

ADVERTORIAL

SHOW DAILY

An initiative by **RED**
Read. Engage. Deliver.

AERO INDIA 2021

HAL in focus on Day 2 of the event

Aero India also saw the Indian government showcasing the country's growing aerospace and defence capabilities, hosting the defence ministers of 27 of the 29 Indian Ocean Region (IOR) countries

ON THE second day of Aero India 2021, the government issued the much-awaited Request for Quotation (RFQ) documents to Hindustan Aeronautics Limited (HAL), marking a significant development for the Indian defence and aerospace industry.

HAL Chairman and Managing Director R. Madhavan told a press briefing after receiving the RFQ that the defence public sector unit has successfully developed the Hindustan Turbo Trainer (HTT-40) plane with internal funds and now would definitely and obviously look at recovering the money it had put into developing the project on its own.

He also said that HAL has now moved on to conceiving projects for the Indian armed forces even before the need is expressed by the user. In this regard, a reference was made at the press meet to the new futuristic technology of Combined Air Teaming System (CATS) that will be the base of an indigenous swarm drone system that can strike at long distances, deep inside enemy territory.

On the signing of the Tejas contract yesterday, Madhavan said HAL was not ready yet to meet export demands for the Light Combat Aircraft and the basic, vanilla aircraft would cost Rs 309 crore a piece for the combat version and Rs 280 crore for the trainer variant.

On day two, India also stepped up its defence diplomacy by hosting the Defence Ministers from 27 of the 29 Indian Ocean Region (IOR) countries on the



Spectators at the Yelahanka Air Base on the second day of the event

sidelines of the Aero India in Bengaluru.

During his keynote address at the IOR Defence Ministers' Conclave, Minister of Defence Rajnath Singh said as the largest nation in the IOR region with a vast coastline of 7500 km, India has an active role to play in peaceful and prosperous co-existence of all countries.

Rajnath Singh stressed that the Indian Ocean is a shared asset and a lifeline for international trade and transport due to its major sea-lanes which carry half of

the world's container ships, one third of the world's bulk cargo traffic and two thirds of the world's oil shipments.

He identified maritime resources as the key to sustained growth and development of IOR nations in the 21st century. He said that the negative impact of conflicting claims in some maritime areas of the world highlighted the need to ensure peace in the IOR region. He added that IOR countries have demonstrated mutual respect for a rules-

based order and commitment to abide by international law.

Referring to India's growing aerospace and defence sector and its emergence as a global research and development hub with one of the world's largest start-up ecosystems, Rajnath Singh said India is ready to supply various types of weapons systems to IOR countries. This was reflected in India's supply of India-made ships, maritime aircraft and setting-up of Coastal Surveillance Radar

Systems, he said.

At the air show, several memoranda of understanding were signed. HAL signed an MoU with another DPSU MIDHANI for development and production of composite raw materials. This is the first time such an MoU has been signed for composite raw materials.

There is no equivalent proven Indian approved/qualified supplier for various types of Prepregs (Carbon, Aramid, Glass types) for aircraft applications. This creates dependency on foreign OEMs, which is likely to continue in future programmes. Aligned with the "Atmanirbhar Bharat" initiative, efforts need to be made to develop and manufacture such prepregs in India through collaboration.

The usage of composites in aerospace is going to increase, particularly for fighter aircraft/helicopters because of its inherent advantages over metallic raw materials. In addition, similar requirements exist for other aerospace and defence programmes including those of Indian Space Research Organisation (ISRO), Defence Research Development Organisation (DRDO), and National Aerospace Laboratories (NAL).

HAL also signed a contract with GE Aviation for development and supply of ring forgings for GE Aviation military and commercial engine programmes. The five-year contract valued at over Rs 100 crore (\$15 million) involves supplying both steel and nickel alloy forgings for shrouds, cases, rings and seals.



