

10. World nuclear forces

Overview

At the start of 2021, 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 13 080 nuclear weapons, of which 3825 were deployed with operational forces (see table 10.1). Approximately 2000 of these are 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. North Korea’s military nuclear programme remains central to its national security strategy, although in 2020 it did not conduct any tests of nuclear weapons or long-range ballistic missile delivery systems.

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 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 (HEU) or separated plutonium. China, France, Russia, the UK and the USA have produced both HEU and plutonium for use in their nuclear weapons; India and Israel have produced mainly plutonium; and Pakistan has produced mainly HEU but is increasing its ability to produce plutonium.

Table 10.1. World nuclear forces, January 2021

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	Other warheads	Total inventory
United States	1945	1 800 ^c	2 000 ^d	1 750 ^e	5 550
Russia	1949	1 625 ^f	2 870 ^g	1 760 ^e	6 255
United Kingdom	1952	120	105	–	225 ^h
France	1960	280	10 ⁱ	..	290
China	1964	–	350	–	350
India	1974	–	156	..	156
Pakistan	1998	–	165	..	165
Israel	..	–	90	..	90
North Korea	2006	–	..	[40–50]	[40–50] ^j
Total^k		3 825	5 745	3 510	13 080

.. = not applicable or not available; – = nil or a negligible value; [] = uncertain figure.

Note: SIPRI revises its world nuclear forces data each year based on new information and updates to earlier assessments. The data for Jan. 2021 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 become fully operationally available.

^c This figure includes approximately 1400 warheads deployed on ballistic missiles and nearly 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.

^d This figure includes c. 130 non-strategic nuclear bombs stored in the USA.

^e This figure is for retired warheads awaiting dismantlement.

^f This figure includes approximately 1425 strategic warheads on ballistic missiles and about 200 deployed at heavy bomber bases.

^g This figure includes c. 960 strategic and c. 1910 non-strategic warheads in central storage.

^h 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. 2021. A planned reduction to an inventory of 180 warheads by the mid 2020s was ended by a government review undertaken in 2020 and published in early 2021. The review introduced a new ceiling of 260 warheads.

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

^j This estimate lists the number of warheads North Korea could potentially build with the amount of fissile material it has produced. There is no publicly available evidence that North Korea has produced an operational nuclear warhead for delivery by an intercontinental-range ballistic missile, but it might have a small number of warheads for medium-range ballistic missiles.

^k These totals do not include figures for North Korea and are rounded to the nearest 5 warheads.

North Korea has produced plutonium for use in nuclear weapons but may have produced HEU as well. All states with a civilian nuclear industry are capable of producing fissile materials (see section X).