



**The Future of U.S. Non-Strategic Nuclear Weapons
and Implications for NATO**
Drifting Toward the Foreseeable Future

Jeffrey A. Larsen, Ph.D.

A report prepared in accordance with the requirements of the
2005-06 NATO Manfred Wörner Fellowship

for

NATO Public Diplomacy Division

31 October 2006

UNCLASSIFIED

Table of Contents

List of Figures	vii
List of Tables	vii
Foreword	ix
Methodology	x
Disclaimer	x
Executive Summary	xi
I. Introduction	1
Background to Today's Situation	2
Defining Non-Strategic Nuclear Weapons	6
Findings	8
II. Historical Background	11
Historical Summary of Non-Strategic Nuclear Weapons in Europe	12
Recurrent Themes in Alliance Nuclear History	16
Modernization Episodes in Europe	21
The Nuclear Planning Group	22
The High Level Group	23
The Montebello Decision and SNF Modernization	25
The End of the Cold War	27
The Presidential Nuclear Initiatives	30
Russian Response to the PNIs	33
Arms Control and Relations with Russia in the 1990s	35
Key Nuclear Documents	37
Summary	38
III. Is There a Future for Non-Strategic Nuclear Weapons?	39
Recent Developments	40
Current Status of NSNW in States of Interest	42
United States	42
Russia	46
Issues Regarding NSNW	48
Arguments For and Against Future Roles for NSNW	49
Arguments For	49
Arguments Against	50
Future Roles for Non-Strategic Nuclear Weapons	51
Political	51
Extended Deterrence	51
Arms Control	52
Military	52
Escalation Dominance	52
Target Coverage	53
Counter NBC	54
Supporting the Strategic Nuclear Arsenal	54
Robustness	54

Hedging	54
Summary	55
IV. Current Issues Affecting NATO Nuclear Policy	57
The Value of Nuclear Weapons in Europe	57
Cold War Balance	57
Immediate Post-Cold War Period	58
Changes Since 2001	58
Future Threats	60
Revanchist Russia	61
New Nuclear-Armed Adversaries	62
Terrorism	63
Other Threats	63
Allied Perspectives	64
Germany	67
Great Britain	69
France	71
Other NATO DCA States	73
Italy	73
Belgium	74
Netherlands	75
Turkey	75
Greece	76
New Allies	76
Latvia	77
Poland	77
V. Implications for the Alliance: Nuclear Alternatives	79
Rationale for Maintaining the Nuclear Status Quo	80
Model of NATO Nuclear Options	81
Driving Factors	82
Europe	83
NATO	84
United States	86
Potential Accelerating Factors	87
Potential Reversing Factors	88
Russian Revanchism	88
New Threats	89
Terrorism	89
Unwillingness to Rely on UK and French Nuclear Forces	90
Requests by New Member States to be Included in	
Nuclear Responsibilities	90
Desire to Maintain Alliance Stability	91
Alternatives	92
Modernization and Enhancement	93
Status Quo	93
Technical Updates	93
Operational Changes	93

No Change	94
U.S. Withdrawal but Continued NATO Nuclear Reliance on Some Form of Nuclear Deterrent	94
U.S. Withdraws its Weapons but Keeps Infrastructure in Place in order to Reintroduce Weapons in a Crisis	95
U.S. Continues to Supply Warheads for European Allies' DCA	96
Create a NATO Nuclear Naval Force	96
Rely on a European Nuclear Force	97
Rely on British or French Nuclear Forces	97
Rely on the U.S. SSBN Force	98
Rely on U.S. Strategic Forces Based in North America	98
U.S. Withdrawal and NATO Abrogation of Reliance on a Nuclear Deterrent	98
Summary	98
VI. Conclusion: Making Waves that Rock the Boat which Wake the Sleeping Dog	101
Final Thoughts	102
Selected Bibliography	105
About the Author	113

List of Figures

1.	Big Picture Model of Pressures on NATO Nuclear Policy	3
2.	U.S. Nuclear Weapons in Europe	15
3.	Reduced NATO Nuclear Aircraft Readiness Levels	30
4.	NATO Nuclear Reductions by Type	32
5.	Types of Nuclear Systems Eliminated in Europe since 1971	38
6.	NATO Nuclear Storage Sites in Europe	44
7.	Balanced Objectives During the Cold War	57
8.	Changing Balance in the 1990s	58
9.	The Situation Today	59
10.	Modeling NATO's Nuclear Future	82
	10.a. Driving Factors	83
	10.b. Potential Accelerating Factors	87
	10.c. Potential Reversing Factors	88
11.	NATO's Nuclear Alternatives	92
12.	Most Likely Future for NATO's NSNW	103

List of Tables

1.	Summary of Recent Changes to U.S. Nuclear Strategy	55
----	--	----

Foreword

I gratefully acknowledge support received from the NATO Public Diplomacy Division (PDD), which selected this topic as the winner of the 2005-2006 Manfred Wörner Fellowship. The fellowship provided travel funding, access, and an office to use while in Brussels conducting my research. In particular, thanks to Despina Afentouli and Ioanna Synadino in PDD for their assistance throughout the year, particularly during my visits to NATO Headquarters.

Also at NATO Headquarters, thanks to Guy Roberts, Deputy Assistant Secretary General for WMD Policy and Director, Nuclear Policy; his administrative assistant Alev Canket; and his colleagues in the division, Heinz Ferkinghoff, Willy Meuws, and Colin Stockman, for their time, suggestions, and comments on early drafts of this paper. Guy's office was also influential in procuring me a slot in the NATO Nuclear Operations Course at the NATO/SHAPE School in Oberammergau, and in arranging interviews with representatives on the Nuclear Planning Group.

I also need to thank many other nuclear and NATO experts who reviewed my early drafts and thought pieces, as well as the final paper, in part or in whole. Their corrections, guidance, and advice were always well intentioned and warmly received. The nuclear community is not very large any more, and those involved in the business have a genuine appreciation for anyone who is dealing with the same issues. In particular, thanks to David Yost of the U.S. Naval Postgraduate School and the NATO Defence College; Joseph Pilat at Los Alamos National Laboratory; Tom Scheber, formerly in OSD Forces Policy; and Rob Irvine, former NATO Nuclear Staff director. At Sandia National Laboratories I had a very educational visit in October 2005. Thanks to Marcey Abate for setting that up. Next door, at the Defense Nuclear Weapons School, Major Bill Weininger gave me a personal tour of the stockpile exhibit in their museum.

Finally, kudos to personal sounding boards who listened to my ideas and provided good ones of their own. This category is fairly large, and could include nearly everyone I interviewed as part of this study. In particular, however, I want to single out my SAIC colleagues Tim Miller and Michael Yap; Jim Smith, director of AF/INSS; and my wife Cyndy, who has put up with my fascination with NATO and nuclear policy for more than two decades.

Methodology

The research for this paper was conducted via traditional social science methods, including elite interviews with experts on U.S. and NATO nuclear policy on both sides of the Atlantic. These experts were found in the governments of the United States and key European allies, in the NATO staff, and in various non-governmental organizations on both sides of the political spectrum and both sides of the debate over a continuing need for U.S. nuclear weapons stationed in Europe. All interviews referred to in this paper were conducted with an understanding of nonattribution, and on an unclassified basis.

Disclaimer

The views, opinions, and analysis in this study are those of the author, and do not necessarily reflect the policy of the United States government, NATO, or Science Applications International Corporation or any of its clients.

Executive Summary

This report examines non-strategic nuclear weapons (NSNW) and the policy implications they manifest. In particular, the study considers the possibility of changing NATO policies toward U.S. NSNW in the post-9/11 era and their ongoing role in protecting Europe. The future of NSNW in NATO is uncertain due to a combination of factors: U.S. bureaucratic perspectives and pressures, Russian public diplomacy efforts, anti-nuclear European publics and pending government decisions, and the requirements for updating NATO strategy.

The debate over whether to maintain or eliminate the remaining arsenal of U.S. nuclear weapons assigned to NATO has proponents with strongly held beliefs on both sides. On the one hand, advocates say, these weapons provide coupling, transatlantic links, military capabilities against an uncertain future, and risk and burden sharing. On the other, coupling may be strong enough through conventional burden sharing and the long history of Alliance cooperation to preclude the necessity for continuing the deployment of nuclear weapons for those purposes. The contribution of a few hundred invisible weapons to coupling, according to this argument, is minimal, so the benefits of removing U.S. nuclear weapons may exceed those of retaining them. Yet the “foreseeable future” referred to in NATO’s Strategic Concept is far enough away for most European governments and security experts that they see no need to undertake public discussions on any nuclear alternatives today.

As a result, NATO today is in a period of drift when it comes to nuclear policy. A series of drivers is conspiring to create a future in which these capabilities will have simply withered away. These include nuclear weariness on the part of the host nations, the lack of interest in the mission by the U.S. Air Force, and the unwillingness of the European DCA states to publicly consider a future for these weapons, or to base fighter aircraft acquisition decisions on such a future. This combination of factors may lead to a situation where all sides of the debate come to the conclusion that it is just easier to remove the remaining U.S. warheads than it is to try to maintain this capability. While the Alliance may choose to maintain a nuclear deterrent strategy, it will more likely rely on the independent nuclear forces of the United States, Great Britain, or even France.

Unless current trends are altered, the remaining U.S. nuclear weapons will likely be removed from NATO Europe within the next decade. A number of potential actions could accelerate these tendencies toward the withdrawal of U.S. nuclear weapons from Europe. A

nuclear incident, a WMD attack against a NATO member, a decision by the Alliance to end this aspect of its defense mission, or a decision to remove the weapons as an arms control measure could all lead European publics or governments to call for a more expeditious end to the deployment of nuclear weapons in Europe.

On the other hand, there also exist a number of serious but unlikely considerations that could quickly reverse the direction of the driving factors that seem to be pushing U.S. NSNW and Alliance nuclear policy. These include: concern over Russian revanchism; an awareness of new nuclear threats, particularly on NATO's southern borders; enhanced threats from state-sponsored terrorism; an unwillingness to place Europe's future security in the hands of British or French nuclear deterrent forces; or a decision to keep U.S. nuclear capabilities in Europe for the larger political purpose of maintaining Alliance stability. A decision that any one of these reversing factors was critical the future of the Alliance or to its security would trump all of the driving factors discussed above. These could even lead to enhanced or modernized nuclear weapons and a more robust nuclear capability for the Alliance.

One can envision a number of potential alternatives to the current nuclear deployment patterns and operational planning assumptions in NATO today that would still provide a nuclear deterrent umbrella for the Alliance. Even if all remaining U.S. weapons were withdrawn from the continent it would not necessarily mean the end of the Alliance's nuclear mission. NATO could rely on the United States to reintroduce the warheads to the continent in a crisis, for example, or the United States could provide the warheads to European DCA aircraft under dual-key arrangements similar to those in place today. Alternatively, the Alliance could choose to develop a European nuclear force, perhaps multinational in nature (though one that most likely relied on UK or French systems). Of course, Europe might also determine that its security no longer needed any nuclear weapons on European soil. U.S. strategic deterrent forces at sea or based in North America may provide enough of a guarantee to enable continued coupling and reassurance.

Fifteen years after the end of the Cold War, the allies have yet to make the hard decision about what the new global security environment means for its Cold War era weapons systems, including its residual arsenal of American nuclear warheads based on European soil. That it has taken so long to adjust its policies may reflect a combination of organizational lethargy and unwillingness to risk changing a collective arrangement that worked well for so many years. Or

perhaps there are genuine military threats to the Alliance that require continued reliance on these weapons.

It appears that the United States maintains its nuclear weapons in Europe primarily because it thinks its European allies want it to continue to do so. The European DCA states, on the other hand, remain committed to the nuclear mission largely because they think the United States expects them to do so, remaining reluctant partners in the DCA mission. There is no consensus on the need for nuclear weapons in the Alliance. Both sides are talking past one another—or more accurately, *not* talking to one another. Nobody wants to rock the boat.

Is the Alliance on a glide path to a non-nuclear future? Whether it chooses to rely on conventional munitions as a replacement for NSNW, or moves to one of the nuclear alternatives described above, is yet to be determined. The “don’t make waves” approach taken by many allies over this issue, however, is disconcerting. If NATO claims to be transforming itself, how can it ignore one of the main pillars of its collective security?

The end of NATO’s nuclear capabilities is not foreordained. The allies could decide that any one of the potential reversing factors is more important than allowing the current situation to continue to drift toward a non-nuclear future. All it will take is political will and the consensus of the member states that maintaining European-based nuclear capabilities is critical to the long-term health of the Alliance, and to the security of Europe and all the allies. If NATO can make that determination, we may yet see another generation of nuclear burden sharing within the Alliance.

Without such a decision, the Alliance will continue its current drift toward the withering away of its nuclear capabilities. In such a case, it is unlikely that there will be any American nuclear weapons based on European soil by the year 2020. That result cannot be seen in advance as either good or bad; it is just likely. The “foreseeable future” is now foreseeable.

I

Introduction

*The Allies have judged that the remaining much smaller sub-strategic force posture will, **for the foreseeable future**, continue to meet the Alliance's deterrence requirements.¹*

The North Atlantic Alliance has deployed nuclear weapons as part of its military defenses since the early 1950s. For more than 50 years it has relied on a policy of deterrence through the threatened use of those weapons. But NATO policy does not exist in a vacuum. The Alliance relies primarily on the United States and its weapons as its ultimate security guarantee, those deployed in Europe as well as its strategic arsenal at sea and in North America. Yet U.S. policy toward non-strategic nuclear weapons is changing as a consequence of the end of the Cold War and a confluence of events since 2001: the September 11th attacks, the global war on terrorism, and two terms of President George W. Bush. These changing policies obviously will have an impact on the deterrence strategy and capabilities of the North Atlantic Alliance. This policy realignment is incomplete, and the U.S. government is challenged by the tensions between a continued requirement to provide nuclear deterrence, the potential political and military roles of nuclear weapons in the new international environment, and the threat of proliferation posed by other states' nuclear stockpiles. At the same time, America's European allies have publics that are generally anti-nuclear, but fear losing that reassurance provided for such a long period by U.S. nuclear weapons. So they prefer to avoid any public debate over this issue.

This study considers nuclear alternatives for the Alliance in the coming decade and identifies options that may help balance America's competing desires to control these weapons

¹ "NATO's Nuclear Forces in the New Security Environment," *Alliance Nuclear Fact Sheets* (Brussels, Belgium: NATO Graphics Studio, 2004), p. 13; emphasis added. This wording was based on that found in the Alliance Strategic Concept, para. 46 (April 1999): "To protect peace and to prevent war or any kind of coercion, the Alliance will maintain for the foreseeable future an appropriate mix of nuclear and conventional forces based in Europe and kept up to date where necessary." The original source of this phrasing may be ascribed to Prime Minister Margaret Thatcher in 1988. She suggested compromise wording that would allow the Alliance to agree to the March 1988 summit communiqué, which faced internal dissension as a result of short-range nuclear force modernization decisions. Thatcher's formula, which has since become a political lodestone for the Alliance, was that such weapons would be kept "effective and up to date where necessary," and they would be necessary "for the foreseeable future." See Michael Mecham, "U.S. Outlines Modernization Plans; Allies Told Nothing is Concrete," *Aviation Week and Space Technology*, 14 March 1988, p. 60; also Jeffrey A. Larsen, *The Politics of NATO Short-Range Nuclear Modernization 1983-1990: The Follow-On to Lance Missile Decision*, Ph.D. Dissertation, Princeton University, June 1991, chapter seven.

while abiding by its dual responsibilities of maintaining a nuclear umbrella over its European allies and proceeding toward nuclear disarmament.

Background to Today's Situation

Nonstrategic nuclear weapons did not disappear with the end of the Soviet threat or the closing of the historical chapter known as the Cold War. Nor, for that matter, have many of the missions for which they were designed and deployed. Four of the five formally acknowledged nuclear weapons states maintain arsenals of tactical nuclear weapons, as do the four new members of the nuclear club. The two largest stockpiles are in the hands of the United States and Russia. Of these, Russia's arsenal dwarfs that of the United States. Recent statements and decisions by the Bush administration have led many observers to believe that in addition to worries about the possible proliferation of these weapons from Russia, and in contrast to 20 years of steady reductions in the size of America's tactical nuclear arsenal, the idea that NSNW may have a military role as a potential warfighting tool in the global war on terrorism is experiencing a renaissance among some elements in the United States government.

This report examines these weapons and the policy implications they manifest. In particular, the study considers the possibility of changing NATO policies toward U.S. NSNW in the post-9/11 era and their ongoing role in protecting Europe. There exists a tension in America's responsibility to maintain such weapons for extended deterrence purposes, for their potential use in certain circumstances, and for the proliferation threat similar weapons pose in the hands of other states, particularly Russia.

Figure 1 shows my early attempt to grapple with the major players, perspectives, and pressures addressing NATO's nuclear policy and posture today.

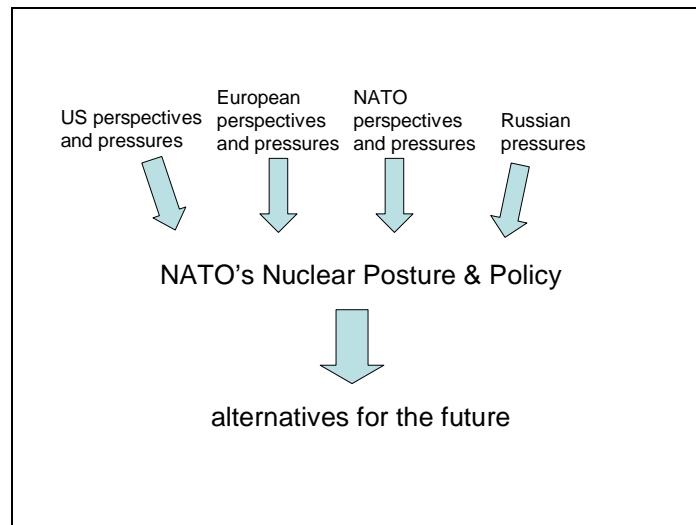


Figure 1: Big Picture Model of Pressures on NATO Nuclear Policy

Anecdotal evidence from discussions with persons familiar with these issues in Washington suggests that NSNW and their associated problems and implications rate very low on the spectrum of concern in the current administration. Rather than facing and attempting to resolve these tensions, the Bush administration may be deliberately tolerating the situation for the purpose of maintaining strategic ambiguity. America needs to balance its competing desires to control these weapons due to the prospect of proliferation; to reduce its stockpile in accordance with its disarmament commitments under the Nuclear Nonproliferation Treaty; and to abide by its responsibilities to maintain a nuclear umbrella for extended deterrence over its European allies.

This study concludes that on a global scale NSNW have a future, but that their future in NATO is shaky. There appears to be a continuing role for nonstrategic nuclear weapons in American and NATO national security strategy, at least for the next decade. Nuclear weapons have been highlighted in several recent U.S. security documents.² Most of these documents had little to say about non-strategic weapons, however. According to the U.S. and French governments, nuclear weapons have a continuing role for certain military missions in the global war on terrorism. This has led to public discussion over the possibility of designing new low yield and earth-penetrating weapons, which has, in turn, raised questions in some quarters about

² Including the April 1999 *Alliance Strategic Concept*, the September 2001 and March 2006 *Quadrennial Defense Review*, the December 2001 *Nuclear Posture Review*, the September 2002 and July 2006 *National Security Strategy of the United States*, and the December 2002 *National Strategy to Combat Weapons of Mass Destruction*.

the United States' willingness to meet its disarmament responsibilities under Article VI of the Nuclear Nonproliferation Treaty. It also leads critics to ask what type of message this would send to the world given America's leadership position in international politics. Congressional opposition has blocked funding for these moves, but the intent of the Bush administration remains.

A major concern for the U.S. government is the possibility that weapons such as NSNW will fall into the wrong hands. The greatest threat of such proliferation would appear to come from Russia, which has a large tactical nuclear arsenal left over from the Cold War—most analysts have estimated that it maintains at least 3,500 NSNW, and some estimate as many as 15,000 or more—that remain uncovered by any international arms control treaty and are in a questionable state of protection, safety, and security. Questions regarding Russia's level of commitment to abiding by the 1991-92 Presidential Nuclear Initiatives, following which the United States reduced its NSNW stockpile by 90 percent, and Russia's increased emphasis on nuclear forces in recent military doctrine revisions, raise legitimate concerns over the purpose of Russia's nuclear arsenal and its trustworthiness as a political partner of the United States and the West. Even before the 9/11 attacks the West recognized this proliferation potential. As a U.S. Congressional commission stated in January 2001, "The most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons-usable material in Russia could be stolen and sold to terrorists or hostile nation states."³ And former Senator Sam Nunn testified before Congress that "Tactical nuclear weapons are another piece of unaddressed business. These weapons have never been covered in arms control treaties. We can only guess at the numbers in each other's inventories as well as the locations. Yet these are the weapons most attractive to terrorists—even more valuable to them than fissile material and much more portable than strategic warheads."⁴

Within this larger security consideration, there are policy implications and possibilities for diplomacy, arms control, nonproliferation efforts, and nuclear deterrence. For example, there remains a continued responsibility for the United States (particularly the U.S. Air Force) to provide dual-capable aircraft and tactical nuclear warheads to maintain the decades-old deterrent

³ Howard Baker and Lloyd Cutler, "Final Report: Task Force on Department of Energy Nonproliferation Programs in Russia," January 2001.

⁴ Sam Nunn, Testimony before the U.S. Senate Committee on Foreign Relations on the Treaty between the United States of American and the Russian Federation on Strategic Offensive Reductions," 23 July 2002.

mission in NATO Europe. Most estimates claim that there remain several hundred U.S. tactical nuclear warheads in Europe, at some eight bases in six European nations that could be delivered by a fleet of dual-capable aircraft (fighter-bombers) manned by up to eight allied nations.⁵ There are also several hundred nuclear weapons in the arsenals of both France and the United Kingdom. While those numbers have diminished substantially since the high point of 7,200 U.S. warheads in Europe in 1971, questions have been raised regularly since the end of the Cold War about the continued necessity for that mission. NATO policy, however, continues to rely on this deterrent capability, as the Alliance made clear in its 1999 Strategic Concept:

The fundamental purpose of the nuclear forces of the Allies is political: to preserve peace and prevent coercion and any kind of war. They will continue to fulfill an essential role by ensuring uncertainty in the mind of any aggressor about the nature of the Allies' response to military aggression. They demonstrate that aggression of any kind is not a rational option. The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies... The Alliance will therefore maintain adequate nuclear forces in Europe.⁶

That position has not changed in the seven years since that document was released—or indeed, since the wording was first formulated in 1991. Has the world changed enough to require a revision of that doctrine? This question is under consideration within Alliance circles, with some states proposing to have a revised doctrine approved and in place in time for the Alliance's 60th anniversary in 2009.

The European nations that host those weapons provide a fascinating political tableau in which to consider these questions, since they have generally anti-military and anti-nuclear publics but governments that continue to want to participate in missions of nuclear deterrence, while trying to minimize public discussion of that policy. The “foreseeable future” is far enough away for most European governments and security experts that they see no need to undertake

⁵ See, for example, Hans Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning* (Washington: Natural Resources Defense Council, February 2005); Kristensen and Stan Norris, “NRDC Nuclear Notebook: U.S. Nuclear Forces, 2006,” *Bulletin of the Atomic Scientists*, January/February 2006, pp. 68-71; and Brian Alexander and Alistair Millar, eds., *Tactical Nuclear Weapons: Emergent Threats in an Evolving Security Environment* (Washington: Brassey's, 2003).

⁶ *NATO Strategic Concept* (Washington: April 1999), para. 62-63.

public discussions on any nuclear alternatives.⁷ As a result, NATO today is in a period of drift when it comes to nuclear policy. A series of drivers is conspiring to create a future in which these capabilities may simply wither away.

Defining Nonstrategic Nuclear Weapons

Over the years non-strategic nuclear weapons (NSNW) have been defined according to numerous criteria: yield, target, range, national ownership, delivery vehicle, or capability. Typically, this category includes weapons of shorter range (less than 500 kilometers), smaller yield (measured in tens of kilotons), delivered by land- or sea-based military systems or fighter bombers. In Europe they can be delivered by European NATO members as well as by the United States. Each of these approaches to defining this type of weapon is helpful, yet each fails to adequately capture their full nature; each lacks some of the nuances of this category of weaponry. One recent book suggested defining them “by exclusion:” anything not covered by an existing arms control treaty should be considered NSNW.⁸ A subsequent report by the Congressional Research Service agreed, accepting that definition as the most useful one available.⁹ Others add the caveat that NSNW must generally be intended for some sort of battlefield use, rather than designed purely for deterrent purposes. Still others say that the category is moot, since any use of any nuclear weapon, no matter the size or purpose, would be strategic in nature. And recent military decisions, such as the U.S. Air Force including heavy bombers in the category of “dual capable aircraft,” has further blurred the distinction between strategic and tactical weapons.

The Department of Defense Dictionary of Military Terms defines a tactical nuclear mission (rather than a tactical weapon or warhead) as:

the use of nuclear weapons by land, sea, or air forces against opposing forces, supporting installations or facilities, in support of operations that contribute to the accomplishment of a military mission of limited scope, or in support of the

⁷ Colin Gray calls this phrase “intellectually vacuous.” The future obviously cannot be foretold, so the Alliance should not try. But refusing to consider the future because it is too murky shirks one of the key responsibilities of the organization. Colin Gray, presentation to NATO, March 2006.

⁸ See Andrea Gabbitas, “Nonstrategic Nuclear Weapons: Problems of Definition,” in Jeffrey A. Larsen and Kurt J. Klingenberg, eds., *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities* (Colorado Springs, CO: USAF Institute for National Security Studies, 2001).

⁹ Amy F. Woolf, “Nonstrategic Nuclear Weapons,” CRS Report for Congress, FL32572, 9 September 2004.

military commander's scheme of maneuver, usually limited to the area of military operations.¹⁰

This gives us at least a vague notion of what non-strategic nuclear weapons are. While their ultimate purpose may be strategic, like other things in life that are hard to define, we know tactical nuclear weapons when we see them.

One of NATO's many concerns during the Cold War was acquiring and maintaining the military weaponry needed to effect flexible response, forward defense, and a credible threat against potential Warsaw Pact aggression. From the 1950s through the 1980s a major aspect of this strategy was the substitution of theater nuclear weapons for conventional forces planned for levels that the allies agreed to but never reached. Such weapons, regardless of type or range, needed periodic upgrading, modernization, or replacement to remain militarily usable.¹¹

The distinction between strategic and non-strategic nuclear weapons and delivery systems has always been blurred. This is not a new situation that merely reflects the changed international security environment. During the Cold War the distinction only seemed clear to some people because of the artificial boundaries created for arms control negotiations, especially the Strategic Arms Limitation and Reduction Talks, which focused on delivery systems that could be verified, it was hoped, by national technical means. The Soviet Union always called U.S. nuclear weapons in Europe "forward-based" weapons, rather than non-strategic or tactical; indeed, the USSR regarded them as strategic because of their potential effects on Soviet interests.¹²

There are forcefully expressed arguments on both sides of the debate over whether to maintain or eliminate the remaining arsenal of U.S. nuclear weapons assigned to NATO. On the one hand, they provide coupling, transatlantic links, military capabilities against an uncertain future, and risk and burden sharing. On the other, coupling may be strong enough through conventional burden sharing and the long history of Alliance cooperation to preclude the necessity for continuing the deployment of nuclear weapons for those purposes. The contribution of a few

¹⁰ DoD Dictionary of Military Terms, www.dtic.mil/doctrine/jel/doddict/index.html.

¹¹ This requirement stems from the fact that military hardware can wear out. Atomic warheads and their associated launchers suffer from the same mechanical and corrosive effects of aging and weather as do conventional weapons, with the additional consideration that the half-life of some nuclear components forces their removal and refurbishment after a period of years or decades. Improvements in safety and security devices need to be incorporated into the weapons in the field. The B-61 bomb, for example, has over 5,900 individual parts in its combined physics package and weaponized delivery means. Furthermore, changing military strategy may force a shift in reliance from one to another type of weapon (for example, the shift from countervalue to counterforce targeting in the late 1970s led to a call for smaller, more accurate warheads and yields).

¹² Thanks to David Yost for making this point. Personal correspondence, May 2006.

hundred invisible weapons to coupling, according to this argument, is minimal, so the benefits of removing U.S. nuclear weapons may exceed those of retaining them.¹³

Findings

The conclusion of this year-long study is that, unless current trends are altered, nuclear weapons may not have many years left before they are removed from NATO Europe. The combined effect of anti-nuclear attitudes on the part of the host nations, the lack of interest in the mission by the U.S. Air Force, and the unwillingness of the European DCA states to seriously consider a future for these weapons, or to base fighter aircraft acquisition decisions on such a future—at least publicly—may lead to a situation where all sides of the debate come to the conclusion that it is just easier to remove the remaining U.S. warheads than it is to try to maintain this capability. While the Alliance may choose to maintain a nuclear deterrent strategy after such a decision, it will more likely rely on some form of off-shore nuclear force belonging to the United States, Great Britain, or possibly even on the nuclear forces of France.

The Alliance Strategic Concept states that the fundamental purpose of nuclear weapons is political. This has multiple layers of meanings to the Allies. On one level, these weapons reassure the allies that they have the ultimate weapon available as a deterrent against threats and, were it to become necessary, to actually use those weapons in combat. The second level of reassurance comes from knowing that the United States has made a visible, physical commitment to the defense of Europe as shown by its weapons and forces being forward deployed in NATO Europe. More fundamentally, the DCA mission keeps the United States involved in European political affairs, and allows the NATO members access to U.S. defense decision-making through the NPG and direct bilateral and multilateral forums with the United States. The intangible benefits of this close relationship are well understood by the European allies. Would those benefits be lost if U.S. weapons were withdrawn from Europe, or would they simply take on a new complexion? At the moment, no member of the Alliance seems willing to risk finding out the answer to that imponderable. Better, they believe, to “not rock the boat.”

Indeed, one can envision a number of potential alternatives to the current nuclear deployment patterns and operational planning assumptions in NATO today that would still provide a nuclear deterrent umbrella for the Alliance. As elaborated in the final chapter in this study, these

¹³ Interviews, Brussels, January 2006.

include maintaining the status quo, either unchanged or with modest technical updates or operational changes, or the withdrawal of all remaining U.S. weapons from the continent. If the latter were to occur, it would not necessarily mean the end of the Alliance's nuclear mission. NATO could rely on the United States to reintroduce the warheads to the continent in a crisis; or the United States could provide the warheads to European DCA aircraft under dual-key arrangements similar to those in place today. Alternatively, the Alliance could choose to develop a European nuclear force, perhaps multinational in nature, such as an EU nuclear force or a European naval nuclear force. More likely would be some form of reliance on UK or French systems. Of course, the European allies could determine that its security no longer needed U.S. weapons on European soil. U.S. strategic deterrent forces at sea or based in North America may provide enough of a guarantee to enable continued coupling and reassurance.

Is the Alliance on a glide path to a non-nuclear future? Whether it chooses to rely on precision-guided conventional munitions as a replacement for NSNW, or on one of the nuclear alternatives described in the final section of this paper, is yet to be determined. NATO is transforming, but it has no agreed definition of its preferred future. So nobody knows where it is headed. Given this uncertainty, the "don't make waves" approach taken by many allies over this issue is surprising. As one senior NATO official put it, if NATO claims to be transforming itself, how can it ignore one of the main pillars of its collective security?¹⁴ The fear of change may relate to the legitimate danger of the potential for an unraveling of the Alliance at a time of growing but vague threats, with the European members of the Alliance unable to defend themselves without the United States.

As a result, most NATO governments would prefer not to conduct a public discussion of the potential end of the nuclear mission in its current form, fearing that open debate would risk turning it into a public issue with unknown but potentially unhappy consequences. Others, however, believe that the public no longer cares about NATO policy anyway, so a decision could be made without fear of repercussions.

The Alliance should address a number of important questions regarding the future of NATO's nuclear policy:

- What is the role of deterrence in the modern world? Is it still viable? What does the Alliance need to deter? What are the alternatives?

¹⁴ Interviews, Brussels, January 2006.

- If deterrence is still necessary, what about nuclear deterrence? Do the same rules apply?
- What NATO nuclear forces are required in order to achieve nuclear deterrence?
- How does the Alliance make its nuclear policies credible?

Unfortunately, the allies do not appear to want to tackle these fundamental questions.

As a result, as this paper will show, it is unlikely that there will be any American nuclear weapons based on European soil by the year 2020. That decision cannot be seen in advance as either good or bad; it is just likely. The “foreseeable future” is now foreseeable. Waves are rocking the boat, and the sleeping dog is stirring.

