

SEE US AT
HALL B, STALL 7



12-15 March 2020
Begumpet Airport, Hyderabad, India

DAY-1
THURSDAY,
MARCH 12, 2020

SP'S



AN SP GUIDE PUBLICATION

SHOWNEWS

PUBLISHERS OF

SP'S MILITARY YEARBOOK, SP'S CIVIL AVIATION YEARBOOK, SP'S AVIATION, SP'S AIRBUS, SP'S LAND FORCES, SP'S NAVAL FORCES, SP'S M.A.I. & BIZAVINDIA

INSIDE



Interview: Ashmita Sethi,
Managing Director, Pratt &
Whitney India

4

Pratt & Whitney to Showcase
Aviation Expertise at Wings
India 2020

5

Potential for Civil Helicopters
in India

8

AIESL to Perform Pratt &
Whitney GTF Maintenance

9

Interview: Captain Ajay
Chauhan, CEO, Gujarat
State Aviation Infrastructure
Company Limited

9



BAOA's BizAvIndia seminar
takes off with deliberations
on "Socio-Economic Impact
of GA/BA"

10

Embraer: A Constant
Innovator

11



WINGS INDIA 2020 OPENS TODAY

COURTING A BOOM

India's Civil Aviation agenda aims for new heights with a vision for a \$290 Billion spend to put 2,000 aircraft in the skies by 2040, a \$13.6 Billion sectoral investment to fund 100 new airports in 5 years, a Delhi-Jewar airport combine bigger than Heathrow-Stanstead-Gatwick



MINISTER OF CIVIL AVIATION HARDEEP S. PURI AT THE WINGS INDIA 2020 CURTAIN RAISER EVENT IN NEW DELHI

By **VISHAL THAPAR**

Projected investment of about ₹1,00,000 crore (\$13.6 billion) in India's aviation sector over the next five years provides the backdrop for Wings India 2020 – billed as Asia's largest civil aviation show – at Hyderabad from March 12 to 15, where business leaders from across the globe will gather to prospect opportunity.

The big policy driver for India's civil aviation sector is the UDAN Regional Connectivity Scheme (RCS) aimed at making air travel affordable and accessible to the common man in small town India, and the concomitant programme to at least double the number of airports in the next five years. The airport count at the moment is 75. Some official statements put the target for new airports by 2024 at 100.



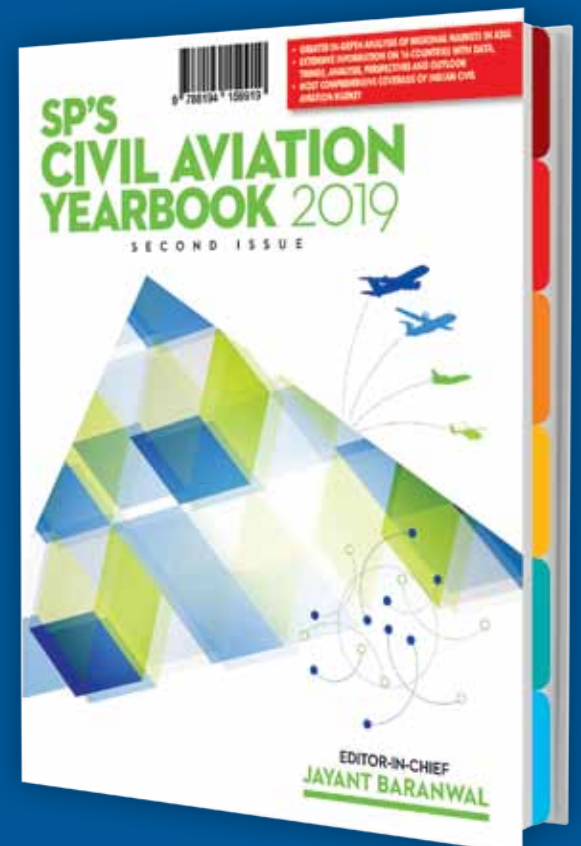
DEBUT: EMBRAER HAS BROUGHT ITS E2 PROFIT HUNTER FOR THE FIRST TIME TO INDIA FOR DISPLAY AT WINGS INDIA 2020
....DETAILED STORY ON PAGE 11

NOW AVAILABLE

SP'S CIVIL AVIATION YEARBOOK 2019



FIRST OF ITS KIND



FROM A MEDIA HOUSE WITH AN **IMPECCABLE RECORD OVER 56 YEARS**

**Book your advertisements for
2020 edition, **Sooner** than later!**

info@spscivilaviationyearbook.com

Reserve Your Own Copies, **Now!**

order@spscivilaviationyearbook.com

www.spscivilaviationyearbook.com

Phone: +91 11 24644693, 24644763,
24620130, 24658322



SP GUIDE PUBLICATIONS



The airport statistics bring out the urgency for creating new infrastructure which is aimed at driving growth in air passenger traffic from 315 million to 1.1 billion by 2040. While 75 airports came up across India in 75 years, as many as 56 additional airports and 31 heliports have been awarded in the first 16 months of the UDAN scheme.

100 per cent FDI in both greenfield and brownfield airport projects create huge opportunity for foreign investors. The Government of India's Airport Authority of India by itself will invest \$3.5 billion over the next five years in airport and related infrastructure. The land requirement for this ambitious expansion plan is about 1.5 lakh hectares.

To gear up for the rapid expansion in traffic, scheduled Indian carriers, which collectively fly 587 aircraft at the moment, plan adding 900 aircraft in their fleets in the next five years alone. India is slated to be the world's third largest market in terms of air passenger traffic by 2022.

"My projection indicates that not only will we have 2,000 aircraft in the sky soon, but in the coming years Delhi and Jewar airport combine will be bigger than Heathrow, Gatwick and Stansted combination, which handle 140 million passengers," India's Civil Aviation Minister Hardeep Puri said at a curtain raiser event for Wings India 2020 in New Delhi in January. India recently awarded the contract for the development of a second airport for Delhi NCR at Jewar to the Zurich Airport consortium.

"Delhi airport today is literally bursting and wants to grow. Even if we have a fourth runway, we may handle a traffic of 100 million people," the Civil Aviation Minister said. With a current penetration level of 7-8 per cent in the Civil Aviation sector, policy is being tailored to drive up this figure to as high as 15-to-25 per cent in the near future, the Minister indicated.

