

CHAPTER FOUR

Options for NATO Nuclear Sharing Arrangements

DR. KARL-HEINZ KAMP AND
MAJOR GENERAL ROBERTUS C.N. REMKES (USAF, RET.)

NATO'S EXTENDED DETERRENCE AND NUCLEAR SHARING

Since 1991, debates about NATO's nuclear weapons¹ in Europe have been largely confined to small expert circles. The emergence of nongovernmental and governmental support for working toward the vision of a nuclear weapons free world and last year's debate over the role of nuclear deterrence in crafting NATO's new Strategic Concept, with some NATO members doubting the wisdom of the continued deployment of U.S. nuclear weapons on European soil, has sparked a renewed debate on requirements of nuclear deterrence in the twenty-first century.

At the Lisbon Summit in November 2010, NATO confirmed that as long as there are nuclear weapons in the world, NATO will remain a nuclear Alliance, and that deterrence based on an appropriate mix of nuclear and conventional capabilities remains a core element of NATO's overall strategy. Although the question of whether NATO will remain a nuclear alliance is largely resolved, NATO continues to grapple with the subject of extended nuclear deterrence and how to harmonize

1. The term "NATO's nuclear weapons" is a misnomer. What is meant are U.S. nuclear weapons stationed in European NATO countries partly to be employed by aircraft owned by the host countries.

CHAPTER FOUR: KEY FINDINGS

- ▶ NATO's nuclear question, which is “*how to deter whom with what,*” is back on the agenda. All 28 NATO Allies agree there is a need to maintain nuclear deterrence and particularly “extended” nuclear deterrence, which means preserving the U.S. nuclear commitments for the European Allies.
- ▶ NATO's nuclear posture in Europe today—U.S. B-61 nuclear bombs to be delivered by U.S. and Allied dual-capable aircraft (DCA)—is a relic from the Cold War and disconnected from the security requirements of the twenty-first century. These weapons were once foreseen to threaten targets in Eastern Europe—West of the Soviet Union. For today's and tomorrow's potential political and military challenges to NATO, they seem hardly suited.
- ▶ The mismatch between NATO's stated commitment to remain a nuclear Alliance and its present nuclear posture can neither be solved by a modernization of the nuclear hardware—U.S. B-61 bombs and NATO DCA—nor by nuclear arms control agreements with Russia.
- ▶ Frequently used arguments that the nuclear “status quo” should be maintained despite the conceptual weaknesses in order to serve political purposes, like being a means of escalation in a crisis or to be “placeholders” for future replacements should nuclear modernization become politically feasible, are flawed. The B-61 is not credible as an actionable threat no matter where it is stationed; thus, having the B-61 in Europe serves hardly any purpose as a political symbol of nuclear resolve. Instead, a credible extended nuclear deterrence for Europe can be provided by the U.S. strategic nuclear arsenal (as NATO's new Strategic Concept clearly states that the supreme security guarantee is provided by U.S. strategic nuclear forces).
- ▶ Moreover, the statement that the credibility of NATO's extended nuclear deterrence would necessarily require a physical U.S. nuclear presence on the European territory is contradicted by the situation in Asia. The United States has extended its nuclear umbrella over Japan, South Korea, and Australia for two decades without having stationed nuclear weapons on the soil of these countries. This is not to argue that the situation in Asia can be transferred at its face value to the deterrence context in Europe. Still it provides lessons for the question of what makes a nuclear commitment credible.
- ▶ It is not the physical stationing of U.S. nuclear weapons in Europe that will determine the future credibility of extended nuclear deterrence and the nuclear cohesion of the Atlantic Alliance. Much more important is credible nuclear sharing—the readiness of the United States to keep the Allies informed about nuclear issues and the willingness of the Allies to contribute to the common deterrence effort.
- ▶ NATO in the past had very elaborate sharing agreements focusing on four areas: (1) information sharing; (2) nuclear consultations; (3) common nuclear planning; and (4) common execution. These sharing agreements all stem from the Cold War and need to be adapted for existing and future security challenges. If NATO can further evolve the system of nuclear sharing, it will have a safer, more secure, and more credible extended nuclear deterrence without U.S. nuclear bombs being stationed in Europe.

NATO declares in its new Strategic Concept that it has no enemies; at the same time the Alliance calls for an “appropriate mix” of conventional and nuclear weapons—begging the question, “appropriate for what?”

the different views within the Alliance on how to implement NATO’s credo of remaining “a nuclear Alliance.”²

The current nuclear discourse is full of inconsistencies and paradoxes. President Obama’s support for a nuclear weapons free world (NFWF) in his Prague speech in April 2009 was frenetically acclaimed in most capitals of the world. At the same time, the Obama administration allocates enormous budgets for its military nuclear activities. France and the United Kingdom have agreed on a defense pact with a strong nuclear element that should last for at least half a century. Russia supports the proposal of a NFWF rhetorically but at the same time regards its nuclear weapons as compensation for its deteriorating conventional forces—suggesting the goal of a NFWF can hardly now be in Moscow’s interest. Despite the Alliance commitment in NATO’s new Strategic Concept “to the goal of creating the conditions for a world without nuclear weapons” and a similar commitment in UNSC Resolution 1887,³ France remains skeptical of the concept arguing, not without logic, that it is illusionary to believe that countries like Israel, India, Pakistan, Russia, or China really *want* to give up their nuclear weapons. Germany and others are opposing the nuclear weapons deployed on their soil but fail to answer the question of how to maintain nuclear deterrence, U.S. nuclear commitments, and Alliance cohesion without them. NATO declares in its new Strategic Concept that it has no enemies; at the same time the Alliance calls for an “appropriate mix” of conventional and nuclear weapons—begging the question, “appropriate for what?”

Each of these positions might have its merits. However, taken together, they present a contradictory picture of the future of nuclear weapons. Thus, a debate that brings the various elements of the deterrence problem together is urgently needed.

This analysis will focus on a few aspects of NATO’s nuclear question: Should U.S. nuclear weapons remain stationed in Europe and if they are withdrawn, how can NATO members continue to share nuclear responsibilities? How to sustain NATO’s proven principles of nuclear sharing, which means burden sharing of those countries under the American nuclear umbrella and information sharing of the U.S. with their nonnuclear Allies, without American nuclear weapons in Europe?