Emmanuel de Roquefeuil, VP & Country Director, Thales in India, welcomed Raksha Mantri Rajnath Singh at Thales' stand and showcased Thales' Make in India efforts that are supporting the modernisation plans of the Indian armed forces



Chief of Army Staff Gen. M M Naravane visited the BrahMos Aerospace pavilion. The Army Chief was briefed by Dr. Sudhir K Mishra, CEO & MD of BrahMos, on the formidable BRAHMOS Weapon System and the major milestones the India-Russia defence JV has achieved over the years. The Indian Army has operationalised the mobile land attack BRAHMOS cruise missile variants since 2007. It is the only land force in the world in possession of the deadly precision strike weapon. In November 2020, the Army conducted two successive successful test firings of BRAHMOS from the Andaman & Nicobar Islands, reiterating the missile's capability to precisely hit land-based targets in "top-attack" mode

Airbus signs MoU with GMR Group

Airbus has signed a Memorandum of Understanding (MoU) with GMR Group, a leading Indian aviation infrastructure developer, to explore collaboration opportunities across aviation services, technologies and innovation.

The MoU was signed at Aero India 2021. Airbus and GMR Group will team up to explore potential synergies in several strategic areas of aviation services, including maintenance, components, training, digital and airport services.

As part of the MoU, Airbus and GMR will collaborate to explore a broad scope of aviation services for both commercial and military aircraft, to benefit the entire aerospace ecosystem in the country.

Airbus has been fostering and support-



ing the development of the Indian aerospace and aviation industry. As part of the partnership, Airbus and GMR Group will

work together on several areas to support and further develop the aerospace ecosystem in the country.

"As one of the leading operators of airports globally, GMR is pleased to partner with Airbus to bring the best possible experience and services to the airlines and passengers who are our shared customers, leveraging our complementary strengths and market presence. Under this partnership, Airbus and GMR teams will work together and innovate across areas such as maintenance, airport operations and air cargo supply chain, among others, to realise our shared goals," said **SGK Kishore**, Chief Innovation Officer and Executive Director, South at GMR

"Airbus and the GMR Group are committed to high standards of operational efficiency, innovation and sustainability. Through this partnership we will align in our mission to provide world class aviation services in the region," said **Rémi Maillard**, President and Managing Director, Airbus India & South Asia. "We will work together towards developing solutions that will shape the future of aviation services and boost the development of aviation infrastructure in the region."

BEML to collaborate with CSIR-NAL



BEML Limited has signed a Memorandum of Understanding (MoU) with Council of Scientific and Industrial Research (CSIR)-National Aeronautics Laboratory (NAL) for development in the areas of advance composite and autoclaves, Mini unmanned aerial vehicles, Design & analysis of aircraft structure and systems.

BEML also teamed up with NAL for joint development of 2 seater trainer aircraft through Technology of transfer (ToT).

At Aero India, A K Srivastav, Director Defence & Aerospace, exchanged the copies with R Venkatesh, Director Business Development, NAL in the presence of MV Rajasekhara, CMD, BEML.

This will help BEML to increase its footprint in the Aerospace sector.



Brahmos Cruise Missile shines at Aero India 2021

• SPEED • PRECISION • POWER • RANGE

BrahMos
India's Ultimate
Force Multiplier
Weapon System

**BrahMos Supersonic
Cruise Missile**
World Leader in
Cruise Missile Family

BrahMos
JOINT VENTURE OF
DRDO, INDIA & NPOM, RUSSIA

BRAHMOS AEROSPACE
16, Cariappa Marg, Kirby Place, Delhi Cantt.
New Delhi-110010. www.brahmos.com

MULTIPLE
PLATFORMSMULTIPLE
MISSIONSMULTIPLE
TARGETS



ADVERTORIAL

SHOW DAILY

An initiative by **RED**
Read, Engage, Deliver.

AERO INDIA 2021

France the top foreign presence

The Bengaluru air show is the first major defence and aerospace exhibition to be held since the outbreak of the Covid-19 pandemic, and French companies have come in force to attend the event.

The French companies present at Aero India are either at the France Pavilion or exhibiting directly. With 28 exhibiting companies, France once again has the strongest foreign representation at Aero India.

This reaffirms the French industry's keen interest in this event, despite the adverse global public health situation. This also reflects the enduring commitment of French companies to contribute to developing India's aerospace and defence industry.

Indeed, French companies invest, design and make in India to produce aircraft and high-tech parts. Over 60 French defence and aerospace companies are present in India through industrial facilities and/or India representation offices. Their activities contribute to the strategic partnership that unites the two countries.