Puri expressed optimism that the current turbulence being faced by operators and the collapse of Jet Airways – till recently India's largest commercial airline with a passenger share of 22.6 per cent – would not cloud the long-term prospects for this sector.

"In spite of turbulence in the sector, particularly characterised by the cessation of operations of one air carrier, between December 2018 and April 2019, the sector has registered a growth of 11.03 per cent on a year-on-year basis for November 2019," he said.

TO GEAR UP FOR THE RAPID EXPANSION IN TRAFFIC, SCHEDULED INDIAN CARRIERS, WHICH COLLECTIVELY FLY 587 AIRCRAFT AT THE MOMENT, PLAN ADDING 900 AIRCRAFT IN THEIR FLEETS IN THE NEXT FIVE YEARS ALONE. INDIA IS SLATED TO BE THE WORLD'S THIRD LARGEST MARKET IN TERMS OF AIR PASSENGER TRAFFIC BY 2022

Official estimates peg Indian civil aviation requirements at 2,100 aircraft worth \$290 billion over the next 20 years. "Three hundred business jets, 300 small aircraft and 250 helicopters are expected to be added to the current fleet of Indian carriers in the next five years," according to the Ministry of Civil Aviation.

Usha Padhee, Joint Secretary Ministry of Civil Aviation put the cumulative number of all types of aircraft in the civil aviation pool at 622 as in March 2018. This is projected to go up to 2,359 by March 2040, she corroborated.

Minister Puri also reaffirmed the Government's commitment to privatise Air India. "We are currently in the process of a privatisation programme for our flight carriers. According to projections, privatisation will strengthen the civil aviation sector and contribute to the expansion of the sector both in the short and medium term," he said.

Puri also highlighted the growing importance of drones and the setting up of a regulatory mechanism to enable unmanned flights.

With India aiming for a spot in the top 5 global air freight markets by 2025, Wings India 2020 is also set to

give due prominence to the Air Cargo and Logistics segment, which is already a strong enabler for e-commerce operations like Amazon.

Asia's biggest Civil Aviation show at Hyderabad – India's premier aviation industry hub – will also be a platform for addressing environmental concerns by highlighting the commitment to environmentally sustainable air travel, ensuring solar powered airports and induction of energy efficient aircraft in accordance with the Green Aviation Policy 2019.

"WingsIndia 2020 is all set to showcase an exceptional forum of Civil Aviation for new business acquisitions, investments and regional connectivity. More than 150 exhibitors, conferences, networking dinners and aerobatic displays await your presence," an official statement added.

A Global CEOs Forum will be a highlight of the show. "This is an unparalleled platform for aviation companies to explore the networking and expansion opportunities in the presence of Hon'ble Minister of Civil Aviation, Mr Hardeep Puri," the organisers stated.

The event will provide a fillip to the aviation and restructured focused forums will be instrumental in attaining the objective of connecting the buyers, sellers, investors and other stakeholders at a common forum. Conference Sessions on cargo, logistics and security, drones, helicopters and general aviation are also on the agenda.

Besides an elaborate exhibition and static displays of commercial, business, regional and cargo aircraft, a flying display by a British team is also slated at the event.

Wings India Awards will be announced on March 12 to give recognition to Aviation Centres which have redefined flying in India.

With 150 exhibitors having confirmed participation, Wings India 2020 is slated to be bigger than the previous edition in terms of participation and exhibition. Over 700 delegates from 10 countries showed up for Wings India 2018. Fourteen airlines were represented at the show which hosted 285 G2B meetings. The 15 aircraft on static display included the saw Phenom 300, Legacy 500, ATR 72, ATR 600 and Dornier.

Pitching big as an investment destination will be the host state of Telangana. At the curtain raiser event, Telangana Industries & IT Minister K.T. Rama Rao promised clearances for investment proposals within 30 days by the state government. Besides the promotion of Hyderabad as an aviation industry hub, Rao spoke about plans for greenfield airports and reactivation of old airports and heliports. •

PUBLISHER AND EDITOR-IN-CHIEF

Jayant Baranwal

DEPUTY MANAGING EDITOR

Neetu Dhulia

SENIOR CONTRIBUTORS

Air Marshal (Retd) B.K. Pandey

Lt General (Retd) Naresh Chand

Lt General (Retd) P.C. Katoch

GROUP EXECUTIVE EDITOR

Vishal Thapar

STAFF CORRESPONDENT

Ayushee Chaudhary

CHAIRMAN & MANAGING DIRECTOR

Jayant Baranwal

PLANNING & BUSINESS DEVELOPMENT

Executive Vice President: Rohit Goel

GROUP DIRECTOR – SALES & MARKETING

Neetu Dhulia

DEPUTY DIRECTOR – SALES

Rajeev Chugh

MANAGER – HR & ADMIN

Bharti Sharma

ASSISTANT MANAGER – HR & ADMIN

Pooja Tehlani

DEPUTY MANAGER – CIRCULATION

Rimpy Nischal

GROUP RESEARCH ASSOCIATE

Survi Massey

CREATIVE DIRECTOR

Anoop Kamath

LAYOUT DESIGNERS

Vimlesh Kumar Yadav, Sonu Singh Bisht

SP'S WEBSITES

Sr Web Developer: Shailendra Prakash Ashish

Web Developer: Ugrashen Vishwakarma

SP GUIDE PUBLICATIONS PVT LTD

A-133, Arjun Nagar,

(Opposite Defence Colony)

New Delhi 110003, India

Tel: +91 (11) 24644693, 24644763,
24620130

Fax: +91 (11) 24647093

E-mail: info@spguidepublications.com

Owned, published and printed by

Jayant Baranwal on behalf of

SP Guide Publications Pvt Ltd. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, photocopying, recording, electronic, or otherwise without prior written permission of the Publishers.

Printed at Kala Jyoti Procoess Pvt Ltd,
Hyderabad

© SP Guide Publications, 2020

www.spguidepublications.com



“We are committed to serving the growing demands of our customers with a futuristic approach to leading-edge innovation”

SP's ShowNews in an interaction with **Ashmita Sethi**, the recently appointed Managing Director of Pratt & Whitney India on their current footprint in the Indian market and plans for the future

SP's ShowNews (SP's): Kindly elaborate on the in-country presence of Pratt & Whitney in India?

