Where the US Bombs are, 2006

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Katharine Lee Bates, the author of "America the Beautiful," could not have been referring to the expanse of the U.S. nuclear arsenal when she penned the lyric "from sea to shining sea," but it is fitting. Though it is the smallest it has been since 1958, the U.S. nuclear arsenal continues to sprawl across the country, with thousands of weapons deployed from the coast of Washington State to the coast of Georgia and beyond.

In total, we estimate that the United States deploys and stores nearly 10,000 nuclear weapons at 18 facilities in 12 states and six European countries (see below). The Pentagon developed this extensive network of installations over the past six decades in order to ensure the survivability of its nuclear arsenal. Post-Cold War base closures and arms reductions led to the consolidation of weapons at the current facilities; the number of weapons and their locations will change as the Pentagon implements the June 2004 Nuclear Weapons Stockpile Plan and the "New Triad."

Pinpointing the whereabouts of all U.S. nuclear weapons, and especially the numbers stored at specific locations, is fraught with many uncertainties due to the highly classified nature of nuclear weapons information. Declassified documents, leaks, official statements, news reports, and conversations with current and former officials provide many clues, as do high-resolution satellite images of many of these facilities. Such images are available to anyone with a computer and internet access, thanks to Google Earth and commercial satellite imaging companies such as DigitalGlobe. This development introduces important new tools for research and advances citizen verification. The statistics contained in this article represent our best estimates, based on many years of closely following nuclear issues.

The nuclear weapons network shrank during the past decade, with the Pentagon removing nuclear weapons from three states (California, Virginia, and South Dakota) and the size of the stockpile decreasing from about 12,500 warheads to nearly 10,000. Consolidation slowed considerably compared with the period between 1992 and 1997, when the Pentagon withdrew nuclear weapons from 10 states and several European bases, and the total stockpile decreased from 18,290 to 12,500 warheads. (For a detailed accounting of the location and distribution of U.S. nuclear weapons in the 1990s, see "Where the Bombs Are, 1992," September 1992 Bulletin; and "Where the Bombs Are, 1997," September/October 1997 Bulletin.)

Approximately 62 percent of the current stockpile belongs to the air force and is stored at seven bases in the United States and eight bases in six European countries; the navy stores its weapons at two submarine bases, one on each coast. None of the other services possesses nuclear weapons.

The ballistic missile submarine base at Bangor, Washington, contains nearly 24 percent of the entire stockpile, or some 2,364 warheads, the largest contingent. The Bangor installation is home to a majority (nine) of the navy's nuclear-powered ballistic missile submarines and a large number of surplus W76 warheads that will eventually be retired and disassembled. Its counterpart on the Atlantic coast, Kings Bay Submarine Base in Georgia, is the third-largest contingent, with some 1,364 warheads. Each base stores approximately 150 nuclear sea-launched cruise missiles.

Minot Air Force Base (AFB) in North Dakota, with more than 800 bombs and cruise missiles for its B-52 bombers and more than 400 warheads for its Minuteman III intercontinental ballistic missile wing, has the largest number of active air force weapons. The other B-52 wing at Barksdale AFB in Louisiana has more than 900 warheads, and Whiteman AFB in Missouri has more than 130 bombs for its B-2 bombers.

The large underground facility at Kirtland AFB in Albuquerque, New Mexico, stores more than 1,900 warheads that are either part of the inactive/reserve stockpile or awaiting shipment across Interstate 40 to the Pantex Plant outside of Amarillo, Texas, for dismantlement. The 970-acre facility at Nellis AFB, Nevada, northeast of Las Vegas, performs a similar function, storing approximately 900 warheads in 75 igloosâ€""one of the largest stockpiles in the free world," according to the air force.

During the Cold War, the United States deployed a large percentage (up to one-third) of its nuclear weapons in other countries and at sea. At its peak arsenal size in the late 1960s, the United States stored weapons in 17 different countries. By the mid-1980s, there were about 14,000 weapons in 26 U.S. states, 6,000 more at overseas U.S. and NATO bases, and another 4,000 on ships at sea.

