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PUSH TO THE CAUSE OF CIVIL AVIATION: MINISTER OF CIVIL AVIATION P. ASHOK GAJAPATHI RAJU RELEASES THE BROCHURE OF SP'S CIVIL AVIATION YEARBOOK, A NEW INITIATIVE ON THE PART OF SP GUIDE PUBLICATIONS, WHICH WILL WORK TOWARDS FILLING THE VACUUM OF A REFERENCE SOURCE FOR THE CIVIL AVIATION INDUSTRY. THE MINISTER HAD NOTED THAT A REFERENCE DOCUMENT WILL BE OF USE AT THIS POINT OF TIME. V. APPA RAO, OSD TO THE MINISTER IS ALSO SEEN IN THE PHOTOGRAPH.

By R. CHANDRAKANTH

That the Indian civil aviation sector is gathering momentum and racing towards becoming the third largest civil aviation market is well-known. However, while the ecosystem is getting created by different stakeholders, there still exists a huge gap in information on the sector. While there is information in different media, there is no comprehensive reference book on the state of Indian civil aviation, be it to do with airlines, be it air cargo, be it the airports, be it MRO, be it manufacturing, et al.

This gap is going to be filled up by *SP's Civil Aviation Yearbook* from the house of SP Guide Publications which has been in the niche sector of aerospace and defence publishing for over 50 years.

The ball was set rolling for the launch of *SP's Civil Aviation Yearbook* by the Minister of Civil Aviation, P. Ashok Gajapathi Raju who has categorically stated that the sector needs all the information, encouragement and engagement.

INFORMATION ON ALL SEGMENTS

SP's Civil Aviation Yearbook will be one of its kind, providing in-depth information on sectors. It will have distinct sections such as civil aviation – intelligence and trends simplified; business and general aviation in India; airports development; Indian MRO markets; Indian cargo markets and regulatory issues of India.

SP's Civil Aviation Yearbook will present the most effective platform to reach thought leaders, policy makers and decision takers in the airlines, airports and the government along with the industry. With its rich content and holistic insights garnered from the opinions and perspectives of experts in the field, it will be a veritable treasure-trove of accurate, relevant and indispensable information.

SP's Civil Aviation Yearbook will be the most effective platform to reach the flag bearers in the ministries, regulators, aircraft manufacturers, aircraft operators, airports, cargo companies and all associated aviation companies and aircraft users. •









C Series









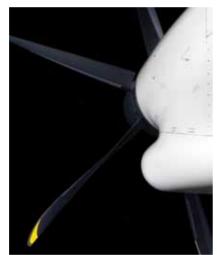


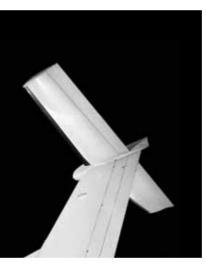




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SNAPSHOTS FROM THE LAUNCH: THE CIVIL AVIATION MINISTER WITH SP GUIDE PUBLICATIONS CMD AND EDITOR-IN-CHIEF JAYANT BARANWAL

The **Boeing** Advantage



DINESH KESKAR, SENIOR VICE PRESIDENT, ASIA PACIFIC & INDIA SALES, BOEING

By R. CHANDRAKANTH

he US aerospace behemoth Boeing is on a roll in India. It has a backlog of 97 aircraft to be delivered in India, 75 to Jet Airways; 19 to Air India and three to Spicejet. These commitments will be fulfilled soon as Boeing sees an upward swing in market sentiments and airlines returning to profitability in India.

Stating this at the media briefing on Boeing's market update at India Aviation, Hyderabad, the Boeing Senior Vice President, Asia Pacific & India Sales, Dr. Dinesh Keskar said the company was in sync with the government which wanted the airframers to create an eco-system while selling an aircraft in India. The eco-system consisted of setting up or helping setting up of a maintenance, repair and overhaul (MRO) facility; training and simulation support; and facilitating leasing options for buyers. Boeing has done all of these - helped set up the MRO unit for Air India in Nagpur; has training and simulation facility and connects buyers to lessors.

Reiterating Boeing's market update for India, he said, the projected demand for new planes is

(Continued on page 4...)

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OVER 5 DECADES SINCE 1964

For Advertisement / Editorial queries



Embraer Executive Jets gung-ho about India

By R. CHANDRAKANTH

mbraer Executive Jets which announced sale of Phenom 100E to an undisclosed customer in India but to be managed by Titan Aviation group, is excited about the Indian market. The Vice President (Sales) Middle East and Asia Pacific, Claudio Camelier told a press conference at India Aviation that the company was satisified with the performance in India, but would strive to do better, though the market conditions were not favourable worldwide.

Camelier said that the sales could be similar to that of last year, but did not disclose what the number was. The global momentum would pick up on recovery of the US economy. In India, he added, the sentiments were favourable and hoped that the push for regional connectivity would help business avia-

tion too. The company has a 33 per cent market share across all business jets.

PHENOM 100E

Giving details of the aircraft that are being showcased at India Aviation, Camelier said the Phenom 100E has a four-occupant range of 1,178 nautical miles (2,182 km), with NBAA IFR reserves. With a high speed cruise of 390 knots, the Phenom 100E is one of the fastest jets in its class, with operating costs comparable to that of leading turbo-prop aircraft. Also, he mentioned that it is proven pilot training jet and was cost-effective and had low maintenance costs.

PHENOM 300

The most delivered aircraft in the industry for the last three years: the Phenom 300 performs among the top light jets, with a high speed cruise of 453 knots and a six-occupant range of 1,971 nautical miles (3,650 km) with NBAA IFR reserves. This range allows nonstop flights from New Delhi to Bangkok for example. With the best climb and field performance in its class, the Phenom 300 costs less to operate and maintain than its peers. The aircraft is capable of flying at 45,000 feet (13,716 meters), powered by two Pratt & Whitney Canada PW535E engines with 3,200 pounds of thrust each. He said it had sales of 60 units in 2013; 73 in 2014 and 70 in 2015.

LEGACY 450

The Legacy 450 is a mid-light business jet with a best-in-class 6-foot tall,

flat-floor cabin. Four fully reclining club seats may be berthed into two beds for complete rest in a 6,000-ft cabin altitude. The optional in-flight entertainment system consists of a high-definition video system, surround sound, and multiple audio and video input options. The cabin includes a refreshment center at the entrance, a rear private lavatory with a vacuum toilet and an in-flight accessible baggage area. The total baggage space is the largest in the aircraft's category.