Ashmita Sethi (Sethi): Pratt & Whitney has a long-standing presence in India spanning seven decades. Our association with the country goes back to 1960, when Air India received delivery of its first Boeing 707 powered by Pratt & Whitney's JT3D engines. Today, with a product portfolio spanning across commercial aviation, regional/business aviation and military applications, we are proud to say that Pratt & Whitney engines are powering aviation growth in India.

India is one of the most important strategic markets for Pratt & Whitney, and we continue to build on our valued relationships. We see tremendous opportunities in the Indian Government's Regional Connectivity Scheme (RCS) and UDAN which will accelerate air travel penetration through regional connectivity and seek to make flying affordable.

As an organisation that is deeply embedded in India, we are aligned with the Government's programmes including 'Make in India' and 'Skill India.' With these, we are actively contributing to translate the Government's vision on making India a global manufacturing hub and developing skills in the country into reality. Pratt & Whitney has partnerships with local governments and universities aimed at facilitating the growth of an aviation ecosystem in India. This is done by helping to create an industry-ready talent pool through several skill development programmes and initiatives. We run specialised training programmes at our Customer Training Centre in Hyderabad, which is DGCA and EASA certified. Our Customer Training Centre trains faculty and students from India and neighboring countries and successfully delivers skill development programmes to our customers. We also collaborate with state governments to advance skills training. Our Industry Capability Enhancement programme supports medium and small-scale enterprises in precision manufacturing and highly specialised engineering services.

SP's: India has one of the fastest growing civil aviation sectors in the world. What are Pratt & Whitney's plans to utilise this opportunity to boost the company's business?

Sethi: The Indian civil aviation sector is set to become the third busiest aviation market in the world in the coming five to seven years, with a capability of sustaining 1.5 billion trips out of eight billion trips globally. It is one of the world's fastest growing aviation markets.

We are committed to serving the growing demands of our customers with a futuristic approach

to leading-edge innovation. The Pratt & Whitney GTF engine is powering growth while reducing the impact of flying on the environment. We are part of making it possible to reap the rewards of growing commercial aviation with a lower carbon footprint.

SP's: Now that you have taken over the reins of Pratt & Whitney in India what are your short and long-term plans?

Sethi: My focus in this role is to serve Pratt & Whitney's commercial, government and general aviation customers, to ensure our engines and services are helping them achieve their missions dependably



P&W GEARED TURBO FAN (GTF) ENGINE

“WE SEE TREMENDOUS OPPORTUNITIES IN THE INDIAN GOVERNMENT'S REGIONAL CONNECTIVITY SCHEME (RCS) AND UDAN WHICH WILL ACCELERATE AIR TRAVEL PENETRATION THROUGH REGIONAL CONNECTIVITY AND SEEK TO MAKE FLYING AFFORDABLE.”

every day. This includes the communities served by our products, and supporting national programmes such as UDAN/Regional Connectivity, Skill India and Make in India. We have exciting plans for Pratt & Whitney's future in India that will benefit young students today thinking about a career in aviation.

SP's: Recently, Pratt & Whitney has been in the news with regards to a directive issued by India's Director General of Civil Aviation (DGCA) to IndiGo and Go Air due to safety concerns over the P&W engines. Has the issue been sorted out?

Sethi: We continue to work closely with our customers in India to support their operations while retrofitting the GTF engine fleet to the latest configuration. With more than 150 GTF-powered A320neo family aircraft delivered to airline operators in India to date, we have achieved significant strides in the past year. We are fully committed to resolving all issues and are making rapid progress towards that goal.

SP's: Please elaborate on the growth of MRO centers for GTF engines?

Sethi: Over the last five years, we have grown our maintenance, repair and overhaul (MRO) network to ensure more timely returns to operators. We currently have eight facilities performing GTF engine maintenance worldwide. We recently announced in-country GTF maintenance capability with Air India Engineering Services (AIESL) to increase support of customers in India and the surrounding region. Our commitment to India goes beyond providing engines. We want to partner with India in building an aviation ecosystem that transforms the country's aviation aspirations to reality.

SP's: What developments have taken place at Pratt & Whitney's Customer Training Centre in Hyderabad?

Sethi: We have invested in a world-class Customer Training Centre in India, which opened in Hyderabad in September 2015. The Centre, the third such Pratt & Whitney training facility in the world along with the US and China, provides specialised training on PW1100G-JM and V2500-A5 engines to engineers and technicians in the region. With 10,000 student days of training completed, the Centre has already imparted training to 30 operators representing over 20 nationalities since its launch. Students from India and around the world learn engine maintenance with state-of-the-art training technologies including 3D animation and virtual, augmented and mixed reality tools.

Our Customer Training Centre works with more than five state governments and leading state and private universities and has successfully conducted specialised short-term training programmes for the benefit of faculty and students in the country. The Centre has delivered programmes in Telangana, Tamil Nadu, Maharashtra, Gujarat and Haryana. The Centre is at the forefront of driving aviation skill development programmes in the country and has been an important pillar in supporting the development of skilled talent pool for the growth of the aviation industry in India. •

Pratt & Whitney to Showcase Aviation Expertise at Wings India 2020

With the curtain rising on Wings India 2020, India's largest Civil Aviation and Aerospace show, Pratt & Whitney, a division of United Technologies Corp. is showcasing its commitment to innovation and aviation growth in the region. The company's presence at the show is anchored by its exhibit—located in Hall B, booth #8—showcases a quarter scale model of Pratt & Whitney's GTF engine. The exhibit also features a full scale model of the GTF engine's key differentiator technology, the fan drive gear system (FDGS), which enables all the engine's modules to run at their optimum rotational speed, reducing fuel, noise and stage count.

"India is one of the world's fastest growing aviation markets and Wings India is a key event for us to engage with our customers, partners, suppliers and other stakeholders," said Ashmita Sethi, Managing Director, India for Pratt & Whitney. "Pratt & Whitney's history in India began more than 70 years ago and we look forward to the opportunity to share how the company's products, services and initiatives in the region contribute to the future of aviation in India."

To meet the growing demand for air travel, more than 150 GTF-powered A320neo family

aircraft have been delivered to Indian operators to date. GTF engines have carried over 80 million passengers on more than 5,00,000 flights in India, and have saved Indian operators 90 million gallons of fuel and 8,80,000 metric tonnes of carbon emissions since entry into service in 2016.