The logic of nuclear deterrence is to change the risk calculation of a potential aggressor by threatening unacceptable damage through nuclear retaliation. In that sense, a nuclear posture sends the political message to an opponent or potential attacker that they cannot expect any gain or benefit from their aggression being

2. See NATO, New Strategic Concept, “Active Engagement, Modern Defense,” (Brussels: NATO, November 2010), http://www.nato.int/cps/en/natolive/official_texts_68580.htm.

3. See United Nations Security Council Resolution 1887 (2009), <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/No9/523/74/PDF/No952374.pdf?OpenElement>.

sufficient to justify the nuclear devastation they will suffer on their own territory. Hence, it would be better for them not to attack in the first place. To make this political message credible, the use of nuclear weapons must be a plausible option. The popular statement that nuclear weapons are purely “political weapons” is not credible. Instead, they have to be militarily usable to fulfil a political effect—or more catchy: one has to be ready to use them in order not to be forced to use them.

NATO has always defined deterrence in the broader sense that the United States expanded their nuclear umbrella over the territory of their nonnuclear Allies. In this concept of “extended deterrence,” the United States took the commitment to retaliate with nuclear weapons not only in case of an attack on its own homeland but also in case of an aggression against other NATO members. Again, the signal was political—a potential opponent (the Soviet Union) could not hope to escape nuclear devastation by limiting their aggression only to parts of Europe. However, this concept entails some dilemmas. The nonnuclear countries cannot be sure whether the nuclear protector will really fulfil their commitments in the case of need, given that they also might suffer retaliation against their own territory. This dilemma was encapsulated in the famous question of whether or not the United States would risk San Francisco to save Cologne. There is no a-priori answer to this question, but for decades there was agreement in NATO that extended deterrence would be more credible if U.S. weapons were forward based in Europe. In that sense, they should not only send a message of resolve to an opponent but also a message of credibility of the U.S. commitments to the Allies.

Nuclear weapons in Europe during the East West conflict, albeit requested by the European Allies, led to another dilemma. Due to the short range of most of the weapons (artillery shells, missiles), they would mostly have detonated close to or even on the territory of the Allies had war broken out between East and West. Thus, countries under the American nuclear umbrella had a vested interest in nuclear relevant information from the United States: which types of weapons are stationed where, in which quantities, and why? Moreover, they tried to influence U.S. nuclear strategies and target plans for Europe, because this would immediately affect their own security.⁴ Last, most NATO members had a strong desire to be consulted should the U.S. contemplate the use of nuclear weapons in Europe in case of a crisis. In consequence, the Nuclear Planning Group (NPG) was founded in 1967 as a forum for consultation, information sharing, and common planning. Up to the end of the East-West conflict, the United States used the NPG to provide its Allies with a remarkable level of information and influence on its nuclear plans and posture in Europe.

The popular statement that nuclear weapons are purely “political weapons” is not credible. Instead, they have to be militarily usable to fulfill a political effect.

4. For instance, the Federal Republic of Germany in its ongoing hope for German unification had a strong interest that NATO nuclear weapons would not detonate in East Germany.

NATO'S INCONSISTENT NUCLEAR POSTURE

Force Posture

NATO's current nuclear posture consists primarily of air delivered nuclear bombs (Type B-61) stationed in Europe.⁵ Some of them are foreseen to be used by U.S. aircraft; for others the stationing countries provide the aircraft as a special form of sharing nuclear responsibilities.

The remaining B-61 bombs in Europe were part of an entire spectrum of nuclear weapons of different types and ranges (missiles, cruise missiles, artillery shells, mines) deployed in large numbers in many NATO countries. The key purposes of these weapons were political, namely deterrence, war prevention, and war termination in a Cold War context. To make this deterrence message credible, NATO needed a number of nuclear and nonnuclear options to react to any foreseeable contingency. Even if deterrence had failed and Soviet troops had launched an attack, NATO's nuclear forces were supposed to have a role within what strategists named a "Continuum of Deterrence." Using them as a form of deliberate escalation would send a sign of resolve that would convince the aggressor of their miscalculation and pressure them toward a ceasefire at the lowest possible level of destruction. Even in war, the purpose of nuclear weapons was not victory on the battlefield but the political goal of war termination.

In that sense, the B-61 bombs were one link in a long chain of nuclear forces, ranging from the intercontinental strategic systems in the United States to intermediate-range missiles (deployed in Europe but able to reach the Soviet homeland) and to short-range nuclear weapons to be targeted against attacking formations in the Warsaw Pact satellite states. This mix of types and ranges were meant to signal strategic flexibility and thereby alter the cost-benefit analysis of military planners in the Soviet Union who might contemplate military options against NATO. Moreover, the American weapons in Europe should reassure the European NATO Allies of the credibility of U.S. nuclear commitments. In turn, by being a natural target for Soviet nuclear attacks, they would symbolize the readiness of the Europeans to share the nuclear risks within the Atlantic Alliance.

The reasons for retaining a small air-delivered nuclear component deployed in Europe following President Bush's decision in September 1991 to withdraw all other nuclear weapons on European soil following the fall of the Berlin Wall and the demise of the Soviet Union were manifold: they were meant to deter a residual threat from the East, as the Soviet Union still existed but was in the process of dissolution. Moreover, bombs on aircraft were regarded as flexible, had enough range to reach Russian territory, allowed the Allies to participate in NATO's nuclear missions by providing the means of delivery and could, unlike missiles, up

5. During the 1974 Ministerial Meeting in Ottawa, the Alliance stated that the French and British nuclear forces would contribute to NATO's overall deterrence. This statement has been constantly repeated since then, including in the most recent Strategic Concept of November 2010.

to a point be called back in the case of a false alarm or a fundamental change in the situation. In the NATO jargon at that time, B-61 bombs delivered by fighter-bombers combined in the best possible way the requirements of flexibility, reliability, and survivability. There was also the political or psychological motive of retaining some nuclear capacities in Europe for the reasons of Alliance cohesion and continuity. If some weapons were to remain to avoid complete denuclearization (at least with regard to U.S. weapons in Europe), the bombs on aircraft seemed to be the best suited ones.

