VOLUME 53 ISSUE 5 / JULY 2025

WORLD AIR NEWS

CONNECTING SKIES • BRIDGING CONTINENTS

E-9 ELECTRIC BLOWN-LIFT TECHNOLOGY

CYBERSECURITY FOR eVTOL AND UAV INFRASTRUCTURE

AEROSA 2025 INTERVIEWS & MINI REPORT

HYDROGEN-ELECTRIC PIONEERING PROJECTS

COVER IMAGE : PIPISTREL'S PANTHERA INTERIOR - PHOTO BY KEITH LAAKS

THE SUPER VERSATILE JET

Designed from the outset to provide unmatched operational flexibility, the new PC-24 is a force multiplier.

Pilatus Centre SA
Authorised Sales Centre

Crafted in Switzerland

pilatus-aircraft.com/southernafrica

HEART AEROSPACE POWERS AHEAD WITH ES-30

Heart Aerospace is charting a bold course for sustainable aviation with its ES-30, a 30-seat hybrid-electric aircraft designed to reshape regional air travel. As a follow-up to the ES-19, the ES-30 combines zero-emission capability with extended range and operational flexibility, offering a fully electric range of 200 kilometres and up to 800 kilometres in hybrid mode. With strong support from industry partners and growing interest from commercial operators, the ES-30 demonstrates how clean technology can be successfully integrated into commercial fleets without compromising performance, reliability or passenger comfort.

OFFICIAL JOURNAL OF:– Commercial Aviation Association of Southern Africa, The Airlines Association of South Africa, The Association of South African Aircraft Traders, Association of Training Organisations of South Africa, Aerodromes & Airports Association of South Africa, Association of Aviation Maintenance Organisations, South African Society of Aerospace & Environmental Medicine, Helicopter Association of Southern Africa, Aircraft Owners & Pilots' Associations of Southern Africa, Airside Operators, Association of South Africa, South African Aerial Applicators Association, East African Commercial Aviation Association, African Airline Association (AFRAA) Media Partner.

DISCLAIMER:– Opinions expressed in signed articles or in advertisements appearing in World Airnews, are those of the author or advertiser and do not necessarily reflect those of this journal or of its publisher. The mention of specific companies or products in articles or advertisements does not imply that they are endorsed or recommended by this journal or its publisher in preference to others of a similar nature which are not mentioned or advertised. World Copyright Reserved.

CONTACTS

PUBLISHER WORLD AIRNEWS PTY LTD
15 Jacaranda Drive, Craigavon AH, Sandton,2192
Telephone: +27 11 465 7706 / 083 378 2060
info@worldairnews.co.za

EDITORS
Joan Chalmers
Email: joan@worldairnews.co.za

Keith Fryer -Technical Editor
Email: keith@worldairnews.co.za

Joey Schulz - Sub Editor
Email: joey@worldairnews.co.za

OPERATIONS & ENQUIRIES
Judi Rodokanakis
Email: judi@worldairnews.co.za

ACCOUNTS
Krystyna Zanike Evans
Email: krys@worldairnews.co.za

BUSINESS DEVELOPMENT/ SOUTH AFRICA
Hes Kiggen
Email: hes@worldairnews.co.za

Jimmy Skosana
Email: jimmy@worldairnews.co.za

BRITAIN / EUROPE BSP
Sally Passey
Email: sally@worldairnews.co.za

RUSSIA - MOSCOW
Yury Laskin
Email: yury@worldairnews.co.za

DISTRIBUTION CHANNELS
WEBSITE: www.worldairnews.co.za
SOCIALS: Facebook, LinkedIn, Instagram, Twitter, Magzter.
DIRECT MAIL: Monthly emailer to Subscribers and Aviation Sector Specialists.
ON -DEMAND PRINTING: We only print what is needed.

WORLD AIRNEWS

SINCE 2003

SIMUFLIGHT

TRAINING FLIGHT DECK EXCELLENCE

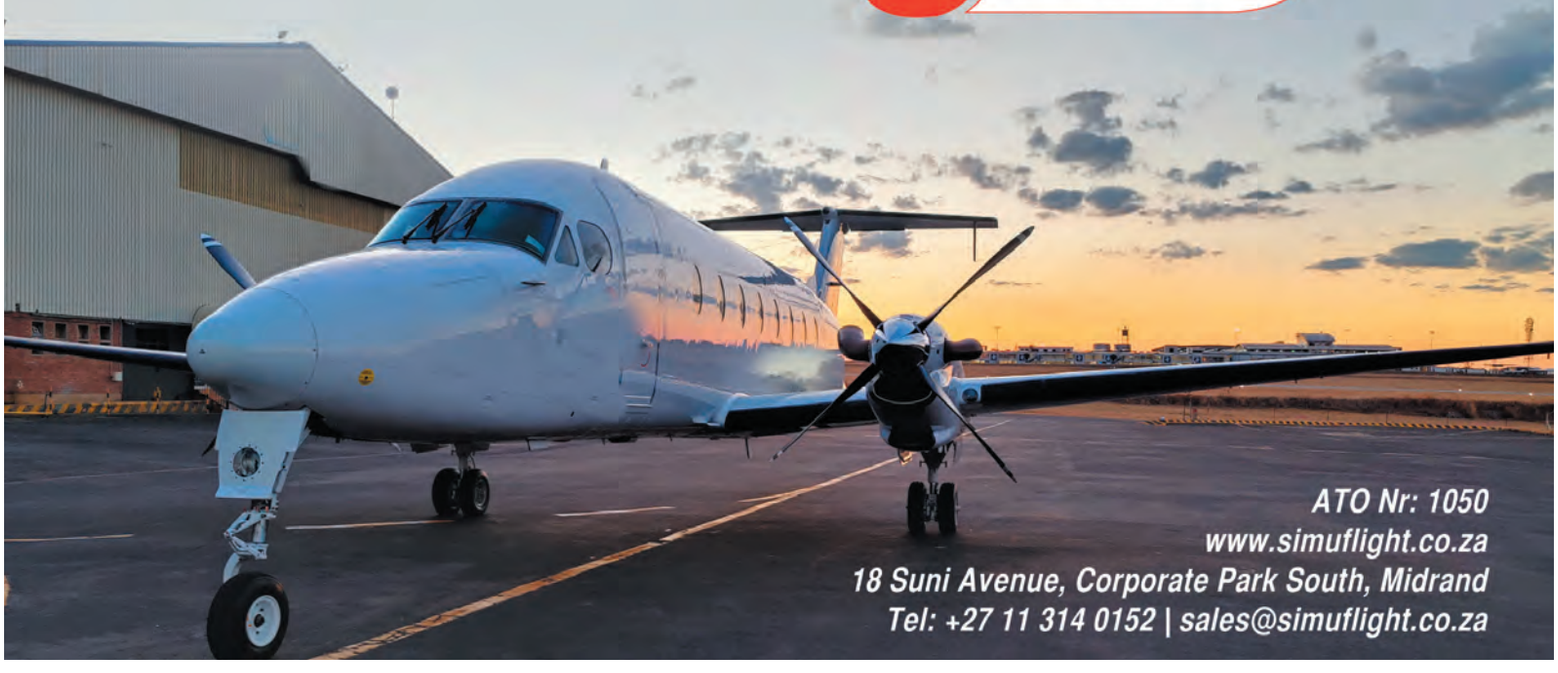
Our Seneca simulator is now full glass cockpit equipped for G1000 NXI training

INHOUSE TYPE SPECIFIC SIMULATORS

Specialising in: Beechcraft B1900
Beechcraft King Air 200 | Cessna Caravan

- Initial Type Ratings
- IF Revalidations (PPL, CPL & ATPL)
- Foreign License Validations / Conversions
- ATPL Preparation & Test
- Glass Cockpit Training
- Pilot Proficiency Checks
- Multi-Crew Coordination Training
- TCAS 7.1 Training (Traffic Collision Avoidance)
- GPWS (Ground Proximity Warning System)
- PBN & RNAV / GNSS

SUBSCRIBE TO OUR CHANNEL
https://youtu.be/cSgGYhwQOik



ATO Nr: 1050
www.simuflight.co.za
18 Suni Avenue, Corporate Park South, Midrand
Tel: +27 11 314 0152 | sales@simuflight.co.za

THE ELECTRIC HORIZON – EVTOL, UAV AND HYBRID ELECTRIC AIRCRAFT

The aviation landscape is undergoing a radical transformation. Once the stuff of science fiction, electric and hybrid aircraft are no longer distant dreams—they are fast becoming commercial realities. From vertical lift to zero-emission propulsion, the global industry is now fully engaged in redefining flight with sustainability, efficiency, and innovation at its core.

This month, World Airnews explores The Electric Horizon, a theme that reflects the seismic shift towards advanced air mobility. Across the globe, breakthroughs in electric Vertical Take-Off and Landing (eVTOL) technology, Uncrewed Aerial Vehicles (UAVs), and hybrid-electric propulsion systems are reshaping everything from urban transport to regional connectivity and defence operations. Manufacturers, operators, and regulators are collectively navigating uncharted airspace to build an aviation ecosystem that's quieter, cleaner, and more adaptable to 21st-century demands.

But what does this mean for Africa?

As the rest of the world accelerates toward eAviation, the need for readiness on the continent grows more urgent. Urbanisation, sprawling megacities, and remote communities all make Africa a prime candidate for the deployment of electric aircraft technologies. Yet readiness must go beyond the aircraft themselves—it includes regulatory frameworks, charging infrastructure, pilot training, and investment in research and development.

In this issue, we spotlight the innovators, technologies, and partnerships paving the way. From Eve Air Mobility's expanding presence in Brazil and the U.S., to Vertical Aerospace's record-setting wingborne flights in the UK, and Archer's CTOL-certified flight tests in the U.S., the race is on. We also reflect on what it will take for Africa to keep pace—and ultimately leapfrog—into this new era.

The electric horizon is no longer an abstract future. It's here, and it's time we all prepare for take-off.

IMAGE : ©World Airnews by Keith Laaks

HYDROGEN-ELECTRIC PROPULSION GAINS ALTITUDE: **PIONEERING PROJECTS SHAPE THE FUTURE OF CLEAN AVIATION**

As the aviation industry accelerates toward decarbonisation, hydrogen-electric propulsion is emerging as a powerful enabler of sustainable flight. Once a fringe concept, the combination of hydrogen fuel cells and electric drive systems is now a focal point for global aerospace R&D, with ambitious projects spanning from regional aircraft to eVTOL platforms and marine vessels. Driven by major investments and growing urgency to meet climate goals, the sector is advancing rapidly, with key players pushing prototypes toward flight testing and certification.

Here's a global snapshot of the most significant hydrogen-electric developments currently shaping the clean aerospace frontier:

UK Clean Aerospace R&D Initiative – £250 Million Boost

The United Kingdom has injected £250 million (~$340 million) into a nationwide clean aerospace R&D push, backing projects in liquid hydrogen infrastructure, fuel-cell systems, lightweight materials, and drag-reducing aircraft designs. Beneficiaries include Airbus, Rolls-Royce, startups, and leading academic institutions, creating a rich ecosystem of innovation intended to drive down emissions and advance certification pathways for next-generation propulsion.

IMAGE COURTESY OF: © GKN Aerospace

Next-Gen Aircraft Powered by Hydrogen and Electricity

1. **Electra.aero's EL9 Hybrid Aircraft (USA)**
   Backed by Lockheed Martin, this nine-seat regional aircraft uses a "blown lift" wing design and a hybrid-electric powertrain combining jet fuel and electric motors. Electra aims to enter service by 2029, offering a quieter, lower-cost solution for regional and special mission operations.
2. **Stralis Aircraft (Australia)**
   This Brisbane-based startup is retrofitting six-seater Beechcraft Bonanza aircraft with hydrogen-electric systems, and plans to scale up to 15–50 seat configurations with a projected 500 km range and ~50% lower emissions than conventional jet fuel.
3. **ZeroAvia's Regional Retrofit Programme**
   A standout in the hydrogen aviation space, ZeroAvia has flown hydrogen-electric versions of the Piper Malibu and Dornier 228, and aims to certify its ZA600 powertrain for the Cessna Caravan by 2025. A larger solution for aircraft like the Dash 8 Q400 is targeted for 2027, alongside the deployment of mobile liquid-hydrogen refueling systems.
4. **H3 Dynamics' Distributed H_2-Electric Nacelle**
   This modular prototype combines fuel cells, batteries, and electric motors into wing-mounted nacelles—a flexible design that can scale from 19 to 100-seat aircraft. The distributed architecture allows for incremental upgrades and integration across platforms.
5. **DLR BALIS 1.5 MW Testbed (Germany)**
   A joint effort by DLR and AVL, the BALIS demonstrator is a 1.5 megawatt hydrogen-electric propulsion rig aimed at commercial passenger aircraft. It includes fuel cells, H_2 storage, batteries, and full system integration for megawatt-class testing—critical for scaling up power output safely and efficiently.
6. **Airbus ZEROe – "Iron Pod" Propulsion System**
   Part of Airbus's bold ZEROe initiative, this project is testing a 1.2 MW hydrogen fuel-cell pod mounted on a modified A380 test platform. The company is targeting a full-scale hydrogen demonstrator by 2035, with system trials already underway in Germany.
7. **GKN Aerospace H2GEAR / H2FlyGHT (UK)**
   The H2GEAR and follow-on H2FlyGHT programmes aim to demonstrate liquid-hydrogen fuel-cell propulsion up to 2 MW by the end of the decade. This puts the UK in the race to produce medium-haul, hydrogen-electric aircraft with viable commercial potential.
8. **LuftCar HYDROB eVTOL (USA)**
   Designed for a 5,000 lb eVTOL, LuftCar's HYDROB system—developed in partnership with Bosch Aviation—uses a hybrid fuel cell and battery propulsion unit with a projected 500 mi range. The company is also laying the groundwork for hydrogen vertiport infrastructure.
9. **Hyfly Dornier Amphibious Aircraft (Germany)**
   Hyfly is retrofitting a Dornier Seawings DS 2C with a hydrogen-electric system. The aircraft has already flown using battery power, with hydrogen systems now being integrated to extend endurance and payload.

Advanced Battery Innovations Supporting Hybrid Aviation

- **NASA's Sulfur-Selenium Battery Prototype**
  This solid-state lithium battery, using a sulfur-selenium cathode, delivers around 500 Wh/kg, making it ~40% lighter than standard Li-ion cells. Its stackable architecture and high-temperature tolerance make it ideal for aviation.
- **Ion Storage Systems Ceramic Battery**
  Now in production in the U.S., this solid-state battery features a ceramic electrolyte, offering a 50% energy density boost and improved safety. Backed by Toyota Ventures and ARPA-E, it's gaining attention across aerospace applications.

Sector Trends and Outlook

Technology Area	Key Focus	Milestones & Projects
Hydrogen-electric aviation	Fuel cells + batteries	Electra EL9, ZeroAvia ZA600, HYDROB eVTOL
Distributed H_2 systems	Modular nacelles, scalable designs	H3 Dynamics, DLR BALIS
Aircraft battery innovation	Solid-state, ceramic architectures	NASA sulfur-selenium, Ion Storage Systems
Marine & eVTOL applications	Hybrids for sea & air mobility	Oceanvolt, LuftCar, Hyfly

- **Community-Driven Ultra-Light Batteries**
  Open-source and academic communities are experimenting with graphene-enhanced, lithium-air, and solid-state chemistries. These developments aim to support ultra-light power solutions critical for small UAVs, eVTOLs, and satellites.

Hydrogen Propulsion Expands into Marine Mobility
Oceanvolt (Finland)

This company is deploying hydrogen-electric and battery hybrid systems for coachboats and small vessels, combining fuel cells with lithium-ion batteries in modular systems such as Deep Blue.

Hydrogen Storage Challenges

Marine applications face hurdles in storing H_2—whether via liquid, high-pressure, LOHC, or metal hydride systems. Innovations in composite tanks and thermal insulation are helping to close the gap between feasibility and certification.

The race toward climate-compatible propulsion is accelerating. With major players like Airbus, ZeroAvia, GKN, and DLR pushing technological boundaries, hydrogen-electric propulsion is no longer theoretical—it's entering prototype testing, infrastructure planning, and certification phases. Meanwhile, next-gen battery systems and hybrid applications in marine and eVTOL environments are broadening the technology's impact.

With demonstrators like ZeroAvia's ZA600 approaching certification by 2025 and Airbus's ZEROe targeting the skies by 2035, the vision of clean, efficient, and scalable hydrogen flight is well within reach. Europe, the UK, the U.S., and Australia are each contributing vital elements to what may soon become the new global standard in aviation propulsion.

ELECTRA'S EL-9: REDEFINING REGIONAL AVIATION WITH ELECTRIC BLOWN-LIFT TECHNOLOGY

In the rapidly evolving landscape of sustainable aviation, few innovations have generated as much excitement and promise as Electra's EL9 hybrid-electric aircraft. This nine-passenger marvel combines revolutionary aerodynamics, hybrid-electric propulsion, and digital flight control into one cohesive vision for the future of regional and tactical aviation.

