

## India's new anti-tank guided missile to enter production by end of 2019

*India's Nag anti-tank guided missile system is reportedly slated to enter production at the end of this year*

*By Franz-Stefan Gady*

The third-generation anti-tank guided missile (ATGM) Nag is slated to enter production by the end of 2019, according to a senior Indian defense industry official.

Speaking to IHS Jane's at the Aero India 2019, a biennial air show and aviation exhibition held in Bengaluru, India at the Yelahanka Air Force Station, MSR Prasad, Director General of Missiles and Strategic Systems (MSS) at India's Defense Research and Development Organization (DRDO), told the trade publication that the Nag ATGM will undergo final user trials in May and June this year with production of the weapon system expected to kick off later in 2019.

Winter user trials of the Nag ATGM were successfully completed in December 2018. This was preceded by extensive validation trials of the a fire-and-forget ATGM's imaging infrared (IIR) seeker head, which caused repeated delays due to the technical inadequacies of the thermal sensors. In February 2018, DRDO successfully tested the Nag against in desert conditions against two tank targets.

After the February 2018 tests, the Indian Ministry of Defense announced that the ATGM system was now ready for induction into service with the Indian Army. (The service claims that it lacks 68,000 ATGMs of various types and around 850 launchers.) The Indian Army is expected to purchase 8,000 Nags with an initial order of 500 NAGs. The ATGM system will be manufactured by India's sole missile producer, state-owned Bharat Dynamics Limited.

DRDO has been working on the Nag ATGM for over a decade. All ground tests to date have been conducted from a specifically designed armored combat vehicle. As I reported in 2017:

The Nag Missile Carrier (NAMICA) is an Indian license-produced variant of the Soviet-era BMP-II armored infantry fighting vehicle. NAMICA can launch Nag missiles from a retractable armored launcher that contains four launch tubes (the armored vehicle can carry up to 12 missiles in total) and the guidance package including a thermal imager for target acquisition. The missile's targeting system is based on visual identification prior to its launch ('lock-on-before-launch system').

To date, no contract has been signed between the Bharat Dynamics Limited and the Indian MoD. It is unclear whether the Indian Army's chief concern including various technical shortcomings and the high price of the weapon system have been addressed.

DRDO has reportedly also been working on a man-portable version of the Nag. DRDO has also been working on a more advanced air-launched variant of the Nag, the Helina ATGM. The Helina ATGM was successfully test fired earlier this month. The government scrapped a \$500 million deal with Israeli defense contractor Rafael Advanced Defense Systems Ltd. for 321 Spike ATGM systems and 8,356 missiles in favor of an indigenously designed and developed man portable anti-tank guided missile (MPATGM). The MPATGM was last test fired in September 2018.

Last month, the Indian MoD approved the procurement of 5,000 French-made second-generation MILAN ATGMs. The total value of the defense deal is estimated at over \$167 million.

<https://thediplomat.com/2019/02/indias-new-anti-tank-guided-missile-to-enter-production-by-end-of-2019/>

## **Women achievers who did their bit get their due**

*A book and a film on women achievers in aerospace were released  
as part of the event at Aero India on Saturday*

Bengaluru: It was a day dedicated to "Saluting the queens of the sky" and as part of it women achievers from the Indian Air Force, Navy and Army, civil aviation, DRDO, CSIR and ISRO were felicitated for their contribution to the aerospace industry. A book and a film on women achievers in aerospace were released as part of the event at Aero India on Saturday.

Those honoured included Wing Commander, Asha Jyothirmai of the IAF, Squadron Leader, Khsushboo Gupta of the IAF, Captain Namrata Patel of the Indian Army, Lt. Commander Ambica Hooda of the Indian Navy, Lt. Commander, Seema Rani Sharma of the Indian Navy, Deputy Commandant, Kiran Kumari of the Indian Coast Guard, Harpreet A De. Singh, president of the Indian Women Pilots Association, Captain Nivedita Bhasin, a senior pilot of the Air India, T K Anirudha, director, SATCOM, Dr V R Lalithambika, director, HSP, ISRO, Suma Verghese of the DRDO, Shashikala Sinha, a scientist with the DRDO, and Captain Ashima Mendiratta, a Pawan Hans pilot, who had volunteered for flying in Naxal- hit areas. She has evacuated serious medical casualties from conflict- hit regions.

Speaking at the event, chairman of DRDO, Dr Satish Reddy observed that people no longer underestimated the capabilities of women in the field of engineering. "When I was a student there was only one woman in my college and now women make up 55 per cent of its students," he said, adding that DRDO too was encouraging women engineers. "In the Gaganyaan mission we will make sure that one astronaut is a woman," he promised.

<https://www.deccanchronicle.com/nation/current-affairs/240219/women-achievers-who-did-their-bit-get-their-due.html>

## Brahmos' AWACS buster

**THE** Indo-Russian Brahmos Aerospace Corporation unveiled a new Very Long Range Air to Air Missile (VLRAAM) version of its Brahmos supersonic cruise missile at Aero India 2019. Brahmos corporation officials say the missile can be used to shoot down the PAF's formidable fleet of airborne early warning and control (AEW&C) aircraft at three times the range of existing beyond visual range (BVR) missiles.

The PAF operates a fleet of eight AEW&C aircraft — four Swedish built Saab Erieyes and four Chinese built ZDK-03 Karakoram Eagles. Four more Erieyes are reportedly on order. In an air combat scenario, the PAF would position these aircraft deep within its airspace from where it could be used to pick up incoming IAF aircraft. Brahmos-NG armed Light combat aircraft (LCAs) can now target them at extreme ranges using the IAF's existing radar net and



*A dummy Brahmos NG missile on Tejas aircraft.*

Airborne Warning and Control System (AWACS.) “We have completed the system analysis studies of this missile and we can field the first firing prototype in four to five years,” says Dr Sudhir Mishra, CEO of Brahmos Aerospace.

The Brahmos-NG cruise missile has a range of 300 km and flies at over three times the speed of sound. Each missile weighs just 1.5 tons and is just 5m in length, it is 50 per cent lighter and three metres shorter than the variant currently equipping the Army, Navy and Air Force.

Two dummy Brahmos NG missiles were displayed at the air show under the wings of an indigenous Tejas LCA aircraft. The CEO says that the Brahmos-NG would also be fielded in air-to-sea and air-to-ground versions.