Today, 20 years later, the strategic situation in Europe has fundamentally changed. Since the fall of the Berlin Wall, NATO has enlarged by 12 countries and three NATO members have a common border with Russia. In classic terms of force comparisons, NATO’s conventional forces today are highly superior to the military capabilities of Russia. Moreover, NATO and Russia are engaged in an intense partnership, which might not be free of frictions but has permitted fruitful cooperation on various common concerns. All this does not exclude regional tensions or aggressive behavior by Moscow and the threat perceptions by Poland or the Baltic Countries, for example, cannot be simply dismissed—particularly as Russia remains one of the two largest nuclear powers in the world.

At the same time, NATO is now facing new threats, including terrorism, cyber threats, limited conflicts outside of Europe, and civil wars or violent action by nonstate actors, which can no longer be countered by nuclear deterrence. Thus, the power of the “nuclear” currency has lost much of its value, not only in a European context but also far beyond.

Strike Planning

The day-to-day nuclear mission in NATO is extremely demanding in peacetime. This complicated enterprise requires sophisticated planning, extensive preparation, intricate procedures, finely tuned equipment, and reliable people in all levels of the effort. The real challenge for NATO’s DCA is successfully accomplishing a nuclear strike. Once the decision to carry out a nuclear strike is made, such a mission is fraught with many challenges. The sequence of events for such a mission would look something like this:

- ▶ **RECEIVE ORDERS TO PREPARE FOR A NUCLEAR STRIKE MISSION.** The bases involved would immediately increase their security measures and cordon off the strike aircraft and spares. The maintenance and flight crews would be sequestered to review procedures and begin the process of preparing the aircraft and weapons. U.S. personnel would pull the nuclear weapons out of their vaults and prepare them for the aircraft. All of this preparatory activity is difficult to hide from the public; NATO’s intent to go nuclear would be obvious during this period.
- ▶ **AUTHORITY TO CONDUCT THE MISSION.** Flight and maintenance crews would proceed to the loaded aircraft and await authorization from the U.S.

The day-to-day nuclear mission in NATO is extremely demanding in peacetime. This complicated enterprise requires sophisticated planning, extensive preparation, intricate procedures, finely tuned equipment, and reliable people in all levels of the effort.

It is essentially a mission of “seven consecutive miracles.”

President to enable the weapons for the mission. At the designated time, the strike crews would take off for their assigned targets.

- ▶ **COMMAND, CONTROL, AND AIR REFUELING.** The only imaginable targets would have to be outside of European airspace, which would put them at ranges that would require air refueling for the strike. In addition, command and control would need to be available up to a certain “point of no return,” when the strike aircraft fly out of radio range. All of this activity is hard to mask, compromising success even further.
- ▶ **THE NUCLEAR STRIKE.** NSNW of any yield still require accurate delivery. What’s more, B-61s are not “smart” weapons; they are simple gravity bombs. Crews must be able to identify the target using a combination of eyesight, infra-red imaging, and/or radar imaging. The delivery becomes even more complicated when the target is masked by smoke or clouds, is decoyed and heavily defended.
- ▶ **THE RECOVERY.** Once the nuclear weapon is delivered on its target, the strike crew will recover to their home base or to an allied or friendly runway if available within the remaining range of the aircraft. Here again, command and control, and perhaps aerial refueling, will be important to a successful operation. Once an aircraft and its crew have been exposed to the radiation of a nuclear strike, proper handling and recovery are necessary to avoid exposing others.

This description of the strike mission underscores how difficult such a mission would be. It is essentially a mission of “seven consecutive miracles”: (1) surviving a first attack by an adversary; (2) receiving the authority from the President of the United States to arm the weapons and conduct such a mission; (3) take-off and proceeding to the target; (4) rejoining with a tanker and getting enough fuel to make it to the target; (5) surviving air and surface defenses along the way; (6) locating and correctly identifying the target; and, (7) dropping the weapon and it works as designed.

In sum, any attempt to use the B-61 will be challenged by the visibility of the many actions required to prepare the weapon and the crews for such an attack. The intended target nation of such an attack under the current planning scenarios will likely have many hours and even days to prepare its defenses and complicate matters for NATO target planners.

If NATO’s nuclear deterrence today has no longer to cope with the huge military force of an opposing empire and if instead a nuclear crisis is likely to emerge in East Asia or in the Middle East—both regions thousands of kilometers away from the former “Central Front”—then the core questions become: assuming that a severe crisis that requires a deterrence message from NATO materializes in one of these areas, is it plausible that NATO would agree to take a B-61 bomb from a storage vault in Europe, mount it under an allied aircraft and then fly it to the

crisis region in order to drop the bomb over the pre-defined target? Would NATO ever consider a mission that would imply a flight over thousands of kilometers with a nuclear freight, crossing NATO and non-NATO airspace, with the severe legal implications this entails, needing air refueling and requiring the nuclear aircraft to overcome the potential heavy air defenses of the target country? Would it not be much more plausible to have this nuclear task fulfilled by a U.S. strategic nuclear weapon like a cruise missile,⁶ a strategic bomber (B-52 or B2-A), or an intercontinental ballistic missile?

Given the above-mentioned insight that nuclear weapons have to be militarily usable (in a plausible manner) in order to have a political deterrence effect, the conceptual plausibility of NATO's nuclear bombs on European soil in today's security environment is close to nil. Thus, NATO's current nuclear posture does not match the political and military challenges ahead and thus cannot satisfy NATO's deterrence needs in a cohesive and credible manner. NATO should therefore either assess the option of adapting/changing its nuclear posture or develop concepts on how to preserve deterrence and nuclear sharing without stationing U.S. nuclear weapons in Europe.

OPTIONS FOR GETTING THE POSTURE RIGHT

Each of these options would be implemented consistent with domestic legislation and international agreements, including the Nuclear Non-Proliferation Treaty.

Option 1: Status Quo

To maintain the status quo, U.S. nuclear force deployments would remain in Europe and upgrades to NATO DCA would proceed in all basing countries as necessary. This option presupposes that no agreement is reached with Russia on reciprocity of reductions of NSNW or other confidence building measures.

