons, if NATO retained an offensive doctrine. Russia would not rule out a pre-emptive attack anywhere if national interests demanded it, he allegedly said.<sup>185</sup>

The statements coincided with a NATO meeting and created an uproar that Defense Minister Ivanov had to quell. NATO Secretary General Lord Carrington said that Ivanov had been “at pains to say that some of the reports bore no relation to what the reality was,”<sup>186</sup> and that “Russia does not have or does not seek to have a pre-emptive strategy in

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<sup>183</sup> For studies on the role of Russian nuclear weapons, see papers from National Defense University symposium Strategy and Doctrine in Russian Security Policy, June 2010,

<http://www.ndu.edu/inss/symposia/2010%20Russia%20Security%20Workshop/References.htm>; Keir Giles, The Military Doctrine of the Russian Federation 2010, Research Review February 2010, National Defense College, <http://www.ndc.nato.int/download/downloads.php?icode=170>

<sup>184</sup> U.S. National Intelligence Council, *Annual Report to Congress on the Safety and Security of Russian Nuclear Facilities and Military Forces*, February 2002, p. 6, [http://www.dni.gov/nic/PDF\\_GIF\\_otherprod/russiannucfac.pdf](http://www.dni.gov/nic/PDF_GIF_otherprod/russiannucfac.pdf)

<sup>185</sup> Paul Ames, “NATO to Quiz Russian Minister Over Threat,” *Associated Press*, October 9, 2003; David Holley, “Russia Sees U.S. NATO Actions as Reasons to Watch Its Back,” *Los Angeles Times*, March 26, 2004.

The two sources differ on the wording of Defense Minister Ivanov's statement. According to the *Associated Press* story, he said: “If NATO is preserved as a military alliance with its existing offensive military doctrine, this will demand a radical reconstruction of Russian military planning. . . including changes in Russia nuclear strategy.” The *Los Angeles Times* story quoted Ivanov saying that, “if NATO remains a military alliance with an offensive military doctrine, Russia will have to adequately revise its military planning and principles regarding the development of its armed forces, including its nuclear forces.”

<sup>186</sup> Paul Ames, “NATO to Quiz Russian Minister Over Threat,” *Associated Press*, October 9, 2003.



relation to its nuclear weapons.” At a press conference following the meeting, Ivanov stated that “Russia still regards nuclear weapons as a means of political deterrent.”<sup>187</sup>

Two years earlier, Ivanov had criticized the Bush administration for trying to incorporate preemptive options into U.S. nuclear doctrine: “Lowering the threshold for use of atomic weapons is in itself dangerous,” Ivanov told a news conference ahead of a NATO defense ministers meeting in Berlin. “Such plans do not limit, but in fact promote efforts by others to develop (nuclear weapons).”<sup>188</sup>

Russian officials have also tied the role of non-strategic nuclear weapons to defending the long border with China. In 2007, the former head of the 12th Main Directorate, Colonel-General Vladimir Verkhovtsev, reportedly said: “We have a difficult enough situation on our southern boundaries, we have borders with nuclear powers, therefore the availability to Russia of tactical nuclear weapons represents a deterrent factor for potential aggressors.”<sup>189</sup>

While China’s conventional forces may be a factor in Russia’s non-strategic nuclear doctrine, the basis for this is vague and generic. Russia used to have serious skirmishes with China along the border during the Cold War, but many of the non-strategic nuclear bases in the far-eastern districts of Primorskiy and Khabarovsk may also be justified by potential scenarios involving U.S. forces in the Pacific.

The Russian leadership continues to see NATO as a potential military threat, and views NATO’s eastward expansion as an encroachment on Russia. In August and September 2009, Russia held large-scale exercises (Zapad and Ladoga) in western Russia that simulated defense against a NATO attack launched from Lithuania and Poland. A subsequent NATO briefing concluded that the exercises included missile launches, “some of which may have simulated the use of tactical nuclear weapons.”<sup>190</sup> This probably referred to the launch of SS-21 short-range missiles, some of which are deployed in the Kaliningrad region.