France's participation in Aero India 2021 comes two weeks after France and India conducted joint air force exercises in Jodhpur, involving Rafale on both sides for the first time, and a month after the visit to India of French President Emmanuel Macron's Diplomatic Advisor for the Indo-French Strategic Dialogue.

Source: French Embassy in Delhi

With 28 firms in attendance, France once again has the strongest foreign representation at Aero India. This reaffirms the French industry's keen interest in this biennial event

Pratt & Whitney: Meeting India's needs

PRATT & WHITNEY has a proud history of supporting India's aviation growth for more than seven decades. While its V2500 engines helped usher in a new age for private aviation in India in mid 2000s, its revolutionary GTFTM (Gearing Turbo Fan) engines, that power more than 180 A320neos for IndiGo and GoAir, are delivering industry leading fuel efficiency, dispatch reliability and reduced emissions. As the industry fast tracks recovery post the pandemic, the need for more efficient, sustainable and economical air travel will be more important than ever. The GTF will be key in meeting that need.

Pratt & Whitney has also shaped the aviation market across the globe, and in India. Its engines power the vast majority of turboprop aircraft in the market, from the first 90-passenger twin-engine Bombardier Q400 delivered to SpiceJet in

Ashmita Sethi, President and Country Head, Pratt & Whitney

2018 to single-engine sea planes – including SpiceJet's Twin Otter seaplane on the Ahmedabad-Kevadia route.

When it comes to powering the nation's defence, Pratt & Whitney's F117 engines power the Boeing C-17 Globemaster

III, while India's young pilots begin their training on PC-7 Pilatus trainers powered by the iconic PT6A engines. Both the Indian Air Force (IAF) and the Indian Navy (IN) continue with their modernisation – the IAF is looking at the Airbus C295 Light Transport aircraft, powered by PW127G engines, and the Navy is looking at the Sikorsky S-76D for its Naval Utility Helicopter programme, powered by the PW210 engine. Both these engines deliver on high durability, reliability and versatility – and are the best choice to power India's defence aircraft.

In India, Pratt & Whitney is committed to building capabilities for high value services that will help customers get the best from their next-generation products, and creating an innovative aerospace and defence ecosystem that transforms the country's aviation aspirations into reality.

Maini Group showcases efforts under Make in India

Bangalore based Maini Group's Flagship Company Maini Precision Products Ltd. (MPP) has presented in Aero India 2021 its contributions in Aerospace manufacture towards the Make in India mission, as a member of the Government of Karnataka Pavilion.

Since 2005, MPP Aerospace has been supporting leading aerospace programmes for global customers. It was the first in the Private Sector to obtain the AS9100 certification for Aerospace manufacture, and is currently certified for the latest AS9100 Revision D. It has a modern plant covering 135,000 Sq. Ft area, equipped with 130 plus CNC machines with 3 and 5 Axis capabilities, ranging from 0.5 to 3 metres.

Since 2005, MPP Aerospace has been supporting aerospace programmes for global customers. It was the first in the Private Sector to obtain the AS9100 certification for Aerospace manufacture

ities, ranging from 0.5 to 3 metres.

MPP is a Single Window organisation providing end-to-end manufacturing solutions from the Purchase Order to finished product delivery. Its extensive industrial eco-system in India and overseas takes care of raw materials procurement, manufacturing processes, protective processes & heat treatments and delivery of final products anywhere in the world. The company has also undertaken TOT projects to strengthen Make in India, entering into international partnerships.

Another lead Company, Maini Materials Movement (MMM), is a pioneer in indigenous Electric Aviation Mobility and Airfield Handling Equipment, as a first mover under the Atmanirbhar agenda.

thalesgroup.com

THALES
Building a future we can all trust



50 countries across the globe protect their populations with Thales technologies

Search: Thalesgroup



MBDA
MISSILE SYSTEMS

A PROUD PARTNER OF THE IAF



• SCALP / STORM SHADOW

• METEOR

• MICA

• ASRAAM

SECURING THE SKIES

PROTECTING YOUR ASSETS

MASTERING THE SEAS

COMMANDING THE COMBAT ZONE

 mbda-systems.com

* **RED** (READ. ENGAGE. DELIVER.) IS THE MARKETING SOLUTIONS TEAM OF THE INDIAN EXPRESS GROUP

epaper.indianexpress.com



ADVERTORIAL

SHOW DAILY

An initiative by **RED**
Read. Engage. Deliver.