II

Historical Background¹⁵

Nearly 50 years ago Professor Klaus Knorr captured concerns that were already arising over NATO's continued ability to conduct its primary mission. He wrote:

In 1958, it is fair to say, the North Atlantic Treaty Organization began to be seriously strained by a profound crisis of confidence... Increasingly the question was put: Can NATO, with its present forces and strategy, still be expected to defend the West against possible aggression and aggressive threats—indeed, to deter military aggression? Is the alliance still able to fulfill its central function?¹⁶

The central problem of the Alliance was already evident in the ninth year of its charter, and has remained relatively unchanged in the half century since these lines were written. The same questions were heard again and again through the following years, surfacing, for example, in the debate over the need for and the prospects of modernizing short-range nuclear forces (SNF) in the late 1980s and early 1990s. Regardless of the technical characteristics of the hardware involved, the central questions have remained for over 50 years: Does the Alliance have a viable strategy? How can NATO deter the threat of external aggression? Are the allies willing to support the level of military forces necessary to effect such a strategy? Are nuclear weapons necessary for the success of that strategy? These recurrent questions have faced NATO planners and government leaders since the beginning of the Alliance.¹⁷

¹⁵ Portions of this chapter first appeared in Jeffrey A. Larsen, *The Politics of NATO Short-Range Nuclear Modernization, 1983-1990: The Follow-On to Lance Missile Decision*, Ph.D. dissertation, Princeton University, June 1991. It is also forthcoming in Larsen, *NATO's Final Cold War Debate: Modernizing Short-Range Nuclear Weapons as the World Changed*, University of Missouri Press.

¹⁶Klaus Knorr, editor, *NATO and American Strategy* (Princeton: Princeton University Press, 1959), p. 1. As the French say, "the more things change, the more they stay the same."

¹⁷This analysis of early NATO doctrine, force structure, the concepts of flexible response and deterrence theory, and the role of TNF weapons, is based on a selective reading of the immense literature available on these topics. Among the most helpful books for reviewing this history have been: David Schwartz, *NATO's Nuclear Dilemmas* (1983), which focuses on six modernization episodes between 1953 and 1979; Lawrence Freedman, *The Evolution of Nuclear Strategy* (1989) and *The Troubled Alliance: Atlantic Relations in the 1980's* (1983); Stephen Biddle and Peter Feaver, eds., *Battlefield Nuclear Weapons: Issues and Options* (1989); Jeffrey Record, U.S. *Nuclear Weapons in Europe: Issues and Alternatives* (1974) and *NATO's Theater Nuclear Force Modernization Program: The Real Issues* (1981); Sherri Wasserman, *The Neutron Bomb Controversy: A Study in Alliance Politics* (1983); Jeffrey Boutwell, Paul Doty, and Gregory Treverton, eds., *The Nuclear Confrontation in Europe* (1985); J.Michael Legge, *Theater Nuclear Weapons and the NATO Strategy of Flexible Response* (1983); Senate Foreign Relations Committee, *Report of the Special Committee on Nuclear Weapons in the Atlantic Alliance* (1985); Uwe Nerlich, "Theater Nuclear Weapons in Europe: Is NATO Running Out of Options?" (1980); Catherine Kelleher, *Germany and the Politics of Nuclear Weapons* (1975); John Steinbruner and Leon Sigal, eds., *Alliance Security: NATO and the No-First-Use Question*

Since the issues and questions surrounding Alliance nuclear weapons decisions are cyclical in nature, this review should prove helpful in sorting out the standard questions, justifications, and criticisms as they have appeared in past debates, giving us a better understanding of why governments took the positions they did.

A Historical Summary of Non-Strategic Nuclear Weapons in Europe

Tactical nuclear weapons have had three purposes in U.S. policy. First, they are meant to deter coercion and aggression against the United States, its allies, and its overseas interests. Second, they are meant to provide extended deterrence to U.S. allies, forging, for example, a tangible link between the European allies and the United States in the support of NATO defense as part of what during the Cold War was termed the Alliance's triad: conventional forces, tactical nuclear weapons in theater, and U.S. and British strategic nuclear systems. The third purpose, which has crystallized in the years since the end of the Cold War, has been to deter the use of weapons of mass destruction more broadly. Nuclear weapons have been in Europe almost from the beginning of the Alliance. The United States deployed its first battlefield nuclear weapon, the 280 millimeter atomic cannon, to Europe in 1953, followed by two types of surface-to-surface missiles the next year.¹⁸ The first American NSNW were deployed in West Germany as a means

(1984); Robert Osgood, *NATO: The Entangling Alliance* (1962); Stockholm International Peace Research Institute, *Tactical Nuclear Weapons: European Perspectives* (1977); Klaus Knorr, editor, *NATO and American Security* (1959); Richard Smoke, *National Security and the Nuclear Dilemma* (1988); Keith Dunn and Stephen Flanagan, eds., *NATO in the 5th Decade* (1990); P. Terrence Hopmann and Frank Barnaby, editors, *Rethinking the Nuclear Weapons Dilemma in Europe* (1988); Leon Sigal, *Nuclear Forces in Europe* (1984); John Cartwright and Julian Critchley, *Cruise, Pershing, and SS-20* (1985); Kenneth Myers, ed., *NATO: The Next Thirty Years* (1980); Carl Amme, *NATO Strategy and Nuclear Defense* (1980); Stephen Cimbala, *NATO Strategy and Nuclear Escalation* (1989); Stanley Sloan, *NATO's Future: Toward a New Transatlantic Bargain* (1986); Catherine Kelleher and Gale Mattox, eds., *Evolving European Defense Strategies* (1987); David Yost, ed., *NATO's Strategic Options: Arms Control and Defense* (1981); Paul Bracken, *The Command and Control of Nuclear Weapons* (1988); James Golden, Daniel Kaufman, Asa Clark, and David Petraeus, eds., *NATO at Forty: Change, Continuity, and Prospects* (1989); Jeffrey Larsen and Kurt J. Klingenberg, eds., *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities* (2001); Thomas Halvorson, *The Last Great Nuclear Debate: NATO and Short-Range Nuclear Weapons in the 1980s* (1995); Hans M. Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning* (2005); and Brian Alexander and Alistair Millar, eds., *Tactical Nuclear Weapons: Emergent Threats in an Evolving Security Environment* (2004).

¹⁸ The date of the first tactical nuclear warhead delivery to Europe varies according to the source one consults. Most authors place it in October 1953, as does Jeffrey Record, *US Nuclear Weapons in Europe: Issues and Alternatives* (Washington: The Brookings Institution, 1974), p. 8. Others differ: Timothy Ireland, for example, states that "small numbers of tactical nuclear artillery shells began to appear in Europe as early as the spring of 1952" (Ireland, p. 8), while David Schwartz says "these weapons made their first appearance in Europe in 1954." (Schwartz, "A Historical Perspective," in *Alliance Security: NATO and the No-First-Use Question*, edited by John D. Steinbruner and Leon V. Sigal (Washington: The Brookings Institution, 1983), p. 7.); and David C. Elliott also claims 1952 based on the Congressional testimony of General Lauris Norstad, in "Project Vista and Nuclear Weapons in Europe," *International*

of countering the massive conventional superiority of the Soviet armies that were threatening Western Europe. These weapons were also meant to provide “coupling” between the fates of the European and North American members of the North Atlantic Treaty Organization by threatening to escalate a conventional war to the nuclear level. The United States meant to intimidate the Soviet Union with this prospect while simultaneously reassuring its NATO allies that it was fully committed to their defense.

By the early 1970s there were over 7,200 warheads deployed in Western Europe for potential use on well over a dozen different types of delivery systems.¹⁹ This was still a modest percentage of the total U.S. NSNW inventory.²⁰ These weapons were truly ubiquitous; the United States military had nuclear bombs for fighter aircraft, nuclear artillery shells, atomic demolition munitions (nuclear land mines), atomic bazookas, surface to air missiles, and rockets of all shapes and sizes, deployed on land and at sea, in multiple countries around the globe. The largest concentrations of stored weapons were in Western Europe and in South Korea, but U.S. tactical nuclear weapons were stored in 18 different countries at one time or another.²¹

The Soviet Union lagged behind the United States in its deployment of tactical nuclear forces until the 1970s, when a massive expansion program resulted in strategic and tactical parity and, eventually, theater superiority in numbers and types of TNF weapons deployed in Europe.

From 1977 through 1979 NATO debated the deployment of a new class of land-based nuclear missiles known as long-range theater nuclear forces (LRTNF).²² These new missiles

Security, Summer 1986, p. 178. October 1953 was the date, perhaps not coincidentally, of National Security Council memorandum 162/2 instructing the Joint Chiefs of Staff to base their defense plans in Europe on the massive use of nuclear weapons.

¹⁹ The number 7,200 comes from Secretary of Defense Clark Clifford, quoted in M. Leitenberg, "Background Materials in Tactical Nuclear Weapons (Primarily in the European Context)," in Stockholm International Peace Research Institute, *Tactical Nuclear Weapons: European Perspectives* (London: Taylor and Francis Ltd., 1978), p. 16.

²⁰ Which exceeded 20,000 tactical warheads at one point. See Kevin O'Neill, "Building the Bomb," in Stephen I. Schwartz, *Atomic Audit* (Washington, DC: Brookings, 1998), Fig. 1-4, p. 46; Hans M. Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning* (Washington, DC: Natural Resources Defense Council, February 2005), p. 24; and Jeffrey A. Larsen, "Tactical Nuclear Weapons," in *Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, History, and Technology, Volume 2: Nuclear Weapons*, James J. Wirtz, Eric A. Croddy, and Jeffrey A. Larsen, eds. (Santa Monica, CA: ABC-CLIO, 2005), pp. 371-372.

²¹ Robert S. Norris, Hans M. Kristensen, and Christopher E. Paine, *Nuclear Insecurity: A Critique of the Bush Administration's Nuclear Weapons Policies* (Washington, DC: Natural Resources Defense Council, September 2004), p. 2.

²² This category's title was subsequently changed, during the Reagan administration, to longer-range intermediate-range nuclear forces (LRINF). This was in response to European concerns about their continent being a mere "theater." LRINF forces, along with shorter-range INF (SRINF, of which NATO had none), were both eliminated by the 1987 INF Treaty. This left only short-range nuclear forces (SNF; those with a range of less than 500 KM) stationed in Europe.

included the ground-launched cruise missile and the Pershing II. In December 1979 NATO's foreign and defense ministers met and agreed to a dual-track arrangement, calling for simultaneous pursuit of LRTNF deployment and arms control initiatives to eliminate this category of weapons.²³

NATO began reducing its nuclear arsenal in the early 1980s as a result of the Montebello Decision, which codified calls for a dual-track approach to dealing with security issues and the Soviet Union.²⁴ This included the responsibility to provide continued military strength, with upgraded weaponry where appropriate, and a parallel track of diplomatic approaches, including arms control negotiations. The first half of that approach ran into public demonstrations in Europe when the Alliance deployed two new theater-range ballistic and cruise missiles to Germany, Italy, and Great Britain in the 1980s. But the host governments' desire to have that continued nuclear commitment overruled any popular opposition. At the same time, NATO was quietly removing thousands of NSNW warheads and delivery systems, and successfully pursuing arms control negotiations with the Warsaw Pact. These led to a number of arms control agreements, including the 1987 Intermediate-Range Nuclear Forces (INF) Treaty, the 1989 Conventional Armed Forces in Europe (CFE) Treaty (and its corollary, the 1992 CFE-IA treaty), and the 1991 Strategic Arms Reduction Treaty (START I). But after this initial flurry of arms control negotiations and agreements, further movement stopped and NSNW were mostly forgotten by both sides.

The surprisingly swift end of the Cold War during the 1989-91 period led to renewed haste in removing most of NATO's remaining nuclear weapons from Europe. This move was accelerated by President George H.W. Bush's Presidential Nuclear Initiative in the fall of 1991, which effectively ended all new tactical weapons research and development, removed all NSNW from Naval ships and ground-based Army systems, and called for the retirement of most tactical nuclear types.²⁵ The overall effect of these initiatives led to a reduction in U.S. nuclear forces deployed to Europe from approximately 4,000 in 1990 to only "a few hundred" gravity dropped

²³ France did not participate in this special meeting of ministers that led to the Dual-Track Agreement.

²⁴ For an in-depth analysis of the Montebello Decision and its consequences for NATO nuclear force structure and planning, see Larsen, *The Politics of NATO Short-Range Nuclear Modernization 1983-1990*. The official Montebello Decision can be found in Larsen and Klingenberg, *Controlling Non-Strategic Nuclear Weapons*, Appendix A.

²⁵ For the U.S. Presidential Nuclear Initiative and Russia's responses, see Larsen and Klingenberg, *Controlling Non-Strategic Nuclear Weapons*, Appendices C and D, pp. 273-290. The text of the initiative is also available at the archives of the George Bush Presidential Library and Museum, <http://bushlibrary.tamu.edu/papers/1991/91092704.html>.

bombs today. There have been no substantial efforts to modernize or reconstitute Cold War levels of nuclear forces in NATO Europe since the 1991 PNI, with the exception of upgraded storage, safety, and security measures for those weapons that remain.²⁶ This is much that same inventory that NATO holds today. (See Figure 2.)

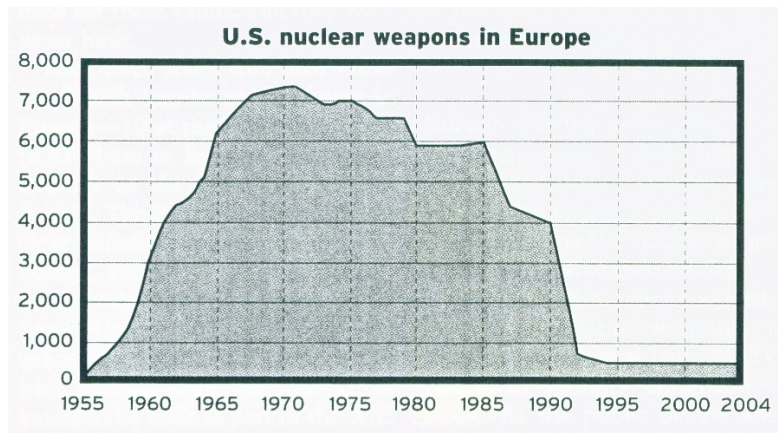


Figure 2: US Nuclear Weapons in Europe²⁷

In 1997 Presidents William Clinton and Boris Yeltsin met in New York to finalize plans developed earlier that year in Helsinki to begin the START III process—the third major treaty in the strategic arms reduction process begun under President Ronald Reagan. The plan for START III included a separate venue for the two countries to “...explore, as separate issues, possible measures relating to nuclear long-range sea-launched cruise missiles and tactical nuclear systems, to include appropriate confidence-building and transparency measures.”²⁸ The goal of such talks, presumably, would have been to discuss how many NSNW each side had, what purpose they served, and how best to draw down the inventory of both sides so as to reduce the threat and enhance stability.²⁹ But the START III talks never began, and the Moscow Treaty signed by Presidents George W. Bush and Vladimir Putin in 2002 ended any need for further strategic negotiations. NSNW were left out in the cold as the only nuclear weapon category not covered by any arms control treaty or agreement.

²⁶ NATO *Nuclear Fact Sheets* and *Alliance Strategic Concept*, para. 64.

²⁷ Source: NATO, modified with numbers showing approximate stockpile size by Hans Kristensen for *U.S. Nuclear Weapons in Europe*, p. 24.

²⁸ “Joint Statement on Parameters of Future Nuclear Reductions,” Clinton-Yeltsin Summit, Helsinki, 21 March 1997, at www.nit.org/db/nisprofs/treaties/abm/abm_heje.htm.

²⁹ For the text of the Helsinki Agreement, see Larsen and Klingenberg, *Controlling Non-Strategic Nuclear Weapons*, Appendix F, pp. 307-308.

Recurrent Themes in Alliance Nuclear History

*For two decades...the stockpile of US nuclear weapons in Europe has resembled fish flopping on a dock: they are still alive, but somehow out of their element.*³⁰

We can expect that trends which have developed over a period of five decades will continue to play a role in future nuclear decisions by the Alliance. Among the major thematic cords linking NATO nuclear issues are the following:

1. The distinction between deterrence and reassurance as the key purpose of nuclear forces.

Nuclear weapons have always been central to NATO's strategy. During the Cold War they dominated the United States' strategy and participation in the Alliance. The distinction between deterrence and assurance lies at the heart of Alliance debates over nuclear modernization and force employment policy changes. Whenever the United States has appeared to be placing more emphasis on the former, whether with talk of limiting a nuclear war to Europe, or making such weapons more useable for warfighting, the European allies have strenuously objected. The Europeans have, generally speaking, shown a marked preference for the political value of these weapons, seeing them as a link that couples the US to European security at the first infraction of the peace. Put another way, "the bottom line of alliance nuclear relations is not NATO's military doctrine but Europe's confidence in America's will."³¹ The level of assurance necessary is defined by the allies, not by the United States.

The nuclear dilemma in Europe is rooted in geography. Some of the weapons which are supposed to protect Western Europe are located in Europe, as was the major threat to the West during the Cold War, yet the country providing the bulk of that deterrent is located some 3,000 miles away. The basic problem of American extended deterrence is the possibility of NATO being "self-deterred," either out of fear of nuclear devastation on its own territory or from American unwillingness to risk its homeland for Europe. This often disturbed the delicate compromise enshrined in MC 14/3 (the flexible response doctrine) between the American wish for theater

³⁰Harlan Cleveland, "Foreword," in *Rethinking the Nuclear Weapons Dilemma in Europe*, edited by P. Terrence Hopmann and Frank Barnaby (Basingstoke, UK: Macmillan Press, 1988), p. xiv. This quote remains valid two decades after it was penned.

³¹ Sheri L. Wasserman, *The Neutron Bomb Controversy: A Study in Alliance Politics* (New York: Praeger, 1983), p. 134.

options and the European desire for tight linkage and quick escalation to U.S. strategic forces. The ambivalence was tolerable only as long as the United States emphasized assured destruction of an enemy in the event of war—a condition no longer credible in an era of nuclear parity.³² Perhaps the continued reliance on nuclear deterrence is due to the Alliance adopting a form of "existential deterrence" and making that the fundamental purpose of nuclear weapons after the Cold War ended. As one book explained it,

the possibility of irrational (or at least involuntary) behavior provides the foundation of existential deterrence. Given this, the mere *presence* of nuclear weapons in Europe contributes deterrent value—whether rational plans for the weapons' use exist or not. This clearly contributes to war prevention... The contribution of existential deterrence, while real, is not a formal element of Alliance policy.³³

2. The concern among European members that the United States does not consult with them prior to making nuclear decisions that affect the Alliance as a whole.

The desire of the European allies to be a part of Alliance nuclear policy making is a constant thread that weaves its way through NATO's history. Their anger over America's failure to consult them concerning such decisions in the past has been a natural outgrowth of this desire.

3. The attempt by NATO to overcome deep political divisions over the purpose and value of theater nuclear weapons with technological "fixes" rather than via new doctrine.

Supplying a technological "answer" to what is inherently a political problem has never satisfied the basic nuclear dilemma. This was attempted in several instances, notably the introduction of intermediate-range ballistic missiles (IRBMs) into the theater in the late 1950s, the attempt to create a multi-national medium-range ballistic missile (MRBM) force in the 1960s, and the deployment of INF forces in the early 1980s. All three were supported as much by political as by military rationale, yet none accomplished the difficult task of solving the simultaneous military and political needs that the Alliance faced, including ensuring a "seamless web" of deterrence. The

³² Helga Haftendorn, in Keith Dunn and Stephen Flanagan, *NATO in the 5th Decade* (Washington: NDU Press, 1990), p. 116.

³³ Stephen Biddle and Peter Feaver in *Battlefield Nuclear Weapons: Issues and Options* (Cambridge, MA: Center for Science and International Affairs, 1989), p. 4. On the concept of existential deterrence, see McGeorge Bundy (who first coined the expression), "The Bishops and the Bomb," *The New York Review of Books*, 16 June 1983, pp. 3-8; Paul Bracken, *The Command and Control of Nuclear Forces* (New Haven, CT: Yale University Press, 1983); and Lawrence Freedman, "I Exist, Therefore I Deter," *International Security*, Summer 1988, pp. 177-195.

seamless web relied on proving American stoutheartedness through renewed linkage between the conventional forces in the theater and nuclear weapons that began the escalatory chain leading to U.S. strategic forces. Creating this level of confidence has proved to be exceedingly difficult to do. The lesson, perhaps, is that "the political implications of deploying new nuclear weapons in Europe should be an integral part of the decision-making process."³⁴

We see this again in 2006 as the allies attempt to resolve the larger question of NATO nuclear policy through technological discussions—for example, by sidestepping direct answers about future requirements for nuclear weapons in favor of raising issues about WS3 vault security, or the geographical location for weapons stationing.³⁵ The ultimate decision on NATO's nuclear future may hinge, in fact, on a technical question: whether the replacement aircraft that the DCA allies buy over the coming decade to replace their current fleets will be nuclear capable or not. For several countries that acquisition question may drive the political decision whether to remain in the nuclear delivery business.

4. The increasing willingness of the Alliance to consider public opinion in its efforts at force modernization and rationalization in the middle years of Alliance nuclear history, but unwillingness to have public debates over the Alliance's nuclear future in the 2000s.

This recognition of the importance of public opinion was most evident in the 1979 dual-track decision, which attempted to "sell" the INF modernization package to the public by attaching an arms control element to it—something which the Alliance had never felt it was necessary to do in earlier nuclear modernization episodes.³⁶ Since an arms control deal seemed like it, too, would offer security improvements to the Alliance, due to the disparity between the long-range theater nuclear forces between the two blocks, and the associated unequal cuts required of the Soviets to reach parity, NATO appeared to have placed itself in a "no-lose" situation with this decision. Only after later re-examination of theater nuclear strategy revealed the apparent loss of coupling and the break in the seamless web of deterrence was the zero option seen to be dangerous by some

³⁴Wasserman, p. 135.

³⁵ The Weapons Safety and Security System (WS3), is a hardened protective vault for weapons that NATO installed at its dual-capable aircraft bases in the 1990s.

³⁶Although the first attempt to do so occurred a year earlier, in the proposed 1978 NATO plan to produce neutron weapons but delay their deployment pending Soviet arms control concessions. The lesson seemed obvious to some: "the dual track notion of parallel modernization and arms control has set a powerful precedent for future nuclear initiatives in NATO." Wasserman, p. 137.

European strategists. To the average citizen, however, the outcome seemed to be greater security through smaller numbers of weapons on the continent.

On the other hand, there are those who argue that the Alliance needs a single strong leader, someone who can make the hard decisions when necessary and provide guidance on nuclear issues. The traditional leader in NATO is the United States. From this point of view, the United States should not put too much emphasis on public opinion, from whatever quarter. Sherri Wasserman, for one, came to this conclusion in her study of the neutron bomb episode, the lesson of which was, for her, that “Modernization of nuclear weapons in Europe cannot be managed by a pluralist approach to decision making.”³⁷ A major part of the political mess surrounding the enhanced radiation warhead stemmed from Washington's failure to exert strong, continuous, decisive leadership.

There is still no definitive answer within Alliance circles as to which is better: a unilateral U.S. decision regarding the future of nuclear weapons in Europe, or a consensual decision by European members as to whether they want such weapons stationed in their countries. The former would certainly be easier for most European governments to deal with. This theme may explain the expressed desire by several European states in the 2006 time frame to keep any discussions about NATO nuclear policy quiet and out of the public eye.

5. Europeans have often had multiple motives when accepting new nuclear systems on their soil.

Early cases clearly showed that European support for deployment, as far as it went, was often motivated more by a desire to acquire the most modern and capable systems with which to defend themselves, or to enhance their prestige within NATO, rather than by any real enthusiasm for American weapons based in Europe.³⁸ The Alliance's unwillingness or inability to accommodate that desire, either through collective nuclear force arrangements (such as the Multilateral Force of the 1960s) or via independent national nuclear forces (such as deployed by Britain and France) has allowed this strain to continue. This has also proven true since 1999 with respect to the ten new member states from Eastern Europe. Unlike some of the older member states, many of these new members are very pro-nuclear. This undoubtedly reflects their previous

³⁷Wasserman, p. 136.

³⁸Ireland, p 40.

experience as vassals of the Soviet Union, often involuntarily hosting Soviet nuclear weapons on their soil, and their resolute unwillingness to ever return to such a situation.

6. The desire by the United States and other allies to prevent West Germany from obtaining its own nuclear capability.

The State Department's worries over Germany's nuclear desires in the 1960s contributed to its organizational support for the MLF concept, despite bureaucratic opposition from several quarters, including the Pentagon and most other European states. MLF was designed to appease supposed German desires for such weaponry, as well as their concerns over France's burgeoning independent nuclear forces.³⁹

The question of German interest in acquiring an independent nuclear capability reappeared during the hectic 1989-1990 period, when issues of SNF modernization were enveloped by the pace of German reunification. Germany committed to remaining non-nuclear in the 1990 “two plus four” agreement that led to German reunification. Yet this residual concern may play some part in its neighbors’ continued support for U.S. weapons deployed in Europe.

7. The incompatibility of weapons and doctrine.

This theme is almost too obvious to mention, for it underlies all that has been said about NATO nuclear history. NATO's nuclear forces have never matched the doctrinal prescriptions for their use. As Jeffrey Record has pointed out, the reasons for this problem were clear: throughout the Cold War NATO had a surfeit of weapons, with extravagant yields, too-short ranges, and unnecessary vulnerability, all of which led to temptations for unauthorized early use of TNF (by both sides).⁴⁰ Nevertheless, as he correctly pointed out, “the deployment's psychological value within NATO far outweighs whatever military contribution the weapons may make to overall deterrence of aggression.”⁴¹

In terms of political reassurance, short-range battlefield nuclear weapons have usually caused more problems than they have solved. To be effectively reassuring, American forces must be credible, stabilizing, and appear to contribute to responsible force planning.⁴² Regardless of

³⁹Schwartz, pp. 82-85.

⁴⁰Record, pp. 50-54.

⁴¹Record, p. 68.

⁴²Biddle and Feaver, pp. 6-7.

military value, a weapon must pass strict political guidelines before it can be successfully deployed on the European continent. Today, as the *Alliance Strategic Concept* points out, politics provides the *only* guideline for nuclear weapons decisions. The role of nuclear weapons always has been, and remains, predominantly political.⁴³

Modernization Episodes in Europe

*If they did not exist, it is far from certain that NATO would, today, seek to develop and deploy them.*⁴⁴

The term “modernization” is a more complex concept than one might first suspect, especially in the context of such emotionally charged issues as nuclear weapons. While in the simplest sense to modernize a military weapons system implies the improvement of a component on an existing system, or the replacement of an older system with a newer, perhaps more capable model, there are a number of other definitions apparent in the way this term has been applied over the past few decades with respect to NATO nuclear forces.

Some would argue that the best way to achieve modernization is to go about it quietly, with a minimum of public notice or explanation. Calling such moves an “upgrade” or “improvement” of current capabilities, rather than a wholesale replacement of an existing system in the theater, may help the prospects of achieving a successful program. But this implies that without resorting to such techniques, the Alliance would not otherwise be able to “sneak it in” past an attentive and opposing public. Learning from experience, and not wishing to recreate the large public opposition to nuclear modernization in the early 1980s, the Alliance chose this option several times in its recent history. Modernization episodes that were undertaken without public fanfare in the late 1980s included replacing gravity bombs for dual-capable aircraft, providing improved 155 millimeter and 8 inch artillery shells, modifying target plans through Supreme Allied Commander of Europe (SACEUR) Nuclear Weapons Requirements Studies, and undertaking a quiet research and development program for the tactical air-to-surface missile.

One alternative to that approach is to make the modernization program as public as possible, perhaps as part of a larger “package” of initiatives that may include arms control possibilities or doctrinal changes as well as weapons upgrades. This was the path taken by NATO

⁴³ See *Alliance Strategic Concept*, 1999.

⁴⁴ Colin Gray, "Theater Nuclear Weapons: Doctrines and Postures," *World Politics*, January 1976, p. 301.

with the INF dual track decision of 1979. It was also the means eventually adopted, albeit not necessarily by choice, for attempting to replace the Lance missile with the follow-on to Lance in the late 1980s.

The Nuclear Planning Group

The Nuclear Planning Group (NPG) was officially established in 1967 to provide a forum for the exchange of views between allied governments concerning nuclear planning and strategy. Meeting at ministerial level twice a year in an informal setting, it was meant to be an advisory body for the free exchange of information and ideas, reporting directly to the North Atlantic Council.⁴⁵ Chaired by the NATO Secretary General, its membership has been kept intentionally small, made up of the Ministers of Defense from each state. Its administrative support is provided by an NPG Staff Group, composed of representatives from all nations in the NPG. The International Staff (Nuclear Policy Directorate) acts as the support staff for the committee.⁴⁶

The NPG gave America's European allies an input into what had previously been purely American decisions. It was largely the creation of Secretary of Defense Robert McNamara, who wanted to improve consultative arrangements within the Alliance but also hoped to keep such interaction tightly constrained. He originally called for a small council limited to the major NATO powers. But when every NATO state except France declared an interest in gaining a seat on the new body, the US conceded that seven states could join.⁴⁷ There were four permanent members—the United States, Britain, West Germany and Italy—and three other seats rotated among the six remaining states. This arrangement lasted until 1979, when the meetings were opened to all interested allies.⁴⁸ As NATO's membership grew, each new member was invited to

⁴⁵ In the early 2000s the NPG decided to reduce its formal ministerial meeting schedule to once per year.

⁴⁶ Scilla McLean, editor, *How Nuclear Weapons Decisions are Made* (Basingstoke, UK: MacMillan Press, 1986). Also *The North Atlantic Treaty Organisation: Facts and Figures* (Brussels: NATO Information Service, 1989); and interviews in Brussels, summer 2006. The best works on the beginnings of the NPG are: Paul Buteux, *The Politics of Nuclear Consultation in NATO, 1965-1980* (Cambridge: Cambridge University Press, 1983); and J. Michael Legge, *Theater Nuclear Weapons and the NATO Strategy of Flexible Response* (Santa Monica, CA: RAND Corporation, 1983), especially "Appendix B: The Composition of the Nuclear Planning Group." See also Chapter Six in Larsen, *The Politics of NATO Short-Range Nuclear Modernization 1983-1990*, for a more detailed look at the inner workings of NATO's nuclear planning process in the late 1980s.

⁴⁷ Norway did not want a seat on the NPG at first, citing its unilateral restrictions on basing nuclear weapons on its soil in peacetime. Nor did Iceland (which has no military), Luxembourg, or Portugal initially choose to join in NPG discussions. After about two years the Norwegians changed their minds and joined as a rotational member. Legge, pp. 14-16, 81.

⁴⁸ Freedman, "The Wilderness Years," in Jeffrey Boutwell, Gregory Treverton, and Paul Doty, *Nuclear Confrontation in Europe* (London: Croom Helm, 1985), p. 51; and Legge, p. 82.

join the NPG, and each has accepted. France remains excluded by choice. Nevertheless, the Alliance recognizes that it cannot ignore France's independent nuclear capabilities.

The creation of the NPG was the first major success for attempts at rationalizing theater nuclear policy in Europe.⁴⁹ It allowed the member nations to contribute to the decisions that affected them and their publics. It institutionalized and legitimized major decisions and force level requirements made by the Alliance, thus giving a united face to these decisions. This impacted on two important audiences for NATO: the Soviet Union, which could be expected to prefer a divided and rancorous Alliance to which it could direct divisive policy initiatives; and the European members' publics, who would be more apt to accept the arguments given for a particular position if the Alliance seemed firmly behind it. It would also improve the domestic political position of the incumbent party in each participating country.

The principle committees dealing with NATO dual-capable aircraft and related nuclear decisions are the North Atlantic Council, which in 2006 meets weekly, with occasional summit meetings, at 26 (meaning all member states, including France); the Defense Planning Committee, which meets regularly at 25 (France not included); and the Nuclear Planning Group, which meets annually (its staff group meets more regularly, approximately biweekly) at 24 plus one (Iceland is an observer). The High Level Group, which provides supporting studies for the NPG, meets some three times a year.

The High Level Group

One important aspect of the INF dual track decision of 1979 was the institutional structure created by NATO to deal with this two-sided approach. The two newly created bodies were the High Level Group (HLG) and the Special Group (SG).⁵⁰ Both played vital roles in the development of Alliance policy during the INF debates and deployments. The HLG became the centerpiece of Alliance nuclear strategy making in October 1977, when it was created to study NATO's nuclear requirements and the appropriate military and political responses to the Soviet TNF build-up in Eastern Europe. NATO and the Pentagon wanted "a group of individuals who

⁴⁹Some would disagree with this proposition. Scilla McLean, for instance, says that "to suggest that the NPG has been a political success is to fly in the face of NATO's nuclear history... The Nuclear Planning Group as an institution is unresponsive to public attitudes on nuclear affairs." McLean, p. 231.

⁵⁰The Special Group was re-named the Special Consultative Group (SCG) in December 1979. Schwartz, p. 240.

had access to key political figures in their own countries *and* who had operational responsibility for defense planning within their governments. The High Level Group fitted the bill.”⁵¹

The Special Group, which later became the Special Consultative Group, or SCG, was formed in April 1979 to study arms control options for theater nuclear weapons, but became moribund after the INF Treaty was signed in December 1987. Its purpose was primarily political: to establish and coordinate mutually agreed policy for the Alliance position *vis a vis* INF arms control negotiations with the Soviets. Since these were bilateral talks, only the United States was sitting down with the USSR in Geneva. The SCG made sure that nothing was done, however, without thorough consultation with all the allied partners and complete coordination within the American interagency process. The SCG officially reported to both the NPG and the North Atlantic Council.⁵²

The High Level Group consists of senior defense ministry personnel from each member state and is chaired by the U.S. Assistant Secretary of Defense for International Security Policy (OSD/ISP). It acts as a senior nuclear think tank, doing preparatory work and studies for the Nuclear Planning Group. Its activities are kept behind the scenes and out of the public eye.

