

# SP'S SHOWNEWS



AN SP GUIDE PUBLICATION

Asia's largest event on Civil Aviation  
(Commercial, General and Business Aviation)



24-27 March 2022

Begumpet Airport, Sardar Patel Road, Hyderabad, India



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# Wings India 2022: Repairing and Renewing the Aviation Industry

*As the nation gears up to host global participants for the event, Wings India 2022 comes with a sense of hope to recommence things towards the better*



AFTER BEING IN DOLDRUMS FOR OVER 2 YEARS, INDIAN AVIATION SEEMS TO BE BACK ON TRACK IN 2022, ON ROAD TO BECOMING THE THIRD LARGEST AIR PASSENGER MARKET BY 2030

## AYUSHEE CHAUDHARY

**A**mid clouds of the first variant of the novel coronavirus in March 2020, India hosted participants from across the globe for Wings India. Among Asia's largest civil aviation show, Wings India 2020 did experience a deduction in number as the virus had taken over in some parts of the world by then and entered India as well. The event remained close for the public and yet noted a foot-fall of over 9,000 with 450 plus exhibitors, more than 3,000 visitors and about 485 B2B/B2G meetings. Despite early speculations around the virus and concerned spirits, the previous show had drawn focus on the long-term goals. At that time, no one anticipated that the virus will rise to become a pandemic, gripping the entire world, claiming lakhs of lives, mutating into multiple variants; clutching industries; changing behaviors of people and just the way

things happened. Two years down that, Wings India 2022 is back with its new edition in the new normal of the "After Disease" world.

As the nation gears up to host global participants for the event, Wings India 2022 comes with a sense of hope to repair and renew things towards the better. The Ukraine-Russia crisis has yet again intensified the clouds of uncertainty but never the less, Ministry of Civil Aviation (MoCA) and Federation of Indian Chambers of Commerce and Industry (FICCI) is all set to jointly organise WINGS INDIA 2022 - "Asia's largest event on Civil Aviation (Commercial, General and Business Aviation)". With the focus on new business acquisition, investments, policy formation and regional connectivity, the event aims to provide a congenial forum catering to the rapidly changing dynamics of the sector.

During these two years, a lot has transitioned through the industry. The virus gripped the industry by ceasing



WINGS INDIA 2022 AIMS TO BRING ALL MAJOR STAKEHOLDERS IN THE INDIAN AVIATION SECTOR ON A COMMON PLATFORM FOR THE GROWTH OF THE INDUSTRY.

operations, jolting the airlines and manufacturers with severe losses, changed logistics in travel, new rules to travel, increase in regional domestic aviation, new airlines entering the Indian market, etc. In line with that, the organisers believe that the event will provide a much-desired fillip to the aviation and restructured focused forums shall be instrumental in attaining the objective of connecting the buyers, sellers, investors, and other stakeholders at a common vantage forum. Wings India 2022, the fifth edition of the event, is scheduled to be held from March 24-27, 2022, Begumpet Airport, Hyderabad, India. Hyderabad is emerging as the nation's aviation hub and hence remains a preferred destination for the event.

The Wings India, 2022 aims to bring the key stakeholders of global aviation market, states governments, international regulators, and business associations together as a group representing airlines, in order to facilitate direct interaction with airport operators, various airlines, cargo operators and other players on a common platform.

This year also marks 75 years of India's independence and the nation is celebrating Azadi ka Amrit Mahotsav to illustrate the significant milestone. In alignment with that, the curtain-raiser for WINGS INDIA 2022 last year revealed the theme for the event as, "India @75 New Horizon for Aviation Industry".

With a market size of \$16 billion in July 2021, India is the tenth-largest civilian aviation market, stated the Indian Brand Equity Foundation (IBEF) in a report. A Morgan Stanley research report for the same month anticipated that the Indian aviation industry could recover to 80 per cent of the pre-COVID levels (as of 2020). Sometime back, the International Air Transport Association (IATA) had shared that India is expected to overtake China and the United States as the world's third-largest air passenger market in the next ten years, by 2030.

