

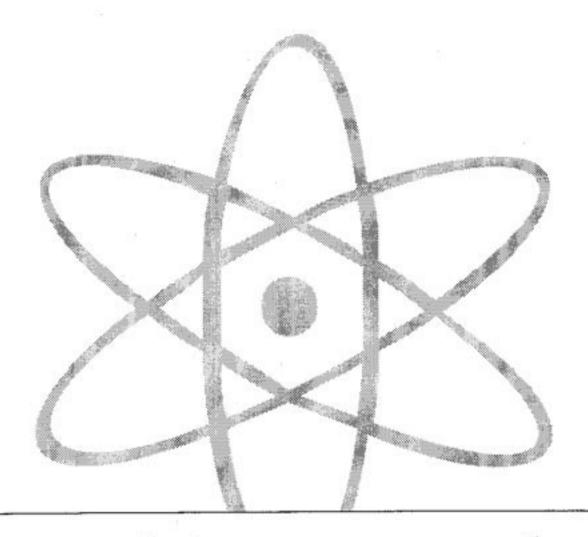
Taking Stock

U.S. Nuclear Deployments at the End of the Cold War

William M. Arkin and Robert S. Norris

Greenpeace/NRDC August 1992 (Revision 1)

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Introduction

The United States is in the midst of the biggest shift in nuclear weapon deployment patterns since the late 1950s and early 1960s when the bulk of the current stockpile was initially fielded. Yet while the newspapers are filled with stories of nuclear weapons movements and withdrawals in the republics of the former Soviet Union, hardly anything has been written about a similar process going on in the United States.

The end of the Cold War has left the U.S. nuclear stockpile in great flux. The normal rhythm that characterized the past four decades has been broken. No new warheads are being produced and fielded, and none are in the pipeline for the foreseeable future. Rather the major activity has to do with withdrawing large numbers of warheads from sites in the United States and abroad and storing them at depots while they await their turn to be dismantled at the nuclear weapons destruction plant (PANTEX) in Texas.

With the changes in the composition of nuclear forces has also come a dramatic reduction in the numbers and the locations of U.S. nuclear weapons at home and abroad. Virtually all nuclear basing overseas has been eliminated. And in the coming years, as the number of nuclear weapons further declines by three-quarters, the number of sites will decline in half. Nevertheless, the domestic spread of nuclear weapons will continue to be significant, and 17 states and six countries will continue to host warheads in the year 2000.

U.S. nuclear weapons are currently stored in 25 states and seven foreign countries. Around the world, there are 50 U.S. nuclear storage sites. This is a decline from 164 in 1985, when small warhead storage sites dotted the European countryside (see Table 1). An additional 900 underground missile launching (ICBM) silos spread across seven states continue to house nuclear warheads, a reduction of 152 silos since 1985. Only two states have given up their nuclear weapons storage mission since 1985 — Arizona and New Hampshire. Two foreign countries — South Korea and Guam (a U.S. territory) — have ceased hosting nuclear weapons as well.

The stockpile's historic high of over 32,000 warheads was reached in 1967. The number decreased through the 1970s to a plateau of some 24,000 warheads in the mid-

Table 1 Nuclear Weapons Storage Sites 1985 1992 2000 Storage Sites Domestic Overseas 125 16 11 TOTAL 50 164 29 Individual ICBM Silos U.S. 1052 900 500

1980s. During the Reagan Administration, the scheduled increase in the number of nuclear weapons never took place, but there was a significant turnover as new weapons replaced older models. The number of weapons started to significantly decline in the late 1980s, and the current stockpile stands at nearly 19,000. The composition and deployment is detailed in Table 2.

Since 1945, the United States has produced close to 70,000 nuclear weapons, of which over 50,000 have already been retired and disassembled. Of the nearly 19,000 warheads in the stockpile today, some 11,500 are in active service, while 7,500 await dismantlement.

¹ In 1985 an accounting was made of the locations and numbers of U.S. nuclear weapons (See Nuclear Battlefields, by William M, Arkin and Richard Fieldhouse, Harper & Row, 1985). This report updates that accounting.

Beginning 1 October 1992, the Department of Energy's PANTEX Plant, outside of Amarillo, Texas, is scheduled to disassemble 2,000 warheads per year. This rate will continue until the eventual stockpile size of 5,400 warheads is reached in the late 1990s. Over the six-year period from October 1986 through September 1992, PANTEX disassembled 5,976 warheads. It has more than enough capacity to disassemble the entire stockpile at current workload levels.

Arms Control and Nuclear Weapons Deployments

Two arms control treaties, and two packages of arms control and disarmament initiatives over the past year have contributed to the reductions and shifts in the nuclear stockpile.

* INF Treaty: The INF Treaty was signed in December 1987 and entered into force in June 1988. Over a subsequent three-year period, all U.S. and Soviet land-based missiles

			Table 2		
	U.S.	Nuclear 1	Weapons Sto	ckpile (J	une 1992)
Warhead/Weapon	First Fielded	Yield (kilotons)	User	Number	Deployment
Active Stockpile					
Bombs					
B53-1	1962	9000	AF	50	LA, MI, NY, ND, WA
B61 Strategic	1966	10 to 500	AF	900	AR, KS, LA, MI, NY, ND, SD, TX, WA
B61 Tactical	1975	10 to 345	AF,MC,N,NATO	1925	CA, FL, HI, NM, NV, VA, Europe
B83	1983	low to 1200	AF	650	AR, KS, LA, MI, NY, ND, SD, TX, WA
Submarine-launched ba		siles	A	000	range and and tell tell one to the
W76/Trident I C4	1978	100	N	3175	GA, SC, WA
W88/Trident II D5	1988	475	Ñ	400	GA, SO, WA
Intercontinental ballistic				400	WA .
W62/Minuteman III	1970	170	AF	610	CO, LA, MT, NB, WY
W78/Minuteman III	1979	335	AF	920	LA, ND
W87-0/MX	1986	300	AF	525	WY
Air-launched cruise mis		300	AL	323	***
WB0-1/ALCM	1981	5 to 150	AF	1000	AR LA MI NV NR TV WA
W80-1/ACM	1990	5 to 150		1660	AR, LA, MI, NY, ND, TX, WA
Sea-launched cruise mi		5 10 150	AF	200	MI, ND
W80-0/SLCM		E to 150	No.		04 111 111 00 1/4
WBD-0/SLCM	1983	5 to 150	N	350	CA, HI, NJ, SC, VA
Scheduled for Retireme	nt and Di	sposal			
Bombs					
B57 strike bomb	1963	<1 to 20	AF,MC,N,NATO	750	NM, NV, Europe
B57 depth bomb	1963	<1 to 20	N.NATO	800	AK, CA, FL, HI, ME, TX, VA
Submarine-launched ba	Illstic mis			000	red end retributed to an
W68/Poseidon C3	1970	50	N	1535	SC, TX
Intercontinental ballistic				1000	22,111
W56/Minuteman II	1963	1200	AF	450	LA, MO, MT, SD
Air-to-surface missiles			575	400	D-1, m-2, m-1, 00
W69/SRAM A	1971	170	AF	1100	KS, LA, MI, NY, ND, SD, TX, WA
Artillery	100	-17	200	1100	וויין ברון וווין ויוין וווין וויין וווין וווין
W33/8-inch	1957	<1-12	A,MC,NATO	700	CA, NM, NY, TX
W48/155mm	1963	1.1	A,MC,NATO	900	CA, NM, NY, TX
W79/8-inch	1981	0.8-1.1			
Short-range missiles	1901	0.0-1.1	A,MC	540	CA, NM, NY, TX
W70/Lance	1070	1 100	A NIATO	222	CA NIM MY TY
VV / U/Larice	1973	1-100	A,NATO	900	CA, NM, NY, TX

between 500 and 5500 kilometer range were eliminated. On the U.S. side, these included Pershing II ballistic missiles and Ground-launched cruise missiles (GLCMs) in five European countries. Missiles were removed from three Pershing II bases in Germany and six newly-built GLCM bases in the U.K., Italy, Germany, Belgium and the Netherlands.

Army Pershing II warheads were returned to Seneca Army Depot in New York and Air Force GLCM warheads were returned to Kirtland AFB in New Mexico. Though the treaty did not specify that the missile warheads be destroyed, the approximately 600 warheads that had been built no longer had a weapon system to go with them. A portion of the 200 W85 Pershing II warheads were converted into B61 Mod 10 bombs for the Air Force (and are currently in the stockpile). The 400 W84 GLCM warheads initially were put in an "inactive reserve" status but eventually were all dismantled in FY 1991.