LEGACY 500

The Legacy 500 has the best-in-class six-foot flat-floor cabin, which is comparable to those of some aircraft in the super midsize category. Eight club seats may be berthed into four beds for complete rest in a cabin altitude of 6,000 feet. He said that Legacy 500 had sold over 20 plus in 10 countries and had 50 per cent mar-

ketshare worldwide in 2015.

LEGACY 650

CLAUDIO CAMELIER

The large Legacy 650 comfortably carries up to 14 passengers with privacy in three distinct cabin zones, and premium acoustic comfort. In addition to the best-in-class galley and a fully accessible in-flight baggage compartment that surpasses in size even those of most ultra-long range business jets, the aircraft may be configured with up to two lavatories. The Legacy 650 features internet connectivity and the latest generation in full HD in-flight entertainment, with Honeywell's Ovation Select entertainment and cabin management system. Over 280 plus aircraft in operation and it had the highest dispatch reliability at 99.5 per cent. It can fly from Delhi to Berlin direct, he said.

LINEAGE 1000E

The ultra-large Lineage 1000E is Embraer's largest executive jet and can carry up to 19 passengers in five cabin zones. The enhanced interior design of the Lineage 1000E is reflected in the new seats, electric doors, refreshed galley and cabinetry design, automatic tables, improved acoustic comfort, and other cabin amenities.

Its range of 4,600 nautical miles (8,519 kilometres) with eight passengers, including NBAA IFR fuel reserves, means that the jet is able to fly nonstop from New Delhi to Tokyo, Japan or Nairobi, Kenya. •

Trujet to go pan-India

By R. CHANDRAKANTH

rujet, the country's fourth regional airline from Hyderabad, is applying for a pan-India license to operate in the northern and western regions.

The Managing Director of Trujet, V. Umesh told SP's ShowNews that the company which had a fleet of three ATR 72-500 aircraft would be getting two more on lease before July this year. Meanwhile, it has begun process for leasing of 15 ATR aircraft in the near future and the deliveries would begin next year. The funding for the same



would be through internal accruals.

Trujet which is connecting seven destinations now will soon be expanding to other southern pockets first and then northern and western regions. The passenger load factor on its routes, he said, was on average 80 per cent and this was encouraging the company to expand at a faster rate.

Trujet is the brand name of Turbo Megha Airways. The airline is a subsidiary of Turbo Aviation, an aircraft maintenance and ground handling services company based in Hyderabad. It commenced operations on July 12, 2015 with inaugural flight between Hyderabad and Tirupati.

(...Continued from page 3)

1740 valued at 240 billion USD. Single aisle aircraft in which Boeing had a strong hold would comprise 84 per cent (1,460) single aisle jets; 15 per cent (260) wide body jets; and one per cent (20) regional jets.

Expressing satisfaction at the way the market in India was moving, he said that increased traffic, reduction in operating costs and fare discipline will drive profitability in Indian aviation. The India domestic passenger traffic is at the highest levels with over 80 million domestic passengers having flown in 2015. So also the capacity discipline is strengthening (2014 vs 2015). The domestic



The contributing factors for this growth were fuel prices which had come down drastically and the exchange rate which continues to drive airline operating costs and return to profitability. So also a relatively stable rupee with decreasing fuel prices reduced break-even fares and Landing and Navigation fees growing proportion of operating cost.; and increased fare discipline is required to continue to industry grow profitability •

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DR SRINIVASAN DWARAKANATH, PRESIDENT OF AIRBUS IN INDIA

Airbus is set to deliver one aircraft every week to India over the next ten years



By SURESH D.

WW ith an estimated 10 per cent annual traffic growth rate over the next decade, India will require over 1,600 new passenger and freighter aircraft in the next ten years to help meet the growing demand, the President of Airbus in India Dr Srinivasan Dwarakanath and Joost Van der Heijden, Vice President (Marketing) told the media on the sidelines of the ongoing India Aviation Show 2016 at Hyderabad.

The demand includes 1,200 single aisle and 400 wide-body aircraft with a total market value of \$224 billion. India is well on its way to become the third largest aviation market by 2034.

Presenting a bullish outlook for Indian civil aviation sector, the two senior executives of Airbus said their company was a proud partner in Prime Minister Narendra Modi's 'Make in India' initiative to create a robust eco-system for improving air connectivity in the country.

"Every Airbus aircraft is partly made in India," declared Dwarakanath while outlining his company's initiatives in fostering cooperation and helping Indian aerospace and aviation sector grow substantially over the last few decades. "India's preference for Airbus aircraft was further consolidated in 2015 with 250 new firm orders, lifting the market share of orders and the inservice fleet to over 70 per cent. At present, about 56 per cent of India's in-service fleet are Airbus aircraft operated by most leading Indian carriers. This includes India's first A320neo, the first to be delivered in the Asian region," Dwarakanath said.

The air traffic growth in India is being driven by urbanisation and growth in wealth with the number of middle classes expected to increase by 50 per cent to touch 600 million by 2024. By 2034, the number of Indian cities with over one million monthly air passengers will more than triple, the Airbus officials said. Today, four Indian megacities each handle over one million passengers each month. This number is expected to go up to 14 by 2034.

The traffic serving the Indian market is set to grow at 8.4 per cent per year over the next 20 years, well above the world average of 4.6 per cent. The domestic Indian traffic will grow more quickly at 9.3 per cent, making India the world's leading emerging aviation market. By 2034, Indian passengers on an average will each make four times as many flights as they do today. \bullet

Four start-ups from Bangalore to benefit from **Airbus BizLab**

By SURESH D.

A irbus BizLab, a global aerospace business accelerator extending support to start-ups, has selected ten start-ups, six from Hamburg in Germany and four from Bangalore, for a six-month comprehensive acceleration programme.

A large number of start-up had submitted their project proposals for the Airbus business accelerators. Following are the four start-ups selected in Bangalore from 80 applicants in seven countries:

Blue Morfo- This start-up is developing a mobile application to detect and prevent specific corporate health related issues, like exposure of airline crew to jetlag and cabin pressurisation.

Shoonya Games- It is proposing interactive gaming solutions for training and marketing purposes through the use of Virtual Reality and 3D technologies embedded in a mobile device.