The HLG served the innate European desire for ever more consultation with Washington, especially over nuclear matters. It has proved resilient and successful in this respect, as seen by its incorporation into the permanent NATO decision-making structure. It also provides a forum for continued American leadership of the Alliance in matters pertaining to nuclear weapons, in two ways: first, the U.S. chairmanship of the committee, and second, because matters are often worked out through the interagency process in Washington first, then briefed to the allies in Brussels for their concurrence and approval.⁵³

The HLG's success in its first major effort, the INF dual-track decision, was significant not only because it marked the first time that the Alliance had used doctrine to determine a weapons

⁵¹Senate *Report of the Special Committee*, pp. 50-51, and Schwartz, p. 217. The HLG was created to handle Task Force 10, which dealt with nuclear aspects of the Long-Term Defense Program (LTDP), launched in May 1977 to pursue (primarily) conventional force improvements. In practice, as Legge points out, the HLG quickly became divorced from the work of the other LTDP groups. (Legge, p. 34.)

⁵²McLean, p. 206.

⁵³This was the approach taken in preparing for the INF dual track, as Schwartz describes in great detail (pp. 223-240). Strobe Talbott points out, for instance, that “in the fall [of 1979] the US National Security Council staff and the State Department took the reports of the HLG and SCG and in effect stapled them together. The result became known as the Integrated Decision Document.” (Talbott, *Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control* (New York: Alfred A. Knopf, 1984), p. 38.) This was essentially the approach taken again in discussions over FOTL and the Comprehensive Concept prior to the May 1989 NATO summit.

systems selection, but because it was also the first occasion in which all the allies reached agreement on the types and numbers of a new weapon before deployment. As part of the December 1979 INF decision, NATO ministers agreed to keep the HLG as a forum in which to study the size and composition of the rest of the TNF stockpile, as well as to oversee INF deployment and the withdrawal of 1,000 older TNF warheads from Europe.⁵⁴ The HLG continues to play its designated role in 2006.

The Montebello Decision and Short-Range Nuclear Modernization

America's open-ended involvement in security guarantees for Western Europe became an issue in the late 1980s as the burden of extended deterrence seemed to grow in an era of U.S. budget deficits, the diminishing credibility of extended deterrence, Gorbachevian peace proposals, declining threat perceptions in the West, calls for a new security order in Europe, and the resulting increased European indifference, or in some cases even hostility, toward a continued American presence in Europe.

Within this environment, moves to effect nuclear modernization over the years were met with increasingly stiff opposition in many of the European member states. This was particularly true of land-based nuclear systems, and opposition was especially heated in Germany.

The follow-on to Lance case was the last great nuclear debate of the Cold War, and it brought the key underlying issues right up to the surface. There was no way to avoid facing the crucial questions over the future role of tactical nuclear weapons in NATO strategy when talking about new theater nuclear weapons systems that were supposed to be deployed in Central Europe in the 1990s. This issue had been scrupulously avoided in the past by the NATO partners in their discussions of SNF modernization and, after 1989, of the future role of NATO in a new Europe. The adoption of MC 14/3 (flexible response) in 1967 as the ambiguous official doctrine of the Alliance had deflected this question for a generation, but the debate was re-opened as the Cold War ended. The Alliance's new Strategic Concept (first published in 1991), which replaced MC 14/3, only papered over the need for this larger debate.

In 1983 the defense ministers meeting in Montebello, Canada, agreed to pursue modernization of NATO's battlefield nuclear forces. These short-range nuclear forces included atomic artillery, dual-capable aircraft stationed in Europe, and the Lance missile. The purpose of a

⁵⁴Legge, pp. 37-38.

follow-on to Lance would be to improve NATO's deterrent posture by threatening to strike at the rear echelons of Warsaw Pact invasion forces, while being stationed further back from the border than existing NATO short range missiles. This would give the political leadership more time to decide whether to use such weapons in wartime, thereby raising the nuclear threshold and contributing to crisis stability. Politically, it was expected to alleviate German concerns over nuclear singularity, since its increased range meant it could reach other East European states beyond East Germany. It was also meant to prove continued coupling of the American extended deterrence guarantee to Western Europe.⁵⁵

The Montebello Decision followed the standard Alliance path of a dual-track approach, announcing not only a modernization program but also, simultaneously, a withdrawal of some 1,400 nuclear warheads from Europe. These reductions were primarily associated with several systems that were removed between 1981 and 1987: atomic mines, Honest John rockets, and Nike Hercules surface to air missiles.⁵⁶ The 1987 INF Treaty led to even further reductions, as it eliminated intermediate- and shorter-range missiles such as the ground-launched cruise missile and Pershing II.

After several years of quiet study and preparation, SNF modernization suddenly became a hot media item in 1988. Political maneuvering by the United States and Great Britain, on one side, and West Germany and other continental allies on the other, culminated in the May 1989 NATO 40th Anniversary Summit meeting. Here it was agreed to defer any final decision on deployment of these weapons (particularly Lance's replacement) until 1992. The Heads of State and Government also signed a Comprehensive Concept on Arms Control and Disarmament to guide future NATO policies in this area.

In May 1990, President George Bush announced that he was canceling the programs meant to modernize the Lance nuclear missile and upgrade nuclear artillery (155 mm howitzer shells) in Europe. At the same time, he called for earlier negotiations on remaining SNF assets in Central Europe. He followed this with the first in a series of Presidential Nuclear Initiatives in September

⁵⁵ See Larsen, *The Politics of NATO Short-Range Nuclear Modernization*, and Larsen and Klingenger, *Controlling Non-Strategic Nuclear Weapons*, Appendix A, pp. 265-266.

⁵⁶ *NATO's Nuclear Fact Sheets*, 2004.

1991 wherein among other steps he cancelled the final SNF program, the tactical air-to-surface missile (TASM).⁵⁷

The follow-on to Lance missile had caused major consternation and rancor within the North Atlantic Alliance less than one year earlier, threatening to turn NATO's 40th Anniversary summit into a disaster. The Lance modernization issue had been a major agenda item at NATO ministerials and summits for nearly seven years. It had created huge headaches for the West German coalition government. And it had caused a rift to develop between the United States and the United Kingdom, on one hand, and West Germany and several European allies on the other, over the proper role and future strategy of NATO's theater nuclear forces. It became, as one analyst put it, "the focus of a poisonous struggle between key allies."⁵⁸

Once FOTL had been cancelled, as well as the upgrade for nuclear artillery, and the INF Treaty had eliminated all longer-range missiles, only dual-capable aircraft remained available for SACEUR's use as a nuclear deterrent.⁵⁹ The rancor raised by the FOTL debate carried forward in to a broad public concern over any nuclear forces, thereby putting the spotlight on DCA. In response, NATO chose over the next 15 years to minimize public discussion or awareness of this aspect of its deterrent mission.

The End of the Cold War⁶⁰

The world witnessed a non-violent revolution from 1989 to 1991, a revolution in which the Soviet Union self-destructed, the Warsaw Pact disappeared, and Russia re-emerged as the new great power in Eastern Europe. NATO recognized that dramatic changes were in prospect at its

⁵⁷ TASM would have been a tactical version of the U.S. Short Range Attack Missile (SRAM) already deployed on B-52 and B-1 bombers.

⁵⁸ John Newhouse, "The Diplomatic Round: Eternal Severities," *The New Yorker*, 23 October 1989, p. 102.

⁵⁹ This ignores certain sea-based forces under SACEUR's control. For example, sea-launched cruise missiles (SLCMs) and sea-launched ballistic missiles (SLBM's) aboard American and British submarines were authorized for nuclear release by SACEUR to use in a European theater conflict. Sea-based forces, by their very nature, have a much lower profile and carry less political baggage than their land-based counterparts. Many critics of SNF modernization, in fact, actually favored sea-based nuclear forces for deterrence or reassurance purposes.

⁶⁰ For details on tactical nuclear weapons since the end of the Cold War, see Alexander and Millar, *Tactical Nuclear Weapons* (2003); Kristensen, *U.S. Nuclear Weapons in Europe: A Review of Post Cold-War Policy, Force Levels, and War Planning* (2005); Larsen and Klingenberg, eds., *Controlling Non-Strategic Nuclear Weapon* (2000); William C. Potter, Nikolai Sokov, Harald Müller, and Annette Schaper, *Tactical Nuclear Weapons: Options for Control* (New York: United Nations Institute for Disarmament Research, December 2000); Bruno Tertrais, *Nuclear Policies in Europe*, Adelphi Paper 327 (London: International Institute for Strategic Studies, March 1999); Amy F. Woolf, "Nonstrategic Nuclear Weapons," CRS Report for Congress, RL32572, 9 September 2004; and David Yost, *The U.S. and Nuclear Deterrence in Europe*, Adelphi Paper 326 (London: International Institute for Strategic Studies, March 1999).

July 1990 London Summit, declaring that Russia was no longer an enemy. The allies expressed their determination to “reach out to the countries of the East which were our adversaries in the Cold War, and extend to them the hand of friendship.”⁶¹ But it still considered nuclear weapons crucial to Alliance security, as stated in the communiqué from the NPG’s meeting later that year:

Our nuclear policy will continue to be based on fundamental principles which remain valid: nuclear weapons, strategic and sub-strategic, play a key role in the prevention of war and the maintenance of stability; European-based nuclear forces provide the necessary linkage to NATO’s strategic forces; and widespread participation in nuclear roles and policy formulation demonstrates Alliance cohesion and the sharing of responsibilities, and makes an important contribution to our nuclear posture.⁶²

Within six months the NPG had hit upon the wording that, with minor tweaking, would be installed in the 1991 Strategic Concept and carried forward to documents 15 years later:

Nuclear weapons will continue *for the foreseeable future* to fulfill their essential role in the Alliance’s overall strategy, since conventional forces alone cannot ensure war prevention. We will therefore continue to base effective and up-to-date sub-strategic nuclear forces in Europe, but they will consist solely of dual-capable aircraft, with continued widespread participation in nuclear roles and peacetime basing by Allies.⁶³

In 1991 the Alliance gave up on its long-standing strategy of flexible response and released a new “Strategic Concept.” This represented the first time NATO’s core strategy document was unclassified and available to the public. It served as the authoritative guidance on Alliance objectives and the political and military means to achieve them. In 1997 allied leaders agreed to revise the concept to better reflect the changes in Europe that had occurred in the previous six years. This resulted in the 1999 Strategic Concept that was unveiled at NATO’s 50th Anniversary summit in Washington.

Reflecting the changed political-military environment and the new strategic concept, NATO’s nuclear policy changed, too. As the 2001 *NATO Handbook* related,

⁶¹ “London Declaration on a Transformed North Atlantic Alliance,” Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council, 5-6 July 1990, para. 4, at www.nato.int/docu/comm/49-95/c900706a.htm.

⁶² “Final Communiqué,” NATO Defense Planning Committee and Nuclear Planning Group, 6-7 December 1990, para. 13.

⁶³ “Final Communiqué: Ministerial Meeting of the Defence Planning Committee and the Nuclear Planning Group,” NATO Press Release M-DPC/NPG-1 (1991) 87, 7 June 1991, para. 8. Emphasis added.

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.⁶⁴

NATO policy during the early 1990s could be described as one of “existential deterrence-plus.” As one analyst put it, “It was existential in the sense that maintenance of a numerically small and limited TNF stockpile was judged to be sufficient for deterrence purposes now that the Soviet threat no longer existed... The ‘plus’ element arose from the fact that the NATO posture nevertheless went beyond that... to embrace the continued deployment of U.S. nuclear warheads widely dispersed geographically amongst European NATO member states.”⁶⁵

At the same time, the United States made a series of decisions, with the full concurrence of its allies, to expedite the withdrawal of most of its remaining nuclear weapons from European bases. A series of such reductions, some announced, some secret, led to the removal of all artillery fired atomic projectiles (some 1,300 shells for both 155 mm and 8 inch howitzers), 850 Lance missile warheads, and 900 anti-submarine depth bombs.⁶⁶ They also reduced the number of DCA delivered gravity bombs stationed in Europe by 50 percent, and removed all naval non-strategic nuclear weapons from surface ships. Following the “largest nuclear weapons movement in United States history,” these warheads were removed from Europe and flown to the United States. The reductions were completed by July 1992.⁶⁷

The United Kingdom gave up most of its NSNW forces at this time, as well, including its nuclear Lance missile tubes, atomic artillery, maritime weapons, and air-launched nuclear weapons.⁶⁸ According to NATO documents, the combined U.S. and UK cuts resulted in a reduction of some 85 percent of all nuclear warheads in Europe compared to the levels of 1991,⁶⁹

⁶⁴ “NATO’s Nuclear Forces in the New Security Environment,” *NATO/OTAN Handbook* (Brussels: NATO Office of Information and Press, 2001), p. 53.

⁶⁵ Martin Smith, “To Neither Use Them nor Lose Them: NATO and Nuclear Weapons since the Cold War,” *Contemporary Security Policy*, vol. 25, no. 3 (December 2004), p. 536.

⁶⁶ Numbers from *NATO Nuclear Fact Sheets*, 2005, at www.nato.int/issues/nuclear/index.html.

⁶⁷ Quote from McGuire AFB website, www.mcquiere.af.mil, reprinted in Alexander and Millar, *Tactical Nuclear Weapons*, p. 190, endnote 8. President Bush declared in July 1992 that “...all of the planned withdrawals are complete. All ground-launched tactical nuclear weapons have been returned to U.S. territory, as have all naval tactical nuclear weapons. Those weapons designated to be destroyed are being retired and scheduled for destruction.” George H.W. Bush, “Statement on the United States Nuclear Weapons Initiative,” 2 July 1992.

⁶⁸ *NATO Handbook*, pp. 54-55.

⁶⁹ “NATO’s Nuclear Forces in the New Security Environment,” *NATO Nuclear Fact Sheets*, pp. 10-13.

and by the dawn of the 21st century some 95 percent lower as compared to the height of the Cold War. The only remaining weapons were “several hundred” B-61 bombs located at some eight bases in six countries, with an additional four bases having nuclear container vaults in caretaker status.⁷⁰ And those remaining aircraft were no longer poised to deliver their weapons from an alert posture; as shown in Figure 3, decisions made in 1995 reduced the DCA readiness levels from minutes to weeks, and further decisions in 2002 reduced that readiness level even further, to “months.”⁷¹

The reductions in U.S. NSNW in Europe were driven to some extent, it seems, by a desire to gain reciprocity from Moscow in highly unstable circumstances. There was no time for formal negotiations, so dramatic unilateral gestures were made that, it was hoped, might reassure Moscow and bring about parallel behavior on its part.

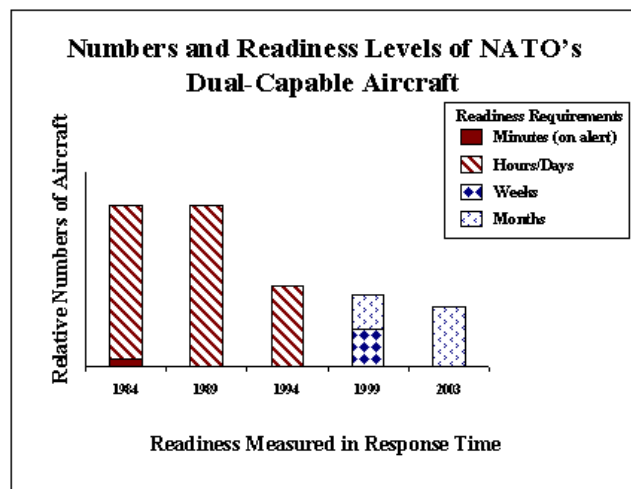


Figure 3: Reduced NATO Nuclear Aircraft Readiness Levels⁷²

The U.S. Presidential Nuclear Initiative

One of the most important reduction efforts came about as the result of a series of Presidential Nuclear Initiatives in late 1991 and early 1992.⁷³ President George H.W. Bush began the process with a speech on 27 September 1991 in which he cancelled all modernization programs

⁷⁰ Kristensen, *U.S. Nuclear Weapons in Europe*, p. 8.

⁷¹ *NATO Handbook*, p. 12.

⁷² Source: *NATO Nuclear Fact Sheets*, 2005.

⁷³ For details on the PNIs, see Amy Woolf, “Nonstrategic Nuclear Weapons,” CRS Report for Congress, RL32572, 9 September 2004; Larsen and Klingenger, *Controlling Non-Strategic Nuclear Weapon*, especially Appendices C and D, pp. 273-290; and Alexander and Millar, *Tactical Nuclear Weapons*, especially Chapter 2, “The 1991-1992 PNIs and the Elimination, Storage, and Security of Tactical Nuclear Weapons,” by Joshua Handler, pp. 20-44, and Appendix A, “The 1991-1992 Presidential Nuclear Initiatives,” pp. 167-181.

involving nonstrategic nuclear weapons and called for the immediate elimination of all remaining land-based weapons systems, including Lance missiles and artillery fired atomic projectiles, as well as nuclear cruise missiles on surface ships. As a result of the initiative, the U.S. Army and the U.S. Marine Corps were denuclearized. The number of units requiring nuclear certification dropped dramatically in the aftermath: from 139 Army units in fiscal year 1991 to 1 in FY 1992 and 0 in FY 1996; the Marine Corps went from 18 units in FY 1991 to none the next year. Similarly, the U.S. Navy's nuclear certification requirements decreased from 200 units in FY 1991 to 38 by FY 1998.⁷⁴

The number of nuclear storage sites in Europe was reduced dramatically, as well. As some weapons systems were eliminated and others reduced in number, the number of sites required to store those warheads remaining was reduced by some 80 percent.⁷⁵ The number of sites storing weapons dedicated to delivery by national air forces (NATO allies with DCA responsibilities) was reduced from 12 in 1990 to 4 by 2006.⁷⁶ At the same time, a new, more survivable and secure weapon storage system was installed, one of several changes and improvements that led to greatly improved safety and security for the remaining weapons in Europe. Weapons storage and security system (WS3) vaults were built into protective aircraft shelters so that the bombs could be stored in underground vaults below their delivery aircraft. This made security simpler, and represented a major improvement in protection against possible theft or terrorism of DCA warheads.⁷⁷ At the same time, the Alliance had removed the most easily concealed weapons from Europe, such as atomic artillery shells. Figure 4 shows this decrease.

⁷⁴ Alexander and Millar, *Tactical Nuclear Weapons*, p. 26.

⁷⁵ *NATO Handbook*, p. 12.

⁷⁶ Kristensen, p. 56.

⁷⁷ Kristensen gives a very good description of WS3 vaults and their operation; see also Alexander and Millar, p. 32, and *NATO Nuclear Fact Sheets*.

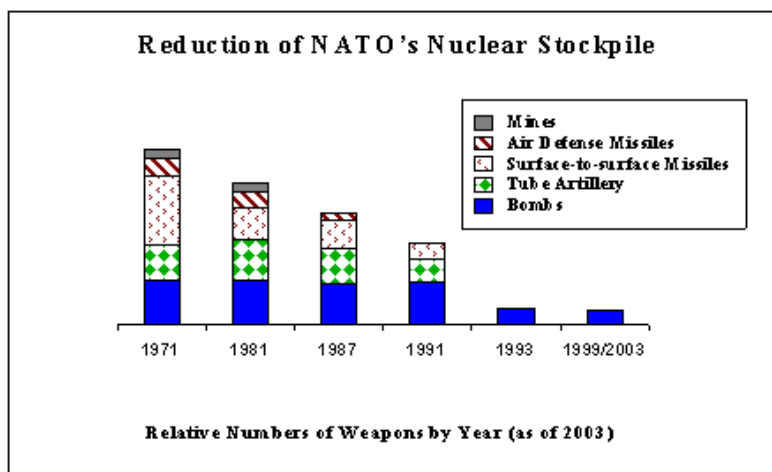


Figure 4: NATO Nuclear Reductions by Type⁷⁸

In the mid-1990s both Great Britain and France further reduced their sub-strategic nuclear systems, as well. The UK eliminated its WE177 gravity bomb, effectively ending any nuclear role for its dual-capable aircraft. Today Great Britain's only nuclear capability resides in its Trident submarine fleet, with less than 200 nuclear warheads. Its four boats remain dedicated to NATO missions, with some of their SLBMs assigned to sub-strategic tasks. France has eliminated four of the six nuclear delivery systems it had in 1991. Today it retains nuclear submarine-launched ballistic missiles and air-delivered cruise missiles, with a total arsenal of about 350 warheads.⁷⁹

The Nuclear Planning Group responded to President Bush's initiative in October 1991 by clarifying what the PNIs would mean for NATO force structure:

In addition to the elimination of ground-launched nuclear systems, the number of air-delivered weapons in NATO's European stockpile will be greatly reduced. The total reduction in the current NATO stockpile of sub-strategic weapons in Europe will be roughly 80 percent... We will therefore continue to base effective and up-to-date sub-strategic nuclear forces in Europe, but they will consist solely of dual-capable aircraft, with continued widespread participation in nuclear roles and peacetime basing by Allies.⁸⁰

⁷⁸ *NATO's Nuclear Fact Sheets*.

⁷⁹ The current arsenal strengths for both the UK and France are widely reported. See, for example, Joseph Cirincione, Jon B. Wolfsthal, and Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, 2nd ed. (Washington, DC: Carnegie Endowment for International Peace, 2005), "France," p. 191.

⁸⁰ "Final Communiqué," NATO Nuclear Planning Group, 17-18 October 1991, paras. 5-6.

The United States also removed its arsenal of tactical nuclear weapons from South Korea by the end of 1991.⁸¹ The number of storage sites for U.S. NSNW worldwide, including inside the United States, was reduced by some 75 percent in the 1990s.⁸²

President Bill Clinton took the PNIs one step further when, in 1994, he denuclearized the U.S. surface navy completely in accordance with recommendations of the Nuclear Posture Review (NPR). This ended all SLCM launch capabilities on surface ships and the final nuclear roles for naval aviation.⁸³ The NATO NPG concurred with the findings of the 1994 NPR, stating in its December 1994 communiqué that “we reiterate the essential value of maintaining widespread deployment of NATO’s sub-strategic nuclear forces by the United States and European Allies. These forces, which are an integral part of NATO’s nuclear posture, represent an essential element of the trans-Atlantic link and are visible evidence of NATO’s cohesion, solidarity, and burden-sharing.”⁸⁴

Russian Response to the PNIs

President Bush’s PNI initiative was matched by Soviet President Mikhail Gorbachev in a December 1991 speech, and by Russian President Boris Yeltsin in January 1992. In its response to the U.S. initiative, Russia agreed to reduce its forces significantly, as well. The numbers were expressed in percentages rather than specific numbers of warheads, but they represented a substantial portion of the existing Russian arsenal. Russia committed to eliminating all warheads on three types of short-range missiles and six types of artillery; all nuclear mines; one third of its naval warheads; one half of its air force warheads; and one half of nuclear air defense warheads. The Russian timeline for these reductions was considerably slower than that of the United States, France, and Great Britain, planning to take until 2000 to reach some of those goals.⁸⁵

In April 2002 the Russian government gave a public summary of its PNI reduction status. In its “Russian Statement on Article VI,” it claimed that:

- All nonstrategic nuclear weapons have been dismantled from surface ships and multiple-purpose submarines, as well as from ground-based Naval Air Force and

⁸¹ “Seoul Says it Now Has No Nuclear Arms,” *New York Times*, 19 December 1991.

⁸² Alexander and Millar, p. 21.

⁸³ Kristensen, p. 45.

⁸⁴ “Final Communiqué,” NATO Press Communiqué M-DPC/NPG-2(94)126, 15 December 1994, para. 19.

⁸⁵ Alexander and Millar, p. 28; Gorbachev’s original speech carried the more vague phrasing “Part of them will be reduced,” but Yeltsin’s January speech and further clarifications by Russian military leaders led to the more precise percentages. See Handler chapter endnotes in Alexander and Millar, pp. 191-193.

placed for centralized storage; more than 30 percent of nuclear munitions of the total number designed for tactical sea-launched missiles and naval air forces have been eliminated;

- All tactical nuclear munitions previously deployed outside Russia have been brought back to her territory and are being eliminated;
- Production of nuclear munitions for tactical ground-launched missiles, nuclear artillery shells, and nuclear mines has been completely stopped;
- 50 percent of nuclear reentry vehicles for surface-to-air missiles and 50 percent of nuclear air bombs of their total number have been destroyed;
- All Russian nonstrategic nuclear weapons have been placed only within national territory.⁸⁶

Whether the Russian Federation has actually met any of its promised goals regarding the elimination of NSNW in its arsenal is unclear. Traditional Russian opacity regarding national security matters has made it difficult for the West to confirm Russian actions. The 2002 document quoted above, in fact, concludes by admitting that “Russia has practically implemented all the declared initiatives to reduce NSNW with the exception of elimination of nuclear weapons in the Army.”⁸⁷ And at times Russian rhetoric in response to calls for greater openness appear much like Soviet sentiment during the Cold War. In June 2006, for example, a Tass report quoted a high-ranking Defense Ministry official reminding the world that “this type of weapon is not restricted by any international treaties and agreements, and Russia does not wish to hold talks on them either with the United States or any other foreign nations.” The official also tried to obfuscate the debate by questioning America’s claim that it had reduced its nuclear arsenal by 90 percent since the end of the Cold War. “The Americans are refusing to disclose any concrete information on their tactical nuclear arsenal and why should they expect us to do it?” he asked.⁸⁸

⁸⁶ Quoted by Ivan Safranchuk, “Tactical Nuclear Weapons in the Modern World: A Russian Perspective,” in Alexander and Millar, p. 63. The last bullet reflects a particular Russian bone of contention regarding U.S. nuclear weapons deployed in Europe.

⁸⁷ Alexander and Millar, p. 63.

⁸⁸ “Russia Does Not Wish to Hold Talks with U.S. on Tactical Nuclear Weapons,” ITAR-TASS, internet, 13 June 2006.

Arms Control and Relations with Russia in the 1990s

The early 1990s were the high water mark for arms control agreements between Russia and the United States. A series of strategic treaties were signed which significantly reduced the stockpiles of both sides and introduced considerably improved political relations and levels of trust between Russia and the United States. None of these treaties, however, addressed non-strategic nuclear weapons. Nearly two decades after the end of the Cold War the world is still living with NSNW deployed on NATO air bases in Central Europe; and the West still faces the specter of thousands of Russian tactical nuclear missiles, bombs, artillery shells, anti-aircraft missiles, and land mines.⁸⁹

The first Strategic Arms Reduction Treaty entered into effect in 1992. As relations improved more quickly than either side envisioned, START II was signed in 1993. Neither treaty addressed non-strategic nuclear weapons. But this category was not forgotten, and in the 1997 Helsinki Agreement between President Bill Clinton and Boris Yeltsin the two leaders agreed to consider NSNW as a separate negotiating category in the next round of START III talks.⁹⁰ Those negotiations never took place, however. In their place, in December 2001 President George W. Bush met with Russian President Vladimir Putin to agree to even more substantial reductions in strategic force levels. This agreement was codified in the May 2002 Strategic Offensive Reductions Treaty (SORT, more commonly known as the Moscow Treaty). This short agreement, while having major implications for U.S. and Russian strategic force levels and decisions, again neglected to mention non-strategic forces. As a result, the two nations still retain some residual capabilities in tactical nuclear systems, and there is little chance of negotiating away those weapons in the near term.

Politically, the Alliance has developed close ties with Russia, even in the arena of nuclear weapons. In 1994 Russia joined NATO's Partnership for Peace program, and in July 1997 Russia signed a wide ranging agreement with the Alliance known as the NATO-Russia Founding Act on Mutual Relations, Cooperation, and Security. This led to the creation of the NATO-Russia Permanent Joint Council (PJC), with multiple sub venues for discussion and cooperation on a

⁸⁹ For one suggestion on dealing with Russia's remaining SNF and TNF stockpile outside the bounds of traditional arms control, see Timothy D. Miller and Jeffrey A. Larsen, "Dealing with Russia's Tactical Nuclear Arsenal: Cash for Kilotons," *Naval War College Review*, Spring 2004. Russia also has non-NATO-related purposes for some of its NSNW.

⁹⁰ See "Joint Statement on Parameters of Future Nuclear Reductions," 21 March 1997.

variety of issues, including nuclear matters.⁹¹ The PJC met regularly until 2002, when the NATO-Russia Council was established. The PJC's first session dedicated to nuclear issues was held in April 1998. These meetings, at the ambassador level, were preceded by smaller experts meetings at which the presentations were prepared.⁹² Some senior NATO officials admit that they are frustrated by a lack of progress in these venues, and by Russia's preference for taking whatever they are given but giving little in return. But, they say, they will keep trying to influence Moscow to become more cooperative over time.⁹³

NATO has attempted to reassure Moscow regarding nuclear threats and Alliance enlargement. Shortly after NATO announced in December 1994 that it would be willing to admit new members, it declared its "three no's" policy: that it had "no intention, no plan, and no reason to deploy nuclear weapons on the territory of new member countries, nor any need to change any aspect of NATO's nuclear posture or nuclear policy, and that it does not foresee any future need to do so."⁹⁴ Nonetheless, all new member states have acceded to the provisions of the Washington Treaty and become full members of the Alliance in all respects, including their commitments to NATO's nuclear policies and consequent nuclear guarantees.⁹⁵

The dual-track nature of Alliance security interests remains alive in the 21st century. In the NPG's June 2005 meeting, for example, the members agreed that

NATO Allies have maintained a long-term commitment to nuclear arms control, disarmament, and non-proliferation as an integral part of their security policy. We stressed the importance of abiding by and strengthening existing multilateral non-proliferation and export control regimes and international arms control and disarmament accords.⁹⁶

⁹¹ *NATO Handbook*, p. 60; and interviews in Europe, winter 2006.

⁹² These meetings cover a range of issues. The October 2000 session, for example, addressed such topics as nuclear terminology, nuclear force structure, and the evolution of each side's nuclear strategy. Rob Irvine, "The Role of Nuclear Weapons in NATO's Strategy," presentation to Airlie House Conference on NSNW, 2-3 November 2000.

⁹³ Interviews in Europe, March 2006.

⁹⁴ The three no's were originally announced by NATO's Foreign and Defense Ministers in December 1996, and reiterated by the NATO Heads of State and Government at the May 1997 "Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation." It has subsequently been repeated at the NATO-Russia Summit in Rome in May 2002, which established the NATO-Russia Council; and at the November 2002 Prague Summit. An important though implicit "fourth no" was the NATO commitment to not build or re-open any closed Warsaw Pact nuclear weapons storage sites in new member states for use as potential future storage facilities. Interviews in Europe, March 2006.

⁹⁵ *NATO's Nuclear Fact Sheets*, p. 13.

⁹⁶ "Final Communiqué: Ministerial Meeting of the Defence Planning Committee and the Nuclear Planning Group Held in Brussels on Thursday, 9 June 2005," para. 9, at www.nato.int/docu/pr/2005/p05-075e.htm.

Key Nuclear Documents

In the 1990s Alliance decision-making circles put into place several key documents and policies that are still in use today, dated as they may be. Three documents form the backbone of NATO nuclear policy: the Alliance Strategic Concept, the Political Principles, and the Nuclear Consultation Procedures.⁹⁷ The Political Principles of Nuclear Planning and Consultation regarding the use of nuclear weapons were drafted in 1992 and are still valid.⁹⁸ Although the details of the principles remain classified, NATO officials stress that the Alliance retains full political control of all nuclear planning, which is conducted at SHAPE Headquarters.⁹⁹ The Alliance no longer targets any country; its nuclear forces are no longer on alert to respond to a specific threat. So there are no standing plans for nuclear use on the shelf at SHAPE, as there were during the Cold War.¹⁰⁰ As it has for 35 years, the Nuclear Planning Group continues to provide a forum for the member defense ministers to discuss nuclear matters.

The Alliance Strategic Concept released at the April 1999 summit meeting did not have much new to say about nuclear weapons or policies, but there was some excitement leading up to the summit as Canada and Germany led a mini revolt against existing Alliance nuclear policy. In 1998 these two countries called upon the Alliance to review its nuclear policy in general, and its first-use option in particular. These demands were quickly quashed by the other allies, led by the United States, the United Kingdom, and France, but it showed that serious doubts about the cogency of NATO's nuclear strategy were beginning to appear even among the member states.¹⁰¹ Nor has this issue disappeared. In February 2006, during the Munich Security Conference, German Chancellor Angela Merkel suggested that NATO conduct a review of its strategic concept in 2008, because "the world has changed considerably since 1999," not least because seven new members joined NATO in 2004.¹⁰² The NPG nations do not want NATO's nuclear policy considered in a vacuum, but rather in conjunction with a larger review of the entire Strategic Concept.

⁹⁷ Interviews in Brussels, January 2006.

⁹⁸ These were based on provisional political guidelines first drafted in December 1969, and updated in 1986 as the General Political Guidelines. Interviews in Europe, early 2006.

⁹⁹ Interviews in Europe, March 2006.