More broadly, NATO concluded that the exercises demonstrated significant deficiencies in Russia’s general military capabilities: “Russia has limited capability for joint operations with air forces, continues to rely on aging and obsolete equipment, lacks all-weather capability and strategic transportation means, is not able to conduct network centric warfare, has an officer corps lacking flexibility, and has a manpower shortage.”<sup>191</sup>

Based on the performance during the exercises, NATO’s International Military Staff (IMS) concluded that Russian armed forces were:

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<sup>187</sup> John Chalmers, “Russia soothes NATO concerns over nuclear posture,” *Reuters*, October 9, 2003.

<sup>188</sup> “Russia Warns U.S. Against New Nuclear Doctrine,” *Reuters*, September 14, 2005.

<sup>189</sup> “These Are the Tactics,” editorial, *Nezavisimoye Voyennoye Obozreniye*, November 13, 2007 (Open Source Center translated text via World News Connection).

<sup>190</sup> Cable, Ambassador Ivo Daalder, Subject: NATO-Russia: NAC Discusses Russian Military Exercises, USNATO 000546, November 23, 2009, section 2. Available on the Internet at <http://www.aftenposten.no/spesial/wikileaksdokumenter/article4028273.ece>

<sup>191</sup> *Ibid*

- able to respond to a small to midsized local and regional conflict in its western region;
- not able to respond to two small conflicts in different geographical areas simultaneously;
- not able to conduct large scale conventional operations.

In other words, Russia would not be able to mount a conventional military threat against NATO or to defend against an attack from the west. To compensate for the deficiencies, the IMS concluded that Russia was “still relying on the use of tactical nuclear weapons, even in local or regional conflicts.”<sup>192</sup>

The new military doctrine approved in February 2010 and published in unclassified format on the president’s web site, did not explicitly mention non-strategic nuclear weapons or the role of shorter-range nuclear weapon systems. Instead, the doctrine described the role of nuclear weapons in general terms for potential use in large-scale or regional wars “in response to the utilization of nuclear and other types of weapons of mass destruction against it and (or) its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat.”<sup>193</sup> It is unknown to what extent the role of non-strategic nuclear weapons is described in the classified version of the doctrine

In November 2011, General Nikolai Makarov, chief of the General Staff of the Russian armed forces, warned that local conflicts along Russia’s border could escalate into large-scale war involving nuclear weapons. He stated that the possibility of local armed conflicts with ex-Soviet states “virtually along the entire perimeter of the border has grown dramatically,” and added: “I cannot rule out that, in certain circumstances, local and regional armed conflicts could grow into a large-scale war, possibly even with nuclear weapons.” Makarov reportedly pointed to NATO expansion as one of the key reasons for heightened level of mistrust in the region, and complained that NATO had gone back on a promise not to expand eastward with almost all former Warsaw Pact countries now being members of NATO.<sup>194</sup>

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<sup>192</sup> Ibid

<sup>193</sup> For English translation, see: Russian Federation President, “The Military Doctrine of the Russian Federation’ approved by Russian Federation presidential edict on 5 February 2010,” February 8, 2010, translation by Open Source Center via World News Connection. The Russian language version is available at the Russian Security Council web site <http://www.scrf.gov.ru/documents/18/33.html>

<sup>194</sup> “Border Alert: Nuke war risk rising, Russia warns,” *Russia Today*, November 17, 2011, <http://rt.com/politics/makarov-nuclear-russia-nato-575/>; “Russia’s military chief warns that heightened risks of conflict near borders may turn nuclear,” *Washington Post* (Associated Press), November 17, 2011, [http://www.washingtonpost.com/world/europe/russias-military-chief-potential-conflicts-near-russian-borders-may-grow-into-nuclear-war/2011/11/17/gIQAWQJTJUN\\_story.html](http://www.washingtonpost.com/world/europe/russias-military-chief-potential-conflicts-near-russian-borders-may-grow-into-nuclear-war/2011/11/17/gIQAWQJTJUN_story.html)