Open Turf- The project is about providing Wireless in-flight entertainment using passenger personal devices

Qualitas- Offers automated quality inspection systems for manufacturing, specializing in 2D and 3D machine vision.

Airbus offers to projects a comprehensive support through a six-month acceleration programme. The selected start-ups will interact with a large number of Airbus experts from various domains (technology, legal, finance, marketing, etc.) and will benefit of a dedicated mentor. They will have office space and have access to prototyping and test facilities. A dedicated demo day with Airbus decision makers, partners, subsidiaries, customers, and venture capital will be also offered.

The six start-ups selected in Hamburg from 100 applicants in 29 countries are:

ZinkCloud from Spain- The project is about developing software to improve quality production by using machine learning and natural language processing.

Jetlite from Germany- 'jetlite - light to lighten your jetlag'. The proposal is about increasing passenger comfort and decreasing jetlag by an innovative use of the existing cabin lighting LED- system.

Synergeticon from Germany- Offers a digital platform with connected smart tools to provide optimal support for manual work processes in production and maintenance.

Velmenni from Estonia/India- The idea is about creating a new wireless technology for high speed data transmission using visible light.

Teraki from Germany- The project consists of making Big Data Small. Software solutions are provided to reduce data from any Internet of Things sensors in a significant and smart way.

Nebaqua from Spain- The proposal is about a water separation systems based on ultrasonic nebulization that helps reduce weight and the related management costs. \bullet

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INTERVIEW BOEING





'Right capacity is the solution for India' Dinesh Keskar

Boeing commercial airplanes are on a steady course and the US-based company has laid out its strategies in the world market in general and India in particular. In an interview with *SP Guide Publications* Editor-in-Chief Jayant Baranwal, the Senior Vice President of Boeing (Asia-Pacific & South Asia), Dinesh Keskar talks exclusively to *SP Guide Publications* on how the company is going to expand its market share.

(...Continued from SP's ShowNews, Day 2)



Jayant Baranwal (Baranwal): What kind of positioning Boeing is willing to have in India in view of the market dynamics evolving so fast?

Keskar: We have been quite pleased with our wide-body placement in India. If you remember Air India was predominantly 747 then subsequently they became 777 and 787 today, that is their whole fleet. Look at Jet Airways, they do have some A330s on lease but they have predominantly 777 and 787. These are the only two airlines today who are flying internationally long-haul. We feel our positioning in the wide-body market in India is absolutely wonderful and our market share is very high. When you come to the 737 and A320 market, in terms of delivered airplanes, we have a reasonably good market share. I know that there has been a lot of talk about IndiGo buying 250 now and 180 of those airplanes they are buying are for the next 10 or 15 years. Jet Airways however has not placed yet any order for the next 10 or 15 years, Air India has not placed an order, and neither has SpiceJet, although they are in talks for that. Jet has recently ordered 75 737 MAX at the Dubai Airshow and SpiceJet placed orders for the 737 MAX two years ago at the last India Aviation. So we are predominant in the narrow-body market. We are also putting more Next-Generation 737 airplanes this year into Air India Express. If you look at the numbers in our delivery share, it was much higher than Airbus though Airbus sold more planes in 2015. The point I continuously

make is that at the end of the day orders are orders and deliveries are deliveries. Deliveries are the one you can take note and bank it.

As an example, Kingfisher order is still on the Airbus books for the narrow-body. And when they speak of their market share, they add it. I am not picking on Kingfisher, but I am giving an example. You and I know the probability of delivering those airplanes and we know that the airline is not going to take that order. If you look at our balance of deliveries you clearly see that these are real deliveries. If you look at delivery share in India right now, it does not take much to figure it out, we are pretty-comfortable of 50:50 share on the narrowbody market and very dominant market share in wide body. I think we have pretty good positioning of the 737 MAX coming to the market soon. The 787 reliability has stabilised in India today. About 1,350 to 1,400 flights a month with the 787 now and reliability is close to 99 per cent which is approaching world average. So we feel very good in our positioning and market dynamics. Of course, our scope is growing and we are looking at over 1,740 airplanes worth \$240 billion with wide-body and MAX coming on line and along with our next products such as the 777X and 787-10, will position us very well in the Indian market.

Baranwal: Dinesh, how would you view the progress of IndiGo in India?

Keskar: I cannot comment on that as I am not

aware of what they do, but I am absolutely impressed with the way they run the operations; I am impressed with the growth they are experiencing and I believe they have reached now 100 airplanes, and it is phenomenal. I don't know their facts well, but they have done a great job for the Indian aviation and for India and they run a very good business.

Baranwal: How do you position the 787 in the next 10-15 years? And also we hear of reports here and there of minor problems on 787?

Keskar: Jayant, you are a sophisticated guy. Even the best of airplanes have 99.6 to 99.8 reliability what that means is that four out of every 1,000 flights you are going to hear something. And literally we have thousands of flights every day. Air India is doing 1,400 flights a month. When you do 1,400 flights a month and have a dispatch reliability with around 99 per cent, simple maths will tell you are going to have about 10 to 15 flights where you going to have a snag. It is a high number and we are continuing to work on that and our goal is to get at 99.2 and eventually at 99.4. So when you have these three or four flights that are delay, for most airlines in the world, nobody writes about it, even if there is a delay of eight hours. It's not a story in the US, as there are so many flights every day. In India, I am sure even IndiGo does not run 100 per cent dispatch reliability, neither does Jet, but whenever something happens to Air India it gets written. We will continue to work with Air India to make sure that their reliability gets higher and higher.

Baranwal: How many 787 do you expect in the next 15 years flying in India?

Keskar: As you know, 21 are flying today, six are scheduled for deliveries in the next two years and Jet has 10 more, so clearly 37 at least in the next five years. Our forecast of 1,740 new aircraft, about 300 in that category in the next 20 years, are going to be in the wide-body which we dominate. There is not a single A350 order in India, there isn't a single A330neo order in India, clearly we will have the lion's share of the wide-body market going forward. We don't speculate what airlines will order. I am giving you the facts that 37 units of 787 and a total of 30 units of 777 have been delivered in India and the last few will be delivered in the next five years.

