

Country	Suspected Strategic Nuclear Weapons	Suspected Non-Strategic Nuclear Weapons	Suspected Total Nuclear Weapons
China	280	120	~400
France	350	0	350
India	60	?	60+?
Israel	100-200	?	200+?
Pakistan	24-48	?	24-48
Russia	~4,850	~3,400	~9,000
United Kingdom	180	5	185
United States	6,500	1,120	~7,500

Chinese Nuclear Arsenal

Strategic Delivery Systems

Possible Delivery System	Year Deployed	Maximum Range (km)	Launcher Total	Warhead	Warhead Yield (kt)	Notes
SLBMs						
Julang	1988	>1,000	12	-	200-300	On one Xia submarine (SSBN). The submarine may not be operational
Missiles						
DF-3A	1971	2,800	40	-	3,300	Currently being replaced by the DF-4
DF-4	1980	4,750	20	-	3,300	--
DF-5/A	1981	13,000	20	-	4,000-5,000	China's ICBM. Arsenal expected to grow to 75-100 by 2015. The DF-31/A, long-range missiles capable of hitting Hawaii or the continental US

						and currently under development, may replace them.
DF-21A	1985	1,800	48	-	200-300	Supplements the DF-4 fleet during transition from DF-3A
DF-31/A	-	8,000-12,000	-	-	-	The longer-range DF-31A replaces the DF-41 in development
Aircraft						
Hong-6 (NATO B-6)	1966	3,100	100	-	-	Copy of Russian Tu-16 Badger
Qian-5 (A-5)	1970	400	30	-	-	Based on Russian MiG-19

Summary of Chinese Nuclear Arsenal:

*Though the exact size of China's nuclear arsenal is unknown, current best estimates are that China has about **280 strategic weapons**, and a smaller number – about **120** – of **tactical weapons**. The weapons are based on ICBMs and strategic bombers, with a naval component under research.*

China's nuclear arsenal is in the midst of a rapid modernization program begun in the mid-1980s. By increasing the size, accuracy, range, and survivability of the nuclear arsenal, Chinese leaders aim to strengthen Beijing's deterrent. China hopes to mimic the United States and Russia by deploying its nuclear weapons in a sea-, air-, and land-based triad.

In the next decade, China will likely make its most striking headway in the development of ballistic missiles. Development efforts are targeted towards increasing the number of mobile, solid-fuel, intercontinental ballistic missiles (ICBMs) in order to maximize deterrence. Currently China has a host of nuclear missiles at its disposal. These include 20 liquid-fueled intermediate range Dong Feng-4s (DF-4s), 48 medium range solid-fuel DF-21s, which are mobile, and 20 silo-based intercontinental DF-5s and DF-5As, which can respectively reach Hawaii and the continental United States. The DF-3 has become outdated and is being retired. Other solid-fueled short-range missiles, the DF-11 and DF-15 (they are called the M-11 and M-9 when exported), may have nuclear capability. Currently, a new mobile solid-fuel intercontinental ballistic missile is under development, the DF-31, with an 8,000 km range. A modified long-range version, the DF-31A, is projected to have an approximate range of 12,000 km. It replaces the defunct DF-41 missile program.

U.S. intelligence believes that China has long had the ability to develop multiple reentry vehicles (MRVs) for its missiles, but has chosen not to do so. Should China choose to develop these systems, ICBMs could be so-outfitted within only a few years. U.S. deployment of a missile defense system could precipitate such action, or could lead to a general acceleration in single warhead-design construction.

The weakness of the Chinese air force previously required Beijing to depend on Russian aid. Today, China relies primarily on two types of aircraft for its nuclear force: about 100 Hong-6 medium-range bombers, based on the Soviet Tu-16 Badger, and 30 shorter-range Qian-5 fighters. A supersonic fighter-bomber, the JH-7, has been in production for more than a decade, but is not currently outfitted as a nuclear platform. Owing to technical problems, few have been deployed. China has also purchased around 80 Su-30 multi-role aircraft from the Russians. Additionally, Russia have sold China 58 Su-27 air superiority fighters, along with production rights and engineering assistance, which should allow China to produce another 200 Su-27s by 2015. While both the Su-30s and Su-27s could theoretically be modified to fulfill a nuclear mission, there is little indication that the Chinese plan to do so.