The main argument in favor of this approach is that existing arrangements reflect a delicate balance of responsibilities, and that changes to these arrangements could risk Alliance unity. Most supporters of this option concede that U.S. NSNW deployed in Europe no longer serve a military purpose. But they are skeptical of intermediate "consolidation" options (see below), and argue that removing all U.S. nuclear weapons from Europe could be seen as signaling a step too far in the denuclearization of NATO security policy, especially at a time when Russia maintains large numbers of its own NSNW in Europe, and new nuclear-armed states could emerge on Europe's periphery.

6. Nuclear air launched cruise missiles, which have been around since 1982, have received a life extension program and will be operational until 2020.

NATO's current nuclear posture does not match the political and military challenges ahead and thus cannot satisfy NATO's deterrence needs in a cohesive and credible manner.

If NATO defaults to the status quo posture . . . it must do something to improve security of these weapons at existing nuclear storage sites, and to extend their service lives through costly life extension programs . . .

Those who oppose maintaining the status quo argue that the maintenance of nuclear forces for which there is no longer a viable military role is inconsistent with NATO member states' commitment to contribute to reducing the salience of nuclear weapons in security policy. They are concerned with continuing risks of theft or accident associated with these forward deployed weapons, together with the financial costs that would be incurred in an effort to limit these risks. Given the opposition in some NATO nations to their deployment, maintenance of the status quo is untenable in the long run, and poses short-term risks of its own to Alliance unity.

Although this is the current arrangement, it should not be confused with a "Do Nothing" option. If NATO defaults to the status quo posture through its own inaction or inability to overcome the political misgivings of some of its partners, it must do something to improve security of these weapons at existing nuclear storage sites, and to extend their service lives through costly life extension programs, or in the case of the DCA, to procure new nuclear capable aircraft.

Option 2: Replace B-61 with a More Modern, Capable Bomb or Cruise Missile

If the B-61 nuclear weapons currently deployed are not in line with deterrence requirements, a theoretical option would be to replace them with state of the art technology. Modern, precision-guided standoff weapons or nuclear cruise missiles could be launched way ahead of the targets and would not require the aircraft to overcome the opponent's air defense systems. Indeed, the modernization of NATO's nuclear posture was intensively discussed in the late 1980s until the demise of the Soviet Union in 1991.

Today, however, any notion of forward deploying more modern nuclear weapons in Europe, regardless of the technical feasibility, is politically impossible. None of the governments in any of the current hosting countries would be willing to risk a public debate on nuclear deployments at a time when no immediate nuclear threat could be brought forward as a justification. Sophisticated arguments on conceptual deterrence requirements or nuclear sharing agreements would hardly suffice to convince the public in any of the old NATO member states of the wisdom of such a step. Moreover, beyond the weapon itself, countries would also need to provide the delivery capacity. Some of the new NATO members in Central and Eastern Europe might theoretically be willing to host modern U.S. nuclear weapons on their soil, but NATO's promise of the so called "Three Nos" precludes such a possibility.⁷ In sum, unless the strategic landscape in Europe

7. In 1996, NATO's foreign ministers declared that the Alliance had no intention, no reason, no plan to station nuclear forces on the territory of new members. See Warren Christopher, U.S. Secretary of State, Press Conference, December 10, 1996, http://www.nato.int/cps/en/natolive/opinions_25112.htm?selectedLocale=en.

dramatically worsens, the option of nuclear modernization is only a theoretical one that de facto does not exist.

Option 3: Consolidation of U.S. Non-Strategic Nuclear Weapons (NSNW) to Two Sites or One with Fewer Bombs and Fewer European DCA

1. CONSOLIDATION (“DOWN TO TWO”). This option would consolidate all of the remaining B-61s in Europe into two sites. This option would decrease the cost of storage considerably because it eliminates the requirement for the other sites; this would yield a savings in the hundreds of millions of dollars. Some of these cost savings would be applied to security upgrades for the remaining two sites. The immediate benefit would be realized in several ways. The first benefit is that operational focus would be improved for the remaining sites. Perimeter security could be provided by the participating nations; or, a multinational security force could be established with costs shared by a larger number of burden-sharing nations. The requirement for DCA would remain the same with those aircraft from participating NATO nations flying to the two remaining sites for exercises, training, and nuclear operations, if necessary.

2. CONSOLIDATION AND PARTIAL WITHDRAWAL (“DOWN TO ONE”). This option withdraws most, but not all of the B-61s from Europe. This option would consolidate the weapons to a single nuclear weapons storage site. Here again, operational focus would be further improved; the burden-sharing arrangement could be continued for those DCA nations that choose to participate. Again, costs are reduced considerably, with some of the savings going toward important security upgrades.

This option could also include the notion of a multinational DCA wing that would conduct nuclear training exercises in peacetime and execute nuclear strike during wartime; this idea is similar to the current arrangement for NATO AWACS or the C-17 Strategic Airlift Capability (SAC). Weapons and security personnel from the participating nations would remain at this location permanently to secure and maintain the nuclear stockpile. At other times of the year, the flight crews, maintenance personnel, and aircraft would return to their respective nations for conventional training and normal operations. Leadership roles would be shared among the participants and could rotate every other year or so.

Because this option would result in a net decrease in the number of U.S. NSNW stationed in Europe, it could be linked to expectations for a corresponding Russian withdrawal. Although complicated, this withdrawal would best be linked in terms of percentages, with the United States reducing its forces by 80 to 90 percent and Russia doing the same.

The most obvious way to reduce the weapons in Europe would be via arms control with Russia, which stores a disproportionately higher amount of what

Unless the strategic landscape in Europe dramatically worsens, the option of nuclear modernization is only a theoretical one that de facto does not exist.

Although reductions would certainly help to reduce potentially insecure Russian nuclear warheads, they would hardly solve NATO's conceptual problem of the role of the remaining U.S. nuclear weapons.

