



The Modernization of the B61 Gravity Bombs and the Problem of Misconceptions

Over the past few weeks, the modernization of the B61 gravity bombs has created intense debates within Germany, and between NATO and Russia as well. Although there is nothing new on the horizon, an incorrect report on the nuclear upgrades was caught up by several TV channels and journals, leading to a spiral of misinterpretations, which unnecessarily heated up the already tense relations between Washington and Moscow. A handful of experts have been quietly monitoring the nuclear modernizations of both the US and Russia, occasionally reporting on the newest developments. For those who follow these programs, it was clear from the very beginning that the unfolding debate was based on false information. Still, this situation showed again the power of the media when it comes to formulating threat perceptions and security issues. A series of incorrect articles like for example the “U.S. Will Station New Nuclear Weapons in Germany Against Russia”¹ or the “US Stations New Nuclear Weapons in Germany”² almost immediately created grounds for a rhetorical war. In response to these reports, Moscow took the opportunity to express its own concerns and fight back with the prospect of very serious consequences. As a result, another wave of comments and articles has been published: “US Nuclear Weapons in Germany: Russia Concerned by American Plans to Add to Stockpile,”³ the “Kremlin Threatens Response to U.S. Nuclear Bomb Deployment in Germany,”⁴ and “Russia pledges counter measures if U.S. upgrades nuclear arms in Germany.”⁵ Although the initial report was incorrect, this action-reaction cycle still adds to the already heightened nuclear rhetoric of the crisis in Ukraine, and it might trigger countermeasures which will actually weaken the European security architecture.

The B61 nuclear bombs are among the oldest weapons in the US arsenal. They entered into the stockpile in the 1960s, and several versions and modifications have been developed since then. Today there are five modifications in the stockpile: the B61-3, B61-4, and B61-10 tactical bombs, the B61-7 strategic bomb, and the B61-11 strategic earth-penetrating bomb. Over the last decade, the total number of the non-strategic variants of the B61s has been reduced from 1,200 to the current 500.⁶ These 500 B61 tactical bombs are the only remaining non-strategic nuclear weapons in the US arsenal. About 180 of them are deployed in Europe, and the remaining over 300 weapons are stored in the continental US for potential delivery by US fighter-bombers to support the allies in the Middle East and Asia.⁷

NATO has never officially disclosed the number and location of US non-strategic nuclear weapons in Europe but according to unclassified reports, today we still have about 180 bombs at

¹ Durden, Tyler: [U.S. Will Station New Nuclear Weapons in Germany Against Russia](#). *Zero Hedge*, September 22, 2015.

² Stern, Johannes: [US Stations New Nuclear Weapons in Germany](#). *Global Research – Centre for Research on Globalization*, September 26, 2015.

³ Harress, Christopher: [US Nuclear Weapons in Germany: Russia Concerned by American Plans to Add to Stockpile](#). *International Business Times*, September 22, 2015.

⁴ Bodner, Matthew: [Kremlin Threatens Response to U.S. Nuclear Bomb Deployment in Germany](#). *The Moscow Times*, September 23, 2015.

⁵ Tsvetkova, Masha – Golubkova, Katya: [Russia pledges counter measures if U.S. upgrades nuclear arms in Germany](#). *Reuters*, September 23, 2015.

⁶ Kristensen, Hans M. – Norris, Robert S.: [The B61 family of nuclear bombs](#). *Bulletin of the Atomic Scientists*, 2014. pp. 2-4.

