



IATA PROPOSES ALTERNATIVES TO QUARANTINE



FLYDUBAI RESUMES FLIGHT SCHEDULE AND OPENS FOR SALE

AVIATION

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UPDATE

MAN BEHIND AEROSPACE LEGAL STUDIES AND RESEARCH IN INDIA



Bombardier Concludes Sale of the CRJ Series Regional Jet Program to Mitsubishi Heavy Industries.



In conversation with Tulsi Mirchandaney the Managing Director of Blue Dart Aviation



CENTRE FOR AEROSPACE AND DEFENCE LAWS (CADL) DIRECTORATE OF DISTANCE EDUCATION NALSAR UNIVERSITY OF LAW, HYDERABAD

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ADMISSION NOTIFICATION 2020-21

NALSAR University of Law established by Act 34 of 1998 is engaged in teaching and research in law and allied disciplines. In recognition of its academic standards National Assessment and Accreditation Council (NAAC) awarded it 'A' grade (A+ as per new grading system) with a score of 3.60 out of 4.00 which is the highest amongst all National Law Universities in the country. NALSAR has also been accorded with the status of Category-I under UGC (Categorization of Universities (only) for Grant of Graded Autonomy) Regulations, 2018.

NALSAR established the Centre for Aerospace and Defence Laws (CADL) in 2005 with the objective of promotion of teaching and development of Aviation, Space, Maritime, Telecom and Defence Laws and Regulations. Since then, NALSAR-CADL has been promoting the study of Aerospace and Defence Laws by introducing courses, conducting National and International Conferences, Moot Courts, Workshops and also publishing Newsletters, Journals, Books and Articles, besides awarding a few M.Phils. and Ph.Ds. in the said areas. The objective of introducing these unique and value added courses is to cater to the needs of unprecedented aviation growth coupled with commercialization and privatization of aerospace, defence and maritime industries, which calls for thousands of skilled manpower to meet not only managerial requirements but also legal compliances that arise from the high value transactions. CADL invites applications for admission to the following courses :

S.No.	Name of the Course	Course Fee
1.	Two-Year M. A. (Aviation Law & Air Transport Management)	Rs.40,000/- p.a. (for Defence personnel – Rs.35,000/- p.a.)
2.	Two-Year M. A. (Security & Defence Laws)	
3.	Two-Year M. A. (Space & telecommunication Laws)	Rs.40,000/- p.a.
4.	One-Year P.G. Diploma (Aviation Law & Air Transport Management)	Rs.30,000/- (for Defence personnel – Rs.25,000/-)
5.	One-Year P. G. Diploma (Advanced Maritime Laws)	
6.	One-Year P. G. Diploma (GIS & Remote Sensing Laws)	Rs.30,000/-

Eligibility

Bachelor's Degree or an equivalent Degree in any discipline from any recognized University; (OR) 3-year Degree/Diploma in Aircraft Maintenance Engineering (AME) will be applicable to S. No.1 & 4, (OR) Students appearing for the final year examination of Graduation / Engineering are also eligible to apply. In such a case, the admission will be subject to submission of passing certificate of the qualifying examination on or before September 30, 2020.

Admission Procedure: Direct Admission subject to fulfillment of the eligibility criteria for the said courses. The Online portal for submitting the Application Form is available at www.cadl.nalsar.ac.in

Curriculum for Masters Programmes:

Semester	Two-Year M.A. (Aviation Law & Air Transport Management)	Two-Year M. A. (Security & Defence Laws)	Two-Year M. A. (Space & Telecommunication Laws)
I	<ul style="list-style-type: none"> • General Principles of Law • International Air Law • Principles of Management • Airport Management 	<ul style="list-style-type: none"> • General Principles of Law • International Security, Diplomacy and Conflict Resolution • Defence Technology and Defence Laws • International Institutions and Global Security 	<ul style="list-style-type: none"> • General Principles of Law • Space Technology and Law • International Space Law • Information Technology and Law
II	<ul style="list-style-type: none"> • Domestic Air Laws in India • Aviation Safety, Security and Liability Laws • Airline Management • Air Space & Air Traffic Management 	<ul style="list-style-type: none"> • Defence Management and Strategic Studies • Defence Contracts and Tenders • Defence Procurement Policies: National and International Perspectives • Defence Laws and Policies in India 	<ul style="list-style-type: none"> • International Telecommunications Law • Space Technology, Telecommunications and IPRs Issues • Space Commercialization and Legal Issues • Space Security: Laws and Policies
III	<ul style="list-style-type: none"> • Aviation Contracts & Tenders • Aviation Corporate Laws • Air Transport Economics and Statistics • Aviation Marketing 	<ul style="list-style-type: none"> • Regional Security and Global Governance • Terrorism and Counter Terrorism • Aviation, Space and Maritime Security Laws • Cyber Space, Cyber Security and National Defence 	<ul style="list-style-type: none"> • Telecommunication Laws in India • Law of Remote Sensing and Geospatial Data • Trade Laws relating to Space and Telecommunications • Space Law and Contemporary Issues
IV	• Dissertation	• Dissertation	• Dissertation

Curriculum for Diplomas:

Semester	One-Year P. G. Diploma (Aviation Law & Air Transport Management)	One-Year P. G. Diploma (Advanced Maritime Laws)	One-Year P. G. Diploma (GIS & Remote Sensing Laws)
I	<ul style="list-style-type: none"> • General Principles of Law • Principles of Management • International Air Law 	<ul style="list-style-type: none"> • General Principles of Law • International Maritime Laws • Maritime Security and Law of the Sea 	<ul style="list-style-type: none"> • General Principles of Law • Remote Sensing Technology and Laws • GIS Technology and Law
II	<ul style="list-style-type: none"> • Airport Management • Airline Management • Domestic Air Laws in India 	<ul style="list-style-type: none"> • Maritime Laws in India • International Trade and Marine Transport Services • Maritime Laws and Contemporary Issues 	<ul style="list-style-type: none"> • Coastal Zone Regulation and Management • Satellite Technology and Telecommunication Laws • Information Technology and Cyber Laws

Important Dates :

Release of Notification and Application Form **May, 2020**

Last date for Receipt of Application Form **July, 2020**

Commencement of Classes **September-October, 2020**

Admission Procedure :

Direct Admission subject to fulfillment of the eligibility criteria for the said courses. The Online portal for submitting the Application Form will be available at

www.cadl.nalsar.ac.in

Email ID : cadladmissions@nalsar.ac.in

Sd/-

Prof. V.Balakista Reddy
Registrar & Head, CADL

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Unbridled Proliferation



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Hello readers,

The aviation sector is facing a tough time due to the pandemic, and almost all commercial international flights are banned. The domestic flights are operational with several restrictions and regulations. In this situation, it is too much to ask for the revival of the Aviation industry, but we believe that the situation would improve soon.

The aviation industry is one of the fastest modes of communication and brings people together. It also helps in making new connections, delivering medical supplies, and various essential commodities. In this edition, we tried to put together interviews of some renowned personalities from various segments of the Aviation sector who are fighting tirelessly to support the people in need. The interview with the Managing Director of Blue Dart Aviation Ms. Tulsi Mirchandaney highlights the vital role played by the cargo freights in supplying essentials to various locations. The only functioning jet express airline of India ensures contactless delivery and online payment can help in breaking the contagion chain.

In the interview with IBS software's CEO Mr. V K Mathews, he apprises how the aviation sector has survived the hard times and would revive soon by December 2023. NALSAR University's registrar Prof. Balakista Reddy states how the Aviation courses offered by them are opening new career paths for the students and helping them venture into the global aviation job market.

The cover story on Drones is quite intriguing. Here, you'll get to know about how the drones being used without following any regulation can be a potential danger to an aircraft, and therefore, the Ministry of Civil aviation has made registration a mandate for the commercially used drones.

In this tough time, your support becomes our driving force. The courage to keep our head up and the herculean effort of our Aviation Update team members, associates, advisors, and volunteers to make every edition a masterpiece has helped us make the magazine a successful endeavour! Keep showering your love so that we can come up with several engrossing issues of Aviation Update like this! Stay safe!

Thanks

B. Kartikeya
Editor

■ INDIGO OPERATES FLIGHT CHARTERED BY NALSAR TO TRANSPORT 174 MIGRANT WORKERS



In line with its commitment to support the country in the current scenario, IndiGo operated a charter flight from Bengaluru to Raipur to transport stranded citizens. The Charter was initiated by the alumni network of NALSAR University of Law, Hyderabad in collaboration with Loving Migrant Workers Network and Samerth Charitable Trust. Adhering to all the precautionary measures including the use of face mask, face shield, gloves and sanitizer on-board, the IndiGo flight 6E 9405 transferred 174 migrant workers and their children to Raipur for the onward journey to their hometowns in Chhattisgarh. NALSAR also facilitated another charter flight in collaboration with Mercy Mission, ILoveBlr Trust, United Sikhs and Bangalore Media Foundation, to fly 179 migrant workers including 29 children, from Bengaluru to Raipur on June 04, 2020.

Mr. Ronojoy Dutta, Chief Executive Officer, IndiGo said, "We are pleased to be a part of this unique and thoughtful initiative by NALSAR Alumni network, which enabled 174 migrant citizens reach their hometowns safely. Our endeavour in these times is to ensure a safe and hassle-free flying experience for all our passengers by rigorously following sanitization of the aircraft and providing PPE to the passengers and the crew. We will continue to contribute and support the nation in every way possible in these trying times."

Representative of the 'NALSAR for COVID-19 Migrant Workers Crisis said, "In light of the precarious situation of migrant workers stranded due to the COVID-19 lockdown that has been forcing them to travel long distances putting their lives at risk, we could not sit idle and wanted to utilise our social capital in an impactful manner to alleviate their situation. We felt that organising flights would honour

their desires of long-distance travel while protecting their health and dignity, as it is the safest option for travel with reduced travel time and extensive preventive measures. We want to give a message that equal rights and access to resources cannot remain a mere dream for them. We have had tremendous support from the Foodshaala Foundation, Samerth Charitable Trust and Loving Migrant Workers Network in this endeavour."

The alumni network is financing their journey home and arranging logistical support including pick up/drop off to the airport, food, water, protective gear and ration kits. The workers are being provided with a cash transfer of Rs. 1000 each for immediate relief. The alumni network has collected a total sum of INR 16 lakhs to be spent on the safe transportation of these migrant workers.

■ SPICEJET GIFTS 3000 FACE SHIELDS TO DELHI POLICE



SpiceJet, the country's favourite airline and the biggest air cargo operator, has gifted 3000 'face shields' to the Delhi Police. These face shields are an effective gear to protect frontline police personnel involved in field duties in COVID-19 affected areas and are manufactured by SpiceJet Merchandise, a fully-owned subsidiary of SpiceJet.

The face shields were handed over to Shri. SN Srivastava, the Delhi Police Commissioner, by SpiceJet CMD Ajay Singh. The face shields will be used by the frontline police personnel who are working tirelessly through the extreme conditions to ensure people observe social distancing and other government protocols.

Ajay Singh, Chairman & Managing Director, SpiceJet, said, "SpiceJet is extremely proud of the fearless corona warriors of Delhi Police who have worked day and night to ensure our safety and security in these most difficult times. They are our real heroes and we hope this some contribution from us

helps provide an upgraded layer of safety as they perform their duties tirelessly."

Earlier on May 30, SpiceJet had gifted 1000 face shields to the Gurugram Police. On May 2, SpiceJet had gifted 400 face shields for frontline police personnel of Gurugram and Rewari Police.

SpiceJet has been at the forefront to ensure that the country's supply chain remains intact and that crucial medical and other supplies are transported timely and efficiently by its dedicated fleet of freighters and passenger aircraft during and after the lockdown. Since the nation-wide lockdown began, it has transported over 16,365 tons of cargo on more than 2308 flights of which 850 were international cargo flights.

SpiceXpress, SpiceJet's dedicated cargo arm, has been regularly transporting surgical supplies, sanitizers, face masks, coronavirus rapid test kits, IR thermometers etc. and providing doorstep deliveries of essential supplies, medicines and medical equipment to various cities in India. The airline has helped Indian farmers maintain continuity of their supply chains by operating special cargo flights to take farm produce, fresh fruits and vegetables to various domestic and international destinations.

■ FLYDUBAI RESUMES FLIGHT SCHEDULE AND OPENS FOR SALE



Flydubai has announced that flights are available to be booked on flydubai.com, initially to 24 destinations. Destinations and flight frequencies will continue to be added to the schedule over the summer.

Hamad Obaidalla, Chief Commercial Officer of flydubai, said: "flights are available for booking from today and will operate from 07 July. We are initially planning to operate

to 24 destinations and we will continuously add destinations and flight frequencies to the network and we expect this to increase to 66 destinations over the course of the summer. This, of course, will be dependent on countries being able to open up and accept international travel."

flydubai will be announcing details of its customer journey shortly which will outline what passengers can expect and what information they need to know the next time they flydubai.

Hamad Obaidalla, Chief Commercial Officer at flydubai, said: "following the recent announcement we welcome a return to service in a safe and measured way. We have redesigned our passenger journey that is built upon existing high standards to minimise the risk of transmission of COVID-19 and we can now bring people together once again. This, along with the clear and simple guidelines set out by the authorities' means it's the perfect time to return to the skies."

Flight bookings can be made on flydubai.com. Passengers are required to make sure that they are up to date with the regulations from the IATA Travel Centre for their whole journey.

AIR INDIA EXTENDS SALE DEADLINE



Bids for state-owned Air India were meant to close, but the government has extended the deadline for a further two months. In a seventh revision for expressions of interest to buy Air India, including its 100% stake in Air India Express and 50% stake in Air India SATS Airport Services, the government has pushed the deadline to 31 August.

The government will reveal qualified bidders on 14 September. On 20 June, civil aviation minister Hardeep Singh Puri called the airline a "first-rate asset" and said he was more confident than ever of a successful sale.

