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WORLD AIR NEWS

CONNECTING SKIES • BRIDGING CONTINENTS

EHANG's PILOTLESS EVTOL

AIRBUS H145 TWIN ENGINE

BLENDED WING AIRCRAFT

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Y-20 STRATEGIC AIRLIFTER MAKES ITS DEBUT AT AAD 2024

The Y-20, a flagship multi-role trasporter of the People's Liberation Army Air Force,took to the sky and displayed during the five-day Africa Aerospace and Defence Exhibition. (AAD 2024). Image by: Tiaan van Niekerk.

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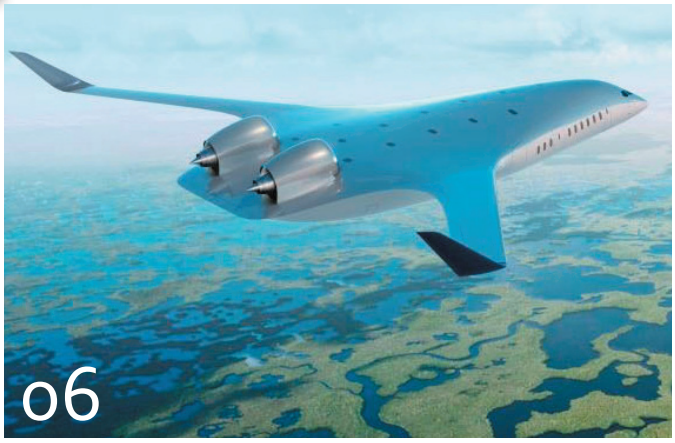

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EMBRACING INNOVATION

The October edition of World Airnews delves into the transformative landscape of the aviation industry as it prepares for significant advancements by 2050. The industry is increasingly focused on reducing CO_2 emissions while simultaneously accommodating a surge in air travel demand. This edition highlights innovations such as electric and hybrid propulsion for short flights, hydrogen-powered long-haul aircraft, and alternative fuels designed to decrease aviation's carbon footprint. The future passenger experience is also a priority, with futuristic cabin designs that promise multifunctional spaces and immersive environments, alongside the potential for air taxis to reshape urban transportation.

Blended wing aircraft, particularly those championed by innovators like JetZero, are showcased for their aerodynamic advantages, potentially offering up to 50% fuel savings and significant carbon emissions reductions when paired with hydrogen-powered engines. However, the article also addresses challenges related to structural integrity, regulatory certification, and infrastructure adaptation that must be overcome to realize these designs by JetZero's 2030 timeline.

Boeing's anticipated New Midsize Aircraft (NMA), known as the 797, is discussed as a strategic move in the face of increasing competition from Airbus and the need for recovery following the 737 MAX crisis. The 797 is expected to embrace a fuel-efficient, single-aisle design aimed at meeting growing sustainability demands, but Boeing must navigate challenges in trust rebuilding with airlines while contending with Airbus's upcoming A321XLR.

EHang Holdings Limited's successful first flight of the EH216-S pilotless eVTOL aircraft in Brazil marks a pivotal development in Urban Air Mobility (UAM). This achievement, conducted in São Paulo with local partner Gohobby Future Technologies, positions Brazil as a burgeoning market for eVTOL technology, with EHang aiming to further

collaborate with regulatory authorities to advance UAM infrastructure.

The edition also features the Airbus H145, a leading twin-engine helicopter recognized for its versatility and safety, boasting over 1,600 units in service and a remarkable 7.5 million flight hours. Enhanced by its five-bladed rotor and powered by two Safran Arriel 2E engines, the H145 showcases advanced avionics and sustainability options, solidifying its market-leading status.

The global aerospace avionics market is set for substantial growth, projected to rise significantly over the next decade, driven by technological advancements and increasing demand for next-generation systems. Major players like Raytheon and Honeywell are highlighted for their roles in both commercial and military aviation sectors.

L3Harris's advancements in counter-drone technology reflect the industry's focus on addressing emerging threats, while Cranfield Aviation Training continues to position itself as a key player in aviation education, having trained over 15,000 professionals since its inception.

Joby Aviation's progress in the UAE toward launching electric air taxi services is spotlighted with their submission of a Letter of Intent for an Air Operator Certificate. This initiative follows collaborations with Dubai and Abu Dhabi transport authorities, aligning with the UAE's ambitions to lead in advanced air mobility.

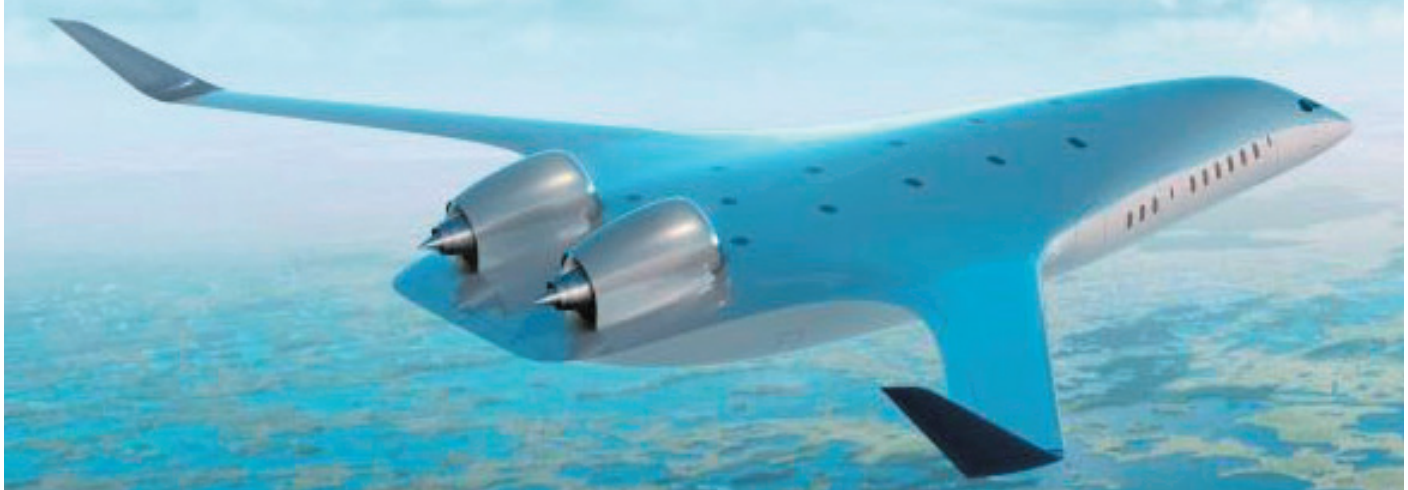
In addition, the ultralight aircraft manufacturing sector is gaining popularity, particularly among aviation enthusiasts attracted to its affordability and unique flying experiences. However, the industry faces challenges such as safety, regulatory constraints, and environmental impacts, prompting innovation in materials and technology.

