

Air force, DRDO, pleased with Tejas performance at Bahrain

In a milestone for India's Tejas light-combat aircraft (LCA), two Tejas fighters travelled from India to performed aerobatics at the Bahrain International Air Show (BIAS-2016) from January 21-23. Business Standard has obtained the first official account of this first international outing, where the Tejas impressed global aerospace experts, taking an important first step towards export in the future.

This official account comes from the Indian Air Force (IAF), which is overseeing the flight test programme of the Tejas; and from the Aeronautical Development Agency (ADA), the defence research & development (R&D) organisation responsible for the Tejas programme.

The proposal for this outing was initiated by the Kingdom of Bahrain, which invited the defence ministry in September 2015, to display the Tejas in BIAS-2016. Defence Minister Manohar Parrikar quickly gave the go-ahead for the Tejas, and also the Embraer-mounted Airborne Early Warning System (AEWS), to travel to Bahrain.

It required a major organisational effort to get two Tejas fighters, three pilots and a fully equipped maintenance team from Hindustan Aeronautics Ltd (HAL) to Bahrain. Only then could the Tejas display its "Made-for Bahrain" aerobatics, showcasing its performance in vertical climbs, tight turns, high-speed runs and slow flying ability.

The IAF detailed one of its giant C-17 Globemaster IIIs to transport the maintenance team and equipment to Bahrain. Two Tejas fighters flew three legs, over three days — the first from Bengaluru to Jamnagar in Gujarat (1,800 km); the second to Muscat (1,200 km), and the final leg to Bahrain (850 km).

The Indian Navy supported the flight over the Arabian Sea. The pilots were provided sea survival training at the new water survival training facility at Kochi. During the flights between Jamnagar and Muscat, the Navy kept one P8-I maritime aircraft airborne throughout, in case a rescue was needed.

Says Commodore (Retired) C D Balaji, who heads ADA: "The Bahraini authorities made us extremely welcome. Their minister for transportation personally came to the airport to receive the Tejas fighters when they flew in. The King of Bahrain came to our stall during the exhibition. We gifted him a model of the Tejas."

Balaji confirms that the Pakistani light fighter, the JF-17 Thunder, was to come to Bahrain but pulled out at the last minute — it has been speculated that the Pakistan Air Force (PAF) realised it would be overshadowed by the Tejas.

"We don't know why Pakistan pulled out the JF-17. But, yes, it was scheduled to be at Bahrain. Its parking slot, which was next to ours, was eventually occupied by the Eurofighter," says Balaji.

The Tejas' flight displays went off flawlessly, with pilots from the National Flight Test Centre in Bengaluru, having put together a special "product demonstration" performance, which showcased for potential customers the operational performance that makes it a combat-worthy fighter — such as the ability to climb quickly and turn tightly.

The IAF, which is traditionally measured in its evaluation of the Tejas, says the fighter's "control harmony is comparable to the best in the world... The intuitive cockpit layout and highly reliable life support systems provide for comfort as well as excellent situational awareness."

Authoritatively detailing the Tejas' performance parameters, the IAF says: "The LCA has a very competitive and cotemporary operational envelope. It is capable of operations up to an altitude of 50,000

feet and a maximum speed of 1.6 Mach at [high] altitudes or 730 knots... at low levels. The aircraft [can turn at] +8G to -2.5G (which allows it to U-turn in 350 metres) in operationally clean configuration... or +6G to -2.5G with other external stores.”

The IAF sums up: “The LCA Mark 1 was designed as a worthy indigenous replacement to the MiG fleet that has been the backbone of the defence of our skies for several decades. It is a safe and contemporary design with a reliable and efficient engine and many modern features. The aircraft is cockpit friendly, agile and easy to fly. It is this capability that was displayed in the recently concluded Bahrain International Air Show... Serial production of the aircraft by HAL has started and it is expected that fighter will be operationally inducted by IAF in 2016.”



Declining Scientific Temper a Cause for Serious Concern: DRDO's RCI Director

HYDERABAD: Regretting that there has been a decline in scientific temper in the country in the last three decades, India's one of the foremost scientists in navigational and avionics technology relating to missile development, Dr G Satheesh Reddy, however, is confident that the situation will reverse in the coming years.

The 52-year-old scientific adviser to the defence minister and director of DRDO's Research Centre Imarat (RCI) in Hyderabad, spoke exclusively to Rahul V Pisharody on scientific temper, scientific development and opportunities available to today's inquisitive youngsters. Excerpts:

When you took over as scientific adviser to the defence minister about eight months ago, you had spoken about bringing about a synergy between DRDO, armed forces and the private sector. How is the progress on that front?

The committees formed to formulate defence procurement procedures and guidelines on identifying strategic partners have submitted their reports. We will ask PSUs to publish online a list of all items which are being imported today so that industries can manufacture them in the country. We have made our test facilities open to our private industries. They can't invest in these facilities but have to work with there. Defence secrets will, however, be kept secret. Only the facilities will be made available to the private sector to work there. Interactions and negotiations are going on. You may not see the results today but can see them soon.

What is the role of academia and students in the scheme of things?

We are trying to encourage them by giving good projects. We are discussing introduction of defence technologies in the curriculum of some institutes. We are also working on a mechanism to encourage innovation through an incubation centre in an institute or directly encourage an individual with a innovative idea and working in an academic institute or an industry. The mechanism may be ready in a couple of months.

To what extent is transfer of technology by foreign countries possible?

There are different scenarios here. If we just don't have a technology or a production base, then foreign company has to come here, start its own unit here and produce here. Or, if someone here has a reasonable good technology but insufficient infrastructure to come out with product, we are encouraging them to join hands with foreign companies, absorb the technology through joint venture and produce it here. Or, we have all the technology and infrastructure. Or, working on future technologies.

The new DPP says offset will no longer be applicable to defence deals worth less than Rs 2,000 crore from earlier Rs 300 crore. How can this clause help ‘Make in India’?

In offset, we want manufacture along with sharing of technology. We are taking up case to case and working on each. In major contracts, at least 30 per cent of the production should be made here. In the case of items of small value, there is nothing much you can produce here.

IAF has a severe shortage of fighter jets and the government has decided to equip it with the indigenous Tejas LCA. Can Indian companies like HAL compete with foreign players?

Tejas is a good air craft and HAL is ramping up its production. HAL has taken the lead to produce Tejas and will continue to do so with other industries joining as tier-2 and tier-3 partners. HAL has its hands full.

Boeing and Lockheed Martin of US, Saab of Sweden, Dessault Aviation of France and Eurofighter are keen to set up manufacturing bases in India and even transfer technology. Will this not kill the domestic industry?

The encouragement to private industry in each sector will be very specific. The strategic partners committee has submitted its report. Partners will be identified for each area like aircraft, helicopters, ships, submarines and armed vehicles. These companies will be encouraged in that particular area to produce what we need. In the aircraft area, the industry will also involve in developing the futuristic aircraft.