While complaining about NATO, Marakov also indicated that NATO operations currently help Russia’s security, warning that the planned pullout of NATO forces from Afghanistan could trigger conflicts in neighboring ex-Soviet Central Asian nations that could “grow into a large-scale war.” “Border Alert: Nuke war risk rising, Russia warns,” *Russia Today*, November 17, 2011, <http://rt.com/politics/makarov-nuclear-russia-nato-575/>

## CONCLUSIONS AND RECOMMENDATIONS

Two decades after the Cold War ended and the United States and Russia undertook sweeping unilateral but reciprocal steps to curtail non-strategic nuclear weapons and transform relations, both sides continue to quibble about the leftovers of those arsenals. On the one hand, Russia and the United States —with backing from NATO— are beginning to talk about non-strategic nuclear weapons. On the other hand, both sides have to be careful that revisiting the issue doesn't end up resurrecting some of the justifications that were used for non-strategic nuclear weapons during the Cold War.

Combined, Russia and the United States today retain an estimated 2,800 non-strategic nuclear weapons. Russia's inventory of 2,000 weapons are said to be in central storage, while the United States retains nearly 200 of its weapons in Europe with the balance in storage at home.

Within Russia, an old-fashioned and misguided preoccupation with a NATO threat has delayed completion of the 1991-1992 Presidential Nuclear Initiatives, prevented new arms control initiatives, and preserved a bloated non-strategic nuclear weapons arsenal to compensate for inferior conventional forces and maintain a sense of national prestige. Russia has retained wide use of non-strategic nuclear weapons in its military forces, ranging from long-range cruise missiles to nuclear torpedoes. Part of this reflects an inability to compete with the conventional postures of NATO and China; another aspect is simply the consequence of the absence of a Russian post-Yeltsin nuclear arms control vision. In contrast, the United States has eliminated all but two of its non-strategic nuclear weapons, has decided to retire one of them (TLAM/N), and appears to be on a path toward phasing out designated non-strategic nuclear warheads from its stockpile altogether.

Within NATO, a reluctance to complete the withdrawal of such weapons from Europe due to opposition from nuclear bureaucrats and over-sensitivity to generic security concerns of some Eastern European member states, combined with a resurgent 1980s-ish arms control approach linking the future of the weapons to Russia's non-strategic nuclear weapons, have so far succeeded in tying down U.S. non-strategic nuclear weapons in Europe.

Some government officials in some of the new NATO member states in Eastern Europe have deep-seated security concerns about Russia. Some of those concerns are about Russian military capabilities. Others are about Russian minority issues, while others stem from decades of being occupied by the Soviet Union.

Whatever the security concerns are, non-strategic nuclear weapons are neither the problem nor the solution (the Baltic States would probably have exactly the same security concerns if Russia did not have any non-strategic nuclear weapons). Absent an important military mission, they have become leftovers from the Cold War that linger on because some see them as providing reassurance in the absence of addressing the underlying security issues. Both NATO and Russia need to address those security concerns in a realistic

and credible way. Extending old nuclear postures will not help and may even undermine the process.

It is unfortunate that NATO and the United States, after two decades of conducting unilateral reductions, have now adopted a policy that “any further reductions” must take into account the disparity between Russian and U.S. non-strategic nuclear forces. The policy formally links the non-strategic nuclear postures of Russia and NATO, even though NATO has insisted for the past two decades that the U.S. non-strategic nuclear weapons in Europe were not directed at Russia.

While it is necessary to seek reductions in Russian non-strategic nuclear weapons, reinstating disparity now as a condition for further reductions seems to turn back the clock to the 1980s. Disparity can become a roadblock to further progress, perpetuate the role of non-strategic nuclear weapons, and deepen the “us versus them” mentality that is increasingly polluting Russian-NATO relations.

For some, the linking of the two postures reflects unease about Russian intentions in general. For others, disparity is a tactic to use promises of further reductions in NATO’s forces as a card to play to get something in return from Russia. Others see disparity as a convenient roadblock to prevent further reductions – certainly withdrawal – of U.S. nuclear weapons in Europe.

But what does it mean to take into account the disparity with Russian non-strategic nuclear weapons? Does it mean that parity needs to be established before NATO can reduce further, or how much must disparity be reduced before it is no longer an issue?