Lastly, the edition emphasizes that the aviation sector's future hinges on embracing innovation, sustainability, and security. As the industry evolves, these themes will be critical in shaping a safer, more efficient, and environmentally responsible air travel experience.

IMAGE COURTESY : Eve Air

AVIATION OF THE FUTURE
A GLIMPSE INTO 2050

As the aviation industry looks to the future, it faces a dual challenge: significantly reducing CO_2 emissions while accommodating a rapidly increasing number of passengers. By 2050, the goal is to halve emissions and simultaneously triple passenger numbers, requiring bold innovations to address climate change and enhance the flying experience. Here's a look at the transformative changes that could shape aviation by mid-century.



Electric and Hybrid Propulsion

The transition to electric flying has already begun, with the first fully electric passenger aircraft successfully taking off in Canada. While smaller aircraft are well-suited for full electric propulsion, larger jets face difficulties due to the weight and limited energy density of current batteries. As a result, a hybrid approach is gaining traction, where electric power is used during takeoff and landing phases, reducing fuel consumption and emissions during the most energy-intensive parts of the flight.

Hydrogen Fuel Cells

Hydrogen-powered flight could revolutionize long-distance travel by providing a clean, emissions-free propulsion system. If hydrogen is produced using renewable energy, the entire lifecycle could be environmentally sustainable. Recent prototypes have demonstrated that hydrogen-powered aircraft can achieve significant ranges, making them a promising alternative for future aviation. This technology is viewed as a potential game-changer in the push for greener skies.

Alternative Fuels

In the near term, synthetic fuels derived from biomass and renewable energy sources offer a viable way to reduce aviation's carbon footprint. These fuels can be used with existing aircraft engines, requiring minimal modifications to infrastructure and equipment. Their adoption

IMAGE COURTESY : Jet Zero

could significantly cut both CO_2 and particulate emissions, helping the aviation industry mee its environmental targets while maintaining operational continuity.

Solar Propulsion

Solar-powered flight is still in its infancy but holds long-term promise. The Solar Impulse 2 project, which successfully circumnavigated the globe, demonstrated the viability of solar energy in aviation. While solar propulsion may not yet be ready for mainstream commercial flights, ongoing advancements could make it a practical option for future long-range, low-emission travel.

Balancing Capacity and Sustainability

Despite growing environmental concerns, demand for air travel is expected to soar. By 2050, an estimated 9 billion passengers will take to the skies annually. This surge in demand will require the aviation industry to balance increased capacity with sustainability initiatives. To accommodate the growing passenger load, airlines and manufacturers must adopt new technologies and rethink aircraft design, ensuring that increased traffic doesn't come at the expense of the planet.

Futuristic Cabin Designs

Aircraft interiors are also set for a futuristic makeover. Leading manufacturers like Boeing and Airbus are envisioning cabins that go beyond conventional designs. Boeing is exploring immersive experiences that include ceiling projections and panoramic displays, while Airbus is focused on multifunctional spaces where passengers can work, relax, or socialize during their journey. Concepts like "all-wings" aircraft, where the entire body of the plane serves as passenger space, could optimise both comfort and capacity, offering a more spacious and adaptable in-flight experience.

Air Taxis: The Future of Urban Mobility

As urban congestion intensifies, electric air taxis are emerging as a solution for quick, emissions-free travel within cities. Companies such as Volocopter and Lilium are at the forefront of developing this technology, aiming to make air taxis as common as subways by 2050. These vehicles promise to offer a convenient, efficient mode of urban transportation while reducing the environmental impact of traditional car travel. The integration of air taxis could change how people navigate large cities, making short-distance air travel part of everyday life.

By 2050, aviation is expected to undergo a profound transformation. Innovations in propulsion technologies, alternative fuels, and cabin design, along with new urban mobility solutions like air taxis, are set to reshape the industry. The future promises not only more efficient and enjoyable travel but also a much-needed focus on sustainability. The vision for 2050 is one where aviation seamlessly integrates into modern life while maintaining a commitment to protecting the planet.

IMAGE COURTESY : Volocopter


IMAGE COURTESY :JetZero

TRANSFORMATIVE **BLENDED WING AIRCRAFT**

The aviation industry is on the brink of a transformative era with the advent of blended wing aircraft. These revolutionary designs are poised to significantly reduce carbon emissions, a critical step toward a more sustainable future. Leading the charge is California-based JetZero, which aims to introduce its first commercial model by 2030. This marks a dramatic shift from the conventional "tube and wing" design that has dominated commercial aviation for decades.

Key Features of Blended Wing Aircraft

1. Aerodynamic Efficiency:
The hallmark of the blended wing body (BWB) is its fusion of the fuselage and wings into a single, seamless structure. This streamlined design boosts lift and minimizes drag, potentially slashing fuel consumption by up to 50% compared to traditional aircraft. The enhanced aerodynamics make the BWB design not just efficient but also a game-changer in long-haul aviation.

2. Increased Payload:
Blended wing aircraft are also expected to offer significant advantages in payload capacity. The design allows for larger cargo and passenger spaces, enabling airlines to maximize operational efficiency. For passengers, this could translate into new seating configurations, more spacious cabins, and perhaps even more affordable tickets as airlines optimize for capacity.

3. Environmental Benefits:

JetZero's vision extends beyond immediate fuel savings. The company is exploring the integration of hydrogen-powered engines, which would further cut emissions. While the initial models may rely on existing engine technologies, the long-term goal is a fully sustainable propulsion system. This ambition could redefine the environmental footprint of commercial aviation.

Development Challenges

1. Structural Integrity:
Despite its advantages, the BWB's unconventional shape presents unique engineering challenges. One major concern is maintaining structural integrity under pressurization. Unlike traditional planes where loads are distinct, the BWB design combines them into a single unit. This requires innovative materials and advanced engineering solutions to ensure the aircraft's durability and safety.

2. Regulatory Hurdles:
Certifying a brand-new aircraft design is no small feat. The regulatory approval process for aviation is notoriously slow and meticulous, and for good reason. JetZero's 2030 timeline, while ambitious, will be tested by the complexities of meeting stringent aviation safety and performance standards. Navigating this bureaucratic landscape will be crucial to the project's success.