Efforts to upgrade China's ballistic missile submarine (SSBN) fleet continue, but technical hurdles have limited progress. China is believed to have 12 Julang I submarine-launched ballistic missiles stored at Jianggezhuang Submarine Base where its one nuclear-powered ballistic missile submarine, the *Xia*, is housed. It is not clear whether this sub is operational. China has a long-term plan to build four to six new SSBNs, which will carry 16 Julang II missiles. These may have intercontinental range. The new subs are not likely to be deployed for many years.

Strategic Nuclear Weapons: 280

Non-strategic Nuclear Weapons: 120

Total Nuclear Weapons: ~400

Sources:

<http://www.thebulletin.org/issues/nukenotes/nd03nukenote.html>

French Nuclear Arsenal

Strategic Delivery Systems

Possible	Year	Maximum	Launcher	Warhead	Warhead	Notes
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Delivery System	Deployed	Range (km)	Total		Yield (kt)	
SLBMs						
M4A/B	1985	6,000	16	6 TN 70/71	150	Stored on <i>Redoubtable</i> and <i>L'Inflexible</i> class subs
M45	1996	6,000	32	6 TN 75	100	Stored on <i>Le Triomphant</i> class subs; slated to be replaced by M51
Aircraft						
Mirage 2000N	1988	2,750	60	TN 81	300	ASMP+ slated to replace the ASMP in 2007
Super Etendard	1978	650	24	TN 81	300	Scheduled to be replaced by the Rafale (B-301)

Summary of French Nuclear Arsenal:

France is believed to have roughly 350 nuclear warheads, all bomber- and submarine-based.

The French nuclear arsenal, largely a legacy of Charles De Gaulle's insistence on French strategic independence, is the fourth largest in the world. Until 1996, it was deployed on a triad mirroring those of Russia and the United States. However, in February 1996, President Jacques Chirac announced his intention to eliminate the land-based deterrent, dismantling the Hades and S3D missiles, and leaving France with a submarine and aircraft based force.

France is modernizing its sea-based deterrent. France has four SSBNs: one each of the older *L'Inflexible* and *Redoubtable* classes, which carry the M-4 submarine launched ballistic missile (SLBM), and two of the newer *Triomphant* class, which carries the M-45 SLBM. The Navy has plans for two more *Triomphant*-class subs, which, like the existing examples, will carry the newer M-45. The controversial nuclear testing at Mururoa Atoll in 1995-96 was reportedly done to perfect the M-45 warhead design. The two additional *Triomphant* subs will be deployed by 2008. The French are also pursuing an advanced SLBM design, the M-51, which will eventually replace both the M-4 and the M-45.

Though the last French nuclear gravity bombs have been retired, the Mirage 2000N and carrier-based Super Etendard fighter-bombers are available to deliver short-range nuclear ASMP missiles. A successor to the current ASMP missile, dubbed the ASMP+, is under development and is slated to enter service in 2007. The ASMP+ will be carried by the

Rafale series of multi-role aircraft; the two-seat D variant will replace the 2000N, and the single-seat M version, the Super Etendard. Both should enter service by next year.

Strategic Nuclear Weapons: 350

Non-strategic Nuclear Weapons: 0

Total Nuclear Weapons: 350

Sources:

<http://www.thebulletin.org/issues/nukenotes/ja01nukenote.html>

Indian Nuclear Arsenal

Strategic Delivery System

Possible Delivery System	Year Deployed	Maximum Range (km)	Launcher Total	Warhead	Warhead Yield (kt)	Notes
Missiles						
Prithvi SS-150	1995	150-250	75-90	~60	unknown	May be equipped with nuclear warheads
Prithvi SS-350	-	350	25	-	-	Liquid-fueled
Agni I	Not yet deployed	1,500	unknown	-	unknown	-
Short-range Variant Agni II (unnamed)	Not yet deployed	700	unknown	-	unknown	Tested January 2001
Agni II	Not yet deployed	2,000	20	-	unknown	-
Agni III	Not yet deployed	3,500	-	-	unknown	-
Aircraft						
Jaguar	1995	850	88	-	-	could deliver nuclear

						bombs
Mirage 2000	-	-	36-38	-	-	could deliver nuclear bombs
MiG-27 Flogger	1986	390	147	-	-	could deliver nuclear bombs

Summary of Indian Nuclear Arsenal:

India is generally estimated to have about 60 nuclear warheads and enough plutonium to manufacture 30-50 more. They are based on medium-range ballistic missiles and possibly on bombers.