From the outset, Electra has focused on breakthrough performance, and at the heart of its innovation is the concept of blown-lift — a technique that dramatically amplifies lift at low speeds. By integrating eight electric motors along the leading edge of its wing, Electra's EL9 generates an accelerated airflow over large trailing-edge flaps, creating a thick jet sheet that virtually enlarges the wing. This allows the aircraft to safely take off and land at speeds as low as 35 knots, requiring only 150 feet of runway — a fraction of what's needed by conventional fixed-wing aircraft.

This capability isn't just theoretical. Recent wind tunnel testing conducted at MIT's Wright Brothers Wind Tunnel has validated the performance of Electra's blown-lift design. Using a 20% scale model of the EL9 wing, engineers confirmed lift coefficients more than seven times greater than conventional wings. These unprecedented results pave the way for safe operations from austere locations, including remote airstrips, grass fields, and urban rooftops.

"*The EL9's optimized wing design is both transformative and practical*," said Chris Courtin, Electra's Director of Technology Development. "*This is a major milestone in demonstrating the EL9's ability to take off and land in spaces never before possible for fixed-wing aircraft.*"

Hybrid-Electric Efficiency and Flexibility

Electra's propulsion system is just as innovative as its aerodynamics. The EL9 uses a hybrid-electric configuration, pairing a turbogenerator with battery packs. The turbogenerator — tuned for efficient cruise performance — provides consistent power, while the battery supplies bursts of additional energy for takeoff and landing. This strategy enables significant reductions in fuel burn and maintenance costs while maintaining operational flexibility.

Crucially, the EL9 doesn't rely on airport charging infrastructure. Its onboard generator can recharge the battery in flight, or operators may opt for ground charging where infrastructure exists. The aircraft supports 100% sustainable aviation fuel and is future-ready for eFuels or hydrogen, making it a long-term solution in the race toward zero-emissions aviation.

Precision Through Fly-by-Wire Control

Operating at the edge of performance envelopes demands a control system capable of seamless complexity management. Electra has equipped the EL9 with a triplex redundant fly-by-wire system that automates coordination between flight control surfaces and the aircraft's eight electric motors. This digital control ensures safety and reliability, especially in slow-speed regimes and confined operating spaces.

Strategic Partnerships and Global Impact

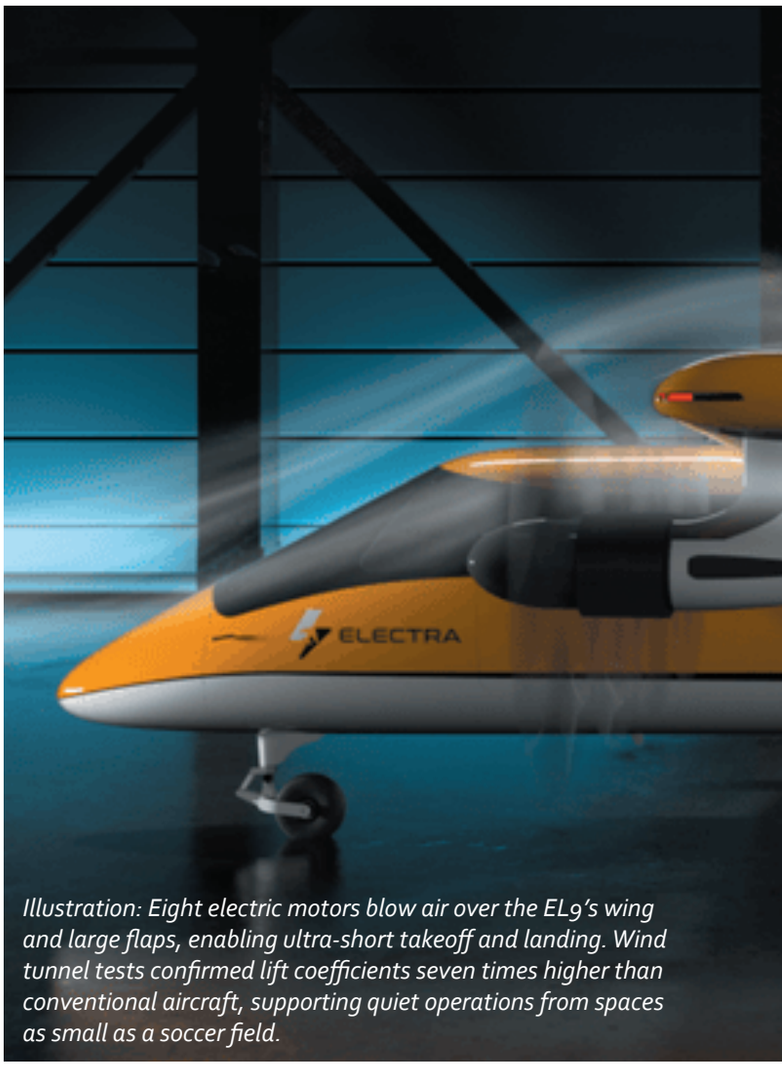


Illustration: Eight electric motors blow air over the EL9's wing and large flaps, enabling ultra-short takeoff and landing. Wind tunnel tests confirmed lift coefficients seven times higher than conventional aircraft, supporting quiet operations from spaces as small as a soccer field.

In June 2025, Electra deepened its partnership with aerospace giant Lockheed Martin, signing a Memorandum of Understanding to advance development of the EL9. The agreement covers collaboration in manufacturing, digital engineering, supply chain management, and potential global defense applications.

"*Lockheed Martin's breadth of manufacturing, supply chain and military customer expertise is the perfect complement to Electra's EL9 commercialization strategy*," said Marc Allen, CEO of Electra. "*This relationship will accelerate our speed to market to bring the EL9's transformative capabilities to our military customers*."

Lockheed Martin's Skunk Works® division and Electra are now exploring potential programs of record with the U.S. Department of Defense and international customers. Use cases under evaluation include last-mile logistics, mobile power generation, and emergency response, all powered by the EL9's unique blend of ultra-short takeoff and landing (Ultra-STOL), range, payload, and low acoustic footprint.

A Vision for Direct Aviation

Electra refers to its future-forward concept as "Direct Aviation" — offering travelers and cargo operators the ability to skip the congestion of major hubs and operate point-to-point. With a range of over 1,000 miles and a payload capacity of over a 1000 pounds, the EL9 is poised to serve hard-to-reach communities, fly into noise-sensitive airports, and revolutionize logistics for both civilian and military operations.

Already, Electra has logged over 2,200 pre-orders from more than 50 operators globally, a pipeline valued at over $10 billion. With first flight of the production-configured EL9 planned for 2027 and FAA Part 23 certification anticipated in 2029, the momentum behind this aircraft is undeniable.

Toward a Sustainable Future

Electra's ambitions go beyond regional mobility. In collaboration with institutions like the Massachusetts Institute of Technology and the University of Michigan, the company is actively exploring how the principles behind the EL9 can scale to larger transport aircraft — a potential game-changer for the decarbonization of global aviation.

As the aerospace industry redefines what's possible, Electra stands at the cutting edge, proving that sustainable innovation doesn't have to compromise

IMAGE COURTESY OF: © ELECTRA

DIGITAL INFRASTRUCTURE AND CYBERSECURITY IN THE AGE OF eVTOL AND UAV

As the aviation industry embraces the rise of electric vertical take-off and landing (eVTOL) aircraft and unmanned aerial vehicles (UAVs), the spotlight is shifting from hardware and airframes to an equally critical layer of this airborne ecosystem: digital infrastructure and cybersecurity.

From high-speed connectivity to data encryption and fail-safe command protocols, the backbone of the air mobility revolution will be as digital as it is aerodynamic. The success of urban air mobility (UAM) depends not just on how high or fast these aircraft can fly—but on how securely and intelligently they're connected.

Real-Time Connectivity: The Role of 5G, 6G, and Satellites

Autonomous and remotely operated aircraft require continuous communication with ground control stations, fleet management systems, air traffic controllers, and other aircraft. These links must be ultra-reliable, low-latency, and high-bandwidth to support:

- Live telemetry and health monitoring
- Command and control signals

IMAGE COURTESY OF: ©NASA

- Sensor fusion and navigation updates
- Obstacle avoidance and collision alerts
- Live video feed in surveillance UAVs
- Real-time monitoring and predictive maintenance

5G networks are already being piloted in some urban air corridors to deliver this level of performance, offering latencies as low as 1 ms and speeds above 1 Gbps. However, coverage gaps—especially in rural or mountainous areas—limit full reliance on 5G.

Looking ahead, 6G technology, expected to emerge commercially by the 2030s, promises to enhance coverage with terahertz wavebands, AI-driven routing, and edge computing—enabling even more resilient data pathways. Until then, many operators will depend on hybrid models combining cellular, Wi-Fi, and low-Earth orbit (LEO) satellite communications, especially for beyond-visual-line-of-sight (BVLOS) operations.

Cybersecurity: A Non-Negotiable Priority

The same digital connectivity that empowers eVTOLs and UAVs also exposes them to cyber threats. Without robust protection, these aircraft could become vulnerable to:

- **GPS spoofing**: Hijacking navigation systems with false location data
- **Command hijacking**: Gaining control of an aircraft via unsecured control channels
- **Denial of Service (DoS)**: Overwhelming onboard systems to disable operations
- **Data interception**: Eavesdropping on communication streams or surveillance payloads

Such attacks don't just endanger aircraft—they compromise public safety, operational trust, and national security.

To defend against this, manufacturers and operators are investing in multi-layered cybersecurity architectures, including:

- End-to-end encryption of command and telemetry links
- Authentication protocols to verify pilots, drones, and ground stations
- Real-time intrusion detection systems that monitor for anomalies
- Redundant control links and autonomous emergency protocols in case of compromise

Leading eVTOL developers now treat cyber resilience as a design imperative, with cybersecurity testing integrated into certification and operational validation.
Regulatory and Industry Collaboration

Global aviation bodies, including ICAO, EASA, and FAA, are beginning to define frameworks for Digital CNS (Communication, Navigation, Surveillance) and UTM (UAV Traffic Management) systems that are cyber-secure by design. In parallel, national cybersecurity agencies are working to embed aviation into broader critical defence infrastructure strategies.

In Africa, where digital networks vary in reliability, the focus is on interoperable systems, localized fail-safes, and partnerships with telecom providers to ensure that UAM can operate safely across borders and bandwidths.

The Connected Sky: A New Frontier

As skies grow more connected and populated with autonomous aircraft, airspace will become a living, breathing network of machines, data, and decisions. The line between aviation and information technology is blurring—and cyber readiness is no longer optional.

In the race to electrify, automate, and elevate urban and regional transport, those who build secure, scalable digital infrastructure will lead. Trust in the system will depend not just on elegant aircraft or quiet rotors—but on invisible safeguards behind every flight.

EVE AIR MOBILITY AND FUTURE FLIGHT GLOBAL JOIN FORCES TO EXPAND eVTOL OPERATIONS IN THE AMERICAS

Eve Air Mobility, the advanced air mobility subsidiary of Embraer, continues to make headlines in the evolving eVTOL landscape. On June 18, 2025, the company signed a Letter of Intent (LOI) with Future Flight Global (FFG) for the potential purchase of up to 54 electric Vertical Take-Off and Landing (eVTOL) aircraft. This strategic move further reinforces Eve's ambitious global rollout, particularly targeting high-demand markets in Brazil and the United States.

Headquartered in Washington, D.C., Future Flight Global is recognised as a pioneer in the integration of next-generation electric aircraft across varied mission profiles. The partnership signals a shared commitment to delivering sustainable and scalable urban air mobility solutions in cities grappling with growing traffic congestion and demand for faster, greener transport options.

"*This collaboration with Future Flight Global is a significant step forward for Urban Air Mobility in the Americas,*" said Megha Bhatia, Chief Commercial Officer at Eve Air Mobility. "*By leveraging Eve's proven eVTOL technology and robust certification process, Future Flight Global gains a powerful platform to deliver efficient, sustainable air travel in high-demand markets such as Brazil and the United States.*"

The agreement is the latest in a series of LOIs that Eve has secured with a range of partners—from global airlines to regional air transport specialists and urban mobility innovators. With the support of Embraer's 55-year legacy in aircraft design and certification, Eve's eVTOL aircraft is engineered to meet the needs of a wide range of operators. Future Flight Global's operational expertise, particularly in Brazil, will be instrumental in expanding Eve's already substantial footprint in Latin America.

"*We are building a diversified electric aircraft fleet for global deployment across multiple mission profiles,*" said Karan Singh, CEO of Future Flight Global. "*Eve's aircraft—rooted in Embraer's history—checks every box: strong performance parameters, passenger-first ergonomics, clear certification pathway, and scalable production system.*"

The timing of this agreement aligns with Eve's recently published Global Market Outlook, which highlights a projected surge in demand for urban air mobility solutions over the next two decades. Urbanisation, road congestion, and the need for faster intra-city and inter-city transport are key trends driving this shift. Eve and FFG's partnership exemplifies the kind of industry collaboration required to bring this vision to life.

Eve's aircraft is currently undergoing a comprehensive certification process, with the support of Brazil's National Civil Aviation Agency (ANAC). Once

IMAGE COURTESY OF: ©EVE AIR

certified, the deployment of these aircraft will begin in Brazil before expanding to other high-density urban corridors in the U.S. and beyond.

As part of its broader strategy, Eve is not only developing an eVTOL vehicle but is also building a robust services and support network and a proprietary Urban Air Traffic Management (UATM) system—critical elements in enabling safe and efficient operations in complex city airspaces.

This agreement between Eve Air Mobility and Future Flight Global represents more than a fleet expansion—it is a step towards the commercial realisation of cleaner, faster, and more accessible air transport.

About Eve Air Mobility

Eve is focused on accelerating the Urban Air Mobility ecosystem through an advanced eVTOL project, a global services and support network, and unique air traffic management solutions. Backed by Embraer and listed on the New York Stock Exchange (NYSE: EVEX), Eve combines a start-up spirit with deep aerospace expertise. Learn more at *www.eveairmobility.com*.

About Future Flight Global

Future Flight Global (FFG) delivers sustainable and innovative mobility solutions through the adoption and deployment of advanced air transportation technologies. The company is committed to reshaping the aviation landscape as part of the third aerospace revolution. Learn more at *www.ffg.aero.*

MIDNIGHT TAKES FLIGHT: ARCHER SHOWCASES PILOTED OPERATIONS IN NEXT PHASE OF TEST PROGRAM

Archer Aviation continues to scale new heights in the urban air mobility race, announcing a major milestone on June 2 with the commencement of the next phase of flight testing for its flagship eVTOL aircraft, Midnight. The highlight? A successful piloted flight, showcasing not only the aircraft's vertical take-off and landing credentials, but also its capabilities in conventional take-off and landing (CTOL) operations—an increasingly vital factor in real-world air mobility scenarios.

The recent flight, conducted with Archer Chief Test Pilot Jeff Greenwood at the controls, marks a pivotal transition from autonomous testing to crewed demonstration flights. Greenwood, a former Bell Textron test pilot and United States Marine Corps aviator, praised Midnight's performance, commenting, *"Flying Midnight felt just like flying the simulator—everything responded exactly as we trained for, which is exactly what you hope for during a test flight."*

Archer's Chief Executive Officer and founder, Adam Goldstein, echoed the sentiment. *"Midnight's VTOL and CTOL capabilities are a strong differentiator for us," he said. "They are critical for delivering an aircraft that can integrate into a wide range of operational scenarios while also providing enhanced safety."*

Conventional Capabilities in a Vertical World

While eVTOL development has largely focused on vertical lift, Archer is setting its sights wider. With the ability to perform conventional take-offs and landings, Midnight offers greater operational flexibility—a feature highly valued by regulators and both civil and defence customers alike.

This current phase of testing evaluates precisely that: the robustness of the aircraft's landing gear and its aerodynamic performance during CTOL operations. During the recent flight, Midnight reached speeds of 125 mph and climbed to over 1,500 feet above ground level, executing a smooth conventional landing that showcased the versatility of Archer's 12-tilt-6 propeller configuration.

Building on Years of Autonomous Data

Archer's piloted flight builds upon years of data and insights gathered through autonomous testing across its various platforms. This cumulative knowledge has shaped the final architecture of Midnight, designed not only for safety but also for seamless human-machine interaction. Greenwood, who joined Archer in 2021,

played a critical role in cockpit development—an effort evident in the aircraft's smooth handling during the test.

Dual Market Certification in Sight

The aircraft's certification roadmap includes regulatory approval for operations in both the United States and the United Arab Emirates, with Archer's strategic efforts aligned to meet commercial readiness in both regions. This dual-market focus reflects the global appetite for next-generation air mobility solutions that are reliable, efficient, and scalable.

