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NRDC NUCLEAR NOTEBOOK

U.S. nuclear reductions

On June 1, National Nuclear Security Administration chief Linton F. Brooks submitted a classified report to Congress detailing the plans that have been agreed to by the Energy and Defense Departments regarding reductions in the nuclear stockpile. Brooks said the stockpile would be reduced by "almost half" but declined to provide details about its new size or composition, citing classification reasons.

Such regrettable secrecy stems from ingrained practices developed during the Cold War. Greater stockpile transparency could help advance certain arms control and disarmament agreements and encourage measures to secure fissile material and warheads in Russia and elsewhere.

We estimate the current size of the U.S. nuclear stockpile, at the end of fiscal 2004, to be 10,350 warheads. To decipher the size and composition of the U.S. nuclear weapons stockpile is difficult, though not impossible. Having closely followed stockpile trends for more than two decades, we feel confident in our estimates. Useful declassified information has been released over the years; one such source is an Energy Department table that provides the number of warheads in the stockpile, the number of warheads built each year, and the total megatons each year from 1945 to 1961.

A second source of official information has been charts provided by the Energy Department to Congress over the years that show the size of the stockpile through the decades. The charts were released without the number of warheads in the left-hand column, but they were easy to fill in (see graph, below). Another source (until 1999 routinely supplied by officials) was detailed figures on the number of disassemblies being carried out at the Pantex Plant. These figures revealed that about 11,000 warheads had been dismantled during the 1990s. In 1999, the Energy Department reversed its policy and classified dismantlement figures.

U.S. nuclear stockpile, 1945--2004. By our count, the United States produced some 70,000 nuclear warheads from 1945 to 1990. At its peak in 1967, the operational stockpile held about 32,000 warheads. A dramatic rise took place from the mid-1950s to the mid-1960s, when each military branch of service wanted a nuclear weapon for practically every mission. In 1955, there were about 3,000 warheads in the stockpile; 10 years later there were more than 30,000. To the military, nuclear weapons were the things to have. Fueled by an intense interservice rivalry and by the fierce competition between Los Alamos and Lawrence Livermore design labs, the stockpile grew by leaps and bounds.

During the two peak production years, 1959 and 1960, warheads came off the assembly line at a rate of 27 a day--about 600 a month. The nuclear weapons included air-to-air Falcon and Genie missiles; many types of anti-submarine weapons (some dropped from planes or helicopters, others launched from ships or submarines); atomic land mines; artillery shells; surface-to-surface missiles in all ranges; air-to-surface missiles; surface-to-air missiles; and every size of gravity bomb for a dozen types of nuclear-capable bombers and three dozen types of nuclear-capable tactical aircraft.

Beginning in the 1970s, the military's enthusiasm for nuclear weapons began to wane. Many nuclear missions were dropped or replaced with conventional weapons. (An interesting study would be to document the military's role in unilaterally giving up these missions, which resulted in the retirement of thousands of nuclear weapons, all without an arms control treaty.)

Another spate of nuclear weapons production occurred in the late Carter--early Reagan years. An estimate at the time calculated that all the proposed weapon systems would require some 17,000 new nuclear warheads to be built. Later, several programs were cancelled and others

were cut back. For example, the Defense Department planned to build 200 of the controversial MX missiles, each to carry 10 warheads. The program was later reduced to 100 missiles, and in the end, only 50 MX missiles were fielded.

Still, the 1980s saw substantial warhead production until 1989, when safety and environmental concerns at several Energy Department weapon complex facilities brought production to a halt. Much of the current stockpile was built in the 1980s, including warheads for the MX and Minuteman III intercontinental ballistic missiles (ICBMs), Trident submarine-launched ballistic missiles, cruise missiles, and new or modified bombs.

As the Cold War ended and the Soviet Union dissolved, a September 1991 initiative from President George H. W. Bush reduced the stockpile approximately by half.

A parallel way to track the history of the stockpile is to examine where the United States deployed its weapons. For most of the Cold War, U.S. nuclear weapons literally encircled the globe. Basing them was a key issue, and nuclear deployments affected foreign policy and military plans. The United States deployed nuclear weapons in 17 countries and seven territories, two of which (Alaska and Hawaii) later became states.

The peak deployment of U.S. nuclear weapons in NATO countries in Europe was in 1971, with approximately 7,300 weapons in seven countries. In 1967, the United States stored some 3,250 weapons in Okinawa, Korea, Guam, the Philippines, and Taiwan. Significant numbers of nuclear weapons--in 1975, approximately 7,400--floated in the Atlantic, Pacific, and Mediterranean on various types of surface vessels and submarines.

Today, the United States is the only nation to deploy nuclear weapons outside its borders--excluding warheads on submarines (see "U.S. Nuclear Weapons in Europe").

If the United States cuts its total nuclear stockpile by "almost half," some 4,300 warheads (or 42 percent) of six types will be retired and disassembled (see "Warheads Likely Slated").

Also, a few warheads of each type will be removed periodically as a part of routine surveillance. By 2012, approximately 6,000 warheads of seven types will remain in the U.S. stockpile (see "Projected Nuclear Stockpile, 2012").