A start-up with promise

Start-ups along with Micro, Small and Medium Enterprises (MSMEs) are going to play a pivotal role in building a robust Indian Defence Ecosystem, said the Managing Director (MD) of a Tamil Nadu-based Indian start-up in defence. "We are happy that the Government of India recently has allowed start-ups to be part of building Indian defence ecosystem. We have an emotional and passionate connect towards this journey," said R Jayaraghavendhar, MD, Mwiven Infra Tech Pvt Ltd.

Mwiven has a 10-year agreement with SRPC Joint-stock Company (JSC), and is working on second generation anti-tank missile, and with value addition the company is upgrading the existing systems. Mwiven is working towards adding Optics and making these second-generation anti-tank missiles more accessible. The company is working with the Indian Army and the Ministry of Defence for Make 1 or say Make 2 with local manufacturing capacity to contribute towards the Make in India platform.

"We have just been sanctioned as a design and development agency for defence platforms by the Ministry of Defence (MoD), Government of India. We are an agency for modern development which makes India future combat ready," Jayaraghavendhar quipped. "Our design philosophy is to design a product or service which has a shelf-life of at least 15 years, which can show its prowess after 15 years of manufacturing. Every shot counts and it should count after 15 years. Our process is small but a robust one," he said.

Lockheed Martin offers Javelin missile through JV

THE JAVELIN Joint Venture, a partnership of Raytheon Missiles & Defense and Lockheed Martin, is offering the Javelin anti-tank guided missile to the Indian Ministry of Defence through various programmes.

Two of the programmes that the Javelin Joint Venture is competing for include the Indian Ministry of Defence's procurement of the next-generation dismounted fire-and-forget Anti-Tank Guided Missile solution and the Wheeled Armoured Fighting Vehicle opportunity.

For both opportunities, the Joint Venture is offering Javelin — a versatile one-man-portable and platform-employed anti-tank and multi-target precision weapon system. Javelin's fire-and-forget capability, which extends to the full 4-kilometre range in most operational conditions, greatly increases the survivability of operators. Javelin's minimum range of 65 metres makes it an ideal weapon for urban or mountainous



environments. Javelin can also switch between top-attack and direct-attack modes. Javelin's lethality is effective against any currently fielded Main Battle Tanks. Javelin's Multi-Purpose Warhead is also lethal against light armour, irregular targets, structures, caves and personnel.

For the Wheeled Armoured Fighting Vehicle programme, the Javelin Joint Venture is working with Ashok Leyland, and other Indian vehicle

weapon system manufacturer with 50 years of experience. The MOU leads the way for the two companies to explore potential, future co-production of the Javelin anti-tank missile system.

Since signing the MOU, the Javelin Joint Venture has been working with Bharat Dynamics Limited to develop Technology Control Plans and identify which Javelin components could be manufactured in India. The Javelin Joint Venture is also working to get export authorisation from the U.S. State Department.

In support of Make in India, the Javelin Joint Venture is also preparing for indigenous production by Indian industry. The Joint Venture regularly meets with industry to explore opportunities and has made progress toward qualification of Indian industry as suppliers of components for the programme. This will result in access to a global defence supply chain, creating extensive export opportunities for Indian industry.



Defence Minister Rajnath Singh holds engaging discussions at the BAE Systems stand at Aero India 2021



MBDA welcomes Raksha Mantri Rajnath Singh at its stand and showcases its game-changing package for the Rafale aircraft manufactured by Dassault Aviation and industrial activities in India, in line with the 'Make in India' initiative

FLYING DISPLAY AT THE 13TH EDITION OF AERO INDIA



America's B-1B Lancer heavy bomber, of the 28th Bomb Wing based out of Ellsworth Air Force Base in South Dakota, performed a "fly-by" at the Air Show

RAC MiG enters into a strategic partnership with Aviatech Enterprises

AVIATECH ENTERPRISES Pvt. Ltd. (AEPL), a Crown Group Company, specialising in Defence Aerospace MRO and Aviation Engineering services including engineering design, Manufacture, Product development and Production for Indigenisation and with a NABL accredited Calibration facility, has announced that it has entered into a 'Framework Agreement' with Joint Stock Company RAC MiG.

