DRDO, Pride of India's Defence Research and Development

AEW&C DEVELOPED BY DRDO IN COLLABORATION WITH EMBRAER BEING INDUCTED DURING THE SHOW AS WAS INDICATED BY DR S. CHRISTOPHER, CHAIRMAN, DRDO

INDIGENOUSLY DEVELOPED LCA TEJAS BY ADA, DRDO AND HAL

By **R. CHANDRAKANTH**

The Defence Research and Development Organisation (DRDO) is taking pride in India's stride in indigenous defence technologies some of which are the 155mm/52-calibre Advanced Towed Artillery Gun System (ATAGS) and Medium Power Radar 'Arudhra'. In addition, to the mobile autonomous launcher based BrahMos missile system; weapon-locating radar 'Swathi'; Akash weapon system; CBRN reconnaissance vehicle; 'Netra', the airborne early warning and control (AEW&C) system and LCA Tejas — all designed and developed by DRDO.

AEW&C SYSTEM

The AEW&C is an 'Eye in the Sky'. It is a force multiplier, developed by DRDO for IAF with Centre for Air Borne Systems (CABS) as nodal agency. AEW&C system consists of multiple sensors for surveillance and signal intelligence. It helps in air defence operations and is capable of communicating using VHF, UHF, C-Band and SATCOM links for network-centric operations. Induction of AEW&C into services early in 2017 will make the country self-reliant and position India among the top five countries of the world having this capability.

LCA TEJAS

Tejas is indigenously developed by Aeronautical Development Agency (ADA), an autonomous society of DRDO and produced by the Hindustan Aeronautics Limited (HAL). It is a lightweight and multi-role four-plus-generation tactical fighter aircraft which can carry laser guided bombs and modern missiles to cause extreme damage to the target. Tejas made its international debut in January 2016 with participation in the Bahrain International Air Show. In the company of F-22 Raptors and Eurofighter Typhoons, it demonstrated impressive manoeuvres which were well appreciated. Tejas has been inducted into the 45th Squadron of the Indian Air Force in July 2016. It is a move towards self-reliance in air power requirement of the nation. Tejas is the pride of the country and a step towards 'Make in India' initiative.

BRAHMOS MISSILE SYSTEM

BrahMos cruise missile, built in collaboration with Russia, is a two-stage supersonic cruise missile with a solid propellant booster as its first stage and liquid ramjet as the second stage. The missile has a flight range of up to 290 km with supersonic speed all through the flight, leading to shorter flight time. It operates on 'fire and forget principle' adopting a variety of flights on its way to the target. The missile carries a conventional warhead weighing up to 300 kg. The missile has been inducted into the Navy and the Army and the air version of BrahMos supersonic cruise missile has been successfully developed for integration with Su-30MKI.

AKASH WEAPON SYSTEM

The medium-range (25 km) surface-to-air missile Akash is a very potent supersonic mobile multi-directional multi-target point/area air defence system and can engage several air targets simultaneously using sophisticated multi-function phased array and surveillance radars in fully autonomous mode. Indigenous development of the system has given impetus to the defence industrial base in the country and generated business of more than ₹20,000 crore. Akash weapon system has been dedicated to the Indian Army in May 2015 and to the Indian Air Force in July 2015.

WEAPON LOCATING RADAR SWATHI

WLR is coherent, electronically scanned C-band phased array radar. The radar automatically locates hostile artillery, mortars and rocket launchers and tracks friendly fire to locate the impact point of friendly artillery fire to issue necessary corrections. The radar is designed to detect projectiles with small cross section across the battle space horizon, and has the capability to handle simultaneous fire from weapons deployed at multiple locations. The radar helps neutralise hostile guns in the tactical battle space and helps own guns for effective shelling on designated enemy targets. The radar has been developed for the Indian Army to substitute the imported system and acts as a force multiplier for artillery. Bharat Electronics is the production partner.

ATAGS

The Advanced Towed Artillery Gun System (ATAGS) is an indigenous weapon system developed by the Armament Research and Development Establishment (ARDE) with industry partners namely Bharat Forge Limited and Tata Power SED. ATAGS has excellent accuracy, consistency, mobility, reliability and automation and is capable of achieving 47-plus-km range. The armament system of the ATAGS which comprises 52-calibre gun barrel with breech mechanism, muzzle brake and recoil system has been designed and developed to fire the 155mm calibre ammunitions held by the Army with enhanced range, accuracy and precision as well as greater firepower. The system is configured with all electric drive technology for the first time in the world that will ensure maintenance free and reliable operation over longer periods of time.

MPR ARUDHRA

Medium power radar Arudhra has been indigenously developed by the Electronics and Radar Development Establishment (LRDE). Arudhra is the first indigenous rotating active phased array multi-function radar with digital beam forming technology. The radar covers 360 degree in azimuth and is capable of performing volumetric surveillance to detect and track aerial targets up to 400 km in range and 30 km altitude. This radar can survive intense ECM environment and electromagnetic interference. It is integrated with modern identification of friend or foe system to recognise enemy targets and is transportable by road, rail and air.

The showcasing of these state-of-the-art systems is a bold step in demonstrating indigenous technological strength and assuring the world that design and 'Make in India' is a reality. •