Looking ahead, Archer's test team will continue evaluating key flight characteristics including control responsiveness, system stability, and model validation—all essential to achieving final certification and unlocking commercial deployment.

About Archer

Based in California and listed on the NYSE under the ticker ACHR, Archer Aviation is developing the aircraft and technologies set to define the future of urban flight. With Midnight as its centrepiece, the company's goal is to revolutionise how people move in and around cities—safely, sustainably, and at scale. For more information, visit *www.archer.com*

This article was compiled from official information released by Archer Aviation. Forward-looking statements are subject to regulatory filings and market risks.

Archer Chief Test Pilot Jeff Greenwood prepares for landing after a successful CTOL flight.

IMAGES COURTESY OF: ©ARCHER AVIATION

Your need is our passion

We provide a safe and reliable Air Service using the following aircraft:

- L410 & L420
- B200
- B1900
- DASH 8

Getting you there

- Safely
- Reliably
- Comfortably
- Cost Effectively

Training

AIR-TEC has the only approved L410 - FNPT 2 Simulator in the Southern Hemisphere. Our Flight Training Team is able to customize and structure every course to our customer's specific requirements.

For more information on Air-Tec contact us on: +230 467 55 59 | sales@air-tecm.com | www.air-tecm.com
Head Office Address: 111, Ebene Junction, Rue de la Démocratie, Ebene, Mauritius

25	L410
3	B200
9	B1900
1	DASH 8

AIRTEC GLOBAL

FRANCE'S H3 DYNAMICS AND XSUN JOIN FORCES TO PIONEER WORLD'S FIRST SOLAR-HYDROGEN-ELECTRIC UAV

In a bold move that could redefine unmanned aerial systems (UAS) as we know them, a French and a Singapore aerospace company—H3 Dynamics and XSun—have announced a strategic partnership to develop the world's first solar-hydrogen-electric unmanned aerial vehicle. The collaboration brings together H3 Dynamics' advanced hydrogen fuel cell systems and XSun's expertise in solar-electric UAS technology, with the goal of creating a next-generation aircraft that can operate with unprecedented efficiency and endurance.

Based in Toulouse and La Roche-sur-Yon respectively, both companies are working on a unique "tri-brid" propulsion architecture. The system will intelligently combine solar power, hydrogen fuel cells, and battery storage—with a smart power management system that continuously optimises energy flow throughout flight.

While ultra-thin solar cells integrated into the wings supply clean energy during daylight hours, batteries will handle peak loads such as takeoff, and a miniaturised hydrogen fuel cell system will serve as the primary power source during cruise. This energy strategy—akin to an airborne microgrid—will allow heavier UAVs with VTOL, STOL or HTOL configurations to fly longer distances, stay aloft for extended missions, and navigate effectively at lower altitudes.

0.4MW Hydrogen Breakthrough: H3 Dynamics Launches Aero-Compliant AEROCELL®

The XSun partnership comes on the heels of a major announcement from H3 Dynamics. On 14 November 2024, the company unveiled its AEROCELL® 400kW fuel cell stack, the most powerful aero-compliant hydrogen fuel cell system ever developed. This new system delivers twice the power of any other single PEM fuel cell currently available and represents a key leap forward in the pursuit of zero-emission aviation.

Designed specifically to meet stringent aerospace standards, the AEROCELL® 400kW is compact, lightweight, and scalable. Just three units can provide more than 1.2 megawatts of power, enough to support propulsion for a medium-sized passenger aircraft.

IMAGES COURTESY OF: ©H3 DYNAMICS

Compared to existing solutions, the system can reduce total powertrain weight by as much as 50%, making it possible for aircraft to carry more payload or extend their range without compromising efficiency.

H3 Dynamics has engineered this technology to operate across a variety of altitudes and mission profiles.

The modular design is suited for both single-stack and multi-stack configurations, enabling deployment across eVTOLs, light jets, regional aircraft, and larger platforms in the 50–100 seat range. The company has also made significant progress in system integration, thermal management, and power density by incorporating advanced materials and compact balance-of-plant designs.

Accelerating Towards Certification and Production

Headquartered in Toulouse—the heart of Europe's aerospace industry—H3 Dynamics is deeply involved in shaping the future of hydrogen aviation. The company is an active member of the Alliance for Zero Emission Aviation (AZEA) under the European Commission and is participating in EUROCAE's WG-80 working group on aviation standards and certification.

H3 Dynamics plans to launch aviation-certified production of its AEROCELL® fuel cell range, including the new 400kW unit, in France by the end of 2025. The full product family now spans from 50kW to 400kW, addressing a wide spectrum of aviation applications—from small unmanned systems to regional passenger aircraft.

"*There is a significant requirements and certification gap between off-the-shelf fuel cell systems available on the market today, and what is expected from the aerospace sector*," said Taras Wankewycz, CEO of H3 Dynamics. "*We are now beyond the technology validation stage, and we are setting up a new European value chain within the zero-emission hydrogen aviation industry.*"

An Eye on the Future: Hydrogen and Solar Take Flight

The partnership between H3 Dynamics and XSun marks a crucial convergence of three green energy technologies—solar, hydrogen, and batteries—into a single aircraft platform. The result promises to dramatically extend flight endurance and operational range for unmanned aerial systems, all while operating with zero emissions.

With the rollout of aero-compliant hydrogen systems, and a pioneering UAV on the horizon, both companies are helping to shape a more sustainable future for aerospace—pushing the boundaries of what clean flight can achieve.

About H3 Dynamics

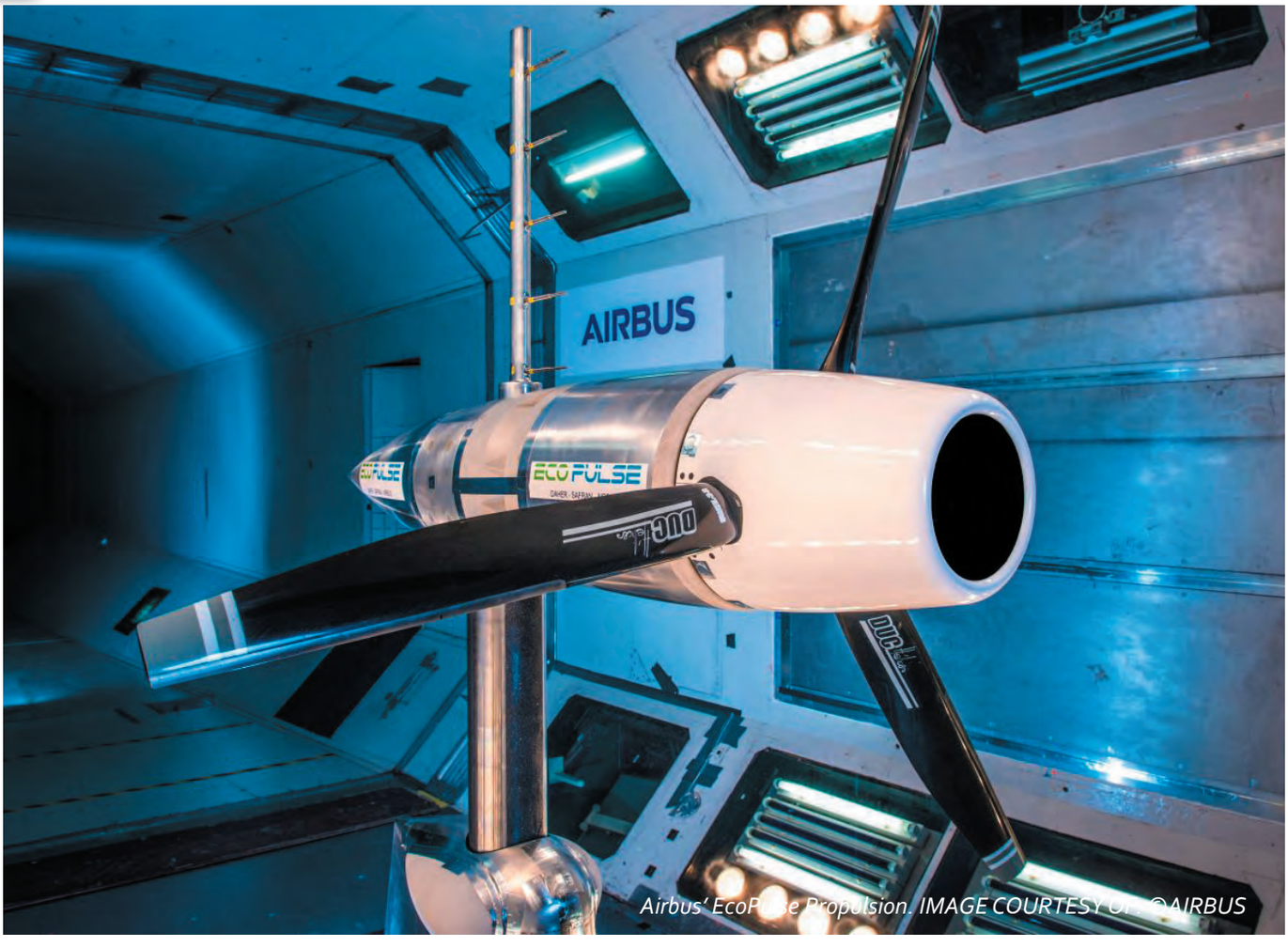
Founded in 2015, H3 Dynamics develops hydrogen fuel cell power systems designed specifically for aviation.

From unmanned aerial vehicles to regional aircraft, its technologies are bridging the gap between hydrogen innovation and aerospace safety, integration, and certification. The company is active across global aerospace certification bodies and alliances, and continues to expand its influence across Europe and beyond.

Learn more at: *www.h3dynamics.com*

About XSun

XSun is a global leader in solar-electric unmanned aerial systems. Based in France, the company designs autonomous, ultra-light, solar-powered drones capable of conducting long-endurance missions for environmental monitoring, security, mapping, and more.



Airbus' EcoPulse Propulsion. IMAGE COURTESY OF ©AIRBUS

HOW SAFE ARE LITHIUM BATTERIES IN AVIATION? A LOOK AT THEIR EVOLVING ROLE IN HYBRID AIRCRAFT

As the aviation industry intensifies its pursuit of decarbonisation, the focus on electrification has turned a spotlight on the energy source at its heart: lithium batteries. From drones and urban air mobility (UAM) to hybrid-electric regional aircraft, the safe and effective use of these batteries is vital to aviation's green future. But how safe are they, and how far have we come in integrating them into commercial use?

Understanding Lithium Battery Safety

Lithium-ion (Li-ion) batteries power everything from smartphones to electric vehicles. In aviation, their appeal lies in their high energy density and low weight. But this same chemistry can lead to catastrophic failures if mishandled, overcharged, or damaged.

One of the greatest risks is thermal runaway—a chain reaction that causes overheating, fire, and sometimes explosion. This phenomenon can result from internal short circuits, overcharging, mechanical damage, or external heat.

According to the FAA, there were over 50 lithium battery-related incidents on US aircraft in 2022 alone, mostly involving consumer devices in passenger luggage. While stringent packaging, containment, and training standards have reduced risks, the safety debate remains active as we scale battery systems for propulsion.

Aviation-Specific Challenges

- Certification barriers: Certifying battery systems for commercial aviation requires compliance with standards such as RTCA DO-311A and EUROCAE ED-248, addressing containment, venting, and fire suppression.

- Weight–energy trade-off: Current battery systems must deliver high power while remaining lightweight—an ongoing engineering dilemma.
- Thermal management: Preventing overheating is critical, particularly in enclosed aircraft environments.
- To mitigate risks, OEMs like Airbus, Embraer, and Rolls-Royce have invested in advanced cooling systems, cell monitoring, and modular battery architectures in prototypes such as the EcoPulse and eVTOL platforms.

Enter Lithium-Sulfur: The Lyten Breakthrough

While lithium-ion dominates today, lithium-sulfur (Li-S) is emerging as a safer, lighter, and more sustainable alternative. Leading this charge is Lyten, a US-based company developing 3D Graphene-enabled lithium-sulfur batteries with game-changing characteristics:

- Energy density: Up to twice that of traditional Li-ion batteries.
- Weight savings: Up to 50–75% lighter due to the absence of heavy metals like cobalt and nickel.
- Cycle performance: Over 3,000 cycles demonstrated in aerospace-grade cells.
- Safety profile: Li-S batteries are less prone to thermal runaway and are intrinsically safer due to their chemistry.
- Sustainability: Made from abundant sulfur and lithium, with a carbon footprint up to 60% lower than conventional batteries.

In May 2025, Lyten showcased its battery in a high-endurance drone flight exceeding three hours and is targeting up to eight hours. In 2025, Li-S cells are also scheduled for on-orbit testing aboard the International Space Station, highlighting aerospace readiness.

Lyten's domestic supply chain—free of China-dependent materials—gives strategic credibility, especially for defence and aviation applications. A new $1 billion gigafactory is planned in Nevada, targeting 10 GWh production annually by 2032, with first output in 2027.

"Lithium-sulfur could enable aircraft designers to significantly reduce weight while increasing range—a key barrier in hybrid and electric aviation," says Dan Cook, Lyten CEO.

Current Use in Hybrid and Electric Aviation

- UAM & eVTOL: Companies like Joby Aviation, Vertical Aerospace, and Archer are already using Li-ion batteries with high-density chemistries like NMC (nickel manganese cobalt), but are closely watching Li-S developments.
- Hybrid prototypes: Ampaire, ZeroAvia, and VoltAero are testing hybrid-electric aircraft that could benefit from lighter batteries for range extension and propulsion assist.
- Auxiliary systems: Batteries are increasingly used for non-propulsion roles such as emergency power, air conditioning, and electric taxiing.

While lithium-sulfur is not yet powering commercial hybrid aircraft, its current application in drones, satellites, and space experiments is narrowing the gap.

Safety Advancements & Outlook

Manufacturers and regulators have made significant progress in improving lithium battery safety in aviation:

- Real-time monitoring of cell health and temperature.
- Enhanced thermal management with phase change materials.
- Redundant protection systems to detect and isolate faulty cells.
- Improved packaging standards, including UN 38.3 and IEC testing.

The future promises even more resilient designs as newer chemistries like solid-state lithium, sodium-ion, and Li-S gain traction.

A Safe Flight Path Ahead?

Lithium batteries are not without risks—but advances in materials science, system engineering, and regulation are making them safer by design. The evolution of lithium-sulfur technologies, particularly from companies like Lyten, indicates that the next decade will likely bring safer, lighter, and more sustainable batteries to the skies.

For hybrid-electric aviation to thrive, continued progress in battery safety and performance is non-negotiable. But with new chemistries now airborne—from drones to orbit—we are already flying into the future.

NASA'S SULFUR–SELENIUM SOLID-STATE BATTERY: CHARTING A NEW COURSE FOR ELECTRIC AVIATION

The world of electric flight demands bold innovation, and NASA's latest development may be the breakthrough the aviation sector has been waiting for. As part of its SABERS initiative—Solid-state Architecture Batteries for Enhanced Rechargeability and Safety—NASA has unveiled a prototype battery that promises to reshape the landscape of airborne energy storage.

Unlike traditional lithium-ion batteries, which are heavy, flammable, and reliant on liquid electrolytes, this new sulfur–selenium solid-state battery delivers superior energy density, safety, and thermal performance—essentials for the unique demands of aviation.

Developed as a lithium-metal solid-state system, the battery uses a sulfur–selenium cathode paired with a lithium-metal anode and demonstrates performance figures that push the boundaries of today's battery technology.