The United States terminated many nuclear missions after the end of the Cold War and retired the weapons. It withdrew all of its nuclear weapons from South Korea in 1991 and thousands more from Europe by 1993. The army and Marine Corps denuclearized in the early 1990s, and in 1992 the navy swiftly off-loaded all nuclear weapons from aircraft carriers and other surface vessels. By 1994, the navy had eliminated these ships' nuclear capability, and many air force, navy, and army bases and storage depots closed overseas as a result. Today, perhaps as many as 400 bombs remain at eight facilities in six European countries, the last remnant of a bygone era (see "U.S. Nuclear Weapons in Europe, 1954-2004," November/December 2004 Bulletin).

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Locations of U.S. nuclear weapons, 2006

Warhead/Weapon Total Location (Weapon)

STRATEGIC FORCES

Bomber weapons
B61-7 bombs 439 35 at Whiteman AFB, MO (B-2); 210 at Barksdale AFB, LA (B-52H); 194 at Minot AFB, ND (B-52H)

B61-11 bombs 41 Whiteman AFB, MO (B-2)

B83-1, -0 bombs* 626 60 at Whiteman AFB, MO (B-2); 130 at Barksdale AFB, LA (B-52H); 130 at Minot AFB, ND (B-52H); 306 at Nellis AFB, NM (storage)

W80-1/ALCM 1,411 500 at Barksdale AFB, LA (B-52H); 200 at Minot AFB, ND (B-52H); 711 at Kirtland AFB, NM (storage)

W80-1/ACM 400 100 at Barksdale AFB, LA (B-52H); 300 at Minot AFB, ND (B-52H)

SLBMs
W76/Trident II D5 1,712 1,100 at Bangor, WA; 612 at Kings Bay, GA

W76/Trident I C4 1,318 850 inactive at Bangor, WA; 468 inactive at Kings Bay, GA

W88/Trident II D5 404 264 at Bangor, WA; 140 at Kings Bay, GA
ICBMs

W62/Minuteman III 580 46 warheads in 46 Warren AFB silos, CO; 85 warheads in 85 Warren AFB silos, NE; 19 warheads in 19 Warren AFB silos, WY; 20 spare warheads in Warren AFB, WY; 150 warheads in 50 Malmstrom AFB silos, MT; 10 spare warheads in Malmstrom AFB, MT; 250 warheads in storage at Kirtland AFB, NM

W78/Minuteman III 805 200 warheads in 100 Malmstrom AFB silos, MT; 150 warheads in 50 Malmstrom AFB silos, MT; 25 spare warheads at Malmstrom AFB, MT; 300 warheads in 100 Minot AFB silos, ND; 100 warheads in 50 Minot AFB silos, ND; 30 spare warheads at Minot AFB, ND

W87/MX 553 553 warheads in storage at Kirtland AFB, NM

NONSTRATEGIC FORCES**

B61-3 386 200 in Europe; 186 at Nellis AFB, NV
B61-4 404 200 in Europe; 204 at Nellis AFB, NV
B61-10* 206 206 at Nellis AFB, NV
W80-0/SLCM 294 150 at Bangor, WA; 144 at Kings Bay, GA

WARHEADS IN RESERVE

W84/GLCM 383 383 in reserve at Kirtland AFB, NM

RETIRED WARHEADS AWAITING DISMANTLEMENT

Several types of warheads await dismantlement; schedule unknown

Total 9,962

ACM: advanced cruise missile; AFB: air force base; ALCM: air-launched cruise missile; ICBM: intercontinental ballistic missile; GLCM: ground-launched cruise missile; SLBM: submarine-launched ballistic missile; SLCM: submarine-launched cruise missile