India conducted five nuclear tests in May 1998, announcing unambiguously its nuclear capacity. Two primary factors drive India's nuclear program: the need to balance China's growing nuclear arsenal and the ongoing conflict with Pakistan over Kashmir. The Indian government released a proposed nuclear doctrine in 1999. This document calls for the use of nuclear weapons only in response to a nuclear attack – in other words a “no first use” policy – and recommends that ultimately, India's nuclear forces be based on a triad of aircraft, mobile land-based missiles, and sea-based forces. The doctrine states that India intends, through a combination of redundant systems, mobility, dispersion, and deception, to heighten the survivability of its nuclear arsenal. Despite its ambition to deploy a nuclear triad, today India can deliver nuclear weapons only by missile or aircraft.

India has two types of missiles: the Prithvi and the Agni, each of which has several variants. The Prithvi I missile has a range under 500 kilometers and is liquid-fueled. In January 2002, India test fired a solid-fuel Agni missile. With a range of 700 kilometers, it bridges a gap between shorter-range Prithvi missiles and longer-range variants of the Agni. Versions of the Agni with ranges up to 5,000 kilometers are being developed. India possesses not only the technical ability but also the resources to construct ICBMs, but has shown no inclination to do so. Though India seeks nuclear self-sufficiency, its ballistic missile programs are largely dependent on Russian components and expertise. India is also likely to develop a global positioning system to upgrade its missile guidance systems.

India has several aircraft that could be outfitted to deliver nuclear bombs. It is not clear which, if any, have been modified for nuclear delivery. India's 147 MiG-27s and 88 Jaguars would require little or no modification to deliver nuclear weapons. In addition, India has 150 Mig-21 fighters, 64 MiG-29s, and 36 Mirage 2000s, which could all be upgraded to carry nuclear weapons.

Indian attempts to complete the submarine-based third of its nuclear triad have been beset by technical difficulties. The Advanced Technology Vessel (ATV) program has been

underway since 1985, but has yet to produce a workable underwater missile launch platform. However, comments made by Navy Chief of Staff Admiral Madhvendra Singh at the apex of the 2002 Pakistan-India tensions implied that ATV might not only be farther along than anticipated, but operational. In addition to the ATV project, the Indian navy has been separately developing an SLBM, the Sagarika. Initially slated for completion last year, the program has run into setbacks and is now not expected to be operational until 2010. India is also working on a sea-launched ballistic missile, the Dhanush, which has also encountered trouble and whose status is presently unclear.

India probably keeps its nuclear delivery vehicles separate from its warheads, although further deterioration in its relationship with Pakistan could lead to changes in this policy.

Strategic Nuclear Warheads: 60

Non-strategic Nuclear Weapons: ?

Total Nuclear Warheads: 60+?

Sources:

<http://www.thebulletin.org/issues/nukenotes/nukenote.html>

Israeli Nuclear Arsenal

Possible Nuclear Delivery Systems

Possible Delivery Vehicle	Year Deployed	Maximum Range (km)	Launcher Total	Warhead	Warhead Yield (kt)	Notes
Missiles						
Jericho 1	1972	1,200	~50	unknown	-	-
Jericho 2	1984-85	1,800	~50	unknown	-	-
Aircraft						
F-16 Falcon	1980	1,600	205	-	unknown	-
F-15I Ra'am	1998	4,450	50	-	unknown	Not known to be nuclear-ready, but are nuclear capable

Submarines						
<i>Dolphin</i> class	2002	-	3	-	Unknown	May use modified Harpoon missiles as nuclear launch vehicle

Summary of Israel's Possible Nuclear Delivery Systems:

*The secrecy with which Israel shrouds its nuclear arsenal renders estimates of its size highly unreliable. Generally, however, it is estimated that Israel has **between 100 and 200** nuclear warheads.*

Israel developed nuclear weapons with French help in the 1950s and 1960s, and has enjoyed the tacit approval of the United States since the Nixon administration. Despite refusals to comment on the issue by the Israeli government, the Israelis clearly have a sizeable nuclear arsenal. Israel may be dodging its oft-repeated pledge never to be the first to introduce nuclear weapons into the region: The United States "introduced" weapons in the region in the 1950s when nuclear bombs were stored at Dharan, Saudi Arabia, and at sea in the Mediterranean Sixth Fleet. Also, it is believed that Israel might not keep its nuclear weapons fully assembled – keeping them "a screw away" from completion.