SPICEJET ADDS RUSSIA TO ITS INTERNATIONAL CARGO NETWORK



SpiceJet, the country's biggest air cargo operator, has added Moscow to its fast growing international cargo network. The airline operated its maiden cargo flight from Hyderabad to Moscow carrying over 16 tons of pharma supplies. SpiceJet deployed its Boeing 737 freighter aircraft for this cargo flight which will reach Domodedovo Airport at 12 noon (Local Time).

SpiceJet has transported over 15,700 tons of cargo on close to 2234 flights since the nation-wide lockdown began. The airline is operating 42 cargo flights.

Ajay Singh, Chairman & Managing Director, SpiceJet, said, "Moscow is the latest addition to our fast expanding cargo network which spans over 35 international destinations. We have added six new international destinations in the last ten days. Since the lockdown began, SpiceJet has operated more than 2200 cargo flights and has carried around 15,700 tons of cargo."

SpiceJet has operated special cargo flights to and from Abu Dhabi, Almaty, Baghdad, Bahrain, Bangkok, Bishkek, Cambodia, Cairo, Cebu, Colombo, Dhaka, Doha, Dubai, Guangzhou, Ho Chi Minh, Hong Kong, Huangzhou, Incheon, Jakarta, Kabul, Kathmandu, Khartoum, Kyrgyzstan, Kuala Lumpur, Kuwait, Male, Myanmar, Shanghai, Singapore, Sharjah, Sulaymaniyah, Tashkent, Ukraine, and a host of other places.'

FLEX IT! INDIGO LAUNCHES FLEX PAY TO PUT CUSTOMERS AT EASE



In its bid to support customers, IndiGo, India's leading airline, launched Flex pay for its passengers wherein they can avail the flexible payment option. With the help of Flex pay, the passengers can now secure their bookings by paying only 10% of the total fare amount and defer their payment on an IndiGo domestic flight for a period of up to 15 days either from the date of bookings or before the date of departure.

For example, the minimum Flex Pay Payment for a DEL-BOM round trip for 4 passengers will be, 2 segments X 4Pax X INR 400 = INR 3200. Whilst making the payment of the balance amount corresponding the Booking where a Customer has exercised the Flex Pay Option, the Flex Pay Payment paid by the customer upfront will be adjusted against the total booking amount. More information is provided in the T&C link given below.

Mr. Sanjay Kumar, Chief Strategy & Revenue Officer, IndiGo said, "We are pleased to announce the launch of our new flexible option for customer, Flex Pay. We intend to extend this offer for our customers to make their travel more comfortable. Our endeavour is to deliver a hassle-free experience, from the time the customer opens our website to book a ticket until the time they reach their destination. The convenience of customers always matters for us, even in these times, whilst safety remains the biggest priority for us."

IndiGo flights are designed to cater to travellers who are constantly on the lookout for new and affordable flying options. Customers who wish to have more further details on flex pay can login on <https://www.goindigo.in/flex-pay.html>

FIVE-BLADED H145 RECEIVES TYPE CERTIFICATION BY EASA



Airbus Helicopters' five-bladed H145 has been certified by the European Union Aviation Safety Agency (EASA), clearing the way for customer deliveries towards the end of summer 2020. The certification covers the full range of capabilities, including single-pilot and instrument flight rules (IFR) and single engine operations (Cat.A/VTOL), along with night vision goggles capability.

"Our new five bladed H145 is an excellent example of our quest for continuous improvement and providing incremental innovation that responds to our customers' requirements", said Bruno Even, Airbus Helicopters CEO. "This helicopter combines value-added features with the robustness and the reliability of a tried-and-tested bestseller, making it very competitive in the light twin-engine market."

The new version of Airbus' best-selling H145 light twin-engine helicopter was unveiled at Heli-Expo 2019 in Atlanta, GA, with launch customers announced for almost every market segment. Prior to the successful high-altitude test campaign in South America, where the aircraft set its skids down on the Aconcagua, the highest mountain in the Southern hemisphere, the new H145 performed several test campaigns including in Spain at medium altitudes and Finland for cold weather.

This latest upgrade of the H145 family adds a new, innovative five-bladed rotor to the multi-mission H145, increasing the useful load of the helicopter by 150 kg (330 lb). The simplicity of the new bearingless main rotor design will also ease maintenance operations, further improving the benchmark serviceability and reliability of the H145, while improving ride comfort for both passengers and crew. Certification by the Federal Aviation Administration will follow later this year. The certification for the military version of the five-bladed H145 will be granted in 2021.

Powered by two Safran Arriel 2E engines, the H145 is equipped with full authority digital engine control (FADEC) and the Helionix digital avionics suite. It includes a high performance 4-axis autopilot, increasing safety and reducing pilot workload. Its particularly low acoustic footprint makes the H145 the quietest helicopter in its class.

■ EMBRAER POSTS FIRST-QUARTER 2020 NET LOSS OF US\$292.0 MILLION



Embraer has delivered five commercial jets and nine executive jets (five light / four large) in the first quarter of 2020, and the company's firm order backlog at the end of the quarter was US\$ 15.9 billion.

EBIT and EBITDA as reported were US\$-46.9 million and US\$9.3 million, respectively, yielding EBIT margin of -7.4% and EBITDA margin of 1.5%. This compares to EBIT of US\$-15.2 million (-1.8% EBIT margin) and EBITDA of US\$30.9 million (3.8% EBITDA margin) in the first quarter of 2019. The first-quarter results include special items due to the impacts of COVID-19: 1) US\$22.2 million in negative fair value changes on the company's stake in Republic Airways Holdings, and 2) US\$33.4 million in bad debt provisions on accounts receivables, as the company adopted a more conservative approach in the context of the COVID-19 pandemic.

Adjusted EBIT and EBITDA were US\$8.7 million and US\$64.9 million, respectively, yielding adjusted EBIT margin of 1.4% and adjusted EBITDA margin of 10.2%. Net loss attributable to Embraer shareholders and Loss per ADS were US\$-292.0 million and US\$-1.59, respectively. Adjusted net loss (excluding special items and deferred income tax and social contribution) for the first-quarter was US\$-104.0 million, with Adjusted loss per ADS of US\$-0.57.

The adjusted net loss in the first quarter of 2019 was US\$-61.8 million, for an adjusted loss per ADS of US\$-0.34 in the quarter. Embraer reported free cash flow of US\$-676.5 million, in line with free cash flow of US\$-665.3 million reported in the first quarter of 2019, which is historically negative due to seasonal working capital consumption.

■ AIRBUS SIGNS CONTRACT FOR INTEGRATION OF 115 NEW EUROFIGHTER ESCAN RADARS



Airbus has been awarded a contract for the development, supply and integration of 115 Eurofighter ESCAN Radars for the German and Spanish Eurofighter fleet. It marks the so far largest order for the world's most modern electronically scanned array radar, Captor-E. The contract signature followed the approval by both governments in recent weeks.

The contract foresees the delivery and integration of 110 Captor-E radars for Germany and an initial batch of 5 radars for Spain to be delivered by 2023. The new sensor will equip Tranche 2 and Tranche 3 Eurofighters as well as new aircraft. Whereas the Airbus sites in Manching, Germany and Getafe, Spain will act as overall integration Hub, the development and building of the radar will be subcontracted to a consortium under the leadership of Hensoldt and Indra and by participation of further Eurofighter partner companies.

"The contract for the Captor-E radar is a main achievement to equip Eurofighter with sensors that ensure today's dominance of the aircraft also in the threat scenarios of tomorrow", said Dirk Hoke, CEO of Airbus Defence and Space. "With Eurofighter, Germany and Spain are investing in a strong backbone of European air defence and in the leading project of the European defence industry."

■ BOEING BOOSTS ISRAELI AEROSPACE INDUSTRY BY \$1B IN THREE YEARS

Boeing strengthened the Israeli aerospace industry by nearly \$1 billion (3.5 billion Israeli shekels) in the last three

years, according to the latest data from the Industrial Cooperation Authority (ICA) within Israel's Ministry of Economy and Industry.

Boeing's multiple cooperation projects with Israeli companies helped drive this growth. The company committed to a long-term strategy for developing Israel's aerospace industry in 2018, as part of an umbrella agreement with the Ministry of Economy and Industry. Since then, Boeing has directed at least 35 percent of the contract value from Israeli government defense procurements to Israel-based companies and suppliers. The agreement is also a testament to the ICA's commitment to bridge the gap between small and medium-sized (SME) businesses and multinational corporations.

"This agreement is definitely an opportunity, a vote of confidence, especially these days and a declaration of intent by a leading international business corporation in the capabilities of the local Israeli industry and its products," said Ziva Eger, ICA chief executive. "By nurturing strategic partnerships such as these, we will continue to promote the Israeli economy forward."

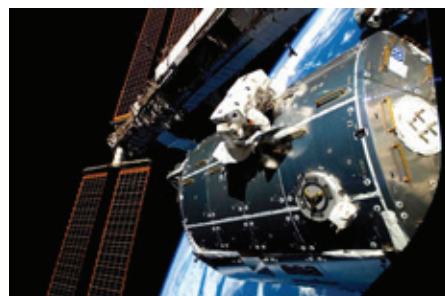
Boeing has worked in coordination with the Production and Procurement Directorate of the Ministry of Defense, as well with the Manufacturers' Association of Israel, to train and develop SMEs on the path to becoming Boeing suppliers. Boeing has assessed and provided training to over 60 Israeli SMEs. Recent examples include:

- Israel Aerospace Industries major structures work for the F-15 program; avionics and spare parts for the V-22 Osprey, the T-38 Talon and T-45 Goshawk;
- Elbit Systems providing sensors, processors and displays on many Boeing platforms, including the helmet mounted display, DIRCM systems and the electronic warfare suite for the H-47 Chinook;
- Key contracts and expertise sharing with small and medium Israeli suppliers, including RADA Electronic Industries Ltd., Sapphire, Ashot Ashkelon Industries, TAT Technologies Group and BAZ Airborne;
- Innovative development projects with small companies such as ALGOLION and Assembrix.

"Boeing's partnership with Israel extends

more than seven decades and the country has a robust and capable industry that can provide global support to both defense and commercial businesses," said Maria Laine, Boeing vice president, International Strategic Partnerships. "Boeing and the Israeli government's considerable investment in the aerospace industry will continue to serve as a growth accelerator in the country and as a bedrock for customers and suppliers to develop lasting partnerships."

AIRBUS AND ESA SIGN AGREEMENT TO CONTINUE ISS OPERATIONS



The European Space Agency (ESA) has signed an annual renewal contract with Airbus on continuing the operation and use of European components on the International Space Station (ISS). The contract is worth around €16 million.

For astronauts conducting research on the ISS, it is essential that all systems function reliably. An international team led by ESA is responsible for smooth operation of the life-support systems, power supply, flight control systems, laboratory equipment and experimental payloads in the European Columbus module.

The agreement between ESA and Airbus is valid until the end of 2020 and includes the following work packages:

- Support during operations, e.g. preparing and conducting experiments, as well as providing engineering support
- Preparing ISS missions, including the integration of ISS payloads
- Maintaining, repairing and developing systems
- Maintaining and developing software

Andreas Hammer, Head of Space Exploration at Airbus, said: "I would like to thank ESA for

their continued confidence in our employees' work. The ISS, the epitome of peaceful cooperation between many nations, has served as humanity's outpost in low Earth orbit for 20 years. Our dedicated systems experts help to ensure that the astronauts on board the station have a safe environment in which to live and work, enabling them to continue with their valuable research in zero gravity."

BOEING DELIVERS FIRST SUPER HORNET BLUE ANGEL TEST JET



Boeing has delivered the first Super Hornet test aircraft for the U.S. Navy's Blue Angel flight demonstration squadron. The unpainted aircraft now enters the flight test and evaluation phase at Naval Air Station Patuxent River in Maryland. Boeing expects to deliver a total of 11 aircraft for the squadron in 2020.

"The Super Hornet is an iconic representation of excellence in naval aviation," said ret. Admiral Pat Walsh, vice president of U.S. Navy & Marine Corps Services for Boeing. Walsh flew with the Blue Angels from 1985 to 1987 as the Left Wingman (#3) and Slot Pilot (#4). "As Boeing continues to support the operational fleet of Navy Super Hornets, we are excited to see this platform enter a critical phase of its journey to joining the team."

The flight demonstration squadron has flown Boeing or Boeing-heritage aircraft for more than 50 years, starting with the F-4J Phantom II in 1969, and then moving to the A-4F Skyhawk. The team currently operates the F/A-18A-D Hornet.

Boeing converts F/A-18 Hornets and Super Hornets into Blue Angels at the company's Cecil Field facility in Jacksonville, Florida. Major modifications include the addition of an oil tank for the smoke-generation system, fuel systems that enable the aircraft to fly inverted

for extended periods of time, civilian-compatible navigation equipment, cameras and adjustments for the aircraft's center of gravity.

Boeing is the world's largest aerospace company and leading provider of commercial airplanes, defense, space and security systems, and global services. As a top U.S. exporter, the company supports commercial and government customers in more than 150 countries. Building on a legacy of aerospace leadership, Boeing continues to lead in technology and innovation, deliver for its customers and invest in its people and future growth.

■ BOMBARDIER AVIATION ANNOUNCES WORKFORCE ADJUSTMENTS IN RESPONSE TO COVID-19 PANDEMIC

Bombardier Aviation announced today that it would adjust its workforce to align with current market conditions reflecting the extraordinary industry interruptions and challenges caused by COVID-19.

When the pandemic first arose, Bombardier Aviation responded quickly, suspending manufacturing operations to support local government efforts to slow the spread of the virus and to protect the health and safety of employees, partners and customers. Over the past month, Bombardier Aviation guided by health professionals and industry best practices, implemented comprehensive procedures and safeguards to further protect employees and communities as manufacturing operations resumed. Now with business jet deliveries, industry-wide, forecasted to be down approximately 30% year-over-year due to the pandemic, Bombardier must adjust its operations and workforce to ensure that it emerges from the current crisis on solid footing.

