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air to air missile

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NAL launches new-generation Hansa trainer aircraft



The National Aerospace Laboratories (NAL) in Bengaluru, rolled out the latest version of the Hansa two-seater trainer aircraft in the city. A top civil aviation official said the aircraft would help India transform from a nation of importers to builders. The Hansa-NG, or new generation, is the latest iteration of the original Hansa aircraft. Dr Jitendra Jadhav, director of NAL, a CSIR lab, said Hansa-NG will tap into a requirement for 100-120 aircraft in the civilian aerospace field. “I am pleased to say that I have 30 letters of intent (LOIs) in hand today,” he said, adding the aircraft was generating interest among flying clubs and manufacturers. The aircraft is expected to start its flight tests later in 2021.

Source: <https://www.deccanherald.com>

CURRENT AFFAIRS

NASA Mars rover 'Curiosity' captures stunning 'selfie' atop mountain

After beginning its journey in the first week of March, NASA's Mars rover 'Curiosity' scaled the 6-foot-tall (20 metres) rock formation and captured a selfie along with a 3D panoramic view of the surroundings, NASA's Mars Mission website revealed. A CNET report stated that the selfie was the first of its kind that has shown the Red Planet's stunning surroundings. Earlier images from rovers have focused on the rover itself, the story said. Composed of 60 images, the selfies were captured by the Mars Hand Lens Imager (MAHLI) on the rover's robotic arm on March 26, which was the mission's 3070th Martian day — known as sol. The same images were merged with 11 images taken by the rover's Mastcam (camera atop its head) on March 16th to produce the final selfie. Nicknamed after France's Mont Mercou, the Martian hill, NASA said is "at the transition between the clay-bearing unit Curiosity is departing and the sulfate-bearing unit" on Mount Sharp, which the rover has been scaling up since 2014. NASA added that scientists have for long believed that the transition could help show how Mars became the desert planet that it is today.

Source: <https://www.deccanherald.com>

NAMING OF THE CENTRE FOR CIVIL AIRCRAFT DESIGN AND DEVELOPMENT AS THE RODDAM NARASIMHA CIVIL AIRCRAFT CENTRE

Naming of the Centre for Civil Aircraft Design and Development as the Roddam Narasimha Civil Aircraft Centre on 31 March 2021 at 09.30 am at C-CADD, Belur Campus, CSIR-NAL The Centre for Civil Aircraft Design and Development (C-CADD) at Bangalore's National Aerospace Laboratories (CSIR-NAL) was renamed Roddam Narasimha Civil Aircraft Centre (RN-CAC) at a brief function held on the CSIR-NAL Belur Campus on 31 March 2021. This is to honour Professor Roddam Narasimha, the renowned Indian aerospace scientist and engineer, who passed away on 14 December 2020. CSIR-NAL's forays in civil aircraft design and development began around 1990, following the recommendations of its Research Council headed by Prof Satish Dhawan. As CSIR-NAL's Director, Prof Narasimha was at the forefront of this initiative. Prof Narasimha championed India's effort to be a leading player in civil aircraft design and development; he was the first to point out that civil aviation could be a creator of national wealth, instead of being a mere consumer. In the 1990s, Prof Narasimha foresaw India's stupendous growth in civil aviation, and positioned CSIR-NAL as a partner in an enduring national endeavour. The light canard research aircraft (LCRA), using the Rutan Long-EZ design, was built at CSIR-NAL and first flew on 26 February 1987. LCRA served as the test-bed to design and develop India's first all-composite aircraft, HANSA, which had its maiden flight on 22 November 1993. HANSA continues to be a popular choice for India's many flying clubs all over the country. Following the HANSA success, CSIR-NAL launched the vastly more ambitious effort to develop SARAS, a multi-role light transport aircraft. SARAS had its inaugural flight on 29 May 2004, and continues to be a very exciting and promising venture in civil aircraft design and development. RN-CAC will become the nodal centre for the development of the vastly improved HANSA-NG trainer aircraft, and the next SARAS version, SARAS Mk2. CSIR-NAL has also submitted a proposal to the Government of India for the design and development of a 90–110-seater Regional Transport Aircraft (RTA). If approved, RTA will catalyse the civil aviation scenario in the country: it will support the growth of India's smaller cities under the UDAAN programme and significantly promote economic development. It is expected that RN-CAC will create the essential nucleus, and play the pivotal role, in the RTA programme once the formal approval is received from the government.

