A SUPPLEMENT TO SP'S AVIATION

BIZAV INDIA

VOLUME 9 • ISSUE 4
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PAGE 4

ONWARDS & UPWARDS

WITH THE WHEELS OF REFORMS MOVING SLOWLY, BUSINESS AVIATION IN INDIA NEEDS SUPPORT AND POLICY REFORMS TO REALISE ITS FULL POTENTIAL

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Gulfstream

A SUPPLEMENT TO SP'S AVIATION 2023
VOLUME 9 • ISSUE 4

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SP GUIDE PUBLICATIONS

FROM THE EDITOR-IN-CHIEF

Business and General Aviation in India holds immense potential, but overcoming existing challenges and pursuing targeted corrective measures is crucial to unlocking its full potential. Fostering a supportive regulatory environment, developing infrastructure, and promoting affordability can propel this sector to new heights.

Dear Reader,
This edition of *BizAvIndia* serves as a comprehensive lens into the nuanced developments and challenges shaping the Indian business aviation sector.

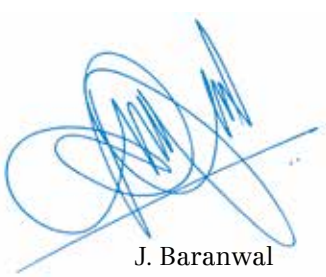
Harsh Vardhan Sharma, President of BAOA, points towards India's trajectory to become the world's third-largest economy, but despite significant growth in commercial airlines, the General/Business Aviation sector still grapples with substantial challenges, prompting the need for accelerated growth. Also, in his letter, Harsh Vardhan brings forth the role of BAOA in accelerating the industry's growth. He adds that in line with the Ministry's guidance, regular meetings with the Directorate General of Civil Aviation (DGCA) will be conducted every four months to systematically address and streamline regulations pertaining to small aircraft operations.

Sanjay Julka, paints a vivid picture of the Golden Age of Indian Aviation, underlining a surge in demand fueled by first-time customers globally. However, concerns arise as supply struggles to meet demand, impeded by hesitant investor confidence and pending domestic and international investments. In his article, Julka advocates urgent reforms in infrastructure, regulations, and the fiscal environment to ensure the necessary momentum.

Jayant Nadkarni delves into the much-anticipated Fractional Aircraft Ownership in India, spotlighting the proven and popular global model that can potentially gain traction in the country. Picking on some important questions, he draws parallels with the perfected model in the US, emphasising its success as a business model for small aircraft in aviation globally. In another feature, Swaati Ketkar addresses the latent potential of helicopters in India, asserting their crucial role in the nation's economic transformation. Despite challenges like outdated infrastructure and regulatory roadblocks, Ketkar sees a new wind rising as India evolves its health, social infrastructure, tourism, and transportation.

Taking flight with its 18th edition, the Dubai Airshow offered insights into the ever-evolving aerospace domain & served as a platform for strategic networking, showcasing cutting-edge aircraft, hosting knowledge-building conferences, and more. Business aviation also had an underlining presence at the Airshow as it has seen significant growth, more so in the Middle East. A show report by Ayushee Chaudhary highlights the BizAv scenario from the show. Features on the Gulfstream G500, a technological marvel enabling business and comfort at 51,000 feet, and Business Jets Sustainability Landmarks add further depth to this edition.

All this and more in this issue of *BizAvIndia*. Welcome aboard and we wish you many happy landings!



J. Baranwal
Editor-in-Chief

PRESIDENT

BAOA

BUSINESS AIRCRAFT OPERATORS ASSOCIATION

Dear Members,

I feel honoured and privileged to be given the responsibility of President of the Business Aircraft Operators Association. The journey of BAOA, which commenced in 2011, has been marked by remarkable challenges and achievements over the past twelve years. BAOA has earned recognition as the most credible representative body of the Non-Scheduled Operator (NSOP) and General Aviation (GA) industry, thanks to the tireless efforts of our valued members and the capable leadership of those who have served on the governing board.

Over the last seven years, BAOA has expanded its footprint, gaining broader recognition in the global General Aviation and Business Aviation industry. Our association has successfully engaged with industry bodies such as FICCI, CII, ASSOCHAM, and PHD Chamber to address various issues affecting the GA/BA industry. Moreover, in the past two years, BAOA has actively participated in discussions within the Ministry of Civil Aviation (MOCA), chaired by the Honorable Minister of Civil Aviation, on the "last mile connectivity" and other critical matters that impact the industry's sustainable growth.

During these discussions, we have placed significant emphasis on finalising the 'fractional ownership' policy for the NSOP industry in India. Additionally, we have advocated for the rationalisation of import duties, proposing a reduction to 'zero,' aligning with the standards applied to scheduled airlines. Both these initiatives are poised to stimulate growth within the NSOP/GA industry in our country.

In line with the Ministry's guidance, regular meetings with the Directorate General of Civil Aviation (DGCA) will be conducted every four months. These meetings are designed to systematically address and streamline regulations pertaining to small aircraft operations. Active participation from our members, including sharing valuable insights and inputs, will be vital to the success of this endeavor.

As we embark on a new year in 2024, I extend my warmest wishes to all our members and their families. *BizAvIndia* 2024, scheduled to take place in Hyderabad, will be an opportune moment for us to convene, exchange constructive ideas, and chart a path for the continued growth of our industry.

We are excited about the possibilities that lie ahead for BAOA and the NSOP/GA industry. With your continued support and active engagement, we are well-positioned to overcome challenges and achieve greater heights in the coming years.

Looking forward to your participation in the *BizAvIndia* 2024.

Happy Landings!

Best regards,

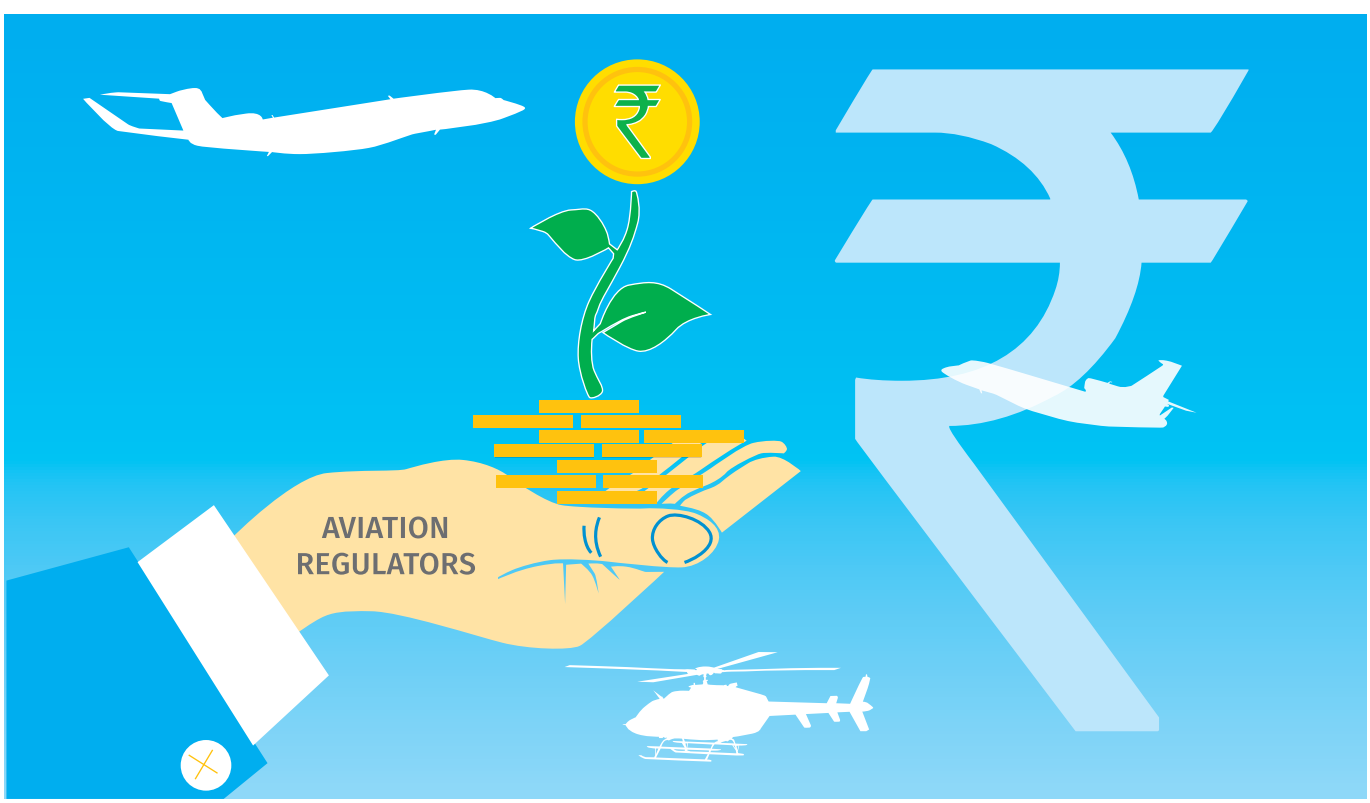
Harsh Vardhan Sharma
President, BAOA.