As a consequence of the INF Treaty, West Germany pledged also to retire its U.S.supplied W50 Pershing 1A missile warheads and 100 were removed from two "custodial" bases in Germany. The W50 warheads were fully retired in FY 1991.

* START Treaty: After almost a decade of negotiations the START Treaty was signed in Moscow in July 1991. To date it still has not been ratified and entered into force, but in anticipation of its acceptance by the Senate, some withdrawals and retirements have been undertaken. President Bush directed the retirement of 10 Poseidon-equipped ballistic missile submarines in September 1991. These submarines were armed with approximately 1,600 W68 Poseidon warheads, which have been stored at Naval Weapons Station Charleston and have begun to be retired. The remaining 450 Minuteman II ICBMs were also removed from "alert" status starting in September. In December, warheads and missiles began to be removed from dispersed silos at Ellsworth AFB in South Dakota, and the other two bases in Missouri and Montana began soon thereafter. The dismantlement process for the W56 Minuteman II warhead has begun, and all the warheads will be disassembled by FY 1997.

The Treaty's provisions call for reduction of U.S. strategic forces from some 13,000 warheads to about 8,500. To meet a lower level of warheads, and to retain the most modern types in the arsenal, the Air Force will also retire the older W62 warhead now on 200 Minuteman III ICBMs. These warheads are located in Colorado, Montana, Nebraska and Wyoming. All the W62 warheads will be retired by FY 1998. Presumably, in accordance with the Treaty's restrictions, a smaller bomber force will also result in the retirement of some number of bomber weapons (bombs and air-to-surface missiles).

* Joint Understanding: The original START limits were overtaken by events in 1992. A new agreement — building on START — was formalized in a Joint Understanding, signed in Washington by President Bush and Russian President Yeltsin on 17 June 1992. This agreement created new limits, and will further reduce the U.S. strategic arsenal to some 3,500 warheads by 2003. In accordance with its provisions, the MX missile will be retired, and its W87 warheads will be removed. Some (or all) of these 500 warheads could be refitted to Minuteman III ICBMs. The Joint Understanding bans land-based multiple warhead (MIRV) missiles, however, so each Minuteman III would only get one W87 warhead. In any case, some 900 ICBM warheads (W78s or W87s, or W78s only) will be retired. The Air Force also plans to move 150 Minuteman III missiles — probably those at Minot AFB in North Dakota — to 150 empty silos at Malmstrom AFB in Montana. This would consolidate the future Minuteman III force at three bases (150 at Grand Forks AFB in North Dakota; 150 at F.E. Warren AFB in Wyoming, Colorado and Nebraska; and 200 at Malmstrom AFB in Montana).

To meet the lower warhead ceilings of the Joint Understanding, the U.S. Navy will retire 12 older submarines that currently carry the Trident I missile with its W76 warhead. These submarines are based at Charleston, South Carolina and operate out of King's Bay, Georgia. Many of these warheads from retired submarines will be used to arm Atlantic Fleet Trident II missiles. Not all of the 1,500 warheads will be needed to fill out the loads of Trident II boats, however, and a significant number will be retired.

The smaller bomber force, and more stringent restrictions on the basing of nuclear bomber weapons, will result in the denuclearization of a number of current bomber bases. These likely include the four B-1B bases at McConnell AFB in Kansas, Grand Forks AFB in North Dakota, Ellsworth AFB in South Dakota, and Dyess AFB in Texas. In addition, B-52G bombers will either be retired or denuclearized in the coming years. B-52Gs are currently based at Eaker AFB in Arkansas, Wurtsmith AFB in Michigan, and Carswell AFB in Texas. In theory, all of these seven bases will cease storing nuclear weapons. Nuclear warheads for the future bomber force will be spread at six bases — five B-52H bases and one B-2 base. Louisiana, Michigan, Missouri, New York, North Dakota, and Washington will continue to host bomber weapons.

* September 1991 Initiatives: On 27 September 1991 President Bush announced a series of new arms control initiatives. These included the withdrawal of Army nuclear weapons from overseas bases and the elimination of some 3,000 artillery shells and Lance missile warheads. On 2 July 1992, the Pentagon announced that these warheads had all been removed from foreign bases and returned to the United States. It is believed that approximately 60 artillery shells were removed from South Korea and some 2,000 were removed from Europe. However, the process of retirement began before President Bush's speech, and many warheads had probably already been moved from Europe to Seneca Army Depot in New York and Sierra Army Depot in California by September 1991. The W33, W48, W70 and W79 warheads are now being rapidly disassembled at PANTEX, a process that will be completed by October 1993.

President Bush also directed the withdrawal of tactical nuclear weapons from ships and submarines, and from P-3 Orion aircraft bases overseas. Between September 1991 and June 1992, about 500 nuclear weapons were thus removed from aircraft carriers, surface ships and attack submarines and returned to naval depots in California, Florida, Hawaii, New Jersey, South Carolina, and Virginia. The bulk of these B57 and B61 bombs and W80 Tomahawk SLCM warheads will be stored. Some 200 B57 nuclear depth bombs were also removed from overseas bases in Italy and the U.K. (and possibly Guam) and returned to the U.S. The B57 nuclear depth bombs will be disassembled in the 1990s.

President Bush also removed strategic bombers off ground alert, directed the acceleration of the retirement of 450 Minuteman II ICBMs scheduled to be eliminated under START (see above), and cancelled three nuclear programs, the mobile MX and Small ICBMs, and the SRAM II missile. Development of a new tactical air-to-surface missile (SRAM-T) was terminated.

Domestic Nuclear Weapons Deployments

South Carolina continues to lead all states with 2,258 warheads stored in the Charleston area, the result of its role as the main depot for Navy ballistic missile submarines. The state has even more warheads than it did in 1985 due to storage of 1,450 Poseidon missile warheads from submarines that have been retired. New Mexico and Texas now rank as

numbers two and four in terms of weapons stored. New Mexico's rise in rank comes as Kirtland AFB in Albuquerque takes on a greater role in storing warheads awaiting disposal in Texas. (Many of these weapons are only temporarily "staged" awaiting shipment to Texas.) North Dakota (#3), Washington (#5), Michigan (#8) and Wyoming (#10) have bases for strategic forces, whereas California (#6), Louisiana (#7), and Virginia (#9), in the main, have depots for long-term storage. Since 1985, New York has dropped from second place out of the top ten due to the retirement of large numbers of Army warheads and the closure of a bomber base. Wyoming has risen from #18 to #10 as a result of the MX missile deployment in 1986-1988.

Greater numbers of weapons are being stored at a few large domestic depots. The Air Force has three main storage bases, the Navy nine, the Army two. Still, 40 percent of the stockpile is deployed at 33 operational air force bases (17 in the U.S. and 16 in Europe). About ten percent of the stockpile (1,800 warheads) is deployed at sea aboard ballistic missile submarines. Four submarines in the Pacific and seven in the Atlantic are on patrol at any given time. Another 4,000 submarine missile (SLBM) warheads are at three Navy bases — Georgia, South Carolina, and Washington — that support the ballistic missile submarine force.

Table 3 provides a state-by-state accounting for 1985, 1992, and a projection for the

Table 3
Nuclear Weapons in the United States

		1985		1992		2000
South Carolina	rank	number 1962	rank	number*	rank	number
			1	2258	9	145
New Mexico	10	410	2	2090	8	150
North Dakota	3	1510	3	1650	3	435
Texas	6	630	4	1365	•••	1ew
Washington	5	1172	5	1248	1	710
California	4	1437	6	1085	6	275
Louisiana	8	530	7	910	4	295
Michigan	6	630	8	650		0
Virginia	7	542	9	595	5	280
Wyoming	18	247	10	582	13	29
New York	2	1900	11	555	6	275
South Dakota	12	365	12	450	-	0
Nevada	16	260	13	400	8	150
Kansas	24	20	14	350		0
Florida	19	230	15	300	0.00	0
Hawaii	13	345	16	275	10	90
Nebraska	17	255	17	255	11	85
Arkansas	9	430	18	250		0
Montana	15	315	18	250	7	210
Georgia	11	406	19	192	2	555
Missouri	20	155	20	150	6	275
New Jersey	22	100	20	150	-	0
Colorado	21	138	21	138	12	46
Alaska	23	70	22	25	-	0
Maine	14	320	22	25		0

^{*} At any given time in 1992, there are an additional 1,792 warheads at sea. If those warheads were on land they would add to the state totals as follows:

Trident I (Atlantic)/South Carolina 640

⁻ Trident I (Pacific)/Washington 768 - Trident II (Atlantic)/Georgia 384

^{*15,000-16,000} pits from dismantled warheads.

year 2000, after most of the withdrawals and eliminations will be completed. At the end of the report is a profile of each state, identifying the nuclear bases and the weapons deployed.