A New Benchmark in Energy Density

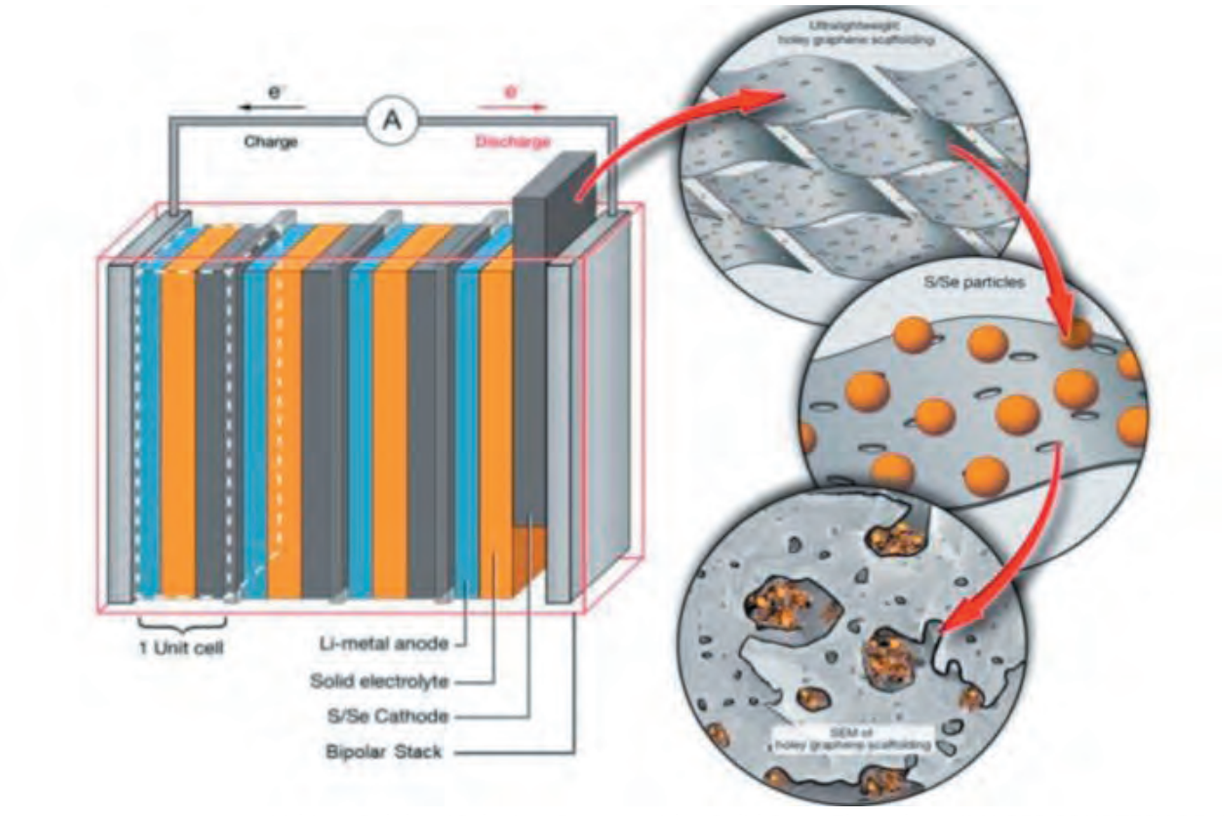
The sulfur–selenium battery developed under SABERS achieves a gravimetric energy density of approximately 500 Wh/kg at moderate discharge rates (~0.4 C)—nearly double that of conventional lithium-ion systems.

When pushed to higher discharge rates (~1 C), critical for takeoff and climb phases of flight, the battery retains exceptional performance, with energy densities reaching up to 800 Wh/kg. This breakthrough not only reduces battery weight but enhances output—unlocking new potential for electric vertical take-off and landing (eVTOL) aircraft and short-haul electric planes.

Innovations That Lift the Bar

At the core of this battery's performance are several technical advancements:

- **Sulfur–selenium cathode with holey graphene**: The cathode is engineered on a graphene scaffold, enhancing conductivity while maintaining structural lightness. Selenium augments the cathode's stability, solving common degradation issues seen in sulfur-only systems.
- **Solid-state electrolyte with casing-free stacking:** With no flammable liquids, the battery boasts inherent thermal stability and safety, tolerating punctures and elevated temperatures. The unique design allows stackable cells without individual casings, reducing system weight by an estimated 40% and simplifying cooling requirements.
- **Rapid discharge capabilities:** The SABERS battery



Lithium-Sulphur / Selenium Battery with a Solid-State Electrolyte. IMAGES COURTESY OF: ©NASA

delivers power 10× faster than earlier solid-state batteries—a critical requirement for high-energy operations like rapid ascent and emergency manoeuvres in electric aircraft.

Ready for the Sky?

The implications for aviation are compelling:

- **Extended range**: Aircraft such as Archer's Midnight could see operational ranges expand from ~100 miles to over 200 miles, greatly improving commercial viability and mission flexibility for eVTOLs.
- **Enhanced safety**: The battery's non-flammable solid-state design reduces fire risk, strengthening safety credentials and easing future certification hurdles.
- **Thermal efficiency**: Operating at roughly double the temperature of current lithium-ion batteries, the design eliminates the need for bulky, complex thermal management systems—cutting weight and improving energy efficiency.
- **Economic trajectory:** While the prototype battery is still costly—currently estimated at $300–500/kWh—NASA projects a significant reduction in cost to $80–120/kWh by 2035, bringing it in line with advanced aviation-grade lithium-ion packs.

Hurdles to Commercial Flight

As promising as the SABERS battery is, several challenges remain on the flight path to widespread adoption:

- **Scaling production:** The innovative use of selenium and holey graphene presents manufacturing challenges. Scaling up from lab-scale prototypes to full-size aviation modules will require new processes and infrastructure.
- **Material supply:** Selenium's global availability is limited, with supply chains largely concentrated in a few regions, posing potential bottlenecks for mass production.
- **Commercial readiness:** Currently built as coin-cell and pouch prototypes, the design must evolve into robust, aviation-standard modules to meet industry requirements.
- **Regulatory certification:** NASA is working closely with the FAA and international regulatory bodies to define certification pathways—a critical step before real-world deployment.

The Future Is Light, Safe, and Electric

With its sulfur–selenium battery, NASA is pioneering a new class of solid-state power systems tailor-made for the sky. This battery doesn't just meet the performance thresholds demanded by electric aircraft—it redefines them. If SABERS continues to meet and exceed its developmental goals, it could catalyse the next phase of sustainable aviation—enabling longer, safer, and more efficient electric flights.

For now, all eyes remain on NASA's Glenn Research Center and the SABERS team, whose work may soon power the quiet revolution in the skies.

LUFTCAR'S HYDROB eVTOL: FUEL-CELL PROPULSION MEETS MODULAR MOBILITY

As the race to decarbonise the skies intensifies, LuftCar is carving a unique path in the advanced air mobility (AAM) space. The Florida-based company is pioneering a hydrogen-powered, modular eVTOL (electric vertical takeoff and landing) concept that merges air and road mobility with a bold zero-emissions vision. At the core of this innovation is HYDROB—a hybrid hydrogen fuel-cell and battery propulsion system—and an integrated vertiport ecosystem known as LuftPad.

HYDROB: Hybrid Hydrogen Propulsion for eVTOLs

LuftCar's green propulsion strategy is centred around the HYDROB module, developed in collaboration with Bosch Aviation and automotive fuel-cell experts. This hybrid system merges a high-energy-density hydrogen fuel cell with a high-power-density battery, forming a compact, aviation-grade power unit capable of lifting eVTOL aircraft up to 8,500 lb (3,850 kg). HYDROB targets a range of 500 miles (800 km), setting it apart from most electric air mobility solutions.

Founder Santh Sathya brings deep automotive fuel-cell experience to the table, having contributed to the development of over 300 fuel-cell vehicles at Ford. The transition of these technologies into a lightweight aviation configuration speaks to the system's adaptability and scalability. HYDROB supports both liquid and gaseous hydrogen, accommodating diverse hydrogen refuelling infrastructures and enhancing deployment flexibility.

Designed with modularity in mind, HYDROB is not restricted to LuftCar's proprietary vehicles. The system is intended for broader adoption, with potential for licensing to other eVTOL OEMs—signalling LuftCar's ambition to become a propulsion supplier as well as a vehicle developer.

LuftPad: Building the Hydrogen Ecosystem

LuftCar is not stopping at airframes. The company's LuftPad vertiports are designed to create a fully integrated hydrogen mobility ecosystem—combining air, road, marine, and stationary utility applications.

LuftPad facilities will offer on-site hydrogen generation, scalable from 20 kg/day for smaller users to multi-tonne capacity for regional transport. These multimodal hubs are being established in partnership with PowerTap Hydrogen Fueling Corp., with initial

installations targeted for Connecticut, New Jersey, and Massachusetts.

The LuftPad network has attracted support from the U.S. Department of Energy through hydrogen hub funding programmes. These sites are envisioned as more than refuelling stations—they're hydrogen infrastructure anchors that support job creation, energy resilience, and the widespread adoption of clean mobility.

The Flying Forklift: A Modular Mobility Platform

LuftCar's flagship eVTOL vehicle—dubbed the "flying forklift"—is a modular, dual-mode transport solution that operates both on the road and in the air. Designed for autonomous operation and high versatility, the air module docks to a four-seat ground chassis, enabling seamless transition from road to flight.

With cruising speeds of up to 217 mph (350 km/h) and an airborne range of 273–483 km, the system is suited to multiple mission profiles:

- Cargo logistics and last-mile delivery, especially in remote or disaster-stricken areas
- Emergency medical response and humanitarian airlift operations
- Defence logistics, including ship-to-shore resupply missions
- Regional passenger travel, easing pressure on urban infrastructure
- Search and rescue, assisting in search and rescue operations.

The modularity extends globally. In Germany, LuftCar has signed MOUs for vertiport development at regional airports, while in the Philippines, it is partnering with eFrancisco to adapt its detachable airframe to a van chassis, enabling regional intercity operations with up to 300-mile range.

Funding, Flight Testing and Future Rollout

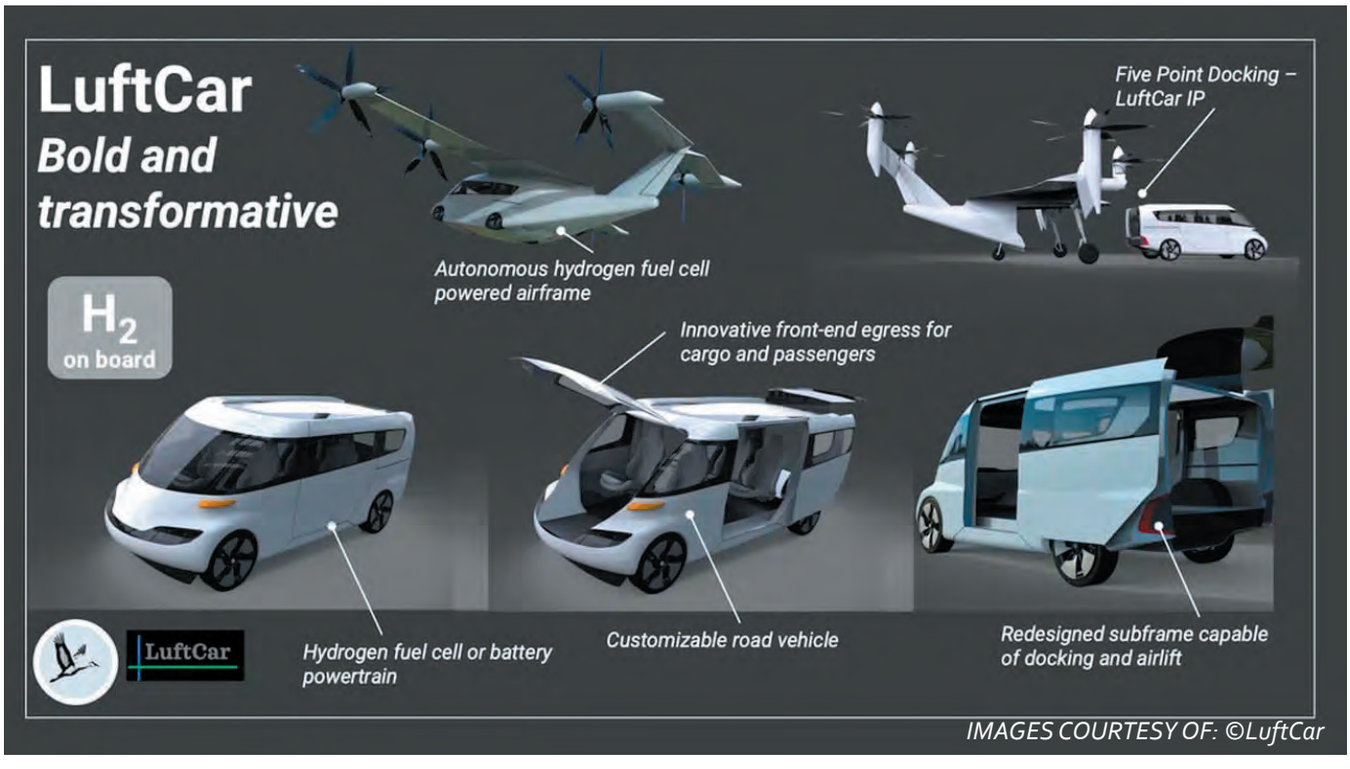
LuftCar's roadmap is as ambitious as its technology. Backed by a $100 million Series A term sheet, the company plans to build a two-seat proof-of-concept model, followed by a five-seat commercial variant. Key milestones on the horizon include:

- 2025–26: Certification and flight demonstrations of HYDROB-equipped aircraft
- 2026–27: First LuftPad hydrogen hubs come online
- 2027 onward: Global rollout across defence, emergency, logistics, and personal mobility sectors
- With operational footprints in the U.S., Germany, and Dubai, LuftCar is strategically positioned for international expansion.

A Convergent Vision for Clean Mobility

LuftCar's integrated approach—bringing together fuel-cell propulsion, modular vehicle design, and hydrogen infrastructure—represents a holistic vision for the future of air and ground transport. In contrast to other players focusing narrowly on urban air mobility, LuftCar is building a scalable, long-range solution tailored to diverse applications and geographies.

By addressing both the energy source and its application across transport modes, LuftCar is not just developing an aircraft—it is laying the foundation for a hydrogen-powered mobility future. As clean propulsion technologies mature and the regulatory landscape adapts, LuftCar's technical depth and strategic partnerships may well give it the lift it needs to lead the next era of sustainable aviation.



IMAGES COURTESY OF: ©LuftCar

magniX LAUNCHES NEXT-GEN SAMSON BATTERY WITH 400 WH/KG CELL

magniX, the pioneering force behind electric aviation propulsion, has unveiled the next evolution in aviation battery technology with the announcement of its new 400 Wh/kg cell, developed in collaboration with its cell partner. This high-energy-density cell will power the next generation of the company's Samson battery product, significantly expanding the capabilities of electric aircraft and opening new markets across defense, industry, marine, and energy storage.

The milestone was announced at the Paris Air Show, where magniX is exhibiting its full electric aircraft powertrain alongside a model of the HeliStorm—its advanced electric propulsion engine for helicopters. The breakthrough underscores magniX's expanding leadership in electrified aviation and high-performance battery innovation.

The 400 Wh/kg energy density achieved by the new Samson battery cell offers transformative benefits for electric aviation. It enables longer flight ranges and greater payload capacities—two critical factors in the commercial viability of electric aircraft. At the same time, it enhances the value of magniX's battery solutions in adjacent sectors that require lightweight, high-capacity energy systems.

"*This significant breakthrough in energy density will extend the range and payload of electric aircraft, further enhancing the strong commercial case for electric flight*," said Reed Macdonald, CEO of magniX.
"*It also widens the use cases for our battery technology across several non-aerospace applications.*"
Chief Technology Officer Riona Armesmith added, "*Achieving this breakthrough is a major step forward in one of the world's most important areas of technology. Our Samson battery product is becoming the go-to choice not only for aerospace but for high-end applications that require exceptional energy density, safety, reliability, and longevity.*"

Performance, Safety, and Versatility

Originally launched in June 2024, the Samson300 was the first in a family of battery systems engineered by magniX to meet the unique demands of aviation. Built on the company's deep experience in electric flight, Samson batteries deliver unmatched energy density and cycle life, paired with patented safety features critical to aircraft certification and performance.

These batteries are designed with integration in mind. Their flexible voltage configuration and modular design make them ideal for a wide range of aircraft—from electric airplanes and eVTOLs to helicopters and high-performance marine vessels.

A Full-Stack Electric Aviation Ecosystem

The announcement of the next-generation Samson battery complements magniX's broader portfolio of electric propulsion solutions. The company's fully integrated electric powertrains for aircraft are designed to deliver maximum efficiency and safety, while its new HeliStorm engine targets the high-speed, high-performance rotorcraft market.

This cohesive approach is a hallmark of magniX's vision: to create a scalable technology platform that can transform not only the skies but the broader transportation sector. With developments like the 400 Wh/kg Samson cell, the company continues to set the pace for electric propulsion innovation.

A Legacy of Engineering Excellence

magniX's heritage is steeped in aviation innovation. The company's founding was inspired by Group Captain George Watt, a WWII test pilot and jet engine pioneer whose work formed the foundation for the UK's jet propulsion programme and later influenced early jet engine development at General Electric in the United States.

Founded in 2005 by inventor Tony Guina, magniX evolved from an electric propulsion startup in Australia to a global leader headquartered in Everett, Washington, at the heart of the aerospace industry. Key milestones along the way have included:

- 2019: First flight of an all-electric commercial aircraft (eBeaver)
- 2020: Successful flight of the eCaravan, the world's largest electric passenger aircraft at the time
- 2021: Awarded a $74.3 million NASA EPFD contract to develop hybrid electric aircraft
- 2022–2023: Electric helicopter and hydrogen-electric aircraft flight records
- 2025: World's first piloted hydrogen-electric helicopter flight

Each achievement has advanced the global transition to clean flight.