Business Aircraft Operators Association ★ New Delhi

Flight Path to Prosperity

BY **HARSH VARDHAN SHARMA,**
PRESIDENT, BAOA

It is imperative to unlock the potential and boost General/Business Aviation (GA/BA) to support the growth of aviation in India



AVIATION REGULATORS SHOULD BENCHMARK WITH GLOBAL STANDARDS AND ALIGN INDIAN AVIATION REGULATIONS WITH US AND EU STANDARDS TO ENSURE GROWTH OF THE SECTOR

ILLUSTRATION: SP'S TEAM

INDIA IS POISED TO become the 3rd largest economy in the World and evidently our commercial airlines showing significant growth, with plans to induct hundreds of aircrafts in the coming years. On the other hand, the growth in General/Business Aviation is sadly stagnant and facing serious challenges. The growth in GA/BA sector is necessary to have potential benefits to our growing economy. To address this issue effectively, it is essential to develop a vibrant general aviation sector that can provide employment opportunities for aspiring Pilots, Engineers, Technicians and develop a robust MRO sector. This article explores the current state of general aviation in India and compares it to the thriving aviation industry in Europe and the United States where GA/BA is an integral part of their growth. The power and value of mobility can be fully seen. In the United States and Europe, the ratio of commercial aviation to general aviation stands at approximately 1:10. In contrast,

India faces a starkly different scenario. According to estimates by the Directorate General of Civil Aviation (DGCA), India's general aviation fleet comprises only around 800 small aircraft, including helicopters. Approximately 20 per cent of these aircraft are more than 25 years old and may not be operational. The ratio of commercial airline aircraft to general aviation aircraft is nearly 1:1, even when including both private and commercially employed small aircrafts. This imbalance hinders the development of aviation sector in general.

POTENTIAL CONTRIBUTIONS GA/BA SEGMENT CAN MAKE

- Provide much-required power and value of mobility to large corporates. It also provides them unique competitive edge in today's global highly competitive economy.
- Currently, most of the Himalayan states are seriously lacking and waiting for the remote or the "last mile connectivity". The Ministry of Civil Aviation is making great efforts to address the issue but hardly any progress has been made. The present NSOP Operators, who are already operating in such regions, are the best equipped to develop and serve the requirement. But they need to augment their size of fleet and manpower.
- The much-required EMS (Emergency Medical Services) not just in difficult terrain but also in plains.
- Import suitable aircrafts required for Aerial work to cater the construction of Ropeways, Powerline, Mapping and Airborne geophysical surveys. Unfortunately, currently the foreign registered aircrafts are being imported under NSOP permits on Wet-lease to carry out such projects.
- The requirements, by the Defence establishments and the para-military forces to carry personnel, machinery, and goods are floated regularly for helicopters. But unfortunately, those requirements have not been met by the NSOP operators due lack of fleet strength.
- Disaster Relief- Often Governments demand helicopters for transportation from and to affected areas to save lives and provide relief material to those stranded.

CHALLENGES HOLDING BACK GA/BA INDUSTRY IN INDIA

Importation Costs: The long pending demand, by the NSOP Operators, of abolition of 2.5 per cent import duty, was imposed in 2008, has proved beyond doubt that it is the first major impediment in acquiring an aircraft. It is a substantial financial expense imposed on a Capital Good. The feasibility of the general aviation segment depends on affordable acquisitions just as in the case with commercial scheduled airlines who pay Zero import duty.

- 18 per cent GST on Pilgrims taking Helicopter shuttles: Helicopter shuttle service in economy class on per seat basis to the destinations like Mata Vaishno Devi, Amarnath ji, Kedarnath ji and to the other destinations has grown exponentially over the last 20 years. Currently, hundreds of thousands of Pilgrims travel every year. The average ticket costs approximately ₹3,000/-. Ironically, even after six years, after the introduction of GST regime, there remains a confusion in the basic understanding of the provisions. The latest demand notices by the State GST Department, served on the Helicopter Operators are suggesting levying 18 per cent GST on the Pilgrims. This is not only discriminatory but also contradictory since the Pilgrim taking Kailash Mansarovar Yatra are being charged only five per cent. Why Pilgrims must be subjected to 18 per cent when a normal passenger in a schedule airline is charged only five per cent?
- It's high time that India needs to develop its own Financial Leasing ecosystem. Our dependence on offshore leasing companies is the second major impediment. The Banking Regulation Act needs to be amended so that the Indian Banks can facilitate lease financing. This step will not only bring the indirect operating cost considerably down but will also help in bargaining better cost with Aircraft and Engine manufacturers. The IFSCA needs to work in more collaborative approach with trade and regulatory authority.
- ATF must be brought under GST purview to provide uniformity across India.
- The Remote Connectivity or the "Last-mile Connectivity" regions must be defined by respective States and be allowed to operate under the NSOP regulatory framework. It needs to operate separately and not under the RCS (Regional Connectivity Scheme) which is very restrictive and unnecessary, from the Regulatory point of view, if applied, in the development of Remote Connectivity.
- **Regulatory Challenges:** The regulatory framework for general aviation in India faces several challenges:

– ***Classification of Air Transport Operations:*** The existing classification of air transport operations into 'Schedule Airlines,' 'Schedule Commuter Airlines,' 'Non-Scheduled Operations,' and 'Non-Commercial Operations' hampers proportionate safety regulations. A more nuanced classification should consider factors such as operation type, aircraft size and complexity, airspace usage, infrastructure, and cost-benefit analysis.

– ***Training and Licensing Alignment:*** Pilot licensing requirements in India should align more closely with ICAO Annex 1, emphasising 'class-related' licenses over 'type-related' licenses.

– ***Collaborative Rulemaking:*** Effective discussions and feedback mechanisms with stakeholders should precede the issuance of new or modified safety regulations, building trust between regulators and industry participants.

– ***Ground Handling and Aeronautical Charges:*** The general aviation and business aviation sectors encounter disadvantages due to higher ground handling and maintenance hangarage charges, imposed by airport operators. Rationalising these charges is crucial for the sustainability of the industry.

– ***Infrastructure Development:*** The government should prioritise the development of infrastructure for smaller aircraft at public airports to accommodate future growth in general aviation. The denial of overnight parking and compounded by exorbitant parking rates at the major airports by the airports operators is a major drawback in the development of GA/BA sector.

– ***The Retirement age of Pilots*** in Single Pilots Operations and Aerial work should be revised to 65 years. This would greatly help is solving problem of Pilot shortage.

– A special cell needs to be established in the DGCA to address the issues of the Smaller Aircrafts belonging to the GA/BA sector.

CONCLUSION

The recent steps taken by The Ministry of Civil Aviation to develop the small aircrafts segment, in the DGCA, is a crucial step in the right direction, hence it is imperative to make it functional at the earliest. However, the other desired Policy issues, to be considered for the growth of GA/BA, needs to be put on the fast-track. There is no doubt that, if the issues that GA/BA segment is facing are addressed effectively, the industry would grow exponentially and contribute immensely in the growing Indian Economy. BAI

Wings of **Change**

BY **SANJAY JULKA**
CEO TECHNICAL, AR AIRWAYS

Unlocking India's Business Aviation potential through rapid reforms and strategic investments

WITH GOVERNMENT SUPPORT, AVIATION HAS THE POTENTIAL TO PROPEL THE NATIONAL ECONOMY OF INDIA INTO TOP THREE OF THE WORLD

ILLUSTRATION: SP'S TEAM

THE GOLDEN AGE OF Indian Aviation has begun. Business aviation is also seeing an increase in demand. In comparison to the pre-Covid yearly registrations of 40, 2022 saw 90 registrations/de-registrations. Globally, first-time customers boosted BA users by 50 per cent during and after Covid.

While demand for aviation is increasing, supply is causing concern in the sector. Investor confidence has yet to reach the targeted level. As a result, significant domestic and international investment is still pending. A major global player that entered the Indian market nearly a decade ago, is yet to add any aircraft to their modest fleet of two.

Infrastructure, regulatory and fiscal environment ranks are the three top variables contributing to diminishing supply and execution. The following paragraphs bring out some of the industry's pain points.

INFRASTRUCTURE

Airports, hangarage for parking and maintenance, flying and AME schools, simulators, ATC training schools, FBOs, and other facilities serve as the foundation for growth. The government must not only

improve the regulatory and tax environment, which would immediately attract investment in these industries, but it must also implement additional schemes such as UDAN and GIFT to support these vital aviation verticals.

REGULATORY ENVIRONMENT

Asset Based Financing. Scheduled operators receive asset-based financing, whilst non-scheduled operators have to battle for the same. This is mostly due to leasing companies' unwillingness to invest time on 1-2 aircraft transactions. Furthermore, Indian leasing rules have failed to give lessors with assurances regarding repossession and asset management capabilities on VT registered aircraft. The government has done well in introducing the GIFT city concept, but unless these roadblocks of repossession and asset management are removed, and laws are brought up to world standards, asset-based leasing will not stabilise, and hundreds of entrepreneurs and aspiring multimillionaires in the country will be unable to purchase business planes. It's weird that a car that isn't tracked, traced, or audited as much as an airplane can get asset-based financing, but an aircraft that can't move without government clearances and is tracked and audited by the DGCA at all times, cannot.

Engine and Component Overhaul. Despite being the world's third largest in terms of passenger traffic, India only retains one per cent of global MRO business, therefore we continue to spend millions of dollars in foreign currencies. To accommodate the planned development, the MRO business must be completely overhauled. OEMs should be encouraged to open MROs in India, even if under their own brands. This will allow Indian workers to be trained and qualified to open pure Indian workshops as achieved in the United States and Europe. Let us not forget that competence in MRO component and engine overhaul would be a need for starting manufacturing of planes in India. This must remain the industry's ultimate goal.

DGCA. The DGCA's regulations are stringent and outdated, and the approval processes are lengthy.