Accordingly, Bombardier Aviation has made the difficult decision to reduce its workforce by approximately 2,500 employees. The majority of these reductions will impact manufacturing operations in Canada and will be carried out progressively throughout 2020. Bombardier's worldwide

customer service operations have continued to operate largely uninterrupted throughout the pandemic.

Bombardier expects to record a special charge of approximately \$40M in 2020 for this workforce adjustment and will provide further information on its market outlook when it reports its second quarter financial results on August 6, 2020.

■ HI AIR TO INCREASE KOREAN REGIONAL CONNECTIVITY WITH PURCHASE OF TWO ATR 72 AIRCRAFT



ATR announces the sale of two ATR 72-500 aircraft from its asset management portfolio to Hi Air. With this purchase, the South Korean start-up, which began operations in December 2019, will increase its ATR fleet to four. The two additional aircraft will be delivered in August and October. Supported by the superior economics and versatility of the ATR 72, which burns 40% less fuel and emits 40% less CO2 than a comparable regional jet, the airline is already ready to grow its fleet and expand the number of routes it offers. This summer, Hi Air will launch services on five domestic routes, including to the popular tourist destination of Jeju Island. ATR aircraft are proven route openers, having opened 164 routes globally in 2019.

HyungKwan Youn, Chief Executive Officer of Hi Air remarked: "Selecting the ATR 72 to begin operations has been important for Hi Air's early success. Launching an airline is hugely challenging. To be successful, new airlines need an aircraft that is efficient, reliable and offers passengers a good in-flight experience. To be in a position already to expand our operations is because the ATR fulfills these criteria. At Hi Air, we believe that increasing regional connectivity in Korea will benefit passengers, communities

and businesses and we look forward to continuing this mission with the support of ATR."

ATR Senior Vice President Commercial, Fabrice Vautier, said: "Regional connectivity is more vital than ever and this is why the regional aviation segment will be resilient. In many countries, we are already seeing that domestic and regional routes are the first to return and in the case of Hi Air they continued to fly. Businesses, governments and people around the world are looking for solutions to this crisis and regional aviation has a key role to play. Our ATR aircraft have the right blend of economics and operational versatility to support airlines. Furthermore, with their advantage in fuel burn and CO2 emissions, they are the perfect solution to help aviation emerge from this global recovery as a more sustainable industry."

■ U.S. FAA FINALIZES DIRECTIVE RELATING TO 737 MAX POTENTIAL ENGINE POWER LOSS



The U.S. Federal Aviation Administration (FAA) has finalized its directive relating to the inspection of a key 737 MAX component that, if faulty, could result in engine power loss. The airworthiness directive was initially produced in February in response to a service bulleting issued by Boeing back in December 2019.

The directive related to concerns that certain 737 MAX exterior panels on top of the engine may lack the electrical bonding necessary to ensure adequate shielding of underlying wiring from the electromagnetic effects of high-power radio frequency transmitters and other sources. The FAA warned that it: "could potentially lead to a dual-engine power loss event and/or display of hazardous misleading" data, which could result in a "forced off-airport landing."

Boeing has confirmed that it supports

“the FAA’s airworthiness directive, which makes our recommended action mandatory” in addressing the potential impact of electrical energy on the 737 MAX. In December, Boeing said the issue affected airplanes built between February 2018 and June 2019 and that “the protective foil inside the composite panels may have gaps.”

Post inspection, airlines will replace any excessively reworked panels and modify an assembly, thus ensuring adequate electrical bonding.

AIRBUS A400M COMPLETES FULL PARATROOPER SIMULTANEOUS DISPATCH CERTIFICATION

The Airbus A400M new generation airlifter has successfully achieved certification of the simultaneous paratrooper dispatch capability and completed the full industrial development of the type’s paratrooping deployment capacity, with a maximum dispatch of 116 paratroopers using both side doors (58 + 58).

The certification flight test, completed in May 2020 in coordination with the French Armament General Directorate (DGA) and supported by the French and Belgian Armed Forces, combined an extensive paratrooping campaign of more than 1,000 jumps along with the implementation of new capability development methodologies based on recording and 3D modelling of paratrooper jump trajectories.

“This certification completes a challenging journey to achieve this next generation capability. The achievement reinforces the strategic value the A400M already offers to air force operators and society, as demonstrated during Covid-19 times,” said Dirk Hoke, Chief Executive Officer of Airbus Defence and Space.

With the completion of this key milestone, the A400M excels in its paratrooping role, being able to carry 116 paratroopers who can jump two at a time from the ramp in freefall, or through the paratroop side doors with automatic parachute opening, a state-of-the-art capability that greatly increments its operational possibilities.

The picture above shows the successful dispatch of paratroopers during the flight test campaign over Ger Azet drop zone in southern France in September 2019.

JAPAN’S NATIONAL POLICE AGENCY ORDERS FIVE NEW HELICOPTERS



Japan’s National Police Agency (NPA) has ordered one new H225 and four H135 helicopters as part of its fleet modernisation programme.

Currently operating 12 H135, four H155 and six AS365 helicopters, with one H215 and two H225 already on order, NPA deploys its growing fleet for missions including law enforcement, personnel and VIP transport, goods transportation, disaster relief, as well as wide area support. The five new helicopters will complement the agency’s law enforcement capabilities. The new order will take NPA’s Airbus fleet to 30.

“Airbus Helicopters treasures the opportunity to support Japan’s wide-ranging law enforcement missions for more than 30 years with our light twin, medium and heavy-lift helicopters. We thank NPA for its continued trust built over the years, and welcome the agency as a new customer for our SuperPuma helicopters. With an enlarged fleet not just in numbers, but also in range and capacity, we are fully confident that the new helicopters will be a timely addition, reinforcing the agency’s operations,” said Guillaume Leprince, Managing Director of Airbus Helicopters Japan.

BELL BOEING DELIVERS 400TH V-22 OSPREY TILTROTOR AIRCRAFT

The Bell Boeing V-22 team recently delivered its 400th aircraft, a CV-22 for

U.S. Air Force Special Operations Command.

The first production V-22 was delivered on May 24, 1999, and today deliveries occur under the Multi-year Procurement III contract valued at \$5 billion. That contract runs through 2024 and includes variants for the Marines, Air Force, and Navy, as well as the first international customer, Japan.

“I want to thank everyone who has made the V-22 successful for their hard work and dedication to the women and men who operate the Osprey,” said Shane Openshaw, vice president of Tiltrotor Programs and deputy director of the Bell Boeing team. “We’re focused on building and supporting these incredible aircraft so our customers can complete their air, land and sea missions worldwide.”

The V-22 takes off, hovers, and lands like a helicopter yet flies long distances like a turboprop aircraft. The CV-22 variant performs special operations missions, including infiltration, extraction, and resupply, that conventional aircraft can’t. The Marine Corps variant, the MV-22B, provides the safe and reliable transportation of personnel, supplies, and equipment for combat assault, assault support, and fleet logistics. The Navy variant, the CMV-22B, is the replacement for the C-2A Greyhound for the carrier onboard delivery mission.

“It’s been over 20 years since the first production V-22 was delivered and we are proud to reach another milestone in our 400th delivery. V-22s continue to be in high demand, protecting our country and our allies around the world through combat operations, international training partnerships and humanitarian missions,” said Marine Corps Col. Matthew Kelly, program manager for the V-22 Joint Program Office (PMA-275). “This platform’s impact can’t be overstated.”

The V-22 has been deployed in a variety of combat, special operations, and humanitarian roles since becoming operational in 2007. Having accumulated more than 500,000 flight hours, the V-22 is safe, survivable, and combat proven. Bell Boeing’s post-delivery support includes maintenance, modifications, supply chain expertise, data analysis and more than 160 field operations employees embedded at customer locations.

“Consistent operations, quality delivery and commitment of promise to our customers” - Blue Dart



Tulsi Mirchandaney, the Managing Director of Blue Dart Aviation tells the Aviation Update Magazine Chief Editor Mr. B. Kartikeya on how they are armed to combat the pandemic hurdles by offering CONTACTLESS DELIVERY to its customers

How is Blue Dart assisting Indians in fighting against the COVID19 pandemic? Can you shed some light on your Contact Less Delivery?

We've pitched in to support our nation during previous disasters – the Bhuj

earthquake in 2001 and the Tsunami in 2004 - ferrying relief materials to areas inaccessible to other modes of transportation. It's no different during this pandemic. Our teams in our domestic express services and our aviation network have stepped in to bridge the gap in transporting essential supplies

when passenger airlines are grounded and the country has been under a complete lockdown. As part of essential services, we've worked through the lockdown, flying across our domestic network and launching our international operations to Guangzhou, Shanghai, Dhaka, Hong Kong and Yangon, carrying vital supplies including ventilators, PPEs, testing kits, reagents, enzymes, respirators, surgical masks, goggles and gloves amongst other medical and pharmaceutical supplies. Blue Dart is also working closely with the Government of India, several State Governments, Municipalities, pharmaceutical companies, hospitals and other research institutions to help the nation fight this war against the COVID-19 pandemic.

We recently rolled out the Contactless Delivery feature for our popular Door-to-Door Express pick-up and delivery services under the strictest health and safety standards and procedures, designed to minimize or eliminate contact during the delivery of shipments. Customers availing this service need to opt for digital payment through the acceptable payment modes rolled out, such as digital wallets, net banking, credit & debit cards, and UPI (BHIM). Our primary focus has always been to serve our customers with the best quality services, whilst adhering to the protocols of the Health Ministry. When delivering & collecting shipments, we have set up guidelines to ensure that utmost care is taken in preventing spread of the contagion.

When passenger airlines are converting or utilizing a few birds from their fleet for transportation of essentials, is it going to show any effect on your operations?

The imperative need of the hour is to support our nation and our people. Blue Dart Aviation is playing its part in ensuring continuity of the mission-critical pharmaceuticals and medical equipment supply chain. We have partnered closely with the Ministry of Civil Aviation to join in the national effort during this difficult time.

Amidst a global health crisis like the current pandemic, there is a huge demand for transporting essential goods and medical equipment. When the lockdown was announced, Blue Dart sought to strengthen

the nation's medical infrastructure, with its wide network across numerous pincodes, as a traditional express trade facilitator. We are working across multiple industries and sectors to enable deliveries to businesses and individuals. Our Contactless Delivery service is keeping the health and safety of all paramount. We are firmly committed and honored to be a part of the Government's 'Lifeline Udan' initiative and are immensely proud of our teams at the frontline who are working around the clock to deliver essentials and non-essentials in a time-bound manner.

How are you planning to gain over operating costs during this period of crisis?

Our operations have been consistent over this pandemic period, as well as our focus on quality delivery and commitment of promise to our customers. We shall continue to add strength to the nation's medical and critical supply-chain infrastructure, and play our role as the nation's trade facilitator by working across more industries and sectors such as banking, insurance, financial services, consumer electronics, FMCG, e-commerce, among others, providing a reliable logistics network as they exit from the lockdown to 'business as usual'.

What are the challenges in India that made Air freighter services very limited in numbers?

The COVID – 19 pandemic brought the industry to the fore as it gave operators the opportunity to augment their services and provide the necessary support to the Government of India in their 'Lifeline Udan' effort by transporting essential goods and medical equipment, as well as agricultural produce to support farmers and reduce wastage. Air freight has proved that it is truly a lifeline during critical situations.

The biggest challenge for the industry has been cost, which inhibits access to produce where the unit costs are comparatively low, but the potential for distribution across a wide geographical area such as ours is a huge opportunity. The cost of ATF with the additional state VAT, together the depreciation of the Indian rupee imposes a huge cost burden, as well as the high cost of infrastructure across airports which primarily cater to passenger airlines. These factors curb the potential growth of the air freight industry.

What do you think would be the short & long term effects of COVID-19 crisis on Air freighters? What would be the operational changes that are going to take place?

The global COVID-19 pandemic has undoubtedly posed an incredibly large set back, with the grounding of aircraft and the resultant impact on transportation, travel, trade and related industries. While passenger

airlines slowly resume services, the air freight industry has really been working overtime during the various phases of the lockdown, and even as we exit, whenever that happens, to ensure a reliable and efficient supply chain for essentials as well as non-essentials.

These are uncertain times. However, at Blue Dart, we are working on a 2-pronged strategy to prepare the logistics infrastructure for future readiness while we continue our focus on our core, quality and time-definite deliveries, and ensure both lines operate smoothly – essential supplies to fight COVID-19 together with all other non-essential supplies in the pipeline.

Our primary role currently is to support the nation and ensure supply chain continuity. We shall continue to add strength to the nation's medical and critical supply-chain infrastructure, through the nation-wide lockdown period and after, while keeping our Blue Darters' safety a priority.



Non-destructive testing can aid aircraft refurbishing market absorb global pandemic shockwaves

By Avimanyu Basu

Background

Non-destructive testing (NDT) can be represented as a set of aircraft inspection methods which spans a wide range of technologies, from analysis of 3D images of cracks, corrosion, dents in metals and composite materials to manual techniques like liquid penetrant and magnetic particle testing. With the adoption of composites and 3D-printed components in aircraft manufacturing, a requirement for testing the endurance of complex nomenclatures is being realized. NDT bridges this gap with its capability to access components down to the material levels. Some of the conventional NDT technologies are the following:

Penetrant Testing (PT) and Magnetic Particle Testing (MT): Some of the conventional ways of detecting surface-breaking defects in metal and other nonporous materials are Penetrant testing (PT) and magnetic particle testing (MT). These NDT technologies have been used for decades but, with their own set of limitations in functionalities i.e. PT is capable of detecting only surface cracks and involves human intervention in handling chemicals, while MT is applicable on ferromagnetic materials alone. The other challenges for both methods include surface preparation and chemical disposal which are often time-consuming even with a skilled inspector without the provision of a detailed digital record of the inspection results. In case of a hazardous or hard to reach area, further delay can be expected.