This will reduce the size of the stockpile to the early 1958 level, with a total yield of 1,800 megatons--less than one-tenth the historic high in 1960. Of the almost 6,000 warheads, all but about 700 may be active, either "operationally deployed" or part of the active "responsive force." With additional tritium available from the retired warheads, it will be possible to keep a substantial portion of the total stockpile in an active status.

The Moscow Treaty limits the number of operationally deployed warheads to 2,200; this could include warheads carried on 500 Minuteman III ICBMs, 12 (of 14) Trident submarines, 76 B-52 bombers, and 21 B-2 bombers. In 2012, there will also be 580 nonstrategic bombs available for F-16, F-15E (later the Joint Strike Fighter), and Tornado aircraft, as well as about 265 warheads for nuclear-armed submarine-launched cruise missiles for attack submarines.

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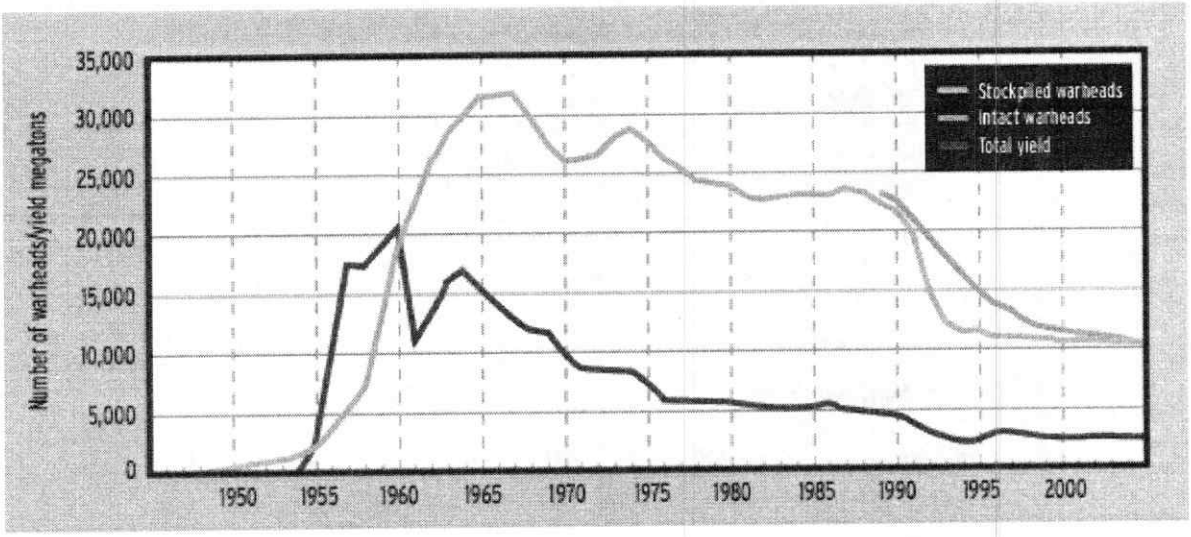
U.S. nuclear weapons stockpile, 1945-2004



U.S. nuclear weapons in Europe

Location	Warheads	Vaults	x2 =
Kleine Brogel Airbase, Belgium	20	11	22
Buchel Airbase, Germany	20	11	22
Ramstein Airbase, Germany	130	54	108
Aviano Airbase, Italy	50	18	36
Ghedi Airbase, Italy	40	11	22
Volkel Airbase, Netherlands	20	13	26
Incirlik Airbase, Turkey	90	25	50
RAF Lakenheath, Britain	110	33	66
Total	**480**	176	352

Warheads likely slated for retirement or disassembly

Warhead type	Number
W62 (MM III ICBM)	730
W78 (MM III ICBM)	425
W76 (Trident I SLBM)	1,350
W80-1 (ACM/ALCM)	1,000
W84 (GLCM)	380
B61-3	200
B61-4	210
B61-10	30
Total	**~4,325**

ACM: advanced cruise missile; **ALCM**: air-launched cruise missile; **GLCM**: ground-launched cruise missile; **ICBM**: intercontinental ballistic missile; **MM**: Minuteman; **SLBM**: submarine-launched ballistic missile; **SLCM**: submarine-launched cruise missile.

Projected nuclear stockpile, 2012

Warhead type	Number
W78 (MM III ICBM)	400
W87 (MM III ICBM)	545
W76 (Trident I/II SLBM)	1,840
W88 (Trident II SLBM)	400
B61-3	200
B61-4	200
B61-7	430
B61-10	180
B61-11	35
B83-0/-1	625
W80-1 (ACM/ALCM)	825
W80-0 (SLCM)	265
Total	**5,945**

570 [some in US]

ACM: advanced cruise missile; **ALCM**: air-launched cruise missile; **GLCM**: ground-launched cruise missile; **ICBM**: intercontinental ballistic missile; **MM**: Minuteman; **SLBM**: submarine-launched ballistic missile; **SLCM**: submarine-launched cruise missile.