

## **User Trial of Akash Missile System by Indian Army Successful**

Balasore: Indian army on Monday successfully conducted a user trial of medium range supersonic Surface-to-Air Missile (SAM) Akash from a defence base off the Odisha coast. The missile was fired targeting a pilot-less target aircraft (PTA).

The test was conducted days after the army declared the weapon system a 'dud' and expressed its reluctance to accept the missile. After getting two regiments of Akash missiles with six firing batteries worth over Rs 15,000 crore, the army had claimed that the missile could not provide desired results on field.

The Defence Research and Development Organisation (DRDO), which had developed the missile indigenously, seemed to be undeterred over the sudden change of mind of the army which is now planning to procure Israeli systems. According to the DRDO officials at Hyderabad, Akash missile is the only missile of its kind now available in the world.

Besides providing the army and air force for the battle field support, DRDO is all set to export the weapon system to the countries which have shown interest on it. "It is a useful weapon for both the army and air force and first successful model of the 'Make-in-India' initiative. The armed forces are scheduled to carry out a couple of more tests in next few days," they informed.

The missile was launched from the launching complex-III of the Integrated Test Range (ITR) at Chandipur-on-sea at about 12.35 pm. The test was aimed at gauging the flight consistency and effectiveness of the missile besides ascertaining the serviceability of the system in various conditions.

A defence official from New Delhi said the mission boosted the air defence shield of the country and re-validated the weapon's operational efficiency. The missile was aimed at intercepting the aerial vehicle 'Banshee' at a definite altitude over the Bay of Bengal. The entire flight of Akash was captured by electro-optical tracking systems, he informed.

Akash is a medium-range surface-to-air missile and it can reach targets 30 km away. The 5.8-metre-long sleek missile has a launch weight of 720 kg and can carry a warhead of 50 kg. The missile is crucial to India's air defence programme as it will be used to counter ballistic and cruise missiles, enemy aircrafts and air-to-surface missiles.

The Akash missile system which is similar to the American Patriot air-to-surface missile system can track 64 targets simultaneously and the inbuilt radar can provide command to the launcher to fire 12 missiles at a time. The development of Akash missile had taken place under the country's Integrated Guided Missile Development Programme (IGMDP) three decades ago. Akash was formally inducted in the Army on May 5 and in the Air Force on July 10 last year.

*RushLane*  
12 Apr, 2016

## **DRDO Nirbhay, MRSAM, Maareech, Pinaka, Tank at 2016 DefExpo**

DRDO is a government run agency which is headed by none other than the Defence Minister of India.

2016 DefExpo the largest turnout of till date. Organized for the first time in Goa, the ninth edition of India's largest Defence Expo saw participation from 1,055 companies.

Highlighting the Make in India theme, it is also for the first time that the number of Indian companies participating outnumbered the companies from outside India. Over 900 delegates from 47 different countries around the globe participated in the country's largest exhibition of Land, Naval and Internal Homeland Security Systems.

The biggest of stall belonged to DRDO – Defence Research and Development Organisation, a government of India run organization which is headquartered in New Delhi. Formed in 1958, DRDO is charged with military's R&D.

Completely under the control of Ministry of Defence, DRDO is the most diverse and largest research organization in India. DRDO is engaged in engaged in developing defence tech in the fields armaments, aeronautics, land combat engineering, materials, naval systems, missiles, life sciences and aeronautics. It has a network of 52 laboratories with over 5,000 scientist and another 25,000 scientific and technical personnel.

At the 2016 DefExpo, DRDO showcased MARS (Mobile Autonomous Robot System), MASS (Mobile Autonomous Stabilisation System), Pinaka launcher, Pinaka Mk I, Pinaka Mk II, Nirbhay Missile Launcher System, MRSAM Surface to Air Missile Launcher System, combat vehicles, MAAREECH Advanced Torpedo Defence System, Winch System Towed Array Sonar & Decoy, Brahmos, etc.

## **India test fires Akash supersonic missile**

The Indian Army has test-fired the indigenously developed surface-to-air Akash supersonic missile from the Integrated Test Range (ITR), Balasore, Odisha, India.

During the trial, the domestically built, medium-range anti-aircraft missile successfully intercepted a small and fast-moving unmanned aerial vehicle (UAV), designated as Banshee.

According to the Defence Research and Development Organisation (DRDO) officials, the test evaluated the system's capability against subsonic cruise missiles.

An unnamed DRDO official was quoted by New Indian Express as saying: "It is a useful weapon for both the army and air force and first successful model of the 'Make-in-India' initiative. The armed forces are scheduled to carry out a couple of more tests in next few days."

Developed by the DRDO and Bharat Electronics Limited (BEL) as part of the integrated guided missile development programme (IGMDP), the nuclear-capable Akash missile is an all-weather missile system capable of engaging aerial threats up to a distance of 25km.

The 5.78m-long missile features a launcher, control centre, multi-function fire control radar and supporting ground equipment, and can destroy manoeuvring targets, such as UAVs, fighter aircraft, cruise missiles and other ballistic missiles launched from helicopters.