Ultrasonic Testing: In case of ultrasonic testing, the instruments and probes initiate high-frequency sound energy to detect



defects such as porosities, delamination, and foreign particles in composites and anisotropics. The defects usually occur on the surface or within a layer of fibre or resin, often introduced during the materials fabrication. With immediate and precise results, along with a digital template that can share and store data, ultrasonic testing addresses some of the challenges encountered with PT or MT.

Eddy Current Testing: it is another swift, precise, and chemical-free technique for detecting surface and sub-surface defects such as cracks, corrosion, and heat damage. It is often used for inspecting airframe skins, stringers, frames, rivet holes, tubing, and other ferrous and non-ferrous components. The methodology involves inducing changing electromagnetic field from a probe or coil into a metal surface. Any cracks or

disruption in the metallurgical structure will deviate the flow. These distortions are analyzed and presented in a digital graphic format to identify the glitch.

NDT is gradually evolving to address the shortcomings of the above technologies, thus, maturing into a more airtight technology segment, reinforced by dynamic market drivers. Some of the key technologies are as follows:

Technology trends

Adoption of Neutron Imaging: One of the emerging NDT technologies is neutron imaging, which can detect deeply embedded catch flaws and defects that often goes unnoticed due to the complexity in detection. The methodology leverages neutron radiography which transmits a stream of neutron radiation to inspect the internal structure of a component. Neutron imaging is appropriate for detecting cracks and voids in energetic materials, ceramic fragments in turbine blades, structural weaknesses in composites and 3D-printed components. With capability to interact only with the nucleus and discarding the electrons, neutron radiation is opaque to lighter materials. This is mainly because atomic nuclei have very high density and it is difficult for the radiation to penetrate. This level of insight in the sub-atomic levels is often useful for materials study of components such as turbine blades.

Rapid softwarization of ecosystem: The role of software has become more critical in NDT, sometimes in fortifying the capabilities of instruments and sometimes in providing a single-pane-of-glass mechanism in holistically managing the overarching process. The signal-to-noise ratio (SNR) of some eddy current instruments, for example, restricts their abilities in identifying minute flaws and loss of material that occurs due to friction stir welds and multi-layer structures. The embedded software in instruments supporting single and dual-frequency eddy current, rotating scanners, and conductivity with viewing tools negates this limitation due to SNR. Furthermore, Germany-based DÜRR NDT's proprietary web-based application Drive NDT enables the unification of NDT workflow, bringing test procedures on to a single system. The system brings together all procedures, from order entry, inspector assignments, equipment, instructions, to test

report generation, approval and archiving. This centralized methodology drives workflow control providing a real-time view of the inspection orders.

With technology innovation, the market is leapfrogging into maturity, exhibiting fast growth. Some of the market trends are as follows:

Changing market dynamics

M&As consolidating the NDT market rapidly: The NDT market reflects a high degree of consolidation, particularly in the US and Europe. While the larger companies are killing competition by acquiring smaller ones, the stakeholders are also expressing significant interest on research-driven, niche technology specialists such as spin-offs from a technology lab or a technical institution. The acquisition of TEAMS (Testing and Engineering of Aeronautical Materials and Structures), which is a spin-off from the University of Seville, Spain by US based aerospace testing specialist Element Group can be cited as an example. TEAMS held a Nadcap accreditation for destructive testing, non-metallic testing and non-destructive testing and further reinforces Element's portfolio in NDT. Earlier, Element also acquired UK based materials testing company NDT to increase its capabilities in non-destructive testing, mechanical testing and metallurgical testing service provider in Europe. Its recent acquisition of UK-based Aerotech expanded its radiography capabilities, spanning digital, film, high energy, and computed radiography capabilities. US-based Sintavia's acquisition of its Hollywood-based neighbour QC Laboratories is also an example of killing competition in the local market.

Collaborative Go-To-Market Strategy: The market witnesses a drift from the conventional typical surface-only inspection technology to detailed analysis, particularly for hard-to-reach structures in an aircraft. For this kind of in-depth analysis, the stakeholders are also adopting a more collaborative GTM directed towards offering a holistic material testing solution to the customers. Spirit AeroSystems, for instance, has partnered with NDT Solutions for the commercialization of Spirit's ultrasonic inspection technology for integrated composite structures. Also, composite aerostructures manufacturer Strata Manufacturing collaborated with France-based Assistance Aéronautique et

NDT is poised to become a critical element in the end-to-end process of identifying glitches before they affect uptime and the safe operation of aircraft

Aérospatiale (AAA) for aircraft manufacturing support services involving NDT.

Cross-vertical collaboration to drive innovation: Aerospace has often been a point of confluence for innovations from various industries. Consistently, market participants from different verticals has been exploring opportunities with NDT in aerospace industry. Creaform, which offers NDT solutions for the oil and gas industry, has been looking at partnering with aircraft manufacturers to test a new surface inspection metrology solution. The solution uses 3D scanning to analyse external surface defects on aircraft parts due to bird strikes, lightning and hail damage. Also, Japanese optics and reprography specialist Olympus' adaptive ultrasonic phased array can be used for ultrasonic inspection of composite components with complex structural nomenclatures. The technology leverages precise alignment of the ultrasonic beams to the object's actual shape and deliver high efficiency in inspection reducing rescan instances.

Product engineering alterations: From a product engineering perspective, the NDT instruments are undergoing considerable transformation. Ergonomics for eddy current tools, for example, are being modified to make them lighter and less arduous to use. Along with this, a portable dashboard (sometimes with touchscreen) supporting the display of multiple signal outputs simultaneously, are being attached to the instruments presenting an end-to-

end visual experience for the inspectors. On top of this the software and the connectivity layer provide the storage of eddy current test configurations in the instrument as well as modify the signals for test applications. Different probe types are supported with provisions of USB, Wi-Fi, and Bluetooth connectivity.

The way ahead

With the impact of COVID-19 pandemic, the global commercial aerospace industry is expected to shift focus from manufacturing new aircraft to the remodeling and refurbishing of old aircraft. This would necessitate intrinsic testing of components, to undertake a cautious assessment of parts which are usable and the ones which needs to be replaced. NDT is expected to play a significant role in accelerating this assessment, reducing the time to make an aircraft ready to be airborne again. The disruptions in the aerospace manufacturing segment are expected to have considerable additively manufactured or 3D-printed parts in these models which needs to be tested appropriately across product design, quality assurance (QA), and failure analysis phases. Specific components such as turbine blades, which are cast from lightweight metal around ceramic cores, can use NDT for testing its endurance against a jet engine's high-temperature operating environment. Its entrenched hollow air-cooling channels can be effectually designed to prevent breaking or melting. Moreover, during manufacturing, small amounts of ceramic, which are sometimes suspended in cooling channels, restricts airflow. Moreover, small amounts of ceramics that may be remnants from manufacturing. As a result, failure of a single blade leads to collapse of an entire jet engine. A resilient NDT-driven QA process can be employed to identify blades with flaw. Insights from these testing processes can also benefit other industries such as energy and utilities through advanced design of wind turbine blades.

To conclude, as the aviation industry jumps back to normal operations, refurbishment and maintenance requirements are expected to become more demanding. NDT is poised to become a critical element in the end-to-end process of identifying glitches before they affect uptime and the safe operation of aircraft.

Airbus announces Rémi Maillard as the President of Airbus India and Head of South Asia

Airbus has appointed Rémi Maillard as President of Airbus India and Managing Director of South Asia region, effective September 01, 2020. Rémi, currently Head of Airbus Services, will succeed Anand Stanley who will move to Singapore as President, Airbus Asia-Pacific. Both report directly to Christian Scherer, Chief Commercial Officer and Head of International of Airbus.

In his new role, Rémi will lead Airbus' business in South Asia. He will be responsible for commercial aircraft sales and business development, and he will manage Airbus' regional footprint, which includes engineering, innovation, customer support and services as well as training. He will also help progress Airbus' top defence and helicopters campaigns and boost the company's 'Make in India' programmes.

As Head of Services, Rémi has been responsible for growing the Airbus commercial aircraft Services business and



overseeing maintenance, upgrades, flight hour services, and training operations with a focus on creating value for customers and enhancing their operational performance.

"Rémi has rich experience in the Airbus organisation and is the right person to take on the lead of the company in India

and South Asia - a region that is both a key growth market as well as a resource base for us. His skills and personality will contribute to further consolidate Airbus' strong position in the region," said Christian Scherer, Chief Commercial Officer, Airbus and Head of Airbus International. "I warmly thank Anand for strengthening the local footprint of Airbus here and look forward to continuing working with him in his new role in the Asia Pacific region," said Scherer.

Rémi, 40, joined Airbus in 2008 and has held several leadership roles. He started his career at Airbus Helicopters, leading a transformation programme for the company's Research and Development activities. Rémi then served as the Chief Engineer of the Tiger programme before playing a key role in the development of the H175 programme and its Entry-into-Service as the Chief Engineer. He also held the position of Head of Development Chief Engineers spearheading engineering activities for major helicopter development programmes. Prior to joining Airbus, Rémi worked as an Associate Director with a consulting firm specialising in industrial strategy. Rémi holds degrees in Engineering and Master of Business Administration (MBA) from Ecole Nationale des Ponts et Chaussées in Paris.

Gulfstream names Naveed Aziz VP and General Manager of Dallas operations

Gulfstream Aerospace announced Naveed Aziz has been promoted to vice president and general manager of the Gulfstream Dallas facility. He will oversee service center operations and Gulfstream G280™ completions. He succeeds Robby Harless, who retires this month.

"Naveed has been a valuable asset to our next generation of aircraft," said Greg Collett, senior vice president, Manufacturing and Completions. "In his current role as director of Completions Research and Development, he led development and certification of the award-winning Gulfstream G500 and Gulfstream G600 interior and oversaw development of the all-new Gulfstream G700 interior, including the G700 cabin mock-up. We look forward to his continued success in Dallas."

Aziz began his career at Gulfstream in 1996 as an engineering co-op, designing avionics and electrical systems for the Gulfstream GIV™ and Gulfstream GV™. He has held several positions within the company and was most recently promoted to director of Completions Research and Development in 2012. In this role, Aziz was responsible for designing, engineering, testing and certifying interior elements and cabin systems for new products.

Aziz earned his Master of Business Administration and his bachelor's degree in electrical and electronics engineering from Mercer University.



Embraer announces Arjan Meijer as President and CEO of Commercial Aviation business

Embraer started its restructuring process with the reintegration of the commercial aviation business and announces Arjan Meijer as the new President and CEO of Embraer Commercial Aviation, succeeding John Slattery. Arjan will report directly to Embraer President and CEO Francisco Gomes Neto, and the move will be effective immediately.

Arjan, 47, has been Chief Commercial Officer of Embraer Commercial Aviation since January 2017. In his role as CCO at the company, he has been responsible for the global Marketing and Sales functions across six different regions, helping the company to achieve 35 airline deals. He joined the company in April 2016 as Vice President of Commercial Aviation for Europe, the Middle East, Africa, and Russia.



Prior to joining Embraer, Arjan spent 15 years in various executive roles at the KLM Group. His last two roles were Vice President of Technical Services and Fleet Development at KLM's regional subsidiary KLM Cityhopper and Managing Director at KLM UK Engineering in Norwich. Arjan earned a Master's in Aeronautical Engineering from

Delft Technical University in the Netherlands and a Master's in Business Administration from Purdue University in the United States.

"Arjan has done a fantastic job as the head of sales for Embraer Commercial Aviation. He has the energy, international experience, and skillset to lead our commercial aviation business at this unique moment," said Francisco Gomes Neto.

John Slattery is leaving Embraer to take an opportunity with one of the company's main partners in the industry. Since July 2016, he has been leading Embraer Commercial Aviation. Prior to that, he was the business unit's Chief Commercial Officer since November 2012.

"John has played a central role at Embraer during a challenging time, and we thank him for his dedication and tireless service to the company, as well as its customers, employees, and partners," said Alexandre Silva, Embraer Chairman of the Board. "Fortunately, the industry will keep counting on him as he will continue to work in the aviation sector."

Anand Stanley appointed President Airbus Asia-Pacific

Airbus has named Anand Stanley as President Airbus Asia-Pacific, effective 1 July 2020. Based in Singapore, Anand Stanley will lead the strategy and future positioning of Airbus and its divisions across the region. In this role he will have responsibility for commercial aircraft sales and customer affairs, group-wide government affairs, industrial and joint venture partnerships, as well as the local operations at Airbus sites across the region.

Anand Stanley reports to Christian Scherer, Airbus Chief Commercial Officer and Head of International, and will work closely with the Heads of Region for the Airbus Helicopters and Defence and Space divisions who are co-located at the company's Asia-Pacific headquarters in Singapore. Anand Stanley joined Airbus in 2018 as President & Managing Director of Airbus India, where he has overseen the Airbus business development and advanced the company's position with key stakeholders, including customers, government agencies and industry partners.

Prior to joining Airbus, Anand Stanley held senior positions in the civil aerospace, defence and helicopter markets, as well as in strategic management and M&A planning, having worked with the Linde Group, UTC, Pratt & Whitney, Lockheed Martin and Sikorsky. Over his career he has worked extensively internationally, with more than two decades of involvement in Asia and the Pacific region.

"Anand has brought a wealth of experience to Airbus and managed the company's operations in India with very positive results," said Christian Scherer. "His proven track record makes him the right choice to lead Airbus in the key Asia-Pacific market. We know that we can count on Anand to focus on supporting our customers in these most challenging times, while developing further our position as the leading partner for the aerospace sector in the region." Anand Stanley has an MBA from the University of Virginia-Darden in the US, a Bachelors of Engineering from Andhra University, as well as a postgraduate degree from IMI-Delhi.





Air bp appoints Martin Thomsen as new CEO

Air bp has announced that Martin Thomsen will assume the role of Chief Executive Officer, Air bp, on July 1, 2020. He will succeed Jon Platt, who has successfully led the business since 2016 and who will retire from bp later this year after a distinguished career spanning over 30 years.

Thomsen has been with bp for 15 years and has held several positions across the downstream business. He joins Air bp from his previous position as retail director and fuels country integrator for Austria, Switzerland and Turkey. Martin's previous roles include fuels general manager Turkey, retail operations manager Spain, and commercial optimization fuels Iberia and retail Europe strategy and business development.