¹⁰⁰ As the Alliance Strategic Concept states, "These include...the termination of standing peacetime nuclear contingency plans." Para. 64.

¹⁰¹ Kristensen, pp. 53-54, and interviews in Washington, December 2005, and Brussels, January 2006.

¹⁰² Angela Merkel quoted in "Assembly Fact Sheet No. 2: European Security Policy, Collective Defence, and Nuclear Deterrence," Assembly of the Western European Union, 1 March 2006; her comments also found at www.securityconference.de.

The U.S. Nuclear Posture Review unveiled in December 2001 mentioned a study taking place in NATO regarding its nuclear forces. The results of that study have not been unveiled. Yet in March 2004 the SACEUR, General James Jones, told a Belgian reporter that with regard to the number of nuclear weapons deployed in Belgium, “the reductions will be significant; good news is on the way.”¹⁰³ Whether this implied a major restructuring of NATO DCA forces and weapons in Europe has not been verified, but it would seem to suggest that the Alliance was carrying out the study mentioned in the NPR.

Summary

To conclude this short history of NATO non-strategic nuclear weapons, let us examine another summary chart showing the types of weapons systems removed from Europe since 1971. Figure 5 dramatically illustrates the large-scale reductions in this category of weapons over the past generation.

Nuclear Systems Deployed in Europe						
	1971	1981	1987	1991	1999	2003
• Mines	x	x				
• Nike Hercules SAM	x	x	x			
• Honest John SSM	x	x				
• Lance SSM	x	x	x	x		
• Sergeant SSM	x					
• Pershing IA	x	x	x			
• Pershing II			x			
• GLCM			x			
• 155mm Howitzer	x	x	x	x		
• 8-inch Howitzer	x	x	x	x		
• Walleye ASM	x					
• ASW Depth Bombs	x	x	x	x		
• DCA Bombs	x	x	x	x	x	x
Total Systems	11	9	9	5	1	1

Figure 5: Types of Nuclear Systems Eliminated in Europe since 1971¹⁰⁴

¹⁰³ “U.S. to Reduce Nuclear Presence in Europe, Top NATO Commander Says,” *Global Security Newswire*, 12 March 2004.

¹⁰⁴ Source: *NATO Nuclear Fact Sheets*, 2005.

III

Is There a Future for Non-Strategic Nuclear Weapons?¹⁰⁵

Despite common perceptions that they disappeared after the end of the Cold War, non-strategic nuclear weapons still exist, and they are likely to have a modest, if short-lived, future. Using the definition of nonstrategic nuclear weapons developed in this paper, we can say that with the exception of Great Britain, all nuclear states have some type of NSNW in their inventories; in fact, some of those arsenals are exclusively tactical in nature and unlikely to change. Russia retains a particularly large residual arsenal of NSNW. The United States may reduce its numbers of NSNW but will likely keep at least a small number in its stockpile for the following reasons:

- Political—to provide credible, deployable extended deterrence to allies, even if not physically stationed in the region; to possibly provide an arms control bargaining chip vis Russia’s NSNW; and to enhance deterrence through greater credibility of use than strategic weapons.
- Military—to provide tailored and proportional strike options for battlefield use below the strategic level, including countering specific targets like chemical and biological agents and hard and deeply buried targets; and, when forward deployed, to enhance capabilities-based planning.
- Supporting the strategic nuclear stockpile—to provide robustness in the nuclear inventory; and to serve as a hedge against surprise during the drawdown of strategic weapons.

Tactical nuclear weapons were a central concern of both sides in the superpower struggle of the Cold War. While they are not as visible, nor arguably as important, in today’s world, there still exists a stockpile of between 5,000 and 25,000 such warheads across the globe, none of them constrained by any arms control agreement.¹⁰⁶ Accordingly, they present a continuing potential threat to mankind, both through the possibility of their use in anger and by their

¹⁰⁵ This chapter was originally produced for the U.S. Defense Threat Reduction Agency’s “Alternative Nuclear Futures” project. A version appeared under the same title in *Defence Studies*, vol. 6, no. 1 (March 2006), pp. 52-72; a shorter version is also forthcoming in *World Defence Systems*.

¹⁰⁶ This range results from adding the total non-strategic stockpiles of all nine de facto nuclear weapons states, as explained below.

possible loss to rogue elements through proliferation. Furthermore, in a period of reduced superpower rivalry but increasing threats from rogue states and nonstate actors, the argument can be made that this category actually holds greater military utility than its better known strategic nuclear cousins.

Today's world is facing a new strategic paradigm. Russia is no longer a threat to the United States; instead, as enunciated by President George W. Bush, the greatest threat today results from the crossroads of radicalism and technology.¹⁰⁷ Historically, non-strategic nuclear weapons may have served a deterrent purpose, but today's international security environment raises new questions about a possible future role for such weapons. As participants at a recent strategic conference asked with regard to these weapons in general, "What is the problem for which nuclear weapons provide the answer?"¹⁰⁸ The answer to this question will have important implications for America's—and NATO's—nuclear force structures and policies.

Recent Developments

The United States is clearly uncertain as to what to do with its small legacy arsenal of non-strategic nuclear weapons. It has not decided whether to keep its existing stockpile at current levels, or reduce those numbers further. Nor has it decided where to station those that remain. At the moment most of the stockpile is dedicated to NATO defense, stored in facilities in Europe and the United States. The delivery vehicles are similarly deployed on both sides of the Atlantic, although primarily in Europe. The US Navy has a residual mission for nuclear-tipped sea-launched cruise missiles fired from submarines, but the warheads are all stored ashore and their future is uncertain even in the short term.¹⁰⁹ The perceived battlefield utility of these weapons has dropped considerably since the early 1990s. Nevertheless, the U.S. government maintains the

¹⁰⁷ See George W. Bush Statement, December 13, 2001; U.S.-Russia Agreed Joint Statement, Moscow, May 24, 2002; *National Security Strategy of the United States of America* (Washington, DC: The White House, September 2002); and *National Strategy to Combat Weapons of Mass Destruction* (Washington, DC: The White House, December 2002); all referenced in Sidney D. Drell and James E. Goodby, *What Are Nuclear Weapons For? Recommendations for Restructuring U.S. Strategic Nuclear Forces* (Washington, DC: Arms Control Association, April 2005), pp. 5-8.

¹⁰⁸ "Visions for the Nuclear Future, Implications for U.S. Policy," 5th Strategic Concepts Roundtable, Colorado Springs, CO, 6-8 September 2006.

¹⁰⁹ TLAM-N may be on the way to retirement, according to interviews in Washington, spring 2006. The Navy may retire the TLAM's nuclear warheads due to technical and fiscal realities. The service life for TLAM/N is estimated to end by 2010, and there are no plans for a service life extension program for the Tomahawk; nor is a replacement weapon on the drawing board. Similarly, the W-80 warhead needs modernizing to be maintained past the year 2008. Michele A. Flournoy and Clark A. Murdock, *Revitalizing the U.S. Nuclear Deterrent*, CSIS Report (Washington, DC: Center for Strategic and International Studies, July 2002), p. 98.

policy that it must be able to deliver on its threat to use nuclear weapons in dire circumstances. As the most recent National Security Strategy of the United States has stated, “Both offenses and defenses are necessary to deter state and non-state actors, through denial of the objectives of their attacks and, if necessary, responding with overwhelming force. Safe, credible, and reliable nuclear forces continue to play a critical role.”¹¹⁰ Indeed, there exist some military missions that can only be accomplished using the effects that nuclear weapons produce. Those missions may be best handled by delivery means other than strategic systems. For these reasons the United States continues to maintain a small number of NSNW.

The 2001 U.S. Nuclear Posture Review renewed attention on nuclear weapons more generally, even though it had very little to say specifically about U.S. nonstrategic nuclear weapons. As one critical reviewer put it, “Not since the resurgence of the Cold War in Ronald Reagan’s first term has there been such an emphasis on nuclear weapons in U.S. defense strategy.”¹¹¹ The NPR called for the development of a new generation of enhanced NSNW warheads to defeat hard and deeply buried targets (HDBT) with minimal collateral damage. It called upon the Departments of Defense and Energy to begin research on a robust nuclear earth penetrator (RNEP), possibly using a smaller yield, tailored nuclear warhead, to achieve the defeat of WMD in HDBTs. This common-sense suggestion resulted in considerable public controversy and Congressional debate over the next few years and resulted in Congress refusing to fund research into an RNEP.¹¹²

A major non-governmental study completed in 2002 on the U.S. nuclear force structure suggested several useful roles for the NSNW that remain in America’s arsenal. In particular, the report pointed to two areas where NSNW might prove valuable: as insurance against the emergence of a catastrophic vulnerability as the United States continues to reduce its strategic nuclear stockpile, and as a hedge against an uncertain future security environment.¹¹³

¹¹⁰ *National Security Strategy of the United States* (Washington: White House, March 2006).

¹¹¹ *Nuclear Insecurity*, p. 1.

¹¹² Unclassified excerpts from the *Nuclear Posture Review* (Washington, DC: The White House, January 2002) can be found at “Special Briefing on the Nuclear Posture Review,” J.D. Crouch, 9 January 2002, available at www.defenselink.mil/news/Jan2002/t01092002_t0109npr.html; also see www.globalsecurity.org/wmd/library/policy/dod/npr.htm; and William J. Arkin, “Commentary: Secret Plan Outlines the Unthinkable,” *Los Angeles Times*, 10 March 2002, at www.latimes.com/news/opinion/la-op-arkinmar10.story.

¹¹³ See Flournoy and Murdock, *Revitalizing the U.S. Nuclear Deterrent*.

Current Status of NSNW in States of Interest

Of the nine states around the world in 2006 with a nuclear weapons capability, only five are recognized as nuclear weapons states according to the Nuclear Nonproliferation Treaty.¹¹⁴ All but one of them maintain weapons that fall under most definitions of non-strategic, although any use would certainly have a strategic impact. The two most important states for this study, of course, are the United States and Russia, both of which have substantial stockpiles of NSNW that are labeled as such.

United States

Aspects of U.S. nuclear policy can be found in a variety of national security documents that, when read collectively, create a new vision of U.S. approaches to strategic strike and deterrence. There is no single document or agency that is the source of all U.S. nuclear policy—one has to read multiple publications and consult with multiple organizations, and even then it may be necessary to interpolate between views held by different agencies to come up with the “real” U.S. policy. In doing so, one realizes that recent changes have impacted America’s Cold War force structure, doctrine, and strategy, and have raised the possibility of new weapons, a resumption of nuclear testing, major increases in funding and attention paid to the defense infrastructure, and potentially the development of new policies—some of them, such as preemption, quite controversial. These changes, when viewed in concert with the Bush administration’s rhetoric, the global war on terrorism, and the conflicts in Afghanistan and Iraq, have made for some critics a persuasive argument that has led to concerns about the direction of America’s nuclear policy among some of its closest allies, and has also led to the re-emergence of a small international anti-nuclear movement.

The United States currently maintains fewer than 1,100 non-strategic nuclear weapons.¹¹⁵ Sources differ as to the exact number, which is of course classified in any event, but these estimates range from a high of approximately 1,300 to 780.¹¹⁶ These include some 320 nuclear

¹¹⁴ Article IX of the 1968 Nuclear Nonproliferation Treaty (NPT) defines a nuclear weapons state as “one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.”

¹¹⁵ Woolf, CRS Report, p. 13.

¹¹⁶ The lower number does not include an additional 435 B-61 bombs in reserve, according to Robert S. Norris and Hans M. Kristensen, “NRDC Nuclear Notebook: U.S. Nuclear Forces 2005,” *Bulletin of the Atomic Scientists*, January/February 2005, pp. 73-75. Their 2006 update changed its estimates of those numbers somewhat, to 500 operational NSNW warheads and an additional 790 in reserve. (“U.S. Nuclear Forces 2006,” *Bulletin of the Atomic Scientists*, January/February 2006, p. 71. These authors claim that “most or all” of those bombs are slated for

Tomahawk land attack cruise missile (TLAM) warheads in storage. The United States Navy has been restoring the capability to use these warheads and cruise missiles on as many as 14 TLAM/N-capable nuclear attack submarines.¹¹⁷ It also includes warheads slated for ten Air Force squadrons comprising some 240 dual-capable fighter aircraft (F-15E and F-16C/D) based in the United States and Europe.¹¹⁸ The 2005 base realignment and closure commission (BRAC), however, called for closing some U.S. bases, including one that hosted F-16 dual-capable aircraft with missions in NATO Europe—Cannon AFB, New Mexico.¹¹⁹ In addition, the F-15 base dedicated to providing replacement dual-capable aircraft to NATO, Seymour Johnson AFB, North Carolina, has eliminated that mission. Those aircraft are no longer certified for a nuclear delivery role while based in the United States.¹²⁰ The BRAC report did not address what will happen to the NATO nuclear mission once the only remaining U.S. bases with the responsibility to provide DCA aircraft to the European theater no longer have that mission.

The service life for both types of U.S. DCA will end in 2013. Possible replacements for the F-15 and F-16 include the F-22, which is designed to be conventional only, and the new F-35 Joint Strike Fighter. The F-35 may eventually have a nuclear capable variant, but not until a later production run, and then only if enough foreign orders come in to justify the additional cost. Its estimated initial operating capability (for the first, non-nuclear version) is approximately 2012.¹²¹

The total number of warheads in the NSNW stockpile includes some 580 B-61 bombs, of which as many as 480, according to some widely quoted sources, are in storage at eight bases in six European nations.¹²² None of these are on alert, as they were during the Cold War; preparing

retirement and dismantlement in coming years as a result of the Department of Energy's June 2004 decision to retire "nearly half" of the U.S. nuclear arsenal. In another report the same authors project that the 2012 U.S. nuclear stockpile will contain 840 NSNW warheads: 500 operational B-61 bombs, plus 80 spares; and 100 SLCM warheads, with 160 spares. *Nuclear Insecurity*, Table 1, p. 4.

¹¹⁷ *Revitalizing the U.S. Nuclear Deterrent*, p. 96.

¹¹⁸ That number is probably dropping, since only 48 of those are based in Europe, at a handful of U.S. bases, and the U.S. replenishment bases no longer have that mission. Interviews in Europe, March 2006.

¹¹⁹ Base Realignment and Closure Commission, 2005, at www.defenselink.mil/brac/.

¹²⁰ Interviews in New Mexico, Washington, and Europe, October 2005, March and July 2006.

¹²¹ *Revitalizing the U.S. Nuclear Deterrent*, p. 97; also "U.S. Nuclear Forces 2005," p. 75; Robert S. Norris, William Arkin, and Hans M. Kristensen, "NRDC Nuclear Notebook: U.S. Nuclear Forces 2002," *Bulletin of the Atomic Scientists*, May/June 2002, p. 73; and interviews, 2006. For background on the JSF, see "The Joint Strike Fighter—America Sounds the Attack: U.S. Controller General Takes Critical View of Program," *Mforum*, December 2001, pp. 8-10; and Christopher Preble, "Joint Strike Fighter: Can a Multiservice Fighter Program Succeed?" *Policy Analysis* No. 460, 5 December 2002, available at www.cato.org/pubs/pas/pa460.pdf.

¹²² The weapons are supposedly based in Great Britain, Germany, Belgium, Netherlands, Italy, and Turkey, according to multiple sources. The most comprehensive open source data can be found in Kristensen, *U.S. Nuclear*

the aircraft and associated bombs for use would likely take 30 days or longer, as shown in Figure 2. In the 1988-1994 time frame the number of sites capable of storing NSNW was reduced by some 75-80 percent worldwide. Similarly, in Europe, the number of NSNW weapons storage facilities has been reduced from 125 to just 10 since the height of the Cold War in the mid-1980s, as seen in Figure 6.¹²³ Outside of Europe, no American NSNW are deployed in any other country anywhere else in the world, nor on U.S. ships at sea.¹²⁴

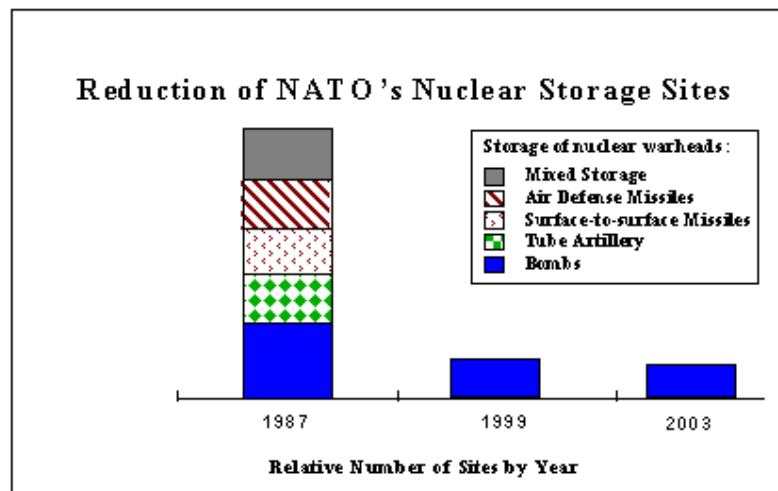


Figure 6: NATO Nuclear Storage Sites in Europe¹²⁵

The U.S. Air Force and its major regional command supporting NATO, U.S. Air Forces Europe (and possibly the joint command to which it reports, U.S. European Command), would like to end its NATO DCA commitment. Nonetheless, the Air Force and Navy both continue to train for and support nuclear missions involving tactical weapons. Neither service sees these missions as core to their organizational essence. As a result, there is little desire to continue carrying these responsibilities. The U.S. Navy does not like its remaining NSNW mission, and reports in early 2006 indicated that it may be planning to retire its TLAM-N cruise missile and associated W80 warhead.¹²⁶ (There are no extended deterrence responsibilities requiring the

Weapons in Europe, Appendix A: "U.S. Nuclear Weapons in Europe, 2005," p. 75; and Robert S. Norris and Hans M. Kristensen, "Nuclear Notebook: U.S. Nuclear Forces in Europe, 1954-2004" *Bulletin of the Atomic Scientists*, November/December 2004, pp. 76-77.

¹²³ Woolf, p. 13.

¹²⁴ U.S. tactical nuclear weapons were removed from South Korea in 1991. "Seoul Says it Now Has No Nuclear Arms," *New York Times*, 19 December 1991.

¹²⁵ Source: *NATO Nuclear Fact Sheets*, 2005.

¹²⁶ "US Looks to Phase Out W-80 Warhead," Kyodo News, reported in *Global Security Newswire*, Nuclear Threat Initiative, 1 May 2006, www.nti.org/d_newswire/issues/print.asp?story_id=74EA7E7D-1706-4FF2-8CA3-9.

Navy to keep its TLAMs, as is the situation with the Air Force and its DCA mission. If the Navy were to eliminate TLAMs, in other words, nobody would miss them.)

The military services are not the only ones tired of the mission. Nuclear weapons and nuclear policies have very few advocates in government circles any longer. U.S. Strategic Command, historically one of the strongest advocates for these weapons, has multiple new missions, only one of which involves nuclear weapons and strategic deterrence. The Joint Chiefs of Staff no longer has much interest in nuclear weapons, except as a secondary residual responsibility, and in mid-2006 the office that deals with nuclear matters under the Secretary of Defense was downgraded organizationally. It is now very difficult even identifying the responsible authority for nuclear matters in the Department of Defense. The most senior advocate of nuclear weapons in the U.S. government appears to be the head of the National Nuclear Security Administration, which is supposed to be concerned with stockpile and infrastructure issues, rather than policy.¹²⁷

Corresponding to this nuclear weariness within the military services and the U.S. government more generally, in 2005 the media reported some rumblings from America's European allies that some of them might be willing to consider retiring their nuclear missions.¹²⁸

¹²⁷ Interviews in Washington, December 2005 and January 2006; also discussions at the 5th Annual Strategic Concepts Roundtable, Colorado Springs, CO, 6-8 September 2006.

¹²⁸ On 21 April 2005, for example, the Belgian Senate passed a unanimous resolution calling for the gradual withdrawal of all American nuclear weapons from Europe in fulfillment of Article VI of the NPT. On 23 April 2005 several parties in the German Bundestag (the Free Democrats and Greens) called on the government to raise the question about eventual nuclear withdrawal in the NATO Nuclear Planning Group and with its European allies. Both initiatives, according to government officials interviewed in Berlin and Brussels in late 2005 and early 2006, may have been the result of renewed interest in nuclear matters generated by the release of Hans Kristensen's study, *U.S. Nuclear Weapons in Europe*. On June 5, 2005 the Schröder government decided not to pursue this position since a new government was expected later that year. See "Rot-Grün kippt Forderung nach Abzug der US-Atomwaffen," *Der Spiegel*, June 5, 2005, at www.spiegel.de/spiegel/vorab/0,1518,358961,00.html, and Oliver Meier, "News Analysis: An End to U.S. Tactical Nuclear Weapons in Europe?" *Arms Control Today*, July/August 2006, pp. 37-40.

Russia

Russia retains at least 3,500 non-strategic nuclear warheads, and possibly many more.¹²⁹ This is down from a peak arsenal of over 25,000 weapons at 600 bases in the late 1980s.¹³⁰ Why does Russia feel the need to keep so many nuclear weapons? Various rationales have been put forward, including its desire to maintain great power status; to show its equivalency with, and maintain its special relationship to, the United States; for extended deterrence over its neighbors and allies; or possibly for genuine security concerns and potential operational use. Russia also relies on nuclear weapons to make up for its declining conventional military capabilities; because nuclear weapons are less expensive to maintain than conventional forces; because of Russia's limited economic resources; due to problems recruiting enough manpower; and as a substitute for high technology conventional forces.¹³¹

Recent Russian national security decisions have increased that country's reliance on nuclear forces to counter NATO's conventional superiority and Russia's own conventional military and economic weakness.¹³² Non-strategic nuclear weapons remain an important element of Moscow's military strategy to counter NATO's geographic expansion as well as to deter other neighboring states. In Russia's view, the combat potential of NSNW enhance their credibility and hence, their deterrent value. Despite dramatic reductions in its strategic nuclear forces, in fact, many observers agree that, "Over the past two decades, Russia has actually increased the role of nuclear weapons in its security doctrine."¹³³ In 1993 Russia abandoned its 1982 "no first use" pledge. And Russia's 2000 Military Doctrine stated that "The Russian Federation keeps the

¹²⁹ Brian Alexander and Alistair Millar estimate between 3,500 and 22,000 in *Tactical Nuclear Weapons*, p. 14. Woolf estimates between 3,000 and 8,000. A similar estimate is found in "NRDC Nuclear Notebook: Russian Nuclear Forces 2006," *Bulletin of the Atomic Scientists*, March/April 2006, p. 67: the authors estimate some 2,330 operational NSNW, and an additional 4,170 in reserve. Alain Richard, French Minister of Defense, claimed in a 10 February 1998 speech at the Institut des Hauts Études de Défense Nationale that Russia's "stockpile of so-called tactical weapons... is estimated to be between 10,000 and 30,000 warheads, and we have only fragmentary information on their control." U.S. intelligence sources more conservatively estimate the number as between 3,500 and 5,000, according to interviews in Washington, May 2006.

¹³⁰ Woolf, p. 8.

¹³¹ Interviews in Europe, March 2006.

¹³² Woolf, p. 14; also David S. Yost, "Russia and Arms Control for Non-Strategic Nuclear Forces," in Larsen and Klingenberg, *Controlling Non-Strategic Nuclear Weapons*, pp. 119-157; and Alexander G. Saveliev, "Implementing the Nuclear Posture Review: The Impact on Russia," in James J. Wirtz and Jeffrey A. Larsen, *Nuclear Transformation: The New U.S. Nuclear Doctrine* (New York: Palgrave Macmillan, 2005), pp. 195-204.

¹³³ George Bunn and Christopher F. Chyba, eds., *U.S. Nuclear Weapons Policy: Confronting Today's Threats* (Washington: Brookings Institution, 2006), p. 13.

right to use nuclear weapons in response to large-scale conventional aggression in critical situations for Russian national security.”¹³⁴

Outside concern lies in both the potential military value of these weapons, but also in the possibility that they could be lost, stolen, or sold to a third party. Some argue that proliferation is the primary reason the West needs to control these weapons, rather than any direct threat they may pose to NATO.

The security status and numbers of Russia’s NSNW stockpile are uncertain. The West believes that Russia has reduced its deployed locations by half and its strategic storage facilities by two-thirds in the past decade.¹³⁵ Whether Russia has completed its commitments under the Presidential Nuclear Initiatives of 1991-1992 is uncertain, but there is considerable doubt in Western circles that it has. There is a distinct lack of transparency when it comes to Russia’s nuclear forces, and Moscow has been less than forthcoming in helping to allay Western concerns.¹³⁶ Assistant Secretary of State Charles Rademaker made this point during a visit to Moscow in October 2004. In the view of the U.S. government, he said, “considerable concern exists that the Russian commitments have not been entirely fulfilled.”¹³⁷ The Russian Ministry of Foreign Affairs responded that “commitments” was too strong a word for promises made in late 1991 that were merely good will gestures rather than binding political agreements. In fact, the Ministry said, Russia has “practically carried out in full” its promised reductions, and that efforts were continuing on weapons that, “unlike the situation with the United States, are located solely within our national territory”—a not very subtle reminder that U.S. weapons are still deployed in Europe.¹³⁸

¹³⁴ “Military Doctrine of the Russian Federation,” 22 April 2000, p. 5, quoted in Bunn & Chyba, p. 13.

¹³⁵ Woolf, p. 17.

¹³⁶ One approach to dealing with this notable lack of transparency, and the associated concerns about potential loss, theft, or sale of Russia’s NSNW warheads, can be found in Miller and Larsen, “Dealing with Russia’s Tactical Nuclear Weapons: Cash for Kilotons,” pp. 64-86.

¹³⁷ “Press Roundtable at Interfax: Stephen G. Rademaker, Assistant Secretary of State for Arms Control,” 6 October 2004.

¹³⁸ Alexander Yakovenko, Ministry of Defense spokesman, 7 October 2004, quoted in Kristensen, p. 65. This argument may be gaining some ground in influencing Europeans, too. An Atlanticist French expert mused during an interview that it might make sense for the United States to withdraw all its weapons in order to create the norm that no state should forward deploy its nuclear weapons on the territory of another state. Interview in Paris, March 2006.

Issues Regarding NSNW

The Congressional Research Service has identified several issues that need to be addressed in the field of non-strategic nuclear weapons, particularly within government circles of the United States:¹³⁹

- *Safety and security of Russia's nonstrategic nuclear weapons.* There is concern over the possible loss, theft, or sale of Russia's NSNW to other states or groups.
- *Role of nonstrategic nuclear weapons in Russia's national security policy.* Increased Russian reliance on nuclear weapons may pose a continued or increased risk to NATO and the United States.
- *Role of nonstrategic nuclear weapons in U.S. national security policy.* It is unclear whether the NPR called for a decreased reliance on NSNW, or whether its calls for new designs mean that they may become more usable, and thereby destabilizing. On the other hand, the U.S. government is now beginning to emulate the long-standing French view that *any* nuclear weapon is strategic in nature. So the category NSNW may soon be gone from the official lexicon.¹⁴⁰
- *Role of nonstrategic nuclear weapons in NATO policy and Alliance strategy.* The Cold War distinction between strategic and nonstrategic weapons, delivery systems, and even missions has become blurred. This may in turn have reduced the utility of forward deployed nuclear weapons, raising the old question whether a withdrawal of American NSNW from NATO may actually improve the United States' political relationship with respect to European politics and Russia.
- *Relationship between nonstrategic nuclear weapons and U.S. nonproliferation policy.* One must ask whether the creation of credible and usable retaliatory weapons deter or dissuade other states from acquiring WMD, or whether maintaining a nuclear weapons capability actually leads others to pursue similar capabilities.¹⁴¹

The same CRS report then listed a menu of policy options for the United States in its nuclear policy:

¹³⁹ Bullets from Woolf, pp. 18-22.

¹⁴⁰ Interviews in Washington, August 2005 and July 2006.

¹⁴¹ This is a position held by many disarmament advocates. See, for example, Henrik Salander, "Is There a Role for Nuclear Weapons Today?" *Arms Control Today*, July/August 2005, p. 9; and *Nuclear Insecurity*.

- Accept the status quo—pursue the goals of the Nuclear Nonproliferation Treaty, and accept Russia’s NSNW stockpile as posing no threat to the West.
- Reduce reliance on nuclear weapons—keep nuclear weapons distinct, and prevent blurring them with conventional weapons and missions.
- Increase transparency—exchange information on the number, location, and status of NSNW with Russia and other states.
- Expand threat reduction assistance—increase funding and opportunities for cooperation within the Cooperative Threat Reduction program.
- Negotiate a formal treaty—codify the Presidential Nuclear Initiatives and restrict numbers and roles for NSNW.¹⁴²

NATO recognizes the need to adapt its policies and forces to new realities. Accordingly, it has its own list of prime concerns and issues it wants to address with respect to its nuclear forces and strategy:

- The role of nuclear weapons against WMD threats
- The role of nuclear weapons in combating terrorism
- The relationship between deterrence and missile defense
- The development of relations with Russia
- The impact of NATO enlargement
- Necessary changes to the Alliance’s Strategic Concept.¹⁴³

Arguments For and Against Future Roles for NSNW

Arguments For

There are a number of valid arguments on both sides of the debate over the future of nonstrategic nuclear weapons. Those calling for continued reliance on NSNW cite the uncertain international security environment and the need to hedge against surprise or reduced levels of strategic weapons in the future. NSNW could provide tailored and proportional options for countering or deterring regional WMD threats; they could provide limited nuclear options in a crisis; they might avoid concerns about ICBM overflight over friendly nations; and they may be necessary to provide continued political commitment to America’s European allies, particularly

¹⁴² Woolf, pp. 22-26.

¹⁴³ Interviews in Europe, March 2006.

in the face of overwhelming Russian tactical nuclear forces. Arguments in favor of continued development, deployment, and potential use of nonstrategic weapons are based on an uncertain future and the supposed success of such weapons for deterrence purposes over the past 50 years. In some cases no level of counter arguments or dissuasive measures will prevent a state from developing indigenous nuclear weapons for reasons of status, commitment, or prestige. In such cases, the size, delivery means, and purpose of such a state's small nuclear capability will most likely fall within the traditional definition of "nonstrategic" nuclear weapons.

Arguments Against

Those opposed to a future role for NSNW, on the other hand, highlight the need to move beyond Cold War thinking, and to take the lead in nonproliferation and disarmament efforts. NSNW, goes this argument, cannot replace strategic nuclear forces, nor are they necessary to substitute for strategic missions. Summarizing the nuclear opposition's arguments against the continued need for NSNW, one recent book stated that "In the post-Cold War context of greatly improved NATO relations with Russia, NATO and the United States no longer have the same need for tactical nuclear weapons."¹⁴⁴ The arguments made for eliminating this category of weapons rest on this fundamental belief—that NSNW, which have been deployed in multiple forms and locations worldwide for over 50 years, are no longer needed in the post-Cold War era. Old rationales and nuclear theology may have made sense during the Cold War, but those perspectives are no longer logical or applicable in today's world. Nearly 15 years after the dissolution of the the Soviet Union and the end of the Cold War, there is no longer any military or political need to deploy NSNW in Europe. Nuclear missions hurt the conventional preparations of the Air Force and the Navy, and in any case are unlikely to be of much use in a conflict, given the long spool-up period necessary to use a tactical nuclear warhead, and the fact that NATO's delivery aircraft cannot reach their projected targets from their home bases without air refueling.¹⁴⁵

According to an overview of these weapons by the Nuclear Threat Initiative,

In some respects, TNWs [tactical nuclear weapons] are more dangerous than strategic weapons. Their small size, vulnerability to theft, and perceived usability

¹⁴⁴ Alexander and Millar, *Tactical Nuclear Weapons*, p. 14.

¹⁴⁵ The summary for these arguments can be found in *Revitalizing the U.S. Nuclear Deterrent*, p. 97; also Roger Speed and Michael May, "Assessing the United States Nuclear Posture," in Bunn and Chyba, pp. 267-269.

make the existence of TNWs in national arsenals a risk to global security. And the new perception of the usability of nuclear weapons in both Russia and the United States, albeit for different reasons, could create a dangerous precedent for other countries.¹⁴⁶

Future Roles for Nonstrategic Nuclear Weapons

There are at least seven categories that may justify the continued existence of nonstrategic nuclear weapons: providing political commitment through extended deterrence guarantees; covering certain types of targets; military use on the battlefield under certain scenarios; as a specific counter for WMD proliferation and use; to provide robustness to the U.S. military arsenal; to hedge against sudden or surprise shifts in the international security environment, particularly as the United States continues to reduce the size of its strategic arsenal; and to serve as potential negotiating chips in future arms control negotiations. These categories are broad enough to apply to any state, although the arguments are most useful when looking at the United States and Russia.