⁷ Kristensen, Hans M. – Norris, Robert S.: [US nuclear forces, 2015](#). *Bulletin of the Atomic Scientists*, 2015/2. pp. 115-116.

six bases in five NATO countries: Belgium (Kleine Brogel Air Base), Germany (Büchel Air Base), Italy (Aviano and Ghedi Air Bases), the Netherlands (Volkel Air Base), and Turkey (Incirlik Air Base).⁸ All of these weapons are B61-3 or B61-4 versions with yields 0.3, 1.5, 60 or 170 kilotons for the B61-3s, and 0.3, 1.5, 10 or 50 kilotons for the B61-4s. Some of these weapons are intended for delivery by U.S. aircrafts (the ones at two U.S. bases) and the remaining weapons by allied aircrafts (at four national bases).⁹

The forward deployment of non-strategic nuclear weapons in Europe looks back on a long history. The first NATO ally to receive US non-strategic nuclear weapons on its soil was the United Kingdom in September 1954. Over the next decade, Germany, Italy, France, Turkey, the Netherlands, Greece, and Belgium also became hosting countries for US non-strategic nuclear weapons. The peak of the deployment was 7,300 nuclear warheads in 1971.¹⁰ Since then, the number of forward deployed weapons has been reduced by more than 90%, and US non-strategic nuclear weapons have been entirely removed from many of the hosting countries. The primary goal of these deployments was to defend the allies from a Soviet aggression by the threat of a nuclear retaliation. As the Warsaw Pact countries enjoyed a significant advantage in conventional weapons along the borders of the Eastern and Western Blocks, these nuclear weapons were meant to counterbalance the conventional gap, and to deter (or eventually defeat) a massive conventional attack from the East. The deployment of these weapons was arranged by a series of secret nuclear deals – these are the so called “nuclear sharing agreements.” In the framework of these agreements, the United States and the hosting country agree on the introduction and storage, the custody, the security, the safety, the release, and the cost sharing of these weapons. The agreements also include regulations for the exchange of atomic information, service-to-service technical arrangements, as well as potential “third party” stockpile agreements. The control of these weapons at the national air bases is performed by the U.S. Munitions Support Squadron (MUNSS), which includes approximately 110 personnel. They guarantee the physical security of these weapons, provide maintenance and logistics, and hand over the nuclear bombs to the national air forces if the U.S. National Command Authority orders to do that.¹¹

As these weapons systems are ageing, the US government is in the process of modernizing both the actual warheads, as well as their means of delivery. In the framework of these efforts, the Obama Administration approved the development of the B61-12 modification which is supposed to “*serve all gravity bomb missions in the future on both strategic and tactical aircrafts.*”¹² The B61-12 will be a converted version of the B61-4 gravity bomb, which will consolidate the components of the B61-3, the B61-4, the B61-7, and the B61-10 into one type. (After the B61-12 enters the stockpile, all these previous designs will be retired, as well as the B61-11 earth-penetrating bomb. These retirements will add up to a more than 50% reduction in the gravity bomb inventory of the US.) The B61-12 has entered the engineering phase in 2013, the first production unit is expected by 2020, and altogether almost 500 B61-12s are planned by the mid-2020s. The main reason why the B61-12 has already created loud debates is the new guided tail kit which will provide a limited standoff capability for safe aircraft escape and increased accuracy. The internal guidance unit in the tail kit is expected to double the accuracy of the bomb but only if it is integrated on next generation bombers. In the first phase, the B61-12 will be integrat-

⁸ Woolf, Amy F.: [Nonstrategic Nuclear Weapons](#). *Congressional Research Service*, February 23, 2015. pp. 17-18. Kristensen, Hans M.: [Non-Strategic Nuclear Weapons](#). *Federation of American Scientists – Special Report No 3*, May 2012. pp. 15-22.

⁹ *Ibid.* p. 17.

¹⁰ Kristensen, Hans M.: [U.S. Nuclear Weapons in Europe A Review of Post-Cold War Policy, Force Levels, and War Planning](#). *Natural Resources Defense Council*, February 2005. p. 24.

¹¹ *Ibid.* pp. 11-12.