Nuclear Weapons Overseas

Currently about five percent of the U.S. nuclear stockpile is deployed in Europe (970 bombs), a marked contrast with the 30 percent deployed overseas a decade ago. Weapons are deployed in seven countries (Belgium, Germany, Greece, Italy, Netherlands, Turkey, and United Kingdom) at 16 bases (see Table 4). All of these weapons are B57 and B61 strike bombs belonging to the Air Force. (The United Kingdom may still store nuclear bombs in Germany at two RAF bases, the only other country to deploy any nuclear weapons outside of its national territory.)

The United States has always deployed a significant portion of its nuclear arsenal overseas. It is these deployments that have undergone the most significant shift as a result of the end of the Cold War. Table 5 shows the shift in the number of weapons deployed by country since 1975 (the peak period). Eleven countries and two U.S. territories (Guam and Puerto Rico) hosted 10,311 warheads in 1975, a number that declined to 6,551 warheads in eight countries (and Guam) in 1985. With the retirement of Army nuclear weapons in the 1980s (atomic demolition munitions, surface-to-air missiles, Honest John and Pershing missiles), and the 1991 decision to eliminate Army nuclear weapons altogether, the bulk of the weapons (artillery shells and Lance missile warheads) were eliminated after 1985.

Table 4 Overseas Nuclear Bases

Belgium

Kleine Brogel air base

Germany

Buechel air base Memmingen air base Norvenich air base Ramstein air base (U.S.) Spangdahlem air base (U.S.)

Greece

Araxos air base

Italy

Aviano air base (U.S.) Ghedi-Torre air base Rimini air base

Netherlands

Volkel air base

Turkey

Balikesir air base Incirlik air base (U.S.) Murted air base

United Kingdom

RAF Lakenheath (U.S.) RAF Upper Heyford (U.S.)

With the removal of the remaining warheads from Guam and South Korea in 1991, the U.S. only deploys weapons in NATO countries. Some 17 countries and three U.S. territories (Guam, Johnston Island, and Puerto Rico) have hosted permanent nuclear weapons deployments since the 1950s (see Table 6).

Germany has seen the most significant change in weapons deployment patterns, from 5,116 warheads on its soil in 1975, to 3,396 in 1985, to 325 today. Over 100 separate nuclear storage sites in Germany have been closed in the past few years, leaving just five today (in 1985, 125 storage sites existed overseas). Six of the seven remaining nations that host nuclear weapons are also participants in secret programs (called "Programs of Cooperation") where their equipment is certified to deliver nuclear bombs (the exception is the United Kingdom, which has its own nuclear bombs). Ten of the 16 nuclear storage sites are located on host nation bases where nuclear certified foreign F-4, F-16, F-104 and Tornado aircraft are based.

Table 5 U.S. Nuclear Weapons Overseas

Germany	1975 5116	1985 3396	1992 325	2000 190	
United Kingdom	1018	1268	300	100	
Turkey	467	489	150	95	
Italy	439	549	150	95	
Greece	232	164	25	0	
Netherlands	96	81	10	10	
Belgium	40	25	10	10	
South Korea	683	151	0	0	
Guam	1213	428	0	0	
Canada	240	0	0	0	
Spain	512	0	0	0	
Philippines	225	0	0	0	
Puerto Rico	30	_0	_0	0	
TOTAL	10,311	6551	970	500	

The Future

Under current plans, the stockpile will shrink to about 5,400 warheads by around the turn of the century. Of these 3,800 will be for strategic forces and 1,600 will be for non-strategic (tactical) forces. Some 3,500 of the strategic warheads will be accountable under the strategic arms treaties and agreements. Another estimated 300 strategic weapons will be retained as spares. The number of states in which nuclear weapons are deployed or stored will drop to seventeen, with 15-16,000 plutonium "pits" from disassembled weapons stored at the PANTEX plant in Texas.

Though the stockpile will decline, the ratio between strategic and non-strategic warheads will remain about the same as it is today, at some two-thirds strategic and one-third
non-strategic. The number of tactical nuclear bombs in Europe will probably decline to
around 500. They will remain at about a dozen bases in six NATO countries (Greece will
likely cease storing weapons). The Navy must still decide how many land-attack strike
bombs to retain for a smaller number of aircraft carriers. Around 450 are estimated for a
future fleet of about 10 carriers. Also retained will be 350 nuclear-armed Tomahawk
SLCMs for a wide variety of submarines, cruisers, and destroyers. These non-strategic
naval weapons will be stored at shore depots, albeit at a slightly smaller number than exist
today.

With fewer numbers of weapons and the cessation of certain nuclear missions in the U.S. military, numerous sites are likely to be closed. In the United States, nuclear storage in two states (Alaska and Maine) will likely end as the land-based nuclear anti-submarine mission is terminated. Storage of naval nuclear weapons in Florida (Cecil Field/Mayport) and New Jersey (Earle) may cease as weapons are consolidated at larger depots on the East coast. The Army announced on 2 July 1992 that the nuclear weapons mission at Seneca Army Depot in Romulus, New York will end by 1 October 1992. This was previously one

Table 6

Countries with U.S. Nuclear Weapons

Current Belgium Greece Italy Netherlands Turkey United Kingdom West Germany

Former
Azores (Portugal)
Bermuda
Canada
France
Greenland (Denmark)
Guarn
Johnston Island
Okinawa (Japan)
Philippines
Puerto Rico
South Korea
Spain
Taiwan

of the largest nuclear storage sites in the United States. Its counterpart on the west coast, the Sierra Army Depot in Herlong, California will also soon end its nuclear storage mission as the Army totally ceases any nuclear role, even one of storage.

Abbreviations

ACM Advanced Cruise Missile

AFB Air Force Base

ALCM air-launched cruise missile

FY fiscal year

GLCM ground-launched cruise missile ICBM intercontinental ballistic missile

INF Intermediate Range Nuclear Forces Treaty
MIRV multiple independently-targetable reentry vehicle

· mm millimeter

NATO North Atlantic Treaty Organization

RAF Royal Air Force

SAC Strategic Air Command

SLBM submarine-launched ballistic missile

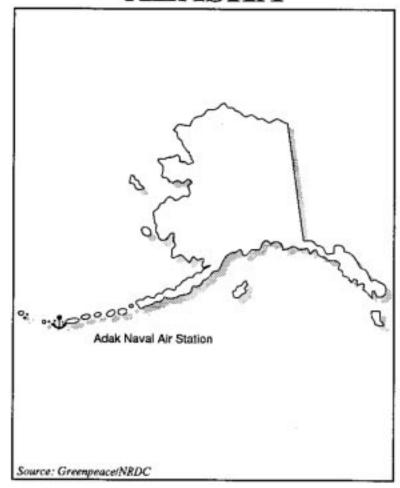
SLCM sea-launched cruise missile SRAM short-range attack missile

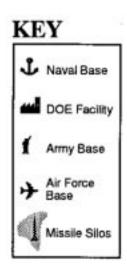
START Strategic Arms Reduction Treaty

The Authors

William M. Arkin is Director of Military Research for Greenpeace International in Washington, DC, and Robert S. Norris is Senior Analyst at the Natural Resources Defense Council, also in Washington, DC. They are acknowledged nuclear weapons experts and the world's leading authorities of weapons deployments and accidents. They have worked together since 1980, and co-authored three volumes of the *Nuclear Weapons Databook*, the standard technical reference work-on nuclear weapons. They write a monthly column ("Nuclear Notebook") for the *Bulletin of the Atomic Scientists* monitoring the status of nuclear arsenals worldwide. Arkin is coauthor of *Nuclear Battlefields* (Harper & Row, 1985), which was the first book to reveal the locations of nuclear weapons worldwide. The nuclear weapons estimates by Arkin and Norris are used by numerous institutions that track the nuclear arsenals — the International Institute for Strategic Studies in London and the Stockholm International Peace Research Institute in Stockholm. Their work has been featured in the *World Almanac*, the *Information Please Almanac*, and *Encyclopedia Britannica*.