More than falling back on non-strategic nuclear weapons issues, NATO needs to have serious and sustained discussions with its eastern European member countries about what their security concerns are about and provide primarily non-nuclear means to reassure them. The Deterrence and Defense Posture Review (DDPR), which is expected to be approved by NATO at the Chicago Summit in May 2012, will be an important opportunity to clarify the nuclear policy.

Based on the principles in the Strategic Concept adopted at the Lisbon Summit in 2010, the DDPR is intended to determine NATO’s mix of nuclear and non-nuclear capabilities for the next decade. But an unfortunate decision at the Lisbon Summit to limit the review to those nuclear forces that are “assigned to NATO” – the U.S. nuclear weapons in Europe and the portion of the British Trident force that might still have a sub-strategic mission – means that the review will not examine the contribution of the vast majority of the nuclear arsenals of the alliance’s three nuclear weapon states in deterring potential adversaries. As a result, the review could end up overemphasizing the importance of U.S. nuclear weapons in Europe.

A DDPR that reaffirms the continued deployment of U.S. nuclear weapons in Europe would – especially if it is accompanied by decisions to strengthen missile defense and conventional forces – likely embolden Russian opposition to NATO and reliance on non-strategic nuclear weapons. Ironically, that would undermine the security of the same countries that say that deployment of U.S. nuclear weapons in Europe is necessary to ensure their safety.

Yet strengthening missile defense and conventional forces appears to be a precondition for reducing the role of nuclear weapons. Both the 2010 Quadrennial Defense Review and 2010 Ballistic Missile Defense Review describe efforts to develop a new, tailored, regional deterrence architecture that combines increased conventional and missile defense capabilities with a continued commitment to extend the nuclear deterrent in order to reduce the role of nuclear weapons.

In developing this deterrence architecture, it is important that the United States and NATO don't improve the conventional posture in such a way that it reinforces Russian reliance on nuclear weapons to compensate for NATO's conventional superiority.

It is also important that modernization of the remaining non-strategic nuclear forces be curtailed and not lead to new or increased capabilities that harden positions and trigger requirements for new countermeasures. Increasing the capability of NATO's nuclear posture by deploying the more accurate new B61-12 bomb on stealthy F-35 dual-capable aircraft will likely provide hardliners in the Kremlin with new arguments for why Russia should not reduce its non-strategic nuclear forces. Likewise, Russian deployment of new nuclear-capable missiles or bombers would likely fuel opposition in eastern European countries to reducing the U.S. nuclear deployment in Europe.

The stalemate in non-strategic nuclear weapons cries out for political leadership and bold initiatives. It is important that Russia and the United States take steps to drastically increase transparency. This can be done on a unilateral basis and should include overall numbers, locations, and delivery systems. It should also include verification measures to confirm data that is provided. Increasing transparency is essential because uncertainty creates mistrust, rumors, and worst-case planning.

Most of what is assumed about Russian non-strategic nuclear capabilities still comes from literature published during the Cold War and in the first years after the demise of the Soviet Union. Since then, the U.S. intelligence community has largely stopped publishing estimates about Russian nuclear capabilities, and Russia has not offered any insight. To that end, it is important that possible agreements on increased transparency of non-strategic nuclear weapons not be confined to confidential exchanges of information between governments but also benefit the international community.

Yet increasing transparency must not become a precondition for further reductions. Both Russia and the United States can and should take unilateral steps to further reduce their non-strategic nuclear forces. The two efforts should happen in parallel.

NATO should declare that the mission for U.S. non-strategic nuclear weapons in Europe has been completed and that NATO's security guarantee can be met by non-nuclear means and – to the limited extent that nuclear weapons are still relevant – long-range strategic nuclear forces. This is consistent with the Strategic Concept declaration that the supreme security guarantee is provided by strategic nuclear forces.

NATO should declare that it is prepared to withdraw the remaining U.S. non-strategic nuclear weapons from Europe. This can be accompanied by urging Russia to take similar steps such as reducing its non-strategic forces and pulling them back from NATO borders.

