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COVER IMAGE
Combining high-speed performance and next-generation technology with unmatched cabin comfort, Gulfstream G800 is the world's longest range business aircraft with an advanced high-speed wing, and a state-of-the-art fuselage that delivers class-leading fuel-efficiency.
*(**Cover Photo**: Gulfstream)*
COVER DESIGN BY: *SP's Team*

NEXT ISSUE: *Paris Airshow 2025 Report*

Passenger safety must be the topmost priority for aircraft manufacturers and a strict, uncompromising standard for all aviation operators. Recent accidents involving both fixed-wing and rotary-wing aircraft in India highlight the urgent need to strengthen safety protocols, enforce stricter compliance, and cultivate a safety-first mindset across the entire aviation ecosystem without delay.

THE RECENT AIR INDIA BOEING 787 DREAMLINER CRASH IN Ahmedabad has become a watershed moment for aviation safety in India, highlighting troubling gaps in maintenance, oversight, and fatigue management amid rapid sectoral growth. With international agencies now aiding the investigation, the tragedy has sparked nationwide concern over the integrity of India's aviation framework. In a subsequent action, the Directorate General of Civil Aviation (DGCA) has cracked down on Air India for breaching Flight Duty Time Limitations (FDTL) on long-haul flights—disciplining senior officials and exposing systemic lapses in crew scheduling. Meanwhile, the country's burgeoning helicopter sector is grappling with its own crisis. A spate of fatal accidents on pilgrimage routes, including Char Dham, has revealed a dangerous culture of operational complacency, where adherence to standard operating procedures is alarmingly inconsistent. Aviation analyst Swaati Ketkar argues these incidents must serve as a wake-up call, urging regulators and operators alike to view safety not as a bureaucratic checkbox but as the bedrock of all aviation activity. If India is to sustain its growth as a global aviation hub, it must institute urgent and enforceable reforms, restore accountability, and embed safety as a non-negotiable priority across all flight operations.

Once luxury symbols, ultra-long-haul business jets are now critical tools for global executives and institutions. Aircraft like the Gulfstream G700/G800, Dassault Falcon 10X, and Bombardier Global 7500/8000 offer non-stop intercontinental reach, cabin luxury, and cutting-edge avionics. With growing demand in Asia-Pacific and innovations focused on performance and sustainability, these jets are transforming business mobility and redefining airborne productivity and decision-making in a globalised world. In a report on the Ultra-Long-Haul Business Jets, Rohit Goel covers the most popular aircraft in the market today that offer the best in luxury and range in this category.

Navigating the complexities of business jet acquisition involves a detailed financial blueprint balancing aircraft suitability, operational costs, and financing structures. The article explores structured debt, finance and operating leases, and export credit options, while spotlighting India's GIFT City as a rising hub for aviation finance. With incentives and regulatory reforms, India aims to reduce dependency on foreign lessors, though challenges remain in building global credibility. A comprehensive guide to Business Aircraft Leasing and Finance is included in this issue.

The 2025 edition of EBACE unveiled a refreshed format under EBAA's leadership. With a new floor plan, themed networking pods, and sustainability-focused sessions, the event reflected a dynamic shift in industry priorities. The decision to drop the traditional static display in favour of immersive experiences underlined a commitment to innovation, while policy discussions focused on fleet trends and regulatory transitions such as ReFuelEU. A photo feature on the show provides you with a glimpse of the major attractions at the show.

India's Ministry of Defence has launched a strategic overhaul of the Defence Acquisition Procedure (DAP) 2020 to align with the 'Atmanirbhar Bharat' and 'Make in India' vision. A high-powered committee will review processes, promote MSMEs, integrate emerging technologies, and streamline acquisition mechanisms. Manish Kumar Jha reports on this initiative that reflects the government's resolve to create a future-ready defence ecosystem that is agile, transparent, and domestically anchored.

All this and more in this issue of *SP's Aviation*. Welcome aboard and we wish you safe landings!

JAYANT BARANWAL
PUBLISHER & EDITOR-IN-CHIEF

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USAF B-2 BOMBER

UNDER ORDERS FROM US PRESIDENT DONALD J. TRUMP, dubbed "Operation Midnight Hammer," seven B-2 Spirit stealth bombers dropped GBU-57 Massive Ordnance Penetrator (MOP) "bunker buster" bombs on nuclear sites in Iran.

Following the initial strike on the nuclear site in Fordow, Iran, the B-2s went on to deploy their ordnance on other sites, eventually totalling 14 MOPs hitting the targeted areas. This was the first operational use of the GBU-57.

Only B-2 Spirit stealth bombers are programmed to carry the GBU-57s. Each B-2 can hold two of the bombs. The GBU-57 series is a 30,000 pound (13,607 kg) class, 20.5-foot-long (6.2 m) precision-guided munition. It is a guided, penetrating weapon with the ability to reach and destroy targets in deeply buried and hardened bunkers and tunnels.

The mission was specifically focused on preventing Iran from developing a nuclear weapon. SP

B-2 SPIRIT GENERAL CHARACTERISTICS

The B-2 Spirit is a multi-role bomber capable of delivering both conventional and nuclear munitions. A dramatic leap forward in technology, the bomber represents a major milestone in the US bomber modernisation programme.

Primary function	multi-role heavy bomber	**Fuel capacity**	167,000 pounds (75750 kilograms)
Contractor	Northrop Grumman with Boeing Military, Hughes Radar Systems, General Electric Aircraft Engine and Vought Aircraft Industries.	**Payload**	40,000 pounds (18,144 kilograms)
		Speed	high subsonic
		Range	intercontinental
Power plant	four General Electric F118-GE-100 engines	**Ceiling**	50,000 feet (15,240 meters)
		Armament	conventional or nuclear weapons
Thrust	17,300 pounds each engine		
Wingspan	172 feet (52.12 meters)	**Crew**	two pilots
Length	69 feet (20.9 meters)	**Unit cost**	Approximately $1.157 billion (fiscal 1998 constant dollars)
Height	17 feet (5.1 meters)		
Weight	160,000 pounds (72,575 kilograms)	**Initial operating capability**	April 1997
		Inventory	active force: 20 (1 test); ANG: 0; Reserve: 0
Maximum take-off weight	336,500 pounds (152,634 kilograms)		

SOURCE: whiteman.af.mil

PHOTOGRAPH: US AIR FORCE

CRASH SITE OF THE AI-171 FLIGHT IN AHMEDABAD. THE TAIL OF THE AIRCRAFT CAN BE SEEN STUCK ON THE HOSTEL OF MEDICAL STUDENTS.

A DEFINING MOMENT FOR AVIATION SAFETY IN INDIA

Why the Ahmedabad Air India 787 crash must be a turning point for aviation safety in India

By SWAATI KETKAR

PHOTOGRAPHS: PIB

THE TRAGIC CRASH OF AN AIR INDIA BOEING 787 DREAMLINER in Ahmedabad has sent shockwaves through India's aviation ecosystem. As investigations begin, now bolstered by the arrival of a US National Transportation Safety Board (NTSB) team to assist the Aircraft Accident Investigation Bureau (AAIB) the need for introspection is more urgent than ever. Speculations are rife as to what caused the crash. However, this is not merely a case of technical failure or an isolated oversight. It is a warning siren for an industry that is expanding rapidly, but perhaps without fully fortifying the safety infrastructure required to sustain such growth.

It must catalyse a national reckoning on one fundamental truth: aviation safety cannot be compromised, delayed, or




(ABOVE) PRIME MINISTER NARENDRA MODI VISITING THE CRASH SITE OF THE AI-171 FLIGHT IN AHMEDABAD ON JUNE 13, 2025.

deprioritised, not in policy, not in practice, and certainly not in the pursuit of commercial growth.

SAFETY MUST BE MORE THAN A BUZZWORD

India is today the world's third-largest domestic aviation market. With increasing aircraft orders, new entrants in the LCC space, and record-breaking passenger numbers, the sector is undoubtedly on an upward trajectory. But this upward curve also magnifies every gap in safety oversight, airworthiness enforcement, and operational discipline.

The Boeing 787 is one of the most advanced commercial aircraft in operation, boasting fly-by-wire systems, composite structures, and state-of-the-art avionics. That such a technologically superior aircraft could be involved in a catastrophic accident in domestic operations raises profound concerns.

It compels us to ask difficult questions:

- Was there a lapse in maintenance or pre-flight inspection protocols?
- Were known defects overlooked or underreported?
- Was crew fatigue a factor?
- Are reporting systems strong enough for ground staff and engineers to voice concerns?

The answers may emerge over time, but the underlying issue is clear: safety in Indian aviation is still treated as an obligation and not an operational philosophy.