Moscow calls “tactical nuclear weapons” in its European territories.⁸ The major problem that renders nuclear arms control in Europe a highly unlikely scenario is the fact that Russia does not seem truly interested in reducing its NSNW. Instead, Moscow has assigned them as a replacement for the conventional capabilities that it now lacks. Shrinking defense budgets over many years, corruption, and failed military reforms have reduced the efficiency of the Russian armed forces dramatically. For the foreseeable future, nuclear forces are regarded as compensation for absent conventional strength.⁹ Scrapping its nuclear weapons in Europe would therefore counter Russia's need to balance NATO's conventional superiority. At the same time NATO has maneuvered itself into a difficult situation because the new Strategic Concept has linked any future decision on reducing NATO's nuclear weapons to parallel measures taken by Moscow to reduce the vast amount of Russian NSNW in Europe.

Not to be misunderstood—nuclear talks with Russia might help to increase mutual transparency on numbers, types, and locations of nuclear weapons and might thereby help to alleviate reciprocal threat perceptions. Taken in isolation, however, they are not likely to lead to significantly lower amounts of nuclear forces in Europe absent progress on other threats perceived by Russia (such as conventional force imbalance).

Even if Russia agrees on a step-by-step approach of reducing its NSNW, the success would only be partial. Although reductions would certainly help to reduce potentially insecure Russian nuclear warheads, they would hardly solve NATO's conceptual problem of the role of the remaining U.S. nuclear weapons. And a consolidation of U.S. nuclear weapons in Europe—be it bombs, aircraft, or nuclear—will not solve NATO's fundamental problem of sustaining a nuclear posture, which does not match today's deterrence requirements.

Option 4: A True NATO Nuclear Force

Another option that is occasionally presented as a way to deal with at least some difficulties of NATO's current nuclear structure would be to create a true NATO nuclear force (including the strategic forces of the United States, United Kingdom, and France). Instead of the bilateral arrangements between the United

8. NATO's new Strategic Concept calls in a slightly cryptic way for nuclear arms control with Russia stating that NATO will seek Russian agreement to relocate their weapons away from the territory of NATO members. See NATO, New Strategic Concept, “Active Engagement, Modern Defense,” (Brussels: NATO, November 2010), Paragraph 26, http://www.nato.int/cps/en/natolive/official_texts_68580.htm.

9. The two Russian maneuvers, Zapad 09 and Layoda 09, which were sharply criticized by NATO's Eastern members for exercising attack options, actually displayed the shortcomings of the Russian forces (no all weather capabilities, no network-centric warfare, no major conventional operations). Some observers conclude that due to these weaknesses, Russia might be inclined to refer to nuclear weapons even in regional conflicts.

States, providing the warheads, and European Allies, providing the stationing ground and the means of delivery, there could be a wing of NATO aircraft under the command of the Supreme Allied Commander Europe. Comparable to NATO’s Airborne Warning and Control System (AWACS), the nuclear capable aircraft would be manned by personnel from many NATO countries. In such a system, the nuclear burden would be shared by as many shoulders as possible and all member states could visibly contribute to the common deterrence effort.

Apart from the political signals of burden sharing and mutual commitments, however, the benefit of such a model would be very limited. Leaving aside the technical question of the choice of the aircraft and the nuclear certification by the United States as the provider of the nuclear weapons, which could lead to serious disputes, many other key problems would not be tackled. Where should the aircraft and the American nuclear weapons be stationed—in only one country or widely dispersed? Which country would volunteer to host nuclear weapons while others get rid of them? Furthermore, regardless of the stationing mode, the issue of aircraft having to cross long distances and enter heavily defended airspace to drop the nuclear bombs would remain unsolved.¹⁰ Hence, the credibility of the deterrence message would be as doubtful as it is under the present regime. The idea of a NATO nuclear air wing seems more an intellectual exercise than a politically realistic or practical option.

The idea of a NATO nuclear air wing seems more an intellectual exercise than a politically realistic or practical option.

Option 5: Full Withdrawal, Return If and When Required

This option withdraws all remaining B-61s from Europe to the United States with an open caveat for their return in the event they are needed. This option does not eliminate the need for a nuclear storage site in Europe; such a site will need to be maintained in the event the weapons need to return.¹¹ The burden-sharing arrangement would continue as described in Option 3b “Partial Withdrawal” and the DCA responsibilities would continue for those nations that choose to participate. There are cost savings to be enjoyed because any upgrades to the weapons would now take place in the United States and avoid the necessity of a team traveling to Europe to do the upgrades. Although they would be stored in the United States, these B-61s would be earmarked for NATO use. NATO could deploy personnel to

10. NATO has so-called SEAD capabilities (Suppression of Enemy Air Defenses); however, it seems doubtful that NATO would risk a nuclear-armed aircraft to be shot down.

11. It is worth noting that the U.S. 2010 Nuclear Posture Review comes close to describing such a posture. According to the Review, the United States will: “Retain the capability to forward-deploy U.S. nuclear weapons on tactical fighter-bombers (in the future, the F-35 Joint Strike Fighter) and heavy bombers (the B-2 and B-52H), and will proceed with full scope life extension, including surety—safety, security, and use control—enhancements, for the B-61 nuclear bomb, which will be able to be carried by the F-35 and B-2. These decisions do not presume what NATO will decide about future deterrence requirements, but are intended to keep the Alliance’s options open and provide capabilities to support other U.S. commitments.”

If NATO's currently deployed nuclear forces seem inappropriate for the future deterrence requirements of the Alliance, and if neither the modernization nor the reduction of the arsenal is realistic or apt to solve NATO's deterrence problem, the option of a complete (and even possibly unilateral) withdrawal of these weapons has to be carefully assessed.

nuclear storage sites in the United States with the specified task of maintaining and securing those weapons earmarked for NATO. Here again, this option could be linked to a corresponding full withdrawal of Russian NSNW. If successful, this would be the first time since the 1950s that Europe has been without U.S. nuclear weapons on its soil.

