

DECEMBER BRIEFING

ONBOARD WITH

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INDIAN EVTOL SCENE SEEKS HOME-GROWN CHAMPIONS

As we've reported before, Western eVTOL startups are making no secret of their interest in India. But India's home-grown eVTOL ecosystem is also evolving rapidly, with at least half a dozen start-ups currently developing prototypes.

The Indian government, in its drive towards 'Atmanirbhar Bharat' (self-reliance) is keen on the sector and wants to see home-grown champions succeed. The founder and CEO of Punjab-based Nalwa Aero, an eVTOL startup, told us: "The government is very aggressive to see eVTOL progress as soon as possible. They are promoting home-built products with the Made-in-India tag, so there are many subsidies and more government support coming."

The CEO cites as an example Delhi's plan to build 1,000 helipads, one every 50km, along the new Bharatmala highway.

Nalwa Aero recently became the first Indian company to receive design approval from India's Directorate General of Civil Aviation (DGCA) for an eVTOL aircraft with five seats or more. The plan is to have a certified model in the air by 2028. That's around the same time as Britain's Vertical Aerospace, though America's two leading US eVTOL makers, Joby and Archer, will beat them to it by two years.

Indeed, Archer has already secured a memorandum of understanding for up to 200 aircraft with InterGlobe, parent company of the Indian low-cost carrier, IndiGo. Nalwa, however, is not worried about US players getting first mover advantage. "Even if they get certified by the FAA, they still have to go through the validation process of type certification from the DGCA [India's regulatory body], which will take some time. And domestically, we have very low production costs compared to western eVTOL makers. So we have a big cost advantage as well as government support."

Cost is critical. While Nalwa's first priority is air cargo and medical services, it aims ultimately to offer air taxi services from as low as 200 Indian rupees – little more than two US dollars. This can only happen at scale.

"It's a good thing for us if Archer and Joby come to India because they will develop the market," says our man. "India is a big market with approximately 170 million yearly flyers. Even if 20 players get in, everybody can eat a big slice."

CYBERSECURITY TOO OFTEN AN AFTERTHOUGHT FOR SMALLER OPERATORS

Many private aviation companies – especially small ones – are failing to take cybersecurity seriously, say experts in the field.

This shortcoming is all the more significant because their clients tend to be high net worth individuals or VIPs, says a US source at the cybersecurity company, NCC Group. This makes them much more likely than most people to be targets for hackers.

Online private jet charter operators and charter-booking services have proliferated since Covid and, in their haste to acquire customers, some have failed to build proper security into their websites and data-storage.

In some cases, where platform development has been outsourced, charter operators may not even have a clear idea of what their cybersecurity protection comprises. "Many [charter companies and booking services] sell themselves on their discretion, but if their systems are compromised, their clients are open to attack if you know those clients are going to be at a certain place at a certain time," says another NCC Group expert. And due to modern flight tracking websites that information, for the most part, is readily available. "You could mimic being their [network] service provider and spoof them [to obtain confidential personal data]."

Sophisticated hackers – particularly if backed by nation states – may not even need to access an operator's booking system to obtain its passengers' personal information, says our US-based NCC Group source.

"If you know who is travelling where, you can expand that [attack] out into seemingly innocent services like [inflight] food and entertainment," using those systems' links to the operator's system – or its aircraft's inflight cabin network – to target the electronic devices specific passengers are using onboard. Ultimately, passengers giving sensitive personal or professional information to charter operators should assure themselves of how well it is encrypted and stored before they do so. It's worth asking some questions, says a source at the inflight

connectivity provider, Gogo. "Who in your company can access my data? How are you protecting my information? Do you do audits on that?"

CHINA'S BUSINESS JET CHALLENGER

It's been a tough few years for China's fledgling business jet market. Hit by a weakened economy and the fallout from President Xi Jinping's anti-corruption campaigns, the nation's fleet of western-built corporate jets decreased by about a quarter between 2021 and 2024, with a net reduction of 21 aircraft in 2024 alone.

But renewal could soon come from a surprising source – China's own aircraft industry. Comac, the Commercial Aircraft Corporation of China, caught industry watchers offguard at the recent Dubai airshow when it gave the Comac Business Jet (CBJ) its international debut.

The CBJ has been years in the making. Designs for a business jet first began to appear 10 years ago, and a prototype was unveiled at the Zhuhai Airshow in 2021. Since then, however, little has been seen or heard of the new business jet. So Comac's decision to bring it to Dubai suggests a growing belief in its market potential, particularly in China and the wider Asia-Pacific market. Says a senior executive, formerly based in China: "Comac is new to business aviation, but the timing may be favourable for the CBJ domestically as there is now a support network in place." As a business jet with 12 to 29 seats, the CBJ also occupies a niche left largely unfilled since Embraer stopped making the Lineage 1000, a corporate version of the similarly sized E190 airliner in 2020.