(Concluded)

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Bell 412EPI, helicopter of choice for search and rescue

By SP'S CORRESPONDENT

Since the Bell 412 was first introduced in, customers have come to rely on the aircraft's capabilities and versatility in accomplishing a wide range of missions including utility, commercial and parapublic operations that includes search and rescue. The legacy of the Bell 412 continues to make its mark on the industry with the enhancements made on the Bell 412EPI that entered the market in March 2013.

"The Bell 412 is known around the world for its rugged reliability to perform the toughest of missions, and the new EPI offers improved performance with a state-of-the-art integrated avionics suite that improves situational awareness and reduces pilot workload," said Sameer Rehman, Bell Helicopter's Managing Director of Asia Pacific.

The Bell 412EPI is a multi-mission capable aircraft first introduced in March 2013. It improves on the Bell 412EP platform with the Bell BasiX Pro^{TM} fully integrated glass flight deck, providing critical flight information at a glance for greater situational awareness and safety, allowing it to operate in a variety of mission sets including search and rescue, corporate transport, utility and military operations.

The avionics suite also includes high resolution digital maps, electronic charts and approach plates, ADS-B transponder and optional HTAWS and XM satellite links. The Bell 412EPI also incorporates the power of Pratt and Whitney's PT6T-9 Twin Pac® engines, providing 15 percent more horse-power than the standard Bell 412. The Bell 412EPI features the BLR Strake and FastFin® system, which modifies the tailboom to optimize airflow and improve handling, safety and lift.

With a max cruise speed of 122 knots, max range of 364 nautical miles and useful load of 4,829 lbs pounds, the Bell 412EPI is designed to bring enhanced value to customers, who include the Canadian Coast Guard, the



BELL 412EPI HELICOPTER

Czech Police, Aomori Prefecture, Japan, and the National Operations Centre Air Division (NOCAD), Trinidad &Tobago.

"We know the entire globe is relying on our aircraft to complete their missions, and we are honored by our customer's noble missions around the world," added Rehman. \bullet





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Bombardier C Series aircraft route-proving takes off in Europe



SWISS CS100 ON ROUTE-PROVING

Bondardier Commercial Aircraft announced on March 7 that it has commenced CS100 aircraft route-proving exercises in Europe. The month-long program is underway with a dedicated CS100 route-proving aircraft operated by Bombardier from launch operator Swiss International Air Lines' ("SWISS") base in Zurich, Switzerland. The route-proving exercises are scheduled to include main European cities such a Brussels, Vienna and Warsaw. Additionally, Bombardier also confirmed that the last of eight flight test vehicles – the second CS300 aircraft – successfully entered the flight test program in Mirabel, Québec last week.

The European route-proving program is being conducted as SWISS readies for the CS100 aircraft's entry-into-service (EIS). The airline's first CS100 aircraft is scheduled to be delivered by Bombardier in Q2 2016.

"As the launch customer and the first airline that will operate the CS100 aircraft, the European route- proving programme is very important to us and will provide a real indication of how the aircraft will operate in our network when we take delivery of our first CS100 aircraft in the next few months," said Peter Wojahn, Chief Technical Officer, Swiss International Air Lines. "The CS100 aircraft continues to attract curiosity and keen interest when visiting airports around the world and now, it will be spotted in cities across SWISS' network – performing as if already a member of the airline's fleet," said Fred Cromer, President, Bombardier Commercial Aircraft. "It's an exciting time as we look forward to these flights and to the close collaboration with our friends at SWISS – together we are preparing for the C Series aircraft's entry-into-service. The route-proving flights will bring the C Series aircraft closer to the flying public in Europe who will ultimately be amongst the first in the world to fly aboard the aircraft – the first all-new airliner built for the 100- to 150-seat market in close to three decades."

"March is turning out to be a very productive month for the C Series aircraft program. In addition to the next phase of route-proving, last week we celebrated the first flight of the eighth and final flight test vehicle. It's only the second CS300 flight test vehicle in the program and one that is equipped with a full production interior," said Rob Dewar, Vice President, C Series Aircraft Program, Bombardier Commercial Aircraft. "We're delighted that its test program, which is dedicated to cabin and interior certification, is off to a great start and progressing extremely well."

The CS100 aircraft will conduct route-proving flights using typical airline flight routings and operational procedures. The flights give a really good indication of how the C Series aircraft will perform in a typical airline schedule to and from different airports. Airfield performance, landings, airport turnarounds and on-ground operations are some of the important characteristics that will be observed.

The European route-proving program follows one conducted last year across North America that included more than 35 cities.

ABOUT C SERIES AIRCRAFT

The C Series family of aircraft, representing the fusion of performance and technology, is a 100 per cent all-new design that offers operators up to US \$13 million extra value per aircraft.

By focusing on the 100- to 150-seat market segment, Bombardier has designed the C Series aircraft to deliver unparalleled economic advantage to operators and to open up new opportunities for single-aisle aircraft operations.

By employing advanced materials, state-ofthe-art technologies and advanced aerodynamics, combined with the groundbreaking Pratt & Whitney PurePower® PW1500G engine, the C Series aircraft is delivering a greater-than 10 per cent unit cost advantage compared to similarly-sized, re-engined aircraft.

In addition to delivering best-in-class economics with the C Series aircraft, Bombardier has placed considerable emphasis on cabin design to ensure a superior passenger experience. The aircraft offers 19-inch-wide seats that set a new industry standard, large overhead bins that accommodate a carry-on bag for each passenger, and the largest windows in the single-aisle market. Together these attributes create a widebody feel that offers passengers an unparalleled level of comfort.

All noise performance testing on the CS100 aircraft has been completed and data confirms it is the quietest in-production commercial jet in its class. The aircraft's noise performance and its outstanding short-field capability make it ideal for varied types of operations.

The C Series aircraft's maximum range has also been confirmed to be up to 3,300 NM (6,112 km), some 350 NM (648 km) more than originally targeted.

Bombardier has booked orders and commitments for 678 C Series aircraft, which include firm orders for 243. \bullet

NDIA AVIATION 2016

Air India ties up for loans

A ir India has tied up loans worth \$155 million (over ₹1,000 crore) to make pre-delivery payment for three Boeing 777 planes, amid the national carrier making efforts to expand and rejig its fleet with new aircraft. The airline, which is making efforts to turn around its fortunes, is expected to start inducting the three new aircraft in early 2018.

Currently, the carrier has 15 Boeing 777s in its fleet — 12 of them B777-300ERs and the rest B777-200LRs.

