

World-record 'gun salute' to incoming defence minister Nirmala Sitharaman

Range, accuracy and consistency are the key attributes of an artillery gun

By Ajai Shukla

On Monday, in trial firing at the Pokhran Ranges in Rajasthan, the advanced towed artillery gun system (ATAGS) being indigenously developed for the Indian Army demonstrated its potential to be a world-beating system.

The 155-millimetre, 52-calibre gun-howitzer fired three shells out to a world-record distance of 47.2 kilometres from the gun position. This was achieved using special, long-range ammunition called “high explosive – base bleed” (HE – BB). In comparison, 155-millimetre, 52-calibre guns in service worldwide fire this ammunition to maximum ranges of 40-45 kilometres.

The achievement coincides with the appointment of Nirmala Sitharaman as defence minister.

The ATAGS is being developed by the Defence Research & Defence Organisation (DRDO) on two parallel tracks – one prototype in partnership with Tata Power (Strategic Engineering Division) and another with Bharat Forge. The prototype that broke the record was the Tata Power (SED) gun.

Earlier, on Saturday, the same gun had broken another record by firing “high explosive – boat tail” (HE – BT) ammunition to a range of 37.2 kilometres.

Range, accuracy and consistency are the key attributes of an artillery gun. A longer range allows more area to be engaged from a “gun position”, without having to redeploy (or shift) the guns.

The secret of the ATAGS longer range is its larger chamber – 25 litres, compared to 23 litres in most 155-millimetre guns like the French Nexter and Israeli Elbit guns the military has evaluated. A larger chamber packs in more high explosive propellant, which shoots out the warhead further.

The need to cater for this higher “shock of firing” makes the ATAGS a heavier gun. It weighs in at 17-18 tonnes, while comparable guns worldwide weigh 14-15 tonnes.

So promising is the ATAGS that both existing prototypes were paraded on January 26 in New Delhi.

After the gun successfully completes development and firing trials, the army is likely to procure at least 2,000 ATAGS. At an estimated Rs 15 crore a piece, that will result in Rs 30,000 crore in business for the production eco-system, benefiting a large number of private defence firms.

With the current round of “summer trials” having successfully concluded in Pokhran, the ATAGS will now undergo modifications and prepare for “winter trials” in December, probably in Sikkim. Each vendor will build three more ATAGs gun prototypes to expedite trials.

The first ATAGS firing trials were carried out in Balasore, Odisha, last December.

While ATAGS looks much like the Bofors FH-77B — the infamous “Bofors gun” that India bought 410 of in the 1980s before scandal derailed indigenous construction — the ATAGS is in fact significantly bigger than the 155-millimetre, 39-calibre Bofors.

When talking about a 155-millimetre, 52-calibre gun, the first figure denotes the “bore” of the gun, or the width of the gun barrel; while calibre relates to barrel length. The higher the calibre, the longer the barrel and, therefore, the greater its range. A third parameter is chamber size, which determines how large a projectile can be fired from the gun, and therefore how much damage a round can inflict on the target.

Another global first in the ATAGS is its all-electric drive, which supersedes the more unreliable hydraulic drives in other towed guns. The all-electric drive operates all the ATAGS' gun controls: ammunition handling, opening and closing the breech, and ramming the round into the chamber.

The ATAGS is the world's only gun with a six-round "automated magazine" that fires a six-round burst in just 30 seconds. Most other existing 155-millimetre, 52-calibre guns have three-round magazines, which must be reloaded after firing three rounds.

A high "burst fire" capability will provide the army a significant advantage since artillery causes most casualties in the initial burst of fire, when enemy soldiers are caught in the open (and not after they dive into their trenches).



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Indian Navy receives LRSAM

India's Defence Research and Development Organisation (DRDO) and Israel Aerospace Industries (IAI) have delivered the first Long-Range Surface-to-Air Missile (LRSAM) manufactured in India to the Indian Ministry of Defence, IAI announced on 31 August.

The missiles are to be installed on the Indian Navy's operational missile ships.

LRSAM is an advanced air and missile defence system designed to protect against a variety of aerial, naval and airborne threats. The system includes a multifunction surveillance, track and guidance radar, command and control system, launchers and missiles with advanced RF seekers.

LRSAM has been jointly developed by IAI and DRDO in collaboration with IAI subsidiary ELTA, RAFAEL and Indian industry. It is currently operational with the Indian Air Force, Indian Navy and Israel Defense Forces and is expected to enter operation with the Indian Army shortly.