"PRATT & WHITNEY'S HISTORY IN INDIA BEGAN MORE THAN 70 YEARS AGO AND WE LOOK FORWARD TO THE OPPORTUNITY TO SHARE HOW THE COMPANY'S PRODUCTS, SERVICES AND INITIATIVES IN THE REGION CONTRIBUTE TO THE FUTURE OF AVIATION IN INDIA."
— ASHMITA SETHI, MANAGING DIRECTOR, INDIA, PRATT & WHITNEY

Worldwide, more than 700 GTF-powered aircraft have been delivered to 48 operators on six continents, and have accumulated over 5 mil-

lion total engine revenue hours for the combined fleet of Airbus A320neo family, Airbus A220 and Embraer E190-E2/E195-E2 aircraft. Demand for the GTF engine is strong with more than 10,000 orders and commitments. The engine is driving the next generation of efficient, sustainable air travel and is enabling new routes and city pairs, resulting in quieter communities, cleaner air and economic development.

For more than seven decades, Pratt & Whitney has been a trusted partner of India in providing game-changing technologies for the future. Today, Pratt & Whitney is committed to supporting more than 1,250 engines in service in the region. These include commercial aircraft powered by GTF, V2500 and PW100 engines, F117-powered C-17 transports and PT6A-25A-powered PC-7 trainers used by the Indian Air Force, and many small jets, helicopters and turboprops flown by governments, businesses and individuals throughout the country. In 2015, Pratt & Whitney opened its India Customer Training Center in Hyderabad with an aim to provide hands-on maintenance training to customers in the region. In 2019, the company opened its 100th eLearning Center where elementary-age children have access to high quality electronic education courses with a STEM emphasis. •



GUJSAIL SURGING AHEAD
WITH NEW IDEAS, CONQUERING NEW FRONTIERS

Aviation is a technology driven industry. GUJSAIL, the Gujarat State Aviation Infrastructure Company Limited, connects Gujarat's aviation industry to world class performance. We initiate and facilitate investment into new facilities and services to enhance the aviation experience available in the State. GUJSAIL is an arm of the Department of Civil Aviation, Government of Gujarat. GUJSAIL works unceasingly to facilitate constant modernization of aviation infrastructure. We encourage establishment of training schools for updating and upgrading special skills required for the human resources manning the aviation sector. We create aviation facilities to become a catalyst in the growth of tourism and other industries.

HELICOPTER SERVICES FOR AERIAL VIEW OF SoU

Aero Sports

Centre Of Excellence

Air Ambulance

Airborne Law Enforcement

Maintenance, Repair, Overhaul

www.gujsail.gujarat.gov.in



CIVIL | LEASING

ENGINE LEASING

Aircraft spare engine leasing is separate from aircraft leasing because engines require more intensive technical management

By GROUP CAPTAIN A.K. SACHDEV (RETD)



SHANNON ENGINE SUPPORT LIMITED SPECIALISES IN PROVIDING SPARE ENGINE LEASE SOLUTIONS TO CFMA AND LEAP OPERATORS AROUND THE GLOBE

[illegible][illegible]

CIVIL | LEASING

[illegible]

It is pertinent to point out that in the Civil Organized Crime Act, not provisions of the formal debtors' exemption term "lease" to as-

[illegible]

aircraft from either another operator or a financial institution (the lessor). India has ratified the 1979 Article 83(b) of the Convention on International Civil Aviation, which states that the Government of the State of registration shall have the right to exercise substantial supervision of the Convention and cannot be held responsible to industry growth and leasing trends. Under Article 83 (b), a bilateral agreement can be signed between the aviation authorities of two contracting states and that agreement transfers and delegates the responsibility for the regulation and safety oversight of an aircraft in accordance with the requirements of the Convention to the State of registration. The State of registration is the state of which the aircraft is registered, or the party in whose name the aircraft is registered. DGCA has established a central database of aircraft registration and maintains a register of aircraft with details of aircraft type, year of manufacture, full name and address of the owner or lessor and of the operator or lessee. The notable point is that there is no engine-specific register in India to record separate registration details for engines on aircraft, which is maintained by DGCA or any other authority. The certificate of registration for the aircraft does not include details of the motivated passenger on

CONCLUDING REMARKS

Aircraft engine repairs in a highly effective and economical aircraft maintenance program are essential, even when the majority of the engines are of large turbofan engines in times of highly congested engine resources (USRs). Life Limited Parts (LLP) shop visits are limited. The flexibility to plan repairs is reduced. The USRs, warranty issues and engine obsolescence reduce the use of leased assets. In reality, the cost of ownership versus leasing can make a huge financial impact on the owner. Although repairs are increasingly reliable, they are complex and when they are removed from aircraft for maintenance, repairs can take a long time to complete. Repairs can be severe such as bird strike cannot be predicted. Spare engines are a small segment, around two percent, of the total engine fleet resources.

Vertical Takeoff and Landing

[illegible]

36 | Aviation | ISSUE 8 • 2019

■ www.cpa-nation.com

www.nco-nigeria.com

ISSUE 8 • 2019 | Aviation | 3



WE AT SP GUIDE PUBLICATIONS
(FOUNDED WAY BACK IN 1964 BY SHRI S.P. BARANWAL,
FOUNDER PUBLISHER AND FOUNDER EDITOR)
ARE PROUD TO STATE
FIRST TIME,
SP GUIDE PUBLICATIONS PARTICIPATED IN NOMINATION PROCESS FOR
AEROSPACE MEDIA AWARDS **IN 2019**
AND, SP GUIDE PUBLICATIONS EMERGED
AS A **WINNING MEDIA** WITH
SEVEN ARTICLES NOMINATED
AS FINALISTS UNDER **4 CATEGORIES**
WHEREAS, AVIATION WEEK & SPACE TECHNOLOGY GROUP
HAD THEIR FIVE ARTICLES NOMINATED AS FINALISTS
WHEREAS, FLIGHTGLOBAL GROUP
HAD THEIR FIVE ARTICLES NOMINATED AS FINALISTS
WHEREAS, IHS JANE'S GROUP
HAD THEIR TWO ARTICLES NOMINATED AS FINALISTS
AND INDEED, SP GUIDE PUBLICATIONS IS FURTHER PROUD TO STATE
THAT IT **RECEIVED** THE **AWARD: AEROSPACE MEDIA AWARDS - ASIA 2020** UNDER
BEST PROPULSION SUBMISSION
FOR THE **ARTICLE** "ENGINE LEASING"
PUBLISHED **IN**
SP'S AVIATION 8/2019



SP GUIDE PUBLICATIONS



Potential for Civil Helicopters in India

By **ZORAWAR SINGH JAISWAL**

India has embarked on an ambitious programme to become a five-trillion dollar economy in the foreseeable future. At the same time, the government has also articulated its vision of doubling the income of farmers. These two lofty visions are achievable in case we Indians strive to improve our way of doing business. This also includes the speed of doing business. The latter can be done by the availability of good communication facilities and fast movement of men and materials by air all over the country. Of course, a fixed-wing aircraft will do the bulk of the hauling work from one part of the country to another. The remote, hilly and fringe areas where airstrips cannot be made or where fixed-wing flight services may not be economically viable, will per force be connected by helicopters. Movements across overpopulated areas too will be done by helicopters. It can be seen that the rotary wing sector provides tremendous scope for providing the necessary infrastructure to achieve the above two articulated visions.