A senior official said the carrier will take loan to the tune of \$155 million from Deutsche Bank at a 'very competitive' interest rate towards making pre-

delivery payment for three Boeing-777 planes.

The three aircraft are to be delivered to the carrier between January-March, 2018.

In December last year, Air India had sought proposals from banks and financial institutions for loan towards pre-delivery payment requirements for three Boeing 777-300 ER aircraft.

Under the terms of the agreement signed with Boeing Company, Air India has to pay 15 per cent of the gross cost of the aircraft as advance payment 24 months prior to delivery. \bullet



NEWS BRIEFS

DGCA AND US agency agreement on aviation safety

he Directorate General of Civil Aviation (DGCA) of India and United States Technical Development Agency (USTDA) signed the Grant Agreement for India Aviation Safety Technical Assistance Phase II in New Delhi recently. The Minister of Civil Aviation, P. Ashok Gajapathi Raju, and Leocadia I. Zak, Director, US Trade and Development Agency were present on the occasion. USTDA will be partially funding the assistance to the tune of \$8,08,327 and contractor The Wicks Group (TWG) will share the cost of assistance at \$75,000. Government of India's contribution is for an amount of \$446,866.

In-kind Cost Share, valued at \$1,96,866 for international roundtrip air travel on Indian air carriers between the US and India and in-country ground transportation for the Contractor during the duration of the assistance; and Cash Cost Share - \$250000

The International Civil Aviation Organization (ICAO) had raised certain safety concerns about Indian aviation in its 2012 audit. Following this the Federal Aviation Administration (FAA) of USA carried out an International Aviation Safety Assessment (IASA) audit in September 2013 and a review in December 2013, and India was assigned Category 2 rating in January 2014.

In March 2014, USTDA in coordination with FAA approached DGCA and offered assistance under a USTDA Grant Agreement project to address the FAA IASA findings and help restore Category 1 status to India. Under the Grant Agreement, US based contractor The Wicks Group (TWG) assisted DGCA in addressing the findings and prepared for a reassessment by FAA in December 2014. Based on this reassessment and a follow-up visit in March 2015, India's Category 1 status was restored in April 2015.

Phase II of the current project is aimed at sustaining efforts undertaken during 2014 for restoration of IASA Category 1 status and bringing in more systemic improvements in the area of operation, airworthiness and licensing. It will include components on general aviation and business aviation.

Soon you can use **Uber** to hail a helicopter



AIRBUS HELICOPTER H130

uropean aerospace giant Airbus will cooperate with the US ride-hailing service Uber Technologies to provide on-demand flights with its H125 and H130 helicopters, Airbus Chief Executive Tom Enders said.

The service will be first tested at the Sundance Film Festival in Park City, Utah, which starts on January 21, Enders told a technology conference in Munich on Sunday. The project aims to make helicopter flights available to a wider audience, he said.

The cooperation with Uber comes as Airbus's Enders seeks to push innovation at the Toulouse, France-based company that makes everything from civil airplanes to military transporters.

Airbus has armed its Silicon Valley branch with \$150 million in venture capital to invest in promising aerospace startups around the world.

60 suspicious flying objects sighted at IGIA in 3 months

he Delhi International Airport witnessed over 60 unidentified objects in its air space in three months from October last year. The Central Industrial Security Force (CISF) Director General Surender Singh, during an annual interaction with journalists here, said a total of 62 such incidents have been reported from October 27 last year till today.

These objects, however, like toy balloons, kites, Chinese balloons among others. It is very difficult to make out (about the kind of the flying objects with naked eyes)," Singh said. The DG said the government will soon come out with "operational guidelines" to tackle such cases after a similar incident was reported late last year when a suspected drone-like object was spotted near Indira Gandhi International Airport (IGIA) runway.

This is a general problem which is not only at the airport. There are other sensitive installations too (near the airport area). Soon guidelines will be out determining the responsibility of each agency in such cases," the CISF boss said. While CISF is the overall in-charge for airport security in the country, it is assisted by local police and the Indian Air Force, more pro-actively at sensitive facilities like IGIA.

Officials said new guidelines or standard operating procedures (SOPs) for all airports are required while dealing with such potential threats as there are multiple stakeholders in civil aviation security and hence, a clear chain of command and task is required to thwart a possible aerial attack by using these gadgets. The CISF boss was also asked about the menace of hoax calls received at airports. The DG said while 44 such calls were received last year at across various airports the force is deployed at, 16 such calls have been made till now this year. "These instances are considerable...but we take them all very seriously. We assume them to be genuine and all the procedures are undertaken to check them," he said. The DG said that the idea of a much-talked about proposal to deploy CISF men on-board Indian merchant vessels to protect them in pirate-infested waters has been 'shelved'. •

For Bengaluru's uber rich, an app to hail a helicopter

very year, hundreds of venture capitalists, hedge fund investors and technology entrepreneurs flock into the city to strike deals or oversee projects worth several million dollars. And then they get stuck on Bengaluru's roads

Happens in every big city, right?

But then Delhi-based entrepreneur Kanika Tekriwal is determined that among India's great metropolises, Bengaluru has the kind of 'experimental crowd' that would be willing to book a chopper ride through a mobile app, like they would an Uber or Ola taxi. Globally, few cities such as New York, Melbourne, Hong Kong and Mauritius have helicopter transfers from airports. And in India, Bengaluru would be the first. •





Five Honeywell Solutions for a more comfortable flight

By JEREMY DINGMAN

NDIA AVIATION 2016

Whether you're flying coach, first class or in the privacy of your business jet, we can all agree that comfort is first and foremost our highest priority when flying – besides safety, of course. And, if you're one of the 3.7 billion estimated passengers flying in 2016, you're probably tired of the same old features and have only dreamt about an airplane that gives you the ability to access the internet, satellite television and a way to manage these features all from the comfort of your seat; you don't have to dream – these features actually exist.

In fact, Honeywell has an entire suite of solutions to make flying more comfortable for everyone, including those travelling on major airlines. So, if you're traveling this year and are ready for a better flying experience, these five, innovative Honeywell's solutions make flying more enjoyable for everyone on-board.