The growth of the sector will add new dimensions to travel, enhance the economy and also create millions of jobs in that journey. With that in mind, the Civil Aviation Minister of India, Jyotiraditya Scindia sees the event as a huge opportunity for the nation as well its neighbouring countries. The Minister also added that WINGS India 2022 will provide an opportunity to build strong roots of the ecosystem that the civil aviation industry represents. Speaking on the government initiatives and emphasising the government policies, the Minister also underlined the need for collaboration.

Usha Padhee, Joint Secretary, Ministry of Civil Aviation said, "This is a unique platform for civil aviation in India, we intend to ensure that all our stakeholders come under a single umbrella, showcase the achievements of the sector, and share the good practices with equal contribution from all. The civil aviation sector is becoming a development engine for the nation."

Given that India has the largest number of unicorns and start-ups and the aviation sector's surge, there is a huge opportunity for each one connected to the aviation industry, affirmed General (Dr) V.K. Singh (Retd), MoS for Civil Aviation and Road Transport and Highways, Government of India (GoI). "One can manufacture, sell, lease and create to become partners in infrastructure with us," he added.

Scindia further said that the civil aviation industry is not only about airplanes and airports, but we must focus on building an airline ecosystem that has strong roots across the value chain. "Manufacturing is the core of the sector and the country must move from products to services. Both product and service will result in economic and employment multipliers. Every direct job generated by civil aviation industry results in 6.1 per cent indirect employment opportunities. This potential cannot be replicated by any other sector," he said.

He urged the industry to join the Wings India 2022 to be part of the expanding horizon of the Indian aviation sector, which can be the key driver towards economic growth. The Minister strengthened this by adding, "We have doubled the number of airports in India since the last seven years and the horizontal expansion will result in vertical depth. The new helicopter policy, MRO policy, flying training organisation policy are focused on the spur of growth in the country." General V.K. Singh also suggested the need to bring down the VAT on aviation turbine fuel (ATF) and ensure more flights come in as that can generate tremendous revenue.

For Wings India 2022, until the day of the meeting 125 international and domestic exhibitors have confirmed the participation along with 11 hospitality chalets, more than 15 country delegations and over 25 States & UT's, FICCI informed in a statement. It also added, "Participation of Global Ministers and Industry captains at the Global Aviation Summit reekons the exciting proposition the event hold."

More than 200 exhibitors; 6,000 trade visitors; 50,00 general visitors; aircraft participation; 200+ international companies, Wings India 2022 promises to be a great chance to discover, network, collaborate and showcase all the various aspects of the aviation industry. Recently, global manufacturer, Airbus released that it will put its wide-bodied A350 aircraft on static display at the Wings India airshow and a scale model of its single-aisle A220 aircraft. For the airshow, India's helicopter team Sarang's performance is much awaited.

There might be some differences in the way the show is conducted with uncertainty still around the corner but the spirits of the organisers and the hosts aren't dampened to have the entire aviation industry come together after a roller coaster ride of two years with the pandemic. ●

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# Shaping the Future of Sustainable Aviation

*Our commitment to powering sustainable aviation is demonstrated by our investments in new technology, materials and products that consume less fuel through increased engine efficiency, including hybrid-electric technology*



(LEFT) GTF ENGINE ALLOWS UP TO 20 PER CENT MORE FUEL EFFICIENCY; (RIGHT) PRATT & WHITNEY HAS BEEN CLOSELY INVOLVED IN SAF TESTING FOR OVER A DECADE AND HAVE TESTED 100 PER CENT SAF IN PW600 AND GTF ENGINES

**ASHMITA SETHI,**  
PRESIDENT AND COUNTRY HEAD, PRATT & WHITNEY

Aviation accounts for 2-3 per cent of the world's global CO<sub>2</sub> emissions, far lower than many other industries. But as electric power generation and surface transportation industries shift to green- and renewable energy sources, aviation's share of CO<sub>2</sub> emissions in total percentage terms could increase, and could impact the climate goals set at the Paris and Glasgow summits, limiting global warming to 2°C. This makes it important for the aviation industry to develop solutions that help airlines further improve their fuel efficiency and reduce CO<sub>2</sub> emissions.