Option 6: Nuclear Replacement

This option withdraws all B-61s from Europe and replaces this nuclear capability by alternate means. This option eliminates the nuclear storage sites in Europe along with the requirements for DCA. The alternate means can take on three forms: intercontinental ballistic missiles (ICBMs) earmarked for NATO; submarine launched ballistic missiles (SLBMs) earmarked for NATO; and/or, B-61s delivered by B-52s or B-2s. This option is similar to the arrangement provided for Australia, Japan, the Republic of Korea, and U.S. Allies in the Pacific, with one notable exception. Whereas Japan and Korea have limited visibility on the exact workings for this arrangement, NATO would continue to enjoy full partnership through the NPG. Each of these alternate concepts comes with certain challenges, but they are no more difficult than maintaining the current arrangements.

- ▶ **ICBMs.** Even though the United States would fund most of this option, some burden-sharing responsibilities could continue in several ways. Multinational ICBM crews composed of participating NATO forces and U.S. Air Force personnel would operate NATO-earmarked missile silos. The NPG would be consulted for targeting priorities and would be responsible for target folders. A combined U.S./NATO team would inspect personnel reliability, nuclear certification, and nuclear exercises.
- ▶ **SLBMs.** As above, the U.S. would fund most, if not all of this option. Multinational SLBM crews would be assigned tours aboard U.S. Navy nuclear submarines. The NPG and the combined U.S./NATO team would have the same responsibilities described in the ICBM option.
- ▶ **NUCLEAR BOMBERS.** This option would allow for NATO to share the nuclear burden financially and operationally. Multinational crews would train for this mission and be put on nuclear alert when required. These crews would have nuclear strike as their only mission and would never operate in a conventional role. NATO participation could also involve command and control roles, maintaining and securing the weapons storage areas, and nuclear-designated bombers.

Option 7: The Asian Model

If NATO's currently deployed nuclear forces seem inappropriate for the future deterrence requirements of the Alliance, and if neither the modernization nor the reduction of the arsenal is realistic or apt to solve NATO's deterrence problem, the option of a complete (and even possibly unilateral) withdrawal of these

weapons has to be carefully assessed. The weapons could either be removed to the United States to be kept in reserve (several B-61 bombs are already kept in this status) or they could be dismantled.

By doing so, the Alliance could eliminate not only the nuclear weapons themselves but also the very expensive infrastructure (nuclear capable aircraft, storage vaults, security systems, custodial teams, etc). Moreover, such a unilateral step by NATO could be presented to Moscow as an advance effort to encourage similar Russian steps on nuclear disarmament in Europe—which might or might not happen. Even if Moscow would not respond totally or even partially in kind (and indeed, the likelihood might be low) NATO would at least adjust the mismatch between its nuclear hardware and the deterrence needs.

This holds all the more true as the United States has a vast and modern nuclear arsenal at hand—strategic bombers, intercontinental missiles, nuclear submarines—to fulfill all the tasks of the NATO nuclear aircraft and beyond in a much more credible manner.

Moreover, NATO includes two other nuclear powers—the United Kingdom (whose nuclear forces are explicitly committed to supporting collective security through NATO for the Euro-Atlantic area) and France—with nuclear weapons postures that contribute to NATO’s overall deterrence, as noted most recently in the November Strategic Concept adopted by NATO. Any potential aggressor would have to count both U.K. and French nuclear forces into their cost-benefit analysis of risking a conflict with NATO, regardless of France’s claim for nuclear independence.

Not always noticed by European NATO Allies, there is an example of U.S. nuclear commitment without a forward basing of nuclear weapons: the “Asian Model.” Countries like Japan or South Korea (and also Australia) are under the American nuclear umbrella; however, their way of implementing “extended deterrence” differs in four points from the European model.

- ▶ The United States underpins its commitment to Asia with nuclear weapons, which are forward deployable but not forward deployed, which means that none of the countries in the region hosts U.S. nuclear weapons on their soil. Instead, they could be moved from the United States close to the region or into the region in case of a crisis.
- ▶ There are no nuclear weapons-related exercises conducted between the United States and the military forces in these countries.
- ▶ There is no burden sharing by the countries in the region, neither by providing bases or nuclear infrastructure nor by providing nonnuclear support. There is also no nuclear risk sharing in the sense that places in South Korea or Japan become nuclear targets for a potential aggressor because they host U.S. nuclear infrastructure.

If the Asian Model suggests anything for the current nuclear debate in NATO, then it is the notion that even without U.S. forward based nuclear weapons, the “nuclear sharing” arrangements are paramount to assure the credibility of extended deterrence and the cohesion of the Alliance.

- ▶ There are no mechanisms for nuclear consultations, common nuclear planning, or sharing nuclear related information.

Apparently, for a long time none of the countries under the U.S. nuclear umbrella in Asia had a credibility problem with a U.S. commitment without a physical presence of American nuclear weapons. They defined the combination of U.S. explicit verbal commitments and the availability of a wide spectrum of American nuclear options (to be executed by strategic and non-strategic nuclear weapons) as sufficient to deter any vital threat against their territory.¹²

These countries are more concerned about the question of nuclear sharing and information than they are about the physical presence of nuclear weapons on their territory. Apparently the trust in the credibility of U.S. commitments depends much more on the knowledge of how the United States intends to execute its nuclear options in case of need than in the immediate visibility of the weapons themselves. Thus, there has been a strong push from the governments, particularly in South Korea and Japan, for more information sharing on U.S. nuclear plans and postures. In late 2010, Washington and Seoul agreed on a U.S.-South Korean Nuclear Deterrence Policy Committee. However, South Korean voices criticize that the consultation issue has a very low profile on the American side. Thus, the request for nuclear sharing remains a key interest for the Asian countries under the U.S. nuclear umbrella.

Of course, the Asian Model cannot be simply transferred at face value to the European political and strategic context, where, among other differences, two other European nuclear states are members of NATO. It does, however, demonstrate that the credibility of extended deterrence is still feasible with appropriate sharing of relevant information with nonnuclear Allies.