JETWAVE

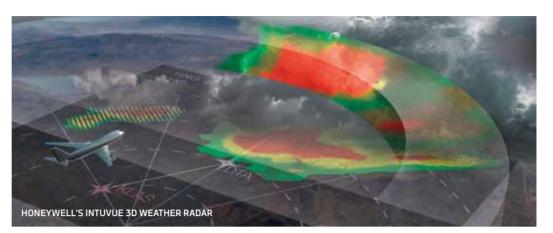
In 2016, it's imperative for all airlines to offer Wi-Fi connectivity since the FAA has allowed passengers to use portable electronic devices from take-off to landing since 2013. In fact, it's unusual and frankly very inconvenient to find a plane in today's day and age that doesn't offer wireless connectivity during flight. Luckily, Honeywell has made this easier for airlines and private jet owners by developing a solution to connect passengers to the internet, even at the highest elevations.

Honeywell's Jetwave allows passengers to access the internet and stay connected to what's most important to them with the help of Inmarsat Aviation's Global Xpress (GX) Ka-band network. This provides high-speed connectivity of up to 50 Mbps, making flying more comfortable and a little less awkward for everyone tired of reading the safety instructions or looking at their neighbor during a 12-hour flight

OVATION SELECT

We live in a world where we can operate our thermostat, lock all of our doors, turn on a light and much more all from the touch of a button on our phone. What would you say if I told you that you could do all of that now from the convenience of your seat on an airplane? Spoiler alert: you can.

With solutions like Honeywell's Oviation Select Cabin Management System, you can do things like open window shades, control lights, adjust the vol-



ume of your TV and much more all from the your mobile device or even your Google Glass – now that's comfort.

AIS-2000 SATELLITE TELEVISION

If you're a seasoned traveler, chances are you've enjoyed your fair share of outdated movies during a long flight. And, with the rise of Wi-Fi on planes, many of us would rather read a book from our tablet than have to watch another one of these movies. However, the need to watch real-time TV has become a necessity in many business aircraft flying today, which is why we've created AIS-2000 Satellite Television.

With Honeywell's AIS-2000 Satellite Television, passengers no longer have to miss their favorite TV shows or sporting events because it's available in the airplane. Now, business jet owners can stay connected to direct broadcast television instead of catching up on their shows when they get on the ground; this saves time and keeps them entertained while they're in the air. Comfortable yet? I think so.

INTUVUE 3D WEATHER RADAR

Raise your hand if you've ever successfully fallen asleep on airplane to be woken up shortly after from turbulence? Not only is turbulence uncomfortable for those flying, but it also "causes airlines on average \$1,50,000 per incident". Fortunately, new advances in technology have made it easier for pilots and their crews to avoid harsh weather.

OUR SOLUTION? INTUVUE 3D WEATHER RADAR.

Honeywell's Intuvue 3D Weather Radar displays timely weather information unlike any other weather radar system by integrating volumetric 3D scanning to increase visibility, improving pilots' ability to change their flight plan in order to avoid bad weather conditions with enough time to spare. Although this might not be the first type of technology you think of when you think comfort, nor the sexiest, you'll definitely notice how enjoyable your next trip is if you're not gripping your seat for dear life the entire flight.

SMARTRUNWAY AND SMARTLANDING

Since working at Honeywell, I've learned that takeoff and landing is truly an art form. For example, there are several different ways to land an airplane with a variety of different approaches made to get everything on the ground while also not disturbing airline traffic. However, if you've been on enough flights, you've probably experienced some landings that were smoother than others. That's why we've created a solution to make taking off and landing more efficient and quieter.

Honeywell's SmartRunway and Smart Landing is an evolutionary software addition to Enhanced Ground Proximity Warning Systems (EGPWS.) This technology allows pilots to communicate with air traffic control through visual messaging, which allows them to plan more efficiently for landing. It gives the pilot another way to communicate rather than trying to speak to ATC in heavily-saturated airways and therefore, makes it quieter for its passengers. Now, you can take that nap you've been looking forward to and wake up at your destination.

Whether you're in the midst of traveling, planning your next trip or getting ready to book your first flight, make sure to keep an eye-out for some of this technology and let us know you found it with #flymuch. •

Airports Authority of India's marketing strategy

he Airports Authority of India (AAI) will enhance its marketing strategy to make airports more operationally and commercially viable.

At the Airport Marketing Conference held recently in Gurgoan, officials and experts chalked out a strategy to make commercial use of airport infrastructure in the country.

The Chairman of Airports Authority of India, R K Srivastava, said the new Civil Aviation policy would help revive "inactive airports" across the country.

"We have already begun our engagements and we believe that with the introduction of new civil aviation policy in the next 2-3 months, the regional connectivity will improve. It will help to increase the viability of many unvi-

able airports in the country," said Srivastava.Formed in April 1995, the Airports Authority of India manages 125 destinations, including 77 domestic and 21 international airports in the country.

The AAI is also looking at focusing on the cargo segment to boost its revenues. It has been undertaking international cargo handling operations at international airports, including Chennai, Kolkata, Lucknow, Coimbatore, Amritsar and Guwahati.

Similarly, the authority has identified 24 domestic airports across five regions, including three civil enclaves to develop such integrated facilities. They include Port Blair, Coimbatore, Jaipur, Raipur, Ahmedabad among others. •



AAI STALL IS THE CYNOSURE OF ALL EYES

The unique stall put up by the Airports Authority of India (AAI) at the India Aviation Exhibition has attracted many visitors. What makes it stand apart from the other pavilions is that it gives the visitor a feel of being in an airport. Measuring 204 sq.mtrs, the stall contains miniature versions of terminal building, Air Traffic Control Tower, Runway and Aircraft.

In addition to this, it also depicts details of achievements of AAI, infrastructure development, cargo activities and other new technologies adopted by AAI for the smooth flow of traffic from Indian Airports. Due to the uniqueness of the booth, it attracted huge number of visitors and saw tremendous footfalls on all the days of the show.

The India Aviation Show 2016 is being jointly organized by AAI and FICCI under the patronage of the Civil Aviation Ministry. The five-day, biennial event is being held at Begumpet Airport of AAI in which corporate companies from all over the world are taking part.