As governments, regulators, and the public demand lower-emission transport solutions, electric aircraft promise to revolutionize regional aviation, reduce operating costs, and open new markets. magniX's latest battery innovation aligns with this vision, offering the performance and safety required to accelerate adoption.

With the Samson battery's enhanced range and versatility, magniX is etting a new standard for electric aviation.

SECURE YOUR SPOT AT THE PREMIER EXHIBITION FOR AIR, LAND, AND SEA TECHNOLOGIES ON THE AFRICAN CONTINENT.

EXHIBITION SPACE IS FILLING UP QUICKLY.

EARLY BIRD RATES
END ON 30 SEPTEMBER 2025

SECURE YOUR SPOT NOW!

STRALIS AIRCRAFT: AUSTRALIA'S HYDROGEN-ELECTRIC TRAILBLAZER CHARTS A CLEAN AVIATION FUTURE

As the global aviation industry accelerates its transition toward low-emissions operations, Brisbane-based Stralis Aircraft has emerged as one of Australia's most promising clean aviation innovators. With a strategic focus on hydrogen-electric propulsion, Stralis is developing retrofit and clean-sheet aircraft solutions designed to deliver zero-emission regional air travel—starting with existing small aircraft and scaling up to 50-seat regional platforms.

Groundbreaking Retrofit: The Bonanza Goes Electric
At the heart of Stralis' near-term strategy is the retrofitting of a six-seat Beechcraft Bonanza A36 with its proprietary high-temperature PEM (HT-PEM) hydrogen fuel cell system. The program involves two test aircraft: "Clyde," used for ground propulsion trials, and "Bonnie," the flight demonstrator. In a key milestone, "Clyde" recently completed successful propeller spin tests at Brisbane Airport, validating the integrated powertrain's readiness for the next stage.

The HT-PEM system is lightweight and highly efficient, allowing the aircraft to achieve a projected range of 500 kilometres on hydrogen fuel alone—producing only water vapour as a by-product. Stralis claims the setup will deliver a 50% reduction in operating costs compared to conventional avgas-powered systems, while also significantly extending performance beyond that of battery-electric alternatives.

Flight testing of "Bonnie" is slated for late 2025, with experimental certification currently in process.

Scaling Up: Beech 1900D and Clean-Sheet SA 1

Building on the Bonanza retrofit, Stralis is preparing to retrofit a 15-seat Beechcraft 1900D into the B1900D-HE variant. With a projected range of 800 kilometres, the aircraft is scheduled to enter commercial service by late 2026, operated by Skytrans Airlines on Australia's first hydrogen-electric route between Brisbane and Gladstone.

Looking ahead, the company is also designing a clean-sheet 50-seat aircraft, known as the SA 1 HE, with plans to offer up to 3,000 kilometres in range. This aircraft is aimed at serving high-capacity regional routes with lower emissions and significantly improved fuel efficiency. Stralis anticipates an entry into service between 2030 and 2035.

Lightweight, Long-Range Power

A cornerstone of Stralis' approach lies in its Hydrogen-Electric Propulsion System (HEPS), featuring patent-pending high-temperature PEM fuel cell technology.

This proprietary system is reported to be six times lighter than current state-of-the-art solutions, delivering the efficiency and power density needed for aviation-grade applications.

The lightweight design of HEPS unlocks new performance benchmarks, enabling hydrogen-electric aircraft to fly ten times further than battery-electric alternatives. It also offers a compelling economic case, with operating costs up to 50% lower than fossil fuel-powered aircraft.

Beyond aviation, the HEPS architecture is scalable and adaptable for long-range drones and heavy-duty ground vehicles, extending its potential well into the industrial and logistics sectors.

To support further development and refinement, Stralis is collaborating with CQUniversity, CSIRO, and other national research bodies to optimise heat management and recovery systems—a critical component for maintaining efficiency and reliability in demanding operational conditions.

Launching Australia's Hydrogen Flight Corridor

In partnership with Skytrans, Brisbane Airport Corporation, Gladstone Airport, and other stakeholders, Stralis has co-founded the Hydrogen Flight Alliance (HFA). The initiative aims to demonstrate a practical, scalable model for hydrogen-powered regional operations, starting with Queensland's east coast. With its first commercial flights targeted for 2026, the alliance could position Australia as one of the world's first hydrogen-electric aviation hubs.

Supporting these ambitions is funding from Australia's Emerging Aviation Technology Partnerships (EATP) program, which is backing the initial retrofit efforts and helping to create the regulatory, operational, and training frameworks necessary for long-term success.

Commercial Interest and Global Market Potential

Stralis has received Letters of Intent (LOIs) valued at AUD 263 million from 11 airlines across Australia, New Zealand, Asia, the United States, and Europe. The company's ability to retrofit existing aircraft and transition to scalable platforms has drawn international attention, highlighting its relevance to both regional operators and global climate mandates.

With the aviation industry under pressure to decarbonise, Stralis offers a flexible and near-term solution without the need for extensive new infrastructure. Its hydrogen-electric systems are designed for drop-in integration, aligning with existing maintenance and operational structures.

Lifting Off Toward a Hydrogen-Powered Future

While battery-electric aircraft may dominate early-stage discussions, Stralis Aircraft is making a compelling case for hydrogen-electric propulsion as the practical path forward for regional aviation. Through strategic retrofits, cutting-edge fuel cell design, and strong industry partnerships, the company is charting a route to commercial zero-emissions flight that is both technologically sound and economically viable.

As the first test flights approach and infrastructure alliances mature, Australia's skies may soon witness the quiet ascent of a new class of sustainable aircraft—led by Stralis, with innovation grounded in engineering, partnership, and climate-driven urgency.

For more information visit *https://stralis.notion.site/*

Stalis B1900D-HE aircraft Retrofit on tarmac . IMAGES COURTESY OF: ©Stralis Aircraft

WISK, JALEC, AND KAGA CITY UNITE TO LAUNCH AUTONOMOUS AIR MOBILITY IN JAPAN

A bold new chapter in Japan's aviation landscape began this week as Wisk Aero, a global leader in Advanced Air Mobility (AAM), announced a strategic three-party Memorandum of Understanding (MoU) with JAL Engineering Co., Ltd. (JALEC) and the City of Kaga, Japan. The landmark partnership aims to lay the groundwork for introducing autonomous, electric air taxi operations in the country, positioning Japan at the forefront of urban aviation innovation.

This collaboration expands Wisk's ongoing relationship with Japan Airlines (JAL) and JALEC, adding the vital support of Kaga City—a designated National Strategic Special Zone with strong mobility ambitions. Together, the three partners will work toward building a future ecosystem for autonomous electric vertical take-off and landing (eVTOL) operations, focusing on regulatory integration, public readiness, and infrastructure development.

Building the Autonomous Aviation Ecosystem

The MoU outlines several key development pillars:

- Regulatory and Airspace Integration: Working closely with Japanese authorities to help shape certification pathways and airspace management systems for autonomous aircraft.
- Market and Operational Model Development: Studying feasible routes, passenger demand, and economic viability for eVTOL deployment in both urban and regional settings.
- Social Acceptance: Engaging with the public to increase awareness and trust in autonomous flight technology.
- Local Supply Chain Support: Exploring partnerships within Japan's robust manufacturing and electronics sectors to support aircraft production and maintenance.

Speaking on the significance of the agreement, Sebastien Vigneron, CEO of Wisk, said: "*Japan is a key market for the introduction of AAM, and Kaga City's forward-thinking approach to future mobility, coupled with its special zone designation, provides an ideal environment for us to explore and demonstrate the benefits of our Gen 6 aircraft. This partnership is a significant step towards building the necessary ecosystem for autonomous flight in Japan.*"

Why Kaga City?

With a population of just over 62,000, Kaga City may seem an unlikely launch site for a futuristic air taxi initiative. Yet its designation as a national strategic special zone grants it unique regulatory flexibility—making it an ideal testbed for new technologies. The local government has already formed the Next-Generation Air Mobility Consortium, positioning Kaga as a hub for research, demonstration, and early-stage implementation.

Mayor Riku Miyamoto emphasized the advantages of operating outside of Japan's mega-cities: "*The advantage of not being a big city like Tokyo or Osaka is that there is a high degree of freedom as a research and development field. One-stop arrangements are possible, and we can move quickly to support new mobility models.*"

JALEC's Role in System Integration

JALEC, a subsidiary of Japan Airlines focused on maintenance and engineering, is a key enabler in bringing Wisk's aircraft to Japanese airspace. With extensive aviation experience and a strong domestic footprint, JALEC will support technical integration, ground operations, and maintenance solutions tailored to Japan's unique air mobility needs.

Hiroki Haraikawa, Vice President of Marketing & Sales at JALEC, underscored the significance of public trust: "*This three-way partnership will play a central role in realizing autonomous AAM in Japanese society. Together, we aim to demonstrate the technology and build nationwide trust in the safety of autonomous operations.*"

About Wisk and the Gen 6 Air Taxi

Wisk Aero, a wholly owned Boeing subsidiary based in California, has spent more than a decade developing its autonomous, all-electric air taxi. The Generation 6 aircraft, designed to carry four passengers, represents the culmination of over 1,750 test flights and significant advancements in safety-focused automation.

Autonomy lies at the heart of Wisk's strategy. Their product is based on autonomous flight with human oversight. The Gen 6 is remotely monitored from Fleet Operations Centers, and relies on robust decision-making software inspired by proven commercial aviation systems—90% of which already operate autonomously today. "*We are building a scalable autonomous platform that's safer, smarter, and ready to take aviation to an entirely new level,*" says Jon Lovegren, Wisk's Head of Autonomy and Airspace Integration.

This three-way alliance signals not only a deepening commitment to Japan's AAM vision, but also the maturing global landscape for autonomous aviation. With Kaga City's regulatory freedom, JALEC's aviation expertise, and Wisk's pioneering aircraft, the project could set a precedent for how cities worldwide embrace safe, electric, and autonomous flight.

As the world prepares for a new era in personal air mobility, Japan—through this unique collaboration, is leading the way.

IMAGES COURTESY OF: ©Wisk

REIMAGINING REGIONAL FLIGHT WITH THE VX4 eVTOL

In a world urgently seeking sustainable transportation solutions, Vertical Aerospace is emerging as a trailblazer in the race toward decarbonised air travel. Founded in the United Kingdom, the company has built a reputation for pushing boundaries through meticulous engineering and bold innovation. Combining aeronautical expertise with cutting-edge electric propulsion, Vertical's mission is both ambitious and timely: to elevate everyday journeys through the transformative potential of electric vertical take-off and landing (eVTOL) technology.

What sets Vertical apart is its integrated approach. The team comprises world-class engineers, idealists, and seasoned aviation professionals dedicated to one shared vision—redefining regional air mobility with zero operating emissions. By challenging the norms of traditional aviation and collaborating with

IMAGES COURTESY OF: ©Vertical Aerospace

global industry leaders, Vertical Aerospace is positioning itself not merely as a manufacturer, but as a movement shaping the future of flight.

At the heart of this movement is the VX4, the company's flagship eVTOL aircraft, developed to revolutionise short-haul urban and regional transport with cleaner, quieter, and more cost-efficient alternatives to conventional aviation. This aircraft will still be piloted, but has huge advantages compared to traditional urban or regional transport.

The VX4: Where Design Meets Purpose

The VX4 embodies a new class of eVTOL aircraft optimised for point-to-point regional journeys. Sleek and compact, it is designed to carry one pilot and four passengers across urban landscapes and between airports with ease, bypassing road congestion and railway delays. Its high gull-type wing and V-tail configuration, paired with retractable tricycle landing gear, are the result of deliberate aerodynamic choices aimed at maximising efficiency and stability.

A key highlight of the VX4 is its propulsion system. The aircraft utilises four main electric tilt propellers for vertical lift and conventional wingborne propellers for forward cruise, ensuring seamless transition from hover to high-speed flight. The entire system is powered by proprietary battery technology, developed inhouse and supported by a lightweight composite fuselage—marking significant strides in weight-to-strength ratios and structural integrity.

Comfort and safety have not been compromised. The cabin features panoramic windows, a skylight for natural light, and user-friendly in-seat amenities including USB ports and status screens. Safety features include a fully redundant flight system and a ballistic recovery parachute—critical in the transition toward autonomous air mobility.

Performance and Progress

Technically speaking, the VX4 is no slouch. It boasts a cruise speed of approximately 150 mph (241 km/h) and an all-electric range of up to 100 miles (160 km)—ideal for metropolitan hops or airport transfers. It can carry a payload of 450 kg, and does so with minimal noise; testing shows it to be up to 30 times quieter than a typical helicopter, making it a natural fit for operations in noise-sensitive urban environments.

Flight testing has advanced steadily through structured phases:

- Phase 1 (2024) focused on tethered flights and ground validation.
- Phase 2 (early 2025) involved over 30 successful piloted hover flights, including manoeuvres like yaw, roll, and spot turns.
- The programme is now transitioning to wingborne flight testing—where lift is generated primarily by the wings—and VTOL-to-wing transitions.
- In May 2025, the VX4 achieved a major milestone with its first open-air piloted flight from Cotswold Airport in the UK, reaching speeds of 150 mph and confirming its real-world performance potential.

From Vision to Commercialisation

Vertical Aerospace is charting a clear path toward regulatory certification, working closely with the UK's Civil Aviation Authority (CAA) and the European Union Aviation Safety Agency (EASA). Certification is targeted for 2028, aligning with the company's "*Flightpath 2030*" strategy for scalable production and deployment.

This roadmap is strengthened through strategic industry partnerships:

- Honeywell is supplying advanced flight controls and the Anthem avionics suite, with a safety standard targeting a 10^{-9} failure rate.
- Partners such as GKN Aerospace, Leonardo, Hanwha, Molicel, and Syensqo are contributing critical systems from propulsion to structural elements.

The commercial response has been overwhelmingly positive, with over 1500 VX4 pre-orders already placed by global aviation leaders including American Airlines, Japan Airlines, GOL, and Bristow Group—the latter confirming an order for 50 aircraft, with options for 50 more.

Extending Range and Capability: The Hybrid Variant

To expand the VX4's reach beyond urban air mobility, Vertical Aerospace has unveiled a hybrid-electric variant aimed at defence, logistics, and emergency services.

First introduced in May 2025, the hybrid VX4 will support payloads of up to 1,100 kg and achieve a remarkable 1,600 km (1,000 mi) range. With first test flights scheduled for Q2 2026, this variant will offer multimode operation—including crewed, remotely piloted, and autonomous capabilities—broadening the aircraft's utility for government and commercial missions alike.

Reaching for the Electric Horizon

As the aerospace industry grapples with the dual imperatives of decarbonisation and efficiency, Vertical Aerospace is answering the call. With a compelling blend of visionary design, technical maturity, and strategic industry backing, the VX4 is no longer a concept—it is a rapidly maturing reality.

In Vertical's world, airport transfers are not a hassle but a seamless flight above the gridlock. Noise pollution becomes a thing of the past. And regional flight is reimagined for a cleaner, connected future.
Vertical Aerospace is not just building aircraft—it's building a new aviation paradigm. And the VX4 is ready to lead the ascent.

CAN THE eVTOL AND UAV REVOLUTION WIN HEARTS AND MINDS?

As the aviation sector hurtles toward a future shaped by electric vertical take-off and landing (eVTOL) aircraft and unmanned aerial vehicles (UAVs), the industry is beginning to grapple with two critical questions: Can this new era of flight be genuinely sustainable? And just as importantly, will the public accept it?

These twin pillars; environmental responsibility and community trust, will determine how successfully eVTOLs and UAVs integrate into everyday life. While much has been said about the technological marvels of these aircraft, less publicised, yet equally important, are the issues of battery sourcing, acoustic impact, airspace congestion, and societal readiness.

The Environmental Footprint: Greener Than Jets, But Still a Shade of Grey

At face value, electric aircraft appear to promise a cleaner, quieter future. eVTOLs and drones produce zero emissions in flight, and compared to helicopters, their noise profiles are significantly reduced. However, their environmental benefits depend heavily on how their energy is generated and how their batteries are sourced.

Battery sourcing presents a key challenge. Most eVTOLs rely on high-energy-density lithium-ion or emerging solid-state batteries, which require critical raw materials such as lithium, cobalt, nickel, and rare earth elements. These are typically mined under energy-intensive conditions, often with questionable labour and environmental standards, particularly in the Global South. Until the battery supply chain becomes cleaner and more transparent, the absolute "greenness" of eVTOLs remains a work in progress.

There is also the life-cycle carbon impact to consider; from manufacturing and infrastructure development to aircraft disposal. While short eVTOL hops might reduce vehicle emissions in urban centres, their benefits may be offset if the electricity charging them comes from fossil-fuel-based grids. Regions with clean power will see the greatest environmental upside, underscoring the importance of pairing air mobility strategies with renewable energy policy.