3. Infrastructure Compatibility:
Introducing blended wing aircraft will also require significant adaptations to current aviation infrastructure. The wider fuselage and differing operational needs mean that airports worldwide may need to rethink gates, runways, and maintenance facilities to accommodate these futuristic planes. Without proper integration into existing ecosystems, the adoption of such aircraft could face delays.

Industry Reactions

While the blended wing concept has generated considerable excitement, opinions are divided over JetZero's ambitious goals. Some industry experts express scepticism, citing the challenges of moving from design to production and the hurdles involved in achieving certification within the proposed timeline. However, there is undeniable interest from major airlines, which are eager to reduce operational costs and improve environmental performance. This growing market appetite for efficient, greener aircraft could be the key to pushing the development forward.

The blended wing aircraft represents more than just a new design—it's a potential game-changer for the entire aviation industry. With the promise of enhanced fuel efficiency, larger payloads, and reduced emissions, these aircraft could revolutionize commercial air travel. However, JetZero and other developers will need to overcome significant engineering, regulatory, and infrastructure challenges to turn this vision into a reality. If successful, blended wing aircraft could define the future of aviation, setting a new standard for efficiency and sustainability in the skies.

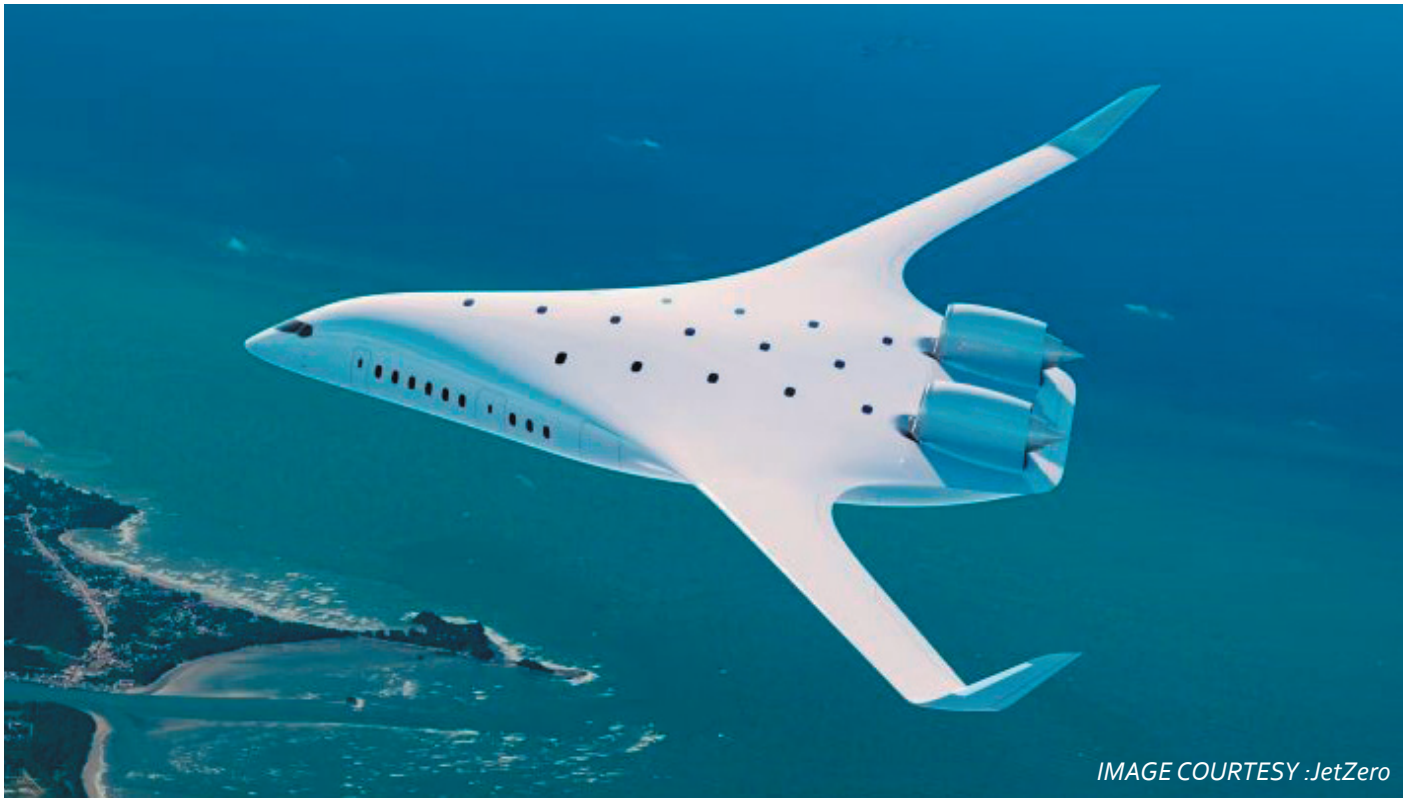


IMAGE COURTESY :JetZero

IMAGE COURTESY: EHang

EHANG'S EH216-S PILOTLESS EVTOL

EHang Holdings Limited (Nasdaq: EH), a global leader in Urban Air Mobility (UAM) technology, has reached a significant milestone with the successful first flight of its EH216-S pilotless eVTOL (electric Vertical Take-Off and Landing) aircraft in Brazil. The landmark event took place in Quadra, São Paulo, in partnership with local operator Gohobby Future Technologies. This achievement marks an important step in Brazil's embrace of UAM, a sector expected to revolutionize urban transportation in the years to come.

A New Era for Urban Air Mobility in Brazil

Brazil, a nation renowned for its aeronautical legacy, is emerging as one of the largest potential markets for eVTOL technology in Latin America. With a robust aviation industry and a growing demand for innovative transportation solutions, Brazil is poised to lead the region in UAM development. The recent trial flight of the EH216-S highlights Brazil's commitment to fostering advanced aviation technologies, particularly in pilotless flight systems.

The trial flight followed the issuance of an Experimental Flight Authorization Certificate (CAVE) by Brazil's National Civil Aviation Agency (ANAC). This certification allows EHang to conduct trial operations in Brazil, enabling the company to test its eVTOL capabilities and demonstrate its intelligent flight technology and cluster management system in a real-world environment.