Boeing Names D'Ambrose as Human Resources Leader

Boeing named Michael D'Ambrose as executive vice president of Human Resources, effective July 6. He will succeed Wendy Livingston, who has served in an interim capacity since April.

In this role, D'Ambrose will be responsible for the company's leadership and learning, talent planning, employee and labor relations, total rewards, and diversity and inclusion initiatives. He will report to Boeing President and CEO David Calhoun, serve on the company's Executive Council and be based in Chicago.

"Michael is joining Boeing at a critical time as we align our workforce with what will be a smaller and more competitive aerospace industry in the coming years," said Calhoun. "He brings to this effort and our other business priorities extensive experience leading through organizational change, passionate advocacy for diversity and inclusion, and commitment to identifying, developing and retaining the industry's top talent.

"I'd also like to thank Wendy for her tremendous leadership in recent months,



particularly as we navigated the pandemic's initial impact on our business and people," Calhoun added. "I look forward to her continued support and success as we further strengthen our world-class Human Resources team and position Boeing as a global employer of choice."

D'Ambrose joins Boeing from ADM, one of the world's largest agribusinesses and a global leader in human and animal nutrition, with more than \$60 billion in annual revenue. He has served as senior

vice president and chief human resources officer at ADM since 2006. In that role, he led the continued modernization of all global human resources activities, as well as the enterprise transformation of ADM through significant organic growth and M&A activity over the past decade.

While at ADM, D'Ambrose founded and led Together We Grow, a group of industrial, educational, non-government organization and legislative partners focused on driving diversity and inclusion – and building a strong talent pipeline – throughout the U.S. food and agriculture sectors.

D'Ambrose has more than four decades of business experience across multiple industries, spending the past 14 years at ADM. Prior to that, he led global human resources teams at companies such as Citigroup, First Data and Toys 'R' Us.

D'Ambrose holds a bachelor's degree in industrial and labor relations from Cornell University, where he chairs the advisory board at the Center for Advanced Human Resource Studies. In 2016, he was inducted as a fellow of the National Academy of Human Resources. He also is a certified recreational pilot.

Livingston will support a thorough transition of responsibilities before resuming her previous role as vice president, Corporate Human Resources.

“Due to the increasing demand for Aerospace and Defence equipments for the armed forces, India becomes promising markets in the world.”

**Aviation Update
Magazine chief editor
Mr. B. Kartikeya talks
to NALSAR University's
registrar
Prof. V. Balakista Reddy
on the changing face of
Aerospace and Defence
sectors generating jobs
for the aspirants**



Could you tell me about yourself and your contribution to the field of Aerospace Law?

After completing my LL.M. in International Law from Osmania University, I pursued M.Phil. and Ph.D. in Air and Space Law from Jawaharlal Nehru University, New Delhi (“JNU”). I joined NALSAR University of Law, as Assistant Professor in the year 2000 and elevated as Associate Professor in 2005 and later as Professor of International Law in the year 2009. In 2014, I was appointed as Registrar, NALSAR. Since the beginning, I am not only teaching and guiding students but also introduced various innovative and value added courses in the field of Aerospace and Defence Laws. While doing teaching and research, I contributed extensively to various national and international journals and published books on Air Law and Policy in India, Recent Trends in International Space Law and Policy, Emerging Trends in Air and Space Law, Space Law and Contemporary Issues which received international acclaim.

Could you tell us brief about University and the Centre for Aerospace and Defence Laws (CADL)?

NALSAR University of Law, Hyderabad, is a government institution of national eminence in the field of legal education and research. It is a residential University established in 1998 under the National Academy of Legal Studies and Research University Act (Act 34 of 1998) and has been approved by the Bar Council of India as well as the University Grants Commission. The quality of academic instruction and research at the Institution has been recognized nationally. The University has been graded as Category-I University by the UGC under the Categorization of Universities (only) for Grant of Graded Autonomy Regulations, 2018. Additionally, NALSAR has been accredited by NAAC with an ‘A’ grade (A++ as per new grading system) with a 3.60 CGPA out of 4.00, which is the highest score among all the National Law Schools evaluated till date.

NALSAR has consistently been ranked as the number one Law University in India and

has always endeavored to promote quality research in contemporary legal issues. One of the contemporary but neglected areas in the Indian legal realm is Air and Space laws. To fill this gap and to promote further studies and research in this area of law, the University established the Centre for Air and Space Law (CASL) in 2005. Since then, NALSAR-CASL has inarguably emerged as a leader in promoting the study of and training in the specialized fields of Air and Space Law. Recently the Centre has been upgraded as Centre for Aerospace and Defence Laws (CADL).

Are courses offered through Directorate of Distance Education (DDE) at NALSAR recognized?

Yes, NALSAR University has been graded as Category-I University by the UGC and is recognized as per the Clause 4.10 of the Categorization of the University under [Categorization of Universities (only) for Grant of Graded Autonomy] Regulations,

2018. The Courses have also been recognized by United Nations under "Education Opportunities in Space Law: A Directory" as notified by the Secretariat of the United Nations on 23rd March 2017 in the document "A/AC.105 /C.2/2017/CRP.10."

What contents will be provided in the two years M.A. and one-year P.G. Diploma Courses? How are these courses conducted?

The courses (M.A. & P.G. Diploma in Aviation Law and Air Transport Management) provide an introduction to law and also management initially. Later, on the core legal side, the course will cover subjects like International and Domestic Air Laws; Aviation Safety, Security and Liability Law; Aviation Contracts & Tenders, and Aviation Corporate Laws besides Air Transport Economics and Statistics. In the management sphere, subjects like Airport Management; Airline Management, Aviation Marketing etc. are covered. Additionally, in the final semester of M.A. programme, the students will have to submit a dissertation on a selected topic.

The course on M.A. (Security and Defence Law) begins with an Introduction to law, international security, Diplomacy and Conflict Resolution. Additional areas covered include, Defence Technology and Defence Laws, International Institutions and Global Security, Defence Management and Strategic studies. The course also touches upon the contemporary subjects like Defence Contracts and Tenders, Defence Procurement Policies, Defence Laws and Policies in India, Regional security and Global Governance, Terrorism and Counter-Terrorism, Aerospace and Maritime Security, Cyber Space and Cyber Security etc. In the final semester, the students will have to submit a dissertation on a selected topic.

The curriculum of the M.A. (Space and Telecommunication Laws) programme includes the General Principles of Law, International Space Law, Telecommunication Laws both International and National, Technology and its relation to Space and Telecommunications. Related areas such as IPR Issues in Space and Telecommunication technology, Commercialization and issues relating to the Cyberspace and security threats, laws relating to remote sensing and geospatial data and also contemporary issues in space and telecommunication sector are further explored. In the final semester, the students will have to submit a dissertation on a selected topic.

The course on P.G. Diploma (Advanced Maritime Laws) begins with the introduction of law and maritime security. Later on, the course deals with the specific subjects like International Maritime Laws, Maritime Security and Law of the Sea, Maritime Laws in India, International trade and Maritime Transport Services, and Maritime Laws and contemporary issues.

The syllabus of P.G. Diploma (GIS and Remote Sensing Laws) include General Principles of Law, Remote Sensing Technology and Law, GIS Technology and Law. Niche areas such as Coastal Mapping and Coastal Zone Management, Satellite Technology, Remote Sensing, GIS and IPR Issues, and Remote Sensing and GIS Applications in Resource Management are also examined in the course.

Personal Contact Sessions will be conducted through onsite lectures and are live-streamed as well, in case any student is unable to attend personally. Candidates will be allotted case-study/assignments for assessment and will be provided with the Self Learning Material

and support through email and remote accessibility of e-resources such as Manupatra, Hein Online, JSTOR, SCCOnline etc.

What are the eligibility criteria and who can pursue these courses?

Candidates with Bachelor's Degree in any discipline from any recognized University can pursue the said Programmes. In addition, candidates with 3-year Degree/Diploma in Aircraft Maintenance Engineering (AME) are also eligible to apply for Aviation courses. However, the AME students have to produce an experience certificate of not less than 3 years.

I am a full-time regular employee. Am I eligible to pursue these courses? How to apply for these Courses?

Yes. These courses are offered through Onsite-Online mechanism using the Open Distance Learning mode. There will be Personal Contact Sessions for a duration of 5-7 days in a semester which are live-streamed and archived for latter accessibility for the enrolled students. For the remaining period, guidance will be provided through emails / website. Attendance at the contact sessions is not mandatory but strictly recommended so that the candidates can get the inputs of experts and can gain subject knowledge. Students can also take these courses while pursuing their regular studies.

The Online Application Form is available on the website <http://nalsarpro.org/>. The duly certified hard copy of the submitted 'Online Application Form' along with the enclosures listed below should reach 'The Directorate of Distance Education, NALSAR University of Law, Justice City, Shameerpet, Medchal District, Hyderabad – 500101; Telangana, India' within 10 days from the date of submission of online application. In the event of non-functioning of the postal services, hard copy of the enclosures should be sent immediately after the postal services resumes.

What is the application deadline and what is the selection process?

The last date to apply for the academic year 2020 – 2021 is 31st July, 2020. Direct Admissions are subject to fulfilment of the eligibility criteria for the said course.

What is the fee structure for these courses?

S. No.	Name of the Course	Course Fee
1.	Two-Year M.A. (Aviation Law and Air Transport Management)	Rs. 40,000/- p.a. (for Defence Personnel- Rs. 35,000/- p.a.)
2.	Two-Year M.A. (Security and Defence Laws)	
3.	Two-Year M.A. (Space and Telecommunication Laws)	Rs. 40,000/- p.a.
4.	One-Year P.G. Diploma (Aviation Law and Air Transport Management)	Rs. 30,000/- (for Defence Personnel- Rs. 25,000/-)
5.	One-Year P.G. Diploma (Advanced Maritime Laws)	
6.	One-Year P.G. Diploma (GIS and Remote Sensing Laws)	Rs. 30,000/-

What is the schedule for the personal contact sessions/Online classes and where do we attend them?

The schedule will be intimated to the students in advance through email. Tentatively classes will be conducted for seven days for the M.A. programme and for five days for the PG Diploma programme in a semester. The classes will be conducted at NALSAR Campus, Shameerpet and can be attended through online mode also. However, the exams will be held on campus, i.e. NALSAR University of Law, Justice City, and Hyderabad.

What is the pattern of evaluation and schedule for the examinations?

Evaluation for courses includes assignments and a written examination. Each paper is evaluated for 100 marks out of which 30 marks are for assignments and 70 marks for the end term written examination. In case of M.A. Programme, students have to submit a Dissertation in the IV Semester on a selected topic, which carries 150 marks for written submission and 50 marks for viva-voce.

How will the quality of the syllabus and readings be ensured and continually updated to t the changing needs and requirements?

Recognizing the dynamic nature of courses being offered and the need to constantly evaluate and update them, NALSAR University has constituted a high-powered Committee consisting of Judges, Experts from Aviation and Defence Industries, Senior Professors of Law and Management etc.

Thus, we have begun with the fundamental belief that students of these courses can learn better only if they are provided with up-to-date information. We therefore intend to undertake periodic revision of our reading material. Lastly, apart from the reading material, we will also provide updated information to our students through website and email and also provide remote access of e-resources such as Manupatra, HeinOnline, JSTOR, SCCOnline etc. for projects submission and dissertation.

What employment opportunities will the students have after the

completion of these courses? Whether NALSAR will provide job guarantee or job assistance?

Aerospace and Defence sectors being truly international in nature do not confine themselves to Indian borders. Students pursuing these courses will be able to enter the global market and boost their career profiles. Students can expect employment as Managers (Airline Managers, Safety and Security Managers, Operations Managers, International Relations Manager (Handling, Bilateral and Traffic Rights), Legal and Financial Consultants etc. Job opportunities are also available in Government Organizations such as the DGCA, AAI and various Defence organizations. NALSAR being a Government Institution cannot guarantee you a job, we will however, provide assistance and guidance to students who are looking for jobs after completing the course by encouraging smooth interaction between students and prospective employers.

Due to an increasing demand of Aerospace and Defence equipment for the armed forces, India continues to be one of the promising markets in the world. Recently, FDI limit has been increased from 26 percent to 49 percent in the Defence sector under the automatic route and above 49 percent on a case-to-case basis under the approval route. The policy aims to promote the programs like 'Make in India', 'Made in India', 'Skill in India' etc. to help the private industries also. With the Increasing private participation in Indian Defence Industry, there are now huge job opportunities. The new entrants like Reliance, TATA, Mahindra etc. are now entering into Defence manufacturing, and hence require people with domain knowledge and expertise in the Defence industry.

How these programs will help various stakeholders in Aerospace and Defence industries in India?

Indian Aerospace and Defence sectors are the fastest growing industries among the world. These programs will be beneficial for the Serving members of the Aerospace and Defence industries, policy makers and stakeholders working in the government departments, public sector undertakings, negotiators and diplomats who represent the country in the negotiations for



various Defence procurements, Aerospace Engineers/Students pursuing Aerospace Engineering, Law Graduates desiring specialization in aerospace and Defence Laws, M.B.A students and Graduates undergoing various aerospace, Defence and strategic studies related Programmes can all benefit from these specialized programs.

Additionally, there is a high demand for law professionals with expertise in aerospace and Defence laws. With the help of these programs, the candidates can be well placed for roles in international institutions, government departments (ministries of foreign affairs, Defence, justice, home affairs and development), non-governmental organisations, law firms and also in private sectors (aerospace and Defence companies).



The economy would revive by December 2023

IBS software's chairman and CEO Mr. V K Mathews tells Aviation Update editor-in-chief Mr. B Kartikeya on the current business opportunities, economic growth and the government's role to support the civil aviation & logistics.



Brief us the journey of IBS since its inception to becoming the number one IT solutions company for the air transportation industry.