So far, it is clear that the solution to sustainable flying doesn't lie in one 'silver bullet', but in pursuing a range of technology solutions, developed for different applications.

Pratt & Whitney has been a leader in powering sustainable aviation for decades, and few aircraft engine makers have the depth and breadth of products and experience that we do of over 95 years. Our commitment to powering sustainable aviation is demonstrated by our investments in new technology, materials and products that consume less fuel through increased engine efficiency, including hybrid-electric technology.

We invested more than \$10 billion to pioneer the Geared Turbofan. With its unique geared design, the Pratt & Whitney GTF engine allows the latest generation of single-aisle aircraft to be up to 20 per cent more efficient than prior-generation propulsion systems. Since entering service in 2016, GTF engines now power more than 1,000 aircraft and have avoided the emission of more than 5 million tonnes of CO<sub>2</sub>, while allowing airlines to grow their route networks sustainably.

But we are still only at the beginning of harnessing the potential of this revolutionary technology. We see a clear path to further enhancing the GTF engine's propulsive efficiency, while also utilising new materials, such as ceramic matrix composites (CMC) parts, to improve thermal efficiency. We recently opened a facility dedicated to the engineering, development and low-rate production CMC materials.

We are looking at further optimising gas turbine efficiency using hybrid-electric technologies, spanning regional turboprops to single-aisle aircraft.

We have progressed our plans to integrate hybrid-electric technology into a Dash 8-100 flight demonstrator, supported by investments from the governments of Canada and Quebec. The regional aircraft-scale demonstrator, developed in partnership with Collins Aerospace and De Havilland Canada, is targeting a 30 per cent improvement in fuel efficiency compared to today's most advanced turboprops.

Electrification is a rapidly developing field and maturing the technology for smaller applications such as regional turboprops could ultimately inform technology for larger scale turbofan engines such as the GTF.

Improving the efficiency of propulsion systems is at the core of what we do, but it is still only part of the equation to achieving our industry's decarbonisation

goals; the other key ingredient is using cleaner, more sustainable fuels.

Developed from a variety of non-fossil fuel-based feedstocks, Sustainable Aviation Fuels (SAF) have a critical role to play in reducing aviation's net emissions. They are a "drop in" solution that are already compatible with today's aircraft and infrastructure and, therefore, offer the best route to decarbonising the tens of thousands of aircraft flying today and in the coming decades.

We have been closely involved in SAF testing for over a decade, and supported industry regulators in devising the standards that allow SAF to be used today at blends of up to 50 per cent with standard Jet A fuel. We've tested 100 per cent SAFs in our PW600 and GTF engines and continue to advance standards for making our engines 100 per cent SAF ready in the future.

As an engine maker, our technical challenge on 100 per cent SAF is relatively modest compared to the more pressing issue of SAF supply and infrastructure. SAF supply accounts for less than 0.1 per cent of fuel used by commercial aircraft today.

It's long been recognised that SAF production must be urgently scaled up, while the cost per gallon must also be brought more closely in line with kerosene. What's good for the environment must also be good for business. Fortunately, momentum is building in that direction, with governments in the USA and Europe establishing a range of policies - from tax incentives to investment stimulus - which will help create the best conditions for demand and supply. In India, we are working with the National Bio-ATF Committee - which includes government stakeholders, energy companies, airlines, and academia - to recommend a framework for adoption of SAFs in India.

Besides SAF, we are also looking at alternative, zero-carbon fuels, especially hydrogen. It's an amazingly energy rich fuel, whose properties we are very familiar with. As early as the 1950s, Pratt & Whitney developed hydrogen-burning engines as part of a top-secret, Lockheed Martin Skunkworks project to build a high-altitude reconnaissance aircraft. "Project Suntan" was intended as a successor to the famous U-2 spy plane but would fly at even higher altitude.