The highly capable and well-equipped Israeli Air Force would more than suffice in a nuclear weapons delivery role, particularly with U.S.-supplied aircraft such as the F-16 and F-15I. It is believed that a small number of Israeli F-16s have been so outfitted; it is unknown whether any of the recently purchased F-15s are. Israel also possesses a land-based ballistic missile force. The Jericho I can strike Syria, and the Jericho II brings the entire Middle East into Israel's range, including Iran. The Shavit space launch booster could be adapted for a long-range nuclear delivery role, and should a decision to do so be made, could be converted into an intercontinental ballistic missile. There are also unconfirmed reports that Israel may have tactical nuclear weapons.

The Israelis also commissioned three diesel submarines of the *Dolphin* class, the last of which was delivered in 2000. The three subs are all stationed off Israel's Mediterranean coast. Currently, the only sea-launched missile in Israel's inventory that could theoretically be nuclear-capable is the Harpoon anti-shiping missile. It is unknown if Israel has fitted any of these with nuclear warheads, or even the proper guidance systems. In March 2000, the U.S. denied an Israeli request for 12 BGM-109 Tomahawk missiles, which could easily have been fitted with a nuclear warhead using the existing guidance systems.

The Israeli arsenal will likely remain stable in the years to come. Israel has not signed the Nuclear Nonproliferation Treaty, and is not considered likely to reduce or eliminate its nuclear arsenal of ~100-200 warheads.

Strategic Nuclear Weapons: ~100-200

Non-strategic Nuclear Weapons: ?

Total Nuclear Weapons: 200+?

Sources:

<http://www.thebulletin.org/issues/nukenotes/so02nukenote.pdf>

Pakistani Nuclear Arsenal

Possible Nuclear Delivery Systems

Possible Delivery System	Year Deployed	Maximum Range (km)	Launcher Total	Warhead	Warhead Yield (kt)	Notes
Missiles						
Ghauri-1 Hatf 5	1998	1,300-1,500	-	unknown	On the order of 9-12	Only Pakistani missile known to be nuclear-ready; based on N. Korean No Dong missile
Ghauri-2 Hatf 6	Not yet deployed	2,000-2,300	-	-	-	Tested in April 1999
M-9 Shaheen-1	1999	700	-	-	-	May have nuclear capability
M-9 Shaheen-2	2000	2,500	-	-	-	May have nuclear capability
M-11 Tarmuk	1992	-	30+	-	-	Based on Chinese M-11
Aircraft						
F-16	1983	1,600	32	-	-	U.S. authorized

						28 for release; have yet to be delivered
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Summary of Pakistan's Possible Nuclear Delivery Systems:

*Pakistan is believed to have **between 24 and 48** nuclear weapons with enough fissile material for 30-52 more.*

Pakistan's nuclear program was born out of its longstanding hostility to neighboring India. Pakistan conducted its first nuclear tests immediately after the Indian tests in May 1998 and has been playing catch-up to match the Indian arsenal. Little solid information is available regarding the Pakistani arsenal, but it is widely estimated to consist of 24 to 48 nuclear weapons. Existing Pakistani warheads are an implosion type using highly enriched uranium, but Pakistan is developing facilities to produce plutonium.

Pakistan would likely use the F-16 to deliver nuclear weapons. Pakistan has about 32 U.S.-built F-16s, which were delivered in the 1980s to support Pakistani efforts in the Soviet-Afghan war. There are reports that claim some of these F-16s have been equipped to carry nuclear weapons since 1985. In an effort to deter Pakistan from developing nuclear bombs, the United States imposed sanctions in the 1990 Pressler Amendment blocking further delivery of F-16s and other military assistance. President George W. Bush, seeking to gain Pakistan's assistance for the campaign in Afghanistan, waived these sanctions on Sept. 22, 2001, allowing the delivery of 28 new F-16s to Pakistan. These have yet to be delivered. Pakistan's F-16s have a range of over 1,600 kilometers and have probably been outfitted to carry nuclear weapons.