Political

Extended Deterrence. NSNW can show a commitment to America's allies, particularly in NATO Europe, as validated once again in the NATO Nuclear Planning Group's June 2005 communique¹⁴⁷ This may not necessarily require stationing U.S. weapons in Europe. They might be withdrawn, or NATO and the United States might consider plans to shift the deployment of U.S. nuclear warheads in Europe to the southern tier of the Alliance, thereby placing them within more efficient range of their most likely threats and targets around the Mediterranean. But they would still provide that guarantee that has proven so valuable since 1953. Furthermore, the new Eastern European members of NATO all accept and welcome their potential nuclear obligations as partners with the United States. NSNW can also contribute to continued provision of a nuclear umbrella over America's allies elsewhere, particularly Japan,

¹⁴⁶ "Issue Brief: Tactical Nuclear Weapons (TNW)," Nuclear Threat Initiative, accessed August 2006 at www.nti.org/e_research/e3_10a.html.

¹⁴⁷ The June 2005 meeting of the NATO Nuclear Planning Group left the language supporting U.S. nuclear deployments unchanged from previous such statements: "The nuclear forces based in Europe and committed to NATO continue to provide an essential political and military link between the European and North American members of the Alliance." "Final Communique: Ministerial Meeting of the Defence Planning Committee and the Nuclear Planning Group Held in Brussels on Thursday, 9 June 2005," NATO Press Release (2005)075, 9 June 2005, para. 8, at NATO On-line Library, www.nato.int/docu/pr/2005/p05-075e.htm.

South Korea, Taiwan, and Israel, countries that may see NSNW as providing greater credibility than strategic forces based in the CONUS.

Arms Control. The United States may decide to keep its NSNW in Europe as a bargaining chip in arms control negotiations to reduce Russia's NSNW arsenal. Some would argue that this is unnecessary; the West, after all, has already reduced its force levels there by some 95 percent from Cold War highs, so now it is up to Russia to show its commitment by meeting its unilateral declarations.¹⁴⁸ Whether the proposed rejuvenation of strategic arms negotiations agreed to by the United States and Russia at the June 2006 G-8 Summit in Moscow will affect NSNW force levels is yet to be determined. But one Russian spokesman told a reporter that August that Russia "does not want to discuss the issue [of NSNW] as long as the United States has nuclear weapons deployed in Europe," a common theme heard from Moscow.¹⁴⁹

One perspective held by some in Europe is that working an arms control deal with Russia will prove to be too difficult. Instead, the Alliance should set the example by disarming unilaterally, thereby putting pressure on Moscow to follow suit with its NSNW stockpile. Others believe that any effort to reduce Russia's arsenal must be done on a bilateral basis by the United States, since Russia refuses to talk directly with NATO on such matters.¹⁵⁰

Military

Escalation Dominance. The original purpose of NSNW in NATO Europe was to deter and, if necessary, defeat an overwhelming Soviet conventional attack on Western Europe by escalating the conflict to the next level of the conflict spectrum—specifically from conventional war to theater nuclear weapons. This would not only force an attacker to stop and reassess his goals, but would also couple the fate of Europe to that of the United States, risking a further move up the escalatory ladder—the final rung being strategic use employing weapons based at sea or in North America. This showed America's political commitment to the security of the

¹⁴⁸ For example, see Frank Miller, "Is There a Role for Nuclear Weapons Today?" *Arms Control Today*, July/August 2005, p. 10; and Jonathon Dean, "Tactical Nuclear Weapons and the Promise of Arms Control," in Alexander and Millar, pp. 155-166.

¹⁴⁹ These pending negotiations are also called the Joseph-Krislyak Talks. See "What Comes After START? U.S., Russia Slated to Kick Off Wide-Ranging Security Talks Next Month," *Inside the Pentagon*, 17 August 2006.

¹⁵⁰ Interviews in Europe, Spring 2006.

North Atlantic Alliance. Is this still a feasible responsibility for either the United States or its nuclear arsenal? Is it believable in the modern post-Cold War world?

A possible future use for NSNW might be hedging against certain future scenarios wherein a nuclear state would find itself facing a nuclear battlefield. In such a case, dual-capable aircraft and nuclear Tomahawk cruise missiles could avoid the touchy issue of ICBM overflight if they were stationed in-theater in advance, or if the necessary delays to deploy them in the proper launch locations were acceptable (as opposed to the need for immediate nuclear response requiring an ICBM or SLBM). Some would argue that there still is nothing in a state's military arsenal better suited to defeating large conventional forces in a cost-effective manner than nuclear weapons. While most military leaders see nuclear weapons as a separate category that cross the threshold into weapons only to be used as a last resort, it may be the case that such a capability would be valued by a theater military commander in a future crisis or conflict.¹⁵¹

Target Coverage. Some analysts (and the 2001 NPR) have argued that the United States needs a new series of small, usable nonstrategic nuclear warheads in order to destroy hard and deeply buried targets with minimal collateral damage. As a recent CSIS Report pointed out, however, NSNW don't add much to target coverage. Most feasible targets can be struck using strategic warheads and strategic delivery methods. Nor can all types of NSNW do the job. The Tomahawk TLAM/N, for example, does not currently have hard target kill capability. It would require an upgraded or new warhead in order to achieve the ability to destroy an HDBT. On the other hand, a dual-capable aircraft delivering a version of the "dial-a-yield" B-61 bomb could significantly reduce collateral damage if the bomb were set at the lowest yield, and if it was linked to a JDAM-style PGM capability with a robust earth penetrating warhead. Achieving either of these technological requirements will require continued research, development, and testing.¹⁵²

¹⁵¹ See *Revitalizing the U.S. Nuclear Deterrent*. Forward-deployed NSNW would achieve several of the goals for nuclear weapons established by the Strategic Deterrence Joint Operations Concept. See George R. Nagy, "The Role of Nuclear Weapons within the DoD Strategic Deterrence Joint Operating Concept," in *Project on Nuclear Issues: The Future Security Environment and the Role of U.S. Nuclear Weapons in the Twenty First Century* (Washington, DC: CSIS, 2005). Of course, it is worth reiterating that positive control procedures preclude the use of *any* nuclear weapon in the U.S. arsenal without the explicit approval of the president in his role as the National Command Authority.

¹⁵² *Revitalizing the U.S. Nuclear Deterrent*, p. 98.

Counter NBC. One commonly understood mission for U.S. nuclear weapons is to deter or defeat other weapons of mass destruction.¹⁵³ Some argue that only the intense heat, pressure, and prompt radiation of an atomic fireball can ensure the complete destruction of chemical or biological agents, thereby minimizing collateral damage to the surrounding area.¹⁵⁴ A regional commander may want to keep at his disposal some U.S. capability to accomplish this, in case a president were one day to call upon him or her to do so. NATO may also want this capability. In the early 2000s, for example, the High Level Group apparently studied the relevance of NATO nuclear weapons to deter chemical and biological weapons from North Africa and the Middle East.¹⁵⁵

Supporting the Strategic Nuclear Arsenal

Robustness. Keeping even one NSNW system could add robustness to the U.S. strategic nuclear triad. This is particularly true if one leg of the strategic triad were to be eliminated for other reasons, such as arms control restrictions, or domestic budgetary or operational decisions. There is value in the fact that all current NSNW systems are dual-capable, providing greater return on investment than nuclear-only systems. A dual-capable fighter, for example, can be used for conventional weapons delivery and other missions, then be refitted for a nuclear role, something much more difficult to do with an ICBM. These weapons may enhance deterrence in the changing strategic environment by being more credible than an arsenal of high-yield strategic forces.¹⁵⁶

Hedging. Since the early 1990s, as its conventional capabilities have diminished, Russian military strategy has increasingly relied on the warfighting role of nuclear weapons, as well as nuclear deterrence. Russian military doctrine seems to have moved closer to NATO's

¹⁵³ In 2002 the White House stated that "The United States will continue to make clear that it reserves the right to respond with overwhelming force—including through resort to all of our options—to the use of WMD against the United States, our forces abroad, and friends and allies." *National Security to Combat Weapons of Mass Destruction* (Washington: The White House, December 2002), p. 3.

¹⁵⁴ Technological arguments countering this requirement suggest that this would only work in shallow underground bunkers, otherwise the agents are more likely to be ejected in the debris cloud than destroyed. See Drell and Goodby, *What are Nuclear Weapons For?* pp. 20-21; also Michael May and Zachary Haldeman, "The Effectiveness of Nuclear Weapons Against Buried Biological Agents," *Science and Global Security*, vol. 12, 1-2 (2004), pp. 91-114.

¹⁵⁵ Interviews in Washington, December 2005.

¹⁵⁶ See Keith Payne, "The Nuclear Posture Review: Setting the Record Straight," *The Washington Quarterly*, Summer 2005, pp. 169-186.

Cold War era rationale—to deter and defeat the overwhelming conventional forces of the other side. This Russian emphasis on nuclear weapons is ironic, but a situation that Western strategists familiar with past NATO strategy certainly appreciate. As Russia’s strategic nuclear arsenal continues to wither, due to arms control commitments and fiscal realities, it may find it prudent to hold on to its large, if aging, stockpile of tactical warheads as an insurance policy. The United States has not found itself in the same predicament, due to its more advanced strategic arsenal and stronger economy. Yet it, too, may one day decide that as its strategic arsenal continues to shrink, and its global adversaries continue to pursue nuclear or other WMD capabilities, there is some value in retaining its small but still capable number of NSNW warheads and delivery means.¹⁵⁷

Summary

Recent changes to U.S. nuclear policy may be viewed differently in foreign capitals than the intended message sent by Washington. American policy changes can be characterized in four categories: operations and strategy; testing; infrastructure and acquisition; and arms control. All of these issue areas have been considered at the highest levels of the U.S. government and, in many cases, specific programs have been funded in the past few years. Taken individually, each of these efforts by the Bush administration appears to be a logical and evolutionary measure that will help ensure the continued deterrent value of America’s nuclear stockpile. Yet these same measures, when viewed collectively and from a different ideological starting point, have raised eyebrows over the United States’ ultimate goals regarding its nuclear future. Hence the concerns often heard on the international stage and by some elements of American society about the direction of U.S. nuclear policy.¹⁵⁸ See Table 1.

Table 1: Summary of Recent Changes to U.S. Nuclear Strategy¹⁵⁹

Operations and Strategy

- Development of a New Triad

¹⁵⁷ *Revitalizing the U.S. Nuclear Deterrent.*, p. 100.

¹⁵⁸ For one example, see Keir Lieber and Daryl Press, “The Rise of U.S. Nuclear Primacy,” *Foreign Affairs*, March/April 2006, pp. 42-54.

¹⁵⁹ Chart from Jeffrey A. Larsen, “U.S. Nuclear Baseline,” paper prepared for DTRA/ASCO Project on Foreign Perspectives of U.S. Nuclear Policy, presented at 5th Annual Strategic Concepts Roundtable, Colorado Springs, CO, 6 September 2006.

- Increased emphasis on preemption as a policy choice (though not necessarily *nuclear* preemption)
- Increased emphasis on strategic defenses (particularly missile defense of North America)
- Continued reduction in the size of the remaining strategic nuclear arsenal
- Movement toward quick-strike strategic delivery systems with conventional warheads

Testing

- Increased preparedness to resume nuclear testing should it be deemed necessary

Infrastructure and Acquisition

- Continued modernization of the strategic arsenal—bombers, submarines, missiles, warheads, and the underlying C4ISR capabilities
- Consideration of new nuclear weapons purposes, and possible new designs to simplify, reduce costs, and give the residual arsenal greater deterrent value (for example, the Robust Replacement Warhead)
- Enhancements to certain aspects of the nuclear weapons production establishment

Arms Control

- Diminished view of the value of arms control by the current administration
- Multiple treaties and agreements to which the United States subscribes, only a few of which actually restrain the United States in its nuclear strategies.

The rationale for maintaining an NSNW capability reflects a mix of political and military reasons: as a hedge against a revanchist Russia or the rise of a regional power; as an insurance policy during a period of strategic reductions; to meet military requirements such as the ability to destroy hard and deeply buried targets; if kept in a forward deployed mode in Europe, to provide continued political coupling with the European members of the NATO alliance; and in keeping with the concept of capabilities based planning, forward deployed when necessary to enhance response time, avoid the problem of friendly nation overflight, and enhance deterrence by providing a more usable option to a president in time of crisis.

Despite these rationales, however, when it comes to NSNW in Europe there is general consensus that they have no military utility; few states like them or want to carry on the mission; and in scenarios involving nuclear use, they believe that the United States would be more likely to use a strategic delivery system anyway. But since America believes its allies still want these weapons deployed in Europe, and it could cause a lot of trouble to withdraw them, the default position is to leave them there and avoid discussing them at all.

IV

Current Issues Affecting NATO Nuclear Policy

The Value of Nuclear Weapons in Europe

Cold War Balance

During the Cold War, nuclear weapons deployed in NATO Europe had three broad missions that were in balance, as shown in Figure 7. First, they provided military value to the Alliance by showing the cost-effective and asymmetrical capability of allied military forces in several phases of a conflict: warfighting, war winning, and conflict termination. Second, nuclear forces provided political value by showing the credible will of the Alliance to pursue self-destructive nuclear war, if necessary, to prevent Soviet forces from dominating the continent. The ambiguity of nuclear weapons and nuclear use policies created fear and uncertainty in the minds of the Alliance’s adversaries, while simultaneously providing assurance to the allies. Third, the combination of military capabilities and political will created a deterrent value to these forces that effectively kept the peace in a relatively stable environment for more than 50 years.¹⁶⁰

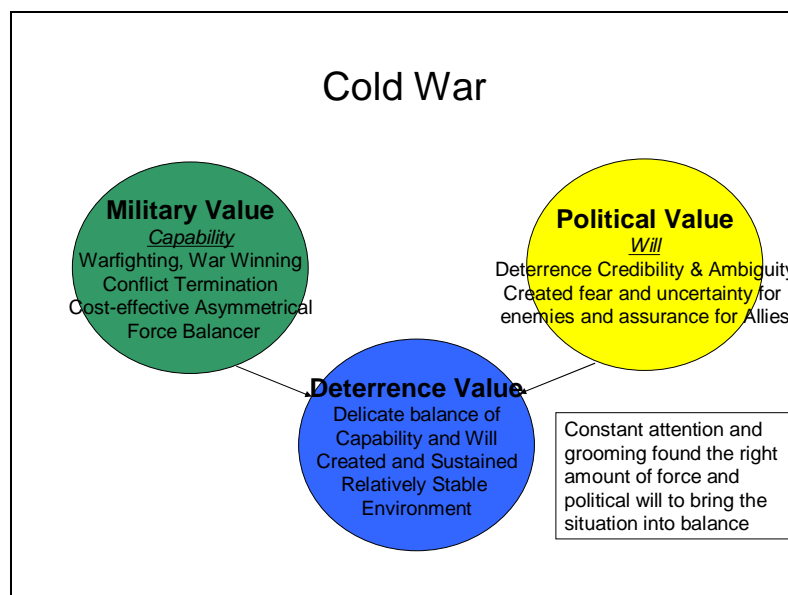


Figure 7: Balanced Objectives During the Cold War

¹⁶⁰ Thanks to my colleague Tim Miller for suggesting this model of the changing relationship between the three classic objectives of nuclear weapons in NATO: deterrence, warfighting, and assurance.

Immediate Post-Cold War Period

In the immediate blush of optimism following the dissolution of the Soviet threat, the military value of these weapons began to shrink first. All aspects of their military value during the Cold War began to be questioned in the aftermath of that conflict, particularly their cost-effectiveness. From a political point of view, questions began to arise as the known adversary disappeared. Who were these weapons now meant to deter? Who was the enemy now? As a result, even though the Alliance continued to put great stock in the enduring political value of those weapons at the existential level, their deterrent value began to diminish due to the lack of perceived credibility in a military sense. See Figure 8.

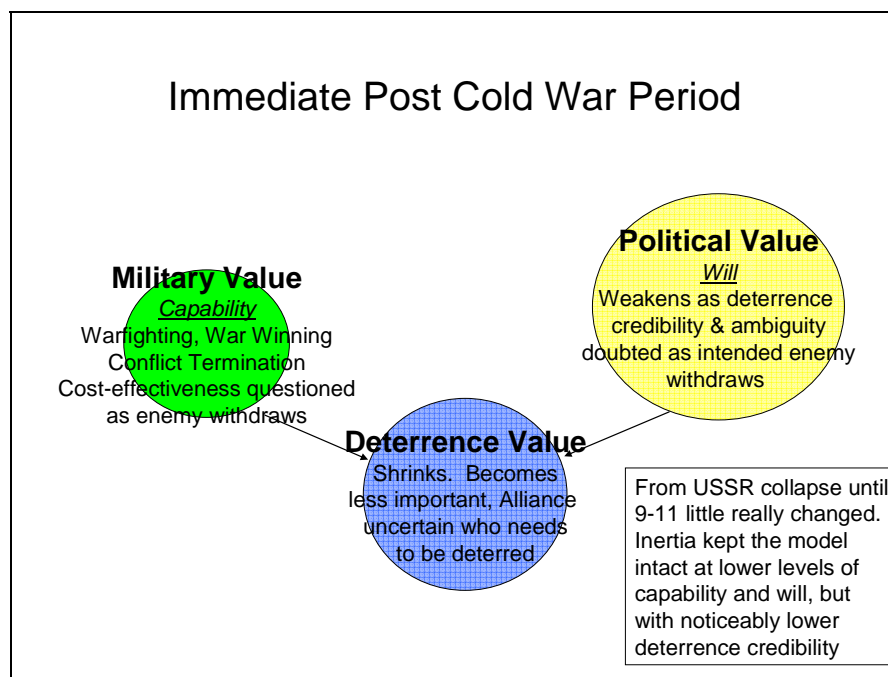


Figure 8: Changing Balance in the 1990s

Changes Since 2001

In the post-9/11 world, all three aspects of the supposed value to nuclear weapons have shriveled considerably, as shown in Figure 9. The military value of NATO’s remaining DCA weapons is almost nil. No member state can justify the continued deployment of these weapons from a military or threat standpoint. Their sole remaining purpose is political. Indeed, the Alliance continues to emphasize that aspect of these weapons above all others, as seen in the unchanged wording of NATO’s 1991 and 1999 Strategic Concepts. Nevertheless, even their political value is now in question as the potential threats against the Alliance appear increasingly

difficult to elucidate, and the asymmetry between nuclear weapons and any foreseeable use scenarios becomes more starkly defined. As a result, the overall value of non-strategic nuclear weapons based in Europe is becoming more suspect to some observers.

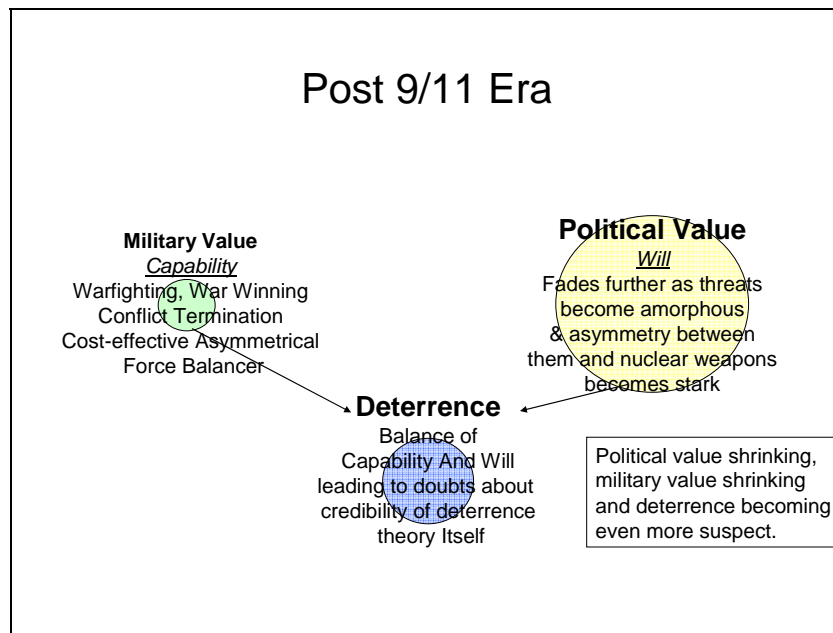


Figure 9: The Situation Today

Today’s NATO places value on nuclear weapons primarily in political terms, and that is primarily to assure allies—not so much to assure them of American military protection, as in decades past, but to assure them that the United States will remain a leading partner in Alliance politics and European affairs. As the 1999 Alliance Strategic Concept states, “The fundamental purpose of the nuclear forces of the Alliance is political: to preserve peace and prevent coercion and any kind of war. They will continue to fulfill an essential role by ensuring uncertainty in the mind of any aggressor about the nature of the Allies’ response to military aggression. They demonstrate that aggression of any kind is not a rational option.”¹⁶¹ Furthermore, NSNW provide a continuing venue for the allies to play a role in American defense decision-making through such forums as the Nuclear Planning Group. The allies don’t want to lose that access to the inner workings of U.S. defense policy making. They also want to retain what they see as the real value to this mission: shared costs, shared risks, and shared responsibilities.

The only remaining military value to these weapons is as a hedge against unforeseen change. They represent the ultimate capability based planning against an unknown future. So the

¹⁶¹ *Alliance Strategic Concept*, 1999, para. 62.

member states with a DCA mission feel a need to continue to provide the same level of performance as in the past, lest they undercut the remaining deterrence value of NSNW. This becomes more difficult to do in an environment where for reasons of political sensitivity staffs cannot conduct threat-based planning (as the NATO staff has apparently been precluded from doing in recent years).¹⁶² This breaks the logic of weapons choices for particular targets, further reducing any perceived military value to the remaining weapons arsenals.

The NATO states require good arguments to continue spending resources on nuclear systems. Coupling and assurance are still discussed, but not as passionately as they were during the Cold War. Some have argued that nuclear weapons are no longer the primary issue coupling the two sides of the Atlantic—today it is more likely be issues regarding logistics, transportation, communications, or out of area conventional missions that dominate budgets and plans.¹⁶³

Can the model be restored to balance? How can the situation be resolved? Perhaps it will take a shock to the system. Either the United States determines that continuing to provide NSNW based in Europe no longer meets its security requirements, or the European members decide that they no longer want to (or can) participate in the DCA mission; or a nuclear event or accident could occur that dramatically hardens public opinion against these weapons. Any one of these eventualities could lead to a withdrawal of American nuclear weapons from Europe. On the other hand, the use of a weapon of mass destruction by an adversary, whether or not on European soil; the resurgence of an adversarial Russia; or some other major factor could see a renewed call for robust nuclear forces stationed on European allied bases.

Future Threats

Nearly every member state in NATO has completed one or more studies in recent years on the strategic threat and future security environment. Planners have to make some working assumptions about the future even if they cannot foretell what is going to happen. There are a number of potential issues that may arise in the decades ahead that will reflect a deteriorating international security environment. The Alliance's 1999 Strategic Concept described the evolving security environment in terms that remain valid. The environment continues to change, but it remains complex and subject to unforeseeable developments. In particular, international

¹⁶² Interviews in Brussels, March 2006.

¹⁶³ Interviews in Washington, December 2005.

terrorism has had an impact on the lives of regular citizens in many Western countries. The combination of terrorism, the rise of anti-Western global Islamic fundamentalism, and the spread of nuclear technology and materials through proliferation make for a potent brew that will pose the greatest threats to the Alliance in the coming decades. The as-yet to be released Comprehensive Political Guidance apparently lists the prime threats to the Alliance in the near term as terrorism, failed states, and the proliferation of WMD.¹⁶⁴ And European analysts point out that their populations have been surprised by the direction of the global security environment in recent years. Their initial post-Cold War optimism has been replaced by a more pragmatic view of the world and the necessity for dealing with proliferation and bad actors.¹⁶⁵

Other issues that will create risks to the Alliance or its constituent members include instability due to failed or failing states; regional crises and conflicts; the growing availability of sophisticated conventional weaponry; the misuse of emerging technologies; and the disruption of the flow of vital resources. From a longer term perspective, the Alliance might need to concern itself with even larger issues, such as global warming; climate change; food, water, or energy shortages; population growth; AIDS and other infectious diseases; an increase in the number of sovereign entities on the world stage; potential clashes of cultures, ethics, values, and civilizations; and next-generation weapons technologies. This latter list is so vague and unpredictable, however, that it is nearly impossible for an organization that works by committee and consensus to effectively deal with the complete roster. From the perspective of nuclear weapons planners, there remain a few more immediate and more easily understandable threats, as illustrated in the next sections.

Revanchist Russia

The primary underlying concern which drives the Alliance to maintain nuclear weapons in Europe is the potential for the return of a militarily strong, anti-Western Russia on its eastern borders. At the moment such a major shift in Russia's foreign policy direction seems unlikely, and Russia has close ties to NATO through a number of forums. It is also politically incorrect to discuss this openly within NATO circles. Russia today is a "strategic partner" rather than a potential threat. Yet the possibility exists that things could change. The new member states of

¹⁶⁴ Interviews in Europe, March 2006.

¹⁶⁵ Interviews in Berlin, January 2006.

Eastern Europe are understandably the most cognizant of this potential. They are watching Russia warily, suspicious of what they see as a corrupt and undemocratic Moscow and its intentions, attitude, and modernization programs. But older members like Germany express reservations about Russia in private, as well.¹⁶⁶ Military planners are required to think about worst case scenarios, of course. The combination of Russian opacity as to its nuclear arsenal and intentions, its apparent unwillingness to abide by the terms of the 1991-92 Presidential Nuclear Initiatives regarding nonstrategic nuclear weapons, its recent development and testing of new strategic rockets, the centralization of political power within a hierarchically governed executive branch, and the possibility that President Putin's successor may not be as friendly to or cooperative with the West lead, in many officials' perspectives, to the pessimistic but unassailable conclusion that Moscow is not to be completely trusted. Russia is under pressure today from several directions, including rising threats on its borders and the need to respond to U.S. strategic initiatives such as missile defense and the New Triad. President Putin has spoken of the need to develop new nuclear weapons to maintain the strategic balance in the new "arms spiral" with the United States.¹⁶⁷

New Nuclear Armed Adversaries

Iran is within several years of having an indigenously produced nuclear weapons arsenal and delivery capability. This would present the Alliance with a new nuclear-armed state on its southeastern flank, one that abuts a NATO member (Turkey) and which has serious anti-Western attitudes. Other states in the region considered likely candidates to acquire nuclear weapons in the longer term include Ukraine, Kazakhstan, and Egypt. These are all within range of NATO Europe, and all lay within the so-called "arc of instability" that crosses the Middle East and extends through South Asia.

Most European member states do not see Tehran as an adversary today. Indeed, as one French diplomat explained, the United States appears to be demonizing the Iranian regime and overstating its nuclear capabilities in order to force Europeans to choose sides—something they are not ready to do.¹⁶⁸ Some Turks point out that their border with Iran is its most stable frontier,

¹⁶⁶ Interviews in Berlin, Oberammergau, Brussels and Tallinn, January-March 2006.

¹⁶⁷ Vladimir Putin, Annual Address to the Federal Assembly, 10 May 2006, at www.kremlin.ru/eng/speeches/2006/05/10/1823_type70029_105566.shtml.

¹⁶⁸ Interview in Paris, March 2006.

having had no serious problems with its southeastern neighbor for hundreds of years.¹⁶⁹ Yet prudent military planning would advise the Alliance to expect Iran to have a nuclear capability within the next 10 years, just about the time that the Alliance will most likely be removing the last vestiges of its Cold War nuclear posture from Europe. In addition, several European members have made security commitments to Israel, which would be the most likely target of Iranian nuclear threats.

Several states, including Canada, believe that nuclear weapons have only one purpose: to deter other nuclear weapons. According to this view, the Alliance needs to try and prevent nuclear proliferation to other states, thereby relaxing the requirement to keep its own weapons as a deterrent.¹⁷⁰

Terrorism

France, Britain, and the United States all recognize the dangers of violent non-state actors in today's world. Those dangers would rise dramatically if a terrorist group were able to acquire some type of WMD, particularly a nuclear weapon. As President Chirac made clear in his January 2006 speech on French nuclear forces, France stands with the United States in considering a state sponsor of terrorism a legitimate target for nuclear retaliation in response to a terrorist WMD attack.¹⁷¹ At lower levels on the threat spectrum, however, or when a terrorist group acts without the help of a state sponsor and cannot be identified, it would be difficult to envision a purpose for nuclear weapons in preventing, deterring, countering, or responding to terrorism.

Other Threats

In a January 2006 speech President Jacques Chirac illuminated some additional threats to a modern nation-state's national interests that could lead to a need for nuclear deterrence, threat, or use. Among those are the threats to commerce, sea lanes of communication, and other trade

¹⁶⁹ Interview in Brussels, January 2006.

¹⁷⁰ Interviews in Europe, March 2006.

¹⁷¹ Speech by Jacques Chirac to the Strategic Air and Maritime Forces at Landivisiau/L'Île Longue, 19 January 2006, available at www.ambafrance-au.org/article.php3?id_article=1492. This speech reflected concepts previously raised in a series of U.S.-French working group sessions on counterproliferation in the mid-1990s. See Robert Grant, *Counterproliferation and International Security: The Report of a U.S.-French Working Group* (Arlington, VA: U.S.-CREST, 1995).

routes. A modern society cannot afford to allow those routes to be interrupted or threatened.¹⁷² By including trade in the definition of France's national interests, the president expanded the role of nuclear deterrence considerably from the traditional NATO sense.

Modern conventional weapons in the hands of an aggressor may also pose a security threat, especially from cruise missiles or conventionally armed ballistic missiles.

Allied Perspectives

Tactical nuclear weapons have served the Alliance well since their introduction in the early 1950s. Their credibility was based on solidarity, widespread participation, and proven capabilities. They have allowed NATO to meet its military requirements at less cost and greater likelihood of success; they have provided reassurance to European allies of American commitment to their defense; they have provided that essential "Atlantic link" between North America and Europe; and they have provided a venue for cooperation and cohesion through the Nuclear Planning Group and nuclear mission sharing through programs of cooperation and dual-key arrangements. As Martin Smith has written,

the legacy of the Cold War years to NATO was... the permanent and institutionalized framework for multilateral consultations amongst NATO members on issues relating to prospective use policy, modernization programs, and arms control decisions.¹⁷³

In general, however, Europeans and Americans see the world through different lenses. The United States has a global perspective, and often sees solutions that emphasize military means. Europeans, on the other hand, see alternatives in more diplomatic ways, including the use of treaties, agreements, and multilateral approaches. Regardless of one's starting perspective, however, all agree that today the rationales offered above for nonstrategic weapons are fading in a post-Cold War world. The proximate threat that justified these weapons in the first place has disappeared (at least for the time being); many of the member states are weary of the burdens of defense in general, and nuclear matters in particular; and in some ways the European members seem to be shifting politically away from the United States on foreign policy matters. This is especially important with regard to the major partner states. As a study on European nuclear

¹⁷² Chirac speech, 2006.

¹⁷³ Smith, "To Neither Use Them or Lose Them: NATO and Nuclear Weapons Since the Cold War," *Contemporary Security Policy*, vol. 25, no. 3 (December 2004), p. 527.

roles recently concluded, “The trend seems clear: nuclear burden-sharing in NATO, in as far as host country nuclear strike missions are concerned, is on a slow but steady decline toward ending altogether. The only question seems to be when and whether it will be constrained defense budgets and force structure reorganization or a political decision that will end it.”¹⁷⁴

European publics are either ambivalent or anti-nuclear, often unaware that these weapons are still stationed in their countries. According to a poll taken in May 2006, some 60 percent of the people in Belgium, Germany, Italy, and the Netherlands don’t even know that U.S. weapons are deployed on their soil. And an even larger number in Italy and Germany hold strong anti-nuclear beliefs. Among the NATO DCA states, only Turkey was in favor of allowing the United States to continue stationing these weapons in its country.¹⁷⁵ Any European politician faces a complicated set of issues and constituencies when addressing nuclear forces: domestic audiences, fellow allies, transatlantic partners, potential adversaries to the east and south, and the disarmament lobby. While every state has some degree of anti-nuclear faction, the most anti-nuclear countries in Europe would appear to be Norway, Sweden, Finland, Austria, Ireland—and Germany—the latter a NATO member with a DCA mission.¹⁷⁶

In its June 2005 communiqué, the Nuclear Planning Group reiterated the Alliance’s belief in the value of U.S. non-strategic nuclear weapons:

At our first Nuclear Planning Group meeting with new members, we reviewed the status of NATO’s nuclear forces and the work of the High Level Group and reaffirmed the continued validity of the fundamental principles governing NATO’s nuclear policy and force posture as set out in the Strategic Concept, which affirms the fundamental political purpose of NATO’s nuclear forces: to preserve peace and prevent coercion. Within this context, the Alliance is committed to its long-standing goal to enhance security and stability at the lowest possible level of forces consistent with its requirements for collective defence and deterrence.¹⁷⁷

Yet some in the Alliance have, in recent years, begun to question whether the increased precision of conventional weapons have made nuclear weapons unnecessary in a military campaign. If the same levels of effects or destructiveness can be reached using conventional weapons, why does the Alliance still need nuclear weapons? This line of thinking has been

¹⁷⁴ Kristensen, p. 59.

¹⁷⁵ Greenpeace survey results quoted by Meier, “An End to U.S. Tactical Nuclear Weapons in Europe?” p. 40.

¹⁷⁶ Interviews in Europe, spring 2006.

