



## India's Nuclear Inventory

India tested its first nuclear weapon in 1974, becoming the sixth country to detonate a nuclear weapon. The country's arsenal carries weapons with estimated average yields [ranging](#) from 10 to 40 kilotons, though exact yields are unknown. India is [pursuing](#) membership to the Nuclear Suppliers Group (NSG) and became a member of the [Missile Technology Control Regime](#) in 2016. India has not signed the [Nuclear Non-Proliferation Treaty](#) nor [The Comprehensive Test Ban Treaty](#).

India bases its nuclear posture on deterring its nuclear armed neighbors: China and Pakistan. India's Chief of Defense Staff [declared](#) in November 2021 that China was India's biggest security threat. The range of New Delhi's new Agni-4, 5, and 6 nuclear-capable missiles [suggest](#) that military planners foresee a need for longer strike ranges than across the Pakistani border. The perceived need to assure mutual ensured destruction with China could [enable](#) thinking whereby India may seek more nuclear capabilities.

India currently maintains a [No First Use](#) policy, but [comments](#) made by Indian officials in the late 2010s as well as a [declaration](#) in 2003 undermine this policy. Officials warned that they could use nuclear weapons in response to chemical or biological attacks considering terrorist attacks attributed to Pakistan. India possesses a full [nuclear triad](#) and is currently pursuing modernization efforts.

### How Many?

India has never publicly released the size of its nuclear arsenal. One assessment [places](#) the country's stockpile at 160 nuclear warheads. However, New Delhi [has](#) enough weapons-grade plutonium, approximately 700 kilograms, for up to 213 warheads. Indian engineers are also [building](#) six fast breeder reactors by 2033 to produce both electric power and fissile material.

### Air

Though there are no official numbers, India has the ability to deliver approximately [48 nuclear warheads](#) via the aging Mirage 2000H/I, Jaguar IS/IB and potentially the French-made Rafale aircraft. These first two were deployed in the early 1980s and have ranges of 1,850 to 1,600 kilometers (km), respectively. Having already made efforts to modernize its aging fleet, India might be looking for a modern fighter-bomber that could take over the air-based nuclear strike role in the future. One Indian Air Chief Marshall [announced](#) the retirement of six Jaguar squadrons in the early 2020s. Rafales are nuclear-capable in the French Air Force and some analysts [posit](#) that they could be fitted with Indian nuclear weapons.

### Sea

India has one type of ship-launched ballistic missile and one submarine-launched ballistic missile (SLBM), and is developing another SLBM. The ship-based ballistic missile is the Dhanush. It is mounted on the back of *Sukanya*-class patrol vessels and is a variant of the Prithvi-II missile. It is a short-range ballistic missile that can hit targets within [400](#) km.

India has already [developed](#) the K-15 SLBM and is in the process of creating the more advanced K-4 SLBM. The former has a strike range of 750 km while the latter may reach 3,500 km. These SLBMs are or will be carried on the still developing INS *Arihant* class submarines, which have [faced](#) repeated delays and production issues. These missiles and submarines are intended to ensure a second-strike retaliatory capability.

## Land

India's ground-based nuclear weapons program consists of four types of operational ballistic missile systems and an [estimated](#) 64 warheads and launchers. The first two are short-range, road-mobile [Prithvi-II](#) and [Agni-I](#) missiles which can travel 250 km and 700 km, respectively. The Agni-I missiles are likely used to target Pakistan, so it is estimated that up to 20 launchers are deployed in western India. The third and fourth type of missile systems are [Agni-II](#) and [Agni-III](#). They are medium and intermediate range missiles that can strike targets up to 2,000-3,500 km and 3,000-5,000 km, respectively.

India is further developing the Agni-IV, Agni-V, and Agni-P. [Agni-IV](#) is a rail- and road-mobile ballistic missile with a range of approximately 4,000 km, giving it the capability to [strike targets](#) in nearly all of China. The [Agni-V](#) is reportedly road-mobile and has a range of more than 5,000 km, potentially making it the country's first intercontinental ballistic missile (ICBM). The Agni-P [builds](#) on these rockets in a shorter-range ballistic missile and incorporates the sophisticated rocket motors, propellants, avionics, and navigation systems found in the Agni-IV and Agni-V.