Overhead Noise and the Urban Soundscape

Unlike commercial airliners, eVTOLs and UAVs will operate at low altitudes and frequently over populated areas. While quieter than traditional rotorcraft, they are not silent. Many produce a high-frequency whirring that can still be perceived as intrusive, especially during take-off and landing.

Multiple daily flights over the same neighbourhoods could trigger noise fatigue, particularly if vertiports are placed near residential zones. This has already become a point of resistance in cities trialling drone deliveries and urban air taxi demos.

To mitigate this, developers are investing in acoustic design, flight path optimisation, and vertiport placement strategies that route traffic away from sensitive areas. But ongoing community dialogue is essential, what's acceptable in one location may be fiercely opposed in another.

Winning Public Trust in Autonomy

Perhaps the most complex hurdle is social acceptance of pilotless or semi-autonomous aircraft. Trust in aviation has historically hinged on human control. Replacing pilots with software, even sophisticated, fail-safe software, requires a significant shift in public perception.

Polls in various countries suggest that a majority of people are skeptical about boarding an autonomous aircraft, regardless of its safety record. The hesitation is not just technological, it's psychological.
To address this, the industry must commit to transparent communication and public education, focusing on:

- Safety evidence: Demonstrating that autonomous systems are as safe or safer than human pilots.
- Simulated experiences: Offering the public virtual reality (VR) or simulator encounters with eVTOL flights.
- Incremental exposure: Starting with short, supervised routes before scaling up to full autonomy.

Cities and operators will also need clear consultation frameworks with communities. Including residents in planning processes from vertiport siting to flight corridor mapping, will be key to avoiding pushback.

Integrated, Informed, Inclusive

Sustainability and social acceptance are not afterthoughts—they are prerequisites. To gain altitude in the real world, the eVTOL and UAV revolution must be green not just in promise, but in practice, and welcomed not just by regulators, but by the people living beneath the flight paths.

The future of air mobility is about modern ways of transport, but also ecosystems, ethics, and engagement. If the industry can deliver on sustainability while earning public trust, it won't just change how we fly, it will change how we live.

COMMERCIAL
UAV EXPO

SEPTEMBER 2-4, 2025

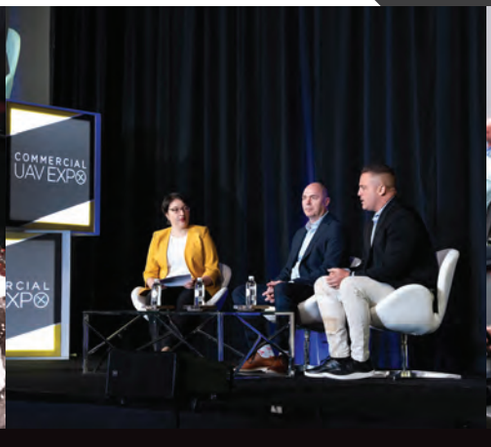
CAESARS FORUM / LAS VEGAS

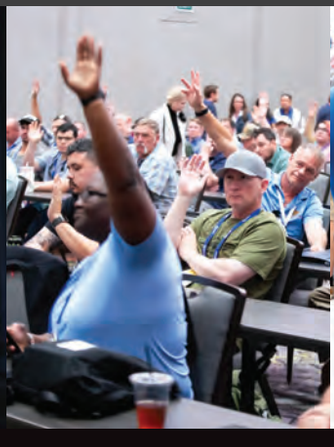
DRONES IN ACTION

CURRENT REALITIES & FUTURE FRONTIERS

Register at
expouav.com

Use code **SAVE100** to get $100 off a conference pass or a free exhibit hall pass.




LEARN

Expansive education program with solutions-oriented presentations & workshops from UAS thought-leaders

CONNECT

Facilitated networking with drone industry professionals from around the globe

EXPERIENCE

Cutting-edge UAS solutions providers, live outdoor flying demonstrations & exclusive training

Presented by: COMMERCIAL UAV NEWS

Official Association Partner: COMMERCIAL DRONE ALLIANCE

Co-located event: DRONERESPONDERS

Produced by: diversified

A EUROPEAN BLUEPRINT FOR CLIMATE-COMPATIBLE AVIATION

DLR's Technology Evaluator paves the way for zero-emission flight. As the aviation sector faces intensifying pressure to align with global climate targets, Europe has responded with a robust and coordinated approach through Clean Sky 2, the continent's flagship aeronautical research programme. Spanning over a decade and involving nearly 1,000 stakeholders—from large OEMs to SMEs and research institutions—the programme has produced more than 100 demonstrators and over 1,000 innovative technologies aimed at reducing emissions, noise, and improving aviation sustainability.

At the core of this ambitious initiative lies the Technology Evaluator, led by Germany's Deutsches Zentrum für Luft- und Raumfahrt (DLR). This tool systematically assessed the environmental, economic, and societal impacts of Clean Sky 2's innovations, setting the foundation for the EU's follow-on programme, Clean Aviation.

Evaluating Innovation at Every Level

The Technology Evaluator's multi-tiered approach stands out as a pioneering framework for comprehensive assessment in aviation. At the mission level, aircraft-level data was supplied by industry to DLR's Institute of System Architectures in Aeronautics, which analysed aircraft performance during actual flight scenarios.

These results were then extrapolated at the airport and air transport system levels by DLR's Institute of Air Transport, working closely with Cranfield University and the Netherlands Aerospace Centre (NLR). The full-spectrum modelling incorporated projected traffic growth through 2050, including expected market developments and fleet renewals.

"*The role of the Technology Evaluator was to assess not only how individual technologies perform during flight, but also how they affect airports and the global air traffic system,*" said Alexandra Leipold, Acting Department Head at DLR's Institute of Air Transport.

Measurable Environmental Impact

The findings of the Technology Evaluator demonstrate the transformative potential of the Clean Sky 2 programme. If current aviation trajectories continued without intervention, Europe's air transport CO_2 emissions would increase by approximately 43% by 2050. However, with the integration of Clean Sky 2 technologies, even without alternative fuels, this growth could be curtailed to just 23%.

Key performance improvements include:

- Up to 15% reduction in CO_2 emissions per seat-kilometre, depending on aircraft type
- Up to 60% cut in nitrogen oxide emissions
- Up to 44% reduction in aircraft noise, measured in Effective Perceived Noise Level decibels (EPNLdB)
- These improvements do more than reduce climate impact, they enhance public acceptance of air transport by addressing community concerns around noise and pollution.

Socioeconomic and Industrial Gains

Beyond environmental benefits, Clean Sky 2 has delivered substantial economic value:

- A projected 40% increase in value creation in the European aviation sector by 2050
- Significant job creation through the integration of advanced technologies and the expansion of sustainable aviation supply chains.

"*With our leading expertise in technology evaluation and diverse contributions to demonstrator platforms, DLR is a pioneer in European research for climate-compatible aviation,*" said Markus Fischer, DLR's Divisional Board Member for Aeronautics.

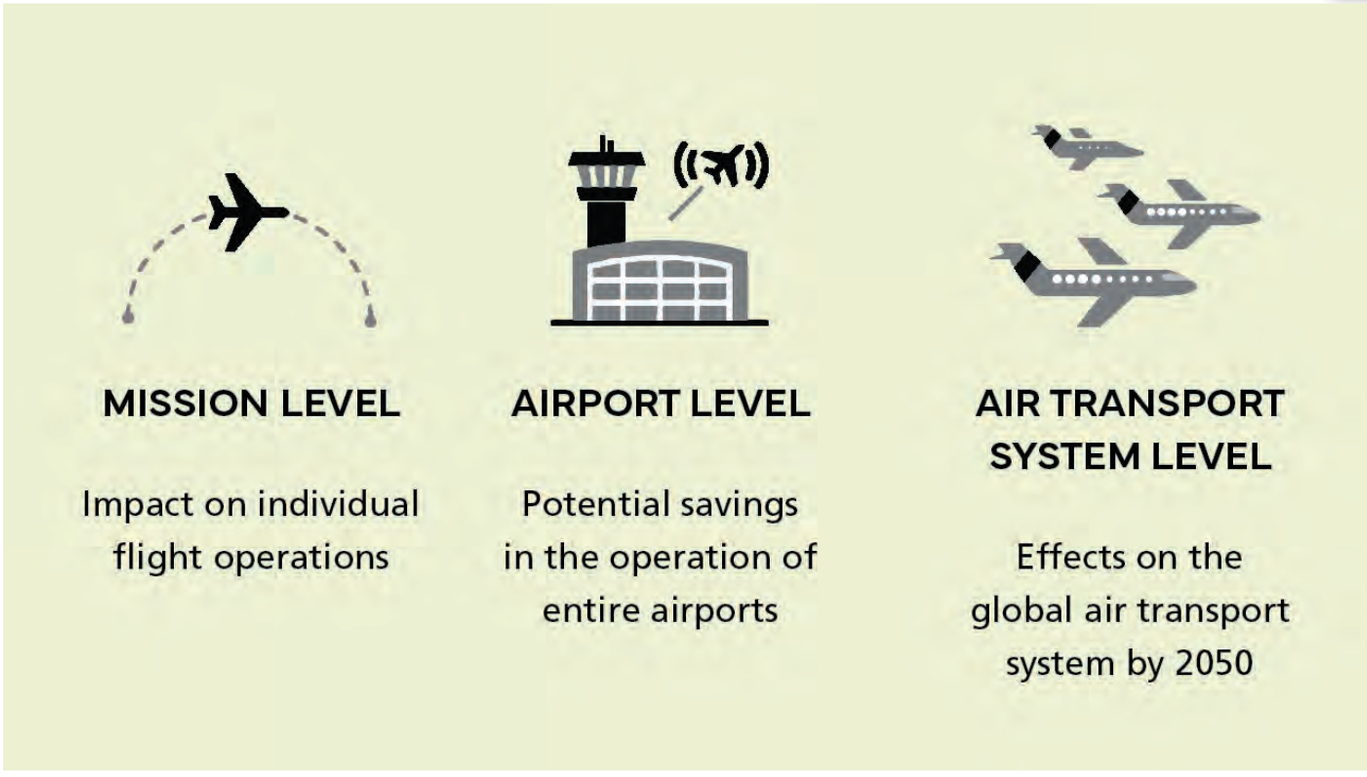
A Vision for Zero-Emission Aviation

To meet the climate objectives set out in the EU Green Deal, Europe is targeting climate compatibility across all sectors, including aviation, which currently contributes around 3.5% of global warming. DLR's long-term vision is zero-emission air transport, a goal that requires not only technological progress but a systemic, cross-disciplinary approach.

With expertise across 25 aeronautics-focused institutes and facilities, DLR is uniquely positioned to lead this transformation. It is one of the few organisations globally capable of:

- Designing and integrating new propulsion systems
- Measuring real-time emissions
- Modelling climate impact at the global air transport level
- Running complex flight simulations and digital twins

"Aircraft and air transport must be considered as a complete system," said Fischer. "Achieving climate targets will require a disruptive and systems-based approach."



Designing the Aircraft of the Future

DLR's research outlines how aircraft will evolve to reduce energy consumption by at least 50% by 2050. Innovations will include:

- Battery and hybrid-electric systems for short and regional flights
- Hydrogen combustion or fuel cells for medium-haul routes
- Sustainable Aviation Fuel (SAF) in combination with high-efficiency turbines for long-haul travel
- Complementing these changes, climate-optimised routing, especially to avoid contrail formation, will play a crucial role in mitigating non-CO_2 climate effects, which account for nearly two-thirds of aviation's warming impact.

These concepts will be tested through DLR's comprehensive infrastructure: research aircraft, wind tunnels, propulsion demonstrators, and supercomputers. Many technologies will debut as digital twins before progressing to real-world validation.

In 2020, DLR, together with the German Aerospace Industries Association, published a white paper titled "Zero Emission Aviation", and is currently developing a broader Zero Emissions strategy for aeronautics.

From Clean Sky 2 to Clean Aviation

With Clean Sky 2 now concluded, its findings are being directly applied in Clean Aviation, the EU's next-generation programme. Focused on hydrogen propulsion, hybrid-electric technologies, and SAF, Clean Aviation aims to bring these climate-compatible solutions into certification and commercial service.

"*The evaluations are shaping the development focus of future aircraft in Clean Aviation*," said Ulrich Herrmann, DLR's Coordinator for Clean Sky 2 and Clean Aviation. "*We now have the data to guide meaningful, high-impact innovation.*"

A European Model for Global Aviation

Clean Sky 2's legacy is not only in its technologies but in the collaborative model it established—a blueprint for how industry, research, and government can work together to drive progress. As Marc Gelhausen, Acting

Department Head at DLR's Institute of Air Transport, noted: "*Close coordination with the entire consortium has been essential over the past ten years.*"

That model is already informing international innovation frameworks and shaping global conversations around sustainable aviation.

Leading the Flight to Climate Neutrality

The journey toward climate-compatible aviation is well underway—and Europe is leading from the front. With scientifically validated technologies, cross-sector collaboration, and a bold vision for the future, the Clean Sky 2 programme has delivered a clear message: sustainable aviation is not only possible—it's already happening.

As these innovations transition from evaluation to application, the skies over Europe may soon reflect not just contrails, but climate-conscious choices, setting a global precedent for cleaner, quieter, and more equitable air transport.

IMAGES COURTESY OF: © Skyports

VERTIPORTS IN 2025: INFRASTRUCTURE TAKING SHAPE FOR AIR MOBILITY

As electric vertical take-off and landing (eVTOL) aircraft inch closer to commercial reality, 2025 marks a pivotal moment for the supporting infrastructure that will make urban air mobility possible: vertiports. These dedicated facilities,ranging from simple rooftop landing pads to integrated multimodal hubs are being planned, built, and tested around the world. With several set to become operational within the next year, the global vertiport network is beginning to take form. With China leading the way in vertiports, concentrated in and around cities and waterways.

The UK's First Permanent Vertiport

In a significant milestone for the United Kingdom, Skyports Infrastructure has begun construction on the country's first permanent vertiport near Bicester Aerodrome. Set to be completed in early 2025, the facility will serve as a testing and demonstration site for eVTOL operations, including aircraft like Vertical Aerospace's VX4. The site is designed to host pilot training, operational simulations, and public engagement, making it a key launchpad for the UK's advanced air mobility (AAM) roadmap.

Japan Targets Expo 2025 in Osaka

Japan is using its upcoming Expo 2025 in Osaka as a platform to showcase next-generation transportation. The Osakako Vertiport, located at Chuo Pier, is being developed to demonstrate public eVTOL flights. The facility will feature check-in areas with facial recognition, transport links via bike-share and buses, and comprehensive safety systems. Japan's government and Osaka Metro are positioning the Expo as a catalyst for long-term integration of air taxis into urban transport.

Dubai Leads with a Vertiport Network

In the Middle East, Dubai continues to position itself as a leader in urban air mobility infrastructure. In partnership with Joby Aviation and Skyports, Dubai's Roads and Transport Authority (RTA) is constructing its first vertiport at Dubai International Airport (DXB). The project is already under way, with trial demonstrations expected by mid-2025. The plan includes additional vertiports in Palm Jumeirah, Downtown Dubai, and Dubai Marina, with full operations anticipated by 2026. The network is designed for both passenger and potential cargo use, integrating seamlessly with the city's wider mobility system.

Abu Dhabi Builds a Multi-Node Vertiport Strategy

Not far from Dubai, Abu Dhabi is pursuing a multi-node vertiport network with locations shortlisted at Al Bateen Airport, Yas Island, and Khalifa Port. Abu Dhabi launched the region's first operational vertiport in April 2024, and is now studying expansion to support both eVTOL passenger travel and UAV cargo logistics. The Khalifa Port hub, in particular, is being designed with freight operations in mind, underscoring the commercial versatility of these facilities.

U.S. Progress: Texas and Florida

In the United States, San Antonio, Texas is emerging as a key testbed. As part of a partnership with Wisk Aero and SkyGrid, a vertiport is under development at Port San Antonio, with up to $102.5 million (couldn't verify) in funding allocated. The site is being designed to support autonomous eVTOL aircraft and serve as a long-term hub for commercial air taxi services.

Meanwhile, Orlando International Airport in Florida is planning for a multimodal vertiport by 2028. The project will connect with the region's SunRail and Brightline rail systems, laying the groundwork for an integrated air–rail passenger network.