¹² Kristensen, Hans M. – Norris, Robert S.: [The B61 family of nuclear bombs](#). *Bulletin of the Atomic Scientists*, 2014. p. 1.

ed on the existing B-2, F-15E, F-16, and Tornado aircrafts but it is primarily intended for the F-35A (Joint Strike Fighter) and the later LRS-B (Long-Range Strike Bomber).¹³ In the case of the current F-15E, F-16, and Tornado aircrafts, the guided tail kit will be “locked down” which means that the B61-12 will “behave” like a standard gravity bomb, and the advanced capability will not be available. But as soon as the B61-12 is integrated on the next generation aircrafts, several new options will open up for the strategic planners. The B61-12 will reuse the nuclear explosive package of the B61-4, which means that it will have yield options ranging from 0.3 to 50 kilotons. However, the B61-12 will still be able to take the mission from the 360 kiloton B61-7 as a result of the increased accuracy of the weapon. Thus, the first consequence for strategic targeting is the possibility to hold at risk the same targets with a smaller yield weapon (and less collateral damage); while the second new development is the potential to open up entirely new target categories for gravity bombs – with the advanced accuracy, the B61-12 can hit targets which previously could not be held at risk by gravity bombs.¹⁴

Despite the technical pressure to upgrade these old weapons, the B61-12 warhead modernization plan is one of the most controversial programs. Arms control advocates claim that this is a “new” nuclear weapon, which goes against the Obama administration’s pledge¹⁵ not to build new nuclear weapons. As no previous gravity bomb designs had this advanced manoeuvring capability, the integration of these weapons on stealthy F-35A aircrafts will significantly increase NATO’s nuclear posture, and make these gravity bombs more “usable.” In the meanwhile, opponents of the modernization program like to remind that these weapons are no longer considered important war-fighting assets, and many NATO allies have repeatedly asked for their withdrawal. In the post-Cold War environment, the forward deployment of non-strategic nuclear weapons have become a political symbol of continued US commitment towards NATO, and the primary mission of these weapons is a representation of alliance solidarity and cohesion. As General James Cartwright, former Vice-Chairman of the Joint Chiefs of Staff said in 2010, these weapons no longer have any military mission.¹⁶ Therefore, arms control advocates keep questioning whether this extremely expensive new weapon with advanced capabilities is really needed in the current security environment.¹⁷ Those, who are in favor of the modernization program, argue that the B61-12 is not a “new” weapon, but only a life extension of an existing warhead type, which will save money and facilitate significant reductions in the stockpile. Besides, it is still considered important for the credibility of extended deterrence.¹⁸ Although some might accept that – from a technical point of view – these weapons are new designs, but they would still insist that in terms of their primary mission, the B61-12s are not new. Despite their improved military capabilities, these weapons will still fulfill the same mission (from the same air bases), and they are not parts of a brand new secret strike plan.

Another aspect of the B61-12 debate relates to the extremely high price tag of the bomb which makes it the most expensive warhead modernization program of US history. The total cost of the modernization program is expected to be \$11.6 billion, which is more than double the estimate that was originally submitted – and it will be covered by the US alone.¹⁹ The guided tail kit

¹³ Ibid. p. 5.

Kristensen, Hans M. – Norris, Robert S.: [US nuclear forces, 2015](#). *Bulletin of the Atomic Scientists*, 2015/2. pp. 115-116.

¹⁴ Kristensen, Hans M.: [Non-Strategic Nuclear Weapons](#). *Federation of American Scientists – Special Report No 3*, May 2012. pp. 23-24.

¹⁵ Department of Defense: [Nuclear Posture Review Report](#). *DoD Archives*, April 2010. p. 39.

¹⁶ Pilllich, Connie: [The modern costs of the yesteryear bomb](#). *The Hill*, June 13, 2013.

¹⁷ Reif, Kingston: [Pentagon pushes for billions to refurbish nuclear bombs](#). *Bulletin of the Atomic Scientists*, November 25, 2013.

¹⁸ Dodge, Michaela: [U.S. Nuclear Weapons in Europe: Critical for Transatlantic Security](#). *The Heritage Foundation*, February 18, 2014.