NUCLEAR SHARING WITHOUT FORWARD BASING

If the Asian Model suggests anything for the current nuclear debate in NATO, then it is the notion that even without U.S. forward based nuclear weapons, the “nuclear sharing” arrangements are paramount to assure the credibility of extended deterrence and the cohesion of the Alliance. Unlike Asia, NATO has a long experience in the various aspects of nuclear sharing and maintains the necessary instruments. Thus, before deciding on or implementing a possible withdrawal of B-61 bombs from Europe, there has to be agreement on how to proceed with NATO’s

12. Following the more recent North Korean activities, debates began about a possible forward basing of U.S. nuclear weapons. In South Korea, for instance, almost 69 percent of the population could imagine that South Korea had their own nuclear weapons. However, this is the result of having an aggressive and hostile nuclear power in the immediate neighborhood. See *Space Daily*, March 23, 2011, http://www.spacedaily.com/reports/Majority_of_S_Koreans_want_atomic_bomb_survey_999.html.

nuclear sharing mechanisms and how to adapt the instruments accordingly. To adapt Cold War experiences to the nuclear realities of the twenty-first century, elaborations on new forms of nuclear sharing have to focus on four dimensions: nuclear information sharing; nuclear consultations; common planning; and common execution.

Nuclear Information Sharing

As mentioned earlier, NATO’s prime forum for nuclear sharing, particularly for the exchange of nuclear relevant information, is the Nuclear Planning Group. It was founded at a time when the European Allies were highly concerned about the purpose of the U.S. nuclear weapons on their soil and about their potential employment should the Cold War become a hot one. This coincidence has led to two myths about nuclear sharing in NATO: first, nuclear sharing in the NPG depends on the presence of U.S. nuclear weapons in Europe; and second, the United States would share information simply because the NPG existed. In fact, today all members of NATO (except France) take part in NPG meetings or send representatives to the so called “NPG Staff Group,” regardless of whether they are stationing countries for B-61 or nuclear capable aircraft.¹³ Moreover, U.S. governments have traditionally been ready to share nuclear issues with their NATO Allies because they *wanted* to do so and not because there was a NATO forum for that purpose. The core question of whether the United States will still *want* to do so—even if no nuclear weapons are forward based any more—can only be answered by the U.S. Administration.

As a result, nuclear information sharing in NATO will take place as long as Washington is prepared to do so and the European Allies have an interest in it, regardless of the existence of the NPG and even without B-61s on European soil.

Following a withdrawal of B-61 bombs from Europe, a reform of the nuclear information sharing procedures might be inevitable, provided that the desire for nuclear discussion further exists on both sides of the Atlantic. For various reasons, the NPG in its present form could hardly be the appropriate forum any more. France has never participated in the NPG, which was established in 1966–1967. Although Paris under President Sarkozy returned to most NATO structures, it still remains outside the NPG and does not seem willing to change this position soon. Thus, a new format for nuclear consultations in NATO would have to be found to include all three NATO nuclear states. Moreover, even today the NPG does no nuclear planning in the strict sense of targeting anymore; in a NATO without U.S. nuclear weapons, this would be even less the case. Even the name of the forum is no longer suitable because it would raise memories of Cold War scenarios.

Nuclear information sharing in NATO will take place as long as Washington is prepared to do so and the European Allies have an interest in it, regardless of the existence of the NPG and even without B-61s on European soil.

13. In practical terms, though, there is an unwritten rule that only the stationing countries speak up in NPG meetings.

Depending on the experiences with the posture review, this forum could be institutionalized to have a deterrence review process permanently and to take over the tasks of nuclear information sharing within the Alliance.

To deal with these shortcomings, NATO could create a new forum along the lines of the current Deterrence and Defense Posture Review (DDPR). In conjunction with the discussions on a new Strategic Concept, the question of how to address U.S. nuclear weapons in Europe had been hotly debated between Germany and other NATO Allies. To solve the issue in the long term, the 2010 summit meeting in Lisbon had agreed on a thorough review of NATO's deterrence and defense posture, which should be presented at the next NATO summit in spring 2012.¹⁴ Although the NPG is described as the "ultimate authority within NATO with regard to nuclear policy issues,"¹⁵ NATO members chose a different forum for the review process. As the NPG was lacking French membership and because the review should not be confined strictly to nuclear planning, an alternative was necessary. Since January 25, 2011, the DDPR has taken place on the level of all Deputy NATO Permanent Representatives, chaired by the Deputy Secretary General. The support does not come from the Nuclear Forces Directorate (as in NPG issues) but from NATO's Defense Policy Planning Division. By using an ad-hoc arrangement, NATO was able to overcome political sensitivities that existed given the delicacy of the topic and still grant a debate on an appropriate political level.

Depending on the experiences with the posture review, this forum could be institutionalized to have a deterrence review process permanently and to take over the tasks of nuclear information sharing within the Alliance.

Nuclear Consultations

Even before the NPG was founded, NATO took on the crucial issue of nuclear consultations. The need for nuclear consultations within the Alliance stemmed from the fact that, given the immediate threat of the Warsaw Pact, NATO's nuclear deterrence concepts were always plagued by a collision of interests between the United States and its Allies. In case of an attack from the East, which required nuclear escalation, the Allies, for good reasons, wanted to be consulted *before* the U.S. president would authorize a nuclear weapon to be detonated on European soil to at least have the option to express an opinion on the wisdom of such a step. However, there might be the need to escalate very quickly without time for a long discussion process among member states. Moreover, there was always the desire of the U.S. Administration not to be entangled by any objections of its Allies if it comes to vital issues like using nuclear forces. Trying to bridge this gap in views and interests, NATO developed detailed regulations for consultations within NATO, starting with the "Athens Guidelines" in 1962, if using nuclear force should become necessary.

14. Actually, the deterrence review was the only tasking by the heads of states and governments in Lisbon that did not have a strict deadline. Still, there is a common understanding that some consensus has to be presented by the next summit meeting.

15. NATO Homepage, Topics: The Nuclear Planning Group, <http://www.nato.int/issues/npg/index.html>.

The need for nuclear consultation in NATO was particularly highlighted by the vast amount of U.S. nuclear weapons in Europe—more than 7,000 in the early 1970s. Still, the need for such consultations would remain, even if all nuclear bombs were withdrawn. In NATO, relevant nuclear contingencies continue to exist far beyond Europe—in the Middle East or in East Asia—and NATO members would like to be consulted before Washington decides on the use of nuclear weapons to protect its European Allies.