¹⁷⁷ “Final Communiqué,” June 2005, para. 7.

pushed by Spain, Canada, Belgium, Italy, and Norway, all for different reasons—some because of a home-grown green movement, or because of a philanthropic bent, or due to a nuclear allergy.¹⁷⁸

Officials on both sides of the Atlantic readily admit that they have held on to nuclear weapons as long as they have for political, rather than military, reasons. As the Strategic Concept says, “To protect peace and to prevent war or any kind of coercion, the Alliance will maintain for the foreseeable future an appropriate mix of nuclear and conventional forces based in Europe and kept up to date where necessary.”¹⁷⁹ But such qualitative rationales may no longer suffice as the Alliance faces the bills for several major nuclear replacement programs in the next ten years. As one European analyst has written, “European governments may not be willing to make the investments in a new generation of nuclear-capable aircraft or participate in relevant technology sharing that would be needed to sustain the policy.”¹⁸⁰ A 2004 Defense Science Board study on future strategic strike forces called NATO’s continued nuclear role into question, suggesting that the DCA aircraft mission could be eliminated because there is “no obvious military need for these systems.”¹⁸¹

A recent master’s degree thesis by a U.S. Air Force pilot came to the same conclusion. It recommended “withdrawing U.S. theater nuclear weapons from Europe” because:

...economic and political ties, including widespread participation in nuclear planning, the increasingly important nuclear taboo, prospects for conventional deterrence and the U.S. strategic nuclear umbrella render TNWs [tactical nuclear warheads] irrelevant. Emphasizing their utility provides incentive for others to join the ‘nuclear club,’ degrades the nonproliferation regime, and creates a roadblock for NATO-Russian arms control and nonproliferation efforts.¹⁸²

A scathing assessment of NATO’s continued nuclear role concurs with respect to current Alliance policy. Referring to paragraph 46 of the 1999 Alliance Strategic Concept, this report comments:

Instead of formulating a clear and bold new vision for its nuclear policy for the 21st century, NATO bureaucrats have put together a hodgepodge of justifications

¹⁷⁸ Interviews in Europe, January 2006.

¹⁷⁹ *Alliance Strategic Concept*, para. 46.

¹⁸⁰ Meier, p. 37.

¹⁸¹ *Report of the Defense Science Board Task Force on Future Strategic Strike Forces* (Washington: Office of the Secretary of Defense for Acquisition, Technology, and Logistics, February 2004), pp. 5-13.

¹⁸² Brian G. Polser, “Theater Nuclear Weapons in Europe: The Contemporary Debate,” MA Thesis, Naval Postgraduate School, September 2004, p. v.

consisting of slightly rewritten policy language from the past, outdated remnants of Cold War threats... unsubstantiated claims of deterring proliferators of weapons of mass destruction, vague and exaggerated rhetoric about preserving peace and preventing “any kind of war,” and peripheral managerial issues of providing a political and military link between Europe and the United States. Under this vision, forward-deployed U.S. nuclear weapons appeared to serve essentially any purpose against any opponent in Europe or outside the region.¹⁸³

This quote is obviously overblown and meant to serve political purposes. It neglects the fact that NATO policy is approved by all the heads of state and government by consensus, and therefore reflects the view that the member states believe that such weapons still have a role to play in today’s security environment. Nevertheless, the Alliance has not publicly responded to this criticism, nor provided an updated rationale for its continued reliance on nuclear weapons.

Germany

Throughout the Cold War Germany was always a leading supporter of Alliance nuclear policy, the host of the largest number of American warheads in Europe, and a full partner in Alliance DCA missions, with Pershing I missiles, multiple land-based tactical systems, and several squadrons of Luftwaffe fighter-bombers assigned to the nuclear role. Today, as one senior German official has said, “We are uncertain the direction in which NATO is headed, but we want to help.”¹⁸⁴ Changes in Germany’s support to the Alliance and its nuclear aspects, therefore, are unlikely in the short term. Germany has long had a firm commitment to nuclear sharing within the Alliance. Those attitudes began changing, however, in the early 1980s with the dual-track decision and INF missile deployments.

Today, the German public is overwhelmingly anti-nuclear, though they don’t think about this issue much. They seem more concerned with economic and domestic issues than national security.¹⁸⁵ A survey in early 2006 revealed that 71 percent of the German population wants Europe to be free of nuclear weapons.¹⁸⁶ Government officials in Berlin interviewed in January

¹⁸³ Kristensen, p. 61.

¹⁸⁴ Interview in Berlin, January 2006.

¹⁸⁵ Interviews in Berlin, January 2006.

¹⁸⁶ “Nuclear Weapons in Europe: Survey Results in Six European Countries,” Strategic Communications, 25 May 2006, at <http://www.greenpeace.org/international/press/reports/nuclear-weapons-in-europe-survey>. Of course, it may be difficult to separate anti-nuclear views from anti-American or anti-Bush sentiments.

2006 estimated that the actual number was probably closer to 80-85 percent. As it has since the 1950s, however, despite such polling data the German government still supports nuclear deployments on its soil to deter potential Russian revanchism, and to prove its value as an ally. Berlin wants no public debate over possible alternative nuclear futures because it fears the public uproar that could ensue.¹⁸⁷ The German government believes that if it were to go public with this issue it couldn't win. The public has little knowledge of the subject, and therefore cannot argue rationally based on facts. But they will still hold strong anti-nuclear views.¹⁸⁸

A recent study concurred, pointing out that “discussion of the issue [of DCA replacement] is most highly charged in Germany.”¹⁸⁹ Their fleet of Tornado PA-200 aircraft has been in service since the early 1980s, and is expected to need replacing by the year 2012, with complete phase-out by 2020. The leading candidate for a new fighter bomber is the Eurofighter Typhoon, which is not currently designed to carry out a DCA nuclear mission.

In February 2006 the German government announced that it might keep some of its Tornados on active service beyond their phase-out date of 2020. One implication of this move is that it would allow Germany to maintain its DCA responsibilities for an undetermined additional period of time. But opposition parties have objected to this continued commitment. There have been resolutions in the German Bundestag since April 2005 calling for a reconsideration of Germany's role in the nuclear business, and of the continued stationing of American weapons on German soil. Furthermore, when a draft of the new German defense white paper was leaked to the public in spring 2006, several political parties were extremely critical of its apparent traditional and unchanging approach to nuclear policy.¹⁹⁰ The Social Democrats, Free Liberals, and Greens want to see Germany's mission end no later than the start of the phase-out of the Tornados next decade.¹⁹¹ Christian Democrats, on the other hand, remain committed to Germany's participation in Alliance nuclear matters, and claim it would be irresponsible to allow their long-standing commitment to wither as a result of an acquisition decision. Rather, they say, Germany should make a conscious decision about its future defense policy, and announce that

¹⁸⁷ Interviews in Berlin, January 2006.

¹⁸⁸ Interviews in Germany, January 2006.

¹⁸⁹ Meier, p. 37. This perspective confirmed by interviews in Europe, January and March 2006.

¹⁹⁰ The draft defense white paper is available at www.geopower.com (in German).

¹⁹¹ Meier, p. 38; also interviews in Berlin, January 2006.

decision to its allies. At the moment, according to a CDU spokesman, there is no need to “fundamentally call into question NATO’s current strategy.”¹⁹²

Great Britain

Great Britain was the third nuclear power, and at one time had a substantial commitment to its own triad of air, sea, and land-delivered weapons. Historically, all of its nuclear weapons have been assigned to NATO.¹⁹³ Fiscal and political realities led the UK to make the decision in 1991 to reduce its remaining stockpile by one third; in 1998 it went further, deciding to reduce its arsenal to fewer than 200 warheads.¹⁹⁴ All of these are SLBM warheads on the Vanguard ballistic missile submarine fleet. There are four Vanguard-class boats in the British navy, only one of which is on patrol at any one time to provide a “credible minimal deterrent.” The fleet came into operation between 1990 and 1996 with an expected service life of 30 years.¹⁹⁵ Each boat can carry up to 16 Trident D-5 missiles with 3 MIRVed warheads, for a total of 48 UK-designed warheads.¹⁹⁶ The Trident boats have also provided a substrategic option for NATO operations since the late 1990s.¹⁹⁷ According to Michael Quinlan,

The declared intention since the mid-1990s has been to exploit the versatility and accuracy of the Trident system to provide ‘sub-strategic’ or war-termination options short of extensive multiple strikes. Details of this concept have not been disclosed, but it is widely conjectured and not officially denied that some missiles may carry only one live warhead, and that that one warhead may have an explosive yield... well below that of the normal warhead.¹⁹⁸

In 2002 Defence Minister Geoff Hoon clarified that Britain would be willing to use nuclear weapons against any state if it employed WMD against British troops in the field.¹⁹⁹

¹⁹² CDU spokesman Bernd Siebert, 9 June 2006, quoted in Meier, p. 38.

¹⁹³ This requirement was part of the 1962 Nassau Agreement whereby the United States agreed to sell the UK Polaris SLBMs, conditional upon Great Britain assigning all its weapons to NATO missions.

¹⁹⁴ Cirincione, *Deadly Arsenal*, “The United Kingdom,” p. 197; and “NRDC Nuclear Notebook: UK Nuclear Forces, 2005,” *Bulletin of the Atomic Scientists*, November/December 2005.

¹⁹⁵ Michael Clarke, “Does My Bomb Look Big in This? Britain’s Nuclear Choices after Trident,” *International Affairs*, vol. 80, no. 1 (2004), p. 50.

¹⁹⁶ The warheads are close copies of the U.S. W-76 design. Clarke, p. 51. See also Chapter Four, “Deterrence and Disarmament,” in Great Britain’s 1998 Strategic Defence Review, at www.fas.org/nuke/guide/uk/doctrine/sdr98/chapt04.htm.

¹⁹⁷ Clarke, p. 58.

¹⁹⁸ Michael Quinlan, “The Future of United Kingdom Nuclear Weapons: Shaping the Debate,” *International Affairs*, vol. 82 (2006), p. 628.

¹⁹⁹ Geoff Hoon, quoted in “UK ‘Prepared to Use Nuclear Weapons,’” BBC News, 20 March 2002, at news.bbc.co.uk/1/hi/uk_politics/1883258.stm.

The land-based leg of the nonstrategic triad, consisting of battlefield nuclear warheads for the Lance missile, 155 mm howitzer shells, and nuclear depth charges, was eliminated by 1993.²⁰⁰ The 1998 Strategic Defense Review codified the elimination of Britain's remaining NSNW capability, which had rested on its WE-177 bombs carried aboard Tornado fighter bombers. The WE-177s were all retired by March 1998.²⁰¹

So Britain has abandoned its nuclear triad, preferring to rely on a single deterrent system. It accepts its status as the smallest of the original five nuclear powers, and emphasizes deterrence minimalism. In February 1994 it declared a de-targeting agreement with Russia, so it no longer aims its missiles at a specific state. It could take days for UK Tridents to reach launch ability, vice minutes during the Cold War, according to the 1998 Strategic Defence Review.²⁰² The former imperial state has accepted its role as a junior partner of the United States and minor nuclear ally of fellow European states. As Michael Clarke has written, "A world dominated by a single superpower hegemon... is not a world which gives minor players much of a role in nuclear deterrence."²⁰³ The prime minister retains authorization to launch a UK Trident missile, but politically they remain assigned to NATO. As the Strategic Defence Review put it, "Our Trident force will continue to be allocated to NATO in both the strategic and sub-strategic roles. It will, however, remain operationally independent and available for use by the United Kingdom alone in a case of supreme national need."²⁰⁴ According to British officials, Britain enjoys the current nuclear arrangements. It gives Britain some independence, but also binds it in Alliance commitments.²⁰⁵

London must make a decision to replace its Trident fleet by 2008 in order to have a like system in place by 2023, when the current fleet reaches its operational life span. There is a broad national consensus within Britain to maintain a nuclear deterrent capability of some kind, although the nature of that deterrent was being debated in 2006. Indeed, with current weapons, policies, and deployments reflecting the Cold War legacy, one can reasonably ask whether Britain's nuclear forces continue to serve any useful purpose in today's world. Who they deter is

²⁰⁰ Clarke, p. 51.

²⁰¹ Stockholm International Peace Research Institute, *SIPRI Yearbook 2000* (Stockholm, Sweden: SIPRI, 2000), p. 486; and Strategic Defence Review, para. 62.

²⁰² Clarke, p. 52.

²⁰³ Clarke, p. 56.

²⁰⁴ "Strategic Defence Review: Nuclear Deterrent," summary from the Federation of the American Scientists, at www.fas.org/nuke/guide/uk/doctrine/sdr98/nuclear.htm.

²⁰⁵ Interviews in Brussels, January 2006.

unclear, beyond giving Britain the ability to respond “to whom it may concern.”²⁰⁶ Nevertheless, as Michael Quinlan has argued, “It seems almost certain that if United Kingdom governments decide to maintain a nuclear-weapon capability, this will continue to rest on the familiar operational basis and established infrastructure of submarine-launched missiles.”²⁰⁷

France

France maintains an abiding belief in nuclear deterrence and the importance of independent French nuclear forces. Its nuclear doctrine parallels that of Great Britain, and its nuclear thinking about the role and purpose of nuclear weapons seems to have begun converging with similar thoughts in the United States over the past five years. France has been a member of NATO’s Military Committee since 1996, but it does not take part in any Alliance nuclear discussions other than those in the NATO-Russia Council.²⁰⁸

France puts forward three primary rationales for retaining and modernizing its nuclear forces. First is the “life insurance” function. Since it is impossible to exclude the emergence of a new threat to Europe on the mid-term horizon (15-20 years), it is only prudent for France to maintain a national nuclear deterrent. Second, French nuclear weapons will guarantee that no regional power will be able to blackmail or pressure Paris with WMD. France believes that while missile defenses could perform the same function, deterrence is a better and safer choice. Third, France would like to maintain the strategic autonomy it has held since the 1960s, when it developed its nuclear capabilities and withdrew from the integrated military structure of NATO. It believes that French forces could serve as the backbone of an eventual European nuclear capability, which would make the continent as a whole more independent of U.S. or other outside influence.²⁰⁹

²⁰⁶ Interview in Brussels, January 2006. For more on the Trident debate, see Ken Booth and Frank Barnaby, eds., *The Future of Britain’s Nuclear Weapons: Experts Reframe the Debate*, Current Decisions Report, Oxford Research Group, March 2006; and Rebecca Johnson, Nicola Butler, and Stephen Pullinger, *Worse Than Irrelevant? British Nuclear Weapons in the 21st Century* (London: Acronym Institute, 2006), available at [www.acronym.org.uk/uk/Worse than Irrelevant.pdf](http://www.acronym.org.uk/uk/Worse_than_Irrelevant.pdf).

²⁰⁷ Quinlan, p. 635.

²⁰⁸ In fact, France has excluded itself from any Alliance military debates, including those surrounding nuclear issues. But the Alliance recognizes that it cannot consider its nuclear policy without taking into account the independent forces of France.

²⁰⁹ Bruno Tertrais, “France and Nuclear Deterrence,” paper presented to the UK House of Commons Defence Committee, 17 February 2006, p. 1.

France's nuclear deterrence covers its vital national interests. In an expansion of the role for French nuclear forces put forth by President Jacques Chirac in January 2006, this now includes not only French national territory and sovereignty by deterring rogue states or state sponsors of terror, but possibly protecting allied territory and safeguarding strategic supplies, as well.²¹⁰ An attack on those interests would bring a nuclear response in the form of unacceptable damage to the adversary state regardless of the methods used in the first attack. Paris rejects any no first use policy.²¹¹

France maintains its nuclear deterrent force at a level of "sufficiency," which equates to minimal deterrence. It has approximately 350 nuclear weapons that can be deployed on 84 nuclear capable aircraft and 48 submarine-launched ballistic missiles on 4 submarines (one of which is on patrol at any given moment).²¹² While most of these are strategic warheads on its SSBN force, some 60 warheads are dedicated to nuclear capable aircraft (the Navy's Super Étendard, the Air Force's Mirage 2000N, and the new Rafale, which will enter the inventory in 2007), each of which can carry the Air Sol Moyenne Portee (ASMP) supersonic nuclear guided missile.²¹³

During the Cold War France fielded a triad of forces, but its S-3D IRBM force was retired beginning in 1996. At the same time, it also scrapped three additional systems, including its Hades short range missile, and retired approximately 175 nuclear warheads.²¹⁴ France is making a large investment in its new Rafale force, planning to buy some 294 of these multirole aircraft for both the air force and the navy (which has one operational aircraft carrier), and it is developing an advanced ASMP missile (the ASMP-A), possibly with a reduced payload that

²¹⁰ Chirac speech, January 2006; also "News in Review: Chirac Reasserts French Nuclear Weapons Policy," *Disarmament Diplomacy*, Spring 2006, available on line at www.acronym.org.uk/dd/dd82/82chirac.htm. The best analysis of Chirac's speech and France's "new" approach can be found in David S. Yost, "France's New Nuclear Doctrine," *International Affairs*, vol. 82, no. 4 (2006), pp. 701-721.

²¹¹ Tertrais, p. 2.

²¹² Cirincione and others who quote his *Deadly Arsenals* claim that three French submarines are at sea at any given time. According to French security expert David Yost, however, "France maintained three SSBNs at sea at all times from January 1983 to June 1992, when the requirement was reduced to two SSBNs. With the reduction from six to four SSBNs during the 1990s, the requirement was cut back to a minimum of one SSBN at sea at all times." Personal correspondence, 30 May 2006.

²¹³ Cirincione, "France," p. 191; also Robert S. Norris and Hans M. Kristensen, "Nuclear Notebook: French Nuclear Forces, 2005," *Bulletin of the Atomic Scientists*, July/August 2005, pp. 73-75; and Tertrais, p. 2.

²¹⁴ Cirincione, "France," p. 191.

would be used for a “final warning shot.”²¹⁵ So French warheads, including those for aircraft delivery, will remain an integral part of its defense plan.

France has offered to lead the development of a broader European nuclear capability, but no other state has opted to take Paris up on that offer.²¹⁶ This concept, sometimes called “concerted deterrence,” was first proposed by France in 1995. In his January 2006 speech Chirac proposed a “deepening reflection” within the European Union about the role of existing nuclear weapons in common defense, and stated that “French nuclear deterrence, by its very existence, is a core element in the security of the European continent.”²¹⁷ The British response to this overture has been consistent; for example, Secretary of State for Defence John Reid responded one week after Chirac’s speech that there was “no common or joint approach to nuclear deterrence outside the framework of NATO.”²¹⁸

France is the only NATO member that does not participate in the Nuclear Planning Group, and it is unlikely to rejoin the integrated military structure of the NATO Alliance. Nevertheless, France does continue limited nuclear cooperation programs with both the United States and Great Britain.²¹⁹ For example, France and Britain created a Joint Nuclear Commission in the early 1990s, and have issued joint public statements on deterrence policy at bilateral summit meetings in Chequers in 1995, and Le Touquet in 2003. Closer ties between the two states may eventually be blocked, however, by the even closer nature of U.S.-UK nuclear relations.²²⁰

Other NATO DCA States

Italy. Italy’s Tornados, like Germany’s, will need to be replaced after 2012. The recent conservative Italian government committed Italy to purchasing small numbers of both the

²¹⁵ Tertrais, p. 3. The concept of a “final warning shot” is similar to Britain’s concept of “sub-strategic use,” even though France considers all its nuclear weapons to be strategic in nature.

²¹⁶ Interviews in Paris, March 2006. President Chirac’s January 2006 speech reiterated France’s willingness to consider alternatives to the current nuclear situation in Europe, whether by extending its nuclear umbrella over willing neighbors who sought such protection, or by leading a pan-European nuclear coalition.

²¹⁷ Chirac speech, January 2006.

²¹⁸ John Reid, House of Commons Hansard, 23 January 2006, reprinted in “News in Review: Chirac Reasserts French Nuclear Weapons Policy,” *Disarmament Diplomacy*, Spring 2006.

²¹⁹ Tertrais, p. 3.

²²⁰ Tertrais, p. 4.

Eurofighter and the American F-35 Joint Strike Fighter, but the new liberal government elected in April 2006 has questioned that country's commitment to the JSF.²²¹

Italy's public is so anti-nuclear that it approved a national decision to forego civilian nuclear power several years ago. Some percentage of the public also opposes Italy's continued membership in NATO, as well. As a result, any Italian government prefers to keep nuclear debates out of the public light. The government has never admitted its role in the DCA mission or that U.S. warheads were stationed on Italian soil during the Cold War.²²²

Belgium. Belgium wants to do its share of burden and risk sharing as a good Alliance partner. The platform it uses to perform that function, according to Belgian officials, is irrelevant. At the moment Belgium supports the NATO dual-capable aircraft mission with its fleet of American-made F-16s.

Belgium is in the enviable position of having purchased its F-16 fleet later than its partners in the NATO DCA business, and has instituted a service life extension program for those aircraft. As a result, its aircraft will remain viable longer than those of its DCA partners in neighboring countries (it can fly its F-16s until the 2015-2020 time period). This gives Brussels the comfortable margin of seeing what its neighbors decide to do before it has to commit to a specific aircraft, or even to a future DCA role. If Germany, Italy, or the Netherlands choose a non-nuclear certified Eurofighter, for example, Belgium can follow suit, or purchase the non-nuclear variant of the F-35 Joint Strike Fighter. It is also apparently considering France's Rafale fighter as a possible replacement. No decision needs to be made before the 2008-2010 time frame.²²³ Since it has been buying a number of European military systems recently, it may decide to purchase the U.S. aircraft in order to support transatlantic trade.

The Belgian Senate passed a resolution in March 2005 paralleling one in the German Bundestag that called for a debate over their government's continuing support for NATO's nuclear policy, and calling for the removal of all U.S. aircraft and weapons "at the earliest reasonable time."²²⁴ Yet the government's modest response to this parliamentary maneuver shows the underlying perspective of the Belgians: they want to be a good partner for the United

²²¹ Meier, p. 38.

²²² Interviews in Brussels, January 2006.

²²³ Meier, p. 39, and interviews in Brussels, January 2006.

²²⁴ See footnote 128 for details on the German and Belgian parliamentary resolutions of April 2005.

States and their other NATO allies. They will not be the first to call for any fundamental reassessment of Alliance nuclear policy. In their view, transatlantic relations are too valuable to risk by opening the Pandora's box of future nuclear alternatives. Belgium supports reducing levels of warheads to the minimum necessary while retaining some capability in the theater. But its air force has also conducted recent discussions over whether it will still need to have a DCA capability in the future. So a political decision may drive its next fighter acquisition decision.²²⁵

Netherlands. The Dutch will be the first to replace their current fleet of DCA aircraft. Holland must replace its F-16s beginning in about 2012. There appears to be considerable debate within the Dutch government over its future commitment to NATO's DCA mission. While the government has committed to buying the American F-35, there is no guarantee that the JSF will have a nuclear variant until several years after the roll-out of the first model in 2012. That means that even if Holland were to remain committed to buying the F-35, there might be a gap of several years between the end of the F-16's service life and the appearance of a nuclear certified version of the JSF. And as in other countries, the opposition party opposes the government's commitment to the JSF.²²⁶

Interviews in early 2006 provided some interesting alternative ideas to replacing Dutch F-16s with the JSF, including the creation of a NATO sea-based deterrent force to replace the current DCA arrangement.

Turkey. Turkey also flies F-16s and has had DCA responsibilities in the past, but it is not currently certified for that NATO mission. Istanbul has not yet made a commitment to purchasing a replacement aircraft in the next decade, but it has earmarked some \$10 billion to buy that generation of aircraft.²²⁷ Turkey also supposedly maintains nuclear storage bunkers for American warheads in two locations, according to open sources.²²⁸

Despite generally supportive comments by the Turkish government regarding its role as a storage site and potential deliverer of nuclear weapons, recent actions have called that commitment into question. For example, during the 2003 war in Iraq, Ankara refused to give the

²²⁵ Interviews in Brussels, January 2006.

²²⁶ Meier, p. 39.

²²⁷ Meier.

²²⁸ See, for example, Kristensen.

United States permission for major ground forces to move through Turkey into Iraq. And in December 2004 it made it clear that it would “not back any U.S. military action on Iran.”²²⁹

Nevertheless, Turkey would like to be more involved in NATO nuclear matters, according to interviews with Turkish officials. But it is limited from doing so for political reasons. Turkey’s population is unaware of its nuclear role or the Alliance’s mission, and its government wants to keep it that way. It perceives no change to its current role or level of support to the Alliance.²³⁰

Greece. Greece has an old fleet of A-7 strike aircraft, which it claims is still committed to the NATO DCA mission should the Alliance call upon it.²³¹ But these aircraft are not currently nuclear certified, nor does the United States apparently store nuclear warheads in Greece. (According to unconfirmed reports, those were pulled out of Araxnos in about 2002.)²³² Like Turkey, Greece is restricted politically from playing a full role as a nuclear partner.²³³ The removal of those warheads, if true, would mean that Greece was the first NATO ally to have completely withdrawn from the nuclear business it once shared. The Greek government still offers Araxnos as a potential DCA storage sites should the Alliance decide to use it. The public, as in most other European states, is ignorant of all things nuclear.²³⁴

New Allies

Three former Warsaw Pact members joined NATO in 1999, as did an additional seven in 2004. These new members saw NATO membership serving two purposes: security against their former masters in Moscow, and as a sort of “halfway house” toward eventual membership in the European Union.²³⁵ The newest NATO allies in Eastern Europe are particularly pleased not only to be in the Alliance, but to be protected by NATO’s nuclear umbrella and to participate in Alliance nuclear planning. This is a new topic for all the recent NATO members. They see

²²⁹ Umit Enginsoy and Burak Ege Bekdil, “Turkey will not Back U.S. Military Action on Iran,” *Defense News*, 6 December 2004, p. 6.

²³⁰ Interviews in Brussels, January 2006.

²³¹ Interviews in Brussels, January 2006.

²³² “U.S. Nuclear Forces 2003,” *Bulletin of the Atomic Scientists*, vol. 59, no. 3 (2003); and Smith, “To Neither Use Them or Lose Them: NATO and Nuclear Weapons since the Cold War,” p. 537.

²³³ Interviews in Brussels, January 2006.

²³⁴ Interview in Brussels, January 2006.

²³⁵ Interviews in Brussels, October 2005 and March 2006.

nuclear policy as a means for them to enter the larger security debate, and to find a place to make a difference in the Alliance. There is a widely held view among the “old” allies that the “new” members have reinvigorated the Nuclear Planning Group meetings, bringing fresh life and enthusiasm for the mission to what was becoming a rather listless environment by the late 1990s.

In 1996, as NATO developed the idea of enlarging its membership to include former members of the Warsaw Pact, it made a public commitment to assuage Russian concerns over the perceived move of NATO’s boundaries eastward toward the Russian frontier. NATO agreed to the “three no’s:” no intention, no plan, and no reason to deploy nuclear weapons on the soil of any new member state. An examination of two representative member states from Eastern Europe may show how these new members may become involved in nuclear missions despite the three no’s.

Latvia. Latvia admits that it joined NATO primarily for its Article 5 defense commitments. The nuclear aspects of Alliance membership were “known and accepted.” Riga do see a continuing need for nuclear weapons in NATO, and would be unhappy if the U.S. arsenal was withdrawn. It would see such a move as a lessening of U.S. involvement in Europe.²³⁶ This is, as in most of the allied states today, an issue for governments only. The general public does not understand the nuclear aspects of Alliance membership, so there is no debate over those issues.

Poland. Poland also believes that American nuclear weapons are crucial to undergirding the U.S. extended deterrence guarantee. Poland worries more about traditional threats like Russia than it does over new threats such as rogue states. It joined the Alliance fully aware of the “three no’s” pledge made to Moscow, which precludes the possession or deployment of nuclear weapons on Polish soil. But according to some Polish officials, that does not mean that Poland may not be able to someday provide conventional support forces to nuclear operations. Polish F-16s and MiG-29s can provide some of the tasks in any air strike, should changing political-military relations require their help. And geopolitical realities may someday lead the Alliance to ask new member states to take on the burden of the DCA role. Some Poles want to put the idea

²³⁶ Interview in Brussels, January 2006.

on the table for discussion at this point.²³⁷ If the Poles or another new member state were to take on this mission, it is unclear how the older members, especially smaller states like Belgium, would react to such a power shift eastward in the Alliance.

²³⁷ Interviews in Brussels, January 2006.

V

Implications for the Alliance: Nuclear Alternatives

*The fundamental purpose of the nuclear forces that remain [in NATO] is political: to preserve peace and prevent coercion.*²³⁸

This chapter identifies the dozen or so alternatives NATO could pursue in its future nuclear strategy. These range from complete elimination of its nuclear mission at one end of the spectrum, to the unlikely option of expanding and enhancing its nuclear mission and accompanying forces. In between these two extremes lie more likely alternatives that fall into two broad categories: some version of the status quo, in which American weapons remain deployed on European soil; or some type of changed nuclear capability that follows the removal of the few remaining U.S. nuclear warheads from Europe.

The Alliance is unlikely to address this issue head-on until it is too late to adjust the direction of the vector in which it is currently headed. Its nuclear strategy will most likely be determined in the next 10 years by acquisition decisions in several countries which must determine the choice of follow-on fighter aircraft to replace the current DCA fleet. Few officials in the Alliance are willing to discuss this future, or even this mission, openly and with candor, preferring to fall back on the familiar mantra that nuclear weapons serve a political purpose. It has been 15 years since that successfully vague explanation was first written in official NATO documents, and a generation of political-military leaders has grown to accept it without considering the underlying details that make the statement work. Nor are they likely to address it in the near term. As one senior NATO official complained to a reporter in 2006, “there are currently no discussions on NATO nuclear policy within NATO... this is not on anybody’s plate.”²³⁹

There are elements within the Alliance that do see the importance of discussing the future need for and requirements of a nuclear mission. These pragmatists are hoping for a renewed commitment to the Alliance’s nuclear role in a new Strategic Concept that would, hopefully, be

²³⁸ NATO’s *Nuclear Fact Sheets*, p. 15.

²³⁹ Quoted in Meier, p. 39. This was a lament also heard from certain offices during interviews at NATO Headquarters during the fall of 2005 and spring of 2006, but the predominant attitude, particularly among the national delegations to NATO, was the “don’t make waves” approach. The issue is not on anybody’s plate by design—because it is too sensitive, and potentially too dangerous from a public relations point of view, to talk about.

completed in time for NATO's 60th anniversary summit in 2009.²⁴⁰ Prior to that, there is some talk of approving and making public a document called the Comprehensive Political Guidance that would update and reconfirm NATO's current nuclear doctrine.²⁴¹

Rationale for Maintaining the Nuclear Status Quo

In 1991 President George H.W. Bush said that "We will, of course, ensure that we preserve an effective air-delivered nuclear capability in Europe. That is essential to NATO's security."²⁴² As David Yost has pointed out, however, the president did not specify *why* maintaining DCA capabilities in Europe was essential to NATO security.²⁴³ On the basis of published evidence, Yost concluded that as compared to alternative weapons systems, air delivered weapons were seen as providing the best combination of longer range, greater flexibility, and widespread Alliance participation, key aspects of the Nuclear Planning Group's criteria for Europe-based nuclear forces.

Colin Gray has listed a number of reasons NATO needs to retain a small arsenal of nuclear weapons today:

- To deter great powers
- To contribute a unique fear factor to military threats
- To raise the stakes for an adversary
- To convey the message the NATO might reply in kind to WMD use against the Alliance
- To protect NATO forces in operations against other nuclear states
- To maintain a level of strategic uncertainty in the eyes of an adversary.²⁴⁴

Yost adds to this list with a set of potential contingencies that may require NATO nuclear capabilities:

- Deterring states from conducting WMD strikes
- Deterring states from sponsoring WMD armed terrorists

²⁴⁰ Interviews in Brussels, January, March, and October 2006.

²⁴¹ Meier, p. 39; and interviews in Brussels, Winter 2005-06. Meier claims that the Comprehensive Political Guidance was actually agreed to by the allies in 2005, but has not yet been published.

²⁴² George Bush, "Address to the Nation on Reducing United States and Soviet Nuclear Weapons," 27 September 1991, *Weekly Compendium of Presidential Documents*, vol. 27, no. 39 (30 September 1991), pp. 1349-1350.

²⁴³ David S. Yost, "Origins of the 1991 Decisions on the U.S. Nuclear Posture in NATO Europe," unpublished paper, 12 September 2005.

²⁴⁴ Colin Gray, presentation to a NATO Symposium, 24 March 2006.

- Preventing further use of WMD by an adversary (through offensive strikes against his WMD capabilities, if non-nuclear means would not suffice)
- Hedging against the sudden emergence of new WMD-armed adversaries, such as might take place through a coup d'etat and seizure of power by a hostile political group in a WMD-armed state
- Deterring threats to NATO forces in non-Article 5 missions abroad
- Providing a capability for intra-conflict deterrence²⁴⁵

The 1999 Strategic Concept explains the official rationale for maintaining a nuclear capability within the Alliance:

A credible Alliance nuclear posture and the demonstration of Alliance solidarity and common commitment to war prevention continue to require widespread participation by European allies involved in collective defense planning, in nuclear roles in peacetime basing of nuclear forces on their territory, and in command, control, and consultation arrangements.²⁴⁶

Others have argued that NATO needs to maintain its NSNW not only for political linkage purposes, and to provide a middle level of effects on the ladder of escalation, but also because they doubt that the Alliance members with strategic forces would have the will to use those strategic weapons in a crisis. The old concerns over decoupling and assurance are still at play in the new NATO.

