

## **Indo-Israeli surface-to-air missile tests from Tuesday**

*By Hemant Kumar Rout*

Bhubaneswar: The Defence Research and Development Organisation is readying to conduct a series of tests of Indo-Israeli joint venture Medium Range Surface-to-Air Missile (MRSAM) from a defence base off the Odisha coast from Tuesday.

At least five tests of the MRSAM, jointly developed by DRDO and Israel Aerospace Industries (IAI) of Israel for the Indian Air Force (IAF), have been planned from the Integrated Test Range (ITR) at Chandipur-on-sea.

The missile guided by a radar system and on-board avionics will be fired against a pilot-less target aircraft mimicking an attacking combat aircraft. Both Indian and Israel teams will participate in the launch campaign.

Preparations for the tests are on in full swing. Designed and developed by Research Centre Imarat (RCI), a DRDO lab and IAI, the missile has been manufactured by the Hyderabad-based Bharat Dynamics Limited (BDL).

Many Indian industries including Bharat Electronics Limited (BEL), L&T, Bharat Dynamics Limited (BDL) and TATA group have contributed to the development of a number of subsystems which will be put into use in the flight tests.

The 4.5-meter long ballistic missile weighs around 270 kg and can carry a payload of 60 kg. Apart from the missile, the system includes a Multi-Functional Surveillance and Threat Alert Radar (MFSTAR) for detection, tracking and guidance of the missile.

Capable of intercepting incoming aerial threats up to a range of 70 km, the MRSAMs can be deployed to protect sensitive defence bases, metro cities and other important installations like nuclear stations.

The MRSAM system which is yet to get a specific name provides reliable air defence at medium range. Travelling at a speed of Mach 2 the missile can identify and destroy airborne threats like jets, missiles and rockets, including projectiles launched simultaneously.

A contract of Rs 10,076 crore for MRSAM was signed in February 2009. The MRSAM is a variant of long range surface to air missile (LRSAM), dubbed as Barak-8, that the DRDO and IAI are developing for the Navy. The project worth Rs 2,606 crore for Navy was signed in December 2005 and first test of the missile was conducted in November 2014.

As precautionary measures the district administration will shift residents of seven hamlets that fall within 2.5 km radius of the test facility. Adequate arrangements have been made to shift 3,652 persons to temporary shelters prior to the missile tests.

While security has been beefed along the coast for the test and patrolling intensified, fishermen of Balasore, Bhadrak and Kendrapada districts have been asked not to venture out into the sea during test period.

Meanwhile, the DRDO officials have conducted successful test flights of unmanned aerial vehicle (UAV) Banshee twice on Thursday and once on Friday. Two dozens of Israeli scientists are camping here for the last more than a week for the tests. First test of the MRSAM was conducted on June 30.

Sun, 18 Sep, 2016  
(Online)

## Quality of youths' skill a challenge: DRDO DG

Hyderabad: Though India has the advantage of a young workforce, the quality of skills is still a challenge. While about 14 million youngsters turn into workforce every year, just two million among them are trained. There is a huge need for upgrading the "infrastructure for skill-development", said Dr S Christopher, secretary, Department of Defence Research and Development and Director General of Defence Research and Development Organisation (DRDO).

"Young engineers and graduates should rise up to the challenges and come up with innovative and creative ideas to make India a technology leader. Youth should focus on coming up with ideas, which will ensure national security, cyber security, energy security, economic security, food security, health security and environment security by using technology," appealed Dr Christopher to the students, speaking at the seventh convocation of Gandhi Institute of Technology and Management (GITAM) University here on Saturday.

Stating that technologies developed by DRDO are even benefiting general public like bio digesters, Dr Christopher stressed that more focus should be invested on improving the engineering skills in youth.

"We have to invest more on improving the engineering skills in youth, to create quality workforce, which is essential for designing, developing and production of indigenous technologies and equipment, to make India a technology leader and ensuring freedom from denial regimes and external controls," said Dr Christopher, urging the academia to focus on engineering training.

Honorary Degree of Doctor of Science was presented to Dr S Christopher at the convocation ceremony by GITAM University vice chancellor MS Prasada Rao.

The atmosphere at convocation reverberated with youthful brilliance as about 750 students who have completed B.Tech. M.Tech and MBA at the university's Hyderabad and Bangalore campuses, were awarded degrees at the convocation.

"Due to our continuous efforts, we have been able to turn out graduates, who are not just well qualified but also trained and equipped with employability skills. Our placements record proves this point. This academic year, 405 engineering graduates from Hyderabad campus got placed in reputed companies with salary package ranging between Rs 3 to 12 lakh. A student from Bangalore campus secured highest package of Rs 25 lakh in a German automation company," stated.

Vice chancellor Prasada Rao, presenting the annual report of GITAM University.

Sun, 18 Sep, 2016  
(Online)

## Make in India gaining steam, says DG DRDO

By R. Avadhani

The Make in India initiative of the Government of India is gaining steam and there is an increased indigenous content in the defence equipment being manufactured in the country, Secretary Defence (DRDO) and Director General Defence Research and Development Organisation S Christopher said.

Delivering the convocation address at the Seventh Convocation of the GITAM University Hyderabad and Bengaluru campuses at the Hyderabad campus here on Saturday he said "the new category of Indigenously

Designed, Developed and Manufactured (IDDM) equipment increases the local mix from 30 per cent to 70 per cent.” Rapid strides are being made in the defence sector with a focus on indigenisation, he added.

“We have to give equal importance to each and every segment of technology for the security and well being of our mighty nation. The technologies developed for armed forces are also benefiting civil society. The bi-digesters developed for armed forces have been adopted for passenger coaches in Indian Railways,” he said adding that a number of products developed by DRDO have high export potential and contributing to the Make in India.

An honorary doctorate was conferred on Dr. S. Christopher on the occasion by GITAM University Vice Chancellor M. S. Prasada Rao.

Stressing the need of quality education, Dr. Christopher said: “Out of the 14 million people that enter into workforce every year, barely two million are properly trained. A huge upgrade of the infrastructure for imparting skills is an obvious requirement. We have to invest more on improving engineering skills so that we can create good work force,” he said and suggested to the students to acquire an aptitude for entrepreneurship from the beginning.

University Vice-Chancellor M.S. Prasada Rao presided over the programme. Later, graduation certificates were presented to the students. President GITAM University M.V.S.S. Murthy, and others were present.