CENTRE FOR AIR POWER STUDIES

In Focus

New Delhi

CAPS InFocus: 54/2023

16 November 2023

The Continued Saga of B61s: Assessing the Implication of US New Nuclear Bomb

Javed Alam

Research Associate, Centre for Air Power Studies

Source: U.S. Air Force

Keywords: B61-13, Nuclear Gravity Bomb, New Security Environment

On October 27, 2023, the Department of Defence (DoD) of the United States announced it would start pursuing a modern variant of the B61 nuclear gravity bomb, the B61-13.[1] The plan is in its infancy and would require Congressional authorisation and appropriation. The announcement comes at a time when the global nuclear order is witnessing a flux in the current state of affairs between the US and Russia vis-à-vis strategic nuclear arms control agreements. The fate of even the New START treaty is uncertain. The relationship between the US and Russia has frayed since the latter invaded Crimea in 2014 and undertook a military offensive against Ukraine in 2021. An increasingly belligerent China has also become a significant threat to the US. Given these developments, a new gravity bomb announcement needs further clarification concerning its tactical or strategic purpose.

Attributes of B61-13

If we look at the modification journey of the B61 bomb, the latest one will be the 13th modification of the original one first inducted in 1968.[2] Since then, the B61 has undergone several modifications to improve its safety, security and dependability. Currently, the US Air Force and North Atlantic Treaty Organisation (NATO) bases have four B61 variants: the B61-3, B61-4, B61-7, and B61-11. The B61-12, a nuclear gravity bomb, was formally accepted by the Nuclear Weapons Council in 2022 and authorised Phase 6.6- Full-Scale Production. According to the US DoD press release, the B61-13 will replace some of the old B61-7s and will have the same yield as the 7s.[3] The B61-7 has a yield of 10-360kt. Though not all B61s currently in service are for strategic missions, the B61-7 is, and it can be postulated that the new B61-13 will also serve the same purpose. Regarding the delivery platform, the press release only mentioned that some modern aircraft would serve the mission for the bomb. As has been reported, the US is planning to enhance its stealth capabilities and develop the B-21 Raider. It could be the same bomber that will deliver the B61-13. It is unknown whether the B61-13 will also have the same earth-penetrating capacity as the B61-12. However, it will have a guided tail kit that will likely improve its precision and capability.

Why does the US need a New Gravity Bomb?

There are at least three reasons why the US needs a new gravity bomb. The prominent one is the so-called changing security environment. The 2022 Nuclear Posture Review (NPR) explicitly named the People's Republic of China (PRC) and Russia as the foremost strategic competitors augmenting their nuclear forces. The 2022 NPR stated that as the PRC will expand its nuclear forces in the

coming decade, it will become necessary for the US to make force adjustments.[4] More importantly, the recent discoveries about China building new missile silos[5] and Russia placing their tactical nuclear weapons in Belarus,[6] which shares a border with Poland, a NATO country, have made the Biden administration more determined to have new nuclear capabilities. The recently released America's Strategic Posture Report has also noted that the US will face a two-front situation emanating from Russia and China in the coming decade.[7] To counter the two-front situation, America's strategic posture seeks to utilise its existing nuclear strategy based on six foundations: assured second strike, flexible response, tailored deterrence, extended deterrence and assurance, calculated ambiguity, and hedging against risk.

The development of a new nuclear gravity bomb will help the US to achieve three core principles: flexible response, tailored deterrence, and extended deterrence and assurance, of the six foundational principles of its nuclear strategy. The announcement of B61-13 has come at a time when the inter-state relations between the major powers are at the lowest since the end of the Cold War. Russia and China are building a modernised nuclear force with an advanced conventional all-domain warfare strategy. More importantly, the announcement of B61-13 echoes the fact that major powers such as the US are now more considerate about projecting nuclear power while building a substantial conventional force for any future conflict.

The second reason for acquiring a new nuclear gravity bomb is to address the issue of legacy systems. The US Air Force deploys an estimated 100 B61s at six bases in five European countries. However, the Biden administration plans to retire the B83-1 gravity bomb due to the cost factor. Given these considerations, the US is undertaking nuclear modernisation, which will continue beyond 2039 and will cost $1.2 trillion.[8] In 2017, the Former Vice Chairman of the Joint Chiefs of Staff, General Paul Selva, stated that the issues concerning the lifespan of legacy nuclear forces and infrastructure need immediate attention and raised concerns about the viability of these systems in the near future.[9] The development of B61-13 will help the US maintain the B61-7 yield-type nuclear weapon in the stockpile while keeping the numbers, cost and maintenance within the approved limits.

The third important reason behind the B61-13 announcement is the disagreement between the Republicans and Democrats[10] over the fate of B83-1, a 1.2-megaton nuclear bomb. During the tenure of former President Barack Obama, the decision was taken to retire B83-1. But his successor, President Donald Trump, did not approve the decision. The decision by the Biden Administration to build a new nuclear gravity bomb will help solve the dilemma of B83-1. More importantly, under the

Stockpile Stewardship Programme (SSP), the US has not manufactured a new weapon for over 30 years.[11] The National Nuclear Security Administration (NNSA) needs confidence in nuclear weapons without performing nuclear explosive tests. The SSP and Life Extension Programme (LEP) are used by the NNSA to test and verify old and new nuclear weapons and boost nuclear deterrence.[12] The induction of B61-12 in 2022 was done through the LEP, and it can be speculated that the induction of B61-13 will also be performed through LEP only.