ALASKA





Nuclear Warheads: 25

Alaska ranks 23rd in number of nuclear warheads deployed (tied with Maine) with one storage site. In 1985, 70 B57 nuclear depth bombs were deployed at Naval Station Adak in the Aleutian islands. It is estimated that 25 B57s continue to be deployed at the base (now called the Naval Air Station), available for P-3 Orion maritime patrol and anti-submarine warfare aircraft.

Elmendorf AFB in Anchorage also serves as an emergency dispersal base for strategic bombers and could support nuclear weapons in a crisis.

Alaska will likely lose its nuclear weapons in the next few years as the Navy abandons its nuclear anti-submarine warfare mission and retires the B57.

ARKANSAS



Nuclear Warheads: 250

Arkansas ranks 18th in number of nuclear warheads deployed (tied with Montana), a decline from 9th place in 1985. Ira Eaker AFB, near Blytheville (formerly called Blytheville AFB) is the only nuclear storage site. The B-52G bomber base houses 125 B61 and B83 gravity bombs and 125 ALCMs. The base was scheduled to receive 244 ALCMs in the early 1980s, but the number was subsequently reduced.

Little Rock AFB, north of Little Rock, retired the last of its Titan II ICBMs in 1986. The base continues to be one of the Air Force's primary nuclear airlift support bases, hosting a specially certified Air Mobility Command airlift unit.

By the year 2000, Arkansas will have no nuclear weapons, with the closure of Eaker AFB by mid-1993.

KEY

Naval Base

DOE Facility

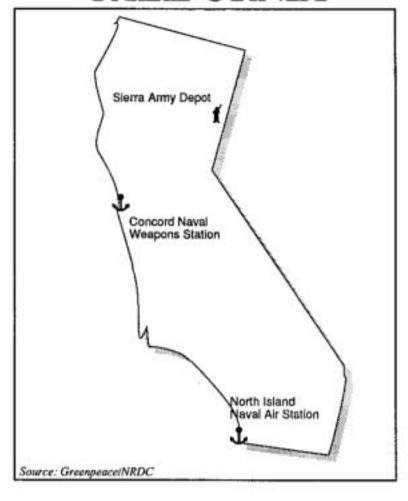
Army Base

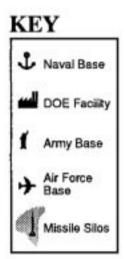
Air Force

Missile Silos

Base

CALIFORNIA





Nuclear Warheads: 1,085

> California ranks 6th in number of nuclear warheads deployed, a decline from 4th place in 1985. Three nuclear storage sites exist in the state, a decline from five in 1985.

> Two former SAC bombers bases — Castle AFB in Atwater and Mather AFB in Sacramento — have ended nuclear functions since 1985. Their 300 gravity bombs and 130 SRAM missiles were dispersed to other bases. These two bases may still serve as emergency dispersal and storage bases, as do Beale AFB in Marysville and March AFB in Riverside.

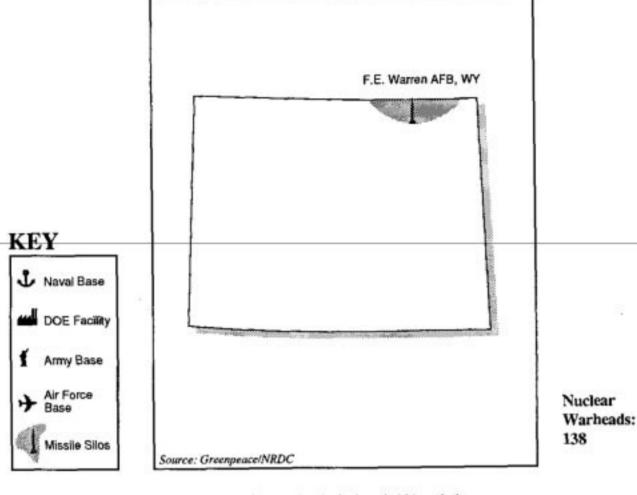
> The Navy operates two major nuclear weapons depots in the state — Naval Weapons Station Concord in the San Francisco bay area, and Naval Air Station North Island in San Diego. Concord supports aircraft carriers homeported at Naval Air Station Alameda and other ships in the region; North Island supports San Diego based ships and submarines. With the withdrawal of tactical nuclear weapons from ships and submarines, Concord now stores 225 B57 and B61 gravity bombs formerly on aircraft carriers (including 25 earmarked for Marine Corps aviation units) and 45 Tomahawk SLCM warheads. About 100 B57 nuclear depth bombs formerly armed aircraft carriers and P-3 Orion aircraft at NAS Moffett Field, south of San Francisco. North Island stores 200 B57 and B61 gravity bombs, 100 B57 nuclear depth bombs, and 65 Tomahawk SLCM warheads. The Naval Weapons Station Laplaya Annex at Point Loma in San Diego may also store some of the San Diego-based Tomahawk warheads intended for arming of attack submarines.

One of two main Army nuclear weapons storage sites exists at Sierra Army Depot in Herlong, near the Nevada border. Like Seneca Army Depot in New York, Sierra will cease its nuclear function with the retirement of Army nuclear weapons in 1992-1993. It is believed that 350 warheads remain at the base — 150 W33/W79 203mm (8-inch) artillery projectiles, 100 W48 155mm (6-inch) artillery projectiles, and 100 W70 Lance short-range missile warheads — pending scheduled movement to PANTEX in Texas and disassembly.

By the year 2000, California will host 275 warheads at two naval bases and rank 6th in nuclear weapons deployments (tied with Missouri and New York). It will host 165 naval bombs and 110 Tomahawk SLCM warheads.

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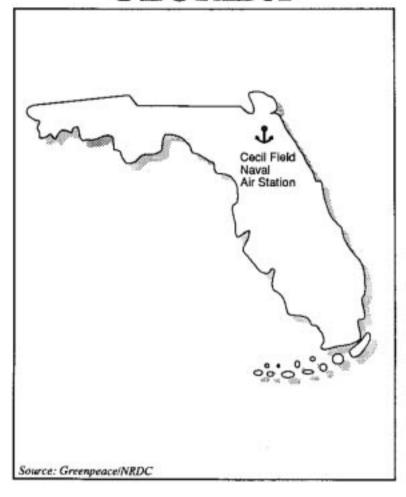
COLORADO

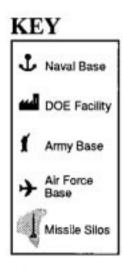


Colorado ranks 21st in number of nuclear warheads deployed. Although there are no main bases where nuclear weapons are deployed in the state, it hosts 46 remote Minuteman III ICBM underground missile silos of F.E. Warren AFB in Wyoming on the northeast border. A total of 138 older W62 warheads arm the missiles.

By the year 2000, with the de-MIRVing of the Minuteman III ICBMs, the number of warheads will decline to 46 and Colorado will rank 12th.

FLORIDA





Nuclear Warheads: 300

Florida ranks 15th in number of nuclear warheads deployed, an increase from 19th place in 1985. With the September 1991 initiative to remove tactical naval nuclear weapons from ships and submarines the nuclear depot at Naval Air Station Cecil Field, 13 miles from Jacksonville (actually an adjacent installation locally called "Yellow Water"), has taken on additional warheads for storage. Cecil Field supports naval units not only at Cecil Field, but also at Naval Air Station Jacksonville and the Naval Station Mayport. It houses 200 B57 and B61 gravity bombs and 100 B57 nuclear depth bombs.

By the year 2000, Florida will no longer store nuclear weapons. It is believed that the nuclear storage depot at Cecil Field will close in the 1990s as the Navy consolidates its weapons in fewer sites.

GEORGIA



Nuclear Warheads: 192

Georgia ranks 19th in number of nuclear warheads deployed, a decline from 11th place in 1985. The King's Bay Naval Submarine Base is the homeport for the Navy's Atlantic-based Trident II-equipped (Ohio class) ballistic missile submarine force. The warheads for three submarines estimated to be in port or overhaul at any one time are split between King's Bay and Charleston, SC. It is estimated that two Trident II-equipped submarines are at sea in the Atlantic at any one time. Because the number of Trident II warheads manufactured is not sufficient to arm all five of the Trident II capable submarines currently at King's Bay, Trident I warheads from retired Atlantic fleet submarines are also used to arm the force. It is estimated that 192 extra Trident I missile warheads are stored on land at the base.