- **100h Additional Training for Captains:** Following outdated laws, such as requiring 100 hours of actual flying time after training on Class D simulators, contributes to the pilot shortage situation. The number of pilots leaving one airline for another is projected to rise. We must recognise that a lack of licensed manpower poses a flight safety concern because airlines are held captive to the wants of licensed manpower and, rather than assuring greater skill levels of the crew, are seen wooing them in order to retain them. It is past time that we brought our legislation up to speed with international best practices, both for the benefit of flight safety and to accommodate rising demand. New types of aircraft are also difficult to introduce, owing to the 100-hour rule and then complex and time-consuming approval procedures.
- **Dual Captaincy:** All over Business Aviation community, a pilot flies two to three different types of aircraft at one time. DGCA also permits, but in its over cautious approach, it rarely approves dual captaincy. In some charter companies and private airlines, these pilots are flying approximately 200 hours a year whereas his optimum utilisation needs to be for approximately 1,000 hours a year. This gross under utilisation of pilots creates pilot shortages and related affects as explained in previous para. Dual Captaincy thus needs to be encouraged without inhibitions.
- **Gross Under Utilisation in Helicopter Industry:** State of Alaska alone has 9,000 helicopters. Compared to this, India has around 275. Helicopters are multi role machines. Besides passenger travel, it can be exploited in multitude of missions like, firefighting, medical evacuation, law enforcement, power line maintenance heavy lift missions, religious and heli-tourism, offshore oil rigs, photography, survey etc. India needs to take a quantum jump in other roles, for which it needs State Government support, in making helipads across the state, underwriting of seats and hours for medical and emergency relief operations. Another area that needs to be addressed is to exploit the next gen avionics and instrumentation in the helicopter. Our night flying rules for helicopters are archaic and we are insisting on Heli runways to conduct IFR operations, defeating the very purpose for which helicopters are designed.
- **18 Year Rule for Import of Aircraft:** An airplane is built for cycles that last 40-50 years. This is a well-regulated business, and all aircraft activities are traceable, trackable, and auditable. There is no reason for an age restriction on aircraft imports. No such ban is enforced in developed countries. By imposing an age import barrier, a large number of citizens with low financial resources are unable to own and operate aircraft, stifling the expansion of aviation and, as a result, the nation.
- **Mutual License Validation Across Registries:** Mutual license validation takes time and includes physical inspections of facilities all across the world. This causes delays in training, maintenance, and even hiring personnel for operations like pilots or AME. It would be easier to introduce and operate new types of aircraft if such constraints did not exist. There is a lack of trust between India and the other registries that must be addressed.
- **Examiner/Auditor Availability:** There needs to be sufficient examiner availability in DGCA. If required, examiner or auditor availability can be supplemented by the industry by including DARs and DERs or retired pool of aviation professionals.
- **Ease of Doing Business:** Single-window concepts, time-bound monitored clearance from regulators, digital processing of clearances are some of the measures that will promote ease of doing business. Ease of doing business must also extend to all other civil aviation offices and ministries engaged in the operation of the aviation industry.

Unless the regulator follows the principle of keeping the aircraft in the air, processes will continue to be lengthy and complex.

REFORMS MUST BE IMPLEMENTED AT A FASTER PACE. WE'VE BEEN TAKING BABY STEPS, WHICH HASN'T RESULTED IN THE REQUIRED MOMENTUM

FISCAL ENVIRONMENT

Tax/Royalty. As a communication industry, it is assumed that the government will provide subsidies or tax breaks to aviation, as communication development is a prerequisite for progress. On the contrary, business aviation aircraft import continues to be misunderstood as a luxury vehicle for the ultra-rich. This misunderstanding must be dispelled by giving examples from around the world, especially India, where the introduction of Business Aviation revolutionised places such as Rai-

garh. (See BizAvIndia Issue 1/2016). Higher taxes, such as GST or VAT on ATF, as well as customs duties, force users to seek alternatives outside. Because airplanes can be easily transported across countries and continents, the industry resorts to using foreign jets, parking or maintaining planes abroad. Three immediate areas of concern are:

- **Custom Duty:** Despite the industry's demonstration of the indirect effect of aircraft induction on the country's GDP, customs duties on import or private aircraft have yet to be repealed. We elected not to follow world-standard norms yet again, and this has stymied national growth of the country.
- **Effects of Custom Duty on Parts Trading:** Customs rules limit components from being used on aircraft other than the one for which they were imported; in other words, the government has placed restrictions on trading parts within the country. As a result, the majority of Indian traders have set up shop abroad and use foreign exchange to trade parts from these locations. A simple waiver of customs duty on all airplane components will allow for part trading in India.
- **GST on Fuel and Services:** Following the simple notion that aviation activities are conducted on a global platform, the tax and regulatory structure must be the same as, if not better than, the rest of the world. At times, it is less expensive to lease an aircraft from Dubai, fly to Mumbai, pick up a passenger, drop him off in London, and return to Dubai. This is due to reduced ATF taxes. Another place where opportunities are being lost.

RBI Restrictions to Remit Money Abroad. While the world is making payments by credit cards and instant bank transfers, our rules require RBI approval before remitting. Often this permission is given only after the DGCA gives permission or other pre-requisites are fulfilled. As a result good deals in the market get lost, thereby affecting Businesses adversely.

Fractional Ownership. It's been over two years, and industry efforts to introduce fractional ownership have failed to bear fruit. Allowing multiple owners of an aircraft is a tried and established concept in other countries, and this will only encourage those on tight budgets to buy and operate aircraft. Some of the complexities are related to custom duty, and once again, if custom duty regulations are brought up to international standard norms, the concept of fractional ownership or distinct owner-operator will simply fall into place.

IT IS TIME FOR INDIAN AVIATION REGULATORS TO BOOST GA AND BA INDUSTRY IN INDIA

CONCLUSION

Not able to Exploit Cheap Labour. Because of an unfriendly tax and regulatory environment, the advantage of having inexpensive and capable English-speaking workers is lost. Imagine if this environment had been created to international standards, with a labour cost advantage, Indian aviation operators, MROs, training facilities, and other support services would have dominated the worldwide market. As a result, demand would have risen, investors would have acquired trust in the sector, and indigenous aircraft manufacturing would have commenced. Given that aircraft is part of the communication industry, the national economy would have benefited greatly. I believe that if this potential is now recognised, it will be the deciding element in propelling India into the top three, if not the top, economy in the world:

- **Reforms must be Implemented at a Faster Pace:** All stakeholders are aware of and accept the aforementioned pain issues. Reforms are being implemented. The pace of reform is excruciatingly sluggish. We've been taking baby steps, which hasn't resulted in the required momentum. We must now change our pace of reforms. Likes of Tatas, Ambanis, Adanis, and Jindals must now be investing large sums in this industry.
- **Task Force:** A task force to bring the tax and regulatory structures up to pace, if not better, with the rest of the globe is required. Because aviation is a communication industry that indirectly affects the GDP of the entire nation, it will not be difficult for a well-intentioned government to obtain all required permissions to modify this environment. Everything will fall into place once the environment changes. The major industrialists will begin investing in aviation companies, aircraft purchases, simulators, MROs, component and engine overhauls, and, eventually, aircraft production. That is the light at the end of the tunnel, and we as industry expect the 2024 government to prioritise this task force. BAI

THE GOVERNMENT MUST NOT ONLY IMPROVE THE REGULATORY AND TAX ENVIRONMENT, WHICH WOULD IMMEDIATELY ATTRACT INVESTMENT IN THESE INDUSTRIES, BUT IT MUST ALSO IMPLEMENT ADDITIONAL SCHEMES SUCH AS UDAN AND GIFT TO SUPPORT THESE VITAL AVIATION VERTICALS

ILLUSTRATION: SP'S TEAM

SP GUIDE PUBLICATIONS

The Dawn of **Fractional Aircraft Ownership in India?**

BY **JAYANT NADKARNI**

Flying high or grounded dreams, unraveling the intricate path and potential of Fractional Aircraft Ownership in India

FRACTIONALLY OWNED AIRCRAFT ALLOWS FOR DRASTICALLY LOWER CAPITAL OUTLAYS, DEFINED OPERATIONAL COST OUTLAYS, AND PEACE OF MIND IN AIRCRAFT AVAILABILITY, SAFETY, AND LIQUIDITY

ILLUSTRATION: SP'S TEAM

IN THE LAST FEW years, there has much speculation about the start of fractional aircraft ownership in India. But is it really going to happen? What does the future behold? Will we start seeing large business houses jumping in? Will we see large foreign fractional majors like NetJets, enter India? How will things unfurl?

These are all risky questions to answer. Any over simplistic attempt to 'crystal gaze' can become obsolete and the subject of ridicule quickly. There are many nuances which should be understood before any such attempt is made.

To be absolutely clear, this article pertains to fractional ownership with actual title sharing as it happens in the western world. This is the more proven and popular model globally. This is the model that can gain huge traction in India. We are not talking about simply creating 'co-usage interests' via proportionate shareholding of a company. Such examples are already functioning in India, but they are not scalable and do not offer the benefits that the traditional fractional model does.

PERSPECTIVE

India is at least 30 years behind the USA in the fractional businesses. The US has perfected the model over time. And what a market response it has got! Fractionals today are by far the most successful 'business model' globally for small aircraft in aviation. In fact, industry leader, NetJets, is more like a mini airline with over 750 fractionally owned business jets. Other fractionals behind NetJets' wake are also no small fries, with most of them having large and growing fleets.

THE QUESTION THEN BEGETS

Why has this model not picked up in India, in 70+ years of freedom? Isn't it no brainer for a 'capital constrained' country like India? There is also a 'sort of democratisation' in the use of small private aircraft, beyond just the 'top most' corporates in India. This is because the small aircraft now become affordable to the much larger 'middle of pyramid' corporates. That is indeed a huge market.

A few decades back some pioneering companies did try to offer fractional ownership services in India, but they met with no success. One such attempt was by a company called BJets, which in fact, was started with former NetJets professionals at the helm! They did start operations with much fanfare, deploying five aircraft (Hawker 850XPs and Citation Jets), but folded up quickly. In hindsight, back then:

- Neither the market was ready in India
- Nor the aviation regulatory and evolving taxation structures were conducive.

SO ARE WE READY NOW IN 2024? SHOULD WE BE OPTIMISTIC?

Let's take the Market First. Powered by sustained economic growth over the past few years, India today has roughly 15,000+ UHNIs (Ultra High Net Worth Individuals with minimum net worth of $30 million each), a number that is projected to touch 19,000 in five years. And 19 per cent of this segment is under 40 years in age, or Next-Gen. You can gauge any market size by attributing a conversion percentage, which can of course, vary depending on your different perceptions. But also keep in mind that coupled with this market profile, is the fact that the Indian luxury market is expanding fast and projected to grow to a staggering $200 billion by 2030 as per a report by Bain and Co. How much can people keep buying the same old luxury products- like expensive cars, high end holiday homes etc? The time may be ripe for a new product class to come in! This is where a fractional aircraft ownership product can be a hit for Industry Captains, or to anyone who attaches a premium to getting a significant boost in their strategic mobility.