The AAI stall was inaugurated by Minister of Civil Aviation P Ashok Gajapati Raju in the presence of Anil Shrivastava, Joint Secretary, Ministry of Civil Aviation and R K Srivastava, Chairman, AAI and other officials. Airports in Jaipur and Lucknow which are managed by the Airports Authority of India, have won the first and second place of the 2015 Airport Service Quality (ASQ) Awards in the category of 2 to 5 million passengers per annum. The ASQ awards, organised by the Montreal-based Airports Council International, are the result of more than 55,000 in-depth passenger satisfactions surveys carried out last year at more than 300 airports across 80 countries. The Goa and Trivandrum airports are at 4th and 5th positions in the same category. In the category of Airports upto 2 million passengers per annum, Airports Authority of India's Srinagar Airport has been rated as the second best airport in the World.

"This is really a great achievement. We have been working very hard to improve the customer facilities. Difference facilities available at the terminal as well as the city sight and the facilities given to the different airlines who are operating from different terminals. Our people have worked very hard and they have brought this laurel to the Airport authority to India," said R.K. Srivastava, Chairman, Airports Authority of India.

Airports Authority of India owns and maintains 125 airports comprising 95 operational airports in the country.



(RIGHT TO LEFT) UNION MINISTER OF CIVIL AVIATION, P. ASHOK GAJAPATHI RAJU, INAUGURATED THE AAI STALL IN THE INDIA AVIATION 2016 EXHIBITION BEING HELD AT BEGUMPET AIRPORT, HYDERABAD, IN THE PRESENCE OF ANIL SHRIVASTAVA, JOINT SECRETARY, MINISTRY OF CIVIL AVIATION, R.K. SRIVASTAVA, CHAIRMAN, AAI AND G.S. BAWA, GM (PR), AAI



MARY ELLEN JONES, VICE PRESIDENT SALES, ASIA PACIFIC & CHINA, PRATT & WHITNEY, WITH ADITYA GHOSH, PRESIDENT, INDIGO AT THE LAUNCH OF FIRST A320NEO POWERED BY PUREPOWER® ENGINE BY PRATT & WHITNEY



FROM L TO R: PALASH ROY CHOWDHARY, COUNTRY MANAGER, PRATT & WHITNEY; CIVIL AVIATION MINISTER, ASHOK GAJAPATI RAJU, R.N. CHOUBEY, CIVIL AVIATION SECRETARY; MARY ELLEN JONES, VICE PRESIDENT SALES, ASIA PACIFIC & CHINA, PRATT & WHITNEY, AT THE PRATT & WHITNEY CENTER OF INDIA AVIATION WEEK 2016



INTERVIEW BOMBARDIER



(...Continued from SP's ShowNews, Day 2)

Jayant Baranwal (Baranwal): What will be the factors driving the growth of the regional aviation market, according to you?

Frank Baistrocchi (Baistrocchi): Commercial airlines are profitable and growing. The industry continues to evolve to manage growth, volatile fuel prices and increasing competition. Most new 60-to 150-seat aircraft deliveries to mature aviation markets will replace retiring aircraft fleets.

In emerging markets, demand for air travel is growing with increasing GDP and an expanding middle class. Lower oil prices may permit airlines to delay the replacement or retirement of less efficient aircraft types, but in the long-term, fuel efficiency will remain a key driver of airline fleet decisions.

Economic and technological obsolescence, as well as environmental regulations are expected to drive aircraft retirements over the next 20 years.

The government has been laying emphasis on regional connectivity, how does Bombardier factor into the government's plan?

India is witnessing substantial growth, and predominant growth is expected from cities and industrial towns which remain underserved. Ouraircraft platforms can accommodate the development of new regional route networks to connect inaccessible and under-served communities — bringing together people, economic growth and development.

Baranwal: Which unique qualities and features of your aircraft be it Q Series or CRJ Series, you will be pitching in the Indian market which is likely to grow substantially?

Baistrocchi: The unique qualities and features for the Indian market are the same as highlighted in the question above:

Q400 AIRCRAFT

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- Unmatched performance, operational flexibility and passenger comfort.
- industry-leading passenger experience
- Adaptability to a variety of business models.
- Excellent performer at high altitudes airports
- and in diverse hot, humid environments.
 20 per cent cash operating cost advantage per seat, and over 30 per cent higher speed compared to competitive turboprops
- Delivers over \$8 million US additional value per aircraft compared to competing turboprops.
- 160 kmph faster than conventional turboprops

 puts the aircraft's flight time within minutes
 of jet schedules, at the same seat-cost as larger,
 single-aisle jets.

CRJ SERIES AIRCRAFT

Proven efficiency, reliability and profitability.



Bombardier fleet

steadily climbing in Asia

Bombardier is the world's largest manufacturer of both planes and trains. Bombardier is evolving mobility worldwide by answering the call for more efficient, sustainable and enjoyable transportation everywhere. Here in an interview with **Jayant Baranwal**, Editorin-Chief, the Vice President Sales, South East Asia and Australasia, **Frank Baistrocchi** gives details about Bombardiers plans in India.

BOMBARDIER CRJ900

- Provides flexibility to operators and allows them to optimise their fleets to meet specific market demands.
- The CRJ200 provides outstanding ownership cost; it's ideal for opening new routes and markets
- The CRJ700is the lightest aircraft in its category, delivering impressive efficiency, performance and fuel burn savings
- The CRJ900 delivers tremendous flexibility and is ideally suited for growing markets.
- The CRJ1000 offers the highest passenger capacity in the family, delivers the lowest seatmile cost in the regional jet market and burns up to 13 per cent less fuel than its competitors.

C SERIES AIRCRAFT

- 100 per cent all-new design that offers operators up to \$13 million extra value per aircraft.
- Unparalleled economic advantage to operators and new opportunities for single-aisle aircraft operations.
- Deliver a greater-than 10 per cent unit cost advantage compared to similarly-sized, re-engined aircraft.
- best-in-class economics
- Superior passenger experience the aircraft offers 19-inch-wide seats that set a new industry standard, large overhead bins that accommodate a carry-on bag for each passenger, and the largest windows in the single-aisle market.
- It is the quietest in-production commercial jet in its class. The aircraft's noise performance and its outstanding short-field capability make it ideal for varied types of operations.

The short haul market has competition from rail and road, do you think Bombardier range of aircraft can compete in such a situation? Yes, our aircraft are designed to serve the short-medium haul markets and to compete effectively against other forms of transportation.

Look at SpiceJet for example: as India's preferred low-fare airline, they focus on establishing their foothold in, and catering to these markets which require an aircraft that could increase the reach to over 60 airports that could not be served by larger jets. After evaluating aircraft options in the 60- to 100-seat category, they selected Q400 turboprops, which combines excellent reliability, economics and passenger comfort.