IBS Software was founded in 1997, with a vision to redefine the way the global travel, transportation and logistics industries managed their businesses. Having served Dubai-based Emirates as head of IT for over a decade and half, I set out to fulfil this vision with just 55 employees joining me in my entrepreneurial venture.

IBS Software, today, is a multinational corporation, serving over 200 clients worldwide, employing over 3,000 professionals from 30 different nationalities. We have acquired seven international companies (in Europe, USA and India) during our 23-year-old journey.

With the aviation sector has taken a big hit during this pandemic, how is it going to affect your services and your business?

The pandemic has given our economy a hard blow. Sectors like retail and automobile have been adversely affected. One of the biggest victims of COVID-19 is the travel and tourism sector, and it may take a lot of time for the industry to regain its position in the market.

However, with sincere efforts and well managed processes, we have a good scope to grow. The businesses will have to become technology-enabled, and there has to be the right traction between businesses and technology. Working remotely would be the future mode, where people work from anywhere. I am quite optimistic about business process management and there's a good opportunity for enterprises

manufacturing high-end electrical devices like iPods, smartphones, laptops, etc. to flourish. As per the calculations, the aviation sector would recover by December 2023, in two phases. The first phase of retrieval would be by August 2021, and the second by December 2023.

With so many years of experience and expertise in the industry, having been through various periods of crisis, how are you planning to fight and move through the rough tides of COVID-19?

As I said, I am quite optimistic. We need to make certain changes in the business process and utilize the technology well to reap optimum business benefits. Business processes need to improve and the government must actively participate in this process. Educational institutions must be tech-enabled, and the efficiency and proficiency of staff must be upgraded significantly.

We are trying our best to fight the crisis, including taking care of our employees' health and safety while they provide 24*7 support to ensure seamless business operation and uninterrupted support to our customers. We are in the business of managing mission-critical operations of some of the world's largest airlines, busiest airports, biggest oil and gas companies, most luxurious cruise-lines and largest hotel chains. We communicate regularly with our customers to understand their requirements and fulfil them in the best manner. At IBS software, we value customer engagement and that would help us function tirelessly during the pandemic.

What are the problems prevailing in the Aviation & Logistics sectors due to the pandemic COVID-19? How can technologies be implemented to solve the problem?

The travel industry, especially aviation industry has been hit severely by the pandemic. The industry is struggling to survive. IATA forecasts a 55% drop in revenues and close to 50% drop in travels. Several carriers are filing for bankruptcy. And taking into consideration the current state the industry is in, we cannot expect major investments also. But, the fact that cannot be ignored is that airlines that embraced new-gen technologies have managed to operate uninterrupted. Airlines need to explore the benefits of digitization. Technology will help optimize resources and gain more productivity. Technology enabled innovations will be vital for airlines to operate and sustain.

What kind of a bail-out package the government can come up with to help the civil aviation and logistics industry now languishing in deep distress?

Government can help, but not much, in the current scenario. But the government could waive charges, wherever applicable. For example the landing fees, flying charges and fuel taxes. As I have stated before, governments could allow airlines to take soft loans on payment terms guaranteed by the government. Through which, the airlines will have cash available at hand, to overcome the crisis.

RPAS IN INDIA

Unbridled Proliferation

Introduction

At the beginning of this year Ministry of Civil Aviation (MoCA) announced that it would be mandatory for all Remotely Piloted Aircraft (RPA) operators in India to register their RPAs (generally referred to as drones) by January 31. Apparently, the voluntary disclosure scheme did not elicit adequate response and, on June 8, MoCA notified a re-introduction of the scheme, this time with no deadline! In official Indian terminology, an RPA is an unmanned aircraft, which is piloted from a remote pilot station; a remotely piloted aircraft, its associated remote pilot station(s), command and control links and any other components forms a Remotely Piloted Aircraft System (RPAS). Implicit to the MoCA announcement was the admission that a large number of RPAs were being operated without adherence to the prescribed guidelines in the Civil Aviation Requirement (CAR) issued by Director General Civil Aviation (DGCA). Depending on the source one accesses, the number of unregistered RPAs in Indian skies is at least a couple of lakhs, and may be more than 6 lakhs. Gloomy projections foresee a growth of around 10 lakhs per year for the next five years or so. The numbers do not matter so much as the fact that the proliferation appears to be unbridled with the regulatory mechanism not yet in convincing control of the growth.





safely and reliably. Other RPA employment opportunities are visible in law enforcement, power distribution inspections, highways and railways. On the commercial side there are uses like filming and photographing from vantage points and angles not accessible to mechanised or hand held cameras; thus film making and wedding filming use RPAs extensively. Meanwhile Board of Cricket Control in India (BCCI) has been given the go ahead to use RPAs for live telecast from stadiums where important matches are being conducted. An eye catching video was circulated some time back on social media where a University used RPAs during a convocation ceremony to bring each successive scroll on to the stage. The list is endless and the above mentioned uses are not a comprehensive catalogue of RPA utilisation possibilities.

Thus it is easy to see why there is so much of interest in manufacture of RPAs in India with some big houses also entering the fray. As an illustration, Reliance Industries, the largest private sector enterprise in India, has invested in Asteria Aerospace whose A200 RPA, which weighs less than 2 kg, was given its certification by DGCA in October last year. There is also a huge influx of import of inexpensive RPAs from China. While the numbers of RPAs in India burgeon uncontrollably, the regulation is yet to rein in their use in Indian skies.

Regulatory Issues

The excessive delay in promulgating the CAR and the inability of the regulatory machinery to ensure the ongoing ban between 2014 and 2018 had already led to wide spread use of RPAs. The CAR envisaged the use of Digital Sky platform which ought to have been ready at the time the CAR was issued; unfortunately, it was not until 01 December 2018 that its readiness was announced. It is a massive framework and, given the extent of Indian territorial expanse and population using RPAs, it needs to be comprehensive, complex and data driven. Unfortunately, users and manufacturers alike appear to be largely unaware of its technical requirements. India has a unique No Permission - No Takeoff (NPNT) clause which means that the drone needs to be configured with a special software and/or hardware in such a manner that unless the regulatory permission is given through Digital Sky platform, an

Proliferation

What started off as the flooding of Indian markets with remotely controlled toy drones around a decade ago eventually acquired such alarming proportions that the government had to promulgate a complete ban on the use of drones in 2014. The ban was only supposed to be a stop gap arrangement until a comprehensive regulation could be put into place. However, the various pulls and pushes that manifested themselves in the process of drafting a regulation led to an inordinately long time to do so. DGCA finally issued the CAR, Section 3 - Air Transport Series X, Part I Issue 1, on August 27, 2018. The CAR regulates the use of RPAs in the Indian Airspace and these regulations provide a process for obtaining Unique Identification Number (UIN), Unmanned Aircraft Operator Permit (UAOP) and other operational requirements including identification of civil RPAs and RPA operators. The RPA operators are required to register their RPAs on the online portal after which a RPA Acknowledgement Number (DAN) and an Ownership Acknowledgement Number (OAN) is issued online which would help in validation of operations. However, this does not give RPA operators to fly RPAs in India without permission. Only around 20,000 RPAs are registered with MoCA but there is a large number of them being flown without registration and without permission for various purposes.

The Indian market for RPAs is huge as they have not only caught the fancy of casual sports lovers but proved to be useful in many variegated spheres of life around us. The control and the autonomous technologies that support RPA operations help to meet many societal needs. Use in the service of agriculture is one such area. Some start ups have already demonstrated the benefits that RPAs can provide to make more effective use of potable water, more granular monitoring of agricultural impact on groundwater resources, and collection of data on standing crops. In another useful application, Survey of India, the national mapping agency which operates under the Ministry of Science and Technology, has committed to mapping 40,000 villages using RPAs to fix locations of village boundaries, canals, canal limits, and roads in conjunction with the State of Maharashtra. Telangana government has tied up with Apollo hospitals and the World Economic Forum (WEF) for a project called 'Medicines From the Sky' which aims to explore the use of RPAs to increase access to healthcare for communities across the state. The use of RPAs for last mile service providers in the health industry especially for organ transportation is another area where RPAs have proved immensely useful. Indian RPA start ups have also demonstrated the ability to detect mosquito breeding grounds to avoid illnesses, assist city planners in mapping urban environments with cost-effectiveness and precision and deliver fast food to customers' residences

RPA cannot fly. In other words, until the NPNT is incorporated into its design, an RPA manufacturer should be unable to sell drones in India. However, while the NPNT compliance has been granted only to nine companies (details at <https://digitalsky.dgca.gov.in/RpaTypeList>), the RPA market is inundated with non-NPNT compliant RPAs doing brisk business at attractive rates. The problem appears to be that while NPNT is a great idea, enforcing it has become a headache for the regulator as it is still struggling with implementing a system to keep a check on the hardware and software capabilities of RPAs as there are very few labs to ascertain these standards.

On June 2, MoCA published a Gazette Notification with a draft "Unmanned Aircraft System (UAS) Rules 2020"; the draft introduces some changes from DGCA's 2018 CAR mentioned earlier. The important changes are aimed at tweaking the five categories of RPAS, eligibility of persons authorised to manufacture, import, trade in, own or operate RPAs, Unique Authorisation Number (UAN) rules, change in UAN/UIIN/UAOP/Pilot License fees, and the import of non-compliant RPAs into India. MoCA had given a month's time for stakeholders and general public to submit comments. Expectedly, there have been many inputs, possibly the most significant being a 43 page document from the Drone Federation of India (DFI), a non-government, not-for-profit, industry led body promoting unmanned aviation industry in India.

Federation of Indian Chambers of Commerce and Industry (FICCI) has recommended that the rules provide of setting up of a single window mechanism to obtain all clearances and approvals necessary for procuring and operating RPAs in the country. Hopefully, these inputs will be accommodated in the final Rules promulgated.

However, even after the Rules are in place, given the small size of most civil use RPAs, it would be well nigh impossible to keep visual or radar surveillance in place to uncover transgressions of the CAR/Rules. Moreover, DGCA is short of personnel even for the non-RPA content of its oversight responsibilities. It does not appear feasible that, in the near future, the Rules would be able to ensure in an airtight manner that only authorised, NPNT compliant RPAs get airborne after due clearance.

A Long Term Solution

While the regulator endeavours to get some order and discipline into the RPA explosion, let us see if something can be done to solve the numbers problem. It is evident that a physical census of all RPAs in the country is impossible. What could be done is what ought to have been done much earlier --- plug the supply end. All drones now crowding our skies currently have either been manufactured in India or come from China (mainly). As far as the import route is concerned, it should be fairly easy to block it, filter only those imports that meet stringent requirements (including NPNT), and after

their import, have a system of following up until they are registered in their weight category. Should a drone imported into India still not be registered within a specified time after entry into India (say two months), it should be recalled and confiscated. Coming to Indian manufacture, there should be a ban to manufacture RPAs of any category except in specifically licensed manufacturing units (whose output can be tracked). This is easier said than done as drone manufacture is now more or less a cottage industry what with modular components available off the shelf. However, the option of controlling the manufacture and import of RPAs is worth exploring although it may not fully solve the problem of unauthorised flights in our skies.

Concluding Remarks

Digital Sky platform has divided the airspace of India into three categories: Red, Yellow and Green. Red means "no fly zone" and includes airspace near international borders, near airports and other strategic locations. Yellow is "restricted zone" which includes airspaces which require an Air Defence Clearance/ Flight Information Centre (FIC) number from Air Traffic Control. Green is "unrestricted zone" although one still needs permission from Digital Sky platform to fly in it. The gay abandon with which drones now inhabit our skies sometimes transgress these restrictions and there have been cases of RPAs flying dangerously close to airports, even defence ones. The ingress of a single 2 kg drone into an airliner's engine could be catastrophic and we have had numerous near misses. The Aramco drone attack holds the ominous warning that drones are a potential threat to sensitive locations, vital installations, huge public gatherings and important personages. There have been instances of arms drop by drones in Punjab. The threats held out by drones operated unauthorisedly by criminal or just irresponsible persons are real and cannot be wished away. The regulatory mechanism is inadequate to squelch drone proliferation; there is a need to address this issue on a war footing before we have a major aviation accident caused by drone ingestion or an attack on a vital facility. Proactive initiatives, as we know, beat any reactive measures taken after an occurrence.

Gp Capt AK Sachdev (Retd)



This is your Captain Speaking....!!!

All about COVID-19

Let's start by thanking Pilots, Doctors, Nurses & everyone who are standing in the frontline during this pandemic to save us and our planet.

No Weapon, No War but this version of Corona Virus proved more dangerous than any war that made humanity to stumble and wonder how to reach normalcy. When the virus COVID-19-Corona Virus Disease 2019 emerged from CHINA in December 2019, the world did not expect or predict that it would have such a significant impact by taking down more than 3 lakh human life in a short time. Experts say, we must learn to live with this virus but in a developing country like India, how are we going to overcome this situation?. These are the one part of the Question, but here we will strictly talk about COVID-19 effects on Aviation.

Loss Fact

Due to COVID-19, Worldwide around USD-250 Billion revenue loss in aviation is expected & in INDIA around INR-26,000 Crore.

WHO

After WHO-World Health Organisation declared the COVID-19 as "public health emergency" on January 2020; initially all the airliners suspended services to CHINA and then IRAN, S.KOREA & ITALY where it was believed the virus has spread massive, eventually, like a domino effect the pandemic spread across the globe making air travel restrictions in March affecting the aviation and the travellers. During the travel ban, only select repatriate flights were operated, and in the empty skies, there was an exception only for Cargo flights to supply medical and essentials supplies to fight against COVID-19. As the air connectivity is the most excellent and faster service, even the passenger aircraft were utilised for cargo operations during the lockdown period, for immediate requirement of face mask, hand gloves, food & medical essentials around the globe. For instance, just from Chennai Airport, there were 400



Capt. Sathish Soundarraj
Captain
Airbus A320

Cargo aircraft movements to transport more than 1500tonnes of essentials during the lockdown period. Cargo flights became the saviour during pandemic and thanks to all who indulged in operating Cargo flights to save our planet against COVID-19.