CUTTING CORNERS IS A DANGEROUS CULTURE

In a hyper-competitive airline market, it is tempting to shave costs wherever possible. Lean staffing, deferred maintenance schedules, aging parts, and pressure to meet tight schedules etc, all these factors, if unchecked, can form a perfect storm.

Unfortunately, some operators have begun to view safety as a cost centre, rather than the bedrock of their legitimacy. When safety is seen as negotiable, it is only a matter of time before negligence results in tragedy.

India's record is not unblemished. The country has experienced multiple safety-related warnings in recent years like grounding of aircraft due to engine failures, DGCA audits uncovering inconsistencies in logbooks, and anonymous reports flagging training shortfalls. These cannot be brushed aside as statistical anomalies in a large system. They are evidence of systemic vulnerability.

POLICY MUST LEAD, NOT FOLLOW

India cannot afford a reactive safety framework. We must move




(ABOVE) HOME MINISTER AMIT SHAH INSPECTING THE SITE WHERE THE PLANE CAME DOWN AND ALSO MEETING THE INJURED SURVIVORS ON JUNE 12, 2025.

from event-driven policy responses to a preventive safety architecture that is resilient, adaptive, and transparent.

- **Strengthen AAIB's Independence and Authority:** The Bureau should have complete autonomy to investigate incidents without interference, with direct access to international technical support when needed.
- **Mandate Third-party Safety Audits for all Commercial Operators,** with audit results made partially available in the public domain to ensure transparency and accountability.
- **Revamp DGCA's Internal Capabilities:** Equip it with better staffing, AI-led surveillance systems, and global best practices in airworthiness management.
- **Create a National Aviation Safety Strategy Board** that is not tied to ministry leadership or commercial interest and is tasked with policy development, regulatory evolution, and industry-wide safety benchmarking.
- **Encourage a Just Culture:** Promote safety reporting without fear of retribution. Maintenance engineers, cabin crew, and ground staff must feel empowered to raise alarms without bureaucratic or punitive backlash.

FLEET EXPANSION AND SAFETY MODERNISATION SHOULD GO HAND-IN-HAND

India is poised to induct over 1,500 aircraft in the next decade, including new-generation narrowbody jets and turboprops for regional connectivity. Under schemes like UDAN and RCS, smaller airports are opening across the country, with new routes connecting Tier II and III cities.

But safety frameworks have not scaled in tandem with fleet and network expansion. Many smaller airports lack adequate emergency services, certified maintenance infrastructure, or qualified MRO support. This mismatch is not sustainable.

CONCLUSION

A crash is tragic but ignoring its lessons would be catastrophic. The Ahmedabad Boeing 787 crash must not be treated as an isolated accident or procedural hiccup. It is a stark reminder that in aviation, there is zero margin for complacency. Each lapse however small, can cascade into irreversible consequences.

India's aviation leadership now stands at a fork in the runway. One path leads to global excellence through transparent, reform-driven safety evolution. The other risks repeating history, with lives and credibility at stake.

The choice should be obvious. Because in aviation, every safe landing begins with an uncompromising commitment to do things the right way, each and every time. SP

THE DGCA'S DECISION TO HOLD SENIOR OFFICIALS ACCOUNTABLE IS A LONG-OVERDUE STEP AND SENDS A CLEAR SIGNAL THAT NON-COMPLIANCE AT THE OPERATIONS LEVEL IS NO LONGER TOLERABLE

REGULATOR GETS TOUGH ON SAFETY LAPSES

DGCA's crackdown on Air India exposes systemic safety gaps in crew management

By SWAATI KETKAR

IN A SHARP AND UNPRECEDENTED MOVE, DIRECTORATE General of Civil Aviation (DGCA) has ordered the immediate removal of three senior Air India officials, including a divisional Vice President, from all responsibilities related to flight crew scheduling and rostering. The regulator has further directed the Tata Group-owned carrier to initiate disciplinary action against the officials involved. Failure to act may result in severe consequences, including the potential suspension of the airline's operating license.

This decisive action stems from an audit of Air India's Integrated Operations Control Centre (IOCC) a critical nerve centre responsible for crew deployment, flight dispatch, weather monitoring, and real-time route planning. At the heart of the controversy are two long-haul flights, AI133 from Bengaluru to London Heathrow on May 16 and 17 which reportedly exceeded DGCA's stipulated Flight Duty Time Limitations (FDTL). These were not special or emergency services, but scheduled international operations that should have followed all regulatory guardrails.

> The violation of FDTL norms in a major scheduled carrier like Air India points to deeper, systemic issues

The regulator, citing violations of Para 6.1.3 of the Civil Aviation Requirement (CAR), has issued a show cause notice to Air India's Accountable Manager, demanding an explanation within

PHOTOGRAPH: AIRBUS

seven days. In its response, Air India has acknowledged the seriousness of the directive and announced that its Chief Operating Officer will now directly oversee the IOCC.

But the issue is far more troubling than an isolated breach. The violation of FDTL norms in a major scheduled carrier like Air India points to deeper, systemic issues: either the software meant to flag such violations failed, or worse, manual overrides were used to bypass safety-critical scheduling protocols?

FATIGUE, OVERSIGHT, AND A SYSTEM UNDER STRAIN

Pilot fatigue has long been recognised as a silent threat in aviation. Fatigue dulls reflexes, impairs judgment, and increases the risk of error, especially in long-haul international flights where pilots are already under significant stress. This is precisely why FDTL rules exist to - enforce mandatory rest periods; cap duty hours and; ensure minimum cumulative cockpit experience.

When a national flag carrier violates these norms on consecutive days and across a high-profile route like Bengaluru–London, it raises serious questions about the integrity of its scheduling systems. According to insiders, the violations were neither minor oversights nor last-minute exigencies. Instead, they appear to be coordinated failures to enforce rest and duty regulations, raising the spectre of deliberate manipulation to meet commercial deadlines.

This isn't just a case of regulatory non-compliance; it's a violation of trust. Passengers place their lives in the hands of pilots and crew, assuming that regulatory protections are airtight. When such safeguards are breached not by accident but through structural and administrative failure the entire aviation safety architecture is called into question.

When such safeguards are breached not by accident but through structural and administrative failure the entire aviation safety architecture is called into question

IOCC UNDER SCANNER

The IOCC is not a routine department, it is the airline's real-time command centre, integrating data from flight schedules, crew availability, weather updates, maintenance slots, and more. It is supported by automated software tools designed to prevent illegal pairings, flag insufficient rest periods, and optimise safety margins. That the system allowed these flights to proceed despite FDTL violations suggests either gross negligence or active circumvention.

Key questions arise:

- Why were the software alerts not triggered or ignored?
- Was there a lapse in monitoring, or was there a deliberate override?
- Is there a culture within the IOCC that prioritises on-time performance and load factors over regulatory compliance?

The DGCA's decision to hold senior officials accountable is a long-overdue step in rebalancing this equation. For too long, scheduling and operations executives have operated in silos, buffered from the downstream consequences of fatigue-related incidents. The regulator's intervention sends a clear message: non-compliance at the operations level is no longer tolerable.

PROFITS OVER PEOPLE?

In today's competitive aviation landscape, even full-service carriers like Air India are under immense pressure to optimise aircraft utilisation, reduce turnaround times, and improve load factors. The temptation to stretch duty hours, delay crew rest, or manipulate roster rules can become overwhelming, especially in the absence of active regulatory deterrence.

But every such shortcut is a direct compromise of safety. When profits are prioritised over pilot welfare, the result is not just increased fatigue but a cascade of risks that can affect flight performance, emergency response, and cockpit decision-making. Air India, now under Tata Group stewardship, has pledged to transform into a world-class carrier. However, such transformation must begin with internal discipline and zero tolerance for safety breaches.

Moreover, the reliance on software and automation cannot replace human judgment and ethical leadership. Airlines often tout their high-tech IOCC platforms as a mark of efficiency. But without accountability, such platforms can easily become tools to rubber-stamp poor decisions. The current controversy makes it clear that safety cannot be automated if the intent is compromised.

IS THIS A TIPPING POINT FOR THE INDUSTRY?

This episode may well be the tipping point for the Indian aviation ecosystem. The DGCA, long criticised for reactive enforcement, has shown resolve in acting against a marquee carrier. This sets a precedent for stricter oversight across the board, particularly in the rostering and crew management domain.

Other carriers especially low-cost operators managing rapid turnarounds and high utilisation rates must take note. The regulator is now closely watching how airlines manage not just aircraft and schedules, but also human capital and crew fatigue.

It is time for the industry to ask some hard questions:

- Are airlines treating FDTL compliance as a core safety metric or just a box-ticking exercise?
- Are crew management systems truly autonomous, or subject to internal manipulation?
- And above all, who is held accountable when safety protocols are systematically breached?