Russian reciprocity should be a goal, but not a precondition, and take into consideration the significantly different military postures.

Preparation for the withdrawal of the remaining U.S. non-strategic nuclear weapons from Europe is consistent with the unilateral reductions carried out since 1991 and the 2010 decision to retire the nuclear Tomahawk cruise missile. Unilateral action, while not perfect, still remains the only measure that has reduced non-strategic nuclear weapons since the end of the Cold War.

To compensate for the withdrawal of nuclear weapons from Europe, NATO should update burden sharing and nuclear consultation arrangement to reflect the new security environment and ensure a credible extended deterrent posture in Europe. The Cold War practice of providing non-nuclear countries with the means to deliver U.S. nuclear bombs should be terminated immediately. The arrangement contradicts the commitments undertaken under the nuclear Non-Proliferation Treaty (NPT) “not to receive the transfer from any transferor whatsoever of nuclear weapons...or of control over such weapons or explosive devices directly, or indirectly.”<sup>195</sup> The arrangement has been an irritant at NPT conferences and contradicts the non-proliferation standards the United States and Europe are trying to promote worldwide.

Given the financial crisis and the defense cuts facing most NATO member countries, asking them to spend scarce resources on maintaining the NATO nuclear strike mission – instead of focusing on the missions and capabilities that are needed in today’s security environment – seems counterproductive and irresponsible. An independent cost-benefit assessment of the need to deploy U.S. weapons in Europe seems long overdue. Nuclear consultation does not require deployment of nuclear weapons in Europe, and the Nuclear Planning Group should be adjusted accordingly.

Continued reassurance of NATO allies is important but should be focused on non-nuclear means. Participation in Article V operations can be done via non-nuclear means, similar to the SNOWCAT (Support of Nuclear Operations With Conventional Air Tactics). One emerging arrangement to provide reassurance to eastern European NATO members is temporary deployment of fighter squadrons to bases in those countries. Aircraft from western NATO bases have flown border patrols in the Baltic States for years. An addition to this arrangement is the recent decision to begin rotational deployment of U.S. F-16s and C-130s to Lask Air Base in Poland in 2013.<sup>196</sup>

However, in these deployments it is important that they be designed so that they are not seen as NATO nuclear forces moving east. To that end, NATO should declare that the rotational deployment will be consistent with the three no’s declared in 1996: that the alliance has no intention, no reason, and no plans to deploy nuclear weapons on the territory of the new members states.

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<sup>195</sup> “Treaty on the Non-Proliferation of Nuclear Weapons,” U.S. Department of State, <http://www.state.gov/t/isn/trty/16281.htm>

<sup>196</sup> For an insightful assessment of reassurance options, see: George Perkovich, et al., *Looking Beyond the Chicago Summit: Nuclear Weapons in Europe and the Future of NATO*, Carnegie Endowment for International Peace, April 2012, [http://carnegieendowment.org/files/beyond\\_chicago\\_summit.pdf](http://carnegieendowment.org/files/beyond_chicago_summit.pdf)



As a consequence of ending the nuclear deployment in Europe, the United States should begin preparations to phase out the remaining non-strategic B61 bombs and cancel deployment of the new B61-12 in Europe. The greater accuracy of the B61-12 and the enhanced capabilities of the F-35 Joint Strike Fighter being designed to deliver the bomb are not compatible with the promise to reduce the role of nuclear weapons.

Russia, for its part, should declare its willingness to begin formal negotiations on reducing the number of non-strategic nuclear weapons. The Russian government's position that it will only discuss non-strategic nuclear weapons if the U.S. withdraws its non-strategic nuclear weapons from Europe is counterproductive and seems disingenuous. It is counterproductive because it provides opponents of a U.S. withdrawal the excuse to keep the weapons in Europe. And it seems disingenuous because Russia's non-strategic nuclear weapons are used to compensate for NATO's conventional superiority - not as a counter to U.S. nuclear weapons in Europe.