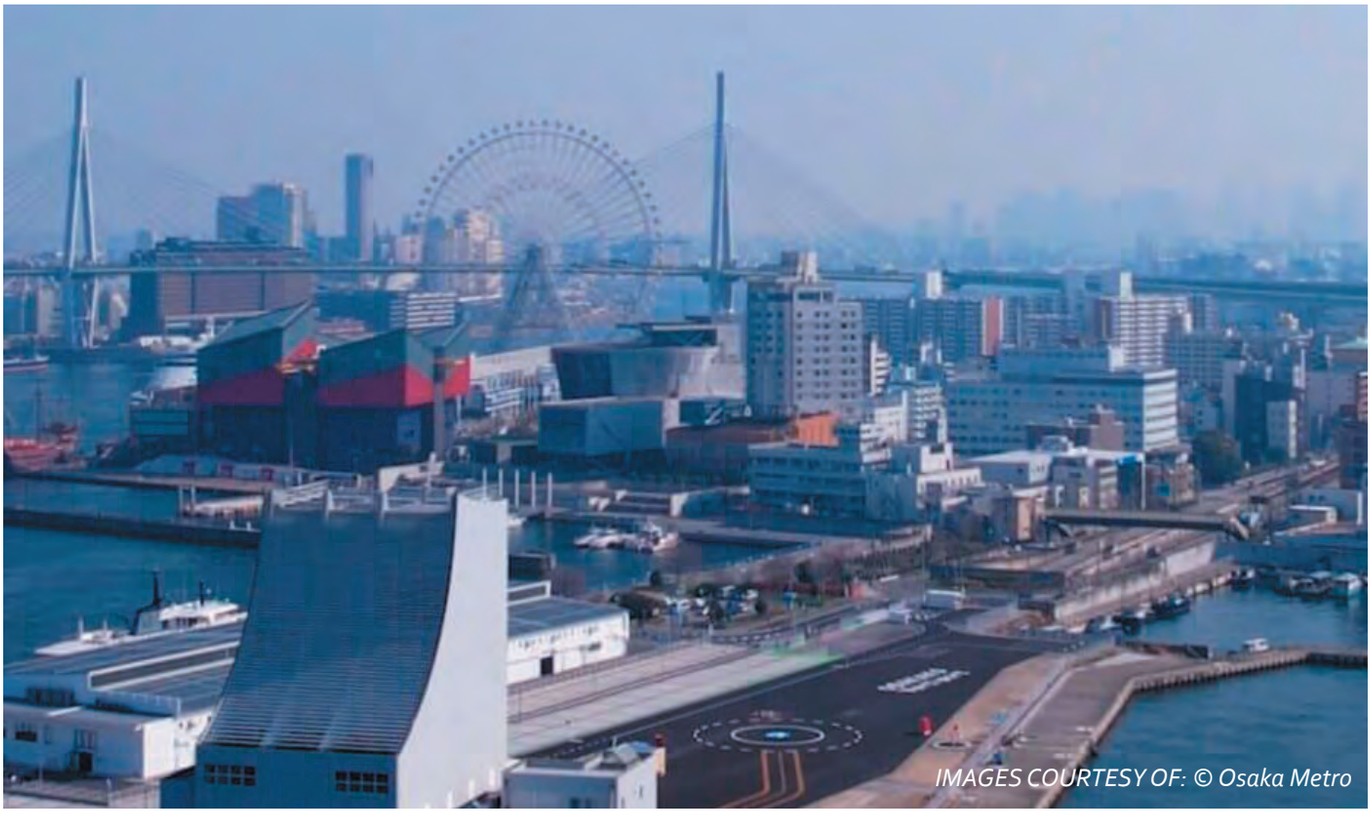
A Global Picture

According to recent estimates, over 1,500 vertiports are planned worldwide, with nearly 1,000 (couldn't verify) expected to be completed by 2029. China's Guangdong province alone has announced plans for more than 100 vertiports by 2027. Regulatory bodies are also evolving: the UAE's General Civil Aviation Authority (GCAA) introduced national vertiport standards in 2024, while the FAA and EASA have published design frameworks, including FAA Engineering Brief 105A.

The world's most advanced vertiport projects, from Osaka to Dubai and Bicester to San Antonio, demonstrate that air mobility infrastructure is no longer a distant concept. With early operational facilities set to come online in 2025 and 2026, and regulatory clarity emerging globally, vertiports are rapidly moving from design boards to rooftops and runways.

Their success will not only enable eVTOL passenger transport, but also support logistics, emergency response, and new models of urban connectivity.

As governments and private stakeholders continue to invest, 2025 stands as the launchpad year for the physical architecture of the air mobility age.



IMAGES COURTESY OF: © Osaka Metro

IMAGE COURTESY OF: © Stralis

STOL VS. eVTOL: WHAT'S THE DIFFERENCE?

As next-generation aircraft begin to redefine how we think about mobility, two acronyms have become increasingly prominent in aviation discourse: STOL and eVTOL. While both aim to liberate aviation from the constraints of long paved runways, they take fundamentally different approaches to doing so. And with Ultra Short Take-Off and Landing (USTOL) technologies now entering the scene, understanding the distinctions between these concepts is key to grasping where regional and urban air mobility may be headed.

STOL: Short Take-Off and Landing

STOL aircraft are designed to operate from short runways—sometimes just a few hundred metres long—by maximising lift at low speeds through clever aerodynamic design and powered lift systems. These aircraft are ideal for remote areas with minimal infrastructure, such as bush strips, mountain villages, or isolated islands.

Examples include:

- Pilatus PC-6 Porter and de Havilland Canada DHC-6Twin Otter and the Cessna Caravan , both renowned for their rugged utility and ability to operate from unprepared airstrips.
- Tecnam P2012 Traveller, used increasingly in short-hop regional routes.
- Electra Aero's EL9, a hybrid-electric STOL aircraft, represents the next generation. With its advanced blown wing technology, the EL9 is expected to take off and land in as little as 150 feet, opening up new opportunities for point-to-point travel.

STOL aircraft generally fall under FAA Part 23 certification, which streamlines the regulatory process and reduces development risk compared to new rotorcraft categories.

USTOL: Ultra Short Take-Off and Landing

The USTOL concept, as embodied by Electra's EL9, pushes STOL capabilities even further. USTOL aircraft are designed to operate from spaces no larger than a football field, yet still offer the efficiency, range, and payload capacity of fixed-wing platforms.

The EL9 is being pitched for both civil and military applications. With funding from the U.S. Army and backing from industry giants like Honeywell, Lockheed Martin, and Safran, Electra is positioning the EL9 as a transformational platform. Its slow approach speed—just 35 knots—and vertical lift augmentation allow it to access areas once thought inaccessible to fixed-wing aircraft.

eVTOL: Electric Vertical Take-Off and Landing

In contrast to fixed-wing STOL aircraft, eVTOLs aim for true vertical flight, eliminating the need for any runway. Using electric motors and distributed propulsion systems, eVTOLs promise a quiet, low-emission solution for short-distance urban travel.

Leading eVTOL prototypes include:

- Joby Aviation S4, with a projected range of over 150 miles and speeds up to 200 mph.
- Archer's Midnight, designed specifically for urban air taxi services with a payload capacity of up to four passengers.
- Lilium Jet, using a unique ducted fan configuration for vertical lift and cruise. It can carry a pilot and six passengers. (added)
- EHang 216, a fully autonomous two-seater already undergoing commercial trials in parts of Asia.

While eVTOLs generate buzz, they face a longer runway to certification, as authorities are still establishing the regulatory frameworks for these entirely new categories of aircraft. Infrastructure demands—such as vertiports, airspace integration, and battery charging facilities—also remain significant hurdles.

Complementary, Not Competing

While it's tempting to frame STOL and eVTOL as competing visions, they actually address different mobility needs. STOL and USTOL platforms are ideal for regional connectivity, particularly in developing markets like Africa, where aviation infrastructure is often minimal. eVTOLs, on the other hand, are tailored for dense urban centres, potentially replacing short car trips or linking suburbs to major transit hubs.

A city like Nairobi, for example, could use eVTOLs to shuttle business travellers across gridlocked streets, while USTOL aircraft like the EL9 could efficiently connect regional hubs such as Kisumu, Eldoret, and Mombasa with short, low-cost flights—without requiring large airport infrastructure.

The Road Ahead

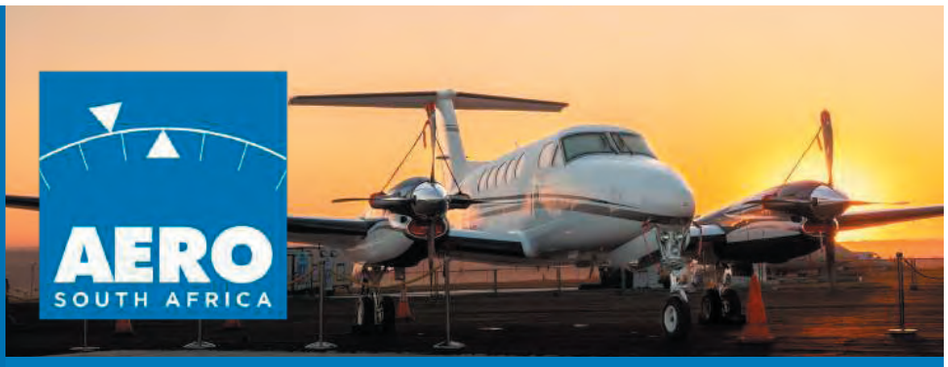
The rise of STOL, USTOL and eVTOL aircraft marks a turning point in how we think about accessibility and efficiency in air transport. While eVTOLs draw headlines and investor enthusiasm, it's the practicality and readiness of STOL platforms that may see them enter real-world service first.

Electra's staged development process—using subscale demonstrators and low-cost testbeds before committing to full type certification—reflects a grounded, pragmatic path forward. Meanwhile, legacy aircraft like the Twin Otter continue to serve where rugged, flexible flying remains a necessity.

Each solution will likely play a role in aviation's next chapter. Together, they offer a glimpse of a future where air mobility is smarter, more sustainable, and more accessible than ever before.

IMAGESCOURTESY OF: © Lillium Jet

POST SHOW REPORT 2025



EXHIBITION OVERVIEW

2996 Trade Visitors

23 Visiting Countries

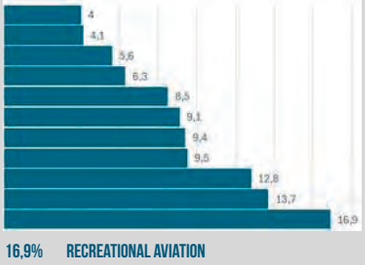
704 Total Pilots

82 Youth Development Programme

65 Exhibitors

327 Business Matchmaking Meetings

VISITOR INTERESTS



16,9%	RECREATIONAL AVIATION
13,7%	TRAINING FLIGHT SCHOOL
12,8%	AVIATION EQUIPMENT & SYSTEM
9,5%	MAINTENANCE, REPAIR AND OVERHAUL
9,4%	AIRPORT EQUIPMENT & SERVICES
9,1%	PILOT SUPPLIES
8,5%	CHARTERING COMPANIES
6,3%	PURCHASE AIRCRAFTS
5,6%	FINANCE
4,1%	PURCHASE HELICOPTERS
4.0%	INSURANCE

SHOW PROFILE

The 5th edition of AERO South Africa took place from 25 – 27 June 2025.
Messe Frankfurt South Africa presented the event in partnership with Fairnamic – organisers of Europe's largest general aviation show, AERO Friedrichshafen – and for the first time ever, the event was hosted at our new venue partner, Lanseria International Airport.

Thank you to all our returning and new exhibitors, partners, and visitors for making this year's event such a success. We look forward to seeing you again in 2026!

EVENT HIGHLIGHTS

PRESENTATION THEATRE

This year, the Presentation Theatre was hosted in the hangar sponsored by ExecuJet, featuring a packed programme of engaging talks from local and international exhibitors. Highlights included Air Lovers sharing their Africa Bush Tour after flying in to AERO, and the AfBAA Safety Workshops, which focused on critical aviation safety topics.

SMART SKIES, SMART CITIES CONFERENCE

The Smart Skies, Smart Cities Conference, in partnership with GGDA, GTA, the City of Johannesburg and Aeronautical Aviation, brought together leaders in aviation, government, and tech to explore the future of smart mobility. The programme focused on urban air solutions, smarter infrastructure, and innovation shaping connected cities and skies.

WHO ATTENDED THE SHOW

AEROSA 2025 WRAP-UP: COLD FRONT, CLEAR SKIES, AND CRITICAL CONVERSATIONS IN GENERAL AVIATION

From 25 to 27 June, Lanseria International Airport hosted AERO South Africa 2025, drawing together general aviation manufacturers, buyers, service providers, and innovators from across the region and beyond. What began under the promise of crisp winter sunshine quickly turned into a showcase of resilience and adaptability, as plunging temperatures and biting winds tested more than just aircraft performance — they invigorated the spirit of connection and community.

PHOTOS BY: Mike De Villeirs and Keith Laaks

Unexpected Weather, Undeterred Crowds

Temperatures dropped to around 10 °C during morning briefings, sinking into single digits by late afternoon. Yet, this unexpected cold snap brought people together. Coffee stands became networking hubs, and conversations around avionics, business collaborations, and MRO solutions stretched longer than expected.

Despite the chill, attendance held strong. Visitors praised the "perfect flying weather" for demo flights, thanks to improved lift and calm skies — and pilots took full advantage of the conditions in precision formation displays and technical demos.

World Airnews at the Heart of It All

As an exhibitor, World Airnews used this opportunity to connect with key figures and voices in the aviation ecosystem. Notable interviews and engagements included:

- **Dawit Lemma**, Chairman of AfBAA, on harmonising African aviation standards and unlocking regional capacity.
- **Goitse Diale,** new Chairman of the Aero Club of South Africa, on inclusive access and youth empowerment in recreational flight.
- **Guilherme Neto**, Southern Cross Aviation, on cross-border transactions and growing demand for certified pre-owned aircraft.
- **Katherine Moloney**, founder of ElevateHER, on mentorship and leadership pathways for women in aviation.
- **Jacques Krige of AUSA**, speaking to safety culture and support infrastructure.
- **Yvette le Grange**, representing Mayday in the absence of Jaco van der Westhuizen, emphasised the role of mental health support for aviation professionals beyond just pilots — including ATC personnel, emergency response, and ground staff.
- **Thomas Jardine** of Aircraft Finance Corporation, who spoke about the evolving finance landscape — from supporting legacy aircraft overhauls to financing drones, eVTOL tech, and shared ownership models.

A Sobering Insight: Dangerous Goods in Aviation

A particularly important session was delivered by Rob Garbett, a veteran aviation safety consultant and advocate. Speaking to World Airnews during the event, Garbett drew attention to what he calls a "clear and present risk": the mishandling and mislabelling of dangerous goods in aviation.

"Many operators and forwarders still lack adequate training in the identification, packaging, and documentation of dangerous goods," Garbett warned. "This gap in awareness is a real safety risk, and in some tragic cases, it has already proven fatal."

He emphasised that proper procedures, regular audits, and effective enforcement are critical. Garbett is campaigning for enhanced regulatory compliance and more robust training standards — particularly as new technologies such as lithium battery-powered drones and eVTOLs become more prevalent in cargo operations.

His presence at AERO SA 2025 was a vital reminder: aviation safety must evolve alongside innovation, and awareness around hazardous materials is essential to secure growth.

Lanseria's GA Capability on Full Display

Lanseria rose to the occasion as a general aviation host airport. Its spacious apron, modern FBOs, and runway upgrades made for a smooth flow of fly-in traffic. Waived landing fees and efficient ground handling encouraged participation from across South Africa and neighbouring countries.

Highlights From the Show Floor and Sky

- Static Displays & Fly-In Zones
- From sleek ultralights to turboprops, the static display showcased GA's depth and diversity. Park & Sell zones stayed lively, as buyers and sellers negotiated deals over mugs of steaming coffee.
- Demos from Sling Aircraft, Pipistrel, and others delivered clean, crisp performance in the cool conditions. The Sling TSi and High Wing were particular crowd-pleasers.

Expert Sessions

Events like the AfBAA Safety & Training Workshop and "Smart Cities – Smart Skies" conference sparked ideas on the role of GA in Africa's evolving mobility landscape.

Looking to 2026

Conversations on-site hinted at big things ahead: more electric aircraft on the way, broader African participation, and stronger business matchmaking. Lanseria's performance as host affirms its future potential — both for regional GA growth and perhaps expanded commercial routes.

Final Thoughts

The closing fly-outs on Friday afternoon, bathed in golden winter light, were a fitting end to three days of cold weather and warm collaboration. For many, the event wasn't just about technology — it was about trust, transparency, and the shared passion that keeps general aviation airborne.

As Rob Garbett put it: "Safety isn't a regulation — it's a responsibility we all share. If we want this industry to grow, we need to grow our accountability along with it."

AERO SA 2025 was a reminder of just that.


ROTAX
#TakingYouPlaces
Sling HW
ZU-DFU


LI-ION
PIPISTREL


TLY


EXPLORER

Dawit Lemma, Chairman of AFBAA (African Business Aviation Association of Africa)

DAVID, DAWIT, DOUD – A CITIZEN OF THE WORLD AND A CHAMPION FOR AFRICAN AVIATION

At this year's AEROSA Expo, World Airnews had the pleasure of an engaging conversation with Dawit Lemma, newly elected Chairman of the African Business Aviation Association of Africa (AFBAA). A man with global roots and a grounded passion for aviation, Dawit's vision for the continent is as personal as it is professional.