Does NATO need nuclear weapons to survive as an Alliance? No, say most observers. But since these weapons are there, removing them cannot be a neutral act. At the same time, there are serious doubts about the level of commitment by some of the DCA members—including the United States—to maintain this capability.

Model of NATO Nuclear Options

Figure 10 displays the likely direction of today's trends affecting NATO nuclear policy and force level decisions. It lists the current drivers that are pushing the Alliance to maintain the nuclear status quo; shows some possible accelerating factors that could push NATO toward the withdrawal of U.S. nuclear weapons; and also displays some reversing factors that, were they to occur, could actually lead the Alliance to enhance its nuclear capabilities in the near to mid term.

²⁴⁵ David Yost, presentation to a NATO Symposium, 24 March 2006.

²⁴⁶ *Alliance Strategic Concept*, 1999, para. 62.

Finally, the graph lists the various alternatives for NATO's nuclear future. These options are described later in this section, and are shown in more detail in Figure 11.

The drivers on this figure may actually be symptoms or indicators reflecting a deeper question which underlies this issue: are nuclear weapons really necessary for Alliance security? The drivers may merely reflect this concern.²⁴⁷ But as is the case in many diseases, one must treat the symptoms until a cure for the underlying problem is found.

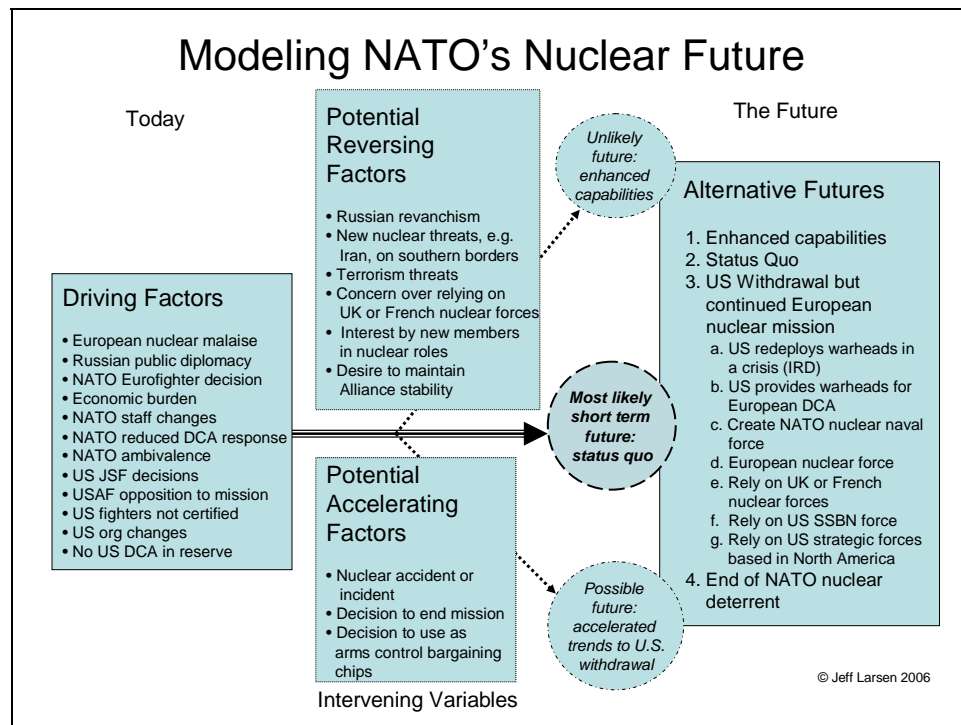


Figure 10: Modeling NATO's Nuclear Future

Driving Factors

The primary factors affecting the perception of nuclear policy and the likelihood of future changes include the series of trends shown in Figure 10 and elaborated below. On first glance, these may seem to be the dominant issues affecting the Alliance and its debates over its future today, but that is only because the Alliance has not yet addressed the truly important questions it faces—those listed as potential reversing factors. The general attitude among many officials interviewed for this study who are involved with NATO nuclear policy is one of “let sleeping dogs lie,” or “don’t rock the boat,” or “don’t make waves”—in other words, do not talk about

²⁴⁷ Thanks to David Yost for making this point.

alternative nuclear futures openly, for fear it will awaken public opposition and cause changes to the status quo, or perhaps even affect public acceptance of civil nuclear energy programs in these states. Presumably these attitudes do not preclude the appropriate national and NATO officials from discussing these questions behind closed doors. Officially, all NATO member state governments support current NATO policy and see little need for immediate decisions. At the same time, all DCA states recognize the coming requirement to make difficult force acquisition decisions. The F-15s, F-16s, A-7s, and Tornados in the current DCA inventories must all be replaced in the next 10 to 15 years. Refusing to acknowledge the hard questions about nuclear certification for those aircraft will force the Alliance's hands in another decade. Will that lead to a decision that is best for the Alliance, or simply one that is "easy" to make because it was forced upon the governments?

Trends pointing toward the end of non-strategic nuclear weapons in Europe can be summarized in three categories: Europe, NATO, and the United States.

Europe. The continent must deal with widespread nuclear allergy and low public support for any nuclear weapons. This is particularly true of Germany and the Low Countries. Officials in Berlin tell interviewers that they believe a poll in their country would show over 80 percent of the population opposed to current NATO nuclear policy, and even more opposed to the stationing of U.S. warheads on German soil, or of a continuing Luftwaffe DCA mission. Much of the public does not even know that their state hosts U.S. weapons or has a nuclear mission, according to these officials and to recent public opinion surveys.²⁴⁸ As a result, given that these governments recognize the value to Alliance cohesion and to maintaining a credible nuclear deterrent to defend against an uncertain future, they prefer to avoid the public debate that would occur if these questions were to become salient.

This is a considerable change from the mid 1990s, when according to some reports the Clinton administration asked its European allies if it could remove all remaining DCA weapons

Figure 10a: Driving Factors

- European nuclear malaise
- Russian public diplomacy
- NATO Eurofighter decision
- Economic burden
- NATO staff changes
- NATO reduced DCA response
- NATO ambivalence
- US JSF decisions
- US organizational changes
- USAF opposition to mission
- US fighters not certified
- No US DCA in reserve

²⁴⁸ For example, see "Nuclear Weapons in Europe: Survey Results in Six European Countries."

from Europe. At that time the United States proposal met with considerable concern by its allies.²⁴⁹ That may not be the case if the United States were to make that offer again today.

The European Union, with France at the forefront, has made efforts to enhance its military capabilities in recent years by incorporating the West European Union and developing a set of Common Foreign and Defense Policies, moves that NATO has generally supported. But many observers note that security in Europe is, in some ways, a zero sum game; any gains by the EU will come at the expense of NATO cohesion and capabilities. The West European Union Assembly has attempted to raise the issue of a European nuclear force for discussion within European parliaments, particularly since the 1995 French offer to provide Europe with a nuclear umbrella, but without success.²⁵⁰ Most NATO members oppose any such discussions. President Chirac raised the issue once again in his speech on national security and the role of French nuclear forces in January 2006 when he offered the force d' frappe as an umbrella that could protect France's European allies.²⁵¹ And serious nuclear experts from several countries are calling for an end to NATO's nuclear mission.

The final European trend worth highlighting involves Russia. For decades the Soviet Union attempted to push NATO out of the nuclear business and force the United States to withdraw its nuclear weapons from Europe. If that is still Russia's goal, it is less vocal about it today. But there is little doubt that Russia would feel more secure if the major military alliance on its western border no longer had nuclear weapons deployed in Europe. Its regular comments about having all of its NSNW arsenal located in its own territory, and suggesting that the United States do the same with its weapons, are an example of this.

NATO. Within the Alliance itself we can also observe a diminished level of interest in all things nuclear, and a reticence to discuss possible future alternatives. As mentioned, the DCA fleets of all states having DCA responsibility will need to be replaced in the next decade. The replacement aircraft have yet to be formally selected, but none of the available choices include a guaranteed nuclear certification option. The most likely choices at this point are either the Eurofighter or the U.S. Joint Strike Fighter. The JSF may have a nuclear option in its later configurations, but no decision has yet been made on whether to build that option in production

²⁴⁹ WEU Assembly Fact Sheet No. 2.

²⁵⁰ Interviews in Paris, March 2006.

²⁵¹ Chirac speech, January 2006.

models of the aircraft yet, or who will pay the additional cost for doing so.²⁵² The Eurofighter does not even have a planned nuclear option. The future of NATO's only land-based nuclear capability rests on this question, yet there appears to be very little discussion in the open press or official circles over the selection debate.

A number of subtle but important staff changes also imply a reduced importance to nuclear matters within the Alliance. At SHAPE Headquarters, for example, a recent reorganization split the once powerful Special Weapons Branch into two branches in different divisions (J3 and J5), thus reducing both the size and importance of the nuclear staff, making it less efficient and reducing the role for nuclear planning by separating plans and operations.²⁵³ There are no longer standing plans for sub-strategic nuclear use in NATO; any future use would rely on adaptive planning.²⁵⁴ The NPG decided in recent years to reduce its meetings at the ministerial level from twice to once annually.²⁵⁵ Summit meetings that discuss nuclear issues are exceedingly rare. The official communiqué from the Prague Summit in November 2002, for instance, did not even include the formerly obligatory paragraphs reiterating the nuclear position of the Alliance as enunciated in every communiqué and Strategic Concept since 1991.²⁵⁶ And the senior officers course at the NATO Defence College in Rome includes very little in its syllabus about nuclear weapons or policy.²⁵⁷

During interviews one notices a real reticence to discuss the tough questions about NATO's nuclear future: What is the purpose of nuclear weapons? Has the nature of deterrence changed since the end of the Cold War? Since 9/11? Is there a threat to NATO, and if so, what is it? Can nuclear weapons deter that threat? Are there any circumstances wherein the Alliance might consider actual use of these weapons? Can the Alliance survive without a nuclear mission?

²⁵² As the publicly released version of the 2001 NPR stated, "The Operational Requirements Document for the JSF requires that initial design permit nuclear capability to be incorporated at a later date (after IOC, currently scheduled for 2012) at an affordable price." Found at www.globalsecurity.org/wmd/library/policy/dod/npr.htm; also found in William M. Arkin, "Secret Plan Outlines the Unthinkable," *Los Angeles Times*, 9 March 2002. .

²⁵³ Interviews in Germany and Belgium, March 2006. SHAPE took an overall 30 percent cut in nuclear personnel in the reorganization.

²⁵⁴ Interviews, Brussels, October 2005.

²⁵⁵ Interviews in Belgium and Germany, spring 2006. The NPG Staff Group meets biweekly, as opposed to weekly in years past. This change has apparently occurred since 2005, when NATO's home page on the NPG said that its staff group met "weekly." See "The Nuclear Planning Group: One of NATO's Defence Decision-Making Bodies," at www.nato.int/issues/npg/index.html.

²⁵⁶ See www.nato.int/docu/comm/2002/0211-prague/index.htm.

²⁵⁷ Interview in Brussels, October 2005.

Without nuclear weapons based on European soil? Should the new member states of Eastern Europe be allowed to contribute to DCA operations, even if only in a support role?

At the same time, there appears to be some divergence from the traditional consensus position within the national missions to NATO regarding the necessity of a nuclear future for the Alliance. In this sense there could be a lively debate over that future, if those who profess to support the status quo would be willing to engage in that debate. Unfortunately, the “let sleeping dogs lie” attitude prevents such a discourse from happening publicly, or apparently even behind closed doors—resulting in disgruntled partners, confused new members, and little progress toward resolving the underlying problems facing the Alliance’s nuclear future.²⁵⁸

DCA alert response levels are so low today that it makes the weapons militarily unusable without advance notice of an adversary threatening NATO. The necessary time to prepare a nuclear strike would apparently be at least 30 days (since the highest alert level today is “months,” according to NATO publications).²⁵⁹ And given the consensus nature of Alliance decision-making, political control over nuclear weapons, and recent experience of mission cancellations by allies during NATO combat operations in Kosovo in 1999, the chances that SACEUR could actually ever recommend a nuclear strike are extremely low. If deterrence credibility rests on the combination of will and capability, both factors would appear to be considerably weaker than they were during the Cold War.

United States. There is no scheduled follow-on DCA aircraft to replace the F-15s and F-16s when their service life ends by the year 2013. The F-22 will be conventional only, and the Joint Strike Fighter may have the option of installing a nuclear certification package, but no decision has been made to do so pending decisions by NATO allies to buy that variant.

The only U.S. DCA aircraft nuclear certified are those already in Europe. In the United States, the former bases that would provide those replacement aircraft are going out of the business. Cannon AFB, New Mexico is closing under the 2005 Base Realignment and Closure decision, and Seymour Johnson AFB, North Carolina no longer requires its F-15s or crews to undergo nuclear certification.

²⁵⁸ Interviews in Europe, October 2005, January and March 2006.

²⁵⁹ *NATO Nuclear Fact Sheets.*

The U.S. Air Force has apparently tried to zero out its DCA funding responsibilities in the annual budget cycles since about 2002. They only agreed to continue that mission when so ordered by the Office of the Secretary of Defense, which may have reminded them of their alliance commitments under the Washington Treaty of 1949.²⁶⁰ This shows the low regard with which nuclear missions are held by the Air Force.

While DOD still considers non-strategic nuclear weapons a separate category, it does not think about the operational use of tactical weapons separately; aligning more closely with the French perspective, it believes that any nuclear event would have far-reaching strategic consequences.²⁶¹ Like its NATO allies, DOD is unwilling to discuss issues surrounding NATO nuclear policy publicly since it believes a public debate would lead to the end of the NATO mission—a mission that the United States government in the Bush administration still finds compelling.

Potential Accelerating Factors.

Several potential actions could alter the current preference for the status quo and accelerate tendencies for the withdrawal of U.S. nuclear weapons from Europe. All the alternatives under U.S. withdrawal in Figure 10 could lead to the eventual end of NATO's NSNW role in Europe, though that is not a given. Nonetheless, should a nuclear incident occur, or a WMD attack take place against a NATO member, or a nuclear or radiological accident occur in a weapons storage site, public opinion could once again become aware of these weapons and enflamed against their continued storage in European soil. Given the underlying anti-nuclear sentiment found in most West European nations, this could lead to calls for the removal of all remaining U.S. warheads and the end to the DCA mission by that particular state.

Even without the catalyst of a precipitating nuclear incident or accident, a political decision by one or more states could accelerate current trends and lead to the removal of U.S. weapons on a much shorter time frame. Such a decision could be made by the United States, for the reasons stated above. Or it could be a NATO consensus decision. Or it could be a state-specific decision by one of the DCA host nations that they can no longer afford the political or

Figure 10b: Potential Accelerating Factors

- Nuclear accident or Incident
- Decision to end mission
- Decision to use as arms control bargaining chip

²⁶⁰ Interviews in Washington, August 2005 and July 2006, and Europe, spring 2006.

²⁶¹ Interviews in Washington, August 2005 and July 2006.

financial burden of that mission. Finally, it could be the indirect result of an acquisition decision, such as the selection of the Eurofighter to replace Germany's Tornados or the Netherlands' F-16s. Without a nuclear certification capability, these countries would effectively be out of the DCA business, even without a NATO decision to that effect.

The Alliance could also decide to use its remaining cache of NSNW warheads as a bargaining chip in new arms control negotiations with Russia. In so doing it could attempt to capture all, or more likely some, of the Russian tactical nuclear stockpile in return for removing the last few American nuclear weapons from European soil. As one analyst has pointed out, however, "Moscow would prefer to give up nothing to achieve this objective, and the Russian policy for several years now has been to refuse to discuss reductions in Russian NSNF until all U.S. nuclear weapons have been removed from Europe."²⁶²

Potential Reversing Factors

There also exist a number of serious but unlikely considerations that could quickly reverse the direction of the driving factors that seem to be pushing U.S. NSNW and Alliance nuclear policy. An Alliance decision that any one of these reversing factors is crucial to the future of the Alliance or to their security would trump all of the driving factors discussed above. At a minimum, such a decision would continue the trend toward keeping the status quo,

Figure 10c: Reversing Factors

- Concern over Russian revanchism
- New nuclear threats, e.g. Iran, on southern borders
- Terrorism threats
- Unwillingness to rely on UK or French nuc forces
- Interest by new member states in a nuclear role
- Desire to maintain Alliance stability

overriding any accelerating trends. These could also lead to enhanced or modernized nuclear weapons and a more robust nuclear capability for the Alliance. Obviously, of course, this latter possibility is a least likely alternative.

Russian Revanchism. Several European states have expressed concern over the unwelcome trends they see in Russian politics: the centralization of power in the presidency, strategic nuclear modernization; refusing to provide transparency into the elimination of its short-range nuclear forces in spite of its PNI commitments;

²⁶² David Yost, personal correspondence with the author, 30 May 2006. Yost explains why he judges it most unlikely that the Russians would make any meaningful NSNW reductions in the aftermath of the removal of the remaining U.S. nuclear weapons presence in Europe in his article, "Russia's Non-Strategic Nuclear Forces," *International Affairs*, vol. 77 (July 2001), pp. 549-555.

and an unwillingness to engage in arms control dialogue. This could become a particularly threatening combination in the future with a Russian president who might be less pro-Western than Putin. Germany and the East European members of NATO are particularly concerned about these trends.²⁶³ This explains in part Germany's continued support for NATO's DCA mission, despite overwhelming popular antipathy for that mission within the German population. It also explains the desire by several new member states to become more involved in NATO's military activities, including DCA support, even if they are not allowed to accept weapons based on their soil as a result of the Alliance's 1996 "three no's" commitment.

New Threats. Threats from the Mediterranean and Middle East—particularly, in the mid-term, from a nuclear-armed, pro-terrorist, and anti-Western Iran—could elicit a much higher threat awareness on the part of Europe, potentially equaling fears of the Soviet threat during the Cold War. These fears could justify a continued or even strengthened Alliance nuclear capability as a hedge and response against these rising new threats on the Alliance's periphery. Iranian nuclear weapons could set off a domino effect of new nuclear states in the region, which could, in turn, affect the European allies' calculus of assurance levels required for their security.

At the moment, however, most European states see no proximate threat from Iran or the Middle East that would justify such a reversal of trends regarding NATO nuclear capabilities. Indeed, the common perspective of many European NATO officials interviewed in early 2006 was that Iran would not threaten Europe's capitals and was unlikely to be nuclear capable for at least five to ten years. Universally it was felt that the United States was making more of this threat than was really there—although some Europeans admitted that they recognize that the United States holds a global perspective quite different than do its NATO allies.²⁶⁴ Others believe that the United States is by its nature pessimistic and takes a longer term view of potential adversaries when it comes to assessing threats, whereas Europe is more optimistic, putting faith in the goodness of human nature.

Terrorism. The primary threat of the early 21st century comes from terrorism, as the populations of New York, Washington, London, and Madrid have already discovered. The

²⁶³ Interviews in Europe, spring 2006.

²⁶⁴ Interviews in Europe, January and March 2006.

question, of course, regards the role that nuclear forces can play against that threat. For example, is there a role for nuclear deterrence to counter state-sponsored terror? France's President Chirac seems to believe so, as his comments in his January 2006 speech indicated, when he said "the leaders of states who would use terrorist means against us, as well as those who would consider using, in one way or another, weapons of mass destruction, must understand that they would lay themselves open to a firm and adapted response on our part. This response could be a conventional one. It could also be of a different kind."²⁶⁵ The United States and Great Britain agree with those sentiments, but the other NATO members are not yet in accord with those beliefs.

Unwillingness to Rely on UK and French Nuclear Forces. Could the nuclear forces of Britain or France be used to replace U.S. nuclear weapons as an option for the future protection of Europe? The European allies must determine which future forces they wish to rely on. For example, a decision *not* to rely on the independent nuclear forces of their closest neighbors in Paris and London might lead to a consensus that it would be best to continue relying on the United States and its nuclear capabilities. This has been the unspoken decision for many decades, despite French efforts to woo its neighbors away from NATO to a French-led European defense consortium of some type, possibly under the auspices of the European Union. A resolute and open decision by the allies might remove all the options in Figure 10 that rely on the UK or France from consideration, leaving NATO but two choices: continued partnership of some type with the United States, or the end of a nuclear mission for the Alliance.

Requests by New Member States to be Included in Nuclear Responsibilities. Should the new NATO member states from Eastern Europe become more forceful in their political participation in the Alliance, they may one day demand to be more directly involved in the operational nuclear aspects of NATO's deterrent mission. Their penchant to do that is already evident; the new members have apparently reinvigorated the meetings of the Nuclear Planning Group staff, and they have offered to provide indirect support for DCA missions.²⁶⁶ There have even been suggestions that certain new members, such as Poland or Latvia, might be willing to

²⁶⁵ Chirac speech, January 2006.

²⁶⁶ Interviews in Belgium and Germany, spring 2006.

take on nuclear DCA roles if one of the current states were to announce that it wished to withdraw from that mission. This would not necessarily violate the “three no’s” commitment by the Alliance to Russia, as those members could deploy their aircraft to bases in neighboring states and fly missions out of bases that do not fall under the three no’s restrictions—similar to what American aircraft have been doing from European bases for three generations.

New member demands could lead the Alliance to expand its nuclear deterrent mission in order to include those states, to modernize or otherwise change its DCA responsibilities, or to keep the mission in spite of calls by some of the older members to get rid of it.

Desire to Maintain Alliance Solidarity. The final key that could overturn all the factors driving NATO to eliminate its European-based nuclear forces would be a political consensus by the allies that they do not wish to risk hurting Alliance solidarity by challenging one of the core defense principles upon which NATO is founded. How important is the continuation of the Alliance to all its members? Assuming all members want to retain NATO for their security, can the Alliance survive without nuclear capabilities on European soil? If it were to become non-nuclear, would it have to find a replacement vehicle for existing consultative bodies such as the Nuclear Planning Group? These are difficult but essential questions that NATO circles do not appear to be addressing today.

The Alliance Strategic Concept states that the fundamental purpose of nuclear weapons is political. As pointed out in the introduction to this paper, this has multiple layers of meanings to the Allies. On one level, these weapons reassure the allies that they have the ultimate weapon available as a deterrent against threats and, were it to become necessary, to actually use in combat. The second level of reassurance comes from knowing that the United States has made a visible, physical commitment to the defense of Europe as shown by its weapons and forces being forward deployed in NATO Europe. The DCA mission keeps the United States involved in European political affairs, and allows the NATO members access to U.S. defense decision-making through the NPG and direct bilateral and multilateral forums with the United States. The intangible benefits of this close relationship are well understood by the European allies. Would those benefits be lost if U.S. weapons were withdrawn from Europe, or would they simply take on a new complexion? At the moment, no member of the Alliance seems willing to risk finding out the answer to that imponderable. Better, they believe, to “not rock the boat.”

Alternatives

The interaction among the factors described above will lead the Alliance to adopt one of at least 12 identifiable options for its nuclear future, as seen in Figure 11. These range from modernization of the force, to a continuation of the status quo, to complete withdrawal of American weapons, to the abdication of a nuclear role for the Alliance. The more intriguing insights come from an examination of those options that fall between the two extremes, particularly the multitude of possibilities for replacing U.S. weapons if they were withdrawn but the Alliance wanted to continue to have a nuclear deterrent of some type.

The purpose of this section is not to debate the pros, cons, or requirements of every alternative available to NATO, nor to rank order a set of options according to any particular criteria. Rather, the goal is simply to introduce the various alternatives in order to recognize the wide range of possibilities the Alliance may select from as it considers the role of nuclear weapons in its future security. I leave it to follow-on efforts to select the preferred option, or to determine the steps necessary to achieving a new security arrangement.

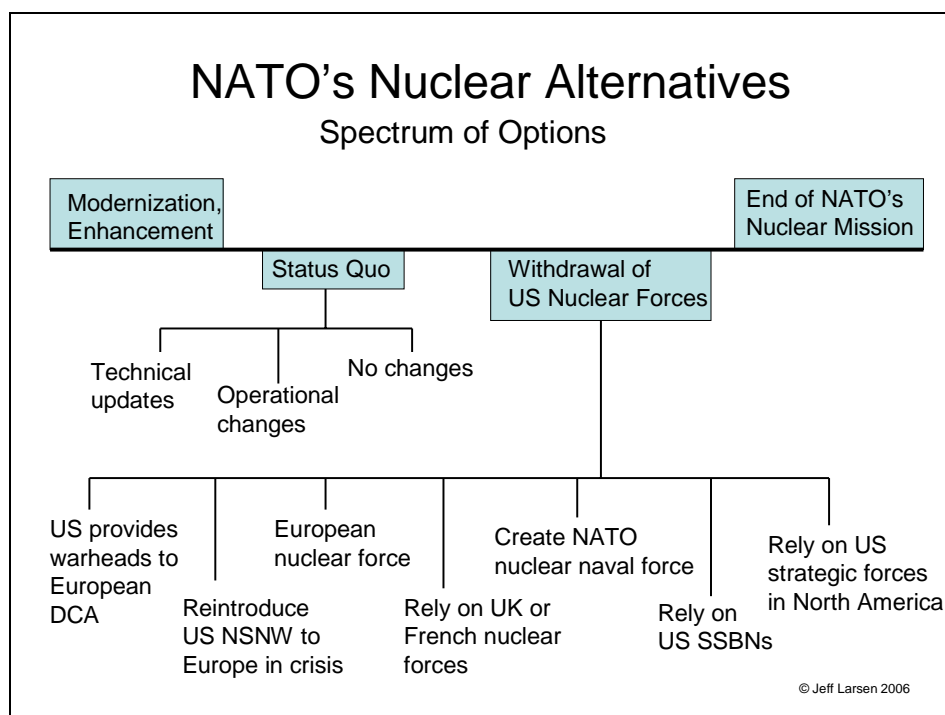


Figure 11: NATO's Nuclear Alternatives

Modernization and Enhancement

Modernization and enhancement of NATO's nuclear forces is an unlikely option, barring a return to the Cold War or the rise of a new and overwhelming threat to Europe. Nevertheless, it is an option that must be considered in the range of alternative possibilities. As the weapons age, the United States must decide whether a small arsenal of B-61s is worth the cost of a service life extension program. The Alliance could decide to replace its current U.S. tactical nuclear warheads with something newer and more capable, perhaps even on a different delivery system, such as an air-launched cruise missile or land-based missile. It could decide to replace its current Tornado, F-15, and F-16 fleets with nuclear certified Joint Strike Fighters in order to maintain the DCA role into the next generation.

Status Quo

There are three alternatives under this option, which is more dynamic than the term implies. Some variant of this alternative is officially preferred by every member state, as they follow the mantra "beware the implications of change."

Technical Updates. The first sub category involves continued maintenance, upkeep, and modest technological improvements that could, if necessary, lead to the first alternative of vastly improved capabilities. Even without a commitment to that level of investment, however, any decision to continue relying on NATO's long-standing deterrent forces as provided by the United States will require a renewed commitment to investment in modernized weapons, delivery systems, maintenance, and security issues, given the age of the existing systems in place. New rationales that could justify keeping or enhancing NATO's nuclear weapons may include deterring chemical or biological weapons threats from the Middle East and North Africa, and providing force protection for deployed NATO forces by offering mobile deterrent capabilities.

Operational Changes. A second broad category under the status quo would include operational changes to the way NATO thinks about its nuclear strategy and how best to achieve its twin goals of military deterrence and political inclusion. The Alliance may, for example, decide to move all of its nuclear weapons to storage sites in Southern Europe to be closer to the most likely near-term threats. Or one or more of the current DCA states may decide that it no

longer wishes to participate in the Alliance's nuclear mission, focusing instead on "role specific tasking" contributions to Alliance security—much as the new East European member states must do now. That could precipitate changes to force deployments, DCA responsibilities, or even the inclusion of new states as members of the DCA "club." Perhaps we may one day see Polish F-16s on alert at an Italian base prepared to carry American bombs. Short of such a major step, new member states may be assigned roles in operations that support nuclear strikes, such as air refueling, combat air support, intelligence/surveillance/reconnaissance, or any of the myriad parts that would make up a strike package. Alternatively, the United States could continue to perform its historical role while all other European DCA states gave up that mission.

No Change. The third and most likely option, and the preferred choice at the moment among most member state missions to NATO Headquarters, is to do nothing to change the status quo. "Let sleeping dogs lie" is not a policy, but it seems to be the preferred approach by member state governments that believe the current approach is the best available choice. One could argue that no decision to make upgrades or select a replacement DCA aircraft in the near term will count as a decision, too. Nothing will change in the short term. But that leaves the Alliance at the whim of the driving factors described above, with eventual obsolescence or ambivalence and neglect determining the future without a conscious decision by the allies. This is the most likely alternative for the future: no change, don't talk about it, and eventually the European nations will fail to replace their DCA aircraft with a nuclear capable successor, leading to the end of the DCA mission. Or the United States might decide that there is no longer a need for its forces in Europe, particularly given the direction its European allies appear to be headed regarding a DCA replacement, so it could choose to withdraw its weapons unilaterally. Either decision would lead to the withdrawal of the remaining U.S. nuclear weapons from Europe. Given that three of its members have independent atomic arsenals, however, as long as the Alliance survives as a political institution it will remain a de facto nuclear alliance.

U.S. Withdrawal but Continued NATO Reliance on Some Form of Nuclear Deterrent

This alternative carries the most possibilities for future nuclear options. Some are obviously more far-fetched and less likely than others, but all are possible and therefore worthy of consideration.

Many in NATO fear any alternative that involves the removal of U.S. nuclear weapons, for varying reasons. Doing so in hopes that Russia would follow suit in good faith disarmament is dangerous, they argue. Any option that called for the reintroduction of U.S. weapons in a crisis would be ludicrous given public opposition and the danger of raising the crisis level as the result of such a move. This is a future that some argue would please both Russia and France, but it is not one the rest of the allies would necessarily welcome. One senior NATO official even went so far as to say that the removal of U.S. weapons from Europe “would be the beginning of the end of the Alliance.”²⁶⁷ Is that right? Could the Alliance survive the loss of its nuclear linkage to North America?

On the other hand, others advocate the immediate and complete withdrawal of U.S. weapons for the simple reason that the Alliance can no longer answer the question over the purpose of those weapons in Europe—NSNW are not justifiable. Removal would eliminate an entire class of weapons, save money, and appease militarists in Russia who point to NATO NSNW as proof of the West’s aggressive nature.²⁶⁸

The United States Withdraws its Weapons, but Keeps the Infrastructure in Place in Order to Reintroduce Weapons in a Crisis. One means to reduce public criticism of the current situation would be to remove all remaining U.S. warheads from Europe, and publicly announce the move for public relations purposes. But it would keep the technical and physical infrastructure associated with nuclear sharing in place so that the warheads could be reintroduced to the theater and mated with their DCA delivery vehicles quickly in a crisis. Given the current nuclear response time, measured in months, and the ability to use realistic weapons trainers (practice bombs) to exercise the flight and maintenance crews, this type of “virtual nuclear sharing” could technically work.

The fact that the Alliance has not yet taken this step reflects concerns that political pressures might be too great to ever allow the United States to reintroduce such weapons to Europe, particularly in a crisis when fears of escalating the tension would abound. There is also some concern that absent the actual weapons on their soil, the European members of the Alliance may lose their interest in the weapons. As one analyst has put it, “There is also a fear at NATO

²⁶⁷ Interview in Brussels, October 2005.

²⁶⁸ Interviews in Berlin, January 2006.

Headquarters in Brussels and national defense ministries that NATO's nuclear policy may over time fade into irrelevance if the real weapons are withdrawn."²⁶⁹

The United States Continues to Supply Warheads for European Allies' DCA. In this alternative the United States would withdraw its DCA aircraft from the European theater, or at least end the U.S. DCA role in a NATO nuclear delivery mission. The other NATO states with a DCA responsibility, however, would continue to carry out that mission under dual-key arrangements with the United States for U.S. warheads stored either in Europe or in the United States. This would resolve many of the U.S. Air Force's concerns about the costs of continuing to support the European DCA mission, and could prove valuable to American arguments to the world community about its commitment to NPT Article VI disarmament measures while still providing a nuclear guarantee to NATO. This would also show a continued level of Alliance cohesion and commitment to nuclear deterrence, and maintain the linkage between Europe and North America. However, while NATO has always planned any nuclear mission to include several member states' aircraft to avoid singularity, it was understood that any mission would include one or more American jets in the package.²⁷⁰ This may make such an option difficult to carry out politically.

Create a NATO Nuclear Naval Force. This could be accomplished with an internationally manned vessel, either an SSBN with SLBMs, perhaps one of the old British Trident boats or a new submarine; or some other option, such as was considered in the Multilateral Force concept of the 1960s. MLF, for example, envisioned IRBMs on a simple vessel such as a barge or surface combatant, manned by a multinational crew with representation from at least three European nations at all times. This would avoid concerns over singularity, and would ensure a multinational decision to carry out a SACEUR order to launch, with three hands on the trigger (or on the lock). Such an option could also be based on the successful NATO AWACS program in existence today.

²⁶⁹ Meier, "An End to U.S. Nuclear Weapons in Europe?" p. 40.