THE US HAS PERFECTED THE MODEL OVER TIME, AND FRACTIONALS TODAY ARE BY FAR THE MOST SUCCESSFUL 'BUSINESS MODEL' GLOBALLY FOR SMALL AIRCRAFT IN AVIATION

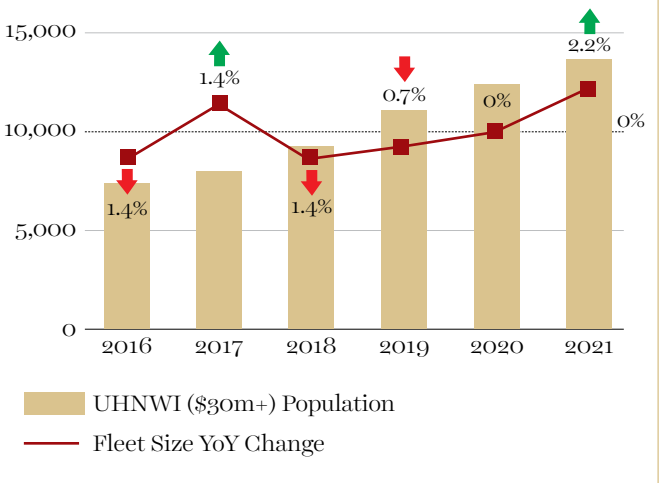
The market just needs to be able to justify purchasing such a product (aircraft, fractionally owned) in the knowledge that it allows them:

- Drastically lower capital outlays,
- Defined operational cost outlays,
- Peace of mind in aircraft availability, safety, and liquidity

There are aircraft categories for different budgets, which then becomes even more affordable in the fractional ownership model. In contract, pure Charter and pure Timeshare can never replicate the success that fractional ownership has achieved, since the cost of the asset is spread across many rich individuals or companies. Not so in charter hire or timeshare (which is really bulk charter) models. In any case, the installed aircraft base is so small in India. Where are the aircraft if you need one immediately? If it all, you will not get the most ideally suited one for your mission. The market is already sensing these facts. There is nothing like owning your own Car vs. always hiring a Cab. It's the same with aircraft, even if fractionally owned.

Yes, one can broadly say the market is ready. What is needed is a credible service offering in the market. So, are there any companies who have made the move? Not really, but it also won't take too long for existing charter companies to launch their own fractional ownership services. The difference on who will succeed will lie in the

UHNWI VS FLEET SIZE IN INDIA



SOURCE: Global Sky Group Business jets Fleet Report YE2021

COUNTRY OVERVIEW: FLEET SIZE VS BILLIONAIRES VS POPULATION

Country	Fleet Size Vs. Billionaires	Fleet Size	Billionaires	UHNWIS ($30M+)	Population (Millions)
New Zealand	14.5	29	2	3,118	5
Australia	4.75	209	44	20,874	26
Malaysia	2.38	50	21	712	33
Indonesia	2.29	48	21	1,403	276
Philippines	2.27	50	22	313	111
Vietnam	1.6	8	5	1,234	98
Singapore	1.48	62	42	4,206	5
Japan	1.33	65	49	31,516	125
Thailand	1.16	36	31	1,272	66
India	1	140	140	13,637	1,393
China	0.64	480	745	1,07,761	1,444
South Korea	0.47	20	43	6,635	52

Source: Global Sky Group Business jets Fleet Report YE2021

execution. Those who plan their fractional foray out well, who put in place the right contracts thoughtfully drafted, who brief potential customers thoroughly with no communication gaps, who don't oversell and underdeliver, who deploy a solid sales team with a strong customer focus....such companies have a good chance at success. Others who treat the business as a casual sidekick to charters will probably just end up hurting themselves and the market. Potential customers would do well to select a fractional company very carefully.

LET'S COME TO THE REGULATIONS NEXT

In October 2022 there were news reports that India's Ministry of Civil Aviation was about to permit the fractional model. The euphoria that followed was short lived, and perhaps it was just as well, as a far deeper dive was undertaken by the Ministry of Civil Aviation, taking many different stakeholder views into account. As things stand, we now have a far clearer and better understanding of:

- Specific transactions for the fractional model to work and the 'operative' aviation rule changes required,
- Taxation implications and changes required

The Operative changes are easy to implement- such as tweaking application processes, allowing multiple title names on registration certificates, making changes in them smoothly as and when ownership changes occur, updating these to a web portal where people such as Lawyers, Insurers, Bankers, Financiers.... and so on, can search tail numbers online and see the different fractional title names against them, and then there are other compliances, which are all operative in nature and easy to implement.

The Taxation changes on the other hand are not easy to implement - the taxation on different transactions have been studied in depth after engaging with reputed Chartered Accountants, Big Consultancy Firms, Law Firms, Ministry of Finance personnel...and so on. These are not being outlined here in details but suffice to say that we now know the exact situation where the incidence of taxation lies, in which transaction, and the changes required. Clearly the taxation element is the 'elephant in the room' for fractionals to start. The Government, as we see it, has a few clear choices:

- Either we keep the big picture in mind, and get rid of the draconian differential taxation structure between private and commercial (not being elaborated here), which is also widely accepted as the root cause of many a problem, holding the industry back.
- Alternately, if this is too big a political ask, another solution is to first promulgate a separate legal sub-category for fractional aircraft owners, and then apply a reasonable taxation on this category.
- Either of the two solutions above would 100 per cent allow the sector to kick-off to a great start. Or else, we can simply stick to the present tax regime and stay with zero or very limited growth for the business aviation sector, that has kept us far below our potential for all these years.

To its credit, the Ministry of Civil Aviation is fully seized of the issues above. This stage has been reached after a prolonged phase of deliberations over the past 18–24 months. So, will 2024 see any major announcements in this regard? If it does happen, it could be the defining aviation reform that will solve many problems for aviation in general. We have a dynamic Minister of Civil Aviation, who is very aware of the concept. We have a Government in power, which has a track record of taking bold decisions if it is in the nation's interest. And fractional ownership of aircraft is most certainly in the nation's interest with many spillover benefits (not being elaborated here).

Many pilots flying over the clouds or technicians working under a wing, have romanticised the fractional ownership concept! It has worked so well abroad. Why will it not in India? What we need is a guiding policy framework coming from the government. A framework that sets in motion making the operative rule changes and taxation rule changes.

While we are optimistic, the flip side is also true - that prolonged delays in promulgating enabling rules, will only cause interested players, investors etc. to loose interest, and focus their energies elsewhere. Let's see what 2024 beholds! BAI

The writer is former President of BAOA, Military Pilot, Aircraft Salesman and AOC Accountable Manager. He is now Managing Director of Flightshares Pvt Ltd, a firm focused on the fractional aircraft ownership in India.

THE G500'S CABIN IS METICULOUSLY DESIGNED TO OFFER THE UTMOST IN COMFORT AND STYLE WITH THE LARGEST PANORAMIC WINDOWS IN BUSINESS AVIATION. THE SPACIOUS AND ERGONOMIC INTERIORS ARE CRAFTED WITH THE FINEST MATERIALS, PROVIDING AN OASIS OF TRANQUILITY.

Redefining **Luxury & Performance**

BY **AYUSHEE CHAUDHARY**

Gulfstream G500 is a technological marvel making business and comfort possible at 51,000 feet

PHOTOGRAPHS: Gulfstream

THE CLASS-LEADING G500 IS Gulfstream's award-winning next-generation business jet which was also put on display at the Dubai Airshow 2023. The G500 holds nearly 60 city-pair speed records, was the first aircraft certified to use enhanced vision to land and was recently certified for steep approach by the Federal Aviation Administration (FAA), unlocking access to even more destinations worldwide. In the world of elite business aviation, the Gulfstream G500 stands as an example of innovation, luxury, and performance, redefining the standards of what is possible in private air travel. This twin-engine business jet is equipped with cutting-edge Pratt & Whitney Canada PW814GA engines, propelling it to a maximum speed of Mach 0.925. With a range of 5,300 nautical miles, the G500 can effortlessly link cities such as New York and Dubai, or London and Los Angeles nonstop. The G500's ability to navigate challenging airports expands the horizons for business leaders, ensuring that no opportunity is out of reach.

A CABIN FOR COMFORT IN THE SKY

The G500's cabin is meticulously designed to offer the utmost in comfort and style. The spacious and ergonomic interiors are crafted

THE GULFSTREAM G500 FUSES TECHNOLOGICAL PROWESS WITH THE ART OF TRAVEL WHERE LUXURY, EFFICIENCY, AND SUSTAINABILITY COEXIST SEAMLESSLY AT 51,000 FEET. THE G500 SETS A NEW STANDARD FOR WHAT IS POSSIBLE IN THE SKIES.

with the finest materials, providing an oasis of tranquility at 51,000 feet. The cabin layout that offers up to 3 living areas, can be customised to suit the unique preferences of its owner. Whether it's a lavish lounge area for business meetings, a serene bedroom for relaxation, or a well-appointed kitchen for gourmet dining, the Gulfstream G500 adapts to the lifestyle of its passengers seamlessly. The tall and wide G500 cabin offers great flexibility, including the option of a forward or an aft galley and an aft stateroom lit by four panoramic oval windows and a generous aisle. It also comes with fourteen windows—the largest in business aviation—offering abundant natural light and sweeping views of the world.

With a high-speed cruise of Mach 0.90 and the long-range, it can be said it gifts time. Fewer flight hours also mean longer periods between scheduled maintenance visits, higher potential aircraft value and fresher crews. Assuring to be the quietest in business aviation, the G500 cabin provides a peaceful environment and refreshed arrival thanks to 100 per cent fresh air and an ultralow cabin altitude.

