

## **DRDO develops trawl system to locate landmines**

Bhubaneswar: Defence Research and Development Organisation (DRDO) has developed a mine clearing trawl system for the minefield area in the battle zone to meet the operational requirements of Indian Army. The trawl system designed by Research and Development Establishment (Engineers), a premier system engineering laboratory under Armament and Combat Engineering (ACE), achieved a major milestone with the successful completion of blast trials recently.

The trials were conducted in collaboration with Pune-based High Energy Materials Research Laboratory (HEMRL) and demonstrated the survivability of the equipment, when subjected to successive series of blasts directly underneath the system. The equipment consists of trawl roller, track width mine plough and electro-magnetic device, which cater to the need of all types of mines usually encountered by the battle tanks in war scenario.

The indigenously developed trawl system will help in breaching of landmines and creating a vehicle-safe lane through a minefield for the advancing columns of mechanised forces in combat zone. A defence official said the trawl system is capable of breaching a variety of landmines, including passive and active influence mines. "The field-able prototype of the system is in final stage of realisation and would be shortly ready for conduct of user evaluation trials by the Army," he said. It is an important step towards achieving self-reliance in area of critical military equipment under 'Make in India' initiative and would result in saving of precious foreign exchange for the country, the official added.



## **DRDO successfully tests air-to-air missile Astra**

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The Defence Research and Development Organisation (DRDO) has successfully conducted the final development flight trials of 'Astra' – Beyond Visual Range Air-to-Air Missile (BVRAAM) over the Bay of Bengal, off the coast of Chandipur, Odisha, earlier this week.

A total of seven trials were conducted against the Pilotless Target Aircraft (PTA), including engagement of target at very long range, engagement of high manoeuvring target at medium range and multiple launches of missiles in salvo to engage multiple targets. It has been developed by DRDL, Hyderabad, with avionics, including the critical RF Seeker developed by Research Centre Imarat (RCI).

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Two missiles were also launched in the combat configuration with warhead and the targets were neutralised, said an official press release on Friday night. This effort for building a state-of-the-art BVRAAM by DRDO, together with the Indian Air Force (IAF) has completed the development phase of the weapon system successfully. Hindustan Aeronautics Limited (HAL) too has played a role in modifying the aircraft for weapon integration while more than 50 public and private industries have contributed in building the Astra weapon system.

S. Venugopal, programme director, led the launch operations and flight trials along with the teams from multiple organisations. Director general, Missiles and Strategic Systems, G. Satheesh Reddy said the technologies developed under the programme will be the building blocks for development of more variants of air-to-air and surface-to-air missiles. Defence Minister Nirmala Sitharaman congratulated DRDO, IAF Air Force, Defence Public Sector Undertaking (DPSU) and industries for the successful trials of ASRTA Missile.

The Chairman of DRDO and Secretary, Department of Defence (R&D) S. Christopher too congratulated the 'Team Astra' for developing and flight testing such a formidable class of weapon system.