Collaborative Efforts for Safe and Efficient UAM

In collaboration with Gohobby and regulatory authorities such as ANAC and the Brazilian Airspace Control Department (DECEA), EHang aims to further develop unmanned aircraft traffic management (UTM) systems and concepts of operation for UAM in Brazil. This strategic effort will help pave the way for safe and efficient urban air mobility solutions throughout the country.
EHang has already conducted over 50,000 safe flights across 17 countries, including regions in Asia, Europe, and North America. The trial flights in Brazil form part of a broader strategy to integrate UAM technologies worldwide and showcase the potential of eVTOL aircraft in urban settings.

Regulatory Advancements and International Cooperation

The recent authorization from ANAC is part of a larger framework of regulatory cooperation between Brazil and China. In August 2024, Brazil and China strengthened their ties in civil aviation with an agreement to facilitate airworthiness certification and mutual validation of aircraft. This cooperation is expected to streamline the approval process for new aviation technologies like the EH216-S, allowing for smoother integration of UAM systems between the two countries.

The certification process for the EH216-S in Brazil also benefits from close collaboration between ANAC and China's Civil Aviation Administration (CAAC). In November 2023, a delegation from ANAC and CAAC visited EHang's facilities in Guangzhou, China, to witness firsthand the capabilities of the EH216-S and discuss the regulatory framework for its operation in Brazil.

EHang's Global Leadership in UAM

EHang's EH216-S has already garnered significant recognition as a pioneer in the eVTOL market. It is the first pilotless eVTOL to receive Type Certification, Production Certification, and a Standard Certificate of Airworthiness from the CAAC, setting a global precedent for the airworthiness of pilotless passenger vehicles.

EHang's mission is to make air mobility safe, autonomous, and eco-friendly, providing accessible air travel for everyone. With its focus on innovation, the company continues to push the boundaries of urban air mobility, from passenger transportation to smart city management and logistics.

Future Outlook: UAM in Brazil and Beyond

EHang's progress in Brazil signals a bright future for UAM in Latin America. By continuing to work closely with ANAC and other civil aviation authorities worldwide, EHang aims to develop and deploy safe UAM solutions, using its certified EH216-S eVTOL technology to bring the promise of autonomous air travel to cities across the globe.

Ms. Victoria Xiang, Chief Operating Officer of EHang Europe and Latin America, stated, "We are delighted to have obtained the Experimental Flight Authorization Certificate from Brazil's National Civil Aviation Agency and look forward to conducting the first EH216-S pilotless eVTOL flight in the country. EHang will continue to collaborate with ANAC and other authorities to bring safe, accessible, and efficient UAM solutions to Brazil and beyond."

As UAM technologies continue to evolve, Brazil's role as a key player in the global aviation industry ensures that the region will be at the forefront of this new era in air mobility.

Mr. Huazhi Hu, EHang's Founder, Chairman, and CEO with Mr. Roberto Honorato, ANAC's Head of Airworthiness Department, and his team at EHang facilities

BOEING'S NEXT BIG MOVE

The aviation world is abuzz with anticipation as Boeing is expected to unveil its next major project, the New Midsize Aircraft (NMA), commonly referred to as the 797. In the wake of recent challenges—most notably the 737 MAX crisis and the global pandemic—Boeing finds itself at a pivotal juncture. With increasing pressure from Airbus, particularly the success of the A321neo and its extended-range variant, the A321XLR, Boeing's response is more crucial than ever to maintain its competitive edge.

Originally envisioned as a twin-aisle aircraft, Boeing has reportedly shifted its focus towards a single-aisle design for the 797, a change driven by market demand for smaller, more fuel-efficient long-haul aircraft. The new design is speculated to seat approximately 240 passengers and will likely prioritize fuel efficiency with the integration of advanced engines. This shift aligns with the global push toward environmentally sustainable aviation, which is a priority for airlines and regulatory bodies alike.

Boeing aims to introduce a "clean sheet" design for the 797, meaning the aircraft will incorporate cutting-edge technology instead of simply upgrading an existing model. This approach is vital for meeting the growing demands for reduced fuel consumption and lower emissions. However, the biggest challenge lies in ensuring that the technologies are mature and proven enough to justify the massive financial investment required for such a new program.

While excitement surrounds the potential of the 797, Boeing faces significant challenges before it can proceed. The company is currently focused on the certification of its 737 MAX 7 and MAX 10 models, as well as ramping up production of its 787 Dreamliner and the 777X. These ongoing projects consume considerable resources, making it difficult for Boeing to allocate the necessary time and funds to the development of the 797.

Moreover, the aerospace giant must also contend with a strained relationship with airlines following the 737 MAX incidents. Gaining customer trust and ensuring the reliability of future designs will be crucial to its long-term success.

As Airbus prepares to launch the A321XLR in 2024, Boeing's timeline for announcing and developing the 797 is growing tighter. The success of Airbus in this segment underscores the importance of Boeing's next move. Without a clear strategy and a competitive design, Boeing risks losing a significant portion of the midsize market to its European rival, potentially missing out on an entire generation of aircraft orders.

Boeing's decision regarding the 797 could shape the company's future in the aviation industry. If executed correctly, the 797 could restore Boeing's dominance, allowing the company to recover from its recent setbacks and reclaim its position as the world's leading aircraft manufacturer. However, the stakes are high, and Boeing must ensure that the 797 meets the industry's evolving requirements for efficiency, capacity, and passenger experience.

As the aerospace industry eagerly awaits Boeing's next announcement, the future of the 797 remains uncertain. Will Boeing rise to the challenge and deliver a game-changing aircraft, or will it falter under the weight of its current commitments? Only time will tell.

With Airbus gaining ground and the market shifting towards smaller, more efficient aircraft, Boeing's response with the 797 is critical. This new aircraft represents a turning point for the company, offering a chance to innovate and adapt to a rapidly evolving industry. As airlines and regulators prioritize fuel efficiency and emissions reductions, Boeing's next-generation aircraft could either redefine commercial aviation or leave the company further behind its competitors.

What do you think about Boeing's upcoming aircraft? Will the 797 be the game-changer the company needs? Share your thoughts in the comments.

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AIRBUS H145: THE PINNACLE OF TWIN-ENGINE HELICOPTER PERFORMANCE

Airbus' H145, the latest in its four-tonne-class twin-engine rotorcraft range, delivers exceptional performance, mission versatility, and safety. Designed for high and hot conditions, the H145 combines a compact footprint with a large, flexible cabin, making it the aircraft of choice for a range of civil and military missions.

A Global Favorite

With more than 1,600 helicopters from the H145 family (including the BK117, EC145, and H145) in service globally, the H145 has become a mainstay in aviation. These helicopters have collectively accumulated over 7.5 million flight hours, a testament to their reliability and performance.