UNIQUENESS OF HELICOPTERS

A helicopter is unique as it can take off and land vertically over a small piece of ground that is clear of vegetation and overhead wires. It can hover to carry out specific operations like rescue and photography. It is also capable of moving at very slow speeds while maintaining the desired altitude with safety to carry out high precision and demanding tasks.

There is no doubt that the operating cost of a helicopter far exceeds that of a fixed-wing aircraft, but the infrastructure required for its operation is a fraction of that required for a fixed-wing aircraft. A helicopter can go to those places where a fixed-wing aircraft cannot go. It can even perform spot hovering tasks unlike the latter machine. These are the facets of this versatile machine which have to be considered while planning its deployment in order to exploit it to the maximum.

India presently has less than 300 helicopters. Whereas, a city like Sao Paulo in Brazil has got over 300 helicopters deployed to move men and material within the municipal limits of this city. This saves time on travel and also avoids road-based congestions. Hence, it can be seen that India has got a tremendous potential for growth of helicopter-based logistics services for moving men and materials. This machine can be deployed for multiple tasks.

UNLEASHING THE POTENTIAL OF HELICOPTERS

We are likely to see a surge in the use of helicopters due to the launch of the Regional Connectivity Scheme (RCS), UDAN and the establishment of GAGAN navigational equipment. The Government of India has gone on to resuscitate the old abandoned airfields to augment the RCS. Helicopters could fly on a fixed or customised itinerary and can also be used to fly between two points where a fixed-wing aircraft cannot be deployed for whatever reason.

These helicopters would be operating as spokes in a hub-and-spoke model. They will bring in passengers from remote areas up to the aviation hub where the load is going to be taken up by the fixed-wing aircraft. The helicopters would also be utilised to move the passengers who have alighted from the aircraft at the hub, to their destinations along the spoke itineraries.



HELICOPTERS ARE NOW AN INTEGRAL PART OF RELIGIOUS TOURISM

Places such as Mumbai, Delhi, Bengaluru and Ludhiana which face heavy traffic congestion on the roads, would look for vertical avenues for movement. People in these towns will use helicopters to reach their destinations faster and with the least amount of fatigue. All these factors indicate that the potential of the helicopters is about to be realised in our country.

HELICOPTER USAGE AVENUES

Elections are an ongoing activity in India throughout the year. They could be block level elections, or elections of the national government apart from the state government elections. Most of the politicians now aspire to connect with as many people as possible on a given day with the least amount of fatigue and time spent on road travel. Consequently, a helicopter has become the favourite means of transportation for the politicians. Hence, we can see that the use of helicopters is going to increase tremendously in the elections to come in the future.

Helicopters can also be used to combat forest fires and to enable search and rescue operations during floods. They can be used to fly in disaster management personnel and fly out the casualties who require urgent medical aid in a partially or from a fully destroyed area due to disasters.

The rotary wing machine is the favourite logistics medium for the law enforcement agencies. Helicopters can also be used to launch non-lethal agents such as tear gas dispensers or spray skin irritating chemicals to disperse the crowds. These machines can also be used to move police reinforcements from one part of crowd control point to another to extract more effectiveness from the available police personnel on ground. Any videography done using helicopter will also enable justice to be promulgated once the violence or protest are over. This aerial photography from helicopter-based cameras can overcome the problems of line of sight visibility.

Helicopter-based ambulatory services are going to be used in a big way. During a medical emergency either the medical teams can be flown into remote areas to provide medical support including surgery or the patients may be flown out to a better equipped hospital. Patients who have the money and need urgent medical attention would not hesitate to summon air ambulatory services. In this way, precious lives can be saved.

The politico-economic development of remote areas like Jammu and Kashmir and the North East, which have got large inaccessible pockets of land, depends on connectivity to the mainland. These places will be connected through helicopter services. Recently, the State Transport Department of Nagaland has restarted the helicopter service in

Phek area. Similarly, the Government of Arunachal Pradesh has launched helicopter service in Ziro and other places under the RCS.

Big players such as Uber have launched an app-based service in the United States (US) where people can book helicopters the same way they book taxis. This has been a game changer. Similarly, Thumbby Aviation is also attempting to start a taxi service within the municipal limits of Bengaluru. It connects the international airport with the other prominent business centres of Bengaluru to move people in minimum time and with minimum fatigue.

Of late, Indians have been going for skydiving to places like Dubai and other countries. With the Directorate General of Civil Aviation (DGCA) now opening up for adventure tourism, skydiving is likely to attract the young generation and helicopters can provide a versatile aviation infrastructure to encourage the adrenalin flowing, thrill-seeking young population in adventure activities. Religious tourism to mountain top-based pilgrimage sites such as the Hemkund Sahib in Uttarakhand and to Mata Vaishno Devi Shrine in Jammu, can be made easier by operating helicopter-based transport facilities. Of course, Pawan Hans and Air Deccan have already launched such services which help aged pilgrims.

Agriculture is the mainstay of the Indian economy. Hence, helicopters can be used for cloud seeding to generate rain over desired areas and also sow seeds, sprinkle fertilisers and insecticides from the air. This will enable the farmers to save time and labour costs.

Today, India has got helicopters having diverse lift capabilities. Hence, they can be used in remote sensing, LIDAR imaging, photogrammetry and aerial surveys. In order to have better accuracy and resolution of the onboard sensor's output, it is possible to control the speed of the aircraft to get better results as per the desired operating conditions.

Sometimes, road-based movement of hazardous chemicals or substances is difficult. Helicopters can be used to overcome this problem, but will be subject to the safety guidelines promulgated by the International Civil Aviation Organisation.

