THE TIMES OF INDIA

Mon, 30 Sep 2019

15 years on, DRDO's supersonic missile ready for IAF fighters

By Rajat Pandit

HIGHLIGHTS

- ***India's first indigenous beyond visual range air-to-air missile (BVRAAM) for fighters, Astra, is now finally ready for induction***
- ***The Defence Research and Development Organisation is also already working to increase Astra's strike range from the existing 110-km to over 160-km***

New Delhi: India's first indigenous beyond visual range air-to-air missile (BVRAAM) for fighters, Astra, is now finally ready for induction after 15 tortuous years of development, with the DRDO expecting the IAF to initially order at least 200 missiles for its Sukhoi-30MKI jets.

The Defence Research and Development Organisation is also already working to increase Astra's strike range from the existing 110-km to over 160-km. "Astra is one of the best BVRAAMs in the world today. We have the capability to develop it for longer ranges," said DRDO Chief Dr G Satheesh Reddy, talking to TOI.

India has joined a handful of countries like US, Russia, France and Israel in developing such advanced air combat missiles that can destroy highly-agile enemy supersonic fighters packed with "counter-measures'' at long ranges, say officials.

The importance of having deadly air-to-air missiles was underscored during the skirmish between Indian and Pakistani fighters along the Line of Control on February 27, a day after IAF jets bombed the JeM facility at Balakot.

The sleek 3.57-metre long Astra, with a mass weight of 154-kg, flies over four times the speed of sound at Mach 4.5. To be produced by defence PSU Bharat Dynamics for about Rs 7-8 crore per unit, Astra will be a much cheaper indigenous alternative to some of the expensive Russian, French and Israeli BVRAAMs currently imported to arm IAF fighters.

After the Russian-origin Sukhois, the indigenous Tejas light combat aircraft will also be equipped with the all-weather Astra. The missile, which is capable of handling multi-target scenarios, has "state-of-the-art ECCM (electronic counter-counter measures) to tackle jamming by hostile aircraft, active radar terminal guidance and "highly accurate complex end-game algorithms for high single-shot kill probability" in both head-on and tail-chase modes.

The DRDO is all gung-ho after it conducted five successful trials of the Astra from Sukhoi fighters against Jet Banshee target aircraft or UAVs, simulating all possible threat scenarios, off the Chandipur coast in Odisha last week. "The targets were hit at distances of 80 to 86-km with pinpoint accuracy. The technologies developed under the programme will be the building blocks for developing future variants of air-to-air and surface-to-air missiles," said an official.

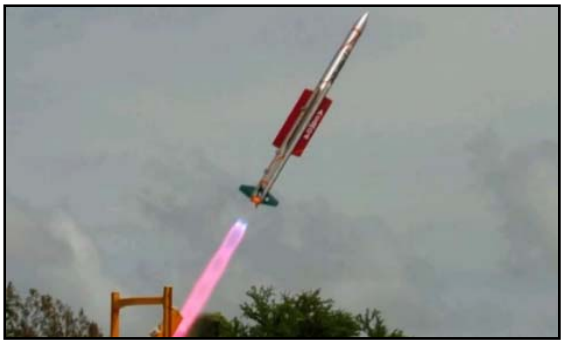
India may have developed long-range nuclear missiles like the Agni-V, which has a strike range over 5,000-km, but had faltered in building BVRAAMs till now. Astra suffered from several technical glitches like a defective aerodynamic configuration since the missile project was first sanctioned in March 2004 at an initial cost of Rs 955 crore.

https://timesofindia.indiatimes.com/india/15-years-on-drdos-supersonic-missile-ready-for-iaf-fighters/articleshow/71355843.cms

Mon, 30 Sep 2019

Indian Air Force to get first domestically developed air-to-air missile soon - DRDO Chief

New Delhi (Sputnik): India will become the fifth nation in the world after the US, Russia, France and Israel to develop and deliver its first domestic beyond visual range air-to-air missile (BVRAAM) to the country's air force, a defence research official said.



The chief of the Defence Research and Development Organisation (DRDO), India's primary military research and development establishment, Dr G. Satheesh Reddy, told Indian daily the Times of India that the Astra beyond visual range air-to-air missile is ready for induction into the Indian Air Force (IAF).

The successful induction of the Astra will take place after 15 years of research and development, and it is expected that the Indian Air Force will place an initial order for at least 200 missiles for its Sukhoi-30MKI jets, he said.

"Astra is one of the best BVRAAMs in the world today. We can develop it for longer ranges," the daily quoted Dr Reddy as saying.

Currently, efforts are on to expand the missile's strike range from 110-kilometres to over 160-kilometres.

The 3.57-metre-long Astra air-to-air missile, with a mass weight of 154-kilograms, possesses the ability to fly at Mach 4.5 or over four times the speed of sound.

It is domestically manufactured by Bharat Dynamic, a central government-run firm. Each missile costs about $11.35 million, which the DRDO claims is much cheaper compared to the Russian, French and Israeli BVRAAMs currently being used by the IAF.

Dr Reddy said the missile has state-of-the-art electronic counter-countermeasures (ECCM) to tackle jamming by hostile aircraft and active radar terminal guidance.

It also has accurate complex end-game algorithms to facilitate high single-shot kill probability in both head-on mode (where a surface-to-air missile system or jet aircraft engages another aircraft while the target aircraft is flying towards the attacker) or in tail-chase mode (where a surface-to-air missile system or jet aircraft engages another aircraft while the target aircraft is flying away from the attacker), he added.

The government sanctions for the Astra missile project were first given in March 2004 at an initial cost of $13.54 million.

After equipping Russian-origin Sukhois with the missile, the DRDO proposes fitting the missile onto the domestically manufactured Tejas Light Combat Aircraft (LCA), Dr Reddy told the Times of India.

The need for air-to-air missiles was underscored during the aerial dogfight between Indian and Pakistani air force jets over the Nowshera Sector in the Indian state of Jammu and Kashmir on 27 February.

That dogfight took place a day after the Indian Air Force claimed that they bombed an alleged terror training facility of the banned Jaish-e-Mohammad militant organisation in Pakistan's Balakot region.

The IAF claimed that the "pre-emptive" missile strike in Balakot was undertaken in response to a suicide bomb attack on an Indian security convoy, in Jammu and Kashmir's Pulwama region on 14 February, killing 40 Indian troopers.

During that dogfight, the Indian Air Force claimed that one of its fighter pilots, Wing Commander Abhinandan Varthaman, had downed a Pakistani F-16 fighter plane before being captured by the Pakistan Army after his MiG-21 Bison was shot down by Pakistan Air Force jets.

Wing Commander Abhinandan drew admiration not just for this feat, but also for his composure during his captivity in Pakistan. Pakistan eventually released him on the night of 1 March.

After the attack in Pulwama, relations between India and Pakistan have deteriorated.

Kashmir has been a bone of contention between the two countries since they gained freedom from British colonial rule in 1947. Both India and Pakistan control part of Kashmir but claim it in full. They've also fought three wars since then, two of them over Kashmir.

https://sputniknews.com/military/201909291076915403-indian-air-force-to-get-first-indigenous-air-to-air-missile-soon---drdo-chief-/