A LUXURIOUS AND INNOVATIVE TRANSIT

Gulfstream has a rich legacy of introducing groundbreaking technologies, and the G500 is no exception. With its clean-sheet engineering and aircraft design, class-leading fuel-efficiency and Gulfstream Symmetry Flight Deck, G500 ushers in an ultramodern era of flight.

The aircraft meets rigorous international safety standards and goes above and beyond with advanced safety features. Enhanced vision systems, predictive analytics, and comprehensive monitoring systems contribute to an unparalleled level of safety. The PlaneView cockpit offers pilots unprecedented situational awareness, and the G500's fly-by-wire technology enhances control and stability, even in challenging weather conditions.

In an era where sustainability is a global imperative, the Gulfstream G500 is designed with fuel efficiency in mind, optimising performance while minimising environmental impact. Outfitted with high-thrust engines, Gulfstream's aerodynamic wing and advanced avionics, the G500 is 33 per cent more fuel-efficient than previous-generation aircraft.

The G500's success is not just measured by its range, speed, or luxurious interiors, it's also about the seamless integration of these elements into an aircraft that offers a transformative experience for its passengers. Gulfstream G500 has received awards including the BIG Innovation Award for its influence on worldwide travel thanks to the introduction of the Symmetry Flight Deck and the safety advancements; the Aviation Week's 2017 Technology Laureate Award for the active control sidesticks and Flying's Editors' Choice Award. The Gulfstream-designed seats on the G500 have also earned the International Yacht & Aviation Award. BAI

SPECIFICATIONS: G500

Performance	
Maximum Range	5,300 nm | 9,816 km
High-Speed Cruise	Mach 0.90
Long-Range Cruise	Mach 0.85
Maximum Operating Mach Number (Mmo)	Mach 0.925
Takeoff Distance (SL, ISA, MTOW)	5,300 ft | 1,615 m
Initial Cruise Altitude	43,000 ft | 13,106 m
Maximum Cruise Altitude	51,000 ft | 15,545 m
Weights	
Maximum Takeoff	79,600 lb | 36,106 kg
Maximum Landing	64,350 lb | 29,189 kg
Maximum Zero Fuel	52,100 lb | 23,632 kg
Basic Operating (including 3 crew)	46,850 lb | 21,251 kg
Maximum Payload	5,250 lb | 2,381 kg
Maximum Payload/Full Fuel	2,900 lb | 1,315 kg
Maximum Fuel	30,250 lb | 13,721 kg
Systems	
Avionics	Gulfstream Symmetry Flight Deck
Engines	Two Pratt & Whitney PW814GA
Rated Takeoff Thrust (each)	15,144 lb | 67.36 kN
Measurements	
Finished Cabin Height	6 ft 2 in | 1.88 m
Finished Cabin Width	7 ft 7 in | 2.31 m
Cabin Length (excluding baggage)	41 ft 6 in | 12.65 m
Total Interior Length	47 ft 7 in | 14.50 m
Cabin Volume	1,715 cu ft | 48.56 cu m
Baggage Compartment Volume	175 cu ft | 4.96 cu m
Exterior Height	25 ft 6 in | 7.77 m
Exterior Length	91 ft 2 in | 27.79 m
Overall Wingspan	86 ft 4 in | 26.31 m

Source: www.gulfstream.com

ADVANCE AIR MOBILITY WILL SOON COMMERCIAL OPERATIONS AND BY 2026 USE OF AAM IN MAJOR CITIES WORLDWIDE WILL BE PART OF DAILY LIFE

Poised for 'Take-off'

From grounded potential to soaring heights, Helicopters in India are taking-off in a new direction for a brighter tomorrow

BY **SWAATI KETKAR**

FOR DECADES, THE INDIAN helicopter industry has hovered like a rotor blade caught in indecision. Immense potential, fuelled by diverse needs and promising applications, has been held hostage by outdated infrastructure, regulatory roadblocks, and a lingering operational bias. But a new wind is rising, one that whispers of streamlined logistics, urban mobility revolutions, and lifesaving interventions in remote corners.

CHALLENGING ENVIRONMENT

The current landscape paints a picture of untapped promise. Limited heliport infrastructure, stuck in a "sunrise to sunset" mindset, restricts training and deployment, leaving skilled pilots grounded. Airport Authority of India's reluctance to embrace modern Precision Based Navigation (PBN) technology further cripples growth. Regulatory hurdles, like the ban on single-pilot IFR operations for helicopters unlike airplanes, create an uneven playing field and stifle expansion.

Qualified pilots willing to execute safer instrument-based operations on adequately equipped machines seldom have opportunity of exercising required skillset. This impediment is owed to deficiency in current heliport infrastructure/operations/procedures which only permits traditional 'sunrise to sunset/good weather' operations. Said infrastructural status finds resonance in AAI's (responsible for infrastructural development) implicit opinion about limited necessity of such operations for slow moving helicopters as evidenced historically. This is a plausible reason that AAI has yet to develop PBN based heliports in India contrasting with countries demonstrating successful helicopter sector growth. Therefore, on one hand, pilots don't have the opportunity due to lack of infrastructure, and on the other hand, the infrastructure doesn't exist since AAI views it as unnecessary/sub-optimal investment for helicopters; Chicken-egg paradox indeed.

DGCA's role in the matter is relatively encouraging wherein regulations are largely in place for the type of operations under PBN. However, operational exposure deficit at DGCA translates

PHOTOGRAPH: Eve Air Mobility

WITH GROWING CONGESTION ON THE ROADS IN CITIES IN INDIA, DEMAND FOR HELICOPTERS IN EMERGENCY MEDICAL SERVICES (EMS) WILL ACCELERATE

into avoidable regulatory apprehensions usually cloaked under the 'misfitting' umbrella of flight safety. One such example is provision of single pilot operations under IFR (instrument flight rules) available for aeroplane operations but precluded for helicopters in India. Imbalanced limitation like such in a pilot deficit industry would do little good to its expansion plans. It is thus strongly argued that a top-down approach only has the potential of ironing out such unfounded concerns holding back sectorial growth of helicopter industry.

According to Captain Peeyush Kumar Saini of HeliGo Charter services, "the figurative 'eye' of operational domain challenge must be addressed for causal factors to capitalise on said untapped potential." About 95 per cent of helicopter pilots in India are retired armed forces personnel. Saini expresses his frustration with the thought of natural bias of operations, peculiar to armed forces helicopters, that is predominant in Indian civil helicopter sector. This operational bias is akin to legacy operations and obviously a reasonable stagnation cause for the sector. "Management teams in helicopter companies usually comprising of senior pilots are also naturally infested with similar bias facilitating yesteryears' nature of operations. Incidentally, growth incentives have been perpetually weak to trigger radical changes at organisational levels as would be evident from current status," Captain Saini adds.

HELICOPTERS ARE POISED TO PLAY A CRUCIAL ROLE IN EMERGENCY MEDICAL SERVICES (EMS), AIRBORNE LAW ENFORCEMENT, OFFSHORE OPERATIONS, AND ADVANCED AIR MOBILITY (ELECTRIC AIR TAXIS) IN THE FUTURE

LATEST TRENDS AND THE FUTURE

But beneath these limitations lies a fertile ground for reforms. The vision ahead is exhilarating. Helicopters will no longer be seen as mere luxury transports, but as vital lifelines, bridging the gap between urban centres and remote hinterlands, transforming not just economies but the very fabric of our social lives. Just like telecom, fintech and digital sectors that are evolving with every passing day, short haul mobility has the potential to transform aviation. Currently the robust growth rate coupled with high urbanisation is compounding the perils of urban road congestion. The UAM industry is poised for exponential growth, helicopters today and a seamless transition to EVAs tomorrow.

As we move ahead the demand for helicopters in Emergency Medical Services (EMS), Airborne Law Enforcement and offshore operations will further accelerate. Additional roles like HEMS and law enforcement are likely to be introduced. B.S. Singh Deo, Vice President of Rotary Wing Society of India claims that demand for offshore Oil support helicopter operations will increase. "However, several roles like aerial photography, powerline inspection, organ transportation and short-range intercity flights will be taken over by Advanced Air Mobility (electric Air Taxis)," Deo says.

Requirement for specially equipped

PHOTOGRAPH: Bell Textron

(LEFT-RIGHT) THERE IS HUGE POTENTIAL FOR THE USE OF HELICOPTERS IN POLICING, LAW ENFORCEMENT AND SEARCH AND RESCUE IN INDIA

helicopters for Disaster Relief and Offshore Search and Rescue have always existed but there is no dedicated helicopter fleet for these roles. There is an urgent need for dedicated fleet of helicopters in this role. Meanwhile players like Airbus are doing their part in developing the helicopter ecosystem of the country. Airbus is bringing the latest generation technology which can help develop local knowhow while enhancing safety standards. The first H130s were inducted in 2015 in India and have performed outstandingly, setting new standards in the single-engine segment in hot and high environments.

Airbus delivered India's first fully customised, ACH135 in 2022 to Hyderabad Airlines, marking the entry of the ACH135 which is expected to become a highly successful twin-engine helicopter into India's private and business aviation market. Airbus qualified the H145D3 (five bladed version) in 2022 for ONGC offshore operations. Airbus is also playing an active role in developing new market segments in India such as Helicopter Emergency Medical Services (HEMS), Airborne Law Enforcement (ALE), Urban Air Mobility (UAM), Power Transmission lines stringing, security, Aerial Works, etc. Recently, the first official HEMS service was launched in India by the state of Karnataka, followed by the AIIMS hospital in Dehradun, using Airbus H130 helicopters.

This year AAM (Advance Air Mobility) will see commercial operations in some advanced countries. By 2026 use of AAM in major cities worldwide will be part of daily life. "India must set up a separate cell to ensure certification, production, operation, maintenance and air traffic issues are addressed to ensure we are not left behind. Like in the case of helicopters, imported Air Taxis should not flood our skies," Deo adds.

