

## No country for old ammunition

*By Anil Bhat*

The induction of Tejas light combat aircraft, overdue by three decades, into Indian Air Force on July 4, marked the beginning of the end of India's dependence on imports for fighter aircraft. Costing \$24 million per unit, approximately one-tenth of the cost of Lockheed Martin's F-35, the Tejas achieves a maximum speed of 1,370 mph compared to the F-35's 1,199 mph and is the lightest multi-role supersonic aircraft in its class, equipped with surface-to-air, air-to-air and anti-ship missiles with in-flight maneuverability that exceeds the slower F-35. "It is comparable and on par with any fourth generation fighter aircraft you have in the world," said group captain Madhav Rangachari, commanding officer of the IAF's 45 Squadron, the "Flying Daggers".

The purchase of 36 Rafale aircraft in a government-to-government contract following Prime Minister Narendra Modi's April 2015 visit to France leading to ministry of defence scrapping an earlier plan to purchase 126 Rafales, is expected to be finalised in the near future. With the clause of delivering 50 per cent offsets, creating business worth at least euro 3 billion for smaller Indian companies, it may generate a few thousand new jobs in India.

Three 155 mm "Dhanush" artillery guns were handed over to the Indian Army in June 2016, for undertaking user exploitation. Special features of the Dhanush are: 8 km more range than the Bofors gun, modified double baffle muzzle brake, modified loading trough to accommodate bi-modular charge system and an electronic suite to include an enhanced tactical computer, inertial navigation system (INS), muzzle velocity radar and automatic gun sighting system for enhanced accuracy as well as auto-laying of the gun.

An indent of 114 guns already placed with the Ordnance Factory Board will be a long overdue shot in the arm for Indian Army's artillery.

Based on the Army's strategic requirement, 231 roads of a total length of 7122.47 km in Jammu & Kashmir (J&K) have been included in the long-term roll-on works plan (LTRoWP) for construction/upgrading out of which 157 roads are planned for completion up to 2020 and the remaining 74 roads after 2020. Apart from the 231 roads being constructed/upgraded, 133 completed roads are exclusively entrusted to Border Roads Organisation in J&K for maintenance.

On September 28, 2015, two contracts were signed for Apache attack helicopters worth Rs 13,951.57 crores and Chinook heavy-lift helicopters worth Rs 8,047.85 crores with the American government and Boeing. Their delivery will commence in March-July, 2019 and will be completed by March, 2020.

The Defence Research and Development Organisation recently flight-tested three medium-range surface-to-air missile systems (MR-SAM) successfully at Integrated Test Range, Chandipur, Orissa, on June 30-July 1, 2016. MR-SAM can detect incoming enemy aircraft at 100 km distance and destroy them at ranges up to 70 km. So far, the Department of Industrial Policy and Promotion (DIPP) has issued 342 licences to 205 Indian private companies to manufacturing defence equipment such as artillery guns, tanks/combat vehicles, unmanned aerial vehicles, helicopters, radars, warships, etc. Since the beginning of financial year 2014-15, 128 industrial licences for defence have been issued to 97 Indian private companies.

To encourage export of defence equipment by Indian manufacturing companies, the Indian government has taken the following measures:

Defence export strategy formulated and placed in the public domain provides for creation of an export promotion body, engaging Indian missions/embassies abroad in export promotion, export financing through line of credit, etc. Better use of offset policy, export of indigenously developed defence systems and streamlining of the export regulation process. The list of military stores for the purpose of issuing no

objection certificate (NOC) for export has been notified by the government to remove ambiguity and to make the process transparent. Standard operating procedure (SOP) for issue of NOC for export of military stores has been simplified and put in public domain. Requirement of government-signed End User Certificate (EUC) for export of parts and components and other non-sensitive military stores has been done away with.