According to U.S. intelligence, Pakistan relies heavily on its ballistic nuclear missiles to counter India's conventional advantage. It has depended on North Korean and Chinese assistance to help develop its missiles but aims for more indigenous capability. The Chinese aid stems from Beijing's interest in using Pakistan as a counter-weight to India. According to A. Q. Khan, head of Pakistani efforts to develop fissile weapons, Pakistan has only one type of missile, the Ghaury or Hatf-5, currently capable of delivering nuclear weapons. The Ghaury is a Pakistani name for the North Korean No-Dong, which is based on the Scud. The Ghaury is liquid-fueled and has a range of 1,500 kilometers. A more advanced version, the Ghaury-2, may have a range exceeding 2,000 kilometers, and a third Ghaury with even greater range is being developed. Pakistan also has two reverse-engineered versions of the Chinese M-9 (DF-15), the Shaheen-1 and Shaheen-2. According to Pakistan, these solid-fueled missiles have ranges of 750 and 2,500 kilometers, respectively. Both Shaheen missiles are nuclear capable, although it is unknown if either version has been so equipped.

Like India, Pakistan is generally believed to keep its nuclear missiles in components: delivery vehicles are likely kept separate from warheads. However, the escalation of conflict along the line of control in Kashmir may have led Pakistan to assemble some of its nuclear weapons. If this is the case, Pakistan's notoriously shaky nuclear command

and control (C²) system could proved highly vulnerable to interference by non-government or anti-government groups, including terrorists. In February 2000, President Musharraf created a new C² regime, but heavy revision in December of that year leaves its current status in doubt.

Strategic Nuclear Weapons: 24-48

Non-strategic Nuclear Weapons: 0

Total Nuclear Weapons: 24-48

Sources:

<http://www.thebulletin.org/issues/nukenotes/jf02nukenote.html>

<http://www.nrdc.org/nuclear/nudb/datab21.asp>

Russian Nuclear Arsenal

Strategic Delivery Systems

Possible Delivery System	Year Deployed	Maximum Range (km)	Launcher Total	Warhead per unit	Warhead Yield (kt)	Notes
Missiles						
SS-18 Satan (RS-20)	1979	11,000	138	10 MIRV	550/750	1,380 total warheads
SS-19 Stiletto (RS-18)	1979	10,000	134	6 MIRV	550	804 total warheads
SS-24 M1 Scalpel (RS-22)	1987	10,000	36	10 MIRV	550	360 total warheads
SS-25 Sickle (RS-12)	1985	10,500	342	1	550	-
SS-27 Topol-M	1998	-	30	1	550	It is estimated that 60-80

						will be deployed by 2005
Strategic ALCMs						
Kh-102	-	3,000-5,000	-	1	-	Under development for Tu-95MS
SLBMs						
SS-N-18 M1 Stingray	1978	6,500	96	3 MIRV	200	In 7 Delta III SSBNs; 288 warheads total
SS-N-20 Sturgeon	1983	8,300	40	10 MIRV	100	In 3 Typhoon SSBNs; 400 warheads total
SS-N-23 Skiff	1986	8,300	96	4 MIRV	100	In 7 Delta IV SSBNs; 384 warheads total
Aircraft						
Tu-95 MS6 Bear H6	1984	6,400	34	6 AS-15A ALCMs or bombs	250	-
Tu-95 MS16 Bear H16	1984	-	30	16 AS-15A ALCMs or bombs	250	Some may be upgraded to carry Kh-102
Tu-160 Blackjack	1987	12,300	15	12 AS-15B ALCMs or bombs	250	-

Summary of Russian Nuclear Arsenal:

*Russia is currently estimated to have about **4,850 strategic** nuclear warheads plus **3,400 tactical** nuclear weapons. It should be noted, however, that estimates of Russia's tactical nuclear arsenal vary widely, ranging upwards to 15,000 when estimates include weapons waiting dismantlement.*

Although Russia has made dramatic reductions in its nuclear forces since the end of the Cold War, a major limiting factor in the pace of reductions has ironically been a lack of funding to dismantle existing systems. Russia has assumed control of all nuclear weapons stationed in the former Soviet republics, including the strategic weapons formerly deployed in Kazakhstan, Ukraine, and Belarus. For economic reasons, Russia's strategic nuclear arsenal is likely to decline to fewer than 2,000 warheads by 2015, according to U.S. intelligence estimates.