Parking Fact

Total of 650 Aircraft parked in various INDIAN airports, in that 205 aircraft parked in DELHI airport.

COVID-19 Travel

The month of March was not easy for aviation, as travelling to nearby countries was so pathetic, as one might worry about flight cancellations or wait a long queue to get checked for COVID-19 symptoms or even worried at the airport about getting quarantined. I can recall my flight duty from Chennai to Malaysia - after reaching Kuala Lumpur International Airport, with 1-hour transit time, I chose to quickly proceed to the terminal to have a cup of coffee. To my surprise the airport terminal was deserted, all the shops were closed and whoever left at the terminal were wearing a face mask, hand gloves and extensive checking of passengers and crew with thermal scanners all around. As Malaysia was one of the first countries outside China to register COVID-19 cases in late January 2020 and gradually it crossed 2000 cases in March, made the state to shut doors much earlier compared to the neighbouring countries. Going towards Middle-East, Kuwait was the first country in the Middle East to impose restrictions on air connectivity due to the pandemic. Just before my flight to Qatar, the news was

circulating that Kuwait has shut their airports for incoming flights from Singapore & Japan; additionally, there was news that most of the Middle East destination flights were cancelled, with this scenario before my trip I seriously thought whether I could make it to Middle East territory or not. Reaching Doha International Airport in the early morning after a long night flight, the airport seems so different with no people to be seen around. A day stay at Doha seemed very different with fewer people on the streets and the so-called social distancing in force. On the other hand, in Dubai, Emirates were the first airlines to have on-site rapid COVID-19 test for passengers, and if the passengers test positive for the symptoms, they will be denied boarding or quarantined.

Airline Fact

British Airways is one of the first international air carriers to stop their service to & from CHINA in January 2020.

Travel Continues

Another flight duty to Singapore in late March, whereby this time the COVID-19 had spread across the globe and the restrictions on air travel was in peak, the flight crew were strictly instructed to use personal protective equipment's where with the PPE's I looked funny enough, but it's for own and others safety. As the International passenger count was going down with less than 100 passengers per flight, and after landing at Singapore- 6ft social distancing and face mask became a new normal. As the new normal was strange to us and were challenging to communicate too. At the airport, most of the shops shut, and the moment any person sneezes or tired at the arrival hall, the Singapore airport officials will rush to the person and screen for COVID-19 symptoms. All the entries and exit were equipped with thermal scanners with COVID squad monitoring extensively. Returning to India, COVID-19 checking was massive, and as a country with more than 123 airports, initially, International airports were screening for COVID. Still, by March, both international & domestic airports were strictly screening incoming passengers for COVID-19 with the health officials getting the details and monitoring the passengers & crew health.

Global Fact

Globally around 5,000 aircrafts are parked and secured due to travel ban.

Money is Business

The Indian aviation market is robust, which is the fastest-growing domestic market at 18% per annum compared to CHINA which is 11%. Indian Aviation, with its supply chain, contributes around USD 70Billion of GDP to India. Now with this pandemic, the Indian Aviation industry will be one of the worst-hit, by affecting 29 lakhs direct workforce in airlines and many more in the supply chain as per IATA. Irrespective of the airline size or previous profitability - all airlines around the world were affected as their aircrafts grounded and the cost of maintaining the parked aircraft are extremely high. Many airlines operate with leased aircraft and must pay the money even not utilised. With the current scenario, Virtually with nil revenue after the air travel ban since March 24th, gulped most of the company's capital affecting the company itself and salaries to the employees. Some airlines decided to give leave without pay to their employees until the pandemic suppressed, some made pay cuts to an extent, or even some airlines may not survive this crisis. Along with this, good news for the aviation sector is that jet fuel price is gone down beyond expectations due to sudden slump in the oil industry and now the jet fuel is cheaper than the petrol used in a car. At least the fuel prices are low now which can save the airlines about USD 30Billion in a year, but the price won't stay the same. Many air carriers are looking for government intervention and IATA groups have sent out letters to the Government to help the already sinking aviation sector during this pandemic.

Government Fact

The Indian Aviation sector is expecting INR-12,000 Crore as rescue package from Indian Government to compensate COVID-19 losses.

Aviation Comeback

With the expert's prediction, it may take between 10 to 18 months to cater for financial losses made during this pandemic, and the airlines may report at least 25% to

35% revenue loss in 2020. And once the air travel opens there will be new norms of do's & don'ts for social distancing, with the regulators planning to keep vacant middle seats inside the aeroplane between occupied seats with mandatory use of face mask for passengers and numerous screening at airports for COVID-19. Also, the centre has proposed Aarogya Setu App, a new mobile application necessary for air travel which will be used for contact tracing once the air travel resumes. These solutions towards air travel will make the air travel costlier and will cause people to think twice before they choose to fly regional routes, e.g. Chennai-Bangalore or Delhi-Jaipur, where the road distance is just 4 to 5 hrs. Even with lots of new procedures expected in this calendar, it's tough to make the passengers use air travel as a priority. Some might worry about the closed environment air conditioning inside the aircraft, or some company may skip the physical meeting making the air travel least priority. Coming to international travel- COVID-19 related travel restriction will follow for six more months even the pandemic comes to an end, and the so-called tourism industry has to wait for so long to get into action again.

Aarogya Setu Fact

As per proposed - People whose Aarogya Setu app is not 'green' are not allowed inside the terminal building or to travel in flight.

People's Question

IATA- International Air Transport Association, answers people's Question,

How safe is the air inside a modern aircraft?

- Very reliable in-fact, the European Aviation Safety Agency Studies showed that "the cabin/cockpit air quality is similar or better than what is observed in normal indoor environments" such as offices, schools and home dwellings. Modern aircraft have high-efficiency air filters similar to those used in hospital operating rooms. They capture more than 99.9% of the airborne microbes in the filtered air.

Not only IATA but also many aircraft manufacturers are claiming that the modern aircraft air-conditioning system is powerful enough to filter many types of bacteria and

viruses, making the aircraft's environment safer.

Tourism Fact

In a recent survey conducted by Miami based travel company in the USA - 72% of Americans are ready for vacation this summer despite COVID-19 pandemic.

Faith in 2020

The invention of a vaccine against COVID-19 is the best and only hope to end this pandemic or building immunity naturally. And medical research centres are on the mission, and we can expect good news very soon within 2020. Definitely, the way we are going to travel will change and Year 2020 will be history in Aviation, as in the year 2020 there won't be a question of profitability, but it's a matter of survival, and the Aviation itself will overcome this as "to rising, one has to fall". Let's have faith and look forward to hearing "Ladies & Gentlemen, Welcome on-board - This is Your Captain Speaking".

Fuel Fact

In May, A litre of petrol in Delhi comes for Rs 69.59 while jet fuel priced at Rs 22.54 per litre after a slump in international oil prices.

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IATA Proposes Alternatives to Quarantine

Geneva The International Air Transport Association (IATA) urged governments to avoid quarantine measures when re-opening their economies. IATA is promoting a layered approach of measures to reduce the risk of countries importing COVID-19 via air travel and to mitigate the possibility of transmission in cases where people may travel while unknowingly being infected.

“Imposing quarantine measures on arriving travelers keeps countries in isolation and the travel and tourism sector in lockdown. Fortunately, there are policy alternatives that can reduce the risk of importing COVID-19 infections while still allowing for the resumption of travel and tourism that are vital to jumpstarting national economies. We are proposing a framework with layers of protection to keep sick people from traveling and to mitigate the risk of transmission should a traveler discover they were infected after arrival,” said Alexandre de Juniac, IATA’s Director General and CEO.

IATA encourages a layering of bio-safety measures in two areas:

Reducing the risk of imported cases via travelers

- Discouraging symptomatic passengers from traveling: It is important that passengers do not travel when ill. To encourage passengers to “do the right thing” and stay home if they are

unwell or potentially exposed, airlines are offering travellers flexibility in adjusting their bookings.

- Public health risk mitigation measures: IATA supports health screening by governments in the form of health declarations. To avoid privacy issues and cut the risk of infection with paper documents, standardized contactless electronic declarations via government web portals or government mobile applications are recommended. Health screening using measures such as non-intrusive temperature checks can also play an important role. Although temperature checks are not the most effective screening method for COVID-19 symptoms, they can act as a deterrent to traveling while unwell. Temperature checks can also shore-up passenger confidence: in a recent IATA survey of travellers, 80% indicated that temperature checks make them feel safer when traveling.
- COVID-19 testing for travelers from countries perceived to be “higher-risk”: When accepting travelers from countries where the rate of new infections is significantly higher, the arrival authority could consider COVID-19 testing. It is recommended that tests are undertaken prior to arrival at the departure airport (so as not to add to airport congestion and avoid the potential for contagion in the travel process) with documentation to prove a negative result. Tests would need to be widely available and highly accurate, with results delivered quickly. Test data would need to be independently validated so as to be mutually recognized by governments and securely transmitted to the relevant authorities. Testing should be for active virus (polymerase chain reaction or PCR) rather than for antibodies or antigens.

Mitigating Risk in Cases Where an Infected Person Does Travel

- Reducing the risk of transmission during the air travel journey: IATA encourages the universal implementation of the Take-Off guidelines published



by the International Civil Aviation Organization (ICAO). Take-Off is a temporary risk-based and multi-layered approach to mitigate the risks of transmitting COVID-19 during air travel. The comprehensive Take-Off guidelines are closely aligned with the recommendations of the European Union Aviation Safety Agency EASA and the US Federal Aviation Administration (FAA). These include mask wearing throughout the travel process, sanitization, health declarations and social distancing where possible.

- Contact tracing: This is the back-up measure, should someone be detected as infected after arrival. Rapid identification and isolation of contacts contains the risk without large-scale economic or social disruption. New mobile technology has the potential to automate part of the contact-tracing process, provided privacy concerns can be addressed.
- Reducing risk of transmission at destination: Governments are taking measures to limit the spread of the virus in their territory that will also mitigate the risk from travelers. In addition, the World Travel and Tourism Council (WTTC) Safe Travel protocols provide a pragmatic approach for the hospitality sector to enable safe tourism and restore traveler confidence. Areas of the industry covered by the protocols include hospitality, attractions, retail, tour operators, and meeting planners.

“Safely restarting the economy is a priority. That includes travel and tourism. Quarantine measures may play a role in keeping people safe, but they will also keep many unemployed. The alternative is to reduce risks through a series of measures.

Airlines are already offering flexibility so there is no incentive for sick or at-risk people to travel. Health declarations, screening and testing by governments will add extra layers of protection. And if someone travels while infected, we can reduce the risk of transmission with protocols to prevent the spread during travel or when at destination. And effective contact tracing can isolate those most at risk without major disruptions,” said de Juniac.

There are some hurdles to being able to implement the full suite of measures. “Data transmission, required for health declarations, testing and tracing, raises privacy concerns. And mutually recognized standards would be needed for testing. Governments have a common interest in finding solutions. The rapid agreement by governments to ICAO’s Take-Off guidelines demonstrates that progress on complex issues is possible where there is the political will to do so,” said de Juniac.

There is every economic incentive to make a layered approach work. The World Travel and Tourism Council estimates that travel and tourism accounts for 10.3% of global GDP and 300 million jobs globally (direct, indirect and induced economic impact).

Mandatory quarantine measures stop people from traveling. Recent public opinion research revealed that 83% of travelers would not even consider traveling if quarantine measures were imposed on travelers at their destination. And analysis of trends during the lockdown period shows that countries imposing quarantine saw arrivals decrease by more than 90%—an outcome that is similar to countries that banned foreign arrivals.

“A layered approach to safety has made flying the safest way to travel while still enabling the system to function efficiently. That should be an inspirational framework to guide governments in protecting their citizens from the terrible risks of both the virus and joblessness. Quarantine is a lop-sided solution that protects one and absolutely fails at the other. We need government leadership to deliver a balanced protection,” said de Juniac.

Boeing delivers first Super Hornet Blue Angel Test Jet

Boeing has delivered the first Super Hornet test aircraft for the U.S. Navy's Blue Angel flight demonstration squadron. The unpainted aircraft now enters the flight test and evaluation phase at Naval Air Station Patuxent River in Maryland. Boeing expects to deliver a total of 11 aircraft for the squadron in 2020.

"The Super Hornet is an iconic representation of excellence in naval aviation," said ret. Admiral Pat Walsh, vice president of U.S. Navy & Marine Corps Services for Boeing.



Walsh flew with the Blue Angels from 1985 to 1987 as the Left Wingman (#3) and Slot Pilot (#4). "As Boeing continues to support the operational fleet of Navy Super Hornets, we are excited to see this platform enter a critical phase of its journey to joining the team."

The flight demonstration squadron has flown Boeing or Boeing-heritage aircraft for more than 50 years, starting with the F-4J Phantom II in 1969, and then moving to the A-4F Skyhawk. The team currently

operates the F/A-18A-D Hornet.

Boeing converts F/A-18 Hornets and Super Hornets into Blue Angels at the company's Cecil Field facility in Jacksonville, Florida. Major modifications include the addition of an oil tank for the smoke-generation system, fuel systems that enable the aircraft to fly inverted for extended periods of time, civilian-compatible navigation equipment, cameras and adjustments for the aircraft's center of gravity.

Boeing is the world's largest aerospace company and leading provider of commercial airplanes, defense, space and security systems, and global services. As a top U.S. exporter, the company supports commercial and government customers in more than 150 countries. Building on a legacy of aerospace leadership, Boeing continues to lead in technology and innovation, deliver for its customers and invest in its people and future growth.



First-time commercial satellite navigation capabilities for air transport aircraft from Collins Aerospace

Collins Aerospace's GLU-2100 recently became the first Multi-Mode Receiver (MMR) to use Dual Frequency/Multi-Constellation (DFMC) technology and build on its legacy of market-leading Global Navigation Satellite Systems (GNSS). The test flights aboard Boeing's Eco-Demonstrator 777 accumulated over 100 hours of DFMC data in

multiple regions of the world. This data will be used to confirm the reliability and accuracy improvements for the MMR that will enhance safety for aircraft operating in high traffic density or low visibility conditions.