What about Nuclear Arms-control and Nuclear Disarmament?

According to the Bulletin of the Atomic Scientist's Nuclear Notebook, the US presently possesses an estimated stockpile of approximately 3,708 nuclear warheads. However, there are close to 1,536 intact retired warheads under the custody of the Department of Energy waiting to be dismantled. So, in total, the US has an estimated inventory of 5,244 warheads.[13] In comparison, Russia has an estimated inventory of 5,889 warheads.[14] In 2022, Russian Defence Minister Sergei Shoigu stated that modern weapons and equipment now make up 91.3 per cent of Russia's nuclear triad. China, on the other hand, is currently far from achieving the numerical strength of the US nuclear stockpile. However, the Pentagon's 2023 report to Congress estimated that by the end of this decade, China will have close to 1,000 operational nuclear warheads.[15]

The current nuclear arms-control deadlock between the US and Russia will have ramifications for the global nuclear order. Though the announcement of B61-13 is unlikely to result in an overall increase in the nuclear inventory of the US, it certainly shows an increased importance being granted to nuclear weapons in national security strategy. This will likely be reflected in the nuclear deterrence postures of its adversaries too. Nuclear arms race remains the predominant trend for the near term.

NOTES:

[1] US Department of Defense, *Department of Defense Announces Pursuit of B61 Gravity Bomb Variant*, October 27, 2023, https://www.defense.gov/News/Releases/Release/Article/3571660/department-of-defense-announces-pursuit-of-b61-gravity-bomb-variant/. Accessed on November 1, 2023.

[2] Hans Kristensen and Matt Korda, "Biden Administration Decides To Build A New Nuclear Bomb To Get Rid Of An Old Bomb," *Federation of American Scientists,* October 27, 2023, https://fas.org/publication/biden-administration-to-build-a-new-nuclear-bomb/?s=03. Accessed on November 1, 2023.

[3] "Fact Sheet on B61 Variant Development," October 27, 2023, https://media.defense.gov/2023/Oct/27/2003329624/-1/-1/1/B61-13-FACT-SHEET.PDF. Accessed on November 1, 2023.

[4] "2022 Nuclear Posture Review," https://fas.org/wp-content/uploads/2023/07/2022-Nuclear-Posture-Review.pdf. Accessed on November 2, 2023.

[5] Shannon Bugos and Julia Masterson, "New Chinese Missile Silo Fields Discovered," *Arms Control Association,* September 2021, https://www.armscontrol.org/act/2021-09/news/new-chinese-missile-silo-fields-discovered. Accessed on November 2, 2023.

[6] Andrew Osborn, "Putin says Russia put nuclear bombs in Belarus as warning to West," *Reuters,* June 17, 2023, https://www.reuters.com/world/europe/putin-says-russia-positions-nuclear-bombs-belarus-warning-west-2023-06-16/#:~:text=The%20Russian%20leader%20announced%20in,European%20countries%20over%20many%20decades. Accessed on November 2, 2023.

[7] "America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States," https://armedservices.house.gov/sites/republicans.armedservices.house.gov/files/Strategic-Posture-Committee-Report-Final.pdf. Accessed on November 3, 2023.

[8] Aaron Mehta, "America's nuclear weapons will cost $1.2 trillion over the next 30 years," *Defense News*, November 1, 2017, https://www.defensenews.com/breaking-news/2017/10/31/americas-nuclear-weapons-will-cost-12-trillion-over-the-next-30-years/. Accessed on November 2, 2023.

[9] *Hearing on Military Assessment of Nuclear Deterrence Requirements*, First Session (2017), *Before the Armed Service committee,* 115th Congress House, Military Assessment of Nuclear Weapon Requirements, (Statement of General PAUL SELVA, USAF Vice Chairman of the Joint Chiefs of Staff) March 8, 2017, p. 54, https://www.govinfo.gov/content/pkg/CHRG-115hhrg24683/pdf/CHRG-115hhrg24683.pdf. Accessed on November 6, 2023.

[10] Bryant Harris, "Republicans lay battle lines over Biden's plan to retire B83 megaton bomb," *Defense News*, May 20, 2022, https://www.defensenews.com/congress/budget/2022/05/19/republicans-lay-battle-lines-over-bidens-plan-to-retire-b83-megaton-bomb/. Accessed on November 2, 2023.

[11] "Nuclear Matters Handbook (2020)," p. 42, https://man.fas.org/eprint/nmhb2020.pdf. Accessed on November 6, 2023.

[12] It has been reported that in fiscal year 2022 the National Defense Authorisation Act (NDDA) approved the requested funds for the B61-12 gravity bomb at $772 million.

[13] Hans M. Kristensen and Matt Korda, "United States nuclear weapons, 2023," Bulletin of the Atomic Scientists, Vol. 79, No. 1, 2023, p. 28.

[14] Hans M. Kristensen, Matt Korda, and Eliana Reynolds "Russian nuclear weapons, 2023," *Bulletin of the Atomic Scientists,* Vol. 79, No. 3, 2023, p. 174.

[15] U.S. Department of Defense, "Military and Security Developments Involving the People's Republic of China 2023," p. VIII, https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF. Accessed on November 6, 2023.