AEPL will be the in-country authorised partner for RAC MiG for providing post-warranty Product Support for MiG 29K/KUB aircraft, Associated Systems, Ground Support Equipment (GSE) and Special to Type Test Equipment (STTE) in the inventory of the Indian Navy.

Speaking on the partnership, Rear Admiral Srinivas Kanugo, VSM (Retd), Head of Aerospace Engineering and CEO Aviatech Enterprises Pvt. Ltd. (AEPL), commented, "We are proud to be the preferred Partner of Choice for JSC RAC MiG, Russia's premier aerospace and defence company. The 'Framework Agreement' is an enabling agreement which paves the way for enhanced in-country Product Support at the doorstep of the Indian Navy establishments operating or maintaining the MiG-29K/ KUB fleet of aircraft. It drastically reduces the turnaround timelines of the aggregates through the contracts on long term basis as per MOD (Dept of Defence Production) guidelines. The association of Indian partner, AEPL in the follow-on support contracts addresses critical Maintenance, Logis-



AEPL will be the in-country partner for RAC MiG for post-warranty Product Support for MiG 29K/KUB aircraft, Associated Systems, GSE, STTE in Navy's inventory

tic and Supply chain issues on 24X7 basis, thus enhancing the availability of the aircraft and associated systems."

The above Agreement is in line with the 'Make in India' policy under the 'Atmanirbhar Abhiyan' vision of the GOI. The Agreement has been concluded under the spirit of 'Inter-Governmental Agreement (IGA)' signed between GOI and Russian Federation in September 2019. It is also in line with the area of focus of IAF to engage with the Industry to set up repair and overhaul (ROH) facilities within India for high value rotables/ repairables and encourage in-house MRO facilities, thereby leading to reduced timeframes for repair and enhanced operational availability of assets.

Rolls-Royce committed to partnering with India on its goals: Kishore Jayaraman

INDIA IS at the right juncture to build a vibrant local defence industry ecosystem that could support both domestic and export demand. With a mix of defence public sector undertakings and private companies, as well as research capabilities and manufacturing set-ups, India has a huge defence industrial base. This provides an excellent opportunity to build and/or scale up an industrial base centred on indigenous manufacturing. Co-creation and subsequent manufacturing for India and for the world, is a goal we can aspire to achieve in this sector.

India today has the width and the weight to invest in co-creation programmes through collaboration with willing global players with the goal to co-develop relevant technologies and IP in critical areas. With a co-owned IP in areas of strategic importance, not only can India commercialise



Kishore Jayaraman, President, India & South Asia, Rolls-Royce

production locally, but it can also use its base to become a global supplier and exporter of defence technologies.

With a legacy partnership that rests on many years of capability development and

co-manufacturing, Rolls-Royce is committed to partnering India's progress. We believe the future will be all about 'Creating in India' in collaboration with willing global players, with India co-owning the Intellectual Property (IP) in areas of strategic importance. This will catapult India's vision to create a strong ecosystem and commercialise production locally, and eventually use this base to boost global supply chain and export capabilities.

Additionally, as India progresses towards 'Atmanirbharata', it must embrace technology at an increasing pace across all spheres of industry and society. Specifically, in the defence sector, the country's aspiration to evolve from a regional power to a global power will need to be coupled with the creation of well-defined initiatives focused on indigenisation and self-reliance, driven by technology at its core.

AATMANIRBHARATA पूर्णतम



BEML's State-of-the-Art Defence Equipment



BEML LIMITED

Schedule 'A' Company Under Ministry of Defence, Govt. of India
DEFENCE & AEROSPACE | MINING & CONSTRUCTION | RAIL & METRO
E-mail : asbd@beml.co.in / mi@beml.co.in
www.bemlindia.in