The process of applying for NOC for export of military stores has been made on-line. Specific time-frame prescribed in SOP for issue of NOC for export of military stores. The provision of "in-principle" approval for export of specific items to specific countries incorporated in the SOP to enable Indian companies to explore export opportunities in overseas markets. In the three years leading to the current financial year, defence equipment such as Dornier-228 aircraft, offshore patrol vessels, Chetak helicopters, Sonars, 4-wheel drive vehicles, simulators, over-vests and ballistic helmets have been exported to Brazil, Egypt, Israel, Japan, Kazakhstan, Mauritius, Russia, Saudi Arabia, South Korea and Turkey.

DRDO has also undertaken several unmanned aerial vehicle (UAV) projects like the indigenous development of medium-altitude long endurance (MALE) UAV & development of aeronautical test range at Chitradurga (Rustom-II); DRDO Nishant; Panchi, the wheeled version of Nishant; a project for development of Naval Rotary Unmanned Aerial Vehicle (IAI-HAL NRUAV) and technology initiative for the development of MALE UAV (Rustom-I).

Nishant is useful for reconnaissance and monitoring of naxal-infested areas, as demonstrated by the Central Reserve Police Force (CRPF) at Jagdalpur, Chattisgarh, in February 2015. Further, a 2-kg class vehicle developed by DRDO demonstrated to various security agencies like CRPF, National Security Guard and Indo-Tibetan Border Police has been acknowledged as suitable for use by all three.

Most developments mentioned were conveyed by minister for defence Manohar Parrikar in response to questions during the July 29 and August 5 sessions of Parliament.

On August 9, he informed that so far, 36 foreign direct investment/joint venture proposals have been approved in defence sector for manufacture of various defence equipment, with both Indian public and private companies. These are one each in Haryana, Himachal Pradesh and Uttar Pradesh, three in Tamil Nadu, four in Telangana, nine in Maharashtra, 12 in Karnataka and five in New Delhi. He also informed that 718 items of defence equipment, including arms, ammunition, depth-charges, combat vehicles, instruments, textiles and general stores have been returned for rectification (RFR) and various steps taken to ensure better quality control of products and reduce the rate of RFR.

While there are many more requirements/projects to be pursued, at least those mentioned reflect forward movement by the defence ministry after the 2004-14 decade of "drought".

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## **Tejas touchdown: For Capt Anand it was home landing**

BHOPAL: Scores of people thronged Bhopal's old airport as India's first indigenous light combat aircraft (LCA) Tejas landed on Wednesday afternoon, though only a select few got the opportunity to catch a close glimpse.

Incidentally, the city's old airport has been termed as one of the most suitable domestic airports in the country for landing light combat aircraft Tejas.

Group captain and pilot SK Anand, who belongs to Bhopal, reached the state capital with the fighter aircraft and took off for Pathankot in the evening. The fighter aircraft took off from Bangalore in the morning and reached Bhopal after one and a half hour journey. Talking to media, Anand said, "It was a fantastic journey.

It was a good experience to come to Bhopal." His family members also reached the airport to meet him. Vijay Patel, technical team head, accompanied him.

For past one month, preparations were on for landing of Tejas at the old airport. When contacted, airport director Akashdeep Mathur said, "I cannot comment much on this. The crew was completely satisfied with the airport and other logistic support provided to them." Sources said the old airport was chosen deliberately to land the fighter plane owing to the absence of traffic.

After the construction of Raja Bhoj Airport, the old airport was shut down for domestic services.

Wing commander Rajiv Joshi, the other team member, said: "Tejas can carry air-to-air and air-to-surface weapons. The new squadron will get a total of 18 aircrafts including four trainers by 2018." Tejas jets, developed by Hindustan Aeronautics Limited (HAL), are said to be the smallest and lightest supersonic fighter aircraft of their class.

People flocked to the airport after Tejas landed there. However, a select group was allowed to enter the airport and see it closely. The single-seat fighter is considered superior to counterparts like the JF-17 aircraft built jointly by China and Pakistan. Tejas has had no accident in 3,000 hours of flying and its use of composites helps lower its radar signature, making it harder to detect early.