Designed to carry a 60kg warhead, the missile is powered by a Ramjet-rocket propulsion system, and can reach speeds up to 2.5 Mach speed.

Akash was inducted into the Indian Air Force (IAF) in 2012, followed by Indian Army in 2015.

The Indian Ministry of Defence is reportedly considering foreign military sales with the latest development.

*NDTV*  
*12 Apr, 2016*

## **Akash Missile Test Fired For Second Consecutive Day**

Balasore, Odisha: For the second day today, India's indigenously developed surface-to-air Akash missile was test fired from the Integrated Test Range (ITR) at Chandipur near Balasore in Odisha. "Two rounds of test of the Akash missile were conducted today," Defence Research and Development Organisation (DRDO) officials said.

The missiles targeted unmanned air vehicle (UAV) 'Banshee' and a para barrel target, they said. Similar trial of the sophisticated missile had been conducted yesterday from the same test range.

The missiles, with a strike range of 25 km and capability to carry warhead of 60 kg, were test fired from the launch complex-3 of the ITR, the officials said. Akash is a medium range surface-to-air anti-aircraft defence system developed by the DRDO as part of the Integrated Guided Missile Development Programme.

Akash is powered by Ramjet-rocket propulsion system, which renders thrust for the missile to intercept the target at supersonic speed without any retardation.

It can fly at supersonic speed ranging from Mach 2.8 to 3.5 and can engage aerial targets up to a range of approximately 25 km.

## **India's BrahMos missile, 'world's fastest', attracts global interest: 7 facts**

BrahMos is also capable of being launched from submarine from a depth of 40-50 metres. In 2013, it was successfully launched from a submerged platform.

The agreement between India and Russia for development of the advanced BrahMos system allows the use of the missile in both countries' armed forces and export to other friendly countries. Owing to this, countries from Latin America and southeast Asia have expressed their interest for the missile system.

BrahMos is a short-range ramjet supersonic cruise missile that can be launched from submarines, ships, aircraft or land. The name BrahMos is a portmanteau formed from the names of two rivers, the Brahmaputra of India and the Moskva of Russia.

The missile has a range of 290 km, has a maximum velocity of 2.8 Mach and cruises at altitudes varying from 10 metres to 15 km, claims BrahMos. It can be launched in either inclined or vertical configuration based on the type of the ship.

The land-attack version of BrahMos is fitted on an mobile autonomous launcher. The mobile land-based configuration of has achieved several advancements over the years in the form of Block I, Block II and Block III variants.

BrahMos air-launched version is getting ready to be soon be test-flown from the Su-30MKI fighter of the IAF.

BrahMos, world's fastest anti-ship cruise missile developed jointly by India & Russia, has caught the attention of a number of countries who want to buy it. It has been developed at a low budget of \$300 million. However, a lack of clarity in the defence exports policy means that it has not yet been sold. India's eagerness to export homemade items has been more pronounced after the 'Make in India' call from Prime Minister Narendra Modi, who also pitches for export of defence items to friendly countries. We take a look at some interesting facts about the BrahMos missile:

## **US Secretary of Defense meets and interacts with Indian Startups**

New Delhi: The Federation of Indian Chambers of Commerce and Industry today organized an innovation roundtable under the DRDO-FICCI Accelerated Technology Assessment and Commercialization Programme with the US Secretary of Defense, Ash Carter. Ten entrepreneurs spoke about their start-up models in sectors including aerospace, defense, and cleantech.

The entrepreneurs comprised five companies to whom DRDO technologies were licensed under the DRDO-FICCI Accelerated Technology Assessment & Commercialization (ATAC) program and five start-ups that were supported under the DST-Lockheed India Innovation Growth Programme.

The technologies discussed included breakthrough innovations in the field of aerospace (DSP based Adaptive Control Algorithm to guide missiles developed by Cybermotion), defense (Short Range Surveillance Radar developed by DRDO and licensed to Bharat Electronics Limited; Explosive Detection Kit developed by DRDO and licensed to Vantage Integrated Security), and Cleantech (Geothermal cooling developed by GIBSS).

The entrepreneurs present shared details of their innovative technologies, their enterprise's vision as well as their entrepreneurial journey before the esteemed panel. The entrepreneurs also discussed

several ideas and thoughts how bilateral cooperation between Indian and US Start-ups could be enhanced particularly in the field of Defense.

The panel comprised Hon'ble Ambassador of the United States, H.E. Shri Richard Verma; Chief of Staff, Office of the Secretary of Defense, Mr. Eric Rosenbach; Director General, DRDO, Dr. S Christopher; Secretary General, FICCI, Dr A. Didar Singh; and Mr. Phil Shaw, Country Head, Lockheed Martin India Pvt Ltd.

*Money Control*  
*12 Apr, 2016*

## **DRDO-FICCI organises innovation forum with the US Defence Secy**

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