CONCLUSION

The Air India rostering scandal is not merely an operational lapse; it is a red flag for the aviation safety ecosystem. At a time when India is poised to become the third-largest aviation market globally, the burden of responsibility is even higher. Airlines must realise that brand reputation, passenger trust, and regulatory goodwill are built on strict compliance not clever circumvention.

If the industry does not course-correct, the cost will not just be reputational, it could be catastrophic. Safety is not a line item in a balance sheet. It is the foundation on which aviation rests. The DGCA's action is not just warranted; it is necessary. What remains to be seen is whether this intervention will lead to systemic reform or be buried under the next commercial deadline. SP

RELIEF AND RESCUE TEAMS AT THE SITE OF HELICOPTER CRASH ON KEDARNATH YATRA ROUTE. THE CRASHED HELICOPTER WAS COMPLETELY BURNT AND ALL 7 PASSENGERS DIED IN THE CRASH.

PHOTOGRAPH: UKSDRF / X

ARE SAFETY NORMS BEING COMPROMISED?

Is India's Helicopter boom at the cost of lives? Time for a reckoning on SOPs, safety, and accountability

By SWAATI KETKAR

THE INDIAN HELICOPTER INDUSTRY IS AT A CROSSROADS. ON the one hand, it promises exponential growth, with global OEMs eyeing a lucrative market ripe for fleet expansion, civil operations, and regional connectivity. On the other hand, the sector finds itself mired in an unfolding safety crisis, the one that is rapidly shaking public trust and exposing a glaring deficit in regulatory rigour, standard operating discipline, and operational accountability.

In less than 45 days, India has witnessed five helicopter crashes, two of them fatal. The Char Dham route, in particu-

lar, has emerged as a grim epicentre. The recent Kedarnath tragedy, which claimed seven lives, wasn't just an accident. It was the latest evidence of an unspoken rot in the country's general aviation ecosystem, one where following standard operating procedure (SOPs) appear to be optional, penalties are practically non-existent, and regulatory oversight is dangerously cosmetic.

THE CULTURE OF COMPLACENCY

Let's be blunt: What we are witnessing is the normal operational indiscipline in helicopter services, especially during pilgrimage charters and high-altitude sectors. Many operators, driven by seasonal profits and backed by opaque auditing, seem to treat SOPs more like suggestions than mandates. Are these operators more interested in filling seats than ensuring safety? Is adherence to procedures seen as an obstacle rather than a necessity?

The aviation sector, especially helicopter operations, cannot afford a culture of convenience when it comes to SOPs. Yet, pilots are reportedly being pushed to fly tight schedules with minimal rest, and aircraft dispatches are being cleared in challenging weather with barely a pause for risk evaluation. This isn't operational bravery; it is regulatory negligence hiding behind the veil of commercial urgency.

WHAT MUST THE MINISTRY DO?

Enough with the soft gloves. The Ministry of Civil Aviation (MoCA) needs to stop just issuing statements of "concern" and start acting like the regulator of one of the world's fastest-growing aviation sectors. This means:

- **Mandatory Pre-Flight SOP Audits:** Before any seasonal route (like Char Dham) is cleared for operation, operators should be made to undergo a comprehensive SOP and safety compliance audit. Every deviation, no matter how small should result in suspension.
- **Pilot Rostering Transparency:** A centralised digital log of pilot rosters, flight duty timings, rest hours, and cumulative air-time should be submitted to DGCA in real time. Pilot fatigue has been cited repeatedly as a contributing factor in accidents, and MoCA must not treat this as an internal HR issue for operators.
- **Airworthiness in Real Time:** All helicopters operating under scheduled pilgrimage charters must be fitted with health monitoring systems that report aircraft status directly to the regulator. Surprise checks must become routine.
- **Seasonal Licensing Conditions:** Charter licenses must be provisional and granted only for fixed intervals, with performance audits acting as gateways to continued operation. One red flag, and licenses should be suspended until revalidation.
- **Impose Penalties that Matter:** Right now, the only real consequence for a crash is a few headlines, a grounded pilot, and a delayed investigation report. That must change. MoCA and DGCA need to treat this with the seriousness it deserves:
  - Serious financial penalty for SOP breaches that endanger lives.
  - Permanent blacklisting for repeat offenders. Even criminal proceedings in cases of wilful negligence.
  - Naming and shaming of negligent accountable managers and directors.
  - Pilot and passenger compensation guarantees linked to operator accountability, not insurance red tape.

This is not about a mechanical failure here or pilot error there. These are systemic cracks in a system too comfortable with risk and too afraid to disrupt the status quo.

> In less than 45 days, India has witnessed five helicopter crashes, two of them fatal. It was the latest evidence of an unspoken rot in the country's general aviation ecosystem, one where following standard operating procedure (SOPs) appear to be optional, penalties are practically non-existent, and regulatory oversight is dangerously cosmetic.

APATHY TOWARDS HUMAN LIFE?

Every time a crash occurs, we mourn. We launch inquiries. We announce compensations. But has a single operator been permanently grounded for recurring safety violations? Have regulatory officials been held accountable for their oversight failures? The industry behaves as if human lives are an acceptable collateral for seasonal profits.

In a country that prides itself on rapid infrastructure growth and increasing connectivity, should safety really be an afterthought? MoCA needs to break out of its slumber and shake up the existing framework.

INDIA'S HELICOPTER MARKET: SKYWARD, BUT AT WHAT COST?

India is on the cusp of a helicopter revolution. From medevac services to regional air mobility and last-mile cargo delivery, the market is expected to grow substantially in the next decade. The government has even envisioned heliports under the UDAN scheme to improve regional access.

But if our current safety protocols remain patchy and loosely enforced, this expansion will be built on an extremely fragile foundation. We must ask: is this growth coming at the cost of safety? At the cost of lives?

No amount of fleet expansion, foreign investment, or market optimism can compensate for a single lost life especially when death was preventable.

FINAL DESCENT: A CALL FOR URGENCY, NOT OPTICS

The Char Dham helicopter tragedy must not become just another grim statistic. It must become a turning point. For regulators to enforce, for operators to introspect, and for the public to demand more.

The writing is on the wall. If India wants to be a global aviation leader, it must earn it, not just with numbers, but with accountability.

Because in aviation, a checklist skipped isn't just a rule broken, it is a life lost. SP

DASSAULT FALCON 10X IS THE LATEST BUSINESS JET TO OFFER THE BEST IN LUXURY, RANGE AND UTILITY IN THE ULTRA-LONG-HAUL CATEGORY

WHERE LUXURY MEETS STRATEGY AT 50,000 FEET

Once seen as indulgences of the ultra-wealthy and celebrities, Ultra-Long-Haul Business Jets have become essential tools for CEOs, government delegations, entrepreneurs, and even small enterprises operating across hemispheres

By ROHIT GOEL

PHOTOGRAPH: DASSAULT AVIATION

IN AN ERA WHERE BILLION-DOLLAR DEALS ARE MADE ACROSS continents and global presence is no longer optional, ultra-long-haul business jets have emerged not merely as symbols of status but as vital strategic assets. These aircraft are redefining global mobility for modern executives and multinational firms by offering direct, non-stop access to virtually any two cities on Earth.

Often cruising at altitudes above 50,000 feet and speeds approaching Mach 0.90 or higher, an ultra-long-haul business jet is typically defined as a purpose-built private aircraft capable of flying 6,000 nautical miles or more without refuelling. In real terms, that means non-stop flights from New York to Hong Kong, Dubai to Los Angeles, or Sydney to London, onboard a jet

FALCON 10X OFFERS THE WIDEST AND TALLEST CABIN IN ITS CLASS ALLOWING FOR INTERIOR SPACES PREVIOUSLY UNIMAGINABLE ON A BUSINESS JET

that doubles as a mobile office, bedroom, and meeting room.

Once seen as indulgences of the ultra-wealthy, these aircraft have become essential tools for CEOs, government delegations, venture capitalists, and even small global enterprises operating across hemispheres. With a market now dominated by heavyweights like Gulfstream, Dassault Falcon, and Bombardier, the race to build the most capable ultra-long-range jet is accelerating—with range, comfort, connectivity, and sustainability forming the new battleground.

Having established the importance of ultra long haul jets in today's globalised business and travel landscape, it's worth exploring how leading manufacturers are pushing the boundaries of range, comfort, and efficiency and which ultra long haul birds are taking over the skies. Contending, among the notable aircraft manufacturers in this space is Gulfstream, which has set new standards for what travellers can expect from long-distance air travel.

