



Background

The B61 is one of two nuclear-armed gravity bombs currently in the U.S. active stockpile; the other is the B83-1. The bomb first entered the stockpile in the 1960s, making it the oldest nuclear weapon still in the arsenal.

The B61 comes in four versions—two “tactical” that are designed to be delivered by fighter planes (the B61-3 and -4), and two “strategic” that are designed to be delivered by long-range bombers (the B61-7 and -11). Exact numbers are classified, but the United States is currently estimated to have a total of about 520 B61s, with about 400 due to undergo life extension. About 180 B61s are kept at bases in Europe; these are tactical versions of the bomb.

Life Extension Program

All deployed versions of the B61 except the B61-11 are scheduled to undergo a life extension program (LEP). The B61-11 is the newest of the versions; it entered service in the 1990s and is not a part of this life extension.

The B61 LEP will produce a new version of the bomb, the B61-12, which will be based on the B61-4 warhead. The LEP will add safety and security features to the weapon, and the Air Force plans to add a new guided tail kit to increase its accuracy. The resulting B61-12 will be deliverable by either fighter planes or long-range bombers, and thus will function as both a strategic and tactical weapon, replacing the B61-3, -4, and -7.

This LEP involves major changes that come with major costs—estimates range up to \$25 million per bomb. The new Air Force guidance system drives the cost up even further, adding from \$1-2 billion to the total price. Also of concern, some outside experts [contend](#) the LEP will give the warhead new military capabilities—something the Obama administration has said it would not do.

Estimated number of B61s in the U.S. nuclear weapons stockpile, 2012¹

| <i>Version</i> | <i>Active Stockpile</i> | <i>Responsive/ Inactive</i> | <i>To Be Dismantled</i> |
|----------------|-------------------------|-----------------------------|-------------------------|
| B61-3 | 200 | 50 | 135 |
| B61-4 | 200 | 50 | 154 |
| B61-7 | 120 | 300 | 19 |
| B61-10 | 0 | 0 | 206 |
| B61-11 | 20 | 15 | 6 |

There are simpler ways to extend the life of the B61 that require fewer changes and are also lower cost. An option labeled the “triple alt,” for triple alteration, would replace only the radar (which uses outdated technology) and the neutron generator and power source (both “limited life components,” that have always been planned for replacement on a set schedule). This could extend the weapon’s life by 10 years and cost billions less than the current, much more ambitious, approach, which would replace hundreds of other non-nuclear parts. These additional parts are continually monitored through the stockpile surveillance program, and there is no pressing reason that they need to be replaced in the short term.

This approach could provide time for the administration to decide whether a new version of the weapon is truly needed, given possible upcoming changes to the U.S. nuclear posture. They could also relieve pressure on the NNSA budget in the short term, allowing it to complete a higher-priority LEP for the W76 submarine-launched ballistic missile, which has fallen behind schedule.

A review of the B61 LEP plan by JASON, a highly-respected group of independent science advisors to the government, found no technical requirement to complete the program on the NNSA’s planned timeline. Rather, they stated, maintaining the schedule was important for “political reasons involving our NATO allies.”

The Future of the B61

By the time the planned B61 LEP is completed, the tactical version of the weapon may no longer be in service. Presi-

¹ From “Estimates of the U.S. Nuclear Weapons Stockpile (2007 and 2012),” Robert S. Norris and Hans M. Kristensen, <http://www.fas.org/programs/ssp/nukes/publications1/USStockpile2007-2012.pdf>

dent Obama has said that he wants to pursue further arms control agreements with Russia to reduce strategic and, for the first time, tactical nuclear weapons such as the B61-3 and -4.

In the same light, as a condition of approval of the New START arms control agreement, the Senate demanded that the administration work with Russia to reduce stockpiles of tactical nuclear weapons. Russia reportedly has a much larger stockpile of such weapons than the United States. If the administration decides to reduce or eliminate the tactical B61 bombs in its arsenal to induce Russia to follow suit, this would alter significantly warhead levels and requirements. Stockpiles of strategic warheads like the B61-7 could also be reduced.

In addition, it is not clear that the European countries that currently host B61s want to continue doing so. Deployment of these weapons in Europe is intended to reassure NATO allies of the U.S. commitment to the alliance. However, both U.S. and NATO military leaders have acknowledged that the weapons' value is political rather than military. Some NATO members, like Germany, have already called for the removal of the B61, seeing it as too expensive to maintain given its lack of military relevance.

In a related issue, U.S. officials have expressed serious concern about the level of security for B61s based in Europe. A 2009 report by a task force reviewing Air Force nuclear weapons security found that “most sites [in Europe] require significant additional resources to meet DOD security requirements.” And in 2010, peace activists in Belgium entered a shed where U.S. nuclear weapons were kept.

Indeed, these security concerns are part of the motivation for the LEP. One of the reasons the B61-12 is based on the B61-4 is because that variant contains the smallest amount of fissile material, somewhat reducing the risk should a warhead be lost. However, there are other measures that could be taken immediately to make these weapons more secure, such as enhancing the security of current storage sites, consolidating the bombs at fewer locations to make them easier to guard, or basing them in the United States.

Budget

The president's Fiscal Year 2014 budget requests \$537 million in funding for the B61 LEP, a 45% increase over the \$369 million in FY13 funding for the program. According to the NNSA, the first refurbished warhead will be produced in 2019 and the total cost of the program will be \$7.9 billion, almost double the initial \$4 billion estimate.

Because the NNSA has had so many problems with schedules and cost estimates, the Pentagon's office of cost assessment and program evaluation was asked to examine the budget for the B61 LEP. In July 2012, they [estimated](#) that it will cost \$10.4 billion to extend the life of the B61 by 20 years— \$2.5 billion more than the current NNSA estimate. The DOD assessment also predicted that production would not begin until 2022, three years later than the NNSA assumes.

B61 Budget Figures (USD, in millions)

| | FY12 | FY13 | FY14 Request | Change FY13-14 | % Change FY13-14 |
|-----------------------|-------|-------|--------------|----------------|------------------|
| B61 LEP | \$126 | \$369 | \$537 | \$168 | 45.5% |
| B61 Stockpile Systems | \$169 | \$72 | \$84 | \$12 | 16.7% |

The NNSA has argued that a less ambitious approach to the B61 LEP, such as the triple alt, will ultimately be more expensive. This argument, however, assumes that the weapon will remain in service and will need additional upgrades after the initial 10 year extension period. But this may not be the case. As discussed above, by the time the LEP is completed, the warhead may no longer be in service or may be significantly reduced in numbers.

It does not make sense to spend as much as \$10 billion on a program to completely overhaul approximately 400 bombs when many of these weapons may be withdrawn from service before the program is completed.

Given the uncertainties involved and the significant cost of the program along with severely constrained budgets overall, Congress is likely to look very closely at the B61 program. At a minimum, key committees will call for further examination of less expensive options; a move to insist on such an option instead of the far-reaching approach is a real possibility.

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