By the year 2000, Georgia will rise to number two in nuclear weapons deployments, with some 555 warheads (including some 75 spare warheads). Five submarines will continue to patrol the Atlantic, and the remaining Trident I and Trident II warheads will be stocked at the base.

KEY

Naval Base

DOE Facility

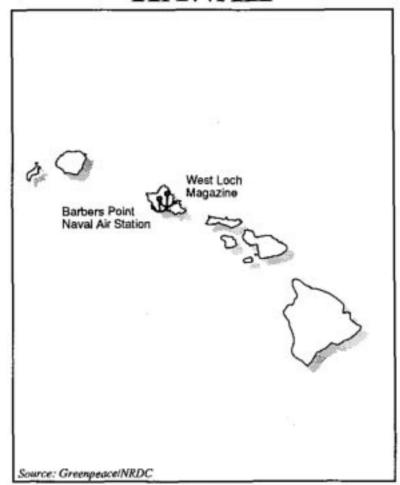
Army Base

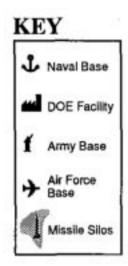
Air Force

Missile Silos

Base

HAWAII



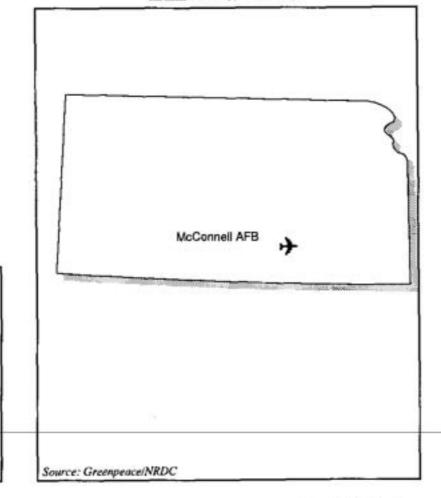


Nuclear Warheads: 275

Hawaii ranks 16th in number of nuclear warheads deployed, a decline from 13th place in 1985. The Navy has two nuclear storage sites in the states — Barbers Point Naval Air Station and the West Loch annex of the Naval Magazine Lualualei. Barbers Point stores 100 B57 nuclear depth bombs for P-3 Orion maritime patrol and anti-submarine warfare aircraft. West Loch supports homeported ships in Hawaii and the western Pacific and stores 125 B57 and B61 nuclear depth bombs (25 for Marine Corps aviation) and 50 Tomahawk SLCM warheads.

By the year 2000, it is estimated that Hawaii will have 90 nuclear warheads (40 naval bombs and 50 Tomahawk SLCM warheads) and rank 10th. Barbers Point nuclear storage will likely cease with naval storage consolidated at West Loch.

KANSAS



Nuclear Warheads:

350

Kansas ranks 14th in number of nuclear warheads deployed, a rise from 24th place in 1985. McConnell AFB, near Wichita, is the only nuclear storage site, and hosts 175 gravity bombs and 175 SRAM missiles for B-1B strategic bombers. The last of McConnell's Titan II ICBMs was retired in late 1984. The former Schilling AFB in Salinas serves as an emergency dispersal base for strategic bombers and could support nuclear weapons in a crisis.

By the year 2000, Kansas will have no more nuclear weapons, with the planned conversion of B-1B bombers to conventional only missions.

KEY

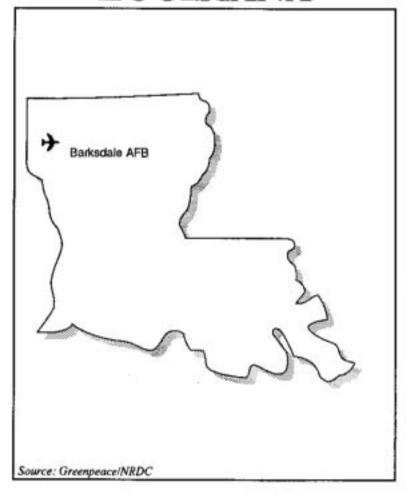
A Naval Base

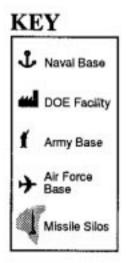
DOE Facility

Army Base

Air Force Base

LOUISIANA



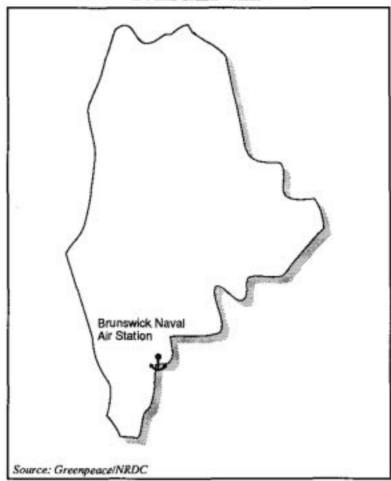


Nuclear Warheads: 910

Louisiana ranks 7th in number of nuclear warheads deployed, a rise from 8th place in 1985. Barksdale AFB, south of Bossier City, is the only nuclear storage site. The base hosts a B-52H bomber wing with 100 gravity bombs, 245 ALCMs, and 60 SRAMs. Barksdale also serves as one of three main Air Force nuclear weapons general depots in the United States (the others are at Kirtland AFB in New Mexico and Nellis AFB in Nevada), and is the main storage depot of the Air Force's strategic forces. It is estimated that 125 gravity bombs, 250 ALCMs, 100 Minuteman II warheads, and 30 Minuteman III warheads are in storage at Barksdale overseen by the 3097th Aviation Depot Squadron,

By the year 2000, it is estimated that 295 warheads will be stored at Barksdale, and the state will rise in rank to 4th. The B-52 wing will continue to possess 250 warheads and an additional 45 warheads (bomber weapons and ICBM spares) will remain in storage.

MAINE



Nuclear Warheads: 25

Naval Base

DOE Facility

Army Base

KEY

- Air Force Base

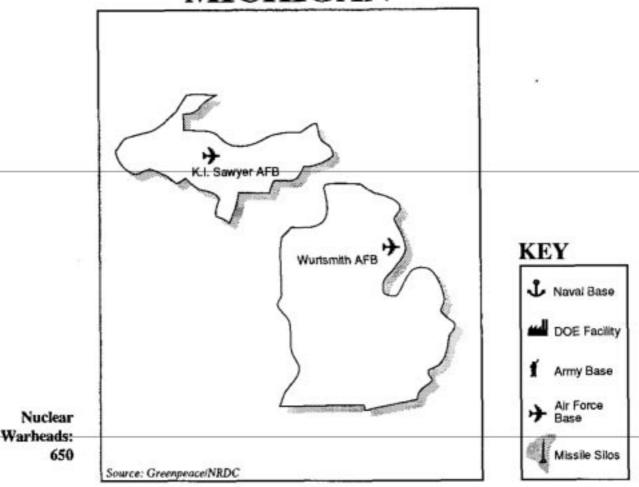
Missile Silos

Maine ranks 22nd in number of nuclear warheads deployed (tied with Alaska), a decline from 14th place in 1985. Loring AFB in Limestone ceased to support nuclear weapons in 1988 — the bombs and SRAM missiles were dispersed to other bases — and the B-52G bomber unit at the base is conventional only.

It is estimated that 25 B57 nuclear depth bombs continue to be deployed at Naval Air Station Brunswick, south of Augusta, available for P-3 Orion maritime patrol and anti-submarine warfare aircraft.

Maine will likely lose its nuclear weapons in the next few years as the Navy increasingly consolidates its nuclear arsenal at central storage sites.