GULFSTREAM AEROSPACE: BENCHMARKING PERFORMANCE AND COMFORT

At the very pinnacle of the long-range jet category is Gulfstream Aerospace, a Savannah, Georgia-based manufacturer with over six decades of leadership in high-performance business aviation. Its two newest flagships—the G700 and G800—are defining the new standard for ultra-long-haul flight. As airlines and passengers alike seek to bridge continents with fewer stops, Gulfstream has emerged as a frontrunner, setting benchmarks for what's possible in ultra-long-haul aviation.

G700: Leading with Range and Refinement

With a maximum range of 7,750 nautical miles at Mach 0.85, the G700 is capable of connecting city pairs like New York–Hong Kong or Dubai–Los Angeles without refuelling. This extraordinary capability is underpinned by the powerful Rolls-Royce Pearl 700 engines and advanced aerodynamics that allow for fast, efficient intercontinental travel.

However, the G700 is not just about performance—it's about presence. With the longest cabin in business aviation (nearly 57 feet), it offers up to five living zones, including a dedicated bedroom and a stand-up shower. The aircraft also features 100 per cent fresh air circulation, lower cabin altitudes, and circadian lighting, creating a tranquil, jet lag-reducing experience.

Pilots benefit from Gulfstream's proprietary Symmetry Flight Deck, featuring active control sidesticks and touchscreen avionics. It's one of the most advanced, safest, and ergonomically intelligent cockpits in the industry.

Gulfstream, which has continued to lead in many segments, offers not just one but two aircraft models in this category. Accompanying the G700 in the ultra long haul category is the G800.

G800: The Range King

While the G700 focuses on cabin comfort and flexibility, the G800 takes Gulfstream's technical capabilities to their limit. It offers an industry-leading range of 8,200 nautical miles, allowing operators to fly from Sydney to Dallas, or Singapore to San Francisco nonstop.

The G800 borrows much of the G700's cabin innovations but optimises efficiency. A smaller fuselage footprint translates to improved fuel burn and extended legs—without compromising the hallmark Gulfstream interior experience. For operators in emerging markets or with irregular routing needs, this flexibility makes the G800 especially attractive.

PHOTOGRAPH: DASSAULT AVIATION

TALLEST WIDEST SMARTEST PERIOD.

The incomparable Falcon 6X cabin. 1.98 m tall, 2.58 m wide. With wide aisles.
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DASSAULT AVIATION

GULFSTREAM G800: BEYOND THE LUXURY AND RANGE, WHAT MAKES THIS AIRCRAFT ESSENTIAL IS THE STRATEGIC VALUE TO GLOBAL BUSINESSES

PHOTOGRAPHS: GULFSTREAM

GLOBAL SUPPORT AND SUSTAINABILITY

Gulfstream has also invested heavily in its customer support ecosystem, with service centres across North America, Europe, the Middle East, and Asia-Pacific. The company is at the forefront of industry sustainability efforts, with all new aircraft fully compatible with Sustainable Aviation Fuel (SAF) and the development of carbon-offset programmes for green-conscious buyers.

"Our mission is simple—connect the world without compromise," says Mark Burns, President of Gulfstream. "The G700 and G800 are engineered for a future where performance, comfort, and responsibility go hand in hand."

While Gulfstream has made significant strides in ultra-long-haul capabilities, it is not the only player redefining the industry. Dassault Falcon, is flying up almost the same level as Gulfstream, offering a unique blend of performance and versatility. As the market diversifies, the Dassault Falcon also stands out for its ability to combine range, efficiency, and passenger comfort.

DASSAULT FALCON: PEDIGREE WITH EXECUTIVE CLASS EXPERIENCE

French aircraft maker Dassault Aviation brings something different to the table—aerodynamic excellence and advanced flight control technology drawn from its heritage. With the upcoming Falcon 10X, Dassault is entering the ultra-long-range race with both innovation and elegance. Having received significant attention in the market and during several global airshows, Falcon 10X is among the most looked forward to aircraft.

Falcon 10X: The Ultimate in European Engineering

Set to enter service in 2027, the Falcon 10X will offer a range of 7,500 nautical miles, putting it firmly in the ultra-long-haul category. However, Dassault's focus isn't on setting raw records. Instead, the 10X will offer the widest and tallest cabin in its class—6 feet 8 inches high and over 9 feet wide—allowing for interior spaces previously unimaginable on a business jet.

Owners will be able to configure their aircraft with a private suite, lounge, office, or dining area. The flexible cabin layout and advanced soundproofing technologies are designed to match or exceed the comfort of luxury apartments.

But beneath the luxury lies serious innovation. The 10X will feature fly-by-wire controls, a smart throttle system for simplified pilot operations, and an advanced digital flight control system that improves fuel efficiency and handling. Its carbon-fibre wing, meanwhile, contributes to a lighter, more fuel-efficient airframe.

Dassault also emphasises sustainability, with the 10X fully compatible with SAF and built with a lower-emissions operations profile in mind.

"We are applying everything we know from building supersonic fighters to creating the most responsive and refined aircraft ever flown in the business world," says Éric Trappier, CEO of Dassault Aviation.

BOMBARDIER: THE PROVEN POWERHOUSE

Bombardier's Global 7500, and its forthcoming sibling, the Global 8000, have proven that Canadian engineering has a place among the very best in ultra-long-haul aviation.

The Global 7500, with a range of 7,700 nautical miles and Mach 0.925 speed, offers four distinct living zones and Bombardier's patented Nuage seating—an ergonomic marvel that supports zero-gravity posture during long flights. Bombardier's Smooth Flex Wing also provides a noticeably smoother ride in turbulent conditions.

Looking ahead, the Global 8000 will enhance performance even further with an 8,000 nm range and a blistering top speed of Mach 0.94—making it the fastest business jet in production. Bombardier has focused heavily on cabin wellness, from advanced HEPA filtration to reduced cabin pressure, supporting passenger health and alertness on 16+ hour flights.

BOMBARDIER GLOBAL 8000: THE AIRCRAFT IS FOCUSED HEAVILY ON CABIN WELLNESS, SUPPORTING PASSENGER HEALTH ON LONG FLIGHTS

PHOTOGRAPHS: BOMBARDIER

A TOOL FOR GLOBAL EXECUTION

Taken together, these aircraft illustrate the remarkable progress being made in ultra long haul aviation, each contributing to a future where distance is less of a barrier than ever before. As the demand for ultra long haul jets continues to rise, manufacturers are not only competing on range and comfort but also on sustainability and operational efficiency. The innovations seen in aircraft above highlight a broader trend toward smarter, more adaptable aviation solutions.

Beyond their luxury and range, what makes these aircraft essential is their strategic value to global businesses. Ultra-long-haul jets enable direct routing between secondary and tertiary cities that commercial airlines don't cover, and eliminate the time lost in layovers, queues, or indirect flights. For today's multinational firms, these aircraft are as much about control as they are about comfort. They allow executives to run tight schedules across continents while remaining secure and productive.

Cabins now support high-speed satellite connectivity, video conferencing, and real-time access to cloud platforms. It's a true extension of the boardroom—often in more comfort and privacy than any five-star hotel or commercial lounge.

While the primary drivers of demand are business and government needs, ultra-long-haul jets have also found their way into the portfolios of the world's wealthiest individuals who are known to own or operate Gulfstream, Bombardier, or Dassault aircraft—emphasising the flexibility, security, and performance these jets offer to both private and professional schedules.

ASIA-PACIFIC: A RISING MARKET FOR ULTRA-LONG JETS

The demand for ultra-long-haul business jets is expected to rise sharply in Asia-Pacific, driven by increasing cross-border investment, expanding family offices, and more globalised executive travel patterns.

According to Honeywell's 2024 Global Business Aviation Outlook, more than 20 per cent of all new business jet purchases in the next five years will fall into the ultra-long-range segment. Asia-Pacific, in particular, is forecast to be one of the fastest-growing markets, thanks to new wealth in India, Singapore, Indonesia, and Australia.

Charter operators and aircraft management firms in the region have reported a marked increase in interest from first-time buyers seeking ultra-long-range models that allow direct flights to North America and Europe without transit in Middle East or Northeast Asia hubs.

THE FUTURE IS HIGH, FAST, AND FAR

As sustainability becomes a key focus for aviation, manufacturers are integrating new technologies like electric taxi systems, lighter composite structures, and hybrid propulsion research into long-term product planning.

And while performance remains a central metric, wellness and environmental stewardship are rising priorities. Gulfstream, Bombardier, and Dassault are all working toward net-zero emission goals, while simultaneously offering cabins that promote better rest, hydration, and circadian alignment on ultra-long-haul routes.

CONCLUSION: FLIGHT WITHOUT COMPROMISE

Ultra-long-haul business jets are no longer just about reaching farther—they are about operating smarter, faster, and more sustainably across the globe. Whether it's a Gulfstream sprinting from Tokyo to New York, a Falcon 10X easing across the Atlantic with whisper-quiet grace, or a Bombardier powering through the Pacific skies, these jets are tools of modern execution and mobility.

