

## The United Kingdom's Nuclear Inventory

One of five nuclear-weapon states recognized under the Nuclear Non-Proliferation Treaty, the United Kingdom had until 2021 been in the [process](#) of reducing the overall size of its nuclear weapon stockpile. The United Kingdom maintains a minimal deterrent with the smallest deployed nuclear arsenal of the nuclear-weapon states. Its nuclear forces are entirely sea-based and the country maintains a [deliberately ambiguous](#) nuclear use policy. This policy is intended to complicate the strategic decision-making of potential adversaries.

Nuclear weapons collaboration between the United Kingdom and the United States is rooted in the World War II effort to develop the first atomic bomb and the programs remain linked today. The [Mutual Defense Agreement](#) of 1958 between the two countries allows for the sharing of classified information to develop nuclear power and weapons for military use. The United Kingdom relies solely on its nuclear-powered ballistic missile submarines (SSBN) for its nuclear deterrent, and the warhead deployed, the [Trident Holbrook](#), is based on the United States' [W76](#) warhead. There is [speculation](#) that the United States' W93 warhead – which may replace the U.S. Navy's W76 warhead – might be the design basis for the United Kingdom's next nuclear warhead, and the UK government has actively [lobbied Congress](#) to support its funding. The United Kingdom also [buys](#) its Trident II submarine-launched ballistic missiles (SLBM) from the United States.

The United Kingdom's nuclear forces are a part of the North Atlantic Treaty Organization's (NATO) integrated military command structure, but London retains independent decision-making powers. Any commands by NATO personnel can be overruled if the action would pose a direct threat to the United Kingdom's national interest. However, the United Kingdom is [committed](#) to using its nuclear weapons, consistent with the Washington Treaty, in "extreme circumstances of self-defense, including the defense of our NATO Allies."

### How Many?

The United Kingdom is estimated to possess [225](#) nuclear weapons, of which [120](#) are operationally available and only [40](#) are deployed at a time. All of the deployed warheads are controlled by the Royal Navy, which maintains a continuous at-sea presence via its [four](#) Vanguard-class nuclear-powered submarines. This posture ensures a secure second-strike capability in the event of a nuclear attack.

The United Kingdom's stockpile peaked at approximately [500](#) warheads between 1974-1981, but the United Kingdom's nuclear deterrent was also bolstered by outside forces. Throughout the Cold War, the United States maintained a stockpile of nuclear weapons in the United Kingdom. Those weapons were under U.S. control, but could, if necessary, be launched from British-operated delivery vehicles. The U.S. stockpile in the United Kingdom peaked at [300 to 400](#) in the 1970s, but slowly declined in the subsequent years. In 1991, President George H.W. Bush announced the last [161](#) of these weapons would be withdrawn and dismantled as a part of the [Presidential Nuclear Initiative](#) (PNI). The PNIs were unilateral reductions by the United States, but there was an implicit challenge for the Russians to reciprocate.

In the United Kingdom's [2010](#) Security Defense and Security Review (SDSR), the British government announced that it would reduce the number of nuclear weapons stockpiled to no more than [180](#) by the mid-2020s. The British government also pledged to reduce the number of warheads onboard each submarine from 48 to 40; reduce the number of operationally available warheads from fewer than 160 to no more than 120; and to reduce the number of missiles on each submarine. In the [2015](#) SDSR, these pledges were reaffirmed and the number of operational missiles on each submarine was specifically limited to no more than eight.

However, the 2021 Integrated Review of Security, Defense, Development and Foreign Policy backtracked on these pledges, arguing that ["in recognition of the evolving security environment,"](#) such limits on warheads were ["no longer possible."](#) Instead, the government announced that the overall nuclear weapon stockpile would be capped at no more than 260 warheads, the first stockpile increase since the Cold War. The government also

announced an extension of its policy on [deliberate ambiguity](#), noting that public figures for its operational stockpile, deployed warhead or deployed missile numbers would no longer be supplied.

## Air

Throughout the Cold War, the United Kingdom relied on an air- and sea-based nuclear deterrent, but this posture was seen as [unnecessary](#) after the collapse of the Soviet Union. The United Kingdom retired its last air-delivered nuclear weapon, the [WE 177](#), in March 1998 and dismantled it completely by the end of August 1998. These gravity bombs were deployed by the Royal Navy and the Royal Air Force with yields ranging from [200-400](#) kilotons. There was also a low-yield variant with an approximate [10-kiloton yield](#) for use against [enemy troops](#), which was also retired in the 1990s.

## Sea

The United Kingdom's nuclear forces are entirely sea-based, and it has maintained a continuous at-sea presence known as [Operation Relentless since 1969](#) through its nuclear-powered SSBN. [Four](#) of the Vanguard-class SSBNs are kept on rotation to maintain this presence. Each SSBN holds no more than eight Trident II SLBMs, which have an estimated range of [7,400](#) kilometers. The Vanguard-class SSBNs will be replaced in the early 2030s by four new submarines, known as [Dreadnought](#). The Dreadnought SSBNs will have a service life of a minimum of [30 years](#) and the capability to carry up to 12 missiles.

## Land

In [1955](#), the United Kingdom began developing the Blue Streak ground-launched, intermediate range ballistic missile (IRBM). However, this program was cancelled in [1960](#) over fears that the silos were vulnerable to a pre-emptive strike and cost-overruns. While the United Kingdom never developed its own ground-based missile, the United States' Thor IRBM was deployed in the United Kingdom and the missile had a range of [1,500](#) nautical miles. The first Thor squadron reached operational status in June 1959 and deployment was completed in April 1960. However, the United States soon shifted its focus away from the Thor missile and the UK-based squadron were [phased out](#) by 1964.