Russia continues to conduct test launches of its intercontinental ballistic missiles and to replace some missiles. Though they were originally slated to be scrapped under START II, Russia has decided to retain all of its multiple independently targeted reentry vehicle (MIRV) SS-18 and SS-19 ICBMs since the treaty never entered into effect. Likewise, the Russians have shown a reluctance to dismantle their mobile SS-24 fleets. The next-generation SS-27 Topol-M mobile single warhead is currently being deployed, but is less of a priority due to the retention of the SS-18s and -19s. However, despite the Russian military's best intentions, it is likely that a large number of all but the newest of these missiles will be retired within the next decade due to lack of maintenance.

Russia also maintains work on a strategic cruise missile, the Kh-102. Little is known about the Kh-102, but it is believed to be derived from the Kh-55 ("AS-15 Kent") air-launched cruise missile (ALCM). The conventional version of the Kh-102, the Kh-101, first appeared in 1998, and was launched from a Tu-160. However, the status of the Tu-160 program is in doubt, and the Tu-95 looks like the probable launch platform for the Kh-102. The Kh-102 was first tested in 1998. A recent test in February of 2004 may have been of the Kh-102, or may have been an entirely new, heretofore unknown "ICCM" – intercontinental cruise missile.

Declines have been particularly dramatic in Russia's SSBN fleet. In 1990 Russia had 62 SSBNs; today, the combined remnants of the Delta III, Delta IV, and Typhoon classes comprise only 17 operational subs. The newest Russian SSBN class, *Borey*, saw construction suspended in 1998; however, recent reports indicate that the first *Borey*-class boat, the *Yuri Dolgorukii*, has finished construction and left dry dock. Russia hopes to commission the boat by 2005, and that it and its sister ships will become the backbone of the 21st century Russian naval missile fleet.

Russia has three bombers with a nuclear mission: the turboprop-powered Tu-95 MS6 (Bear H6) and Tu-95 MS16 (Bear H16), and the 1980s era Tu-160 (Blackjack), reportedly modeled on the U.S. B-1 Lancer bomber. Many of the older Tu-95s have fallen into disrepair. Of the 15 Tu-160s currently in the Russian air force inventory, eight were formerly stationed in Ukraine, and are in unknown condition. The Russian government has declared its intention to retrofit all 15 with modernized avionics packages and control systems, and to complete three more unfinished Blackjacks, bringing the total to 18.

The START II treaty limits Russia and the United States to 3,500 strategic, deployed warheads. But despite START II's demise (due to U.S. withdrawal from the ABM

treaty), both the U.S. and Russia have largely followed the force guidelines recommended in the treaty. In the Treaty of Moscow (a.k.a. Strategic Offensive Reductions Treaty, or SORT), ratified by the Duma on March 14, 2003, Russian President Vladimir Putin agreed to reduce Russia's strategic nuclear arsenal to between 1,500 and 2,200 warheads – a reduction that fiscal necessity would likely have effected on Russia even without reciprocal U.S. cuts. This reduction may be imperiled by the U.S. plan to move most of the nuclear weapons taken out of the active stockpile into a reserve stockpile, where they could easily be rearmed. The START treaties do not restrict tactical or reserve weapons. Russia will likely retain approximately 3,000 tactical warheads, in addition to an unknown number of reserve weapons.

Strategic Nuclear Weapons: 4,850

Non-strategic Nuclear Weapons: 3,400

Total Nuclear Weapons: ~9,000

Sources:

<http://www.globalsecurity.org/wmd/world/russia/kh-101.htm>

<http://www.thebulletin.org/issues/nukenotes/ja03nukenote.html>

United Kingdom Nuclear Arsenal

Possible Delivery Vehicle	Year Deployed	Range (km)	Launcher Total	Warhead	Warhead Yield (kt)	Notes
SLBMs						
D-5 Trident II	1994	7,400	Up to 64	1-3 W76	100	On four <i>Vanguard</i> class SSBNs

Summary of United Kingdom Nuclear Arsenal:

Britain likely has 180 operational nuclear warheads, all based on Trident submarines. Another 15 inoperative warheads are in storage.

Britain had dismantled all of its air-delivered nuclear weapons by 1998, retaining only a sea-based deterrent. This leaves the sole British nuclear force based on four new *Vanguard*-class SSBNs, each armed with 16 U.S.-supplied Trident II D-5 missiles and 48 nuclear warheads (although up to 64 could be fitted if needed). The British share a pool

of submarine launched ballistic missiles with the United States. At any given time, only one British submarine is on patrol, with its missiles de-targeted and off alert. Were war to break out, it would take several days for the British submarine on patrol at that time to launch its nuclear weapons. Britain keeps a total of fewer than 200 operational warheads.