Flexibility for Any Mission

The H145's versatility is one of its key strengths. Its compact design, flat cabin floor, and spacious interior can accommodate up to eight passengers in a standard configuration or up to 10 passengers in a higher-density setup. The helicopter's cabin can be quickly reconfigured for different missions, from emergency medical services (EMS) and law enforcement to private transport and offshore operations. With over

IMAGE COURTESY: Airbus

400 modular equipment configurations, operators can tailor the H145 for specific tasks, ensuring it meets a wide range of mission requirements.

Five-Bladed Innovation

In 2020, Airbus introduced a new version of the H145 with a five-bladed main rotor, a significant upgrade aimed at improving performance. The new design has increased the helicopter's useful load by 150 kg, offering the best load-to-takeoff-weight ratio (50%) in its class. The helicopter's reduced D-value, or rotor footprint, allows it to land in even more confined spaces, making it ideal for challenging EMS and public service missions.

The innovative five-bladed rotor also sets a new standard for flight smoothness and comfort. By reducing strain on the crew, Airbus has improved overall mission efficiency. Simplified rotor maintenance has led to higher availability rates, further enhancing the H145's appeal.

Performance and Safety at High Altitudes

Equipped with two Safran Arriel 2E engines, managed by full-authority digital engine control (FADEC), the H145 offers unmatched performance, even at extreme altitudes. The helicopter's performance was demonstrated in 2019 when it landed at an altitude of 20,000 feet during a flight over Aconcagua in the Andes, proving its capabilities in one of the most demanding environments.

Safety is a key focus for the H145, featuring a twin-engine setup, fully separated fuel systems, dual electrical systems, and redundant hydraulic systems. Additionally, the helicopter's energy-absorbing fuselage and crash-resistant fuel cells offer enhanced crashworthiness. Together, these systems ensure that the H145 delivers the highest levels of reliability and safety for both civil and military operations.

Advanced Avionics and Connectivity

The H145 is equipped with Airbus' cutting-edge Helionix® avionics suite, which includes a 4-axis autopilot designed specifically for helicopters. This offers high flight stability, precision, over-limit protection, automated takeoff, and fully-coupled approaches to hover. Additionally, the helicopter features a Fenestron® anti-torque device, which improves flight and ground safety, enhances anti-torque efficiency, and reduces sound levels.

Connected services are a crucial part of the H145's modern operational approach. A wireless airborne communication server (wACS) allows for secure wireless data exchange with ground stations, opening up new possibilities for maintenance and flight management. This advanced connectivity is further supported by Airbus' health monitoring system (HUMS), ensuring the helicopter is maintained to the highest standards with minimal downtime.

A Maintenance-Friendly Rotorcraft

Building on decades of experience with the H145 family, Airbus has designed the new H145 with a focus on reducing operating costs. The helicopter's bearingless main rotor has fewer parts, simplifying maintenance. Additionally, the H145's advanced gearbox, engine monitoring system, and longer time between overhauls (TBO) help to optimize performance while minimizing costs.

Leading the Market

The H145 stands out in its class with impressive takeoff and landing precision, the lowest fuel consumption among competitors, and the quietest operational noise levels. Its compact design and low downwash make it suitable for densely populated or protected areas, while its 50% certification for sustainable aviation fuel (SAF) usage underscores its commitment to a greener future.

Luxury Meets Functionality

Airbus has partnered with Mercedes-Benz Advanced Design to offer the "H145 Mercedes-Benz Style" variant, tailored for private and corporate customers. This luxurious version includes a customisable interior with real wood floors or sophisticated carpets, along with multiple seating arrangements that can accommodate up to eight passengers in comfort. The cabin's modular layout allows for easy reconfiguration to meet the varying needs of private and business travelers.

The Airbus H145 represents the pinnacle of twin-engine helicopter design, combining flexibility, high performance, and safety. Its ability to perform in challenging environments, paired with advanced avionics and low maintenance costs, makes it the top choice for operators worldwide. With its innovative five-bladed rotor and commitment to sustainability, the H145 is well-positioned to lead the market for years to come.

IMAGE COURTESY : Airbus

THE BAT HAWK
AFFORDABLE LIGHT SPORT AIRCRAFT

The Bat Hawk, a proudly South African-made Light Sport Aircraft (LSA), is making waves in the aviation world as the most affordable and versatile aircraft in its class. Designed specifically for the tough African landscape, this robust aircraft is ready for a wide range of applications, from flight training to conservation efforts.

Built for Africa, Ready for the World

Manufactured by Micro Aviation South Africa, the Bat Hawk is designed to withstand the rugged conditions of the African bush. Its strut-braced high wing, fixed tricycle landing gear, and powerful single-engine Rotax configuration make it the ultimate "bush plane." Its propeller is strategically positioned to avoid damage from grass, sticks, stones, and sand, ensuring durability in even the most challenging environments.

The Bat Hawk complies with both ASTM2245 Build Standards and South African Civil Aviation Type Approval, making it a reliable and certified aircraft ready for take-off anywhere in the world.

The aircraft responds with fingertip control and smooth handling. Its 3-axis controls mean it doesn't rely on pilot weight shift, providing full dual control in a side-by-side seating configuration, where the crew is protected from the elements by a durable fibreglass pod and wrap-around windshield.

While its performance is impressive, what truly sets the Bat Hawk apart is its versatility. The aircraft has become a go-to solution for industries like conservation and surveillance, where slow cruising speeds and stealthy operations are crucial. Its helicopter-like cockpit offers excellent forward and side visibility, ideal for tasks like aerial patrols, game reserve monitoring, and anti-poaching efforts.

In addition, the Bat Hawk's applications stretch across agricultural, industrial, and environmental fields. It can be used for everything from fence checking, stock mustering, and aerial spraying to scientific research and border patrols. With its second seat offering room for significant payloads, the aircraft can easily be adapted for specialized roles, such as carcass location, water-point monitoring, and radio telemetry for wildlife tracking.

Ideal for Flight Training

Thanks to its conventional 3-axis aircraft controls, the Bat Hawk is also perfectly suited for initial flight training toward a National Pilot's Licence (LSA). Its forgiving flying characteristics, side-by-side seating, and comprehensive instrumentation make it a reliable and safe choice for flight schools.

The Bat Hawk's affordability and versatility have made it a favourite in industries ranging from conservation to aviation training. Whether you're looking for an affordable flight training solution, a reliable aircraft for specialized surveillance work, or a sturdy bush plane for rugged environments, the Bat Hawk stands out as a leading choice in the Light Sport Aircraft market.