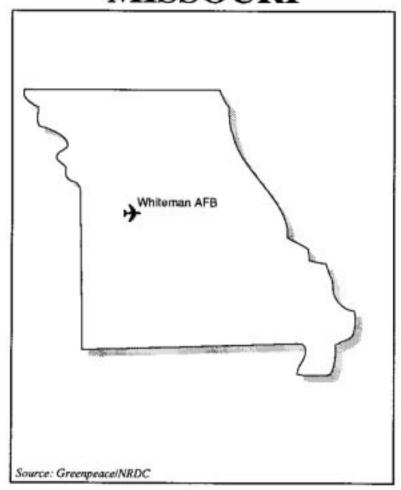
MICHIGAN



Michigan ranks 8th in number of nuclear warheads deployed, a decline from 6th place in 1985. The Air Force operates two nuclear storage sites at two strategic bomber bases in the state — K.I. Sawyer AFB in Gwinn and Wurtsmith AFB in Oscoda. K.I. Sawyer houses 100 gravity bombs, 60 SRAM missiles, 120 ALCMs, and 120 stealth Advanced Cruise Missiles (ACMs) for B-52H bombers (one of two ACM bases, the other being Minot AFB in North Dakota). Wurtsmith houses 125 gravity bombs and 125 ALCMs for B-52G bombers. Kincheloe AFB serves as an emergency dispersal base for strategic bombers and could support nuclear weapons in a crisis.

By the year 2000, both bomber bases in Michigan will have closed and the number of nuclear weapons in the state will drop to zero. Wurtsmith is scheduled to close by mid-1993 and K.I. Sawyer will cease supporting nuclear weapons in the mid-1990s.

MISSOURI



Nuclear Warheads: 150

Missouri ranks 20th in number of nuclear warheads deployed (tied with New Jersey). Whiteman AFB, west of Jefferson City is home to 150 Minuteman II ICBMs, one of three remaining Minuteman II bases. Since September 1991, the Minuteman II missiles have been removed from alert and their warheads are now either stored centrally at Whiteman or are in the process of being transferred.

Whiteman is earmarked as the main base to host the B-2 stealth bomber. The number of nuclear weapons will subsequently increase to 275 by the year 2000, and will include B61 and B83 gravity bombs as well as possibly Advanced Cruise Missiles (ACMs). With deployment of the single B-2 wing and its 275 nuclear weapons (including 25 extra bombs). Missouri will rise to 6th rank (tied with California and New York).

KEY

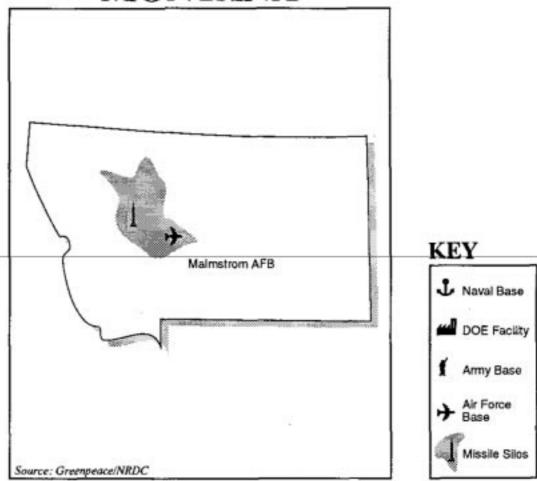
L Naval Base

DOE Facility

Army Base

Air Force

MONTANA

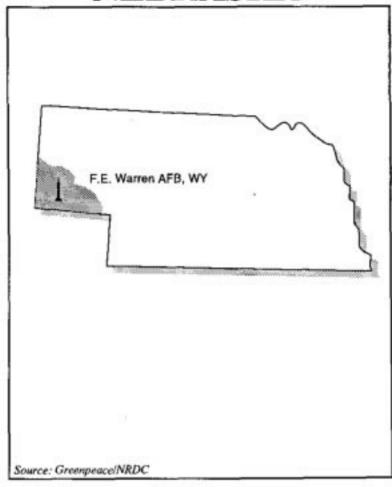


Nuclear Warheads: 250

Montana ranks 18th in number of nuclear warheads deployed, a drop from 15th place in 1985. Malmstrom AFB in Great Falls is home to 100 Minuteman II and 50 Minuteman III ICBMs with a total of 250 warheads (it is one of three Minuteman II bases and one of four Minuteman III bases). The 50 Malmstrom-based Minuteman IIIs are armed with the old W62 warhead. Since September 1991, the Minuteman II missiles have been removed from alert and it is assumed that the warheads are now removed from dispersed missiles and stored on the base.

By the year 2000, with the de-MIRVing of the Minuteman III ICBMs, the number of warheads will decline to 210 (200 single warhead Minuteman III missiles and 10 spares), and Montana will rank 7th.

NEBRASKA



Nuclear Warheads: 255

Nebraska ranks 18th in number of nuclear warheads deployed. Although there are no bases where nuclear weapons are deployed, Nebraska hosts 85 Minuteman III underground missile silos of F.E. Warren AFB in Wyoming in the southwest corner of the state. A total of 255 older W62 warheads arm the missiles.

By the year 2000, with the de-MIRVing of the Minuteman III ICBMs, the number of nuclear weapons will decline to 85 and Nebraska will rank 11th.

KEY

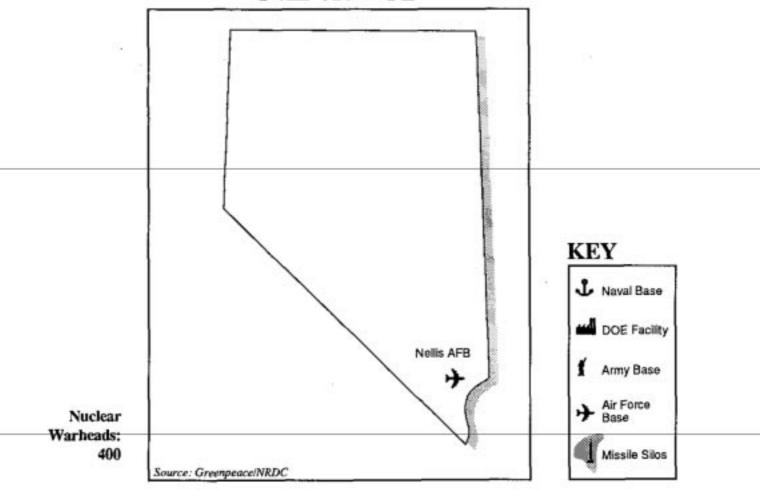
L Naval Base

DOE Facility

Army Base

Air Force

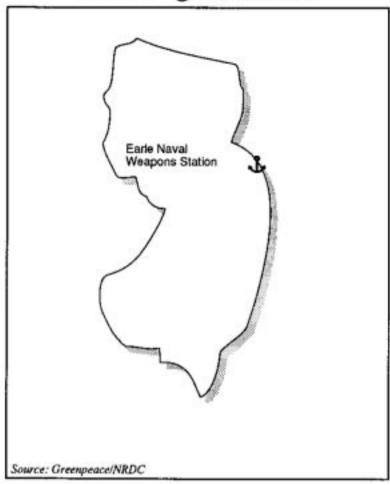
NEVADA



Nevada ranks 13th in number of nuclear warheads deployed. Nellis AFB, north of Las Vegas, serves as one of three main Air Force nuclear weapons general depots in the United States (the others are at Barksdale AFB in Louisiana and Kirtland AFB in New Mexico), and the main storage depot of the Air Force's non-strategic nuclear forces. It is estimated that 400 gravity bombs are in storage at the Lake Meade Base (Nellis Area 2), at a remote section of the Nellis complex, overseen by the 3096th Aviation Depot Squadron.

By the year 2000, the number of nuclear weapons stored in the state will likely decline to 150 (tactical bombs), and Nevada will rank 8th (tied with New Mexico).

NEW JERSEY



Nuclear Warheads: 150

New Jersey ranks 20th in number of nuclear warheads deployed (tied with Missouri). The Earle Naval Weapons Station in Colts Neck is home to 125 B57 and B61 gravity bombs and 25 Tomahawk SLCM warheads supporting ships in the Atlantic Fleet. Naval Air Station Lakehurst serves as a transhipment point for the air movement of nuclear weapons in and out of Earle and can occasionally house nuclear warheads. New Jersey is also home to the primary nuclear weapons airlift transportation unit of the U.S. military, based at McGuire AFB.

By the year 2000, it is believed that Earle will cease its nuclear functions as the Navy increasingly consolidates its arsenal in central storage sites. The state will then cease storing nuclear weapons.

