

DRDO empowered India in 2019 to neutralise live satellite

New Delhi: The Defence Research and Development Organisation (DRDO) empowered India in 2019 by carrying out the country's first anti-satellite (ASAT) missile test -- Mission Shakti -- apart from successfully developing several important projects like Light Combat Aircraft for Indian Navy, Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform.

This year, DRDO Chief G. Sateesh Reddy has set a target to achieve self-reliance in missiles, radars, sonars, torpedoes, armaments and early warning systems. He has stated that DRDO intends to have no import for these systems in five years.

DRDO flight-tested Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform off the coast of Chandipur in Odisha from September 16 to 19.

The five trials conducted during this period, tested missiles in different configurations. Three missiles were launched in combat configuration with warheads and neutralised manoeuvring targets to establish the end-game capability of the missile. The tests were successful.

The first ever arrested landing of Light Combat Aircraft at INS Hansa, the Indian naval air station in Goa, took place on September 13. The test will pave the way for the indigenous platform to undertake aircraft carrier landing demonstration on board the Indian Naval aircraft carrier Vikramaditya.

DRDO flight tested indigenously developed low weight, fire and forget man-portable anti-tank guided missile on September 11 in Andhra Pradesh. The missile was launched from a man-portable tripod launcher on the target mimicking a functional tank. The test paves the way for the Indian Army to have third generation indigenously anti-tank guided missile.

The research and development organisation also handed over three indigenously designed airborne early warning and control system Netra to the Indian Air Force on September 11 to augment the service's network centric capabilities.

They also flight-tested its state-of-the-art quick reaction surface-to-air missile against live aerial targets from Chandipur on August 4.

On March 27, the country joins a select group of nations with capability to neutralises live satellites in low earth orbit. DRDO carried out Anti-Satellite (ASAT) missile test "Mission Shakti" from Odisha.

A DRDO-developed ballistic missile defence interceptor missile engaged a live Indian satellite orbiting in Low Earth Orbit (LEO) in a "Hit to Kill" mode. The test demonstrated India's capability to defend its assets in outer space and vindicated the strength and robust nature of DRDO's programmes. In a landmark occasion, Light Combat aircraft Tejas MK I for Indian Air Force was informally awarded final operational clearance (FOC) on February 20.

DRDO successfully conducted two BrahMos supersonic cruise missiles tests, one each from land and air platforms and as part of the series of flight trials of Pinaka missile system, two test firings were successfully conducted.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: IANS)

<https://www.outlookindia.com/newscroll/drdo-empowered-india-in-2019-to-neutralise-live-satellite/1695626>

How DRDO negated all criticism and got India on the global stage in defence technology?

The Defence Research & Development Organisation (DRDO) has strengthened India's defence capabilities by successfully conducting the country's first anti-satellite (ASAT) missile test apart from other projects like Light Combat Aircraft for Indian Navy, Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform off the coast of Chandipur in Odisha. A EurAsian Times report.

Indian DRDO to test 3500 Km Range Submarine Launched Ballistic Missile

About DRDO

DRDO is the R&D wing of Ministry of Defence, Govt of India. It has the vision to empower India with cutting-edge defence technologies and a mission to achieve self-reliance in critical defence technologies and systems. It also aims at equipping our armed forces with state of the art weapon systems.

The DRDO was formed in 1958 from the amalgamation of the then already functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).

Indigenous Breakthroughs by DRDO

DRDO Chief G. Sateesh Reddy, as EurAsian Times reported earlier, set an ambitious target of achieving self-reliance in missiles, radars, sonars, torpedoes, armaments, and early warning systems in 5 years. This becomes important because even after 60 years of the DRDO formation, India still imports a large share of its defence equipment.

In the year 2018-19, India became the world's second-largest importer of defence equipment, accounting for 13 per cent of the global total, according to the Stockholm International Peace Research Institute.

Light Combat Aircraft (LCA)

The LCA (Navy) is the naval version of indigenously developed Tejas fighter aircraft being developed for the Indian Air Force. In this context, DRDO successfully neutralized manoeuvring targets to establish the end-game capability of the missile. For instance, the first-ever arrested landing of Light Combat Aircraft at INS Hansa was done in Goa.

The DRDO released an official statement which said, "This arrested landing heralds the arrival of true indigenous capability and displays the professional prowess of our scientific community Aeronautical Development Agency (ADA) embedded with design plus build the capability of HAL(ARDC), DRDO and CSIR Labs involved in executing this landmark event".