Even back then, we were aware of the challenges of hydrogen, which ultimately led to the project's cancellation. Hydrogen has three times the energy density of kerosene but takes up four times the volume. To effectively store it, you need to turn it into a liquefied gas at very low temperature of - 253 degree Celsius. As with SAF, another major challenge with hydrogen lies in its supply, both in terms of green production and delivery to airports for fueling.

The challenges are vast, but we will not be deterred from the ultimate goal. Accessible, affordable travel powers the global economy, and connects people. It is part of the fabric of our life and will only continue to grow. It's clear that our industry, from airlines to manufacturers, is stepping up to the challenge and is determined to make sustainable aviation a reality. We will need a great deal of planning, effort and co-operation among many industry stakeholders, much of which is already underway.

At Pratt & Whitney, we are already planning and preparing for the future, to help airlines and other air operators achieve their goals. ●

# Restrictions Now; Repercussions Ahead

*The invasion followed by sanctions across the globe pose a threat to the already vulnerable aviation industry*



AIRSPACE RESTRICTION DUE TO RUSSIA-UKRAINE CONFLICT HAS AFFECTED ALL MAJOR AIRLINES DUE TO INCREASED COSTS BECAUSE OF RE-ROUTING OF FLIGHT PATH OR HIGHER ATF PRICES

## AYUSHEE CHAUDHARY

**T**he turbulence for the aviation industry seems to be in a continuum. Just as the sky was beginning to get clear after the halt that the COVID-19 pandemic caused, another crisis has emerged. The invasion of Ukraine by Russia is again embarking uncertainty towards the aviation industry with deeper impacts that may push recovery back again.

The invasion followed by sanctions across the globe pose a threat to the already vulnerable aviation industry. Extensive economic instability, uncertain demand for air travel, airspace restrictions, and other issues are likely to cloud over the aviation industry as the crisis continues. Closed or restricted airspace is a major concern that comes with multiple other related issues. According to flight tracking websites, the airspace over Ukraine and its border with Russia has mostly been empty. A Notice to Air Missions (NOTAM) banning civil aircraft from flight routes bordering northeastern Ukraine was issued by Russia to remain in effect until May. Ukraine also closed its airspace for passenger flights. Civilian air traffic tracking sites also displayed airlines bypassing the conflict areas by a wide margin.

The Federal Aviation Administration (FAA) banned the United States (US) airlines and pilots from flying in areas of Eastern Europe. "The FAA issued NOTAMs expanding the area in Eastern Europe and Russia where US airlines and US pilots cannot operate," the FAA said in a statement.

The European Union Aviation Safety Agency (EASA) doubled its existing security alert and expanded the warning for airlines and other civilian operators from 100 nautical miles to 200 nautical miles of the Ukrainian border with Russia due to fears of "mid-range missiles penetrating into controlled airspace." "Operators should exercise extreme caution. In particular, there is a risk of both intentional targeting and misidentification of civil aircraft. The presence and possible use of a wide range of ground and airborne warfare systems poses a HIGH risk for civil flights operating at all altitudes and flight levels," the EASA said.

Some of the immediate impact areas that have already emerged for the aviation industry ever since the crisis escalated include:

### RE-ROUTING

Civilian flights have remained closed in Ukraine for almost a month now after Russian military advanced inside the former's borders. The European Union, and Canada have shut the airspace to Russian aircraft along with the United States that has also banned Russian aircraft from American airspace. Russia too, in turn, has shut its air space for about 40 countries.

Russian airspace has a special advantage owing to its unique geographical location. It makes way for important Asia-Europe corridors. European as well as Middle Eastern airlines often use Russian airspace for reaching Asia and even Australia. Most of the flights from the US that fly to Asia often use routes over the North Pole and then proceed to fly down over Russia into China, Japan, Singapore and more. While many airlines will have to opt for rerouting, some others might also be forced to cancel their flights altogether. Hundreds of flights that otherwise flew over the Russian airspace are now forced to look for alternate routes which are mostly longer and more time taking. This is also impacting the overall operating costs.