* All B61-10 and 83-0 bombs are inactive. ** Presidential Decision Directive 74 of November 29, 2000, authorized deployment of 480 (+/- 10 percent) B61 bombs in Europe. Whether the full number was deployed is unclear. Since 2000, the United States withdrew weapons from two former nuclear bases (Araxos in Greece and Memmingen in Germany) and placed all B61-10s in the inactive stockpile

Locations of U.S. nuclear weapons overseas:
Belgium;
Germany; Italy; Netherlands; Turkey; Britain;

Where they were

Alaska*, Canada
Chichi Jima
Cuba

France
Greece
Greenland
Guam
Hawaii*
Iwo Jima
Japan (non-nuclear)
Johnston Island
Kwajalein Atoll
Midway Islands
Morocco
Okinawa
Philippines
Puerto Rico
South Korea
Spain
Taiwan
* Deployed prior to 1959 statehood

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U.S. Nuclear Weapons in Europe

New report provides unprecedented details (February 2005)

The United States continued to deploy roughly 480 nuclear bombs in Europe, more than double the number normally estimated by the media and non-governmental analysts. The deployment was detailed in the report "U.S. Nuclear Weapons in Europe" published by the Natural Resources Defense Council. The weapons are all B61 gravity bombs and are deployed at eight bases in six NATO countries: Belgium, Germany, Italy, Netherlands, Turkey and the United Kingdom (see map below).

The 480 nuclear bombs in Europe are the last of a huge arsenal of forward-deployed weapons that NATO and the Warsaw Pact used to deploy in Europe during the Cold War. The Soviet Union deployed nuclear weapons in Eastern European countries, but all of these weapons have been withdrawn to Russia. On the NATO side, the stockpile peaked at some 7,300 nuclear warheads in 1973 and gradually declined over the subsequent years (see table). In 1991, the U.S. government decided â€” and NATO agreed â€” to withdraw almost all of the remaining weapons, but left 480 air-delivered bombs in place.

Today, the United States is the only nuclear power that continues to deploy nuclear weapons outside its own territory. The approximately 480 nuclear bombs in Europe are intended for use in accordance with NATO nuclear strike plans, the report asserts, against targets in Russia or countries in the Middle East such as Iran and Syria.

The report shows for the first time how many U.S. nuclear bombs are earmarked for delivery by non-nuclear NATO countries. In times of war, under certain circumstances, up to 180 of the 480 nuclear bombs would be handed over to Belgium, Germany, Italy, the Netherlands and Turkey for delivery by their national air forces. No other nuclear power or military alliance has nuclear weapons earmarked for delivery by non-nuclear countries.

Although the United States retains full control in peacetime, this quasi-nuclear status of non-nuclear NATO countries violates the objective of the nuclear Non-Proliferation Treaty (NPT). The U.S. and NATO argue that there is no violation because the U.S. retains control of the weapons. But the allied nuclear role is far from dormant in peacetime, with host country pilots practicing nuclear strikes and their aircraft being maintained ready to delivery the nuclear weapons if necessary. Besides, the strictly legal argument misses the bigger point: equipping non-nuclear NATO countries with the means to deliver nuclear weapons if necessary contradicts the non-proliferation standards that the U.S. and Europe are trying to impress upon other countries such as Iran and North Korea.

Satellite images of the bases are available for download in the right-hand bar.

The report reveals that although the U.S. in 1994 and 1996 withdrew Munitions Support Squadrons (MUNSS) from five national bases in Germany, Italy and Turkey, the weapons at the bases were not returned to the United States but instead moved to the main U.S. operating bases in those three countries. Moreover, the weapons continued to be earmarked for delivery by host nation aircraft. MUNSS number designations were changed in 2004 and logistics concentrated at Spangdahlem Air Base in Germany for the remaining four nuclear weapons custodian units deployed in Belgium, Germany, Italy and the Netherlands.

Nuclear Weapons For U.S. And NATO Forces

Note: Of the weapons listed at Ramstein Air Base, 40 may have been returned to the United States.