Strategic Nuclear Weapons: 180 (48 available on patrol at any given time)

Non-strategic Nuclear Weapons: 0

Total Nuclear Weapons: 180

Sources:

<http://www.thebulletin.org/issues/nukenotes/nd01nukenote.html>

United States Nuclear Arsenal

Ballistic Missile Systems

Land-based Ballistic Missiles					
Name	Year Deployed	Maximum Range (km)	Missile Total	Warhead Yield (kt)	Notes
LGM-30G Minuteman III Mk 12	1970	13,000	150	170	W62 warhead
LGM-30G Minuteman III Mk 12 [MIRV]	1970	13,000	50	170 x 3 MIRV	W62 warhead; will be converted to single warhead version by 2007
LGM-30G Minuteman III Mk 12A	1979	11,300	300	335 x 3 MIRV	W78 warhead; will be converted to single warhead version by 2007
LGM-118 MX/Peacekeeper	1986	9,600-11,000	29	300 x 3 MIRV	W87 warhead; all operational

					MX are to be deactivated by 2007
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SLBMs					
Name	Year Deployed	Maximum Range (km)	Missile Total	Warhead Yield (kt)	Notes
UGM-96A Trident I C-4	1979	7,400	72	100 x 6 MIRV	W76 warhead; Trident II D-5 to completely replace Trident I C-4 by 2006
UGM-133A Trident II D-5 Mk 4	1992	12,000	288 [see Notes at right]	100 x 8 MIRV	W76 warhead. The total number of Trident II D-5 Missiles is currently 288; the exact ratio of Mk4 to Mk5 is unknown
UGM-133A Trident II D-5 Mk 5	1990	12,000	288 [see note for Mk 4]	475 x 8	W88 warhead

Other Delivery Platforms

<i>Aircraft</i>					
Name	Year Deployed	Maximum Range (km)	Platform Total	Weapons	Notes
B-52H Stratofortress	1961	16,000	94	20 ALCM or ACM	-
B-2A Spirit	1993	12,000	21	16 B61 Mod 7, B61 Mod 11, or B83 bombs	-

Submarines

Name	Year Deployed	Platform Total	Weapons	Notes
<i>Ohio</i> class	1981	14 (10 projected)	24 UGM-96A Trident I C-4 or UGM-133A Trident II D-5 SLBMs	Four of the current 14 <i>Ohio</i> class are being converted into SSGNs [see text]

Other Strategic Nuclear Weapons

Name	Type	Year Deployed	Max Range (km)	Total Units	Warhead Yield (kt)	Notes
B61 Mod-7	Gravity bomb	1967	-	750	10-500	Carried on B-2A Spirit
B61 Mod-11	Earth penetrating gravity bomb	1997	-	Unknown	0.3-180	Carried on B-2A Spirit and others
B83	Gravity bomb	1984	-	650	1,000-2,000	Carried on B-2A Spirit
BGM-109A Tomahawk*	Sea-launched cruise missile (SLCM)	1984	2,500	325	200	W80.0 warhead. Carried on <i>Los Angeles</i> -class submarines and some surface ships
AGM-86B*	ALCM	1982	2,500	950	200	W80.1 warhead. Carried on B-52H Stratofortress
AGM-129A ACM*	ALCM	1991	3,000	460	200	W80.1 warhead. Carried on B-52H Stratofortress

*Because of their subsonic speeds, ALCMs and SLCMs are not always considered strategic weapons. Those that have been included here are noteworthy due to both the size of their yields and their long ranges.

Summary of U.S. Nuclear Arsenal:

In spring 2004, the U.S. stockpile contained approximately 7,000 operational nuclear warheads, including 5,886 strategic and 1,120 non-strategic warheads. Some 3,000 additional warheads are held in reserve, with a few hundred, under current plans, slated for dismantlement. Current plans call for the U.S. to reduce its strategic nuclear arsenals to 1,700 - 2,200 operationally deployed warheads by 2012. The majority of the weapons removed from the arsenal, however, are moved to either a responsive or inactive capacity, rather than dismantled. In addition, the U.S. has a sizable tactical nuclear weapons arsenal.