In a world of instant communication and 24/7 decision-making, they offer something more precious than luxury—uninterrupted, strategic time in motion. SP

NAVIGATING THE BUSINESS AIRCRAFT FINANCING LANDSCAPE REQUIRES METICULOUS PLANNING AND A CLEAR UNDERSTANDING OF VARIOUS INTERCONNECTED FACTORS

THE FINANCIAL FLIGHT PLAN

A Comprehensive Guide to Business Aircraft Leasing and Financing

By SP'S SPECIAL CORRESPONDENT

ILLUSTRATION: ROHIT GOEL

THE BUSINESS AIRCRAFT FINANCING MARKET HAS UNDERGONE a significant transformation, particularly in the post-pandemic era, driven by an unprecedented surge in demand for private and chartered flights. However, the decision to acquire an aircraft is not merely a purchase; it's an intricate financial commitment involving a myriad of factors, including whether to opt for new or pre-owned aircraft, desired capacity and range, and the substantial long-term operational costs. Navigating the business aircraft financing landscape requires meticulous planning and a clear understanding of various interconnected fac-

tors. Buyers must approach this process with a comprehensive financial flight plan to balance immediate costs with long-term operational needs

- **Defining Travel Requirements and Aircraft Suitability:** The foundational step involves a thorough assessment of travel needs, including flight frequency, typical destinations, and required range. For instance, a company with frequent domestic travel within short-to-medium distances might find a midsize jet perfectly adequate. In contrast, international operations spanning continents would necessitate a long-range aircraft. The "90/10 rule," where 90 per cent of travel needs can be met by chartering while 10 per cent necessitates ownership, can also guide decisions on whether to buy or lease, balancing operational expenses effectively. This early-stage analysis helps in identifying the most suitable aircraft type, which in turn influences financing options.
- **Evaluating Aircraft Attributes and Market Dynamics:** The aircraft itself plays a significant role in financing terms. Newer models, often accompanied by manufacturer warranties and higher resale values, are generally more attractive to lenders and secure more favorable interest rates. Older aircraft, while potentially more affordable to acquire, may face stricter lending terms due to increased maintenance costs and lower collateral value. The overall market demand for a specific aircraft model also influences its financing appeal.
- **Creditworthiness and Financial Health:** Lenders conduct rigorous due diligence on the buyer's financial standing. This includes an in-depth review of credit history, tax returns, revenue stability, and the ability to service debt. Robust financial health, coupled with a strong credit profile, is crucial for securing competitive financing terms. For corporate buyers, the balance sheet strength and cash flow projections are key determinants.
- **Sustainability and Risk Management:** Increasingly, sustainability is influencing financing trends, with a growing focus on fuel-efficient aircraft and environmentally responsible operations. Financiers are also keenly aware of the unique risks associated with aviation. Therefore, comprehensive insurance policies and robust risk management strategies are essential to mitigate potential financial exposures, from operational hazards to market depreciation.
- **Comprehensive Lifecycle Cost Analysis:** Beyond the initial acquisition cost, prospective owners must meticulously account for all lifecycle expenses. These include ongoing maintenance, hangar fees, crew salaries, fuel, insurance premiums, and regulatory compliance costs. A holistic understanding of total ownership costs prevents unforeseen financial burdens and ensures the long-term sustainability of the aircraft acquisition.

The business aircraft market provides several financing structures, each tailored to different financial strategies and operational needs:

- Structured debt finance is the most traditional approach, functioning much like a standard loan where the aircraft itself serves as collateral. This method allows buyers to gain immediate ownership and benefit from tax advantages, such as depreciation, making it cost-effective for those with strong credit profiles. However, it requires extensive documentation and thorough due diligence from lenders, and the owner assumes the full risk if the aircraft's resale value declines.
- Operating leases, also known as dry leases, have become increasingly popular, especially among operators seeking flexibility and asset-light business models. With this structure, lessees make minimal upfront payments, preserving capital and avoiding residual value risk since the lessor retains ownership and responsibility for the aircraft at the end of the lease. This option offers greater flexibility for fleet management and enables quicker aircraft delivery, particularly for non-scheduled operators. The trade-off, however, is that operating leases often come with higher effective interest rates and strict return conditions, specifying the required state of the aircraft when the lease ends. This structure is especially suitable for companies that prioritise adaptability and want to avoid the long-term responsibilities of ownership.
- A finance lease, or capital lease, blends features of both debt finance and operating leases. It typically results in lower monthly payments and allows the lessee to claim depreciation benefits, as the aircraft is treated as an on-balance-sheet asset. At the end of the lease term, the lessee often has the option to purchase the aircraft for a nominal sum, making this approach ideal for those planning eventual ownership but preferring a lower initial capital outlay and structured payments. Nevertheless, the lessee bears the residual value risk and is generally responsible for maintenance and operational costs, with limited flexibility for early termination.
- Export Credit Agency (ECA) financing is a specialised option mainly used for acquiring large, often new, aircraft from countries with robust export credit agencies. ECAs, backed by government guarantees, offer competitive, low-interest loans with long tenures, frequently surpassing what commercial banks provide. This can significantly reduce the overall cost of capital for substantial acquisitions. However, ECA financing involves a complex application process, extensive documentation, and stringent guarantees, making it primarily accessible to major corporations or airlines capable of meeting these requirements and seeking favorable long-term financing for significant fleet expansions.

A holistic understanding of total ownership costs prevents unforeseen financial burdens and ensures the long-term sustainability of the aircraft acquisition

GIFT CITY, INDIA'S AMBITIOUS HUB FOR AIRCRAFT LEASING AND FINANCING

The Gujarat International Finance Tec-City (GIFT City) stands as a testament to India's ambition to transform into a global financial powerhouse and a self-reliant aviation finance hub. Operating as both a Special Economic Zone (SEZ) and an International Financial Services Centre (IFSC), GIFT City is meticulously designed to facilitate international financial activities, particularly in the realm of aircraft leasing and financing. It represents a key pillar of India's 'Project Rupee Raftaar' report, aimed at reducing reliance on foreign lessors and curbing significant foreign exchange outflows.

India's regulatory landscape has undergone significant transformations to accommodate aircraft leasing as a recognised financial product under the IFSC Authority Regulations, 2021. This progressive framework allows entities, structured as companies, LLPs, trusts, or branches to engage in the leasing of aircraft, engines, and aviation training equipment within GIFT City. The International Financial Services Centres Authority (IFSCA) provides centralised regulatory oversight, streamlining compliance and reducing bureaucratic hurdles, thereby enhancing the ease of doing business for lessors and financiers alike.

GIFT City has established itself as a truly unique hub for aircraft leasing by offering an impressive array of direct and indirect tax incentives, all designed to attract both domestic and international players. On the direct tax front, aircraft leasing units benefit from a 100 per cent income tax exemption for any 10 years within the first 15 years of operation—a major draw for new entrants looking to maximise returns. After this exemption period, a reduced corporate tax rate of 22 per cent applies, and for those operating exclusively in foreign currency, a significantly lower Minimum Alternate Tax (MAT) of just nine per cent further enhances the financial attractiveness. Accelerated depreciation at 40 per cent allows for rapid cost recovery, while non-resident lessors enjoy exemptions from taxes on royalty or interest income for leases initiated by March 31, 2025, providing clear incentives for global participation.

Beyond direct tax advantages, GIFT City also offers substantial indirect tax benefits. Aircraft and engines imported into the Special Economic Zone (SEZ) are exempt from Basic Customs Duty (BCD), and lease rentals are subject to a concessional five per cent Integrated Goods and Services Tax (IGST), making transactions more cost-effective for lessees and lessors alike. These fiscal incentives are complemented by a streamlined operational environment that prioritises efficiency and ease of business. Procedures for aircraft repossession and export are simplified—a critical factor for lessors managing asset risks—and the ability to keep repossessed aircraft registered in India adds a layer of operational flexibility. Compliance is also made easier, with reduced bureaucratic complexity compared to traditional Indian jurisdictions.

Setting up a leasing operation in GIFT City is a structured process: companies secure office space, incorporate an IFSC unit, complete tax registrations, obtain SEZ and IFSCA approvals, and acquire necessary certifications such as GST registration. Once operational, these units can leverage GIFT City's unique ecosystem to access global markets, benefiting from both a business-friendly regulatory framework and world-class infrastructure. This combination of tax incentives and operational efficiencies positions GIFT City as a compelling choice for anyone looking to thrive in the rapidly evolving world of aircraft leasing.