International sales will depend on Comac getting the CBJ certified by western agencies – not likely anytime soon. In the meantime, the CBJ has a significant advantage in its home market, where the Chinese government considers it to be a strictly domestic aircraft despite its variety of westernmade components. Says our contact: "Politically that could be very important. To many it's seen as an unstated selling point.

A Chinese buyer can gain political advantage by being seen to support Comac."

DUBAI BENEFITS FROM AIRSHOW HALO IN WASHINGTON

Glowing reports about the Dubai Airshow from senior US officials and aerospace executives are giving the UAE added political credibility in Washington. As a Pentagon policy planner remarked to us: "When executives from Boeing and Lockheed Martin are telling us that the Dubai Airshow rivals Farnborough and Paris in their eyes, we pay attention."

Officials have been impressed by the sheer scope of the event. A Boeing executive told us: "The Dubai Airshow is the complete package. At Farnborough and Le Bourget things are segmented: military here, commercial there, air mobility in another place. Here, everything was out there at the same time: big time sales, eVTOLs and brand new business jets, cutting-edge R&D based on AI, and so on. We could deploy our full team. We could even see if the new Chinese business jet was any good."

The word from Lockheed was similar: "In terms of a global showcase, it's increasingly clear that Dubai is the rising challenger to the European shows. It's blown past Singapore."

There was top tech like the F-35, but the displays of things like smart fuel and innovative navigation solutions were just as important. Our big takeaway was the extraordinary presence of raw buying power. This is where the money is." The UAE was already favourably regarded in the White House following President Trump's visit in May.

The success of the Dubai Airshow has strengthened the relative immunity it enjoys for its policies in Africa, such as support for Sudan's paramilitary Rapid Support Forces (RSF). A strategist in the intelligence community told us: "Whenever we produce evidence of the UAE's destructive policies in Africa, State and Commerce push back. And now, to cap it all, we hear that the fulsome praise flowing into the White House about the deals for US companies emanating from the Dubai show makes the UAE all the more untouchable."

GULFSTREAM G800 MAKES A SPLASH IN DUBAI

The uber-glamorous debut of the Gulfstream G800 at the Dubai Air Show has set tongues wagging among other private jet manufacturers and fractional jet operators.

The consensus among our contacts is that the aircraft is a showstopper in terms of performance, at a time when geopolitical routing is placing ever-higher premiums on range and speed.

A contact at NetJets remarked to us: "The G800 has got our phones ringing off the hook. Our top revenue customers are all telling us they want to fly it, and nothing else. We have Bombardier Global 8000s on order. Now we have to convince our customers they are just as good. We're concerned about defections."

The word from FlexJets was more upbeat: "We have a strong fleet of Gulfstreams, including plenty of the G800's immediate predecessor, the G700. We are well placed to receive a couple of G800s within the foreseeable future. We see it as a major competitive edge. So many of our high-end customers are prestige snobs."

Among the aircraft manufacturers, the reaction is more muted. They can see the G800 is setting a new standard of excellence in its class. The question they are asking themselves is how they should respond.

The reaction from Bombardier is to accept that the G800 places increased but not unsustainable pressure on its Global 8000. The first requirement seems to be to add a "buzz quota". Price cuts do not seem to be in the frame.

A contact there told us: "The G800 wins all the prizes for splashiness. But glamour is not everything. If we can up the celebrity appeal of the Global 8000, it can still win on specs. Ironically, we are more expensive which is a plus at this end of the market. Our main concern is whether NetJets will come under such intense customer pressure that they will switch to Gulfstream."

Executives at Embraer USA also seem relaxed. They concede that the G800 has stolen all the headlines but they see this as accretive to the market. One remark was: "Anything that amplifies the allure of private jet travel suits us." The calculation is that people are drawn into the PJ space by buzzy news and then start to shop around.

Even if the G800 becomes the go-to option at the ultra-luxe end, this still leaves plenty of room for Embraer. The final comment was: "we feel the real money is in the mid-range."

STOL FLIGHTS MAY SOON JOIN THE GULF'S AERIAL MOBILITY REVOLUTION

While the development of eVTOL aircraft proceeds apace in the Gulf, as well as in India, a Dubai jet charter operator is working to bring STOL (short take off and landing) seaplane services to the region.

The operator, Tahseen Aviation Services, is planning to offer an amphibious STOL option, potentially from 2031. This would be able to ferry passengers between airports and coastal resorts anywhere from Qatar to Oman – enabling them to avoid journeys on the region's increasingly gridlocked roads.