Good governance with minimum intervention can be insured by flying in the bureaucrats or the technocrats through helicopters to the critical flashpoints in their areas of responsibility. They would be able to then take on-the-spot decisions on the progress of projects or announce actions to be taken to mitigate the problems faced by the people. These executives would then be able to devote more time to their responsibilities. This will be particularly useful in the case of the politician's movement because their cavalcades often barricade the roads as they travel from one place to another.

For a helicopter to achieve its full potential, its operating cost should not be seen as a dampener. The helicopter must be viewed as a means of achieving the lofty visions established by the government. Once a robust helicopter industry is established, not only will the cost of production and operation of helicopters come down, it will also spur other ancillary activities such as Maintenance, Repair and Overhaul. All these activities will provide employment to people. Over a period of time when helicopter operating costs come down and maintenance facilities are available at pre-decided places, it is quite feasible to expect that foreign registered helicopters would too come to these hubs in order to avail the cheaper labour and lower service costs. Once this starts happening, then we can say that the full potential of the helicopter industry in India has been achieved. •

AIESL to Perform Pratt & Whitney GTF Maintenance

Pratt & Whitney recently announced that Air India Engineering Services Limited (AIESL) will provide maintenance, repair, and overhaul (MRO) services in support of Pratt & Whitney's GTF engines and customers in India. AIESL will service PW1100G-JM engines at its facility in Mumbai.

"With AIESL performing maintenance on our high-tech GTF engines, we are excited to strengthen our global MRO capacity and capabilities for customers on the ground in India," said Joe Sylvestro, Vice President of Aftermarket Operations at Pratt & Whitney. "As the demand for air travel grows in India, we look forward to furthering the growth of Indian aviation."

AIESL's introduction to GTF maintenance will be a phased approach, starting with engine upgrade and module exchange capabilities as immediate support of the GTF fleet in India. The facility has already received its first GTF engine.

"It's an exciting time for us as we prepare for the GTF engine," said H.R. Jagannath, CEO of AIESL. "AIESL has been engaged in providing engine MRO services to Air India and other operators for over 50 years now. Our association with Pratt & Whitney goes back a long time as well. The GTF engine provides us with the opportunity to showcase our capabilities and establish AIESL as one of the premier engine MROs in Asia."



Pratt & Whitney powers more than 700 aircraft in service today in India, including more than 150 GTF-powered A320neo family aircraft. The GTF engine has saved Indian operators over 90 million gallons of fuel and more than 8,00,000 metric tonnes of carbon emissions since its entry into service. Hyderabad is home to Pratt & Whitney's state of the art Customer Training Center, which provides maintenance training to India's growing aviation workforce.

"Pratt & Whitney is committed to investing in the success of the aviation industry in India, and to build capabilities for high value services that will help airlines get the best from their next-generation products," said Ashmita Sethi, managing director of India for Pratt & Whitney. "These services based on deep knowledge and expertise of the manufacturer, once performed in India, will save customers the downtime, disruption and costs, by keeping GTF engines flying longer, and getting them back on the wing, sooner. We remain dedicated to providing world-class support to our customers and their operations today and into the future."

Since entering into service in early 2016, the GTF engine has demonstrated its promised ability to reduce fuel burn by 16 per cent, to reduce nitrogen oxide emissions by 50 per cent compared to the regulatory standard, and to reduce the noise footprint by 75 per cent. •



"GUJSAIL has planned to explore almost each and every corner of aviation sector in the next 10 years"

Captain Ajay Chauhan, CEO, Gujarat State Aviation Infrastructure Company Limited (GUJSAIL) talks to SP's ShowNews about their plans for the future

SP's ShowNews (SP's): What is GUJSAIL and main objectives of GUJSAIL?

Captain Ajay Chauhan (Chauhan): The aim is to create a state-of-the-art civil aviation infrastructure and system which will make a key contribution in the success of Gujarat and to develop world-class aviation infrastructure which will contribute to growth of trade and tourism and generate employment opportunities across the aviation value chain. Also to develop green field airports at multiple locations in Gujarat and to create employment generation through training school of pilots, stewards, airhostess, etc.

SP's: What are the achievements of GUJSAIL so far? What will be new targets aiming at in near future?

Chauhan: In the span of last five years, GUJSAIL had successfully achieved the targets in various segments of the Aviation Sector with some major achievements like implementation of Regional Connectivity (Intra-State) under the State VGF, Development of New Greenfield Airport at Rajkot, Aviation Training Institute at Mehsana, MRO facility at GUJSAIL Complex, Ahmedabad, Heli Service at Statue

of Unity (SoU) and Development at New Airstrip at Ankleshwar, Palitana, Rajpipla, Morbi, Dholavira, Dahej, Ambaji, and Dwarka.

SP's: What are the big challenges you have as a CEO?

Chauhan: The huge challenge which I faced as the CEO, GUJSAIL, is the compliance of technical subject of aviation which governed with sub guidelines/sub rules within guidelines and rules which at times create complication and contradiction and leads to confusion for drawing any conclusion. For enabling us to achieve or comply the requirement of civil aviation authorities, it is very much essential to set the guidelines clearly and specifically, especially when it comes to planning and implementation of the mandatory amendments which are always time bound.

SP's: How do you see the development of GUJSAIL in next 10 years?

Chauhan: GUJSAIL has planned to explore almost each and every corner of aviation sector in the next 10 years. Department has plans to implement MRO development, Regional Connectivity (Intra-

State), Heli Services, Aero Sports, Aviation SEZ, disaster and rescue operation and training academy for providing fleet knowledge of the aviation, EMS etc. etc. GUJSAIL also planning to develop, only one its kind the "Aviation Park" to provide good platform for educating the people about the aviation activities; also serve the excellent phenomena for the private players and investors to spare their money for the development of aviation in consultation with the Government.

SP's: What is your wish list for 2020?

Chauhan: GUJSAIL plans to establish an Aviation park in Rajkot to raise awareness about the aviation sector. Also, Gujarat will be the first state in India to have AirPolicing by implementing India's first AirBorne Law. An Air Ambulance services are also in pipeline along with Seaplane tour as a part of the tourism initiative.

