

Tejas induction – a boost to *Make in India*

Induction of 83 LCA Tejas — India's advanced fighter aircraft — in the Indian Air Force has created history and is a feather in the cap of the Make in India campaign

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photos | DRDO





Light Combat Aircraft Tejas designed by Aeronautical Development Agency

On July 1, 2016, home grown Light Combat Aircraft (LCA) was inducted into the Indian Air Force paving way for what has been a long cherished dream in defence matters: self sufficiency. The Defence Acquisition Council chaired by Defence Minister Manohar Parrikar approved the procurement of 83 LCAs Mk-1A for induction into the Indian Air Force, writing a new chapter in Prime Minister's flagship project Make in India. While the actual induction of LCA may take few years to get completed, the offsets of Tejas programme are sure to help India advance in military supplies – be it the development of ancillaries or the leaps in technological developments.

Sixteen LCAs — christened Tejas by the then Prime Minister of India, Atal Bihari Vajpayee — are flying today (excluding the Series Production aircraft flying with the IAF). About 3300 sorties have been flown without a single accident in a stupendous achievement for the entire LCA team. But much before Tejas reached the induction stage passing the treacherous Initial Operational Clearance (IOC) and the Final

Operational Clearance (FOC) founds, the idea was mooted 33 years ago, when the need was felt to garner self-reliance in defence technology.

Design and development of indigenous fighter aircraft started in mid-1980s. An idea to develop a contemporary fighter aircraft was taken up with the purpose of finding a replacement for the MiG-21. The need for self-reliance in this vital sector was the driving force to embark

on an ambitious project of LCA. It was important from the security point of view to propel India into the league of major players in the aviation industry. The value of the aerospace “self-reliance” initiative was not simply the production of an aircraft, but also development of enabled technologies in the field

of aeronautics and the capabilities for creating state-of-the-art aeronautical products. The LCA programme was intended to expand and advance India's indigenous aerospace capabilities. To start the process, the Aeronautical Development Agency (ADA), an autonomous society of Defence Research and Development Organisation (DRDO), under Ministry of Defence, was founded in 1984 to oversee the LCA

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programme. The plan to develop the LCA was officially sanctioned in 1993.

LCA's development is unique as there was no infrastructure base and negligible technological knowledge available in the country for undertaking development of a modern combat aircraft and LCA has been developed virtually from scratch. The programme suffered a setback in the backdrop of sanctions imposed by the US on transfer of modern military technology after Pokhran nuclear test by India. However, the challenge was accepted by the LCA team in successfully developing the technologies indigenously. Subsequently, even when the sanctions were finally lifted and consultancy services restarted, LCA team chose the path of self-reliance.

Team LCA functioned through strong collaborative research and development with IAF, IN, HAL (Hindustan Aeronautics Limited), CSIR (Council of Scientific & Industrial Research), CEMILAC (the Center for Military Airworthiness & Certification), DGAQA (Directorate General of Aeronautical Quality Assurance), academia, public and private Indian industries and foreign partners with around 400 work centres across the country. The effort resulted in development of LCA, which

is the smallest, light weight, supersonic capable, all weather, multi-role, air-superiority fighter aircraft designed for air-to-air, air-to-ground and air-to-sea combat roles.

International Air Show in Manama, Bahrain in January 2016 saw the first phenomenal performance of LCA which literally kept the audience spellbound and 'Tejas' proving its mettle. Finally, India could proudly boast of a state of the art aircraft, indigenously designed and manufactured — truly a game changer and comparing favourably with the best aircraft in the world in its class. It redounds to the credit of all those involved in its development that despite the numerous challenges along the way and the criticism for the huge time and cost overruns, they stoically persevered to deliver a world class, state-of-the-art product. This 4th plus generation fighter aircraft has the potential to revolutionise the aviation sector in India. This needs to be carefully nurtured and supported to make India, in the years to come, a leader in aviation and a name to reckon with.

This would most certainly be a boost for India's future programmes with respect to Advanced Medium Combat Aircraft (AMCA).



ACHIEVEMENTS MADE BY DRDO

Here are some of the major products and systems that have been developed by DRDO and accepted/inducted by the armed forces

PLATFORMS

- Light Combat Aircraft 'Tejas'
- Remotely Piloted Vehicle 'Nishant'
- Pilotless Target Aircraft 'Lakshya-I'
- Main Battle Tank 'Arjun Mk-I'
- Armoured Amphibious Dozer Mk-I
- Armoured Engineer Recce Vehicle
- NBC (nuclear, biological, chemical) recce vehicle
- Bridging Systems 'Sarvatra'

SENSORS

- Airborne Early Warning & Control (AEW&C)
- Integrated sonar system for EKM submarine
- Hull Mounted Sonar
- Short Range Battle Field Surveillance Radar
- Weapon Locating Radar 'Swathi'
- 3D Low Level Light Weight Radar 'Aslesha' Mk-I



- 3D Surveillance Radar 'Revathi'
- Electronic Warfare system for Navy 'Sangraha'
- Electronic Warfare system for Army 'Samyukta'
- Electronic Warfare system 'Divya Drishti'
- Electronic Support Measure 'Varuna'
- Commander's Thermal Imager Mk-II for T-72, T-90 and BMP tanks

- Holographic sights for small weapons

WEAPON SYSTEMS

- Akash Weapon System
- Prithvi missile for Army and Air Force
- Supersonic cruise missile 'BrahMos'
- Multi Barrel Rocket Launcher System 'Pinaka' Mk-I
- Torpedo Advanced Light
- Heavy weight ship launched torpedo 'Varunastra'

SOLDIER SUPPORT SYSTEMS

- Computerised Pilot Selection System for Indian Air Force
- Telemedicine System for Navy
- Submarine Escape Suit
- Flame Retardant Gloves
- NBC products

The decision would reduce our dependence on imports in defence sector. Indeed, after the Indian Space Research Organisation's space missions, Tejas represents India's next big leap forward in the technological field. It would play the role of a pillar of strength in achieving self-reliance in the air power needs of the country. A ray of hope generated 33 years ago has brought sunshine and certainly would open new horizons, hopefully acting as a catalyst to revolutionise, in a true sense, India's defence sector.

Air Superiority has always been the decisive factor in enforcing a nation's strength and

security. DRDO was formed with a vision of making India prosperous by establishing world-class science and technology base that will provide the defence services a decisive edge by equipping them with internationally competitive systems and solutions. DRDO has consistently strived to attain self-sufficiency and develop core competency in the field of aeronautics, electronic warfare systems and missiles aimed at augmenting Indian Air Force (IAF) and to foster the growth of military aviation in India.

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