KEY

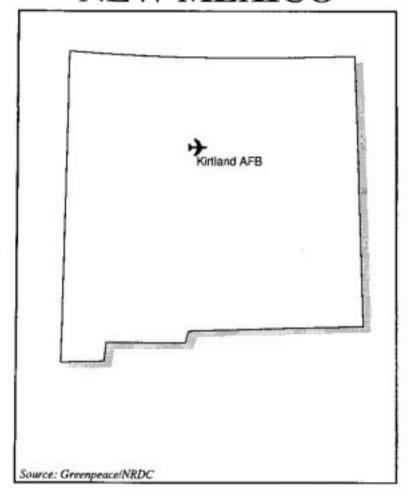
A Naval Base

DOE Facility

Army Base

Air Force

NEW MEXICO



KEY

♣ Naval Base

♣ DOE Facility

♣ Army Base

♣ Air Force
Base

Missile Silos

Nuclear Warheads: 2,090

New Mexico ranks 2nd in number of nuclear warheads deployed, a rise from 10th place in 1985. Kirtland AFB in Albuquerque serves as one of three main Air Force nuclear weapons general depots in the United States (the others being Barksdale AFB in Louisiana and Nellis AFB in Nevada). It is believed that Kirtland also serves are a transhipment base and storage point augmenting the capacity of the Department of Energy's PANTEX Plant outside of Amarillo, Texas, 300 miles away. Nuclear weapons are stored in Manzano mountain (formerly called Manzano base), as well as at the recently opened Kirtland Underground Munitions Storage Complex (KUMSC).

With the rapid retirement of the Army's ground-launched nuclear weapons, Kirtland is thought to house some 840 W33 and W79 203mm (8-inch) nuclear artillery projectiles, 550 W48 155mm (6-inch) nuclear artillery projectiles, and 600 W70 Lance short-range missile warheads. These warheads are part of a stock of 3,000 Army nuclear weapons (2,140 artillery projectiles and 900 Lance warheads) all awaiting dismantling.

The Los Alamos National Laboratory in Los Alamos also builds and stores prototype nuclear warheads and weapons-like devices, as well as large quantities of nuclear materials.

By the year 2000, it is estimated that New Mexico will support 150 nuclear warheads (tactical bombs in storage), and rank 8th (tied with Nevada). The vast majority of the weapons staged out of Kirtland AFB will be retired, and the completion of the main bulk of dismantlement at PANTEX in Texas will result in the decline.

NEW YORK



Nuclear Warheads: 555

New York ranks 11th in number of nuclear warheads deployed, a decline from 2nd place in 1985. The main reason for the decline is the elimination of Army nuclear weapons. The Army announced on 2 July that the nuclear weapons mission at Seneca would cease by the end of FY 1992 (October 1992). It is estimated that 50 W33/W79 203mm (8-inch), 50 W48 155mm (6-inch), and 50 W70 Lance short-range missile warheads remain, the last of the nuclear warheads awaiting shipment to PANTEX in Texas for dismantlement.

One of two bomber bases — Plattsburgh AFB — has also closed with transfer of its FB-111 fighter bombers, 125 gravity bombs and 60 SRAM missiles to other bases. Griffiss AFB in Rome continues to host a B-52H bomber unit and host 100 gravity bombs, 60 SRAM missiles, and 245 ALCMs.

The number of nuclear weapons in New York will decline to some 275 by the year 2000 with the closure of Seneca and further reductions at Griffiss, and the state will rank 6th (tied with California and Missouri).

KEY

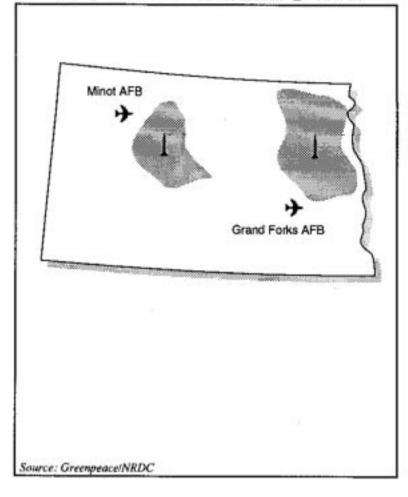
L Naval Base

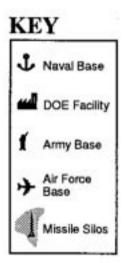
DOE Facility

Army Base

Air Force

NORTH DAKOTA



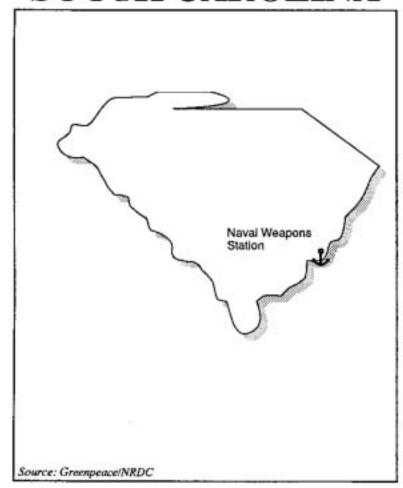


Nuclear Warheads: 1,650

North Dakota ranks 3rd in number of nuclear warheads deployed. Both nuclear bases in the state — Grand Forks AFB in Emerado and Minot AFB — each host a bomber and Minuteman III ICBM wing (two of four Minuteman III bases). A B-1B bomber wing is at Grand Forks and a B-52H wing is at Minot. The B-1B unit is supplied by 175 gravity bombs and 175 SRAM missiles. Minot's B-52H unit is armed with 100 gravity bombs, 60 SRAM missiles, 120 ALCMs, and 120 stealth Advanced Cruise Missiles (ACMs) (one of two ACM bases, the other being K.I. Sawyer AFB in Michigan). The 300 Minuteman III missiles dispersed around North Dakota are armed with 900 W78 warheads.

By the year 2000, the number of nuclear weapons in North Dakota will decline to 435 although the state will retain its 3rd rank. Minot's B-52 wing will be armed with 275 warheads (25 spares), and Grand Forks will host 160 warheads, 150 single warhead Minuteman III ICBMs and 10 spares. With the Air Force decision to consolidate its Minuteman III ICBMs at three bases rather than the current four, one of the two missile bases in North Dakota is likely to close. Minot was the first base to receive the Minuteman III missile, the first squadron active in December 1970. Under the original START Treaty, the U.S. ICBM warhead total is capped at 1400. Because of a provision demanding uniform reductions ("downloading") of warheads by base, the Minuteman IIIs at Minot were the likeliest to be moved to Malmstrom AFB, MT, to consolidate and reach the 1400 ceiling. Under the new Joint Understanding, other scenarios are possible, the final decision scheduled to be made by the time of the submission of the FY 1994 budget.

SOUTH CAROLINA



Nuclear Warheads: 2,258

South Carolina ranks number one in nuclear warheads deployed. The Naval Weapons Station Charleston on the west bank of the Cooper River some 25 miles from the city, and the adjacent Polaris Missile Facility Atlantic (POMFLANT) store 2,258 submarine-launched ballistic missile warheads. The majority of the land-based weapons are 1,450 Poseidon warheads removed from 10 submarines that were retired in September 1991. An additional 748 Trident I warheads are stored, the warheads for five submarines estimated to be in port or overhaul at any one time, together with the main stock of spare warheads. It is estimated that five Trident I equipped submarines are at sea in the Atlantic at any one time. The Naval Weapon Station also stores 60 Tomahawk SLCM warheads for ships homeported in the area.

By the year 2000, the number of nuclear weapons in South Carolina will decline to some 145 and the state will rank 9th. The 1,450 Poseidon warheads will all be retired and the vast majority of the Trident I warheads will also have been retired or transferred to King's Bay, Georgia. With the elimination of the strategic mission, Charleston will continue to store 85 bombs for aircraft carriers and 60 Tomahawk SLCM warheads.

KEY

L Naval Base

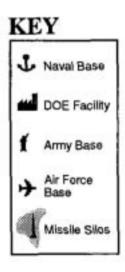
DOE Facility

Army Base

Air Force

SOUTH DAKOTA



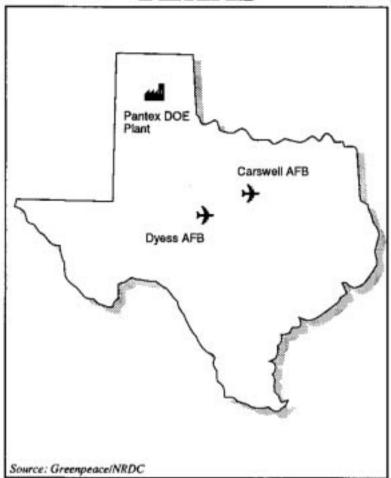


Nuclear Warheads: 450

South Dakota ranks 12th in number of nuclear warheads deployed. Ellsworth AFB in Rapid City is the only nuclear storage site. The base hosts a B-1B bomber wing with 175 B61 and B83 gravity bombs and 175 SRAM missiles, and a Minuteman II wing (one of three Minuteman II bases). Since September 1991, the 100 Minuteman II missiles have been removed from alert and it is assumed that the warheads are now stored on the base.