NATO’s old consultation guidelines would hardly be applicable to today’s security environment, particularly if there were no B-61s in Europe any more. A NATO that claims to be a “Nuclear Alliance” as long as nuclear weapons exist would have to restart the process of developing political guidelines for nuclear consultations. This could be done in the successor forum for the NPG and could include numerous related questions, depending on, for instance, how France defines its future role as a European nuclear power.

Common Planning

Closely intertwined with nuclear consultations was the element of common nuclear planning. NATO Allies were not only interested in the “when” of a U.S. nuclear employment in Europe but also in the “where.” Nuclear planning, which was also done on the framework of the NPG, was related to the U.S. nuclear weapons in Europe and to the nuclear capable aircraft owned by the European Allies (as—at least theoretically—allied states could veto using a U.S. nuclear bomb by not providing the aircraft as the means of delivery.)¹⁶ Moreover, a few sea launched ballistic nuclear missiles stationed on U.S. submarines were “assigned” to NATO and included into NATO’s nuclear plans.

In a future NATO without forward deployed U.S. nuclear weapons, the Allies would still have a strong interest in remaining engaged in American nuclear planning, at least with regard to the NATO-related contingencies. Again, any form of a common nuclear planning first and foremost depends on the willingness of the United States to grant its Allies access to such a highly sensitive area of national security. Should this be the case, different models would be possible.

Washington could permit NATO representatives a presence in American national nuclear planning processes and grant them a say in NATO related issues. In a very rudimentary form, such a liaison system already exists. There is one British officer (Captain’s rank) present at U.S. Strategic Command (STRATCOM) in Nebraska who functions as a liaison officer; a second one is an American citizen. It seems doubtful that they have a real impact on planning questions. The British officer serves in a double role as NATO and U.K. liaison officer and seems therefore to be more a symbol of the special U.K.-U.S. nuclear relationship. His

In a future NATO without forward deployed U.S. nuclear weapons, the Allies would still have a strong interest in remaining engaged in American nuclear planning, at least with regard to the NATO-related contingencies.

16. In such a case, though, the United States could have used their own aircraft or employed other types of weapons that are not under so-called “dual key arrangements” with the allies.

American colleague can hardly be regarded as a true NATO voice in the U.S. nuclear planning system either.

To establish a mechanism that comes close to a true common planning, NATO's representation in U.S. planning processes would have to be increased in numbers and in ranks to have a real effect and to have an appropriate link to NATO's political and military leadership.

A second angle of common nuclear planning could be confined to a set of U.S. strategic nuclear weapons earmarked for NATO missions. Along the lines of the Cold War assignment of U.S. submarine missiles, a few U.S. nuclear warheads could be "reserved" for targets or contingencies that all 28 NATO members could agree upon. Probably of limited military value (as the U.S. disposes of a huge nuclear arsenal to execute any mission, whether it would be in line with NATO or not) it would be a highly symbolic step epitomizing transatlantic cohesion. Moreover, such a NATO earmarked force could mitigate the concerns of those NATO members, who still support the current stationing of U.S. nuclear weapons in Europe.

Common Execution

Executing nuclear strikes where the Allies provide the means of delivery and the United States supplies the warhead will no longer exist as soon as the B-61 bombs have been withdrawn to the American homeland. Theoretical options of keeping the storage sites in Europe for occasional redeployments to Europe or having the NATO nuclear aircraft fly to the U.S. to load the nuclear bombs are perhaps unrealistic. Such procedures to keep up the illusion of a NATO nuclear force would be extremely costly and would be of limited political value. Moreover, they would not be necessary, as NATO with three nuclear members, including the largest nuclear power on earth, would not lack nuclear options to convey a credible deterrence message.

Still, even without U.S. forward based systems, NATO Allies could contribute to nuclear operations if necessary and desired. Already today, 15 nonnuclear NATO member states provide support to, as the NATO jargon says, SNOWCAT missions (Support of Nuclear Operations with Conventional Air Tactics). Should a nuclear-armed NATO aircraft be sent on an attack mission, they would grant nonnuclear support like air refueling or search and rescue operations. These missions are regularly exercised and symbolize the willingness of nonnuclear Allies to burden sharing beyond stationing nuclear weapons on their territory.

Even if the U.S. strategic bomber force has all support elements available, allied support along the lines of SNOWCAT might be a welcomed contribution and might symbolize NATO's cohesion.

CONCLUSIONS

Extended deterrence is a highly political concept that depends first and foremost on the willingness of the nuclear power to give a commitment to the Allies and on its capabilities to employ nuclear weapons in the case of need. The credibility of the nuclear commitment, though, is primarily defined by the Allies under the nuclear umbrella (and of course by the potential opponent). For many decades, the physical deployment of U.S. nuclear weapons on European soil was to a large degree requested by the European NATO Allies and had a dual function: it should send a signal of resolve to the opponent and a sign of protection to the Allies.

In today's security environment, NATO's current nuclear posture can no longer fulfill this dual function. Because U.S. forward deployed weapons have lost most of their functions and are increasingly losing the support of NATO Allies, they can be withdrawn and either stored in the United States or dismantled. This holds particularly true as the logic of U.S. extended deterrence does not necessarily require nuclear deployments to be forward deployed in Europe. Instead, there are examples where the nuclear umbrella is maintained without the forward presence of U.S. nuclear weapons.

Much more important for NATO's cohesion and the credibility of its nuclear deterrence concepts is a dense network of nuclear information and consultation mechanisms—subsumed under “nuclear sharing.” As NATO's nuclear sharing principles still stem from Cold War times more than two decades ago, a reassessment would be necessary anyway. Withdrawing the B-61 bombs would make such a nuclear review even more pressing. Provided that nuclear sharing is intended by both sides, by the United States and by their nonnuclear Allies, ways can be found to align the different requirements: the American requirement for the freedom of action and the European requirement for information and influence. Sustaining the status quo, that is, leaving NATO's nuclear weapons where they are, and papering over all the risks and inconsistencies of doing that for another decade or two is no longer an option.

The views expressed in this paper are the responsibility of the author and do not necessarily represent those of the NATO Defense College or the North Atlantic Treaty Organization.

Sustaining the status quo... for another decade or two is no longer an option.