IMAGE COURTESY : Micro Aviation SA

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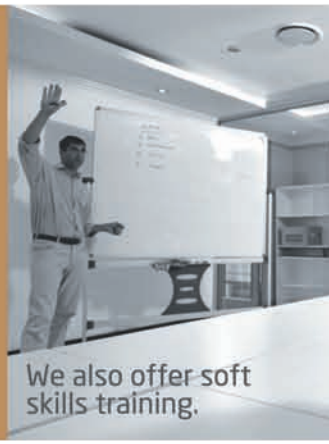

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AIRTEC GLOBAL

IMAGE COURTESY : Ultralight Aircraft

INNOVATION IN THE **ULTRALIGHT AIRCRAFT MANUFACTURING** INDUSTRY

Ultralight aircraft represent a unique segment in aviation, characterised by their small size and lightweight design, allowing them to be piloted by individuals with minimal training and a basic license. Their appeal spans aviation enthusiasts, hobbyists, and adventurers who crave the freedom of flight.

The advantages of ultralights over conventional aircraft are significant:

- Cost-Effective: Ultralight aircraft are generally more affordable to purchase, maintain, and operate. Many can be built from kits or plans, or bought ready-to-fly. Their fuel efficiency and reduced storage needs further enhance their economic viability.
- Accessibility: Unlike traditional aircraft, ultralights can take off and land in diverse environments such as fields, roads, and beaches. They are not bound by the constraints of airports, allowing pilots to explore more remote and scenic locations.
- Thrilling Experience: Designed for fun, ultralight aircraft are agile and responsive. They can perform aerobatic manoeuvres, carry passengers, and accommodate cameras or other equipment for recreational use.

However, the ultralight category is not without challenges:

- Safety Concerns: Ultralights are more susceptible to adverse weather, mechanical issues, and pilot error. Their lack of safety features like airbags or emergency systems can lead to higher accident rates compared to traditional aircraft.
- Regulatory Hurdles: Different countries impose varying regulations on ultralight aircraft, affecting licensing, registration, and operational restrictions. Some nations have stringent rules, while others may prohibit ultralights entirely.
- Environmental Impact: The use of ultralight aircraft can result in noise pollution and disturbances to wildlife. They can also pose risks to other aircraft, particularly in congested airspace.
- These challenges open the door for innovation and improvement within the ultralight aircraft manufacturing sector.

Challenges and Opportunities in Ultralight Aircraft Manufacturing

The ultralight aircraft manufacturing industry, though niche, is experiencing growth and presents unique opportunities for innovation. As manufacturers navigate the complexities of this market, they face several critical challenges:

- Ensuring Safety and Reliability: Safety remains the foremost concern for both users and regulators. Ultralight aircraft must withstand a range of operational stresses. Manufacturers are tasked with upholding rigorous quality and performance standards. For instance, Quicksilver Aircraft has implemented a stringent testing process and achieved Light Sport Aircraft (LSA) certification from the FAA, underscoring their commitment to safety.
- Market Demand and Competition: The ultralight market primarily attracts a specific group of aviation enthusiasts. To thrive, manufacturers must deeply understand their target audience and create distinctive offerings that set them apart. SkyRunner, for example, has carved out a niche with its innovative product that combines the features of an off-road vehicle with those of a powered parachute, appealing to adventure seekers.
- Harnessing Technology and Innovation: Leveraging cutting-edge technology can significantly enhance ultralight aircraft. Innovations can improve efficiency, performance, and sustainability, while also streamlining production processes. A standout example is Opener's BlackFly, a fully electric VTOL aircraft that operates via a simple joystick, removing the need for traditional runways or pilot licenses.

As the ultralight aircraft manufacturing industry evolves, the focus on innovation, safety, and market understanding will be crucial for future success. With the right strategies, manufacturers can continue to captivate the growing community of ultralight enthusiasts while navigating the unique challenges of this dynamic sector.

Innovating in the Ultralight Aircraft Industry
Ultralight aircraft provide an exciting and environmentally friendly way to explore the skies. As the industry evolves, manufacturers are embracing cutting-edge technologies and innovative designs to enhance performance while minimizing ecological impact. Here are some key areas of innovation driving this dynamic sector:

- Advanced Materials and Manufacturing Techniques: By utilizing carbon fiber, titanium, and aluminium alloys, manufacturers create lightweight yet robust frames for ultralight aircraft. Techniques such as 3D printing, CNC machining, and laser cutting optimise component design and performance. For instance, our latest model, the Ultralight X, features a 3D-printed wing capable of adjusting its angle and curvature in response to varying weather conditions.
- Smart and Autonomous Features: Integrating sensors, cameras, GPS, and AI enhances safety and convenience. Our ultralight aircraft can communicate with each other and ground stations, enabling autonomous take-offs, landings, and emergency manoeuvres. The Ultralight X, for example, includes a built-in Copilot system that monitors flight parameters and can take control if necessary.
- Personalized and Flexible Solutions: Understanding that every customer has unique needs, we offer a wide range of customisation options. From model sizes and colors to seating configurations and engine types, our customers can tailor their aircraft to suit their preferences. We also provide flexible payment plans, rental schemes, and subscription services.

Product Features and Specifications

Addressing safety, reliability, and regulatory standards is crucial for ultralight aircraft manufacturers. Our innovative features include:

- Lightweight, Durable Materials: Advanced composites like carbon fiber reduce weight while enhancing strength and corrosion resistance, improving performance and lowering maintenance costs.
- High-Performance Engines: Our aircraft come equipped with efficient engines capable of delivering up to 100 horsepower while complying with noise and emission regulations.
- Advanced Avionics: State-of-the-art instrumentation systems provide real-time flight data, GPS navigation, and emergency parachute systems, ensuring safety and enhancing the flying experience.
- Customisable Design: Our aircraft allow for personalization in aesthetics and ergonomics, providing pilots with comfort and a panoramic view during flight.

Making a Difference in the Ultralight Aircraft Market
Our journey in the ultralight aircraft manufacturing industry has been shaped by challenges and opportunities. By leveraging cutting-edge technology, fostering collaboration, and adapting to market needs, we are confident we are making a positive impact.