**Extensive economic instability, uncertain demand for air travel, airspace restrictions, and other issues are likely to cloud over the aviation industry as the crisis continues**

### FUEL PRICES

Longer routes also lead to additional fuel burn and hence added cost. The prices of the Aviation Turbine Fuel (ATF) are also moving upwards because of the soaring cost of crude. The oil prices have sharply shot up ever since the Ukraine-Russia crisis escalated. Oil prices skyrocketed to as high as \$105 per barrel for the first time since 2014. This spike in price has come even when there's no shortage in the supply yet. The sanctions and restrictions being imposed could also lead to other hindrances in the supply chain for the movement of materials.

### RESTRICTIONS & SANCTIONS

Restrictions on not just airlines' routes but also import/export activities of certain aircraft parts and materials is becoming a matter of grave concern for the industry. International travel was only beginning and starting to revive from the pandemic and the restrictions and sanctions further pose uncertainty that will impact passengers' behavior as well. The international relations between any two countries and their actions against each other impact them more seriously, but other nations are not left untouched.

### PEOPLE'S BEHAVIOUR

The uncertainty around travel had already left many people anxious, confused and overwhelmed after the novel coronavirus. With bans and violent situations on the rise, that ambiguity around travel will again take the forefront. Added to that, the spike in fuel prices and operating costs further increases the ticket prices which in turn will impact the number and frequency of passengers opting to travel around. The crisis is likely to force some people to rethink their travel decisions.

Europe's favourite vacation places like Spain, France, Germany, and the United Kingdom (UK) were expected to be the hotspots for the vacation season. Summer vacation time was looking as a positive high coming in for the aviation sector in Europe as well as US domestically and internationally as well. However, now they are likely to suffer the brunt of the situation if the tensions escalate.

### AIRLINES' ACTIONS

Many large airline alliances have Russian airline partners and are likely to be encountered by the need to restructure. Many airlines like the Ukrainian airlines have suspended operations. So many of the airlines are rerouting and operating within the present possible scenarios. Some countries have also initiated national programmes to bring back their stranded citizens. For instance, India's Air India has been engaged with Operation Ganga to bring back Indian students who are stuck in Ukraine. Manufacturers like Boeing, Airbus, Bombardier have also suspended maintenance support to the Russian fleet.

Financially not the airlines were already not in a very viable place and the future does not look very sustainable either. This scenario at a time when airlines were just recovering having dealt with an almost cash burnt situation, is further pointing towards a delay in recovery and profitability.

The global aviation industry has encountered the war when the industry was feeling positive about demand recovery and reopening of many markets but is now again standing before an unknown turn. ●



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# “We have been the Engine Power for Indian Aviation for More Than Seven Decades”

*Ashmita Sethi, President & Country Head, Pratt & Whitney India talks to SP's ShowNews about their contribution to Indian Aviation and their plans going forward*



(LEFT) GTF ADVANTAGE DECREASES FUEL CONSUMPTION AND WILL BE COMPATIBLE WITH 100 PER CENT SUSTAINABLE AVIATION FUEL (SAF) AT ENTRY INTO SERVICE; (RIGHT) THE HYBRID-ELECTRIC TECHNOLOGY IS TARGETTING A 30 PER CENT IMPROVEMENT IN FUEL EFFICIENCY.

**SP's ShowNews (SP's):** Pratt & Whitney recently announced its GTF Advantage Engine. Could you tell us more about the engine? And will it have a market in India?

**Ashmita Sethi (Ashmita):** At Pratt & Whitney, we pioneered the geared turbofan (GTF) technology - reducing fuel burn and CO2 emissions for single-aisle aircraft by up to 20 per cent, reducing NOx emissions by 50 per cent, and noise footprint by 75 per cent. The unique geared configuration delivers unmatched performance and has a long runway for growth. As part of this evolution, we recently announced Pratt & Whitney GTF Advantage engine for Airbus A320neo family aircraft. The GTF Advantage extends the economic and environmental benefits of the existing GTF, by reducing fuel consumption by an additional one per cent. This evolution also extends its lead as the most efficient powerplant for the A320neo family.

