

10. World nuclear forces

Overview

At the start of 2022, nine states—the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and the Democratic People’s Republic of Korea (DPRK, or North Korea)—possessed approximately 12 705 nuclear weapons, of which 9440 were estimated to be in military stockpiles for potential use. About 3732 of these warheads were estimated to be deployed with operational forces (see table 10.1), and around 2000 of these were kept in a state of high operational alert.

Overall, the number of nuclear warheads in the world continues to decline. However, this is primarily due to the USA and Russia dismantling retired warheads. Global reductions of operational warheads appear to have stalled, and their numbers may be rising again. At the same time, both the USA and Russia have extensive and expensive programmes under way to replace and modernize their nuclear warheads, missile and aircraft delivery systems, and nuclear weapon production facilities (see sections I and II).

The nuclear arsenals of the other nuclear-armed states are considerably smaller (see sections III–IX), but all are either developing or deploying new weapon systems or have announced their intention to do so. China is in the middle of a significant modernization and expansion of its nuclear arsenal, and India and Pakistan also appear to be increasing the size of their nuclear weapon inventories. In 2021 the UK announced its intention to increase the cap for its nuclear stockpile. North Korea’s military nuclear programme remains central to its national security strategy and it may have assembled up to 20 warheads.

The availability of reliable information on the status of the nuclear arsenals and capabilities of the nuclear-armed states varies considerably. The USA, the UK and France have declared some information. Russia refuses to publicly disclose the detailed breakdown of its strategic nuclear forces, even though it shares the information with the USA. China releases little information about force numbers or future development plans. The governments of India and Pakistan make statements about some of their missile tests but provide no information about the status or size of their arsenals. North Korea has acknowledged conducting nuclear weapon and missile tests but provides no information about the size of its nuclear arsenal. Israel has a long-standing policy of not commenting on its nuclear arsenal.

The raw material for nuclear weapons is fissile material, either highly enriched uranium or separated plutonium (see section X).

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Table 10.1. World nuclear forces, January 2022

All figures are approximate and are estimates based on assessments by the authors. The estimates presented here are based on publicly available information and contain some uncertainties, as reflected in the notes to tables 10.1–10.10.

State	Year of first nuclear test	Deployed warheads ^a	Stored warheads ^b	Total stockpile ^c	Retired warheads	Total inventory
United States	1945	1 744 ^d	1 964 ^e	3 708	1 720 ^f	5 428
Russia	1949	1 588 ^g	2 889 ^h	4 477	1 500 ^f	5 977
United Kingdom	1952	120	60	180	45 ⁱ	225 ^j
France	1960	280	10 ^k	290	..	290
China	1964	–	350	350	–	350
India	1974	–	160	160	..	160
Pakistan	1998	–	165	165	..	165
Israel	..	–	90	90	..	90
North Korea	2006	–	20	20	..	20 ^l
Total		3 732	5 708	9 440	3 265	12 705

.. = not applicable or not available; – = nil or a negligible value.

Note: SIPRI revises its world nuclear forces data each year based on new information and updates to earlier assessments. The data for Jan. 2022 replaces all previously published SIPRI data on world nuclear forces.

^a These are warheads placed on missiles or located on bases with operational forces.

^b These are warheads in central storage that would require some preparation (e.g. transport and loading on to launchers) before they could be deployed.

^c Some states, such as the USA, use the official term ‘stockpile’ to refer to this subset of warheads, while others, such as the UK, often use ‘stockpile’ to describe the entire nuclear inventory. SIPRI uses the term ‘stockpile’ to refer to all deployed warheads as well as warheads in central storage that could potentially be deployed after some preparation.

^d This figure includes c.1344 warheads deployed on ballistic missiles and c.300 stored at bomber bases in the USA, as well as c.100 non-strategic (tactical) nuclear bombs deployed outside the USA at North Atlantic Treaty Organization partner bases.

^e This figure includes c. 100 non-strategic nuclear bombs stored in the USA.

^f This figure is for retired warheads awaiting dismantlement.

^g This figure includes c.1388 strategic warheads deployed on ballistic missiles and c. 200 deployed at heavy bomber bases.

^h This figure includes c. 977 strategic and c. 1912 non-strategic warheads in central storage.

ⁱ This figure refers to retired warheads that have not yet been dismantled. It seems likely that they will be reconstituted to become part of the UK’s total stockpile over the coming years (see note j).

^j The British government declared in 2010 that its nuclear weapon inventory would not exceed 225 warheads. It is estimated here that the inventory remained at that number in Jan. 2022. A planned reduction to an inventory of 180 warheads by the mid 2020s was ended by a government review published in 2021. The review introduced a new ceiling of 260 warheads.

^k The 10 warheads assigned to France’s carrier-based aircraft are thought to be kept in central storage and are not normally deployed.

^l In previous editions of the SIPRI Yearbook, this figure referred to the number of nuclear warheads that North Korea could potentially build with the amount of fissile material it has produced. However, SIPRI’s estimate for Jan. 2022 is that North Korea has assembled up to 20 warheads. This is the first time that figures for North Korea have been included in the global totals.