Painting an optimistic picture for the helicopter industry going ahead, Vishok Mansingh, Chief Executive, Vman echoes Deo's views that there will be a huge push in India to use helicopters as a tool for the delivery of services to the hinterland and inaccessible areas and change the social and economic lives of people. "There will be a few large operators with pan-India operations covering all segments. There will be civil and defence convergence in MRO, manpower development and support services," Mansingh concludes.

CONCLUSION

Going ahead as India transforms its health and social infrastructure and strengthens tourism and transportation, the use of helicopters must be boosted as an essential and integral part of its efficient economic transformation. With figurative 'hard ceiling' being reached under current operational bias, limited enhancement of helicopter operations coherent with current linear progression may be expected at best. However, should timely course corrections be taken, a high 'angle' trajectory is possible in both quantitative and qualitative terms. Finally end user confidence in safety and convenience indices for a sustainable growth is essential and that such reformist measures be initiated at apex levels (MoCA). All-in-all including private sector and grass root level SMEs at planning and monitoring stages should be done for a more focused and result-oriented initiative. BAI

THERE IS A NEED FOR A DEDICATED FLEET OF HELICOPTERS FOR ROLES LIKE DISASTER RELIEF AND OFFSHORE SEARCH AND RESCUE

PHOTOGRAPHS: Bell Textron

SP GUIDE PUBLICATIONS

Dubai Airshow **Draws the Future Skyscape**

BY **AYUSHEE CHAUDHARY**

The Dubai Airshow showcased the strong picture of Business Jets as well as for the Urban Air Mobility

TAKING FLIGHT WITH ITS 18th edition, the Dubai Airshow soared from November 13 to November 17, 2023, at the Dubai World Central, Dubai Airshow Site. This prominent international affair not only offered insights into the ever-evolving aerospace domain but also served as a platform for strategic networking, showcasing cutting-edge aircraft, hosting knowledge-building conferences, and more. What began as an airshow has transformed into the multifaceted aviation spectacle that is the Dubai Airshow (DAS), illustrating the trajectory of aviation. This edition saw participation from pavilions representing over 20 countries, each unveiling groundbreaking products and technologies. From civil to business aviation to space and the futuristic advanced air mobility, the Dubai Air Show had it all.

Business aviation had an underlining presence at the Airshow as it has seen a significant growth globally and more so in the Middle East. Backed by corporate clients and high-net-worth individuals (HNWIs), with additional support expected from global fleet modernisation initiatives, business aviation remains robust. This trend is set to drive demand for upgraded charter services with enhanced cabin interiors and advanced avionics. Effective pandemic policies in the UAE, including robust testing and swift vaccination, led to increased visitor numbers and revived business activities. In Dubai, a recent S&P Global study showcased a substantial business expansion, marked by the fastest growth in new business intakes in four years. The Mohammed Bin Rashid Aerospace Hub recorded over 15,400 business jet movements in 2022, and the first half of 2023

BUSINESS AVIATION IN THE MIDDLE EAST REMAINS ROBUST, BUOYED BY CORPORATE CLIENTS, HIGH-NET-WORTH INDIVIDUALS, AND INCREASED DEMAND FOR UPGRADED CHARTER SERVICES

PHOTOGRAPH: Dubai Airshow 2023

indicated sustained momentum with about 7,300 movements. With strategic government initiatives, Dubai attracted global investors and individuals. Further, Honeywell Aerospace also reported that the Middle East region has experienced more growth in 2023 than any other, projecting it to contribute to six per cent of new jet deliveries over the next five years.

Hence abiding by the strong spirit of business jets in Dubai and focusing on an upswing in the Middle East, many major manufacturers of business jets showcased their products, aircraft and services at the Dubai Airshow's 2023 edition. Gulfstream, Bombardier, Dassault, Embraer, Textron Aviation, and Pilatus were among the prominent exhibitors, aiming to expand their presence in the growing Middle East market.

Alongside BizAV, Middle East especially Dubai has been a promising platform for advanced technology and infrastructure for the future of urban air mobility, and the 2023 Dubai Airshow echoes that sentiment. The new Advanced Aerial Mobility (AAM) pavilion at Dubai Airshow 2023 was a thrilling addition, showcasing cutting-edge flight technology like eVTOLs, drones, and UAVs. This spotlight on the growing flying taxi market aligned with Dubai's pioneering role in disruptive aerial transportation. The event served as a platform to explore various aerial transport solutions, including drones, UAVs, UAMs, and eVTOLs, with an exciting eVTOL flying display highlighting their capabilities. Dubai's ambitious plans for flying taxis by 2026 added an extra layer of excitement to this display. About 20 manufacturers from across the globe exhibited their static or mock-up models at the show.

BIZAV BOONS

Gulfstream. Gulfstream Aerospace showcased two of its acclaimed next-generation business jets at the Dubai Airshow: the ultralong-range Gulfstream G700 and the class-leading Gulfstream G500. "Gulfstream has a longstanding history in the Middle East and surrounding regions," said Scott Neal, Senior Vice President, Worldwide Sales, Gulfstream. "Recently, we announced a host of increased capabilities across the fleet, and we look forward to meeting with customers and guests at the Dubai Airshow to showcase The Gulfstream Difference with two of these aircraft, firsthand."

Gulfstream had recently announced that the G700's range had increased to 7,750 nautical miles/14,353 kilometers at Mach 0.85 or 6,650 nm/12,316 km at Mach 0.90, gaining 250 nm/463 km at both speeds over original projections. Additionally, the G700's maximum operating speed increased to Mach 0.935 from Mach 0.925, solidifying its position as the fastest in the Gulfstream fleet.

Bombardier. Bombardier showcased its Global 7500 and Challenger 3500 aircraft during the Dubai Air Show, unraveling the uncompromising attributes of these impressive business jets. Bombardier shared that it had a robust presence on-site, featuring dedicated sales teams from business aircraft. "The Middle East is an important market for Bombardier both for business jet customers as well as growing defence business. We looked forward to showcasing our Challenger and Global platforms to business jets customers, who will benefit from our aircraft cutting-edge innovation, cabin design, performance, reliability and smooth ride," said Éric Martel, Bombardier's President and Chief Executive Officer. The Global 7500 aircraft, with a top speed of Mach 0.925 and a range of 7,700 nautical miles (14,260 km), showcased unmatched performance capabilities, offering the smoothest ride in the skies.

Dassault. Dassault Aviation participated in the Dubai Airshow, marking the 50th anniversary of the company's partnership with the United Arab Emirates. The static display of Dassault included a Falcon 2000LXS business aircraft and a full-scale model of the Falcon 10X cabin. Dassault noted that the Middle East has seen the operation of numerous Falcon aircraft, with their reliability, comfort, and flexibility being highly appreciated. Dubai, a key point in the Falcon support network, witnessed the opening of a new maintenance center at the new Al Maktoum airport (DWC) last summer, managed by Dassault Aviation's subsidiary ExecuJet MRO Services, replacing the former facilities located at Dubai International Airport (DXB).

ON DISPLAY: DASSAULT FALCON 2000LXS (TOP) AND EMBRAER PRAETOR 600 (ABOVE) AIM TO EXPAND THEIR FOOTPRINT IN THE MIDDLE EAST

Embraer. Embraer presented its Praetor 600, the most technologically advanced executive jet in its category, on the static display along with other commercial capabilities. The Praetor 600, is said to be the farthest-flying super-midsize jet in the world, capable of nonstop flights from Paris to New York or São Paulo to Miami. With four passengers and NBAA IFR Reserves, the Praetor 600 has intercontinental range of 4,018 nautical miles (7,441 km). About a month prior to the Dubai Air Show, Embraer had announced the successful testing of Praetor 600 alongwith the Phenom 300E on 100 per cent neat sustainable aviation fuel (SAF).

THE FUTURE SKYSCAPE

Eve Air Mobility, Embraer's subsidiary, also displayed the full-size model of the electric vertical take-off landing (eVTOL) vehicle cabin in the pavilion dedicated to advanced air mobility, offering visitors a virtual reality experience of the eVTOL cabin. Archer Aviation, a US eVTOL manufacturer, showcased the life-size model of its Midnight eVTOL within the pavilion. Meanwhile, on the

PHOTOGRAPHS: DassaultFalcon / X, embraer / X

THE ADVANCED AERIAL MOBILITY (AAM) PAVILION AT DUBAI AIRSHOW 2023 STOLE THE SPOTLIGHT:
(CLOCKWISE FROM TOP LEFT) EVE AIR MOBILITY EVTOL; LILIUM EVTOL JETS; AUTOFLIGHT EVTOL; ARCHER AVIATION.

static aircraft display, AutoFlight from Shanghai, China, presented its Prosperity One, earlier introduced at the Paris Air Show 2023.

Airbus Urban Air Mobility CEO Balkiz Sarihan nudged towards their unique mission—to develop an electric flying machine with an exceptionally low noise profile. The CityAirbus NextGen, Airbus' venture into the eVTOL space, is undergoing final assembly in Germany, aiming for its inaugural indoor flight in 2024.

ANRA Technologies has unveiled a Vertiport Management System (VMS), designed to effectively coordinate the safe operations of eVTOLs and vertiports. Specialising in traffic management solutions for unmanned systems, ANRA's VMS offers real-time data to ensure the secure arrival and departure of Urban Air Mobility (UAM) aircraft.

Lilium garnered significant spotlight at the Dubai Airshow. Following the show, Lilium announced that it had received Design Organization Approval from its primary regulatory authority, the European Union Aviation Safety Agency ("EASA"). The award marks a major milestone for Lilium, positioning it at the forefront of the industry as a company authorized to hold a type-certificate for an eVTOL aircraft in Europe.

