



Covering the Period from  
(01 May to 31 May 2021)

## Publisher

Journal of Aerospace Sciences  
And Technologies  
The Aeronautical Society of India  
Bangalore Branch Building  
New Thippasandra Post  
Bangalore 560 075  
Karnataka, INDIA  
Phone No : +91 80 25273851  
Email: [editoraesi@yahoo.com](mailto:editoraesi@yahoo.com)  
Website: [www.aerjournalindia.com](http://www.aerjournalindia.com)

## Publication Team

Dr R Balasubramaniam  
Dr S Kishore Kumar  
Dr P Raghothama Rao  
Mrs Chandrika R Krishnan  
Mr Hemanth Kumar R  
Mr Kumaran A K M

## Advertisement – Tariff

A4 – 1 Full Page : Rs. 2000  
Draft Drawn in Favour of  
“Journal Office, The Aeronautical  
Society of India” Payable at  
Bangalore

## Head Quarters

The Aeronautical Society of India  
13-B, Indraprastha Estate  
New Delhi 110 002, India  
Tel: +91 11 23370516  
Fax: +91 11 23370768

## UK to Support India's Tejas MK2 Development, Collaborate on Marine Engines



The United Kingdom has agreed to work with India to develop Tejas Mark 2 fighter aircraft. In the recent virtual dialogue held between Indian Prime Minister Narendra Modi and his British counterpart Boris Johnson, the topic of the latter aiding the development of the Light Combat Aircraft (LCA) Tejas MK2 was breached. The leaders reaffirmed the benefits of closer cooperation in a free and open Indo-Pacific, recognising their shared interest in regional prosperity and stability. They agreed to significant new cooperation on Maritime Domain Awareness, which includes new agreements on maritime information sharing, an invitation to the UK to join India's Information Fusion Centre in Gurgaon and an ambitious exercise programme which includes joint tri-lateral exercises, the UK Ministry of Defence said in a release. The two countries are also working to conclude a Logistics Memorandum of Understanding that will enhance our joint ability to tackle shared challenges. In addition to commitments on the Indo-Pacific, the two countries agreed to build on existing government-to-government collaboration on India's future combat air engine requirement. As part of a '2030 Roadmap', they agreed to work closely together in support of India's indigenous development of the Light Combat Aircraft Mark 2. They also spoke of the potential for further industrial collaboration in areas like maritime propulsion, space and cyber, marking the start of a promising new era of UK-India research, capability and industrial collaboration on Indian combat air and beyond. LCA Tejas @ IAF 5 This agreement builds upon that signed between Hindustan Aeronautics Limited (HAL) and Rolls Royce to move aspects of the manufacture of the MT30 Gas Turbine engine to India, supporting PM Modi's Make in India initiative. The MT30 is an engine employed widely in navies around the world and is the basis of the UK's Integrated Electric Propulsion system that powers the Queen Elizabeth Class Carriers

Source: <https://www.defenseworld.net/>

## CURRENT AFFAIRS

### **Indian Navy to take charge of flying ICU**

A Medical Intensive Care Unit (MICU) has been installed onboard ALH Mk III from INAS 323 at INS Hansa in Goa by Hindustan Aeronautics Limited (HAL). With ALH Mk III, an all-weather aircraft, being equipped with MICU, the Indian Navy can now undertake medical evacuation of critical patients by air even in unfavourable weather conditions. The MICU has two sets of defibrillators, multipara monitors, ventilator, oxygen support as well as infusion and syringe pumps. It also has a suction system to clear secretions in the mouth or airway of the patient. The system can be operated on aircraft power supply and also has a battery backup of four hours. The equipment can be installed in two to three hours to convert the aircraft into an air ambulance. This is the first of eight MICU sets to be delivered by HAL to the Indian Navy.

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

### **Defence production policy to be issued soon**

The second negative import list, which has been now rechristened as the positive list, has been delayed due to the ongoing pandemic and will be issued very soon by the Department of Military Affairs (DMA), said Sanjay Jaju, Additional Secretary Defence Production. The final version of the 'Defence Production and Export Promotion Policy (DPEPP) 2020' will also be put out very soon, Mr. Jaju said speaking at a webinar on "defence testing and certification for speedy procurement" by PHD Chamber of Commerce and Industry. The draft DPEPP 2020 was released last August for public feedback and once it comes into effect will serve as the overarching guiding document of the Defence Ministry for boosting domestic defence manufacturing as well as exports. The first negative import list issued last year had listed 101 military items that cannot be imported from abroad. As part of efforts to promote the role of private sector in defence manufacturing testing facilities of DPSUS and DRDO are being opened up for use by private sector while new ones are planned to be set up under the Defence testing Infrastructure Scheme (DTIS). On this Mr. Jaju said that the Request For Proposal is expected to be floated soon and industry consultations will also begin shortly, "Under DTIS, testing infrastructure is planned to be set up through public private partnership mode..." he stated while listing a series of measures being taken to simplify the testing and certification procedures like self-certification and using simulations, among others. The RFI for DTIS was issued in February this year. In this regard, Mr. Jaju said during the recent Combined Commanders Conference, the Secretary Defence Production had made a presentation before Prime Minister Narendra Modi on the issue of improving quality assurance and improving the competitiveness of the industry. The DTIS proposes setting up six to eight greenfield testing facilities in partnership with private sector with a total Grant-in-Aid of ₹ 400 crore, according to the Directorate General of Quality Assurance.