¹⁹ Loehrke, Ben: [Meet the Budget Busting B61 Nuclear Bomb](#). *Ploughshares Fund*, July 9, 2013.

in itself will cost more than \$1 billion,²⁰ and the integration of the weapon will also total at around \$1 billion on the designated aircrafts.²¹ In comparison to this amount, the life extension program of the W78 strategic warhead (the second most expensive LEP) “only” costs \$5 billion.²²

Although NATO originally did not require this new design, by April 2010 the US Department of Defense (DoD) and the European NATO allies reached an agreement on the details of the development of the bomb. This means that the new B61-12 bombs will replace the B61-3s and B61-4s from the early 2020s,²³ and the current aircrafts which are assigned to NATO’s nuclear mission will also go through technical upgrades to accept these weapons. The integration of the F-16 and Tornado aircrafts was started this year and it will be completed by 2017 and 2018.²⁴

This is exactly what was misinterpreted by the German ZDF public television. On September 22, the channel reported that “*new U.S. atomic weapons will be stationed in Germany.*”²⁵ They argued that by the end of this year, the US will introduce 20 new B61-12 gravity bombs at the Büchel Air Base. They made reference to a DoD budget document, and an interview with Hans M. Kristensen, the Director of the Nuclear Information Project of the Federation of American Scientists.

In the flow of articles and comments which followed this report, the modernization of the B61-12 was portrayed as if a new nuclear armament was going on in Germany, sending a direct message to Moscow in response to the crisis in Ukraine. A leading official from Angela Merkel’s own party warned that these “*new attack options against Russia*” will look like “*a conscious provocation of our Russian neighbors.*”²⁶ The media was loud with concerns that these new weapons will destabilize the region, and trigger an arms race, symbolizing an upsetting shift from the previous German policy of withdrawal.²⁷ In 2009, the former Foreign Minister, Guido Westerwelle demanded²⁸ the withdrawal of these non-strategic nuclear weapons from Germany, and in 2010 his call was supported by a Bundestag resolution. Over the past few years, Angela Merkel distanced the German position from such calls, and the ZDF report was found as a proof of Merkel’s support of the nuclear upgrade.²⁹ In response, almost 100,000 Germans signed a petition against the deployment of the new weapons in Germany, calling “*on the federal government, the Parliament, the chancellor and the federal president to stop nuclear armaments on German soil.*”³⁰

But despite these harsh reactions, the story is still based on misconceptions and false information, and there is nothing new that would not be planned for several years. As Shelley Laver, Deputy Director of Public Affairs at the Department of Energy’s (DoE) National Nuclear Security Administration (NNSA) said, “*the B61-12 won’t reach full production until FY20*” and “*the articles*

²⁰ Department of Defense: [Fiscal Year \(FY\) 2014 President's Budget Submission](#). *Air Force Justification Book Volume 2 of 3 Research, Development, Test & Evaluation, Air Force*, April 2013.

²¹ Department of Defense: [Fiscal Year \(FY\) 2015 Budget Estimates](#). *Air Force Justification Book Volume 2 Research, Development, Test & Evaluation, Air Force*, March 2015.

²² Collina, Tom Z.: [U.S. Nuclear Modernization Programs](#). *Arms Control Association*, January 2014.

²³ Kristensen, Hans M.: [Non-Strategic Nuclear Weapons](#). *Federation of American Scientists – Special Report No 3*, May 2012. pp. 24-27.

²⁴ Kristensen, Hans M.: [B61-12 Nuclear Bomb Integration On NATO Aircraft To Start In 2015](#). *Federation of American Scientists – Strategic Security Blog*, March 13, 2014.

²⁵ Klar, Herbert – Stoll, Ulrich: [Stationierung neuer US-Atomwaffen in Deutschland](#). *ZDF – Frontal 21*, September 22, 2015.

²⁶ Durden, Tyler: [U.S. Will Station New Nuclear Weapons in Germany Against Russia](#). *Zero Hedge*, September 22, 2015.

²⁷ Sputnik News: [US Nuclear Weapons in Germany Could Spark Arms Race](#). September 24, 2015.

Stern, Johannes: [US Stations New Nuclear Weapons in Germany](#). *Global Research – Centre for Research on Globalization*, September 26, 2015.

²⁸ Nathler, Christian – Connor, Richard: [German foreign minister likens nuclear-weapons threat to global warming](#). *DW*, April 8, 2011.