We are also working on the establishment of Four Water Aerodromes in association with Ministry of Civil Aviation and AAI which will be at Sabarmati riverfront, Statue of Unity, Shatrunjay Dam and an Aero Sports Hub at Amreli. •

The Challenges Today and the Changes Tomorrow: BizAvIndia Maps General Aviation's Situation in India

BAOA's BizAvIndia Seminar Takes Off with Deliberations on "Socio-Economic Impact of GA/BA"



GROUP CAPTAIN R.K. BALI, MD, BAOA ADDRESSING THE AUDIENCE.

SEATED ARE (L-R) AVM S.S. CHAUHAN, PRESIDENT, BAOA; ROHIT KAPUR, MD, ARROW AIRCRAFT SALES & CHARTERS PVT. LTD.; ASHISH SARAF, PRESIDENT AIRBUS HELICOPTER SOUTH ASIA AND VARUN GUPTA OF HONEYWELL.

Amid the rising reports of India coming under the garb of COVID-19, organised by the Business Aircraft Operators Association (BAOA), the 5th edition of the BizAvIndia Conference was held on March 11, 2020, in Hyderabad on the sidelines of Wings India 2020. The welcome address at the conference was moderated by Group Captain Rajesh K. Bali, MD, BAOA. The panelists included BAOA President, AVM S.S. Chauhan; Rohit Kapur, Managing Director, Arrow Aircraft Sales & Charters Pvt. Ltd.; Ashish Saraf, President Airbus Helicopter South Asia and Varun Gupta from Honeywell.

The session witnessed the release of a special concept report prepared by Pratt & Whitney Canada in collaboration with BAOA titled 'Social impact of General Aviation'. While presenting the report, Group Captain Bali also talked about the need to explore and expand helicopters for private aviation in the country as well as the tremendous potential that India has when it comes to amphibious aircraft in the form of coastal tourism. The session further showcased the scope of GA/BA for emergency medical services (EMS), remote air connectivity, and disaster management. The many challenges that the industry faces were also discussed through the conference from infrastructure to limited economic opportunities, governance challenges, taxation policies, etc. as the hurdles for an effective growth of the sector.

"This conference is very timely. The government is interested in providing a thrust and put in place a regulatory system which enables the business aviation sector to realise its true potential in India. We have been working in close concert with the association (BAOA) in order to put in place a regime for BA/GA which enables you to grow and fulfil your rightful place along with scheduled airline operations," said Vandana Aggarwal, Economic Advisor, Ministry of Civil Aviation (MoCA), Government of India.

The conference proceeded further with panel discussions divided into three sections catering to three very significant topics of the GA/BA industry which required conversation. The first session was about 'Boosting economic growth with business and general aviation'. The panelists for the same included Sudhir Nayak, Senior Vice President, Reliance Commercial; Rohit Kapur, Managing Director, Arrow Aircraft Sales & Charters; Ashish Saraf, President Airbus Helicopter South Asia and Narayana Vislavat, Deputy Director of Air Safety, DGCA. The last session

was moderated by Wing Commander Julian D'Souza, Vice President -Aviation, Jupiter Capital on 'Safety/Infrastructural/Security Challenges for achieving optimal growth of GA/BA in India, and the way forward' and added Ashish Kumar, Chief Commercial Officer, GMR Hyderabad International Airport and Harsh Wardha Sharma, Director, Himalaya Airlines in the panelists.

The panelists presented the challenges with single-engine operations in the country and the steps that can be taken for better utilisation of the single-engine turboprop aircraft including proper routing, operational and training requirements, etc. There were also extensive talks about the elitist tag that this industry has unnecessarily carried and how it's high time that's done away with along with many other infrastructural steps being worked out for the future.

"We understand the importance of GA and the role it plays in developing country like India, the government has already acknowledged the challenges and we are taking these up to the highest level and working to have dedicated areas for GA aircraft," said Usha Padhee, Joint Secretary, Ministry of Civil Aviation. •

—Ayushee Chaudhary

Pratt & Whitney and Business Aircraft Operators Association (BAOA) of India Examine Societal Benefits of General Aviation Missions

Pratt & Whitney announced it has published an assessment of the social impact of general aviation in three primary missions: emergency medical services, remote air connectivity and disaster management. Called Social Impact of General Aviation, the whitepaper examines the financial and operational models of aviation missions around the world that focus on the common public good. The study was conducted in collaboration with the Business Aircraft Operators Association (BAOA) of India and was released at BizAvIndia 2020 conference on March 11, 2020.

"Pratt & Whitney turboprop, turboshaft and turbofan engines have powered the growth of business and general aviation for decades," said Ashmita Sethi, managing director of Pratt & Whitney India. "BAOA is the voice of business and general aviation in India and we're delighted to have collaborated with them on this project. The study demonstrates just how vital these kinds of missions are to societies around the world."

Emergency Medical Services (EMS) are growing



PRATT & WHITNEY'S REPORT ON SOCIAL IMPACT OF GENERAL AVIATION

around the world – and particularly in the Asia-Pacific region – due to aging populations, increased healthcare spending and favorable policies.

Remote Air Connectivity supported by governments can overcome barriers such as lack of physical infrastructure, limited economic opportunities and governance challenges. The study talks about how a comprehensive set of policies can help lift up the social and economic status of remote regions.

Disaster Management is growing in importance around the world, including missions such as firefighting, search and rescue (SAR) and humanitarian aid programs like the World Food Programme (WFP) and United Nations Humanitarian Air Service (UNHAS).

"In India and around the world, social missions like these are helping millions of people. The study demonstrates how important it is to set up the best possible policies and financing models to empower our fellow citizens – and boost our economy," said Group Captain R.K. Bali, Managing Director of the Business Aviation Operators Association (BAOA). •

Embraer: A Constant Innovator

With an unwavering focus by Embraer on producing exceptional jets with enviable economics and focus on innovation, it is a lesson for all in aviation on what is indeed possible

By **SATYENDRA PANDEY**

Empresa Brasileira de Aeronáutica, popularly known as Embraer, is a Brazilian aviation conglomerate. Founded in 1969 as a government enterprise, it was privatised in December 1974 during a period of economic challenges. Thereafter, Embraer went from strength to strength with the company evolving into four distinct business segments: Commercial Aviation, Executive Jets, Defence and Services & Support. A capital market listing in 2000 further bolstered its position and most recently, it clocked in revenues of almost \$5.9 billion with approximately 43 per cent coming from commercial aviation. Indeed, the commercial aviation arm has delivered steadily for Embraer with a history of gauging the market accurately, finding a niche and constantly focusing on innovation. As Embraer states on its website: "Our task is to see the world of aviation from different eyes and construct new perspectives."