Some of the futuristic deals at DAS 2023 included:

- ArcosJet commits to purchasing 10 Lilium eVTOL aircraft for private buyers in the Middle East. A display at DAS showcases the four-passenger Pioneer Edition with 30 ducted-fan engines.
- In Bengaluru, Skyward Ascent partners with Eve Air Mobility and Hunch Mobility to introduce eVTOL commuter flights. The collaboration involves engaging with officials and technology providers to establish urban air mobility infrastructure. Eve signs an LOI with Hunch Mobility for 200 eVTOLs and urban air traffic management.
- Bellwether Industries collaborates with Schubeler to advance electric propulsion for the Volar line. The partnership with Viasat ensures cutting-edge communication technology integration, marking a significant advancement in personal aerial mobility.
- Eve Air Mobility expands its vertiport horizon with a letter of intent from Swedish developer KookieJar. The alliance establishes KookieJar as the tenth Urban ATM customer and fifth vertiport partner, introducing Eve's Urban ATM system in Dubai.
- Honeywell's AAM unit achieves remarkable success, securing over $10 billion in business, showcasing its proficiency in lucrative contracts for anticipated AAM production.
- Archer Aviation and Air Chateau International signed an MoU covering a planned purchase by Air Chateau of up to 100 of Archer's Midnight eVTOL aircraft with an approximate value of $500M and providing for an initial non-refundable, pre-delivery payment of $1M by December 31, 2023. Air Chateau plans to own and operate the Midnight aircraft in the region.

The strong presence of these business jets as well as the advanced technologies for the future landscape of aviation at the 2023 edition of the Dubai Air Show along with other business aviation players highlighted the industry's optimistic intentions as well as advancements in the region. BAI

PHOTOGRAPHS: Eve Air Mobility, Lilium, ASDS Media, Dubai Airshow 2023

GULFSTREAM G700 SETS SPEED RECORD FROM SAVANNAH TO TOKYO ON SAF

Year 2023 – Business Jets **Sustainability Landmarks**

BY **SP'S CORRESPONDENT**

Year 2023 saw significant progress in sustainable business jet initiatives, with increased focus on SAF, technological advancements, and operational efficiency

BOMBARDIER

Commitment to Cover Totality of Flight Operations with SAF. Bombardier reaffirmed its commitment to cover all its operational flights with sustainable aviation fuel (SAF), utilising the Book-and-Claim system. Operational flights are part of Bombardier's regular activities, and notably include production testing, certification flights, transiting Global aircrafts from Toronto to Montréal to perform the completion stages, customer demonstration flights, new aircraft platforms certifications and after-service check flights. By using a blend with 30 per cent of pure sustainable aviation fuel, Bombardier anticipates to reduce its annual greenhouse gas (GHG) emissions (scope 1) from fuel use in its flight operations by approximately 20-25 per cent. Bombardier's 2025 objective is aligned with the business aviation industry's goal of achieving a net-zero emissions by 2050.

Ramps Up EcoJet Project. Bombardier unveiled its EcoJet research project's second test phase to the attendees of NBAA-BACE 2023. The company continues its industry-defining work in sustainable aviation by ramping up the second phase of testing on the EcoJet research project by flying an 18-foot-wide test vehicle designed as a blended wing body (BWB) aircraft to reduce business jets emission by up to 50 per cent through a combination of aerodynamic, propulsion and other enhancements. EcoJet is a sustainability-focused research and technology initiative which started 15 years ago. This project has successfully materialised into a family of Blended Wing Body (BWB) test vehicles, with flight tests being conducted to develop and mature relevant technologies, bound to be applied to more sustainable, future business aircraft.

PHOTOGRAPH: Gulfstream

DASSAULT AVIATION

FalconWays— A Route Optimisation Tool to Reduce Carbon Emissions. Dassault Aviation has unveiled a new flight planning tool that allows Falcon pilots to select the most fuel efficient route and reduce excess fuel carried using updated global wind data, optimisation and performance model-specific algorithms. The new tool, FalconWays, will be offered as a flight app on Dassault's FalconSphere iPad electronic flightbag and is compatible with Jeppesen and Universal flight planning tools. During actual flights using FalconWays, crews were able to reduce fuel consumption up to seven percent. The company will first roll out FalconWays on the new Falcon 6X extra widebody twinjet, set to enter service in the coming weeks. The app will be available on the Falcon 8X early next year, on the 7X before the end of 2024 and Falcon 2000LXS/S by early 2025.

EMBRAER

Phenom 300E and Praetor 600 Complete 100 per cent SAF Flight Tests. Embraer announced it has successfully tested the Phenom 300E and Praetor 600 on 100 per cent neat sustainable aviation fuel (SAF). The tests, with one engine running on 100 per cent SAF, were performed at Embraer's Melbourne facility and provided significant insight into systems' performance when utilising blends up to 100 per cent SAF, which was provided by World Fuel. The tests had collaboration of the engine and fuel system suppliers Honeywell Aerospace, Parker, Pratt & Whitney Canada and Safran. Currently, all Embraer aircraft are approved to use a blend of up to 50 per cent of SAF mixed with conventional Jet Fuel, based on ASTM International specifications. Embraer's commitment to sustainability is a core part of its business strategy, and the company is continuously exploring new ways to reduce its environmental impact.

GULFSTREAM

World's First Trans-Atlantic Flight on 100 per cent SAF. Gulfstream Aerospace announced the successful completion of the world's first trans-Atlantic flight using 100 per cent sustainable aviation fuel (SAF). Accomplished on November 19, the flight took place on a Gulfstream G600 aircraft, which departed the company's headquarters in Savannah and landed 6 hours, 56 minutes later at Farnborough Airport in England. Powered by Pratt & Whitney PW815GA engines, both using 100 per cent SAF, this mission showcases the potential for aviation's future use of renewable fuels, which feature lower carbon, sulfur and aromatics. The data collected from this endurance flight will help Gulfstream and its key suppliers gauge aircraft compatibility with future low-aromatic renewable fuels, particularly under cold temperatures for extended flight durations.

G700 Sets Speed Record from Savannah to Tokyo on SAF. The all-new Gulfstream G700 set a speed record using sustainable aviation fuel (SAF), travelling from Savannah to Tokyo at an average speed of Mach 0.89. The flight, recorded at 13 hours, marked the G700's first visit to Japan. This record was achieved as the company recently reached a milestone of more than 2 million nautical miles flown on SAF blends. Gulfstream was the first business aircraft manufacturer to sign the World Economic Forum's Clean Skies for Tomorrow 2030 Ambition Statement, a declaration of intent to accelerate the supply and use of SAF technologies to reach 10 per cent of global jet aviation fuel supply by 2030. The company was also the first original equipment manufacturer (OEM) to fly on 100 per cent SAF in December 2022. The flight took place on a Gulfstream G650 in partnership with Rolls-Royce on the BR725 engine.

EMBRAER'S PHENOM 300E AND PRAETOR 600 HAVE COMPLETED 100 PER CENT SAF FLIGHT TESTS

HONDA AIRCRAFT COMPANY

Technologies for Reducing Carbon Emissions. Honda Aircraft Company presented the technological innovations that the HondaJet uses to achieve exceptional fuel efficiency. These include the unique Over-The-Wing Engine Mount (OTWEM) configuration, Natural Laminar Flow (NLF) nose and wing, and composite fuselage. Honda Aircraft Company's disruptive designs and technologies place it at the forefront of the aviation industry's efforts to lower carbon emissions. The HondaJet Elite II saves nearly 8,000 gallons of fuel and reduces approximately 1,72,000 pounds of CO_2 emissions yearly, making it one of the most environmentally responsible aircraft in its class.

TEXTRON AVIATION

New Sustainableadvantage Carbon Offset Program. Textron Aviation announced a new ProAdvantage program, SustainableAdvantage, to provide owners with an additional option for reducing their carbon dioxide emissions from operating aircraft. In collaboration with 4AIR, the programme is to launch in January 2024 and is available to eligible customers who own and operate Cessna, Beechcraft and Hawker turbine aircraft worldwide. SustainableAdvantage will offer owners the option to offset their footprint 100 per cent with 4AIR's Bronze Level. Carbon offsets reduce emissions elsewhere which can be claimed against the carbon footprint from operating aircraft.

Global Service Network Re-Certifies Under NATA. Textron Aviation announced its 20 company-owned service centers received recertification from the National Air Transportation Association (NATA) as a Green Aviation Business. The recognition is part of NATA's Sustainability Standard for Aviation Businesses programme encouraging environmental sustainability within the industry. Five company-owned service centers achieved Tier 1 status and 15 achieved base-level certifications. To achieve base level certification, facilities must establish a baseline carbon footprint and work to reduce greenhouse gas (GHG) emissions with ground support equipment. Facilities also must offer recycling, implement paperless systems as appropriate, begin installing LED lighting and reduce plastic water bottle use. BAI

PHOTOGRAPH: Embraer

Scindia Chairs Meeting of Small Aircrafts & Helicopter Operators

The Minister of Civil Aviation Jyotiraditya M. Scindia, assured full support to entrepreneurs of small aircraft operators and helicopter services to expand their operations. In an 'Advisory Group' meeting, the Minister individually addressed regulatory and day-to-day operational concerns of each operator, and resolved to take action on the relevant suggestions put forth by the group.

Lauding them for their vital role in connecting tier 2 and 3 cities under the UDAN scheme, he committed to enhance processes and approvals for participating operators. To that end, a special cell for helicopters and small aircraft will be envisaged, as and when the DGCA ramps up manpower capacities.

At the conclusion of the meeting, operators expressed their gratitude to Scindia for his timely interventions and responsiveness to their needs. They also extended their appreciation to the Ministry of Civil Aviation for the successful implementation of the UDAN scheme, which has played a pivotal role in their emergence and growth within the market. BAI

All-Electric Air Taxi Service Across India in 2026

InterGlobe and Archer Aviation, a leader in electric vertical takeoff and landing (eVTOL) aircraft, announced that they have entered into a memorandum of understanding (MoU) with the goal of partnering to launch and operate an all-electric air taxi service in India, subject to appropriate regulatory approvals and clearances. Rahul Bhatia, Group Managing Director of InterGlobe, and Nikhil Goel, Chief Commercial Officer of Archer, signed an MoU to form a proposed partnership through which the parties aim to provide a revolutionary transportation solution for the country, improving urban mobility with safe, sustainable, and low-noise electric air taxi service that is cost-competitive with ground transportation.