Source: <https://www.nal.res.in/>

DRDO conducts maiden trial of Python-5 air to air missile

India's indigenously designed and developed Light Combat Aircraft (LCA) Tejas has added the 5th generation Python-5 air-to-air missile (AAM) to its repertoire of air-to-air weapons capabilities. The Python-5 missile was test-fired from a Tejas aircraft of the Aeronautical Development Agency (ADA), the designers and development agency of the Tejas, and flown by Indian Air Force test pilots attached to the National Flight Test Centre (NFTC), Bengaluru. The successful

firing of the missile completes the full complement of air-to-air missiles that needed to be test-fired from Tejas. "This is a proud moment since the Tejas' full air-to-air arsenal is now on board," said an ADA official. In a series of test-firing trials that were conducted off the coast of Goa and concluded on April 27, a live launch of the Israeli-manufactured missile on to a 'manoeuvring' banshee target was carried out with a 100 per cent success rate. Officials in the know said that the Python-5 missile live firings were "conducted to validate target engagement from all aspects as well as beyond visual range". They added that in all the live firings, the missile hit the 'manoeuvring' aerial target. The Python-5 is capable of 'lock-on after launch' (LOAL) and has full-sphere/all-direction (including rearward) attack capability. Prior to the live firing trials, extensive missile carriage flight tests were conducted in Bengaluru to assess integration of the missile with various aircraft systems on board the Tejas, such as the avionics, fire-control radar, missile weapon delivery system and the flight control system. In Goa, a successful completion of separation trials preceded the live launch of the missile. The live trials were also aimed at validating the enhanced capability of the already integrated 'Derby (Alto) beyond visual range (BVR) air-to-air missile (AAM) on Tejas. The test firing in Goa completed a series of missile trials to validate the 'Derby' missile's performance under extremely challenging scenarios. The missile, developed by the Israeli defence company Rafael Advanced Defense Systems, achieved a direct hit on a high-speed manoeuvring aerial target, thereby validating its complete capability.

Source: <https://frontline.thehindu.com/>

HAL's Advanced Light Helicopter Dhruv demonstrates deck operations capabilities in ship-borne trials

Hindustan Aeronautics Limited's Advanced Light Helicopter (ALH) Dhruv Mk III MR has successfully demonstrated its deck-operations capabilities that include landing on deck, folding of blades and storing the helicopter inside the onboard hangar. The recently concluded ship-borne trials off Chennai coast in collaboration with the Indian Coast Guard also covered maintenance activities inside the hangar and on the deck, hot refuelling with engines running on the deck, Bengaluru-headquartered HAL said in a statement. The helicopter is equipped with the Shakti engines and an advanced glass cockpit. HAL had recently delivered ALH Dhruv Mk III MR to Indian Coast Guard as part of its 16 ALH contract. "These trials have proven the capability of ALH Dhruv to carry out extended operations from ships. Some of the missions that were successfully executed were surveillance, search and rescue, anti-pollution to address oil spillage, etc." "With the successful demonstration of these capabilities like blade folding, stowage, the helicopter is now ready to be fielded for operations," said HAL CMD, R. Madhavan. Dhruv Mk III MR is equipped with the surveillance radar that can detect and identify ships and boats up to a range of 120 nautical miles to enable the Indian Coast Guard in its duty to secure the nation from threats, according to HAL. "Coupled with an electro-optical sensor that can closely monitor even the smallest of the vessels at distances as far as 30 nautical miles, ALH Dhruv will boost the capabilities of the Indian Coast Guard," the statement said.

Source: <https://www.thehindu.com/>

ALH Dhruv Demonstrates Deck Operations Capabilities in Ship-borne Trials

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Source: <https://hal-india.co.in>

TECHNOLOGY

DRDO develops light weight bullet-proof jacket

The Defence Materials and Stores Research and Development Establishment (DMSRDE), Kanpur has developed Light Weight Bullet Proof Jacket (BPJ) weighing nine kg, meeting the qualitative requirements of Indian Army, the Defence Research and Development Organisation said (DRDO). The Front Hard Armour Panel (FHAP) jacket was tested at Terminal Ballistics Research Laboratory (TBRL), Chandigarh and met relevant BIS standards, it said in a statement. According to the DRDO, the importance of this vital development lies in the fact that each gram of BPJ weight reduction is crucial in enhancing soldier comfort while ensuring survivability. This technology reduces the weight of the medium sized BPJ from 10.4 kg to nine kg. Very specific materials and processing technologies have been developed in the laboratories for the purpose. Defence Minister Rajnath Singh congratulated DRDO scientists and the industry for developing the light weight BPJ to make the soldiers more comfortable. The DRDO Chairman, Dr G Satheesh Reddy congratulated the DMSRDE team for the development.