²⁹ DW: [Reports: US nuclear 'upgrades' in Europe](#). September 23, 2015.

³⁰ Harress, Christopher: [US Nuclear Weapons In Europe: Massive Protest Planned Against New Atomic Weapons In Germany](#). *International Business Times*, October 1, 2015.

implying deployment to Europe by the end of the calendar year would be inaccurate.”³¹ The DoD budget report only indicated that the Tornados are now undergoing a two year integration program. But all of these upgrades have been planned for years, and the timelines of the modernizations are available for a long time.

The US started the deployment of non-strategic nuclear weapons in the territory of the Federal Republic of Germany in March 1955. By the 1960s, Germany hosted at least ten different types of non-strategic nuclear weapons, including gravity bombs, nuclear-tipped cruise and ballistic missiles, nuclear artillery and atomic mines. Although their number remains classified, it is estimated to reach a four-digit amount. After the end of the Cold War, a significant reduction was implemented in the non-strategic nuclear arsenal of the US, and only a few hundred B61 gravity bombs remained in Germany, stored at Ramstein and Büchel Air Bases.³² During the Bush administration’s first term (2001-2005), an estimated 130 non-strategic nuclear weapons were removed from Ramstein, leaving the current 10-20 B61 gravity bombs at Büchel Air Base. These weapons are in custody of the US Air Force’s 702nd MUNSS. They are intended for delivery by German PA-200 Tornados of the 33rd Fighter Bomber Squadron, and the German government has just extended the service-life of these aircrafts through the mid-2020s. Unlike many other European hosting countries, Germany will not purchase the F-35A Joint Strike Fighters – Germany’s next-generation strike aircraft is the Eurofighter, which is not dual-capable and there is no evidence that Germany would acquire replacement aircrafts for the nuclear mission after the retirement of the Tornados.³³

In light of all these, the reports on the new nuclear deployment are shaky at several points. First, the production of the new B61-12s will be completed by the early 2020s, which means that 2024 is the earliest date when these weapons can be deployed in Europe. Second, this was not proposed in response to the crisis in Ukraine, to send a political message to Russia – the Obama administration has decided on the modernization of the gravity bombs during its first term, and NATO has also given its support to the plan in 2010. Third, this is not an “armament” of Germany as the overall number of nuclear weapons will not change – US non-strategic nuclear weapons have been there for decades and the replacement of the B61-3s and B61-4s to the B61-12s will be a standard upgrade of an existing mission, and the number of the B61-12s will not exceed the current amount of US gravity bombs in Germany. One could easily argue that even if the mission is the same, the military capability of the weapon will be increased. In this regard, however, the fourth point is that the advanced capabilities of the B61-12 will not be available for Germany at the beginning, and there is no evidence that it will change anytime soon. The current Tornado fighters cannot benefit from the internal guided unit of the tail kit, thus the B61-12s will work like the current “dumb” gravity bombs on these deliveries. Besides, as the Eurofighters are not dual-capable, and there is no indication that Germany would take up the nuclear mission on these aircrafts, we might eventually see a silent scale-back of the nuclear mission in Germany. And this is the last point on the media reports: although in the past few years Merkel was not so outspoken about the issue of non-strategic nuclear weapons withdrawal, supporting the B61-12 modernization does not necessarily contradict the phase-out of the nuclear mission in Germany. If the service-life of the Tornados ends without a replacement aircraft to the nuclear mission, then the German Air Force will lose its capability to deliver US non-strategic nuclear weapons, which is a perfect interim step between disarmament and maintaining NATO solidarity. By hosting the new gravity bombs, Berlin can avoid being seen as unilateral – especially when Central and Eastern European allies are increasingly worried about Russian

³¹ Harress, Christopher: [US-Russia Nuclear Weapons Standoff: Air Force Won't Station New Atomic Bombs In Germany Until 2020](#). *International Business Times*, September 24, 2015.

³² Franceschini, Giorgio – Müller, Harald: European Hosting Countries – Germany. In: Foradori, Paolo (ed.): *Tactical Nuclear Weapons and Euro-Atlantic Security: The future of NATO*. Abingdon, 2013, Routledge, pp. 44-60.