The 2002 Nuclear Posture Review (NPR) meshes with President George W. Bush's SORT agreement with Russian President Vladimir V. Putin in calling for a reduction in the United States' strategic nuclear arsenal from 6,500 to 1,700-2,200 operationally deployed weapons by 2012. The review states that the United States will reduce its reliance on nuclear weapons and depend more heavily on conventional weapons and missile defense to ensure national security. Most of the reduction, however, will involve merely shifting warheads into storage, where they could swiftly be reactivated if required. While the review calls for continued adherence to a nuclear testing moratorium, it opposes U.S. ratification of the Comprehensive Test Ban Treaty. By advocating acceleration in the nuclear test readiness posture, and renewing funding for new nuclear weapons, the review raises the possibility that the United States might seek to resume nuclear testing and try to circumvent its SORT obligations.

The United States aims to reduce its nuclear arsenal by almost half by 2012. While no specific numbers have been released by the Pentagon, outside observers believe that 600 W62s, 500 W78s, 1,500 W76s, 1,000 W80-1s, 400 W84s, and 600 B61s are slated for retirement. The United States is modernizing its nuclear arsenal on several fronts. Minuteman III ICBMs have received upgraded targeting systems under a plan to extend the fleet's life until 2020. Guidance and propulsion systems are currently being upgraded, and a program to refurbish the liquid-propulsion stage of the missile has been planned. The 350 missiles with MIRV launchers will be downgraded to a single warhead by 2007. Work may also begin soon on the next generation of ICBM, the Minuteman IV, though the plan has suffered from financial constraints. Dismantlement of the Peacekeeper missile fleet continues apace, with the last expected to be offline by 2007. Some of the W87 warheads that formerly crowned Peacekeepers will likely be reused in Minuteman IIIs; some of the missiles themselves will be put into storage, either for space missions or possible future redeployment. The 2002 NPR prescribes the retention of Peacekeeper silos, as well.

Currently, the United States bases its Trident SLBMs on 14 Ohio-class submarines. When the reductions proposed by the 2002 Nuclear Posture Review come to pass, the United States will have reduced its SSBN fleet to 10 ships (the four oldest Ohio subs are to be converted into cruise missile submarines, or SSGNs, armed with conventional warhead Tomahawks). The Navy is currently replacing its Trident C-4 missiles with Trident II D-5 missiles, and expects to entirely replace the original C-4 by 2006. A next-generation Trident is also under development. In addition, Los Angeles-class attack submarines, Ticonderoga-class cruisers (CG 52 and onward), and Arleigh Burke-class

guided missile destroyers carry BGM-109A Tomahawk SLCMs, capable of generating a 200 kiloton yield that is well within the strategic range.

Two U.S. aircraft, the B-2A Spirit and the B-52H Stratofortress, can carry strategic nuclear weapons. The B-1B no longer has a nuclear mission, although a plan remains to outfit it for nuclear weapons should the need arise. The B-52 carries 20 AGM-86B air-launched cruise missiles (ALCMs) or AGM-129A Advanced Cruise Missiles (ACMs), both of which are equipped with a single W80 nuclear warhead. The United States has reduced its ACM and ALCM inventories slightly since 2002 and now has 430 of each. The B-2A Spirit is only capable of carrying nuclear bombs, including the B61 Mod-7, B61 Mod-11 earth penetrator, and B83. The B-2A would also be the logical launch platform for the Robust Nuclear Earth Penetrator (RNEP), a proposed replacement for the B61 Mod-11. The controversial RNEP would greatly increase U.S. “bunker buster” capability, but critics fear it could lower the bar for use of nuclear weaponry. Nevertheless, the Department of Energy has requested and received funding to begin preliminary studies.

In 1998, the Pentagon decided to maintain the size of its tactical nuclear arsenal, as a gesture to Russia’s dependence on its own large tactical arsenal. The United States’ nuclear-tipped Tomahawk SLCMs are arguably tactical weapons, and it stores 150 tactical nuclear bombs in Europe for NATO use. Some fighter-bombers also maintain a non-strategic nuclear capability.

Strategic Nuclear Weapons: ~5,886

Non-strategic Nuclear Weapons: ~1,120

Total Nuclear Weapons: ~7,000

Sources:

<http://www.thebulletin.org/issues/nukenotes/mj04nukenote.html>

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<http://www.nrdc.org/nuclear/fstockpile.asp>