From Childhood Dream to Aviation Advocate

Dawit's aviation journey began at the age of seven, when he and his best friend declared they would grow up to be either cowboys or pilots. The cowboy dream quickly lost its appeal, but aviation stayed in his blood. Today, he holds FAA and EASA licences, a mechanic's A&P certification, and flight credentials from both the U.S. and South Africa.

"I've worked the ramp, fixed the aircraft, flown it, and managed the hangar," he says. *"The only thing I haven't done is dispatch – and I'd probably be alright at that too."*

Born in Ethiopia, raised across Zambia, the United States and Switzerland, Dawit embodies the phrase *"citizen of the world."* He left a comfortable corporate life in Switzerland to return to Africa in 2012 with a singular purpose: to serve.

"So many come back and leave when things get tough," he reflects. *"I stayed. My reason for coming back was bigger than comfort."*

A New Chapter with AFBAA

Dawit's involvement with AFBAA began long before his current leadership role. "I volunteered when the association was launched," he explains, "not as a corporate, just as a passionate individual." With leadership experience in IBAC, EBAA, and NBAA, he now brings global insight to local challenges.

His strategic goals for AFBAA rest on five pillars:

1. Membership Engagement and Outreach
2. Good Governance and Operational Systems
3. International Collaboration
4. Integration of General Aviation and UAVs
5. Public Relations and Communications

"It's about creating value," he emphasises. *"AFBAA must help our members solve real, everyday problems. But it's a two-way street — members must also contribute and shape the association."*

Advocacy with Empathy

Dawit's approach to regulatory change is clear-eyed but hopeful. *"Africa has a fear-based governance culture. Our role is to shift mindsets — from fixed to growth."* Drawing on examples from other associations, he advocates for collaboration with civil aviation authorities by making a strong business case for reform. *"It's not just about what we want,"* he explains, *"but about how our goals align with broader economic and social benefits."*

Business Aviation's Misunderstood Role

Challenging lingering perceptions, Dawit notes, *"Business aviation isn't just luxury jets. It's air ambulances, anti-poaching aircraft, humanitarian aid, even farmers in a Cessna 172."* He's optimistic about Africa's ability to leapfrog legacy systems and embrace emerging tech. *"Just like we skipped landlines and went straight to smartphones, we can do the same with aviation infrastructure."*

The Drone Paradox and a Regulatory Balancing Act

One area he's particularly passionate about is UAV integration. *"There's a paradox in Africa. Drones are seen as security threats but they're also delivering blood in Rwanda."* Ethiopia, he points out, has made great strides by implementing drone regulation, jamming systems near airports, and building an ecosystem around UAVs.

The Road Ahead

As AFBAA moves forward under his leadership, Dawit remains focused on systemic change. *"Rules and manuals create continuity. People manage systems. Systems manage organisations. That's how we build a resilient aviation future."*

His ultimate goal?
"To see aviation become the great connector of the continent; economically, socially, politically. Until teleportation arrives, aircraft are still the fastest way to move people, goods, and hope."

Click To view Full Pdf Of The AfBAA Aerosa Discussion.

DANGEROUS GOODS IN AVIATION: A CLEAR AND PRESENT RISK

At this year's AEROSA conference, Rob Garbett delivered a compelling talk on one of the most underappreciated threats to aviation safety: the mishandling of dangerous goods (DG). Drawing on decades of regulatory and operational experience, Garbett stressed that the risks posed by improperly managed DG are not just bureaucratic headaches—they are matters of life and death.

Rob Garbett IMAGE ©: WORLD AIRNEWS.

Dangerous goods are not limited to scheduled air cargo.

Charter operators, forwarding agents, and even online retailers are all included in the compliance chain.

Garbett reminded the audience that whether or not a carrier is authorised to transport dangerous goods, they are still required by law to maintain and implement CAA-approved procedures to identify and respond to DG risks. Non-compliance, he warned, is not just an administrative oversight, it can lead to catastrophe.

In support of this, Garbett cited sobering case studies: the 2010 UPS Flight 6 crash in Dubai caused by lithium battery fire; the explosion aboard United Airlines Flight 873 in 1999; and the total loss of Hania Airlines OZ991 in 2011, among others. In some instances, such as Malaysian Airlines MH370, lithium battery fire remains a possible, though unconfirmed, cause of disaster.

At the core of mitigating these risks is Competency-Based Training and Assessment (CBTA), which became mandatory in South Africa on 5 October 2023 under ICAO Annex 18. Unlike traditional training, CBTA is designed to align with the specific job functions of each employee; whether a truck driver, ramp handler, export director or dispatcher. Everyone must understand the threat, know what constitutes dangerous goods, and be able to act decisively when risks arise.

Garbett drew an insightful parallel between CBTA and South Africa's national motto, derived from the Khoisan phrase "*!ke e: /xarra //ke*", meaning unity in diversity. He described CBTA as an operational embodiment of this philosophy, uniting the diverse functions in the supply chain under a common standard of safety.

His company, Professional Aviation Services, which specialises in air cargo security and the prevention of intentional threats such as IEDs, asserts that dangerous goods now pose a greater hazard than terrorism itself—largely because they often go undetected or unreported.

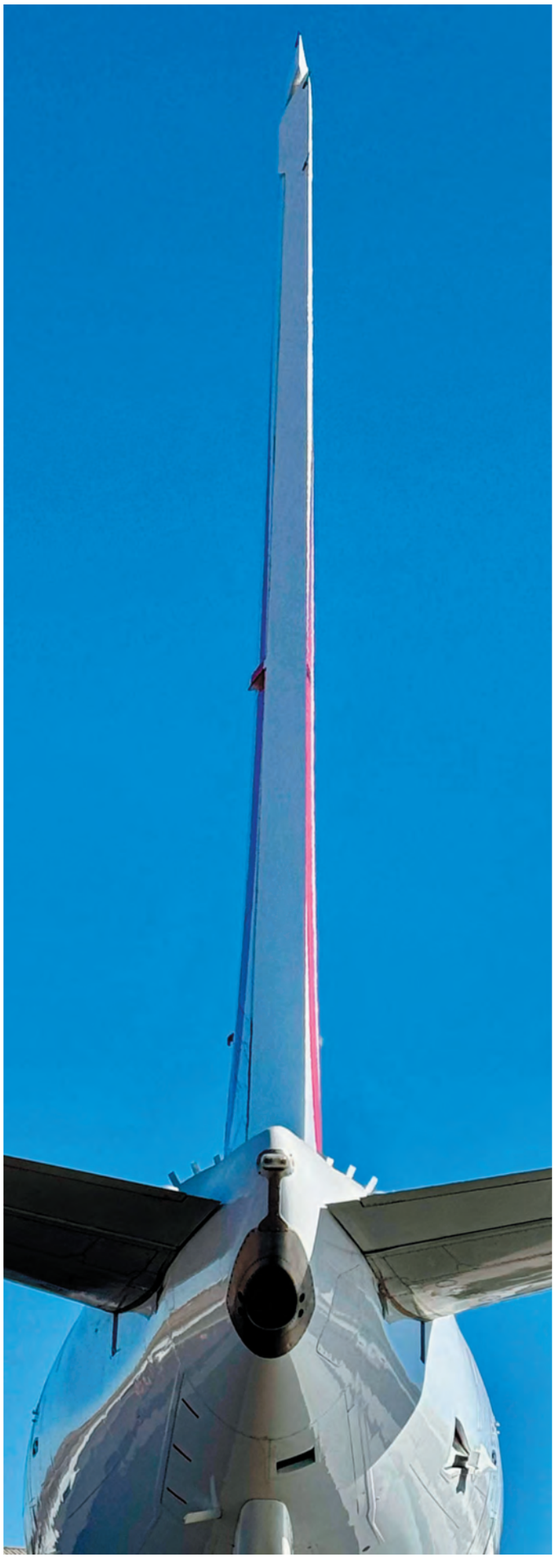
As such, the DG threat must be addressed with the same seriousness.

Garbett also called for standardised DG operations manuals tailored to each job function. These must be living documents, regularly updated and reviewed, with clear lines of responsibility. Critically, every carrier or freight forwarder—whether they handle DG or not—must appoint a designated DG officer or accredited service provider. This person must hold a DG Group A qualification, SMS training, and other relevant certifications. Without this oversight, compliance efforts risk becoming fragmented and ineffective.

South Africans, Garbett noted with characteristic humour, are known for last-minute compliance. But procrastination in this context could cost lives and invalidate insurance claims that might run into the hundreds of millions. He urged all operators to compile and submit compliance plans to the CAA immediately and to inform insurers of their progress.

CBTA is not a box-ticking exercise, it's a moral imperative. "*If these regulations save one precious life,*" Garbett concluded, "*then all the effort is worthwhile.*"

He closed with a joke that lightened the mood, but his message was unambiguous: we ignore the threat of dangerous goods at our peril.



Goitseane Diale IMAGE ©: WORLD AIRNEWS.

A NEW GENERATION **AT THE HELM**

Goitse Diale brings fresh energy and vision to the Aero Club of South Africa.
At 26 years old, Goitse Diale has been appointed Chairman of the Aero Club of South Africa (AeCSA), one of the country's oldest aviation organisations. His appointment marks a generational shift in leadership, at a time when general aviation in South Africa — and across the continent — faces both critical challenges and exciting opportunities.

"*I've only ever worked in aviation*," says Diale. "*It's the only thing I've ever loved.*"

That passion was sparked early. Raised on his grandfather's farm near Rustenburg, he remembers watching aircraft overhead and dreaming of one day joining them in the sky. A decade later, he joined the Aero Club as a member and quickly rose through the ranks, becoming Vice Chair in 2023 and now Chair in 2024.

Protecting General Aviation – and Growing It

Diale is clear about his mission: to protect, preserve and grow general aviation. He sees it not only as a personal passion but as an enabler of development across Africa.

"*General aviation is essential to functional societies*," he says. "*It supports firefighting, anti-poaching operations, medical transport, business flights to remote locations, and of course, it's the lifeblood for aviation enthusiasts and professionals alike*."

Under his leadership, the Aero Club is advocating strongly on policy matters, most notably the controversial 12-year engine overhaul rule, which he says needs to be balanced with the reality of South Africa's ageing fleet and highly capable maintenance sector.

"*South Africa ranks 12th globally for aviation safety, alongside countries like France and Australia*," he notes.

"*That's a credit to the integrity of our maintenance engineers and the culture of accountability across our aviation ecosystem. Our challenge now is to work with regulators to ensure sustainable, practical policies that don't ground businesses or stifle growth*."

A Living Legacy at 104

Founded in 1920, the Aero Club is now 104 years old, one of the oldest in the world. It plays a unique role as both a custodian of aviation heritage and a modern advocacy body representing the interests of general aviation stakeholders.

"*We are deeply proud of our heritage*," says Diale, "*but also forward-facing. We're one of the few countries in Africa that still supports heritage flying, and we want to continue honouring that legacy while enabling the next generation of aviation innovators*."

The Club is composed of 13 different sections, covering everything from aerobatics to hot-air ballooning, power flying, model aircraft, and more. Membership is open to pilots, enthusiasts, professionals, and even non-flying supporters — all united by their love of flight. Annual membership is R650, with a portion allocated to the Club's advocacy fund.

Awareness Must Be Matched by Access

A key part of Diale's agenda is aviation education and transformation. While awareness campaigns and school visits are useful, he stresses the importance of long-term, sustainable programmes that identify and nurture talent over time.

"*Too often, we arrive at a school, put up a banner, show the kids a plane, and then disappear*," he says. "*What we need are after-school programmes, career assessments, mentorship structures and consistent exposure to aviation in all its forms — not just piloting, but engineering, regulatory work, quality systems, even aviation media.*"

He cites the Air Force and structured training colleges as examples of how to do it right: "*They understand that human capital needs to be nurtured across decades. A child in grade 11 today could be your company's managing director 15 years from now — if they're given the opportunity*."

Building Platforms, Making Aviation Visible

Diale is also calling for greater collaboration between organisations, clubs, private companies and aviation businesses. He's optimistic about partnerships with initiatives like Junior Aviation Programmes that focus on hands-on learning through basic model-building, robotics, and aeronautics — especially for young children in under-resourced areas.

He's equally enthusiastic about responsible use of digital platforms: "Social media has changed everything. If used well, it can be a powerful tool for awareness — but we must also uphold aviation's technical standards and regulatory integrity." "*It's Our Turn to Lead*"

For Diale, the moment is both personal and symbolic.

"*South Africa has a dynamic and sometimes difficult history — and aviation reflects that. But we are also a country of innovation. Our job is to ensure we don't lose that legacy but carry it forward, adapt it, and build on it.*"

As one of the youngest chairpersons in Aero Club history, Diale is aware of the significance of his role. "*It's now our turn*," he says. "*And we have a duty to leave the future in better shape than we found it.*"

To learn more about the Aero Club of South Africa or to join, visit *www.aeroclub.org.za. or contact goitse@aeroclub.org.za.*

IS THIS THE YEAR OF THE EVTOL?

A conversation between two flight engineers inside a busy hangar.

Sipho: "Is this the year of the eVTOL?" That's what they're asking. What do you reckon, Mike? You think 2025's finally the year we see air taxis zipping around the skyline?

Mike: (Snorts) You mean the year the hype crashes into certification reality? I've been hearing about these flying Ubers since before my knees started clicking. Feels more like the year a few of them go bust rather than take off.

Sipho: You're not wrong. Lilium already filed for insolvency—and Volocopter too. And they were among the early leaders. Imagine, all those public demos, all that media fanfare… now they're barely keeping the lights on.

Mike: Prototype flights are one thing. Building fleets, securing airspace approvals, and actually moving people safely—that's a whole other mission. Investors got caught up in the excitement without fully grasping how slow and expensive certification is.

Sipho: Brian Foley said something along those lines. That the money flowed fast, but the due diligence didn't. Developing a brand-new aircraft category isn't like launching a new smartphone. This is aviation. Certification alone can bleed billions.

Mike: And the FAA isn't exactly known for rushing things. Joby's made decent progress—they say they've completed 40% of Phase 4 and want to start Type Inspection Authorisation testing this year. But that's still a long way from commercial service.

Sipho: At least they've got backing from Toyota and Delta. Archer's in a similar boat—Stellantis, United Airlines, and all that. Their Midnight aircraft is supposed to shuttle passengers between Manhattan and Newark in under 10 minutes. Sounds ideal on paper.

Mike: Yeah, well, flying people over a dense urban sprawl isn't just about noise and emissions. It's about trust. You know how people already complain about helicopters—wait until they hear electric rotors over their rooftops every five minutes.

Sipho: Exactly. It's not just a technical challenge anymore. It's a public acceptance one. These aircraft have to prove they're better than helicopters—quieter, cheaper, safer. Otherwise, what's the point?

Mike: That's why I think Beta Technologies might be onto something. They're not diving headfirst into passenger ops. They're going the cargo route first with their eCTOL. Same airframe, just without the rotors. Build experience, prove the tech, then scale.

Sipho: A slower burn, but smarter maybe. Still, the clock's ticking. Investors are running out of patience. And you know how volatile the auto and airline industries are—Joby and Archer's fortunes are tied to them too.

Mike: Right? Imagine if Toyota or Delta hits a downturn—suddenly your flying taxi partner's too busy fighting fires at home to help you scale up production. Not a great place to be.

Sipho: Meanwhile, the big aerospace names—Boeing with Wisk, Embraer's Eve, Textron's Nexus—they're all watching from the sidelines. No one's sprinting just yet, but the groundwork's being laid.

Mike: That's the thing. Everyone wants to be first, but no one wants to be first and fail. Aviation history's littered with big ideas that didn't land—turbojets that took too long, flying cars that never sold…

Sipho: Or nosewheel aircraft that executives said wouldn't sell—until the Cessna 172 became a legend. Sometimes the doubters are right, sometimes they're dead wrong.

Mike: If these eVTOLs ever do make it, it'll be years from now. 2025 won't be the year of the flying taxi. It might be the year we find out who survives the first real shakeout.

Sipho: Yeah. And if one day our kids are catching rides to school from rooftop vertiports, maybe we'll look back at this moment and laugh. Or maybe we'll say, "Remember when they thought that would work?"

Mike: Either way, it's aviation. Big dreams, big risks—and bigger realities. Now, enough talking. Let's get this Cessna back together before someone thinks we're going bust.

They both chuckle, return to their tools, and the hum of hangar life resumes.

The Commercial Aviation Association of Southern Africa

CAASA is a non-profit organisation formed in 1944 to promote and protect the commercial interests of the general aviation industry in South Africa

Melissa Sewgolam

Mobile: +27 (0) 82 847 3403

Email: mellisa@caasa.co.za

Gate 9, Lanseria International Airport

www.caasa.co.za