³³ Norris, Robert S. – Kristensen, Hans M.: [US tactical nuclear weapons in Europe, 2011](#). *Bulletin of the Atomic Scientists*. 2010/1. pp. 68-69.

aggression. At the same time, this strategy can also put Berlin on a path of “*disarmament by default*.”³⁴ Paving the way towards a complete withdrawal would support the longstanding German vision for NATO, which intends to use arms control and disarmament to improve the relations between the Alliance and Russia.

Looking at the Russian side of the debate, the ZDF report included an official reaction by the Spokesperson of the Russian Ministry of Foreign Affairs, Maria Zakharova. Zakharova argued that such a new deployment by the US would constitute a violation of Articles I and II of the Nuclear Non-Proliferation Treaty (NPT). One day later, these claims were followed by additional accusations from President Putin’s Spokesman, Dmitry Peskov, who argued that these steps would upset the strategic balance in Europe and “*without a doubt it would demand that Russia take necessary countermeasures to restore the strategic balance and parity*.”³⁵ Although Peskov did not specify the concrete measures, an unnamed source from Russia told Interfax News that Iskander-M tactical missiles could be redeployed to the Kaliningrad exclave between Poland and Lithuania. Further speculations suggested that the upgrade of the US gravity bombs will trigger a new nuclear arms race on the continent, and it might push Moscow to withdraw from the Intermediate-Range Nuclear Forces Treaty (INF).³⁶ Many of these claims, however, lack any credible basis, and they only prove that Russia has mastered the ability to launch a rhetorical strike against the West whenever possible.

First of all, when the NPT was negotiated during the 1960s, the issue of nuclear sharing was extensively debated, and the Soviet Union gave its consent to the practice of forward deployment. Critics argue that NATO’s nuclear sharing agreements violate the NPT as they allow the transfer of US nuclear weapons for a potential delivery by non-nuclear weapon states. But according to NATO, forward deployment in itself is not a violation as the control of these weapons is not transferred until a decision is made about their actual use.³⁷ (In fact, nuclear sharing agreements strengthened the NPT in the early years as they discouraged proliferation by the NATO allies.)³⁸ As Moscow accepted this explanation in the 1960s, it has no basis to attack NATO today – the replacement of the B61-3s and B61-4s does not change the general undertakings of nuclear sharing agreements which created the legal grounds for nuclear deployments in Europe during the Cold War.

With regards to upsetting the strategic balance between Washington and Moscow, both the Russian Federation and the United States are undergoing massive modernization efforts to upgrade the nuclear warheads, all three legs of the strategic triad, and the non-strategic delivery systems, as well. While the United States will spend at least \$355 billion over the next decade to maintain and modernize its nuclear arsenal, in 2011 President Putin has also launched a 20 trillion ruble (\$300 billion) modernization program for the Russian armed forces. In the framework of this effort, all Soviet-era nuclear weapons will be replaced. This includes the development of the SS-27 ICBM, the RS-26 ballistic missile, and a new “heavy” ICBM. At sea, eight Borei-class submarines will be introduced in the stockpile, each equipped with 16 or 20 Bulava SLBMs. In air, the current Tu-160 Blackjack, Tu-95MS Bear, and Tu-22M bombers are undergoing upgrades, and a new replacement bomber, as well as a new air-launched cruise missile is also underway. In the field of tactical nuclear weapons, new SS-26 Iskander-M short-range ballistic missiles are replacing the nuclear-capable SS-21s, and Moscow will also deploy a new fighter-

³⁴ Franceschini, Giorgio – Müller, Harald: European Hosting Countries – Germany. In: Foradori, Paolo (ed.): *Tactical Nuclear Weapons and Euro-Atlantic Security: The future of NATO*. Abingdon, 2013, Routledge, pp. 44-60.

³⁵ Bodner, Matthew: [Kremlin Threatens Response to U.S. Nuclear Bomb Deployment in Germany](#). *The Moscow Times*, September 23, 2015.