CHALLENGES AND FUTURE OUTLOOK FOR INDIA'S AVIATION FINANCE

Despite its ambitious incentives and streamlined regulatory environment, GIFT City faces considerable challenges in its quest to become a global aircraft leasing hub. Established aviation finance centers in Ireland, Singapore, and other jurisdictions boast mature ecosystems, extensive double taxation treaties, and a long history of stability, making relocation less attractive for some prominent lessors.

A primary concern for potential entrants is the uncertainty surrounding the continuity of India's tax incentives beyond the initial 10-year holiday period. While the current framework is robust, historical instances of retrospective taxation in India, even if unlikely under the current regime, can foster a degree of caution among international investors. Addressing these concerns through clear, long-term policy commitments and building unwavering investor confidence will be crucial for GIFT City's sustained success and its ability to rival global leaders in aviation financing.

To secure the best aircraft financing—especially for models like the Pilatus PC-12 or PC-24 that you're interested in—it pays to be proactive and well-prepared. Start by integrating financing considerations right from the beginning, as part of your aircraft selection and budgeting process, rather than treating them as an afterthought. This early planning gives you the time and clarity needed to make smart, well-informed decisions as you navigate the sometimes lengthy financing procedures.

> The Gujarat International Finance Tec-City (GIFT City) stands as a testament to India's ambition to transform into a global financial powerhouse and a self-reliant aviation finance hub

Working with a team of experts—including aviation consultants, financial advisors, and legal specialists—can make all the difference. Aviation consultants help you model cash flows and compare different financing options, while lawyers ensure compliance and protect your interests throughout the deal. Accountants bring valuable insight into tax implications and help you maximise benefits such as depreciation.

Don't settle for the first offer; instead, solicit proposals from multiple financiers and carefully evaluate each one, paying close attention to interest rates, amortisation periods, covenants, and any hidden fees. Strong negotiation skills can help you lock in terms that give you a real competitive edge.

Finally, think ahead. Consider your future operational needs, potential upgrades, and possible exit strategies such as resale or lease extensions. Building flexibility into your financing plan not only safeguards your investment but also ensures you're positioned for long-term success as your business grows.

The business aircraft financing market is a dynamic and sophisticated domain, continually shaped by global demand, economic fluctuations, and advancing technologies. From the diverse array of financing structures to the burgeoning opportunities in hubs like India's GIFT City, understanding this landscape is key to making astute financial decisions. By meticulously considering financial health, maximising tax benefits, staying abreast of sustainability trends, and engaging expert guidance, buyers and financiers can formulate strategies that optimise returns, ensure operational efficiency, and unlock the full potential of business aviation as a powerful enabler of growth, connectivity, and competitive advantage. The financial flight plan, when meticulously crafted, ensures a confident and successful journey in the skies of business aviation. SP

A REIMAGINED AND EVOLVED SHOW FOR EUROPEAN BUSINESS AVIATION

A bold new era emerges as European Business Aviation seizes new growth opportunities whilst adapting to evolving regulatory environments and geopolitical complexity

By SP'S SPECIAL CORRESPONDENT

THE EUROPEAN BUSINESS AVIATION CONVENTION & EXHIBITION (EBACE) 2025, held from May 20–22 at Geneva's Palexpo centre, marked a transformative chapter for Europe's premier business aviation event. Now fully managed by the European Business Aviation Association (EBAA), the show embraced a revitalised format reflecting the evolving needs of the industry.

Departing from tradition, EBACE25 eliminated the static aircraft display to invest in a dynamic visitor experience. The revamped layout included a new floorplan to boost booth visibility, enhanced networking lounges, and themed pods, all contributing to an environment ripe for business development. The updated conference programme offered unmatched insights into market trends, regulatory changes, and sustainability strategies.

The Innovation & Sustainability stage spotlighted cutting-edge technologies such as autonomous flight, while dedicated sessions addressed the needs of the air charter community. Key discussions revolved around fleet trends, European market growth, and policy impacts like ReFuelEU, underscoring EBAA's advocacy role within European aviation policy.

The show opened with a spirited Welcome Celebration, uniting industry players and setting the tone for three days of intense networking and collaboration. Exhibitors and attendees praised the event's fresh identity and relevance, affirming its value as a business platform. As EBACE25 concluded, it left behind a renewed sense of purpose, signalling a strong foundation for future growth and a redefined vision for the show's evolution. SP

PHOTOGRAPHS: EBACE


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MOD INITIATES COMPREHENSIVE REVIEW OF DAP 2020, PUSHES FOR DEFENCE REFORMS

This strategic initiative signals a pivotal moment in India's defence policy evolution, reinforcing the government's resolve to fortify national security through systemic reform and innovation

By MANISH KUMAR JHA

IN A SIGNIFICANT STEP TOWARD enhancing transparency, efficiency, and alignment with national priorities, the Ministry of Defence (MoD) has launched a comprehensive review of the Defence Acquisition Procedure (DAP) 2020. The directives for such initiatives are based on the declaration of 2025 as the 'Year of Reforms' to modernise governance structures and policy frameworks.

The review aims to optimise DAP 2020 with evolving national policies, including the 'Atmanirbhar Bharat' vision, the 'Make in India' initiative, keeping with the advancements in emerging technologies such as artificial intelligence, quantum computing, and autonomous systems. The goal is to streamline procurement processes, ensure greater self-reliance in defence manufacturing, and enhance the operational capabilities of the Armed Forces through timely and cost-effective acquisitions.

DEFENCE SECRETARY RAJESH KUMAR SINGH. THE POLICY REVIEW AIMS TO OPTIMISE DAP 2020 WITH EVOLVING NATIONAL POLICIES, INCLUDING THE 'ATMANIRBHAR BHARAT' VISION AND THE 'MAKE IN INDIA' INITIATIVE

A high-level Committee, chaired by the Director General (Acquisition), has been constituted to spearhead this initiative. The panel comprises senior officials from the Ministry of Defence, key representatives from the Indian defence industry, academic experts, and policy analysts. Their mandate is to conduct extensive consultations with stakeholders across the public and private sectors, as well as with end-users within the Armed Forces.

Adding considerable weight to the initiative, the Ministry has appointed Apurva Chandra, a former IAS officer of the 1980 batch, as a special advisor to the Committee. Chandra, who previously served as DG (Acquisition), brings with him a wealth of experience in defence procurement and public policy formulation.

A senior MoD official stated, "This review reflects our commitment to evolving a future-ready defence acquisition system that is robust, responsive, and aligned with our national goals. By integrating stakeholder feedback, technological foresight, and best practices, we aim to create a more agile and transparent procurement process."

The Committee is expected to submit its recommendations in phases, with an emphasis on fast-tracking indigenous procurement, promoting MSME participation, and ensuring compliance with environmental and ethical standards.

This strategic initiative signals a pivotal moment in India's defence policy evolution, reinforcing the government's resolve to fortify national security through systemic reform and innovation.

DAP'S OVERHAUL

The policy review aims to look at the operational requirements of the Indian Armed Forces, ensuring the modernisation drive for national security. It also aligns acquisition procedures with GoI policies and initiatives to achieve Atmanirbharta (Self-Reliance) by promoting technology infusion through indigenously designed and developed systems.

The MoD also aims to enable 'Make in India' by promoting defence manufacturing in India through facilitation of Joint Ventures and Transfer of Technology for the private sector, encouraging foreign OEMs via FDI alignment, and establishing India as a global Defence manufacturing and MRO hub.

The Committee will review and promote Design & Development in both public and private sectors, with a focus on startups, innovators, and the private Defence Industry for indigenous technology infusion. At the same time, the MoD has sought stakeholder suggestions on the Policy and procedural changes to streamline acquisition processes, covering categorisation, ease of doing business, conduct of trials, and post-contract management, Fast Track procedures, and adoption of new technologies such as AI.

The MoD also issued statements for the language improvements to eliminate ambiguity, remove inconsistencies, and enhance procedural clarity in the DAP. SP

Manish Kumar Jha is a Consulting & Contributing Editor for SP's Aviation, SP's Land Forces and SP's Naval Forces and a security expert. He writes on national security, military technology, strategic affairs & policies.

PHOTOGRAPH: PIB

MAX IMMELMANN (1890 - 1916)

Max Immelmann and Oswald Boelcke engaged in a fluctuating contest to be Germany's leading ace. On January 12, 1916, both pilots received the "Blue Max" award from Kaiser Wilhelm II.

THE FIRST SUSTAINED, CONTROLLED, POWERED FLIGHT OF A fixed-wing aircraft happened on December 17, 1903, at Kitty Hawk, North Carolina. The enormous military potential of this new device was already apparent. And when the First World War started, in July 1914, it provided the perfect impetus for the rapid military exploitation of the air. Indeed, aviation was one of the most romanticised facets of the War. Air aces were lionised by politicians and press alike, and quickly achieved celebrity status. Though the term "ace" meant different things in different countries, it was generally taken to mean any pilot credited with shooting down five or more enemy aircraft.