IMAGE COURTESY : Joby. JoeBen Bevirt, Founder and CEO with his excellency Saif Mohammed Al Suwaidi , Director General of UAE

JOBY AVIATION TO LAUNCH ELECTRIC AIR TAXI OPERATIONS IN UAE

In a groundbreaking move, Joby Aviation, Inc. (NYSE: JOBY) has initiated the process to become the first certified electric air taxi operator in the United Arab Emirates (UAE). During the International Civil Aviation Organization's Advanced Air Mobility Summit in Montreal, JoeBen Bevirt, founder and CEO of Joby Aviation, met with His Excellency Saif Mohammed Al Suwaidi, Director General of the UAE General Civil Aviation Authority (GCAA), to present Joby's Letter of Intent for the Air Operator Certificate application.

This milestone builds on Joby's growing presence in the UAE, following its 2024 agreement with Dubai's Road and Transport Authority (RTA) to launch air taxi services in Dubai. With a clear focus on revolutionizing urban air mobility, Joby's electric air taxi aims to offer faster, cleaner, and quieter journeys across the city and beyond.

A New Chapter for Advanced Air Mobility in the UAE

Joby's air taxi initiative aligns with the UAE's push to be a global leader in Advanced Air Mobility (AAM). Following the agreement with Dubai's RTA, the company has also signed a Memorandum of Understanding (MoU) with Abu Dhabi's Department of Municipalities and Transport (DMT), setting the stage for air taxi services in the capital.

"There is incredible momentum behind the adoption of clean flight across the UAE," said Bevirt. "We're excited to be working with a wide range of partners to establish one of the world's first electric air taxi networks."

Key Milestone in Joby's Certification Journey

To operate commercial air taxis in the UAE, Joby will need to secure the GCAA's Air Operator Certificate (AOC), following a five-stage application process. This will involve developing operating manuals, facility inspections, and pilot training evaluations. Joby is no stranger to certification hurdles, having received its U.S. Part 135 Air Carrier

IMAGE COURTESY : Joby.

Certificate in 2022 after completing a similar process with the FAA.

H.E. Saif Mohammed Al Suwaidi welcomed Joby's Letter of Intent, stating, "The UAE is committed to fostering advanced air mobility solutions, and we're excited to work closely with Joby Aviation to ensure the highest standards of safety and efficiency as we advance towards the realization of commercial EVTOL operations in our skies."

Revolutionising Air Travel

Joby's electric air taxis are designed to carry a pilot and four passengers, reaching speeds of up to 200 miles per hour. For example, a trip from Dubai International Airport to Palm Jumeirah—typically a 45-minute drive—could take just 10 minutes by air taxi.

As the UAE advances its commitment to sustainable and futuristic transportation, Joby Aviation's entry could signal the dawn of a new era in urban mobility. The company's all-electric, vertical take-off and landing (eVTOL) aircraft promises to deliver fast, clean, and quiet journeys—placing the UAE at the forefront of global air mobility innovation.

With its Letter of Intent filed, Joby Aviation is poised to transform air travel in the UAE, potentially making the nation a leader in electric air taxi services. As Joby moves through the certification process, the skies over Dubai and Abu Dhabi could soon become home to a new, environmentally friendly mode of transport that will redefine urban mobility.

THE MWARI: A LEGENDARY AFRICAN WARRIOR RETURNS

The Mwari, a groundbreaking addition to the South African military aircraft portfolio, has recently returned to Paramount's production facility at Wonderboom Airport for its major Original Equipment Manufacturer (OEM) inspection, commonly known as a C-check. This marks an important milestone for the aircraft, which was deployed in Mozambique in December 2022, playing a pivotal role in counterinsurgency operations through its reconnaissance and surveillance capabilities.

A Key Player in Mozambique

Since its deployment to northern Mozambique, the Mwari has made significant contributions to the ongoing efforts against insurgent threats in the region. Its ability to provide real-time intelligence has been crucial for military operations, helping ground forces gain actionable insights into enemy movements and strategies. The return to the production facility not only signals routine maintenance but also a testament to the operational impact the Mwari has achieved in the field.

In addition to its operational success, Paramount has been actively training aircrews from Mozambique to maximize the aircraft's potential. This week, new groups of crew members have begun their training, ensuring that the Mwari is operated by highly skilled personnel familiar with its unique capabilities.

A New Era in Military Aviation

The Mwari represents the first clean-sheet manned military aircraft developed in South Africa since the Rooivalk attack helicopter. Its journey began with the first flight of the Experimental Demonstrator (XDM) in July 2014, followed by the Advanced Demonstrator (ADM), which was specifically designed for testing various weapons and mission systems.

Marketed as a cost-effective alternative to more expensive military aircraft, the Mwari is specifically tailored for a variety of missions, including surveillance, maritime patrol, and counter-

insurgency operations. Additionally, it serves as a versatile training platform, reinforcing its value in military operations beyond combat scenarios.

Innovative Design and Versatility

One of the Mwari's standout features is its Interchangeable Mission Systems Bay (IMSB), which resides in the aircraft's belly. This innovative design allows for quick integration and swapping of sensor and payload options in under two hours, providing near-endless versatility for various mission requirements. The open-architecture and flexible systems further facilitate low-cost integration of new pods, avionics, special mission equipment, weapons, and sensors.

Powered by PT6 turboprop engines, the Mwari boasts impressive specifications, including a service ceiling of up to 31,000 feet, a maximum cruise speed of 250 knots, and a mission range of up to 550 nautical miles with ordnance. Its overall endurance can reach up to 6.5 hours, complemented by a short take-off and landing (STOL) capability that enables operations from semi-prepared and unprepared airstrips.

Equipped for Success

The Mwari is outfitted with a suite of advanced sensors and equipment, enhancing its operational effectiveness. Notable installations include Hensoldt's Argos II electro-optical gimbal, Paramount Advanced Technologies' 420 sensor ball, Thales's Avni thermal reconnaissance system, Sysdel's MiniRaven radar warning receiver, and Reutech's ACR510 radio. Future enhancements may include the integration of synthetic aperture radar (SAR), further expanding its capabilities.

The Mwari aircraft stands as a testament to South Africa's innovative spirit in military aviation. With its successful deployment in Mozambique, the Mwari has demonstrated its operational impact in counterinsurgency operations, providing vital reconnaissance and surveillance support. As training continues and new missions are undertaken, the Mwari is poised to further solidify its reputation as a legendary African warrior in the skies, embodying a new era of affordable yet highly capable military aviation.