²⁷⁰ Interviews at NATO, fall and winter 2005-2006.

Rely on a European Nuclear Force. This could be provided by Britain, by France, by a joint commitment by those two nations, or by some type of new collective European nuclear force, possibly under EU auspices. France has implied such an arrangement in its offer to create a European force relying on French nuclear capabilities. Some EU members (such as Ireland or Sweden) would object to nuclear deterrence in principle. The new nuclear force would also need a body equivalent to the NPG as its organizational and consultative heart. According to the West European Union Assembly, there have been a number of initiatives to explore the possibility of a more coordinated (or even joint) deterrent. These include the Hague Platform on European Security Interests of October 1987, and the Madrid EU meeting communiqué from November 1995.²⁷¹ France remains committed to creating a framework for European nuclear deterrence. But according to French sources, the British see no reason to change the current reliance on NATO, the Germans don't want to talk about it, and the Italians only want to talk informally without committing to anything.²⁷²

Of course, this alternative raises a lot of questions, not least of which is the appropriate organizational venue for debating the issue. The European Union? Certainly at least one member would veto any such discussion. The WEU Council no longer meets. And France is not a member of the integrated military structure of NATO.²⁷³

Rely on British or French Nuclear Forces. This alternative is easy to understand, but difficult to imagine actually occurring. The United Kingdom or France could extend their nuclear deterrent umbrella over neighboring states, or even all of Europe. This would require a level of trust not yet reached even within the European Union. France has offered to extend its nuclear deterrent over its European allies, an offer no state has yet accepted. Yet it may be extending its deterrent umbrella over states even without their express permission. President Chirac recently said that, "The development of the European Security and Defence Policy, the growing interweaving of the interests of the European Union countries, and the solidarity that now exists between them, make French nuclear deterrence, by its very existence, a core element in the security of the European continent."²⁷⁴

²⁷¹ WEU Assembly Fact Sheet No. 2.

²⁷² Interviews in Paris, March 2006.

²⁷³ Interviews in Paris, March 2006.

²⁷⁴ Chirac speech, January 2006; also WEU Assembly Fact Sheet No. 2.

Rely on the U.S. SSBN Force. This alternative is also easy to envision. Throughout the Cold War the United States dedicated a certain number of SLBMs on its Atlantic SSBN fleet to SACEUR as part of the SIOP. That commitment is presumably still in place today. It would certainly be fairly simple to make that commitment public, and to codify it in NATO documents if necessary to enhance its deterrent value.

Rely on U.S. Strategic Forces Based in North America. This is not a new concept, and would seem to provide a simple solution to the current situation. But what effect would such a dramatic shift in the Alliance correlation of forces have on deterrence credibility in the eyes of NATO's adversaries? The rationale for NSNW based in Europe during the Cold War, after all, was to ensure coupling and a seamless web of deterrence based on an escalatory ladder, from conventional forces to tactical nuclear weapons to U.S. strategic forces based in North America. This alternative would require a new level of reassurance to allies who have grown to expect that middle rung of the escalatory ladder would always be in place in Europe.

US Withdrawal and NATO Abrogation of its Reliance on a Nuclear Deterrent

This is the most extreme alternative, although one which may not be hard to foresee given today's trends. This option also has the greatest potential for causing irrevocable rifts in the Alliance, or even causing its demise. On the other hand, should the Alliance survive such a change, many of the current coupling functions could be retained. The NPG, for example, could be kept as a consultative body with a new name, such as the Strategic Planning Group.

Summary

Which option is most likely? If current trends continue, with no decision by the Alliance, the status quo is most likely in the near term, with U.S. withdrawal the likely mid-term result of the passage of time and benign neglect. At some point the United States will likely decide to end its 53 year deployment of nuclear forces to Europe, whether unilaterally or at the request of its allies in the DCA business. The clock is ticking regarding the technical issues of nuclear certification for replacement fighter aircraft in all the DCA states. The warheads won't last forever, either, but the aircraft delivery systems will be the first major acquisition hurdle. When

that point is reached, the Alliance will need to select one of the options under the alternative of U.S. withdrawal, lest it find itself inextricably drawn into the extreme position of having to abrogate its long-standing nuclear deterrent policy.

VI

Conclusion:

Making Waves that Rock the Boat which Wake the Sleeping Dog

*The status quo is imperiled by the aging of NATO's nuclear-capable fighter fleet.*²⁷⁵

Deterrence has been pursued in various ways through the decades, with the ultimate goal of deterring a military threat often sought in conjunction with related objectives, such as promoting Alliance unity through extended deterrence guarantees and shared military missions. Non-strategic nuclear weapons served their purpose as one means of achieving those multiple goals at lowest cost and maximum political return. They succeeded in providing protection for Western Europe during a time of Soviet conventional force domination; of ensuring that the allies were included in the inner circles of U.S. decision making; of granting the allies greater prestige through sharing arrangements than their relative size would have otherwise allowed; and achieving the long-standing NATO goal of linking the security of North America and Europe through a ladder of escalation that relied on tactical weapons as the middle rung.

Today, however, the Alliance finds itself facing a different world. Fifteen years since the end of the Cold War, the allies have yet to make the hard decision about what the new global security environment means for its Cold War era weapons systems, including its residual arsenal of American nuclear warheads based on European soil. That it has taken so long to adjust its policies may reflect a combination of organizational lethargy and an unwillingness to risk changing a collective arrangement that worked well for so many years. Or perhaps there are genuine military threats to the Alliance that require continued reliance on these weapons. Unfortunately the key members of the Nuclear Planning Group appear unwilling to bring these questions to light and discuss the rationale for maintaining NATO nuclear weapons.

When it comes to NSNW in Europe there is general consensus that they have no military utility; nobody likes them or wants to carry on the mission; and in scenarios involving nuclear use, the United States would be more likely to use a strategic delivery system anyway. But since

²⁷⁵ Meier, "An End to U.S. Nuclear Weapons in Europe?" p. 37.

America believes its allies still want these weapons deployed in Europe, and it could cause a lot of trouble to withdraw them, the default position is to leave them there and avoid discussing them at all.

It appears that the United States maintains its nuclear weapons in Europe primarily because it thinks its European allies want it to continue to do so. The European DCA states, on the other hand, remain reluctantly committed to the nuclear mission largely because they think the United States expects them to do so. There is no consensus on the need for nuclear weapons in the Alliance. Both sides are talking past one another—or more accurately, *not* talking to one another. Nobody wants to rock the boat.

Secretary of Defense Rumsfeld indicated a willingness to allow the Europeans to determine the future of NATO's nuclear role. In an interview with *Der Spiegel* in October 2005, he noted that “it is up to the Germans and to NATO” to pass judgments on the purpose of U.S. weapons on German soil.²⁷⁶ He did not say whether the United States thought this would be a good or bad decision, nor which alternative the United States preferred. He was, in effect, clarifying that any such decision should be a collective Alliance decision, not just an American one.

Final Thoughts

The most likely future for non-strategic nuclear weapons? They will still be with us in 20 years. The United States will retain a small arsenal of tactical weapons, at a level not much smaller than today's numbers. It is quite likely, however, that there will be no American nuclear weapons stationed in NATO Europe at that time. Presumably that will not reduce the value of those weapons in providing extended deterrence guarantees.

As stated in the introduction, America needs to balance its competing desires to control these weapons due to the prospect of proliferation; to reduce its stockpile in accordance with its disarmament commitments under the Nuclear Nonproliferation Treaty; and to abide by its responsibilities to maintain a nuclear umbrella for extended deterrence over its European allies. Most European states, by contrast, are non-nuclear at heart, and would prefer to allow the DCA mission to wither away rather than find new missions or new rationales for these weapons.

²⁷⁶ Donald Rumsfeld, quoted in Meier, p. 40.

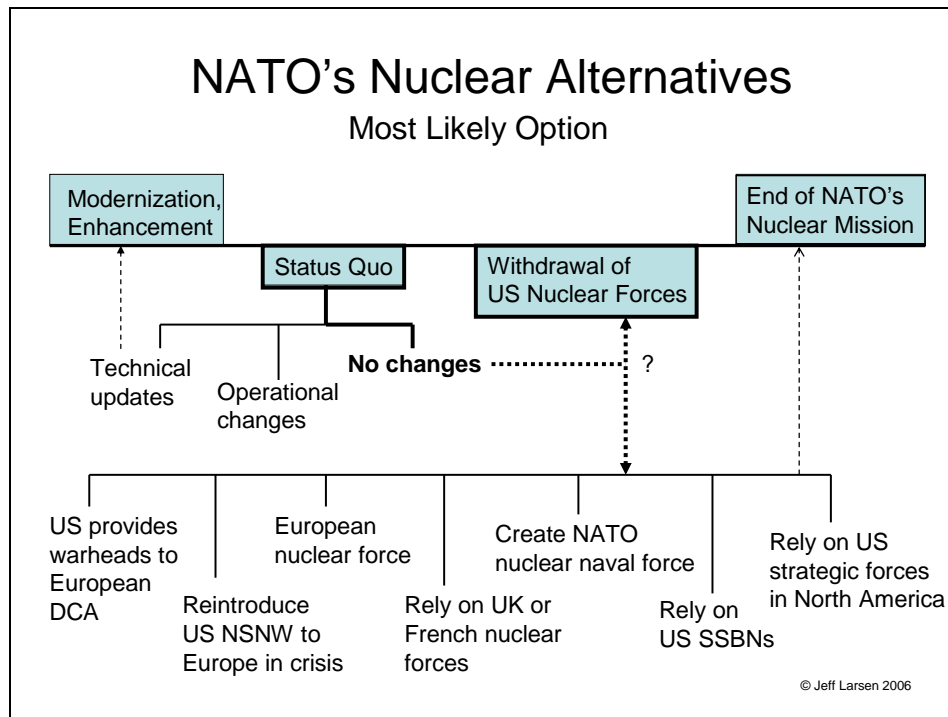


Figure 12: Most Likely Future for NATO's NSNW

The conclusion of this study is that, unless current trends are altered, nuclear weapons may not have many years left before they are removed from NATO Europe. The combined effect of nuclear weariness on the part of the host nations, the lack of interest in the mission by the U.S. Air Force, and the unwillingness of the European DCA states to seriously consider a future for these weapons, or to base fighter aircraft acquisition decisions on such a future, may combine synergistically into a situation where all sides of the debate come to the conclusion that it is just easier to remove the remaining U.S. warheads than it is to try to maintain this capability.

Why is the Alliance choosing to preserve any nuclear capability at all? Because change is disruptive. As a senior U.S. government official said, "A non-nuclear future is a likely, if unintended, consequence of these trends. And such a future is in America's best interest."²⁷⁷ While the Alliance may choose to maintain a nuclear deterrent strategy, it will more likely rely on some form of off-shore nuclear force, belonging to the United States, Great Britain, or possibly even France.

But the end of NATO's nuclear capabilities is not foreordained. The allies could decide that any one of the potential reversing factors identified above is more important than allowing the current situation to continue to drift toward a non-nuclear future. A nuclear Iran which

²⁷⁷ Interview in Washington, January 2006.

threatens the Alliance, for example, could change this thesis. All it will take is political will and the consensus of the member states that maintaining European-based non-strategic nuclear capabilities is critical to the long-term health of the Alliance, and to the security of Europe and all the allies. If NATO can make that determination, we may yet see another generation of nuclear burden sharing within the Alliance.

Selected Bibliography

- Abate, Marcey, Sandia National Laboratories, "The Future Stockpile," briefing to Strategic Concepts Roundtable, Colorado Springs, CO, 14 September 2005.
- Alexander, Brian and Alistair Millar, *Tactical Nuclear Weapons* (Dulles, VA: Brassey's, 2003).
- Allison, Graham, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Henry Holt, 2004).
- Arbman, Gunnar and Charles Thornton, *Russia's Tactical Nuclear Weapons*, FOI Reports in 2 parts (Stockholm: Swedish Defence Research Agency, November 2003 and February 2005).
- Arkin, William M., "Secret Plan Outlines the Unthinkable," *Los Angeles Times*, 9 March 2002.
- "Bagehot: A Ticking Bomb," *The Economist*, 18 March 2006, p. 34.
- Booth, Ken and Frank Barnaby, eds., *The Future of Britain's Nuclear Weapons: Experts Reframe the Debate*, Current Decisions Report, Oxford Research Group, March 2006.
- Brooks, Linton, "The Future of the U.S. Nuclear Weapons Stockpile," Arms Control Association Panel Discussion, 25 January 2006.
- _____, "Trinity and Beyond," presentation to the National Academy of Sciences Symposium on "60th Anniversary of Trinity," 14 July 2005, reprinted in "Nuclear Weapons Still Key to U.S. Security, Energy's Brooks Says," Project on Nuclear Issues, 19 July 2005, at www.poni-csis.org/news/article.asp?ARTICLE_ID=301&F_CATEGORY_ID=7
- Bunn, George and Christopher F. Chyba, eds., *U.S. Nuclear Weapons Policy: Confronting Today's Threats* (Washington: Brookings Institution, 2006).
- Campbell, Kurt M., Robert Einhorn, and Mitchell Reiss, eds. *Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington: Brookings Institution, 1994).
- Cartwright, James E., "Statement of General James E. Cartwright, USMC, Commander, United States Strategic Command, Before the Senate Armed Services Committee, Strategic Forces Subcommittee, on Strategic Forces and Nuclear issues in Review of the Defense Authorization Request for Fiscal Year 2006," 4 April 2005.
- Chirac, Jacques, "Speech by Jacques Chirac, President of the French Republic, During his Visit to the Strategic Forces," 19 January 2006, Internet.
- Cimbala, Stephen J., ed., *Deterrence and Nuclear Proliferation in the Twenty-First Century* (Westport, CT: Praeger, 2001)
- Cirincione, Joseph, Jon. B. Wolfsthal, and Miriam Rajkumar, *Deadly Arsenal: Nuclear, Biological, and Chemical Threats*, 2nd ed. (Washington, DC: Carnegie Endowment, 2005)
- Clarke, Michael, "Does My Bomb Look Big in This? Britain's Nuclear Choices After Trident," *International Affairs* vol. 80, no. 1 (2004), pp. 49-62.

- Croddy, Eric A., James J. Wirtz, and Jeffrey A. Larsen, eds., *Weapons of Mass Destruction: An Encyclopedia of Worldwide History, Technology, and Policy, Volume 2: Nuclear Weapons* (Santa Barbara, CA: ABC Clio, 2005)
- Daalder, Ivo H. and James M. Lindsay, "A New Agenda for Nuclear Weapons," Policy Brief No. 94, Brookings Institution, February 2002.
- D'Agostino, Thomas P., "Statement of Thomas P. D'Agostino, Deputy Administrator for Defense Programs, National Nuclear Security Administration, Before the House Armed Services Committee, Subcommittee on Strategic Forces," 5 April 2006.
- DeGroot, Gerard J., *The Bomb: A Life* (Cambridge, MA: Harvard University Press, 2004).
- Deutch, John, "A Nuclear Posture for Today," *Foreign Affairs*, January/February 2005, pp. 49-60.
- Drell, Sidney D. and James E. Goodby, *What Are Nuclear Weapons For? Recommendations for Restructuring U.S. Strategic Nuclear Forces* (Washington: Arms Control Association, April 2005).
- Dunn, Lewis, Michael May, Alexander Pikayev, Brad Roberts, Bruno Tertrais, Frank Umbach, Michael Wheeler, and Jon Wolfstahl, *Nuclear Issues in the Post-September 11 Era*, FRS Report No. 30 (Paris: Foundation pour la Recherche Stratégique, March 2003)
- "European Security Policy, Collective Defence, and Nuclear Deterrence," Assembly Fact Sheet No. 2, Assembly of the Western European Union, 1 March 2006.
- Fearey, Bryan L, Paul C. White, John St. Ledger, and John D. Immele, "An Analysis of Reduced Collateral Damage Nuclear Weapons," *Comparative Strategy*, vol. 22 (2003), pp. 305-324.
- Fetter, Steve and Charles L. Glaser, "Critiquing the NPR's New Nuclear Missions," *Nuclear Transformation: The New U.S. Nuclear Doctrine*, James J. Wirtz and Jeffrey A. Larsen, eds. (New York: Palgrave Macmillan, 2005).
- Flournoy, Michele A. and Clark A. Murdock, *Revitalizing the U.S. Nuclear Deterrent*, CSIS Report (Washington, DC: Center for Strategic and International Studies, July 2002)
- Freedman, Lawrence, "Deterrence: A Reply," *The Journal of Strategic Studies*, vol. 28, no. 5 (October 2005), pp. 789-801.
- Generous, Kevin, "Nuclear Weapons and U.S.-Russian Relations Beyond the Moscow Treaty," briefing prepared for the Strategic Concepts Roundtable, Colorado Springs, CO, 14 September 2005.
- Gordon, John A., "Statement of John A. Gordon, Under Secretary for Nuclear Security and Administrator, National Nuclear Security Administration, U.S. Department of Energy, Before the Committee on Armed Services, U.S. Senate," 14 February 2002.
- Halvorson, Thomas E., *The Last Great Nuclear Debate: NATO and Short-Range Nuclear Weapons in the 1980s* (Basingstoke, UK: Macmillan, 1995).
- Irvine, Robert, "The Role of Nuclear Weapons in NATO's Strategy," unpublished presentation to the Strategic Concepts Roundtable, Colorado Springs, CO, 14 September 2005.
- "Is There a Role for Nuclear Weapons Today?" *Arms Control Today*, July/August 2005, pp. 6-12.

“Issue Brief: Tactical Nuclear Weapons,” Nuclear Threat Initiative, at www.nti.org/e_research/e3_10a.html.

Joffe, Josef, “Keynote Address: The Future of Transatlantic Security Relations,” in *The Future of Transatlantic Security Relations: Colloquium Report*, Richard A. Chilcoat, Joseph R. Cerami, and Patrick A. Baetjer, eds. (Carlisle, PA: Strategic Studies Institute, September 2006), pp. 31-40.

Johnson, Rebecca, “News in Review: Chirac Reasserts French Nuclear Weapons Policy,” *Disarmament Diplomacy*, no. 82 (Spring 2006), at www.acronym.org.uk/dd/dd82/82chirac.htm.

Johnson, Rebecca, Nicola Butler, and Stephen Pullinger, *Worse Than Irrelevant? British Nuclear Weapons in the 21st Century* (London: Acronym Institute, 2006).

Joint Publication 3-12, *Doctrine for Joint Nuclear Operations* [Final Coordination (2) version], 15 March 2005.

Kristensen, Hans M., “Nuclear Mission Creep: The Impact of Weapons of Mass Destruction Proliferation on U.S. Nuclear Policy and Planning,” presentation to the Program on Science and Global Security, Princeton University, NJ, May 11, 2005.

_____, “U.S. Nuclear Planning after the 2001 Nuclear Posture Review,” presentation to the Center for International Security Studies at Maryland, University of Maryland, 21 October 2004.

_____, *U.S. Nuclear Weapons in Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning* (Washington, DC: Natural Resources Defense Council, February 2005).

Kunsman, David M. and Douglas B. Lawson, *A Primer on U.S. Strategic Nuclear Policy*, Sandia Report SAND2001-0053 (Albuquerque, NM: Sandia National Laboratories, January 2001)

Larsen, Jeffrey A., “Is there a Future for Non-Strategic Nuclear Weapons?” Paper prepared for DTRA/ASCO Alternative Nuclear Futures Project, August 2005; published under the same title in *Defence Studies*, vol. 6, no. 1 (March 2006), pp. 52-72.

_____, “Tactical Nuclear Weapons,” in *Weapons of Mass Destruction: An Encyclopedia of Global Policy, History, and Technology*, Eric Croddy, James Wirtz, and Jeffrey Larsen, eds. (Santa Barbara: ABC Clio, 2005)

_____, *The Politics of NATO Short-Range Nuclear Modernization 1983-1990: The Follow-on to Lance Missile Decision*, Ph.D. Dissertation (Princeton, NJ: Princeton University, June 1991)

_____ and Kurt J. Klingenberger, eds., *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities* (Colorado Springs, CO: USAF Institute for National Security Studies, July 2000)

_____ and Patrick J. Garrity, “The Future of Nuclear Weapons in Europe: Workshop Summary,” CNSS Report No. 12 (Los Alamos, NM: Center for National Security Studies, Los Alamos National Laboratory, December 1991)

Lebow, Richard Ned, “Deterrence: Then and Now,” *The Journal of Strategic Studies*, vol. 28, no. 5 (October 2005), pp. 767-773.

- Lieber, Keir and Daryl Press, "The Rise of U.S. Nuclear Primacy," *Foreign Affairs*, March/April 2006, pp. 42-54.
- Maaranen, Steve, "A Responsive New Triad Infrastructure," in *Nuclear Transformation: The New U.S. Nuclear Doctrine*, James J. Wirtz and Jeffrey A. Larsen, eds. (New York: Palgrave Macmillan, 2005).
- May, Michael and Zachary Haldeman, "The Effectiveness of Nuclear Weapons Against Buried Biological Agents," *Science and Global Security*, vol. 12, 1-2 (2004)
- Medalia, Jonathan, "Bunker Busters: Sources of Confusion in the Robust Nuclear Earth Penetrator Debate," CRS Report for Congress RL32599, 22 September 2004.
- _____, "Nuclear Weapons: The Reliable Replacement Warhead Program," CRS Report for Congress, RL32929, 24 May 2005.
- Meier, Oliver, "News Analysis: An End to U.S. Tactical Nuclear Weapons in Europe?" *Arms Control Today*, July 2006, pp. 37-40.
- Millar, Alistair and Brian Alexander, *Uncovered Nukes: Arms Control and the Challenge of Tactical Nuclear Weapons* (Washington: Fourth Freedom Forum, 2001).
- Miller, Timothy D. and Jeffrey A. Larsen, "Dealing with Russia's Tactical Nuclear Arsenal: Cash for Kilotons," *Naval War College Review*, Spring 2004.
- Morgan, Patrick M., "Taking the Long View of Deterrence," *The Journal of Strategic Studies*, vol. 28, no. 5 (October 2005), pp. 751-763.
- NATO/OTAN Handbook* (Brussels: NATO Office of Information and Press, 2001).
- NATO/OTAN Nuclear Fact Sheets* (Brussels: NATO Graphics Studio, 2005).
- Nolan, Janne E., "Preparing for the 2001 Nuclear Posture Review," *Arms Control Today*, November 2000.
- "Non-Strategic Nuclear Weapons: Do They Still Matter?" paper prepared by SAIC for AF/XOS-PI, 30 April 2005.
- Norris, Robert S. and Hans M. Kristensen, "NRDC Nuclear Notebook: British Nuclear Forces, 2005," *Bulletin of the Atomic Scientists*, November/December 2005, pp. 77-79.
- _____, "NRDC Nuclear Notebook: Chinese Nuclear Forces, 2006," *Bulletin of the Atomic Scientists*, May/June 2006, pp. 60-63.
- _____, "NRDC Nuclear Notebook: French Nuclear Forces, 2005," *Bulletin of the Atomic Scientists*, July/August 2005, pp. 73-75.
- _____, "NRDC Nuclear Notebook: Russian Nuclear Forces, 2006," *Bulletin of the Atomic Scientists*, March/April 2006, pp. 64-67.
- _____, "NRDC Nuclear Notebook: U.S. Nuclear Weapons in Europe, 1954-2004," *Bulletin of the Atomic Scientists*, November/December 2004, pp. 76-77
- _____, "NRDC Nuclear Notebook: U.S. Nuclear Forces 2006," *Bulletin of the Atomic Scientists*, January/February 2006, pp. 68-71

- _____, “NRDC Nuclear Notebook: U.S. Nuclear Reductions,” *Bulletin of the Atomic Scientists*, September/October 2004, pp. 70-71
- Norris, Robert S., Hans M. Kristensen, and Christopher E. Paine, *Nuclear Insecurity: A Critique of the Bush Administration’s Nuclear Weapons Policies* (Washington, DC: Natural Resources Defense Council, September 2004).
- “Nuclear Exchange: Does Washington Really Have (or Want) Nuclear Primacy?” *Foreign Affairs*, September/October 2006, pp. 149-157.
- Nuclear Posture Review* (Washington, DC: The White House, January 2002), excerpts found at “Special Briefing on the Nuclear Posture Review,” J.D. Crouch, 9 January 2002, www.defenselink.mil/news/Jan2002/t01092002_t0109npr.html.
- O’Brien, K. Henry, Bryan L. Fearey, Michael R. Sjulín, and Greg A. Thomas, “Sustaining the Nuclear Enterprise—A New Approach,” paper prepared jointly for Lawrence Livermore, Los Alamos, and Sandia National Laboratories, UCRL-AR-212442/LAUR-05-3830/SAND2005-3384, 20 May 2005.
- Oelrich, Ivan. “Missions for Nuclear Weapons after the Cold War,” FAS Occasional Paper No. 3 (Washington, DC: Federation of American Scientists, January 2005).
- Oppenheimer, Andy, “Mini-Nukes: Boom or Bust?” *Bulletin of the Atomic Scientists*, September/October 2004, pp. 12-14.
- Payne, Keith B., “Bush Administration Strategic Policy: A Reality Check,” *The Journal of Strategic Studies*, vol. 28, no. 5 (October 2005), pp. 775-787.
- _____, “The Nuclear Posture Review: Setting the Record Straight,” *The Washington Quarterly*, Summer 2005, pp. 169-186.
- Pilat, Joseph F., “The New Triad,” in *Nuclear Transformation: The New U.S. Nuclear Doctrine* James J. Wirtz and Jeffrey A. Larsen, eds. (New York: Palgrave Macmillan, 2005).
- Polser, Brian G., “Theater Nuclear Weapons in Europe: The Contemporary Debate,” MA thesis, Naval Postgraduate School, Monterey, CA, September 2004.
- Potter, William C., Nikolai Sokov, Harald Müller, and Annette Schaper, *Tactical Nuclear Weapons: Options for Control* (New York: United Nations Institute for Disarmament Research, December 2000).
- Preble, Christopher, “Joint Strike Fighter: Can a Multiservice Fighter Program Succeed?” *Policy Analysis* No. 460, The CATO Institute, 5 December 2002.
- Project on Nuclear Issues, *The Future Security Environment and the Role of U.S. Nuclear Weapons in the Twenty First Century* (Washington: CSIS, 2005).
- “Public Diplomacy Paper on NATO’s Nuclear Policy and Posture,” Nuclear Policy Directorate, HQ NATO International Staff, June 2002.
- Quadrennial Defense Review Report* (Washington: Office of the Secretary of Defense, 6 February 2006).
- Quinlan, Michael, “The Future of United Kingdom Nuclear Weapons: Shaping the Debate,” *International Affairs*, vol. 82 (2006), pp. 627-637.

- Rationale and Requirements for U.S. Nuclear Forces and Arms Control: Volume 1, Executive Report* (Washington: National Institute for Public Policy, 2001).
- Report of the Defense Science Board Task Force on Future Strike Forces* (Washington: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, February 2004).
- Report of the Defense Science Board Task Force on Nuclear Weapon Effects Test, Evaluation, and Simulation* (Washington: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, April 2005).
- Saveliev, Alexander G., "Implementing the Nuclear Posture Review: The Impact on Russia," in *Nuclear Transformation: The New U.S. Nuclear Doctrine*, James J. Wirtz, and Jeffrey A. Larsen, eds. (New York: Palgrave Macmillan, 2005).
- Schneider, Mark, "The Nuclear Forces and Doctrine of the Russian Federation," Publication No. 3, United States Nuclear Forum (Washington, DC: National Institute Press, 2006).
- Smith, Martin A., "To Neither Use Them Nor Lose Them: NATO and Nuclear Weapons Since the Cold War," *Contemporary Security Policy*, vol. 25, no. 3 (December 2004), pp. 545-555.
- Tertrais, Bruno, "A Fragile Consensus," *The National Interest*, no. 83 (Spring 2006), pp. 31-34.
- _____, "France and Nuclear Deterrence," paper presented to the House of Commons Defence Committee, 17 February 2006.
- _____, *Nuclear Policies in Europe*, Adelphi Paper 327 (London: International Institute for Strategic Studies, March 1999).
- Watts, Barry D., "Moving Forward on Long-Range Strike," Center for Strategic and Budgetary Assessments, 27 September 2004.
- "What Comes After START? U.S., Russia Slated to Kick Off Wide-Ranging Security Talks Next Month," *Inside the Pentagon*, 17 August 2006.
- Wirtz, James J. and Jeffrey A. Larsen, eds., *Nuclear Transformation: The New U.S. Nuclear Doctrine* (New York: Palgrave Macmillan, 2005).
- Woolf, Amy F., "Conventional Warheads for Long-Range Ballistic Missiles: Background and Issues for Congress," CRS Report for Congress, RL33067, 6 September 2005.
- _____, "Nonstrategic Nuclear Weapons," CRS Report for Congress, RL32572, 9 September 2004.
- _____, "U.S. Nuclear Weapons: Changes in Policy and Force Structure," CRS Report for Congress, RL31623, 27 January 2006.
- Yost, David S., "France's Evolving Nuclear Strategy," *Survival*, Autumn 2005, pp. 117-146.
- _____, "France's New Nuclear Strategy," unpublished paper, March 2006.
- _____, "France's New Nuclear Doctrine," *International Affairs*, July 2006.
- _____, "The NATO Allies," in James J. Wirtz and Jeffrey A. Larsen, eds., *Nuclear Transformation: The New U.S. Nuclear Doctrine* (New York: Palgrave Macmillan, 2005).
- _____, *NATO Transformed* (Washington: U.S. Institute of Peace Press, 1998).

_____, “Origins of the 1991 Decisions on the U.S. Nuclear Posture in NATO Europe,” unpublished paper, 12 September 2005.

_____, “Russia’s Non-Strategic Nuclear Forces,” *International Affairs*, vol. 77, no. 3 (2001), pp. 531-551.

_____, “Russian Non-Strategic Nuclear Weapons and Arms Control,” in *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities*, Jeffrey A. Larsen and Kurt J. Klingenberger, eds. (Colorado Springs: USAF Institute for National Security Studies, 2001), pp. 119-157.

_____, *The U.S. and Nuclear Deterrence in Europe*, Adelphi Paper 326 (London: International Institute for Strategic Studies, March 1999).

About the Author

Jeffrey A. Larsen is NATO's 2005-06 Manfred Wörner Fellow. A Senior Scientist with Science Applications International Corporation (SAIC) in Colorado Springs, CO, he is also president of Larsen Consulting Group, an adjunct professor of international studies at the University of Denver, and a research fellow with the U.S. Navy Center for Contemporary Conflict, the U.S. Air Force Counterproliferation Center, and the Air Force Institute for National Security Studies. A retired Lt. Colonel, he holds a Ph.D. in politics from Princeton University (1991), an M.A. in international relations from Princeton, an M.A. in national security affairs and European studies from the Naval Postgraduate School, and a B.S. in Soviet Area Studies from the US Air Force Academy. He has held a Fulbright Research Fellowship, and has twice won SAIC's annual publication prize. Dr. Larsen has served as a command pilot, associate professor of political science at the Air Force Academy, first Director of the USAF Institute for National Security Studies, and senior editor of the USAF Chief of Staff's studies of Air Force lessons learned in the air campaigns over Kosovo, Afghanistan, and Iraq. He led the team that developed a strategic vision for U.S. Northern Command, wrote U.S. Space Command's theater strategy, supported Air Force Headquarters in arms control policy issues and the 2001 Nuclear Posture Review, and served as a consultant to Los Alamos National Laboratory. He speaks German and holds an FAA airline transport pilot rating.

Dr. Larsen is the author or editor of multiple journal articles, chapters, and books, including "The Future of Non-Strategic Nuclear Weapons," *World Defence Systems* (forthcoming 2006); "Is There a Future for Non-Strategic Nuclear Weapons?" *Defense Studies*, March 2006; *Nuclear Transformation: The New U.S. Nuclear Doctrine* (with Jim Wirtz, Palgrave, 2005), "National Security and Neo-Arms Control in the Bush Administration," *Disarmament Diplomacy*, Autumn 2005; *Historical Dictionary of Arms Control and Disarmament* (with Jim Smith, Scarecrow, 2005); *Weapons of Mass Destruction: An Encyclopedia of Worldwide Policy, Technology, and History* (with Jim Wirtz and Eric Croddy, 2 vols., ABC Clio, 2005), *Emerging Missile Challenges and Improving Active Defenses* (with Kerry Kartchner, Air University Press, 2004); "Dealing with Russian Tactical Nuclear Weapons: Cash for Kilotons" (with Tim Miller), *Naval War College Review*, Spring 2004; *U.S. Northern Command's Strategic Vision* (USNORTHCOM, September 2003); *Arms Control: Cooperative Security in a Changing Environment* (Lynne Rienner, 2002); *Rockets' Red Glare: Missile Defenses and the Future of World Politics* (with Jim Wirtz, Westview, 2001); *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities* (with Kurt Klingenberg, INSS, 2000); *Arms Control in the Asia-Pacific Region* (INSS, 1999); *Arms Control Toward the 21st Century* (with Greg Rattray, Lynne Rienner, 1996); and *The Future of Nuclear Weapons in Europe* (with Pat Garrity, Los Alamos National Laboratory, 1992).