FOCUS ON REGIONAL JETS

This philosophy is seen both in its ability to carve out and focus on a niche market and its product lines. Focusing on the regional jet segment, Embraer has delivered aircraft with a comprehensive redesign --from advanced avionics and high wing aspect ratios to seat pitch and overhead bin space. The innovation is not all in-house and large part of it is driven by a collaborative culture of maintaining partnerships with over 50 institutions. Approximately 10 per cent of revenue is reinvested in research, development and innovation. More importantly, new ideas are actively taken up and incorporated. Additionally, from its very inception, Embraer has been open to procurement from global suppliers enabling it to adopt best practices to stay ahead of the curve in design, technology and manufacturing.

The niche market that Embraer carved out for itself and targeted effectively is that of exceptional regional jets. This came about by observing the market, given the focus on lower seat-mile costs, the large manufacturers were going for aircraft that were 180 seats or higher as the costs were amortized over more seats. Embraer took a considered and perhaps contrarian view and saw an opportunity in the segment of 80 to 100 seats. Thus was born the E170 which evolved into the E175, E190 and E195 variants. Via constant innovation, capacity and range dynamics were addressed while efficiency improvements continued to deliver lower overall costs. With this, Embraer targeted markets that were too small for the larger aircraft to be flown profitably, yet demanded the same level of service and importantly jet service, as larger markets. By choosing to focus exclusively on jet-powered aircraft, Embraer further strengthened its niche and indeed several campaigns from airlines such as American Airlines from 1999, focused on the regional jet proposition in contrast to turboprops. Delivering lower

trip costs and extremely competitive seat costs further strengthened its position. Interestingly, now Embraer is engaging airlines that have witnessed overcapacity in markets with higher seat capacity and highlighting to them the profit potential of Embraer jets.

Embraer is now focusing on the E2 programme which was launched in 2013 with the first flight of the E190-E2 in 2016. Certification followed in early 2018 and as of now, the E2s deliver a 17 per cent better fuel economy with the use of geared turbofan engines, higher wing aspect ratios, improved aerodynamics, smaller tail surfaces and state-of-the-art fly-by-wire systems.

STRIVING FOR MARKET SHARE

The lines above also on Embraer's website, certainly ring true when one looks at numbers. Embraer commands a 29 per cent share of deliv-

jin and Colorful Guizhou Airlines ordering several jets. This is quite significant as the Chinese airlines have chosen this over the domestically manufactured aircraft COMAC and this speaks volumes.

In a further testament to the innovation and potential for Embraer, Boeing has entered into a joint venture to form a Commercial Aviation unit. Interestingly, the initial focus of Boeing was on a competitor – Bombardier — that had suggested collaboration between the two, but during evaluation of strategic fit and potential synergies, it was Embraer that came out on top. That said, in 2005 a transaction could not go through due to opposition by the Brazilian government which was a major shareholder. A decade later, the talks were on again with the announcement of a joint venture (JV) in 2018. With the JV, Boeing will acquire 80 per cent of the Commercial Aviation unit while Embraer will retain 20 per cent. This is a win-win with Embraer getting access to Boeing's marketing, financing, procurement and supply chain capabilities while Boeing will be able to leverage Embraer's innovative DNA and also fill in the market gap in the up to 150 seats aircraft market. The merger involved significant anti-trust examinations, approvals and filings and in January 2020, Boeing and Embraer secured approval of their planned partnership from Brazil's Council for Economic Defense (CADE). It follows clearance from other jurisdictions including the USA. Only the European Commission has yet to approve it but the merger is almost certain to go through.

OPPORTUNITIES IN THE FUTURE

Embraer believes that there will be significant opportunities for its commercial aviation jets going forward. These will be driven by opportunities in replacement of existing Embraer fleets of current operators, replacement and upgrading of the 50-70 seat

jets, replacement of existing turboprops as airlines move towards jet engine fleets and finally, right sizing where airlines look at capacity and costs and move to more efficient jets. Embraer forecasts that from 2018 to 2027, there will be a demand for around 10,550 aircraft in the up to 150-seat market. The order book as of now, is stable with a backlog of \$1.6 billion worth of aircraft orders. More are likely in the upcoming air shows in Paris and Dubai.

Overall, Embraer's success is awe inspiring. With an unwavering focus on producing exceptional jets with enviable economics, and a constant focus on innovation, it is a lesson to all in aviation on what is indeed possible. •

The author is an India market expert and has held a variety of positions within the aviation industry. His roles include working as the Head of Strategy & Planning at Go Airlines (India) and with CAPA (Centre for Asia Pacific Aviation) where he led the Advisory and Research teams. He is an alumnus of the University of New South Wales and the London Business School. He is also a certified pilot with an Instrument Rating.



EMBRAER E190-E2 AIRCRAFT TAKES OFF

eries for regional jets up to 150 seats market and is the leader in this segment. Its global presence is remarkable with 100 airline customers across 60 countries. The United States is its largest market with four large operators namely Republic Airlines, Envoy, SkyWest Airlines and ExpressJet Airlines. All of these airlines have an active fleet of over 100 Embraer aircraft. Brazil is the next largest market with Azul as a leading customer with a fleet of 61 Embraer jet. Europe has also seen operators such as KLM, HOP (Air France) and FinnAir with sizeable Embraer fleets and the jets are increasingly penetrating the Asian markets. India has seen two operators namely the now defunct Paramount Airways which flew the E170s and most recently Star Air which is flying the E145s. In a sign of how far the company has spread its wings, most recently, Mongolia leased four Embraer aircraft for use in the country's skies via their airline Hunnu Air.

The order book is also fairly strong with 1000+ orders across 25 airlines and lessors. The United States continues to lead with Brazil and Europe having sizeable orders. Recently, China has also shown interest in the jets with airlines like Tian-



GO BEYOND

PRATT & WHITNEY

GTF

THERE IS NO COMPARISON.
NO EQUAL. THERE IS ONLY ONE.

**THE COMMERCIAL JET ENGINE
IN A LEAGUE OF ITS OWN.**

Powered by an industry-first geared architecture — and more than 40 other groundbreaking innovations — the **Pratt & Whitney GTF™** is unlike any engine that's come before it.

EXPLORE THE FUTURE OF FLIGHT AT [PW.UTC.COM](https://www.pw.utc.com)

A UNITED TECHNOLOGIES COMPANY