"This is an important milestone for the GLU-2100 and Collins Aerospace because it demonstrates that this product can evolve and continue to support GNSS airspace needs for decades to come," said Nate Boelkins, vice president and general manager for Commercial Avionics at Collins Aerospace. "In addition, we were able to add the DFMC capabilities with only a software upgrade, avoiding what would have normally required an expensive hardware overhaul."

An MMR assists pilots in positioning, navigating and landing an aircraft - most notably in inclement weather. DFMC technology increases the number of frequencies the receiver accepts from satellites, while also accepting data from more than one satellite constellation, all of which improves the accuracy and integrity of the aircraft position information.

Additional DFMC benefits may include the ability to support Lateral Precision with Vertical (LPV) guidance anywhere on the globe without the need for a costly Satellite-Based Augmentation System (SBAS).

Collins Aerospace's GLU-2100 is available today on most Boeing platforms. The demonstration of DFMC capabilities on the 777 Eco-Demonstrator will help validate and formalise industry standards, allowing the capability to enter into revenue service in the near future.

Boeing Delivers First F/A-18 Block III Super Hornets to U.S. Navy for Flight Test

Boeing delivered the first two F/A-18 Block III Super Hornets to the U.S. Navy for flight testing. One jet is a single-seat E model and the other is a two-seat F model.

“The aircraft will be used for carrier suitability and integration testing of all Block III mission system components,” said Steve Wade, Boeing vice president, F/A-18 & EA-18G programs. “These test jets will ensure crews have plenty of time to become comfortable with the new, next-generation systems before receiving operational aircraft.”

The Navy will use the aircraft to familiarize pilots with the advanced cockpit system’s new 10-inch-by-19-inch touchscreen display and test the capabilities delivered with the enhanced network capability.

In addition to these enhancements, the Block III configuration adds capability upgrades that include longer range, reduced radar signature and an enhanced communication system. The fighter’s life also will be extended from 6,000 hours to 10,000 hours.

Last year, Boeing was awarded a contract from the Navy for 78 Block III Super Hornets. Boeing and Navy test teams have also flown conformal fuel tank prototypes.



Lt General Manoj Pande takes over as Commander-In-Chief of Andaman & Nicobar Command

Lieutenant General Manoj Pande, AVSM, VSM, will take over as the 15th Commander-in-Chief of the Andaman & Nicobar Command (CINCAN) on June 1, 2020 and not as rendered. An alumnus of National Defence Academy, the General Officer was commissioned into the Corps of Engineers (The Bombay Sappers) in December 1982. He is a graduate of Staff College, Camberley (United Kingdom) and attended the Higher Command Course at Army War College, Mhow and National Defence College (NDC) at Delhi.



During his 37 years of distinguished service, the General Officer has taken active part in Operation Vijay and Parakram. He commanded an Engineer Regiment along the Line of Control in Jammu & Kashmir, an Engineer Brigade as part of the Strike Corps, an Infantry Brigade along the Line of Control, a Mountain Division in High Altitude Area of Western Ladakh and a Corps deployed along the Line of Actual Control (LAC) as also in Counter Insurgency Operations area in the North East. He

has tenanted important staff assignments and was posted as Chief Engineer at the United Nations Mission in Ethiopia and Eritrea. He was Director General at Army Headquarters dealing with subjects of Discipline, Ceremonial and Welfare, prior to assuming the present appointment.

Meanwhile Lieutenant General Podali Shankar Rajeshwar PVSM, AVSM, VSM, ADC, the 14th Commander-in-Chief of the Andaman & Nicobar Command (CINCAN) retired from service on 31st May

2020. He left a glorious legacy and many milestones in his distinguished career spanning four decades. He had taken over the appointment on Dec 1, 2019. During his tenure as CINCAN, Lieutenant General Rajeshwar focused on enhancing the operational preparedness of ANC. The 29th edition of the Indo-Thai Coordinated Patrol (CORPAT) was successfully conducted from 13th to 21st February 2020 during his Command.

Under Lieutenant General Rajeshwar’s directions, the personnel and assets of the Command actively coordinated and worked together with the Andaman and Nicobar Administration in dealing with the Corona pandemic and providing succour to the populace across the length and breadth of the islands. For his distinguished service, Lieutenant General Rajeshwar had been awarded the Param Vishisht Seva Medal (PVSM) on 26th January 2020 and appointed as an Honorary Aide-de-Camp (ADC) to the President of India in November 2019.

Women in Aviation International (India Chapter) and Lockheed Martin India Advance Stem Education in India



hear industry experts speak on the 'Future of STEM in India'. The session provided an opportunity to engage with Lockheed Martin executives and other industry experts who stressed upon the importance of STEM and how these subjects can lead to fulfilling careers in aerospace and aviation.

Speaking on the occasion, Mrs. Radha Bhatia, President, WAI, India Chapter shared, "This is the fifth year that the WAI India Chapter is working towards building awareness about STEM and its necessity for taking up various careers in aviation. This day is celebrated in order to encourage young boys & girls to choose aviation as a viable career opportunity. The aviation industry has always had a lot to offer in terms of opportunities and jobs. Usually when people think of a career in aviation, the focus is on a few roles like pilots and cabin crew. With this celebration our aim is to see young children from Delhi explore other, equally exciting career options available to them as engineers, air traffic controllers and dozens of other jobs within the aviation industry."

"We will continue our endeavour to introduce the children to role models and educate them in a fun and supportive atmosphere." added Mrs. Bhatia.

"Since aviation in India will continue to grow at a phenomenal rate once the slight bump posed by the current travel restrictions is overcome, we hope that our efforts will help the industry find the right talent to fuel this growth, while also helping children in choosing an exciting and challenging career in the domain of their liking within the industry."

Speaking about Lockheed Martin's commitment to this initiative, Mr. William L. Blair, Vice President and Chief Executive, Lockheed Martin India said, "As a global security and aerospace company, we believe in building technologies for tomorrow. For more than three decades we have been a trusted partner to India and take it as our responsibility to train and develop the next generation of future engineers, explorers and scientists in India on the solid foundation of STEM education."

Since 2016, Lockheed Martin has partnered with WAI India chapter to create awareness and build confidence in young students to expand their horizons and inspire future generations of scientists, technologists and innovators in India.

Women in Aviation International (WAI), India Chapter and Lockheed Martin India held a virtual event on June 9th to advance STEM education in middle and high school students.

With the vision to encourage young children to take up Science, Technology, Engineering and Mathematics (STEM) subjects and explore career opportunities in related industries, WAI India Chapter is a registered NGO that works to create awareness about opportunities in the aviation and aerospace sectors. The virtual event is part of Lockheed Martin's commitment to provide ongoing support and engagement aimed at developing the talent of tomorrow. This initiative aligns with the 'Skill India' initiative of the Government.

As part of the program, WAI (India Chapter) invited students from Delhi and NCR based schools as attendees. The

event began with Ms. Noopurr R Chablani, Secretary, WAI, India Chapter welcoming all participants and talking about the agenda of the event. This was followed by insights from Capt. Shweta Singh, Deputy Chief Flight Operations Inspector, DGCA. The children also got an opportunity to hear Mrs. Radha Bhatia, President, WAI (India Chapter) and Mr. William L. Blair, Vice President and Chief Executive, Lockheed Martin India along with Dr. Sarah Hiza, Vice President, Fleet Ballistic Missile Programs, Lockheed Martin Space.

The speakers enlightened the students about the aviation and aerospace industries and their functioning, and created awareness about the various career opportunities in these sectors including R&D, design engineering, remote sensing, air traffic control, satellite communications, robotic space exploration, among others. Attending students were given an opportunity to

Bombardier Concludes Sale of the CRJ Series Regional Jet Program to Mitsubishi Heavy Industries.

Bombardier confirmed the closing of the previously announced sale of the CRJ Series aircraft program to Mitsubishi Heavy Industries, Ltd (MHI) (TOKYO:7011) for a cash consideration of approximately \$550 million, subject to post-closing adjustments and the assumption of liabilities by MHI related to credit and residual value guarantees and lease subsidies amounting to approximately \$200 million. Under the agreement, the Corporation's net beneficial interest in the Regional Aircraft Securitization Program (RASPRO), which is valued at approximately \$170 million, has been transferred to MHI.

Through this sale, MHI acquires the maintenance, support, refurbishment, marketing, and sales activities for the CRJ



Series aircraft, including the related services and support network located in Montréal, Québec, and Toronto, Ontario, and its service centres located in Bridgeport, West Virginia, and Tucson, Arizona, as well as the type certificates.

Bombardier will continue to supply components and spare parts and will assemble the remaining 15 CRJ aircraft in the backlog as of March 31, 2020 on behalf of MHI until the complete delivery of the

current backlog, expected in the second half of 2020.

Bombardier retains certain liabilities representing a portion of the credit and residual value guarantees totalling \$288 million as of March 31, 2020. This amount is largely fixed and not subject to future changes in aircraft value and is mainly payable by Bombardier over the next four years.



Piaggio Aerospace: 19 Expressions of Interest submitted

Upon expiration of the deadline, May 29 nineteen Expressions of Interest (EOI) have been received - accompanied by the large documentation required- for the purchase of the business complexes of Piaggio Aero Industries and Piaggio Aviation. Both companies are

currently under extraordinary administration and operating under the Piaggio Aerospace brand.

"EOIs were submitted from all over the world", says Mr Nicastro, the Extraordinary Commissioner, "in particular from North America, Europe and the Far East. This confirms the interest in the Group and its growth potential, although some possibly interested parties could have been discouraged by the current pandemic".

According to Mr Nicastro- who will soon examine the files to assess their eligibility to the tender- most of the applicants are interested in the whole Group.

Those showing the necessary requirements will then be allowed access to the data room in order to assess the value of Piaggio Aerospace and, if their interest is confirmed, submit their binding offers. Afterwards, the buyer will be finally selected.

As Mr. Nicastro often underlined, the main goal is finding a new owner for the whole Company by the end of the year.

After the recently signed long-term agreement with the Italian Ministry of Defence for the support of the P180 air fleet of the Armed Forces, Piaggio Aerospace shows up to its potential buyers with a €640 million order book. Additional orders are under negotiation for further €260 million. It is therefore expected that the total amount will reach €900 million.

Bombardier Celebrates Entry-into-service of Spacious, Long-range Global 5500 Business Jet

Bombardier is very proud to announce the entry-into-service of the innovative, long-range Global 5500 business jet, which was recently delivered to an undisclosed customer. This high-value aircraft represents the gateway into Bombardier's flagship large-cabin Global family, offering world-renowned performance, comfort and the smoothest ride.

Last year, Bombardier announced that the Global 5500 aircraft can fly 200 nautical miles more than planned, and its new range of 5,900 nautical miles is 700 nautical miles more than the nearest competitor at the same speed.

"This spacious and efficient aircraft is the ultimate business tool, with the range and access to safely take our customers where they need to be," said David Coleal, President, Bombardier Aviation. "The first Global 5500 aircraft delivery is of particular significance for our employees in Wichita, who recently took on the meticulous work of interior completions for the Global 5000 and Global 5500 aircraft."



Bombardier's Wichita site has a rich history as the manufacturing center of the iconic Learjet. Over the years, Bombardier expanded the site's operations to include a world-class service center, as well as its Flight Test Center and Specialized Aircraft operations. Completion work for the stunning Global 5000 and Global 5500 aircraft cabins is the latest diversification for this skilled workforce.

All Bombardier employees have demonstrated flexibility and dedication in the face of the COVID-19 pandemic. Bombardier has taken extraordinary steps to protect its employees and customers against the virus, and as manufacturing activities resume around the world, the company has strict protocols for continued safety and operational excellence. The successful entry-into-service of the Global 5500 business jet at this time demonstrates Bombardier's resilience and the efforts of its talented employees.

Introducing the all-new Diamond Aircraft 5 Seat DA50 RG with retractable gear

With one of the widest, most comfortable cabins in its class, the DA50 RG spoils both pilots and passengers with everything known from the twin-engine DA62: generous front seats with adjustable backrests, a 60/40 split folding three seat second row bench, easy access through the large gull wing doors and cargo door and exceptional leg, shoulder and head room. Luxury features abound throughout, including premium interiors in several styles, colors and materials, LED interior lighting and many optional features, such as removable right-hand control stick, oxygen system, electric air conditioning, TKS de-icing system, Garmin GCU 476 keypad or a built-in tablet mount.

Liqun Zhang, CEO Diamond Aircraft Austria: "We are very excited to be presenting the DA50 RG to the market. She is offering so much – space, efficiency, luxury, comfort, safety and retractable gear on a single piston aircraft that will make everyone really stand out. Plus, the extra benefits of operating a jet fuel powered aircraft - much lower emissions compared to leaded and even low leaded aviation fuels and saving many gallons of fuel and money due to excellent fuel efficiency. We are convinced that our all-new DA50 RG will be the new star on the piston single market for private pilots needing more seats and space and charter operators looking for a low-cost alternative."



"Continental's CD-300 engine and valuable partnership with Diamond on the DA50 RG reinforces the global demand for jet-fueled piston aircraft in general aviation", said Robert Stoppek, President & CEO of Continental Aerospace Technologies™. "The luxurious and modern carbon fiber constructed DA50 RG paired with the 300 horsepower Jet-A engine is redefining the expectations for GA aircraft. Congratulations to Diamond Aircraft for introducing this fuel-efficient engine and up-to-date airplane that perfectly fits the renowned Diamond jet-fuel

aircraft portfolio."

The DA50 RG comes with a standard installed Garmin G1000 NXi flight deck with standard 3-axis GFC700 Automated Flight Control System combined with simple single lever power controls, offering great control and situational awareness reducing pilot workload.

EASA TC is well on its way for late Summer 2020. FAA certification will start right after and is expected end of 2021.

EASA order books are open now with first deliveries commencing end of Q1/2021.



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