Max Immelmann, known as "The Eagle of Lille", was one of Germany's early air aces, credited with 15 (sometimes 17) aerial victories. Together with Oswald Boelcke, he became famous as a daring fighter pilot whom the Allied pilots would rather not mess with. Immelmann was the first to receive the Pour le Mérite (colloquially called the "Blue Max" in his honour) at the same time as Boelcke. And a distinctive combat manoeuvre – a half loop followed by a half roll on top, employed to rapidly reverse the direction of flight – came to be called an "Immelmann turn". However, more likely, an Immelmann turn was a sharp rudder turn, off a near-vertical zoom climb – a manoeuvre that Immelmann may have originated and used in combat.

Max Immelmann was born on September 21, 1890, in Dresden, Germany. He was fascinated with engines and other mechanical devices, and entered the Dresden Cadet School when he was 15. By the time he became a pilot the War was in full swing. For the first half of 1915, he served with various flying units. On several occasions he was involved in combat while flying the LVG – a German two-seat reconnaissance biplane – but without success. On June 3, 1915, he was shot down by a French pilot. However, he managed to land his plane safely behind German lines.

Everything changed in July 1915, when the German aircraft manufacturer Fokker delivered two early examples of its Fokker Eindecker fighter – the E.13/15 – to Immelmann's unit, one for Oswald Boelcke's use, and the other for Immelmann's. The E.13/15 aircraft was armed with one lMG 08 Spandau machine gun, synchronised to fire forward through the propeller arc. It helped Immelmann achieve his first confirmed air victory of the war on August 1, 1915, just a fortnight after another German pilot had recorded the very first confirmed German aerial victory. In fact, the Fokker Eindecker was Germany's first fighter aircraft, and the first to be designed to fire through the propeller arc. It helped Max Immelmann, Oswald Boelcke, and other pilots to put in place the so-called "Fokker Scourge" by inflicting heavy losses on British and French aircraft. Although around 200 German pilots flew Eindeckers, only three or four came close to Immelmann in their scores.

In September 1915, three more victories followed and Immelmann was promoted to First Lieutenant. In October 1915, he became solely responsible for the air defence of the city of Lille. That is how he received the nickname "The Eagle of Lille" from the German newspapers. Meanwhile, Immelmann and Boelcke engaged in a fluctuating contest to be Germany's leading ace. On January 12, 1916, both pilots received the "Blue Max" from Kaiser Wilhelm II. Thus encouraged, Immelmann made March 1916 his best month, with five victories.

On June 18, 1916, Immelmann led four Eindecker fighter in pursuit of four British F.E.2b two-seat pusher fighters (called "Fees") of No. 25 Squadron. Immelmann succeeded in forcing one down near Arras, but only after his own plane suffered serious damage. Later that same evening, Immelmann in a Fokker E.III, encountered No. 25 Squadron again. After recording another victory (which turned out to be his last) he closed into a British Fee piloted by Second Lieutenant G.R. McCubbin, with Corporal J.H. Waller as gunner/observer. Immelmann's aircraft was hit by a burst of gunfire and started going down. Suddenly, it pitched up and stalled over its left wing. Witnesses saw its fuselage break off behind the cockpit. As it began its death dive, both wings tore away as well. Immelmann's body was recognised only by his monogrammed kerchief and the Blue Max at his throat.

Max Immelmann was given a state funeral and buried in Dresden, his home town. There was deep shock in the German camp, since many had seen Immelmann as invincible. He was one of their first great aces to die in combat. People claimed that his Eindecker had been hit by friendly anti-aircraft fire, or that his synchroniser gear had malfunctioned (one of the propeller blades appeared to be sawed off). Anything except the painful but most likely truth: that he had been shot down by a British fighter pilot. SP

— JOSEPH NORONHA

MILITARY

DEFENCE MINISTER HOLDS BILATERAL MEETING WITH AUSTRALIAN DEFENCE MINISTER

Defence Minister Rajnath Singh held a bilateral meeting with Australian Deputy Prime Minister & Minister for Defence Richard Marles in New Delhi on June 4, 2025. Both Ministers strongly condemned the terror attack in Pahalgam and expressed deepest condolences to the families of the victims. Defence Minister highlighted India's right to respond in self-defence against cross-border terrorism and described New Delhi's actions against Pakistan as measured, non-escalatory, proportionate and responsible. The two sides agreed to work together to combat terrorism in all its forms.

The two Ministers welcomed the signing of Australia-India Joint Research Project and agreed to intensify & diversify defence industry collaboration. They deliberated to further the defence science and technology collaboration projects when they meet in Australia later this year for the third India-Australia 2+2 ministerial meeting. They also reviewed the progress made since the last 2+2 Ministerial Dialogue held in November 2023.

The meeting offered an opportunity to both sides to review the status of bilateral engagements in the context of emerging regional and global scenarios. The discussions covered a wide range of issues such as defence strategic cooperation and security, including industry collaboration, cyber & new emerging technologies, counter-terrorism, hydrography and maritime security. The two sides also exchanged views on regional and global security issues of mutual interest.

DRDO CONDUCTS MAIDEN FLIGHT-TRIALS OF STRATOSPHERIC AIRSHIP PLATFORM

Defence Research and Development Organisation (DRDO) successfully carried out maiden flight-trials of Stratospheric Airship Platform on May 3, 2025. Developed by Aerial Delivery Research and Development Establishment, Agra, the airship was launched carrying an instrumental payload to an altitude of around 17 kms.

Data from onboard sensors was received and would be utilised for development of high-quality fidelity simulation models for future high-altitude airship flights. Envelop pressure control and emergency deflation systems were deployed in flight for their performance evaluation. Trial team recovered

APPOINTMENTS

AIR MARSHAL NARMDESHWAR TIWARI TAKES OVER AS VICE CHIEF OF THE AIR STAFF, INDIAN AIR FORCE

The Air Marshal was commissioned as a Fighter Pilot in the Indian Air Force on June 7, 1986. The Air Marshal has over 3600 hours of flying experience on various types of aircraft. Besides, he is a Qualified Flying Instructor and an Experimental Test Pilot. He was actively involved in the flight testing of the LCA from 2006 to 2009 and later in 2018-19, wherein, as the Project Director (Flight Test), he was involved in the Final Operational Clearance of the aircraft. The Air Marshal served as the Air Attache at Paris from 2013 to 2016. He has also held appointment Deputy Chief of the Air Staff at Air HQ (VB). Prior to assuming charge as the Vice Chief of the Air Staff, he was the Air Officer Commanding-in-Chief at South Western Air Command.

AIR MARSHAL TEJINDER SINGH TAKES OVER AS AOC-IN-C TRAINING COMMAND

Air Marshal Tejinder Singh took over as Air Officer Commanding-in-Chief (AOC-in-C), Training Command on May 1, 2025. An alumnus of the National Defence Academy, Air Marshal Tejinder was commissioned in the fighter stream of the IAF on June 13, 1987. He is a Category 'A' Qualified Flying Instructor with over 4500 hours of flying, an alumnus of Defence Service Staff College and National Defence College. He has commanded a Fighter Squadron, a Radar Station, a premier Fighter Base and was Air Officer Commanding, Jammu and Kashmir. Prior to his present appointment, he was the Deputy Chief of the Air Staff at Air HQ (VB).

AIR MARSHAL JASVIR SINGH MANN TAKES OVER AS SENIOR AIR STAFF OFFICER, WESTERN AIR COMMAND, INDIAN AIR FORCE

Air Marshal Jasvir Singh Mann took over as Senior Air Staff Officer of Western Air Command, Indian Air Force on June 1, 2025. He is an alumni of the National Defence Academy and was commissioned as a fighter pilot in the IAF on December 16, 1989. In his operational career, he has commanded a fighter squadron, been Chief Operations Officer of a forward base and Air Officer Commanding of a premium fighter base. He has also held various important appointments at Air Headquarters and Command Headquarters.

BOEING NAMES HEAD OF DIGITAL TECHNOLOGY AND CHIEF INFORMATION OFFICER FOR INDIA

Boeing has named Shashank Jha as India site leader for Information Digital Technology & Security (IDT&S) and Chief Information Officer (CIO), Boeing India. Based in Bengaluru, Jha will lead strategy and operations for Boeing's IDT&S team in India, which includes nearly 1,500 team members. In this role, he will focus on strengthening collaboration, talent development, and IDT&S India site engagement. Further, as part of the global engineering and product support teams, he will work with the business partners team across the global IDT&S function.

the system for further investigation. The total duration of the flight was about 62 minutes.