The parties intend to work with select in-country business partners to operate Archer's aircraft, finance and build vertiport infrastructure, and train pilots and other personnel needed for these operations. The partnership also plans to finance the purchase of up to 200 of Archer's Midnight aircraft for the India operations. Archer's Midnight aircraft is a piloted, four-passenger electric vertical takeoff and landing aircraft designed to perform rapid back-to-back flights with minimal charge time between flights. In addition to urban air taxi services, the parties plan to pursue a variety of other use cases for the electric aircraft in India, including cargo, logistics, medical and emergency services, as well as private company and charter services. BAI

ModAir Aviation Announces the Induction of the Fifth Aircraft

ModAir Aviation is proud to announce the induction of the fifth aircraft under its wings. This inducted airplane is Tecnam P-Mentor, a flight training, two-seater aircraft that touchdown at Ahmedabad. The import of this aircraft is facilitated under the guidelines of IFSC – GIFT City. This aircraft would be leased to an upcoming FTO preparing to commence operations in the Karnataka state of India.

Towards the end of the financial year 2023-24, the Company will be inducting its sixth aircraft under their kitty, ready for lease in the Indian Aviation Industry to one of the Non-Scheduled Airline Operators.

Atul Jain, Director, ModAir Aviation said "We are excited to welcome the fifth aircraft under our Company. We take pride in supporting our Hon'ble PM's vision. Very soon we would be inducting our sixth aircraft. The company's current concentration is on Fight Training and Non-Scheduled aircraft category operations for the Indian market by Importing, Finance and Leasing of the aircraft.

Ashish Jaiswal, Chief Executive Officer, ModAir Aviation added "With this fifth aircraft induction, the landscape of aircraft induction through India-based Aircraft Leasing infrastructure is taking shape. We extend our sincere thanks to the Government of India, IFSC Authority & the GIFT City for providing the required platform to enable seamless and easy aircraft induction in the Country.

ModAir Aviation is poised to support our Prime Minister's Vision for enabling and building the IFSC infrastructure for importing and leasing aircraft for FTO, Non-Scheduled Airline and Scheduled Airline. The GIFT City & IFSC infrastructure is proving to be extremely beneficial to the ever-expanding Indian Aviation Sector. BAI

PHOTOGRAPHS: JM_Scindia / X, Archer Aviation, ModAir Aviation

Eve Air Mobility and Hunch Mobility to bring eVTOL Flights to Bengaluru

Eve Air Mobility and Hunch Mobility, a joint venture between Hunch Ventures and Blade Air Mobility, Inc., have announced that the two companies are working together to bring first electric commuter flights to Bengaluru, India. With the announcement, Bengaluru becomes the launch city in the region for urban air mobility flights utilising electric vertical takeoff and landing (eVTOL) aircraft. The announcement is the first step as both companies will be working with local, state and federal officials, infrastructure, energy and technology providers. The goal is to ensure the appropriate infrastructure is in place to introduce eVTOL aircraft flights.

Eve's eVTOL will offer Hunch Mobility's customers a quick and economical way to avoid traffic congestion in one of the world's most dense urban environments. Eve's eVTOL is 100 per cent electric and has a range of 100 kilometers (60 miles) allowing it to complete a variety of urban air mobility missions in Bangalore. The aircraft features a lift + cruise configuration with dedicated rotors for vertical flight and fixed wings to fly on cruise, with no components required to change position during flight. It will be piloted at launch but evolving towards uncrewed operations in the future. Eve was the first eVTOL manufacturer to announce an LOI in India with Hunch Mobility announcing an agreement to purchase 200 eVTOLs, Services and the company's Urban ATM (Air Traffic Management) solution. Eve's eVTOL is scheduled to enter into service in 2026. BAI

Gulfstream Completes World's First Trans-atlantic Flight on 100 per cent Sustainable Aviation Fuel (SAF)

Data Collected During This Mission Will Advance Industry Toward Net-Zero Goals

(TOP) GULFSTREAM CONTINUES TO LEAD THE AVIATION INDUSTRY'S SUSTAINABILITY EFFORTS; (ABOVE) GULFSTREAM USED THE G600 AIRCRAFT FOR THE WORLD'S FIRST TRANS-ATLANTIC FLIGHT USING 100 PER CENT SAF.

Gulfstream announced the successful completion of the world's first trans-Atlantic flight using 100 per cent sustainable aviation fuel (SAF). Accomplished on November 19, the flight took place on a Gulfstream G600 aircraft, which departed the company's headquarters in Savannah and landed 6 hours, 56 minutes later at Farnborough Airport in England.

Powered by Pratt & Whitney PW815GA engines, both using 100 per cent SAF, this mission showcases the potential for aviation's future use of renewable fuels, which feature lower carbon, sulfur and aromatics. The data collected from this endurance flight will help Gulfstream and its key suppliers gauge aircraft compatibility with future low-aromatic renewable fuels, particularly under cold temperatures for extended flight durations.

"Gulfstream is innovating for a sustainable future," said Mark Burns, President, Gulfstream. "One of the keys to reaching business aviation's long-term decarbonisation goals is the broad use of SAF in place of fossil-based jet fuel. The completion of this world-class flight helps to advance business aviation's overarching sustainability mission and create positive environmental impacts for future generations."

The SAF used on the flight was produced by World Energy and delivered by World Fuel Services. It was comprised of 100 per cent Hydroprocessed Esters and Fatty Acids (neat HEFA), which has at least 70 per cent lower lifecycle CO_2 emissions than fossil-based jet fuel, helping to reduce aviation's impact on climate. Additionally, this zero added aromatics fuel has a reduced impact on local air quality and very low sulfur content, which can reduce non-CO_2 environmental impacts.

"Gulfstream continues to break new ground in the sustainable aviation space, and we applaud them for completing this mission as we work to validate the compatibility of our engines with unblended SAF," said Anthony Rossi, Vice President, Sales & Marketing, Pratt & Whitney Canada.

Other key partners supporting this milestone include Honeywell, Safran and Eaton.

"We'd like to thank all our partners for their help in making this milestone flight happen, and for their ongoing partnership in collaborating with the extended SAF community to champion the aviation industry's path to 100 per cent SAF usage," said Burns.

Gulfstream was the first business jet original equipment manufacturer to fly on 100 per cent SAF. This flight advances the company's continuing work to lead the industry's sustainability efforts. BAI

PHOTOGRAPHS: Eve Air Mobility, Gulfstream

Gulfstream and Flightsafety Celebrate 10 Years of Courtesy Training Program

Gulfstream and FlightSafety International recognised the 10th anniversary of their complimentary ground handling and servicing training programme. Tailored for line service technicians, the programme is designed to improve dispatch reliability and increase safety for Gulfstream aircraft and the people who support them. It features explanations and demonstrations of best practices for handling and servicing Gulfstream aircraft, including parking, walkarounds, fueling, towing, snow and ice removal and more. Gulfstream covers the cost for fixed base operator (FBO) personnel to complete the course annually. To ensure this quality training service is easily available, it can be accessed online anywhere at any time.

Since the programme's launch in October 2013, 160 FBOs located in 30 countries have participated and more than 800 technicians have enrolled this year to date.

"This exciting milestone further demonstrates our ongoing commitment to safety and service," said Derek Zimmerman, president, Gulfstream Customer Support. "We value our partnership with FlightSafety International, and we're pleased to work with them to offer this complimentary service to technicians at the FBOs our customers rely on. Since the program's inception, there have been 26,000 ground handling and servicing training course enrollments." BAI

Embraer Reimagines Excellence with the All-new Phenom 100EX

Embraer unveiled the Phenom 100EX business jet, the company's latest evolution from the Phenom 100 series, which has served its loyal customers since 2008 with over 400 aircraft in operation. Adopted and trusted by owner-pilots, private companies, and flight academies, such as RAF, Emirates, Etihad, and the Finnish Aviation Academy, the Phenom 100 series is the most trusted entry-level platform in the industry. Now, the new Phenom 100EX delivers superior cabin comfort, operational versatility and safety enhanced pilot-centric avionics to offer the ultimate flying experience.

The aircraft incorporates Embraer's Design DNA, which influenced the combining of cabin controls into sleek upper tech panels, as well as the seat design, increased use of more sustainable materials and flush-to-the-wall tables that maximises workspace. The aircraft also includes interior enhancements, such as a baseline side-facing fifth seat and belted lavatory for additional passenger capacity. "We are proud to announce the Phenom 100EX—an aircraft designed to experience excellence with superior comfort and disruptive technology that enhances safety," said Michael Amalfitano, President and CEO of Embraer Executive Jets. "This product reimagines the entry-level flight experience, offering enhanced comfort, empowering pilots, and enriching journeys to deliver more value to our customers." BAI

The New PC-24 is Here

Beginning with new aircraft deliveries in 2024, Pilatus has extended the payload-range capability of its Super Versatile Jet to achieve a maximum range with six passengers of 2,000 nautical miles (3,704 kilometers). Pilatus also incorporated an array of new interior amenities, including a large side-facing divan which can be converted into a bed! The new PC-24 features a 600 pound (272 kg) increase in full fuel payload and maximum payload capacity. This enables operators to increase the PC-24's maximum range by 200 nm (370 km) with six passengers on board. The PC-24 now offers a full fuel payload of a single pilot plus 1,315 pounds (596 kg), and features a class-leading maximum payload capacity of 3,100 pounds (1,406 kg).

Bruno Cervia, Vice President of Engineering for Pilatus, explained: "The payload increase was achieved by refining both wing and fuselage structural elements to reduce the airframe empty weight while simultaneously increasing the maximum gross take-off weight limit. It's simply Swiss engineering at its best". BAI

PHOTOGRAPHS: Gulfstream, Pilatus, Embraer

THE GULFSTREAM DIFFERENCE

Your success is our inspiration. Every investment we make—in advanced technology, sustainability innovation, precision manufacturing and worldwide customer support—is an investment in you.

Gulfstream™

A General Dynamics Company