By the year 2000, South Dakota will have no nuclear weapons, with the planned conversion of B-1B bombers to conventional only missions.

TEXAS



Nuclear Warheads: 1,365

Texas ranks 4th in number of nuclear warheads deployed, an increase from 6th place in 1985.

Nuclear weapons are stored at three bases, the PANTEX plant of the Department of Energy outside of Amarillo, and two bomber bases — Carswell AFB near Fort Worth and Dyess AFB near Abilene.

Texas' rise in rank is mostly attributed to the significantly increased workload of the PANTEX plant in retiring and dismantling old warheads. At the current 2,000 warhead per year retirement rate, it is estimated that some 765 weapons are present at the base at any one time, 370 being physically dismantled, 350 in storage awaiting dismantlement, and 45 undergoing stockpile evaluation or modification. It is estimated that 100 W33 and W79 203mm (8-inch) artillery warheads, 100 W48 155mm (6-inch) artillery warheads, 100 W70 Lance warheads, 35 W68 Poscidon warheads, and 35 B57 nuclear depth bombs, are in various stages of dismantlement. Another 100 W33s, 100 W48s, 50 W70s, 50 W68s, and 50 B57 are estimated to be in storage. Monthly a stockpile evaluation pool of 35 warheads include dismantlement and diagnosis of B53, W56, B57, B61, W62, W69, W78, B83, W87, W80, and W88 warheads removed from the active stockpile. Approximately 10 B61 Navy bombs are also undergoing modification monthly to improve safety.

The two bomber bases host 600 nuclear warheads. The B-52G wing at Carswell possesses 125 B61 and B83 gravity bombs and 125 ALCMs (SRAM missiles formerly deployed at the base have been dispersed elsewhere). The B-1B unit at Dyess possesses 175 B61 and B83 bombs and 175 SRAM missiles. Amarillo International Airport, Bergstrom AFB in Austin, and Sheppard AFB in Wichita Falls also serve as emergency dispersal bases for strategic bombers and could support nuclear weapons in a crisis.

By the year 2000, the number of nuclear weapons in Texas will decline to just a few. The two bomber bases will be closed or denuclearized; Carswell is scheduled to close by mid-1993. PANTEX will have completed the bulk of its retirement tasks, completing the dismantling of Army nuclear weapons, Navy Poseidon missile warheads, and older bombs and depth bombs. Some 15,000-16,000 "pits" (nuclear cores of warheads that have been dismantled) will be in storage at PANTEX by the year 2000, pending a solution to the final disposition of tens of tons of Piutonium from the current stockpile.

KEY

A Naval Base

DOE Facility

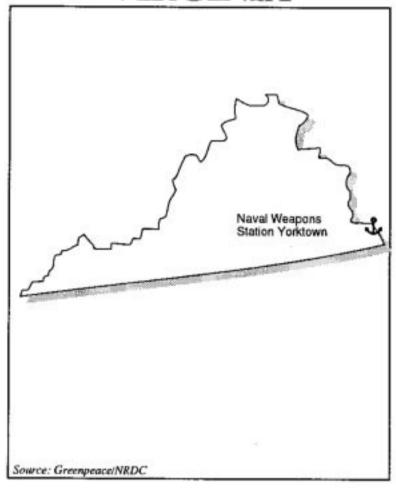
Army Base

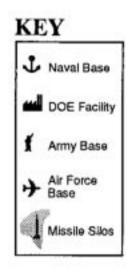
Air Force

Missile Silos

Base

VIRGINIA



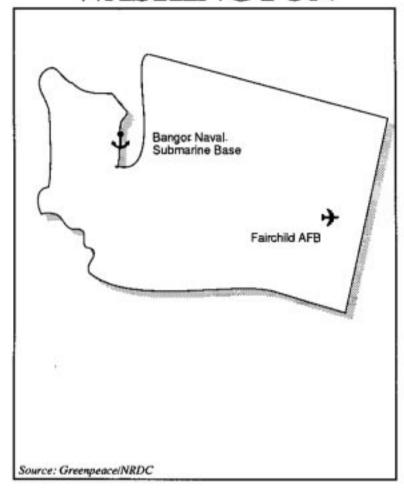


Nuclear Warheads: 595

Virginia ranks 9th in number of nuclear warheads deployed. Its single nuclear storage site, the Naval Weapons Station Yorktown, serves aircraft carriers, ships and submarines deployed in the Norfolk area. With the September 1991 decision to remove tactical nuclear weapons from ships and submarines, Yorktown now stores 300 B57 and B61 gravity bombs (25 earmarked for Marine Corps aviation), 95 Tomahawk SLCM warheads, and 200 B57 nuclear depth bombs.

By the year 2000, the number of nuclear weapons in Virginia will decline to 280, but it will rise in rank to 5th. The B57 nuclear depth bombs will be retired and the number of naval strike bombs will decline to 160, but consolidation of other bases on the Atlantic coast will likely results in modest increases in Tomahawk SLCM warheads to 120.

WASHINGTON



Nuclear Warheads: 1,248

Washington ranks 5th in number of nuclear warheads deployed. The state has two nuclear storage sites, the Bangor Naval Submarine Base and Fairchild AFB in Airway Heights. Nuclear warheads supplying Pacific-based Trident submarines are stored at the Strategic Weapons Facility Pacific in Silverdale, part of the submarine base complex. It is estimated that 843 Trident I warheads are at the base, the warheads for four submarines estimated to be in port or overhaul at any one time, together with the main stock of spare warheads. It is estimated that four Trident I equipped submarines are at sea in the Pacific at any one time.

Fairchild AFB hosts a B-52H bomber wing armed with 100 B61 and B83 gravity bombs, 60 SRAM missiles, and 245 ALCMs. Boeing Field in Seattle, Grant County airport, and the Seattle Tacoma airport are emergency dispersal bases for strategic bombers and could support nuclear weapons in a crisis.

By the year 2000, Washington state will rise to 1st place in warhead deployments with 710 weapons (including some 75 spare strategic warheads). The B-52 bomber base at Fairchild will host 275 warheads, and Bangor will stock 435 Trident I warheads for submarines not on patrol. It is estimated that four Pacific-based Trident submarines will still be on patrol at any one time.

KEY

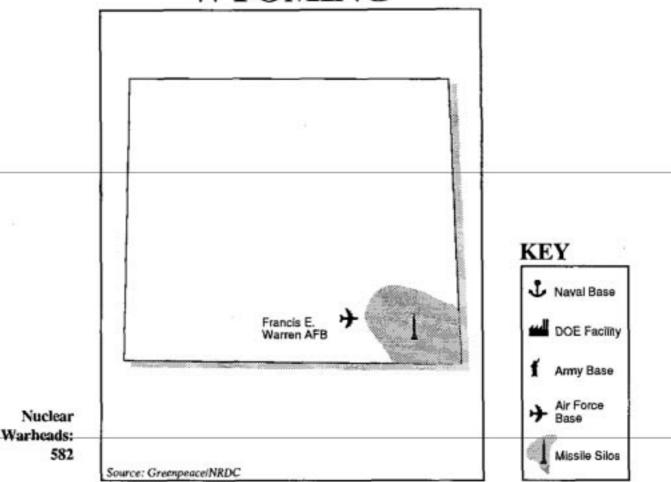
L Naval Base

DOE Facility

Army Base

Air Force

WYOMING



Wyoming ranks 10th in number of nuclear warheads deployed, a rise from 18th in 1985. F.E. Warren AFB in Cheyenne is the only nuclear storage site, hosting both Minuteman III and MX ICBMs (one of four Minuteman III bases and the only MX base). The missile silos of F.E. Warren are spread out over 12,000 square miles in Wyoming, Colorado and Nebraska; 19 Minuteman III silos and 50 MX silos are in the state. Warheads include 57 older W62 Minuteman IIIs and 525 MX.

By the year 2000, with retirement of the MX missile and the de-MIRVing of the Minuteman III in accordance with current arms control plans. Wyoming will host 29 nuclear warheads (19 single warhead missiles in Minuteman III silos and 10 spare warheads) and rank 13th.