Defence Minister Rajnath Singh has congratulated DRDO for the successful maiden flight-trial of the system. He stated that this system will uniquely enhance India's earth observation and Intelligence, Surveillance & Reconnaissance capabilities, making the country one of the few countries in the world having such indigenous capabilities.

FIRST CENTRE FUSELAGE FOR LCA TEJAS MK 1A HANDED OVER TO HAL

In a significant boost to India's indigenous defence manufacturing capabilities, the first centre fuselage assembly for the Light Combat Aircraft (LCA) Tejas Mk1A was handed over to Hindustan Aeronautics Limited (HAL) by VEM Technologies in Hyderabad on May 30, 2025. This event marks for the first time a major sub-assembly for the LCA Tejas being manufactured by a private Indian company.

The handover marked a significant milestone in establishing a fourth production line for the LCA Mk1A, in addition to the two existing lines in HAL-Bengaluru and one in HAL-Nashik. He assured that with major sub-assemblies underway, HAL will increase the production of the LCA aircraft and ensure timely deliveries to the Indian Air Force.

HAL has built a national aerospace ecosystem by closely supporting private partners and providing critical inputs such as jigs, fixtures, tools, and technical know-how. This has enabled companies like L&T, Alpha Tocol, Tata Advanced Systems Ltd (TASL), VEM Technologies, and Lakshmi Machine Works (LMW) to produce complex sub-assemblies such as centre fuselages, fuel drop tanks, pylons, rear fuselages, wings, fins, rudders, and air intakes.

DASSAULT AVIATION PARTNERS WITH TATA ADVANCED SYSTEMS

Dassault Aviation and Tata Advanced Systems Limited have signed four Production Transfer Agreements to manufacture the Rafale fighter aircraft fuselage in India, marking a significant step forward in strengthening the country's aerospace manufacturing capabilities and supporting global supply chains. This facility represents a significant investment in India's aerospace infrastructure and will serve as a critical hub for high-precision manufacturing.

Under the scope of the partnership, Tata Advanced Systems will set up a cutting-edge production facility in Hyderabad for the manufacture of key structural sections of the Rafale, including the lateral shells of the rear fuselage, the complete rear section, the central fuselage, and the front section. The first fuselage sections are expected to roll off the assembly line in FY2028, with the facility expected to deliver up to two complete fuselages per month.

EMBRAER DEEPENS COMMITMENT TO INDIA WITH NEW SUBSIDIARY

Embraer announced a significant reinforcement of its commitment to India with the establishment of a fully owned Indian subsidiary in New Delhi. This strategic move underscores Embraer's long-term vision for growth and potential collaboration with India's rapidly evolving aerospace and defence landscape.

The establishment of a subsidiary in India aims at strengthening its interests across defence, commercial aviation, business aviation, services & support and the burgeoning urban air mobility sector. This includes establishing teams across corporate functions and specialised cells focused on procurement, supply chain and engineering.

Embraer is significantly deepening its engagement in India. The company has a substantial footprint with nearly 50 Embraer aircraft and 11 aircraft types currently operating in the country - from commercial aviation, defence and business aviation, all supported by Embraer's service and support network in the country.

DEFENCE MINISTER APPROVES AMCA PROGRAMME THROUGH INDUSTRY PARTNERSHIP

In a significant push towards enhancing India's indigenous defence capabilities and fostering a robust domestic aerospace industrial ecosystem, Defence Minister Rajnath Singh has approved the Advanced Medium Combat Aircraft (AMCA) Programme Execution Model. The Aeronautical Development Agency (ADA) is set to execute the programme through Industry partnership.

The Execution Model approach provides equal opportunities to both private and public sectors on competitive basis. They can bid either independently or as joint venture or as consortia. The entity/bidder should be an Indian company compliant with the laws and regulations of the country.

This is an important step towards harnessing the indigenous expertise, capability and capacity to develop the AMCA prototype, which will be a major milestone towards Aatmanirbharta in the aerospace sector.

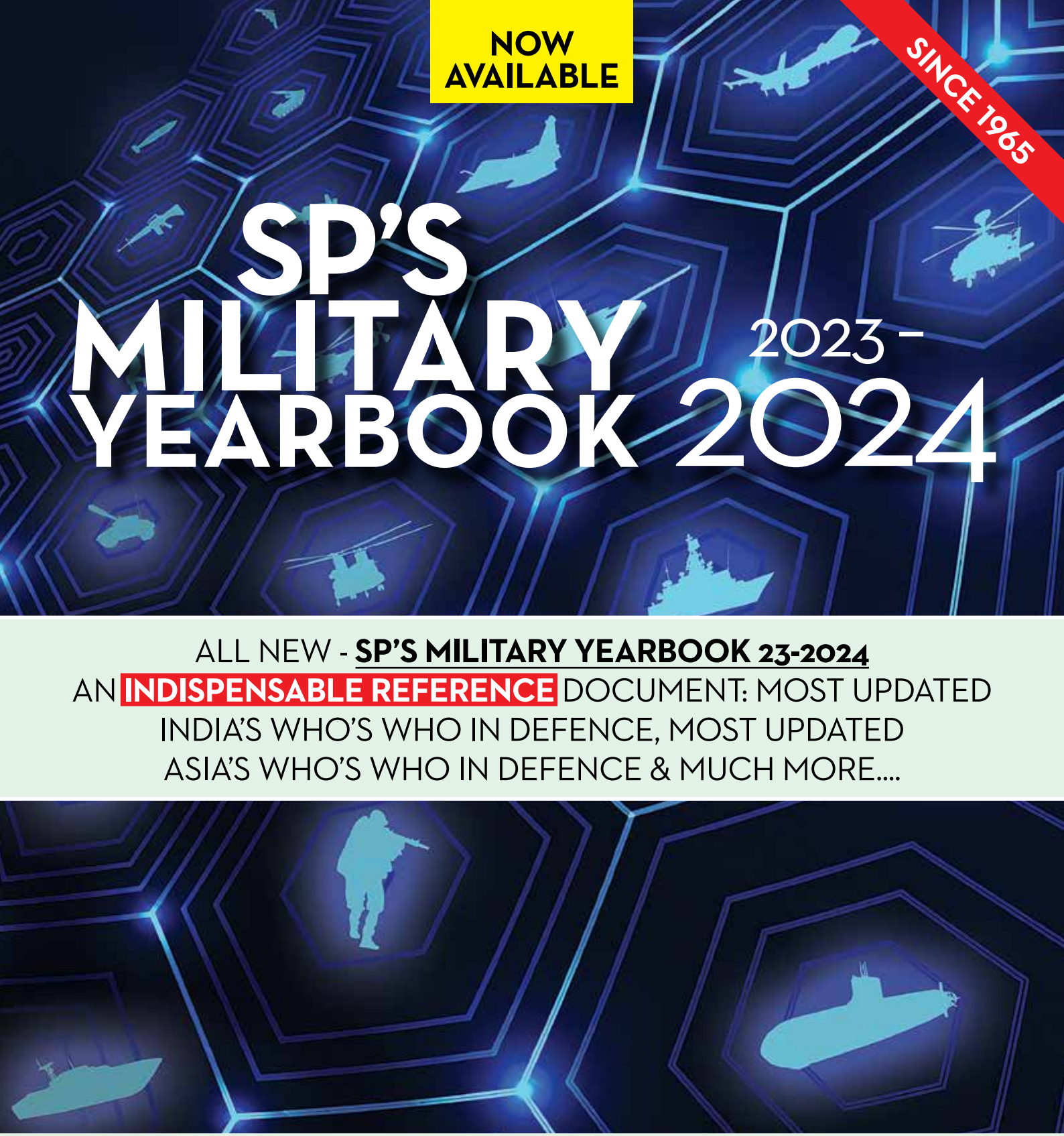
CIVIL

AUTHORIZED PILATUS CENTRE PRO STAR OPENS NEW FACILITY

Pro Star Aviation recently opened its new Authorized Pilatus Sales & Service Centre at Gerald R. Ford International Airport (KGRR) in Grand Rapids, Michigan, USA. This 37,000-square-foot (3,437.41-square-meter) Pilatus dedicated facility will strengthen the company's ability to support Pilatus customers with sales, maintenance, and technical services.

The new facility includes a modern multi-bay aircraft maintenance hangar and a two-story, 17,000-square-foot (1,579-square-meter) office building. Designed with both functionality and comfort in mind, it features a pilot lounge, flight planning areas, a cafeteria, and quiet spaces for relaxation. Large windows allow natural light to fill the space, creating a welcoming, open environment for both customers and employees.

The new Grand Rapids location is dedicated to supporting Pilatus aircraft, including the PC-12 and PC-24 Super Versatile Jet. As an Authorized Pilatus Sales & Service Centre, Pro Star Aviation offers a full range of services, including aircraft sales, avionics upgrades, and special mission aircraft modifications.



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