But Russia can and should also take unilateral initiatives. First, it should complete the 1991-1992 Presidential Nuclear Initiatives, including elimination of all ground-launched nuclear weapons, and make a declaration to that effect. Second, in response to the U.S. unilateral decision to retire the nuclear Tomahawk sea-launched land-attack cruise missile (TLAM/N), Russia should reciprocate by retiring its SS-N-21 nuclear sea-launched land-attack cruise missile and cancel any plans it may have for new nuclear long-range naval cruise missiles.

Russia should also withdraw any non-strategic nuclear warheads it deploys at facilities near NATO borders and make a declaration to that effect. To that end, Russia should clarify the status of the storage of its non-strategic nuclear warheads, most importantly which storage facilities no longer contain nuclear warheads. For example, Russia denies, but NATO officials continue to say, that there are nuclear weapons in the Kaliningrad district. Russia should declare, if that is the case, that there are no nuclear warheads stored in Kaliningrad. Suspicion that nuclear warheads are present creates unease in some NATO capitals and fuels arguments that U.S. nuclear weapons are needed in Europe.

The Kaliningrad situation underscores the importance of increasing transparency of non-strategic nuclear weapons and illustrates how uncertainty fuels suspicion and worst-case assumptions that undermine security for all.

Like the United States and NATO, Russia should declare which types of non-strategic delivery vehicles have nuclear capability.

The Russian Navy should reaffirm that it no longer carries non-strategic nuclear warheads on surface ships and submarines. The reaffirmation is necessary after the Russian defense minister in 2006 stated that several general purpose submarines at sea carried nuclear weapons.

In more general terms, Russia should shift its defense planning from preoccupation with NATO as a threat to focusing on the real security threats against its territory. Despite its history and military capabilities, NATO is not a current military threat to Russia. By highlighting a NATO threat and posturing forces and doctrine accordingly, as most

recently illustrated by President Dmitry Medvedev's statement on November 23, 2011,<sup>197</sup> the Russian government ironically helps create the very perceptions in some NATO governments that U.S. non-strategic nuclear weapons are still needed in Europe.

As recommended above, Russia and NATO can take numerous concrete steps unilaterally and bilaterally to break the stalemate on non-strategic nuclear weapons. All it requires is the political will and vision that characterized the Presidential Nuclear Initiatives in the early 1990s. Bureaucrats in NATO and the Kremlin cannot provide this leadership; it requires presidential action. It is interesting to remember that back in the 1990s, President W.H. Bush deliberately chose to bypass negotiations to avoid prolonging the life of non-strategic nuclear weapons:

“Last year, I cancelled U.S. plans to modernize our ground-launched theater nuclear weapons. Later, our NATO allies joined us in announcing that the alliance would propose the mutual elimination of all nuclear artillery shells from Europe, as soon as short-range nuclear force negotiations began with the Soviets. *But starting these talks now would only perpetuate these systems, while we engage in lengthy negotiations.* Last month's events not only permit, but indeed demand swifter, bolder action.”<sup>198</sup> (Emphasis added).

Granted, this statement was made at a different time immediately after the breakup of the Warsaw Pact and a failed coup in the Soviet Union. Yet the security challenges in Europe today dwarf in comparison with the risks back then and have very little to do with nuclear weapons. Making further reductions in non-strategic nuclear forces conditioned on negotiations to reduce disparity unnecessarily perpetuate the importance of non-strategic nuclear weapons, instead of moving forward with bold unilateral and bilateral initiatives to consolidate, withdraw and eliminate them.

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<sup>197</sup> President of Russia, *Statement in connection with the situation concerning the NATO countries' missile defense system in Europe*, November 23, 2011, <http://eng.kremlin.ru/news/3115>

<sup>198</sup> President George H.W. Bush, *Address to the Nation on Reducing United States and Soviet Nuclear Weapons*, September 27, 1991, [http://bushlibrary.tamu.edu/research/public\\_papers.php?id=3438&year=1991&month=9](http://bushlibrary.tamu.edu/research/public_papers.php?id=3438&year=1991&month=9)

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This report reflects the judgments and recommendations of the author. It does not necessarily represent the views of the Federation of American Scientists.

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