Source: <https://www.deccanherald.com>

DRDO conducts successful flight test of Solid Fuel Ducted Ramjet technology

The Defence Research and Development Organisation (DRDO) successfully conducted a flight test of solid fuel ducted ramjet (SFDR) technology from a test range in Odisha, official sources said. During the test all subsystems including the ground booster motor have performed as expected, the DRDO said. The successful demonstration of SFDR technology has provided DRDO the technological advantage which will enable it to develop long range air-to-air missiles. At present only a handful of countries have the technology, it said. The test was carried out at around 10.30 am from the integrated test range (ITR) launch platform at Chandipur, they said. During the flight test, air launch scenario was simulated using a booster motor. Subsequently, the nozzle-less booster accelerated it to the required Mach number for Ramjet operation, the DRDO said. The performance of the missile was monitored using the data captured by electro optical, radar and telemetry instruments deployed by ITR and confirmed successful demonstration of the mission objectives, it said. The launch was monitored by senior scientists of various DRDO labs, including Defence Research and Development Laboratory, Research Centre Imarat and High Energy Materials Research Laboratory, the sources said. Defence Minister Rajnath Singh congratulated the scientists of DRDO, Indian Air Force and the industry on the successful flight test of SFDR. The secretary to the department of defence research and development and DRDO chairman G Satheesh Reddy too congratulated the team which was involved in the flight test, the sources added.

Source: <https://www.deccanherald.com>

DRDO develops advanced chaff technology to safeguard Naval ships

The Defence Research and Development Organisation (DRDO) said it has developed an Advanced Chaff Technology to safeguard naval ships against enemy missile attack. Defence laboratory Jodhpur (DLJ), a DRDO laboratory, has indigenously developed three variants of this critical technology — Short Range Chaff Rocket (SRCR), Medium Range Chaff Rocket (MRCR) and Long Range Chaff Rocket (LRCR) — meeting Indian Navy's qualitative requirements, a DRDO statement said. Recently, Indian Navy conducted trials of all three variants in Arabian Sea on Indian Naval Ship

and found the performance satisfactory, it said. Chaff is a passive expendable electronic countermeasure technology used worldwide to protect naval ships from enemy's radar and RF missile seekers, the statement noted. "The importance of this development lies in the fact that very less quantity of chaff material deployed in the air, acts as decoy to deflect enemy's missiles for safety of our ships", DRDO said. DRDO said it has also gained the expertise to meet the futuristic threats from adversaries, which is a unique technology not available from outside. The technology is being given to industries for production in large quantities, it said. Vice Chief of Naval Staff Vice Admiral G Ashok Kumar has applauded DRDO efforts in developing strategically important technology indigenously in a short span and cleared for bulk production, the statement said. Defence Minister Rajnath Singh congratulated DRDO, Indian Navy and Industry for the achievement, it said. Secretary, Department of Defence R&D & Chairman, DRDO, Dr G Satheesh Reddy appreciated the efforts of teams involved in indigenous development of this vital technology to safeguard Indian Naval ships, it added. "Successful development of Advanced Chaff Technology by DL Jodhpur is one more step towards 'Aatmanirbhar Bharat'", DRDO said.

Source: <https://www.deccanherald.com>

Award

HAL Bags Top Award for Innovative Training Practices

HAL has bagged the first place for Innovative Training Practices 2019-20 at the 30th National Award ceremony held recently at New Delhi by Indian Society for Training & Development (ISTD). "We are honoured to receive such a coveted award. This is a recognition of our relentless efforts to strive for excellence in the area of training and development", said Mr Alok Verma, Director (HR). Apart from using the in-house talent, HAL has tied up with the best management and training institutes to impart the right training to the professionals. HAL Management Academy having a sprawling lush green campus of nearly 16 acres with state of the art facilities in Bengaluru is a Centre of excellence for Aerospace Technology and Management professionals. It offers specific courses blending the rich experience and domain expertise with industry exposure to provide trained manpower in aerospace sector. ISTD, established in April 1970, is a national level professional & non-profit society registered under the Societies Registration Act, 1860. It has a large membership of individuals and institutions involved in the area of training and development of Human Resource from Government, Public and Private Sector Organizations & Enterprises; Educational and Training Institutions and other Professional Bodies. The Society is affiliated to the International Federation of Training and Development Organizations (IFTDO), Geneva and Asian Regional Training and Development Organizations (ARTDO), Manila.

Source: <https://hal-india.co.in/>

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