The report also provides new insight into the logistics of the nuclear weapons deployment in Europe, including the capacity and characteristics of the Weapons Storage and Security System (WS3) used to store the weapons underground inside Protective Aircraft Shelters at the individual bases. It also highlights the fleet of Weapons Maintenance Trucks (WMTs) dispersed to the bases to provide on-site maintenance of the nuclear bombs. Because this maintenance program occasionally disassembles weapons inside the Protective Aircraft Shelter, the report reveals, the U.S. Air Force discovered in 1997 that the procedure created a risk of inadvertent nuclear explosion if

a disassembled weapon was struck by lightning.

Risk of Inadvertent Nuclear Explosion at NATO Bases

A U.S. Air Force safety review determined in 1997 that lightning could cause an accidental nuclear explosion during service of B61 nuclear bombs in NATO's protective aircraft shelters.

Another finding of the report is that the the United States have quietly modernized the B61 nuclear bombs in Europe over the last five years to upgrade the bombs' use-control and improve the stability of the weapons' during employment.

Recent Modernization of U.S. Nuclear Weapons In Europe

Between October 1998 and September 2003, the United States modernized the nuclear surety capabilities and the trajectory spin control of the B61 nuclear bombs in Europe.

The report also documents that the U.S. military in 1994 made arrangements for nuclear targeting and use of nuclear weapons in Europe outside European Command's (EUCOM) area of responsibility. For EUCOM, this means CENTCOM (Central Command) which incorporates Iran and Syria (see 1994 documents in the right-hand bar). It is unclear whether NATO parliaments are aware of arrangements to target and potentially strike Middle Eastern countries with nuclear weapons based in Europe. The arrangements may be the result of a general broadening of U.S. nuclear policy after the Cold War to also target proliferating nations with nuclear weapons.

A Role For NATO Nuclear Weapons Against Iran?

Documents partially declassified and released under the U.S. Freedom of Information Act reveal that arrangements were made in the mid-1990s to allow the use of U.S. nuclear forces in Europe outside the area of responsibility of U.S. European Command (EUCOM). As a result of these arrangements, EUCOM now supports CENTCOM nuclear missions in the Middle East, including, potentially, against Iran and Syria. (Download full copy of these two documents from the right-hand bar)

The report concludes that the United States and NATO have been incapable of articulating a credible mission for the nuclear weapons, that the deployment needlessly continues a nuclear deterrence relationship with Russia in Europe, and that equipping non-nuclear NATO countries with the capabilities to delivery nuclear weapons undercuts U.S. and NATO nonproliferation objectives in the 21st century. The report asserts that NATO's recent announcement that the

readiness level of nuclear-capable aircraft has been reduced to "months" suggests that the nuclear electronic and mechanical interfaces on the strike aircraft may have been removed from the aircraft, in which case there is no operational need to keep the nuclear weapons in Europe.

The principle of nuclear burden-sharing began to unravel in 2001 when nuclear weapons were withdrawn from Greece. The inactivation of the Munitions Support Squadron at Araxos Air Base was ordered in April 2001 after the withdrawal of the weapons was authorized by Presidential Decision Directive/NSC-74 in November 2000. Greece's departure from NATO's nuclear club contradicts the Alliance's Strategic Concept from 1999 which emphasizes widespread deployment of nuclear weapons in European member countries. If Greece can withdraw with no severe consequences for NATO deterrence or unity, so can the other European host countries that currently perform the NATO nuclear strike mission.

The report recommends that all the weapons should be withdrawn to the United States, and that the U.S. and NATO should use the political leverage from such a move to engage Russia to drastically reduce the large number of Russian non-strategic nuclear weapons, as well as revitalize efforts to create a nuclear weapons free zone in the Middle East. Initiatives like these, the report concludes, would â€" unlike continuing to maintain U.S. nuclear weapons in Europe â€" provide real security benefits to NATO.

The full report is available from the right-hand bar along with a number of documents released under FOIA. Also made available are satellite photos of many of the European bases where U.S. nuclear weapons are stored.

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