Baranwal: Can you elaborate on the environment initiatives of Bombardier Commercial? Baistrocchi: Here are some initiatives:

CO, EMISSIONS:

The Q400 turboprop burns 30 per cent less fuel and produces 30 per cent lower emissions on short-haul routes where it has replaced jet aircraft of similar capacity — that's over 4,000 tonnes lower emissions each year per aircraft. The CRJ Series aircraft's lightweight and highly efficient aerodynamics provide the best fuel burn and lowest greenhouse gas emissions in its class. he C Series aircraft's fuel burn advantage translates directly into a 20 per cent reduction in CO_2 emissions. This means that one C Series aircraft could reduce an operator's CO_2 emissions by up to 6,000 tonnes each year.

NOISE:

All noise performance testing on the CS100 aircraft has been completed and data confirms it is the quietest in-production commercial jet in its class. The aircraft's noise performance and its outstanding short-field capability make it ideal for varied types of operations. Noise reduction isn't just responsible, it's profitable. This will lead to a balance between increased airport utilisation and community quality of life.

The Q400 turboprop is one of the quietest aircraft flying today, inside and out. This makes the Q400 a very attractive aircraft for operation at city centre airports such as London and Toronto and other noise sensitive airports.

LIFE CYCLE APPROACH

We have adopted a life cycle approach to ensure that Bombardier aircraft are conceived, designed, built, used and disposed of with the least possible effects on the environment. 100 per cent of our manufacturing and service sites with over 150 employees are certified to ISO 14001 environmental standards. •

(Concluded)

RELENTLESS JOURNEY OF EXCELLENCE SINCE 1964

Scintillating display of aircraft















BIRDS ON DISPLAY: (TOP) EMIRATES AIRBUS A380 ON STATIC DISPLAY; (SECOND ROW, L-R) A CABIN CREW INSIDE THE A380, A FIRST CLASS CABIN OF A380 WITH THE INFOTAINMENT DISPLAY SCREENS, A DIAMOND DA-40NG WITH THE HUMONGOUS A380 IN THE BACKGROUND; (THIRD ROW, L-R) ETIHAD BOEING 787-9 DREAMLINER, ETIHAD CARGO BOEING 777 FREIGHTER; (FOURTH ROW, L-R) EMBRAER PHENOM 300, BELL HELICOPTER 412EP, PAWAN HANS MI 172 HELICOPTER.







BizAvIndia 2016 Awards

Award Ceremony organized by Business Aircraft Operators Association (BAOA) at Taj Krishna in Hyderabad on March 15, 2016.



CONGRATULATIONS KANIKA: KANIKA TEKRIWAL OF JETSETGO RECEIVES THE BIZAVINDIA AWARD FOR INNOVATION FROM ROHIT KAPUR MD, ARROW AVIATION; THE OTHER AWARDEES WERE A.J. BAKER OF GLOBAL VECTRA HELICORP WHO RECEIVED BIZAVINDIA OPERATORS OF THE YEAR AWARD FROM ANTHONY COX OF BOMBARDIER AIRCRAFT AND CAPT. S.S. MAJITHIA, CHAIRMAN, SARAYA GROUP WHO RECEIVED BIZAVINDIA HALL OF FAME AWARD FROM KURT, H. EDWARD DIRECTOR GENERAL OF INTERNATIONAL BUSINESS AVIATION COUNCIL

Pawan Hans to tie up with Airbus Helicopters for MRO

awan Hans Limited is discussing with Airbus Helicopters to set up a maintenance, repair and overhaul (MRO) facility in Juhu airport, Mumbai soon. With helicopter fleet of Pawan Hans likely to go up from present 45 helicopters to 145 in the next 10 years and also the rotor industry growing in India, the MRO will provide quick after service.

The Chairman and Managing Director of Pawan Hans, B.P. Sharma told a press conference that the company's focus would be emergency medical services (EMS) and law enforcement. Pawan Hans is accordingly working out a business plan, in conversation with hospitals, insurance companies and other stakeholders.

He said that in the next 10 years investments worth ₹50,000 crore would be coming into the aviation sector in helicopters, MRO and other services. Presently, India has about 270 helicopters in India, which is almost the size of the helicopter market in Rio de Janiero, but with expanding growth the estimate is that there would be additional 600 to 800 helicopters in the next 10 years.

SIGNS MOU WITH IRCTC

If the helicopter sector has to grow in India, he said, it was imperative for creation of infrastructure, particularly heliports, heli-hubs and afterservice support. The country's first heliport, he said, would come up in Rohini, Delhi by June this year.

Pawan Hans Ltd. (PHL) and Indian Railway Catering & Tourism Corporate(IRCTC) has signed an memorandum of understanding (MoU) to jointly promote Heli Tourism for the National & Interntional Tourists.

Under the MoU, Pawan Hans and IRCTC will collaborate on an exclusive basis to develop a marketing and opertaional plan to reach and provide Heli service in every nook and cornor of the country.

By joining forces, PHL, India's National Carrier for helicopter operations with extensive experience operating at several locations across India.We are excited to conduct a detailed review of bt e best way to introduce and deliver a truly world class heli tourism services into India.





(TOP) B.P. SHARMA, CHAIRMAN AND MANAGING DIRECTOR OF PAWAN HANS (ABOVE) PAWAN HANS & IRCTC SIGNING THE MEMORANDUM OF UNDERSTANDING (MOU)



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AIR of CONFIDENCE

III BREESEBBERE

When the demands of world travel become daily business, the Gulfstream G550™ is ideally suited to deliver. The aircraft can fly from Mumbai to London in 9 hours and 10 minutes or New Delhi to Sydney in 11 hours and 50 minutes. The distance will fly by as you relax in a handcrafted cabin of meticulous design. The G550—proving that life is as much about the journey as the destination.

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+65 6572 7777 - JASON AKOVENKO jason.akovenko@gulfstream.com | Regional Vice President

Theoretical range shown is based on cruise at Mach 0.80 with eight passengers, four crew and NBAA IFR fuel reserves. Actual range will be affected by ATC routing, operating speed, weather, outfitting options and other factors. Flight durations are estimated at best cruise speed and account for 85% annual winds conditions.

