

# Pakistani nuclear weapons capability

## [Overview]

As of May 2018, Pakistan is estimated to possess a total of approximately 140 nuclear warheads (**Kristensen, Hans M. & Norris, Robert S. 2016; Kristensen, Hans M. & Norris, Robert S. 2018**). As of late 2016, They had approximately 280 kg of weapons-grade plutonium and 3,400 kg of high enriched uranium (HEU) (**IPFM 2018**). Since it takes 12 kg to 18 kg of HEU or 4 kg to 6 kg of plutonium to manufacture a nuclear warhead (though these amounts may differ according to the level of their technology), Pakistan has enough fissile material to make 215 to 350 nuclear warheads. With higher levels of technical sophistication, however, it is possible to obtain a bomb from 2-4kg plutonium, in which case the same Israeli stockpile would suggest an arsenal of 260-420 warheads (**Union of Concerned Scientists 2004**). Kristensen and Norris suggest that Pakistan has not converted all its fissile material into nuclear warheads, and estimate the number of warheads in conjunction with the intelligence on their nuclear weapons delivery capabilities (**Kristensen, Hans M. & Norris, Robert S. 2011**). It is thought that the warheads are unloaded and in storage at a central storage facility (**Kristensen, Hans M. & Norris, Robert S. 2018**).

Currently, Pakistan deploys six ground-launched ballistic missiles (four short-range, two intermediate range) capable of carrying nuclear warheads and is thought to be developing three more ballistic missiles. Pakistan is also actively developing cruise missiles with nuclear/conventional capability. The ground-launched Babur I (Hatf 7) is already in deployment and tests are repeatedly under way for anti-ground and anti-ship as well as submarine-launched variants.

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## ● Nuclear warheads ~140

## ● Nuclear weapons delivery vehicles <sup>1)</sup>

Type / designation	Missile/bomb	No. of warheads per weapon	No. of warheads	Range (km)	Payloads (kg)	Year first deployed	Remarks
<b>Ground-launched ballistic missile</b>				~92			
Abdali (Alias : Hatf 2)	unknown	1	unknown	180	200-400	2017?	2)
Ghaznavi (Alias : Hatf 3)	~16	1	~16	250	500	2004	3)
Shaheen-1 (Alias : Hatf 4)	~16	1	~16	750	750-900	2003	4)
Shaheen-1A (Alias : Hatf 4)	-	1	unknown	900	1,000	In development	5)
Ghuri (Alias : Hatf 5)	~24	1	~24	1,250	700-1,000	2003	6)
Shaheen-2 (Alias : Hatf 6)	~12	1	~12	1,500	~1,000	2014	7)
Shaheen-3	-	1	unknown	2,750	~700-1,000	In development	8)
Nasr (Alias : Hatf 9)	~24	1	~24	60	400	2013	9)
Aababeel	-	multiple numbers	unknown	2,200		In development	10)
<b>Ground-launched cruise missile</b>				~12			
Babur-1 (Alias : Hatf 7)	~12	1	~12	350	400-500	2014?	11)
Babur-2	-	1	unknown	700		In development	12)
<b>Submarine-launched cruise missile</b>							
Babur-3	-	1	unknown	450		In development	13)
<b>Airborne bomb</b>				~36			
Loading machine : F-16A/B	~24	1	~24	1,600	4,500	1998	14)
Loading machine : Mirage III/V	~12	1	~12	2,100	4,000	1998	15)
<b>Air-launched cruise missile</b>							
Ra'ad (Alias : Hatf 8)	-	1	unknown	350	~400	In development	16)

## [Notes]

- 1) Unless specifically stated, the source for information on missile / bomb and number warheads is **Kristensen, Hans M. & Norris, Robert S. 2016**; nuclear weapons delivery range, payloads and year of deployment is **Schell, Phillip Patton, Kile, Shannon N. & Kristensen, Hans M. 2015**.
- 2) Single-stage. Solid-propellant. The latest test launch was conducted on February 15, 2013 (**The Nation 2013**).
- 3) Single-stage. Solid-propellant. The latest test launch was conducted on May 8, 2014 (**The Times of India 2014**).
- 4) Solid-propellant, single-stage. Pakistan bases its missiles on the M-II missiles that they imported from China in the early 1990s. The latest test launch was conducted on April 10, 2013 (**The Express Tribune 2013**).
- 5) The Shaheen 1A extended the range of a Shaheen. The latest test launch was conducted on December 15, 2015 (**Smith, Alexander 2015**).
- 6) Single-stage. Liquid-propellant. Believed to be a variant of the North Korean Rodong (Nodong). The latest test launch was conducted on April 15, 2015 (**Dawn.com 2015**).
- 7) Two-stage, solid-propellant. Thought to become the replacement for Ghauri. The latest test launch was conducted on November 13, 2014 (**Dawn.com 2014**).
- 8) Two-stage. Solid-propellant. The latest test launch was conducted on December 11, 2015 (**Press Trust of India 2015**).
- 9) Single-stage. Solid-propellant. Very short in range and, at a few kilotons, limited in yield, but highly accurate in targeting. Fired from a multi-tube box launcher (**Kristensen, Hans M. & Norris, Robert S. 2016**). The source for information on the range is **The Missile Threat 2016**. The latest test launch was conducted on July 5, 2017 (**Dawn.com 2017**).
- 10) Three-stage. Solid-propellant. The first test launch was conducted on January 25, 2017. According to the Pakistani Armed Forces' joint public relations department, it is capable of carrying multiple warheads (**ISPR 2017-2**). Some believe this to be a Shaheen III redesign/upgrade (**Gady, Franz-Stefan 2017**).
- 11) To date, 11 tests have been conducted (**Kristensen, Hans M. & Norris, Robert S. 2016**), the last instance being July 2014 (**IHS Jane's 2015-1**), but sources for this intelligence are not clear. The latest verifiable test launch was conducted on September 17, 2012 (**Defense Update 2012**). The Babur missile is capable of stealth and precision guidance, according to the Pakistani government (**Kristensen, Hans M. & Norris, Robert S. 2016**).
- 12) A Babur 1 variant with greater precision—owing to highly advanced aerodynamics and electronics—and an extended range of 700km, to be used for both ground and naval targets. The first test launch was conducted on December 14, 2016 (**ISPR 2016-2**). On April 14, 2018, the Babur 1B, another variant of equivalent performance, was test-fired (**ISPR 2018-2**) but this may in fact be identical as the Babur 2.
- 13) The range of the submarine-launched Babur 2 is 450 km. The first test on January 9, 2017, is said to have been accurate and struck the target (**ISPR 2017-1**). The latest test launch was conducted on March 29, 2018 (**ISPR 2018-1; Dawn.com 2018**).

- 14) Equipped with US-made missiles from 1983-87. Nuclear missions appear to be entrusted to the 9th and 11th Air Squadrons at Sargoha Air Base (Kristensen, Hans M. & Norris, Robert S. 2011).
- 15) Also used in test launches of the Ra'ad ALCM (Kristensen, Hans M. & Norris, Robert S. 2015).
- 16) It is capable of stealth mode and precision guidance, according to Pakistani government sources (Kristensen, Hans M. & Norris, Robert S. 2016). The source of information on payload is IHS Jane's 2015-2. The latest test launch was conducted on January 19, 2016 (ISPR 2016-1). The 2017 independence day parade saw Ra'ad Mark II, with an extended range of 550 km (Khan, Bilal 2017).

**[Source]**

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