The GTF Advantage decreases fuel consumption and CO2 emissions by 17 per cent in total compared to prior-generation A320neo engines and will be compatible with 100 per cent sustainable aviation fuel (SAF) at entry into service. That will be a crucial step in helping the industry meet its commitment to net zero emissions by 2050.

India already has one of the most modern and fuel-efficient commercial fleets in the world; with a bulk of the A320neo fleet with airlines being GTF powered. With the kind of fuel economics and industry-leading dispatch reliability the current engine is now delivering; we expect the GTF Advantage, with its incremental thrust and efficiency gains, to have a market in India in future.

**SP's:** You spoke of the economics and efficiency that the GTF is now delivering, could you tell us more about the GTF's performance in country?

**Ashmita:** There are now more than 190 GTF powered aircraft that are helping drive the post-pandemic recovery for our customers like IndiGo and GoFirst through their efficiency. The GTF is delivering on its promise, by enabling the fuel-economics and efficiency airlines need. So far, over 100 million passengers in India have flown on GTF powered aircraft and the engines have clocked more than three million engine flight hours for our Indian customers and saved 600 million liters of fuel for them.

**Over 100 million passengers in India have flown on GTF powered aircraft and the engines have clocked more than three million engine flight hours for our Indian customers and saved 600 million liters of fuel for them**

In fact, in the past two years dominated by the pandemic, global data indicates that on the Airbus A320neo, GTF utilisation has been higher and GTF-equipped aircraft are usually the last planes taken out of service, and the first planes returned to service.

**SP's:** How do you see fuel-efficiency, and economics evolving into a concerted effort towards sustainable flying for Indian aviation?

**Ashmita:** Since aviation is one of the fastest growing sectors in India, its contributions to total emissions generated will eventually increase. However, India's commercial airliner fleet is growing with new and efficient aircraft, powered by engines like the GTF - this will help reduce passenger CO2 emissions.

Major Indian airlines and industry stakeholders are now looking to explore the potential of using SAFs (Sustainable Aviation Fuel) in their aircraft - something our engines are geared for. We are also constantly engaging, sharing our perspective and our expertise with diverse bodies like the Bio-ATF Program Committee, our airline customers, and the Ministry of Civil Aviation among others.

All of this together creates a great opportunity to drive policy towards accelerating SAF uptake in the short term - and pursuing a range of technology solutions, developed for different applications, in the long term.

For sustainable aviation - apart from developing SAFs and thermal propulsion technology, electric-powered aircraft also offer exciting opportunities to further reduce or even eliminate aircraft CO2 emissions. These technologies are already being developed for regional aircraft - like our recently announced hybrid-electric propulsion technology and flight demonstrator programme.

The programme targets a 30 per cent improvement in fuel efficiency compared to today's most advanced turboprops, and we are working with De Havilland Aircraft of Canada Limited to integrate this hybrid-electric technology into a Dash 8-100 flight demonstrator. Technologies like these may well be introduced into regional airline services by late 2030s - and given India's thrust on UDAN there may be an opportunity for India to take the lead in this segment in the future.

# Embraer Displays Cutting-edge E195-E2



THE E195-E2 DELIVERS THE LOWEST OPERATING COSTS AND HIGHEST YIELDS FOR AIRLINES, MORE COMFORT FOR PASSENGERS, SMALLEST NOISE FOOTPRINT AND LESS IMPACT ON THE ENVIRONMENT

**SP's CORRESPONDENT**

Embraer's largest commercial aircraft, the E195-E2 is at Wings India 2022 as part of its demonstration tour around India. Showcasing a stunning 'TechLion' livery that covers the entire aircraft's fuselage, this aircraft is the largest member of the new generation E-Jets family, the E-Jets E2, and is designed to seat up to 146 passengers in its signature two by two seating.