Netra

Another indigenously built achievement has been the airborne early warning and control system-Netra- which the DRDO handed over to the Indian Air Force. The system played a 'behind the scene' role in the much talked about Balakot surgical strikes in February 2019.

"India is only the fourth country in the world to have developed this advanced system, popularly known as the 'Eye-in-the-sky', for its ability to detect enemy aircraft soon after they are airborne with the help of a radar onboard the aircraft although it is akin to looking for a needle in a haystack", said Dr K Ramchand, a member of the development team.

Mission Shakti

Mission Shakti is the country's first anti-satellite (ASAT) missile test. By launching Mission Shakti, India has entered the elite group of nations (consisting of the US, China, Russia) that have the ASAT weapon.

It becomes an important step towards strengthening Outer space warfare capability. To be specific, it can help in targeting and destroying satellites of the enemy which can completely halt communication systems of a country and during a conflict, this would mean the enemy could fail to use its missiles or drones.

In the test, India targetted a Low Earth Orbit (LEO), thereby achieving the capability to protect itself in outer space. The operation was conducted by using Light Combat aircraft Tejas MK I for Indian Air Force which has got (informally) awarded with final operational clearance (FOC).

Inertial Guided Bomb

India successfully test-fired an indigenously-made 500-kg class "inertial guided bomb" from a Sukhoi jet at the Pokhran test range in Rajasthan. The test has been pegged as a major achievement for the Defence Research and Development Organisation (DRDO) as the guided bomb achieved the desired range and also hit its target with precision.

This 500-kg class precision bomb allows precision targeting from long distances even under adverse visibility conditions. The inertial guidance system is an electronic system that continuously monitors the position, velocity and acceleration of a vehicle, usually a submarine, missile, or aeroplane, and provides navigational data or control without the need for communicating with a base station.

Such achievements of the DRDO counter the criticism faced by it regarding the delays in approvals, red-tapism, etc. The organisation has indeed played a great role in 2019 to enhance the Indian defence capabilities.

<https://eurasianimes.com/how-drdo-negated-all-criticism-and-got-india-on-the-global-stage-for-defence-technology/>

‘Missile woman’ guides girls to Science

Women opting for science up from 3% to 15%: Tessy Thomas

By R. K. Roshni

Thiruvananthapuram: The increased participation of girls in the National Children’s Science Congress is heartening, according to Tessy Thomas, scientist and Director General of Aeronautical Systems, Defence Research and Development Organisation (DRDO).

She was speaking to *The Hindu* on the sidelines of the congress where she interacted with children during a ‘Meet the Scientist’ programme here on Saturday. This year, nearly 60% of the child scientists taking part in the congress are girls.

Scene in Kerala

Ms. Thomas said the percentage of women joining the science stream had increased from some 3% a few decades ago to 15%. This was because of the importance given to science in academic institutions and the science fraternity. Kerala, especially, was supporting innovations in science at the school level, she said. Achievements by women in institutions such as ISRO, DRDO, and CSIR were inspiring girls to take up science. The percentage of women in the DRDO, Ms. Thomas pointed out, too had gone up. The science field, she said, was very challenging and if committed to learning, women could go far. They should persevere, even when required to go the extra mile when faced with something for the first time in the field. One should not let detractors bother them.

Work begins at home

Encouraging girls to study science should begin from home, Ms. Thomas said, pointing out how her family encouraged her interest in science and mathematics.

Visits from Alappuzha, where she lived, to the Thumba rocket launching station spurred her fascination. During her B.Tech., she studied radar systems as an elective, and when the opportunity for M.Tech. in Guided Missiles came around, she grabbed it.

It was at the DRDO Hyderabad missile labs that she worked with the former President A.P.J. Abdul Kalam, later earning the moniker ‘Missile woman.’ Ms. Thomas recounted how he once introduced her to a large audience of students as ‘Missile lady.’

Development of long-range missile Agni IV, she recalled, involved a quantum jump in technology. Till then the scientists had worked with metallic rocket motor casing but with Agni IV, they came up with composite rocket motor for the first time in the country. It was the result of three years of effort and was something she was very proud of, for it gave an advantage in weight reduction for the Agni IV and V missile.

<https://www.thehindu.com/news/cities/Thiruvananthapuram/missile-woman-guides-girls-to-science/article30422562.ece>