³⁶ Sputnik News: [US Nuclear Weapons in Germany Could Spark Arms Race](#). September 24, 2015.

³⁷ British American Security Information Council (BASIC): NATO: Nuclear Sharing or Proliferation?. *BASIC/ORG project – Briefing 8*, 2005.

³⁸ Khalessi, Daniel K.: [The Ambiguity of Nuclear Commitments – The Implications of NATO’s Nuclear Sharing Arrangements for the Nuclear Non-Proliferation Treaty](#). Stanford University – Center for International Security and Cooperation (CISAC) Thesis, 2013.

bomber.³⁹ In light of all these modernization efforts, the upgraded B61-12s have very limited ability to hurt the greater strategic balance between Washington and Moscow. Russia has plenty of options to counterbalance the new military capabilities of the US gravity bombs. (The deployment of the nuclear-capable Iskander-M systems is the best example for that – the decision to deploy these weapons in Kaliningrad was already announced in March⁴⁰ this year but the current situation created a perfect opportunity to act like it is a necessary countermeasure to NATO's modernization efforts.) Besides, we are talking about the mid-2020s when these new weapons will be deployed in Europe, and relations might actually normalize by then. But even if the upgrade of the B61 gravity bombs will be followed by harsh rhetorical responses from Moscow, tensions are not likely to escalate to the level that NATO hosting countries would be directly endangered. Moscow knows exactly the technical details of the American modernization programs, knows the timelines of their introduction, and it also knows that this is not a US attempt to add a new military mission to NATO's nuclear posture – a new military capability yes, but not a new mission(!).

This is exactly why Russia is also not likely to withdraw from the INF Treaty, directly in response to the modernization of the B61 gravity bombs. It might decide to do so (and it might put the blame on these upgrades) but in reality, Moscow will only take the risks of abandoning the INF if it sees important strategic benefits to such a decision (and not because of the upgrade of 180 gravity bombs in Europe). At the moment, however, the potential negative consequences still outweigh the possible gains. A Russian withdrawal would most likely destabilize its relations with NATO and with its immediate neighbors, risking an unwanted escalation in the region. Besides, in response to hypothetical threats from NATO, Russia could actually make the situation worse for itself. Russia's INF withdrawal could easily cause more serious missile defense upgrades on NATO's side, and bring the European allies closer to the US. Washington might also decide to preposition assets on their territory, and in absence of a legal limitation, it could reintroduce land-based intermediate-range weapons to Europe, which would seriously harm the national security of Russia. Therefore, at this point, a standard upgrade of the B61s is simply not worth the risk of all these potential negative consequences.

Altogether, there are several valid questions that can be asked about the B61-12 modernization program: is it really needed for the national security of the US, or the reassurance of its allies; is there any real justification for a gravity bomb with an advanced capability in the European theater; is it worth the extremely high price tag that it has reached, or would it make more sense to go with a simpler life extension program for the B61-7s; or does it make any sense to maintain forward nuclear deployment in Europe when some of the allies do not seem to be eager to keep the nuclear mission. The current debate about the B61-12s, however, did not focus on these issues. Unfortunately it only added to the insecurity spirals in Europe, and created another opportunity for heightened nuclear rhetoric between NATO and Russia. The only positive outcome of the increased attention could be a renewed debate within NATO circles, creating an opportunity to revisit the nuclear posture of the alliance in preparation for next year's Warsaw Summit. These events definitely highlighted one very important lesson for NATO: it should consider becoming more outspoken and transparent in its nuclear posture because this is the only way to avoid such unnecessary misconceptions in the future.

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³⁹ Kristensen, Hans M. – Norris, Robert S.: [Slowing nuclear weapon reductions and endless nuclear weapon modernizations: A challenge to the NPT](#). *Bulletin of the Atomic Scientists*, 2014/4. pp. 102-103.

⁴⁰ Isachenkov, Vladimir: [Russia is putting state-of-the-art missiles in its westernmost Baltic exclave](#). *Business Insider*, March 18, 2015.