Tahseen Aviation and the aircraft's Swiss manufacturer, Jekta, have reached an agreement (announced this week at the Dubai Airshow) to investigate business opportunities for Jekta's PHA-ZE 100 amphibious STOL seaplane in the Gulf, north Africa and India, though the initial focus will be very much on the Gulf.

The seaplanes will be electrically powered by hydrogen fuel cells, allowing guests to make carbon-free journeys between their luxury holiday spots and the region's airports within minutes, rather than the hours it now takes by car.

"The region has very extensive coastlines, with waterfront resorts," says Jekta's CEO. This means that water runways can be set in the sea "with minimum or no investment, and within the existing regulatory framework".

The planned zero-emissions seaplanes should appeal both to eco-conscious guests and to luxury resorts looking to burnish their eco credentials. At the same time, says our source, the aircraft's rough-sea capability, rugged conventional landing gear and enhanced-resilience flight deck will enable it to fly oil and gas support missions to pumping-stations and other installations offshore or in the desert.

Moreover, the PHA-ZE 100's airframe will be made entirely of fibreglass and carbon fibre composites – meaning "no corrosion", says our CEO. "And it will be cheap to repair." It will also be possible to adapt the design to offer cabins for corporate shuttles, VIPs, cargo or emergency medical transport.

Jekta already has one Dubai-based customer, Gayo Aviation, which in 2023 became the PHA-ZE 100 launch customer. But as Gayo, which also has a base in Sweden, plans to operate flights in northern Europe and airportcoastal resort flights in Goa, there seems to be little prospect of a conflict.

BUSINESS JET BOOM HERE TO STAY

The boom in business aviation looks set to continue. Global Jet Capital forecasts that over the next five years deliveries of new jets will grow by 3.2%, while deals involving existing aircraft will be up by 4.2%.

Honeywell, the aerospace manufacturer, is similarly optimistic, reckoning new-jet deliveries will grow 3% annually on average during the next decade. Today, it notes, “20% of operators globally have at least one aircraft on firm order – up from 17% a year ago”. An even greater percentage of private-jet charter companies are awaiting new deliveries; 28% of Honeywell’s survey respondents say they have aircraft on order.

Two things stand out from the forecasts. One is that the strongest growth is in new heavy jets, which are prized for their range, passenger capacity, and superior cabin experience – all valued by younger UHNWs (often tech entrepreneurs) now entering the private aviation space.

Secondly, there is strong demand for fractional ownership, with fractional fleets having grown more than 65% since 2019 to roughly 1,300 aircraft now in service. These trends were unveiled at the Business Aircraft Convention and Exhibition in Las Vegas last week, where Bond, a brand-new fractional operator, announced that it was planning to operate 50 Bombardier Challenger 3500 and Global 6500 aircraft in a bid to be the first exclusively super-midsize and large-cabin fractional fleet.

While the forecasts reckon the North American market will continue to dominate – the US accounting for 76% of the global business jet market over the next five years – strong growth is also expected in the Middle East and Asia, where governments are working to address regulatory and infrastructural blocks. As Global Jet Capital puts it, “sustained wealth creation over the last 25 years has resulted in a growing user base that appreciates the value proposition of business aircraft”.

AI CAN EASE AVIATION MECHANIC SHORTAGE

Aviation is suffering from a chronic shortage of trained maintenance mechanics – a problem particularly affecting business aircraft. The US insists that all mechanics meet FAA standards, meaning that immigrant mechanics – even if they have been fully certified in Europe – have to start again as apprentices and do basic retraining before they can work in the US.

Given that there is also a continuing shortage of spare parts, the dearth of mechanics is making it ever harder to schedule maintenance for business jets, and lengthening their downtime. It's also affecting aircraft sales. Indeed some are foundering because of the difficulty of booking prepurchase inspections (PPIs) at maintenance facilities. PPIs are a customary part of the process.

A leading US financier in the business aircraft world told us that using AI and robots might help ease the problem - though only up to a point.

Maintenance inspection and repair work require extreme precision and 'feel', says the CEO of a maintenance service company. It is all too easy to damage parts in maintenance or to over-torque fasteners; relying on AI and robots for this could jeopardise safety.

On the other hand, AI could undoubtedly handle the administrative tasks mechanics now spend many hours performing, from making aircraft logbook entries to maintenance tracking, forecasting parts requirements, and scheduling maintenance-shop visits.

Forecasting future maintenance demand and staffing requirements is vital for maintenance companies, says our CEO, but it's "hard and tedious", consuming many man hours.

AI could also help maintenance field service teams who travel to perform emergency 'aircraft on ground' repairs. It could handle the logging of mechanics' travelling work- time, any spare-parts ordering required, and generate each mechanic's full expense report using mobile phone photos of invoices for every expense incurred. This would save mechanics from hours of "100% unproductive time" the CEO says, leaving them free to do the work that counts to the jet owners.