"India's aviation scene is at a turning point and now is the moment for airlines to reposition themselves for sustainable growth," said Raul Villaron, Asia Pacific Vice-President for Embraer Commercial Aviation. "The E195-E2, offers a low cost per seat, making it very competitive with large narrow-body aircraft that are prevalent in India. It is the perfect aircraft for airlines to tap for the next frontier of growth - connectivity to Tier-II and Tier-III cities."



**RAUL VILLARON**  
ASIA PACIFIC VICE-PRESIDENT,  
EMBRAER COMMERCIAL  
AVIATION

According to Embraer's analysis, even before COVID, 50 per cent of domestic flights in India had between 90 to 150 passengers per flight. This makes the E195-E2's combination of ideal capacity and low unit cost a compelling platform to connect metro to non-metro and non-metro to non-metro cities in India.

The E195-E2, part of Embraer's E2 family of advanced jets, is dubbed the profit hunter because of its high performance and low fuel burn. It delivers the lowest operating costs and highest yields for airlines, more comfort for passengers and space for their bags, smallest noise footprint and less impact on the environment. It is powered by PW1900G GTF engines. The E195-E2 is operated by several airlines globally including KLM (The Netherlands), Helvetic Airlines (Switzerland), Azul (Brazil), Air Peace (Nigeria) and soon, Porter Airlines (Canada). ●

On the larger engine side, we are committed to supporting our industry and customers to meet the goal of reducing CO2 emissions to net zero by 2050. The scale of the sustainability challenge requires close coordination between industry, government, customers and suppliers - and we are playing a leading role. We view advancements to sustainable aviation as a business imperative and a growth opportunity. Our geared architecture is foundational for the innovations we're pursuing next. We've only just begun to tap the potential of this technology.

**SP's:** Before the GTF, Pratt & Whitney's V2500 also powered a significant commercial fleet in India - could you tell us more about the V2500 family today?

**Ashmita:** The V2500 is an incredibly versatile engine and continues to power a large A320ceo fleet worldwide. With 30 years of reliable, efficient performance - which includes powering India's private aviation renaissance in the mid-2000s with IndiGo's 100 A320ceos - the V2500 is in the prime of its life. V2500 engines power approximately 3,000 aircraft with nearly 200 operators in over 80 countries, with an average age of only 11.7 years. Almost 40 per cent of the V2500 fleet has not yet seen its first shop visit.

As the fleet approaches mid-life, we're working with our customers to offer new solutions to meet their needs, from storage to return-to-service.

**SP's:** As India aspires to and emerges as an aerospace hub for the world, how do you see Pratt & Whitney's role as a leading engine OEM in country?

**Ashmita:** We have been the engine power for Indian aviation for more than seven



PRATT & WHITNEY INDIA TRAINING CENTRE

decades. At Pratt & Whitney, we are aligned to the government's vision of India as an aerospace hub - and the investments we have made over the years, reflect this commitment.

We established our India Customer Training Center (CTC) in Hyderabad in 2015 - one of three such Pratt & Whitney training centers operating globally which offer specialised DGCA and EASA Part 147 approved trainings. The center provides advanced training for airline customers, MRO operators, as well as industry and university skill development programmes, to spur the growth of the aviation sector in India. The India CTC has imparted 11,500 student days of training to over 39 operators representing over 27 nationalities since its launch.

Another example is our R&D (Research & Development) presence through the Center of Excellence

(COE) located at the Indian Institute of Science (IISc), Bengaluru. The COE has been engaged in state-of-the-art research since 2012, in the areas of advanced materials, combustion, mechanical design and advanced gas turbine technologies. We also continue to work with start-ups in India through Innovation Challenge conducted with T-Hub, Hyderabad, which saw over 60 Indian and global startups propose solutions to optimise aircraft engine inspections with reduced human interventions.

Given that nearly one in every two Indians flying, fly on a Pratt & Whitney powered aircraft, India to us is more than just a market. We see India as a mutual partner for success and we will continue to build our India presence through partnered investments in innovation, research, supply chain and sustainment - working with leading Indian aerospace suppliers. ●



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