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

## TECHNOLOGY

### **DRDO develops critical near isothermal forging technology for aeroengines**

Defence Research and Development Organisation (DRDO) has established the near isothermal forging technology to produce all the five stages of high-pressure compressors (HPC) discs out of difficult-to-deform titanium alloy using its unique 2000 MT isothermal forge press. The technology has been developed by Defence Metallurgical Research

Laboratory (DMRL), a premier metallurgical laboratory of DRDO at Hyderabad. This is a crucial technology for establishing selfreliance in aeroengine technology. With this development, India has joined the league of limited global engine developers to have the manufacturing capabilities of such critical aero engine components. To meet the bulk production requirements, DMRL technology was transferred to M/s MIDHANI through a licensing agreement for technology transfer (LATOt). Using the isothermal forge press facility available at DMRL, Hyderabad, bulk quantity (200 numbers) of HPC disc forgings pertaining to various compressor stages have been jointly (DMRL & MIDHANI) produced and successfully supplied to HAL (E), Bengaluru for fitment in to Adour Engine that powers the Jaguar/Hawk Aircrafts. In India, the Adour engine is overhauled by HAL (E), Bengaluru under a licensed manufacturing agreement with OEM. Like in any aeroengine, the HPC Drum assembly has to be replaced after a specified number of operations or in case of damage. The annual requirements of these high value HPC discs are quite large, warranting indigenisation. HPC drum is a highly stressed sub-assembly and is also subjected to low cycle fatigue and creep at elevated temperature. The raw materials and forgings for HPC drum are required to be of the highest quality which can meet the specified combination of static and dynamic mechanical properties. DMRL developed this forging technology by integrating various science and knowledge-based tools. The methodology adopted by DMRL is generic in nature and can be tuned to develop other similar aeroengine components. The compressor discs produced using this methodology met all the requirements stipulated by the airworthiness agencies for the desired application. Accordingly, the technology was type certified and letter of technical approval (LoTA) was accorded. Based on the exhaustive component level and performance evaluation test results, HAL (E) and Indian Air Force cleared the components for engine fitment. Apart from DMRL and HAL (E), various 2 agencies such as MIDHANI, CEMILAC and DGAQA worked in unison to establish this crucial technology. Raksha Mantri Shri Rajnath Singh has congratulated the scientists of DRDO, Industry and all other agencies involved in the development of this critical Aero Engine related technology. Secretary Department of Defence R&D and Chairman DRDO Dr G Satheesh Reddy expressed his satisfaction on achieving this crucial milestone and congratulated the teams involved.

Source: <https://pib.gov.in/>

## BUSINESS

### Rolls-Royce and HAL Sign MoU for Supporting MT30 Marine Engine Business

Hindustan Aeronautics Limited (HAL) and Rolls-Royce have signed an MoU to establish packaging, installation, marketing and services support for Rolls-Royce MT30 marine engines in India. Through this MoU, Rolls-Royce and HAL will expand their long-standing partnership in India and work together in the area of marine applications for the first time. **Mr. R Madhavan, CMD, HAL** said, *"Rolls-Royce has been our valued partner for several decades. We now look forward to working together to explore business opportunities in marine applications. This partnership will leverage the rich experience of HAL's IMGT Division that works on marine gas turbines with Indian shipyards. Further, we are also exploring the option of using MT7 marine engine on the hovercraft being planned by the shipyards in India."*

**Mr. Kishore Jayaraman, President, Rolls-Royce India and South Asia** said, *"We are excited to bring together Rolls-Royce's experience of over five decades in developing naval propulsion solutions and HAL's in-market expertise in working with marine gas turbines to support our MT30 engines. We look forward to building on this partnership to provide solutions in the area of naval defence."*

**Speaking about the partnership, Mr. Tom Bell, President, Rolls-Royce Defence** said, *"Rolls-Royce has a shared history of successful collaboration with HAL in defence aerospace, and we are proud to strengthen our valued partnership to work together for the MT30 naval gas turbine. As India focuses on its vision of modernisation and self-reliance in defence, we look forward to introducing the MT30 to customers in India in collaboration with HAL. Designed for naval platforms of the future, the MT30 is perfectly equipped to meet the Indian Navy's present and future needs."* MT30 is the world's most power-dense, best-in-class naval gas turbine currently in-service with naval programs worldwide in

various propulsion arrangements across seven ship types. Derived from the Trent aero engine family, the MT30 has the potential to provide next-generation capabilities to the Indian Navy's future fleet. The MT30 can deliver its full power of up to 40 MW in ambient temperatures up to 38 degree celsius, without any power degradation throughout the life of the ship. Earlier this year at the Aero India 2021 show, the two companies also announced new partnerships in the aerospace sector, including a MoU to establish an Authorized Maintenance Centre at HAL for Adour Mk871 engines to support international military customers and operators. They also announced their intent to expand their supply chain partnerships for Civil and Defence Aerospace, by working towards making Adour Mk871 engine parts in India, as well as supplying forgings such as shrouds, cases and seals for Rolls-Royce's Pearl 15 and Trent family of engines. Attendees at the announcement included Mr. M. Velpari, Director (Operations), Mr. Amitabh Bhat, CEO (Bangalore Complex) and Mr. B Krishna Kumar, General Manager, Engine Division from HAL and Mrs. Louise Donaghey, Sr. Vice President (Defence), Rolls-Royce (joining virtually), Abhishek Singh, Vice President (Defence), Rolls-Royce.

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

## ADVERTISEMENTS

**E-news is bringing out an exclusive slot for individuals to advertise for career opportunities. Industries and Institutions can promote advertise at very nominal charges product ranges as well as airline operators to present route and tariff**