IMAGE COURTESY : Tiaan van Niekerk, World Airnews

ERS BIOMETRICS

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ExecuJet
LUXAVIATION GROUP

EXECUJET SOUTH AFRICA: SAFE TRANSPORT OF DANGEROUS GOODS

In a significant milestone for aviation safety and logistics, ExecuJet South Africa, a proud member of the Luxaviation Group, has secured a Dangerous Goods Certificate as of October 2023. This certification empowers the company to transport hazardous materials by air, fully compliant with international regulations, and underscores its unwavering commitment to safety and excellence while meeting the complex needs of clients.

Commitment to Safety Recognised

In addition to achieving the Dangerous Goods Certificate, ExecuJet's South Africa team has been awarded the prestigious Gold Level Aviation Safety Award for the fifth consecutive time. Granted by Litson & Associates (Pty) Ltd, this accolade highlights the company's dedication to maintaining the highest aviation safety standards. The recognition is a testament to the expertise, diligence, and unwavering focus on excellence exhibited by the entire team.

Expanding Capabilities with Specialised Aircraft

ExecuJet operates a fleet of specialized aircraft tailored for the efficient and safe transport of dangerous goods over various distances. This expansion significantly enhances operational capabilities, offering clients increased flexibility and a wider range of options for the transport of hazardous materials.

The Complexities of Transporting Dangerous Goods

Transporting dangerous goods by air is governed by stringent regulations designed to ensure the safety of passengers, crew, and the environment. Hazardous materials can include explosives, flammable liquids, toxic substances, and radioactive materials. The safe and efficient transport of these goods is not just a regulatory requirement; it is a critical responsibility that ExecuJet takes seriously.

Estie Serfontein, QA Manager at ExecuJet South Africa, emphasizes, "The safety of our crew, clients, and the environment is at the forefront of everything we do. With this certification, ExecuJet is fully equipped to handle the complexities of transporting dangerous goods in strict accordance with regulations and international best practices."

Navigating Regulatory Compliance

ExecuJet adheres strictly to the guidelines set forth by the International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO). These organizations provide the framework for the safe transport of dangerous goods, including the IATA Dangerous Goods Regulations (DGR) and the ICAO Technical Instructions. Each class of dangerous goods comes with its own set of packaging and labelling requirements designed to mitigate risks during transport.

Commitment to Packaging and Labeling Safety

Proper packaging is not merely a formality; it is a critical safety measure. ExecuJet ensures that all hazardous materials are packaged robustly to withstand the rigors of air transport, including pressure and temperature variations. For example, leak-proof and impact-resistant containers are standard for flammable liquids.

Equally important is accurate labelling. All packages display the appropriate hazard labels and handling instructions, ensuring that everyone involved— from handlers to emergency responders—is fully informed about the nature of the contents.

Excellence in Documentation

Meticulous documentation is maintained for every shipment. ExecuJet's team ensures that the Dangerous Goods Declaration (DGD) is thoroughly completed, detailing the nature of the goods, their classification, and the packaging used. This transparency facilitates smooth coordination with airlines and freight forwarders, ensuring compliance with all regulatory requirements.

Specialised Training for Safety

ExecuJet prioritises rigorous training for its personnel to stay current with the latest regulations and safe handling practices. This comprehensive education covers classification, packaging, labeling,

and emergency response procedures. Regular refresher courses are part of the company's commitment to maintaining the highest safety standards.

Overcoming Challenges with Expertise

Transporting dangerous goods by air presents unique challenges, including balancing speed and efficiency with safety protocols and navigating varying international regulations. ExecuJet's experience and proactive approach enable the company to effectively overcome these hurdles. The team is also keenly aware of emerging technologies and continuously adapts its practices to incorporate innovations that enhance safety and efficiency.

Why Choose ExecuJet South Africa?

- **Certified Excellence:** Our Dangerous Goods Certificate and consecutive Gold Level Aviation Safety Awards highlight our capabilities and commitment to safety.
- **Versatile Fleet:** With aircraft like the Beechcraft B1900 and the forthcoming Cessna Caravan, we offer flexible solutions tailored to specific needs.
- **Regulatory Compliance:** We adhere strictly to IATA and ICAO regulations, ensuring smooth and hassle-free transport.
- **Expert Team:** Our specialists are trained to handle a wide array of hazardous materials with the utmost care.

Let ExecuJet's specialists in the Charter division assist with any type and size of shipment, even if it means sourcing additional aircraft. We are dedicated to providing comprehensive solutions tailored to your specific needs.

Contact Us Today

Email: charter.africa@luxaviation.com
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ABOUT EXECUJET

ExecuJet, part of the Luxaviation Group, is widely recognized as an industry leader in business aviation ground handling, boasting a strong heritage of operational excellence. With a global network of Fixed Base Operators (FBOs), ExecuJet is dedicated to delivering first-class facilities and award-winning services for business aircraft, passengers, and crew.

With an expanding footprint, ExecuJet manages an FBO network of over 140 facilities worldwide. The company's comprehensive portfolio of aviation services includes aircraft management and insurance, corporate aircraft charter, cargo (including dangerous goods), fixed base operations, aircraft sales and acquisitions, exclusive tailor-made experiences, and luxury travel concierge services.

ExecuJet, like all companies in the Luxaviation Group, integrates corporate sustainability into its business strategy, actively addressing social and environmental concerns while continuously seeking to improve operations. Explore every aspect of the Luxaviation and ExecuJet brands today.

AEROSPACE AVIONICS MARKET SET FOR GROWTH: NEXT-GEN SYSTEMS IN HIGH DEMAND

The global aerospace avionics market is poised for robust expansion, with projections estimating its value will surge from $48.7 billion in 2022 to a staggering $111.6 billion by 2032. This growth, forecasted at a compound annual growth rate (CAGR) of 8.9%, is fueled by the increasing demand for next-generation aircraft systems, technological advancements, and substantial investments in both commercial and military aviation.

Technological Advancements Driving Market Growth

The rapid pace of technological innovation is one of the primary forces driving the evolution of avionics systems. Advancements in sensors, processors, and communication systems are allowing manufacturers to integrate cutting-edge technologies into avionics. These systems enhance functionality, reliability, and performance, ensuring safer and more efficient aircraft operations. Components such as air data sensors, accelerometers, pilot control stick sensor assemblies, and rate gyros are pivotal in modern avionics, which is why their demand is increasing. The rise of the retrofit market, where older aircraft are upgraded with state-of-the-art technology, is further boosting avionics adoption through 2032.

Next-generation flight management systems (FMS) and the integration of advanced navigation and surveillance technologies are expected to be major contributors to market growth. These systems play a critical role in coordinating aircraft operations from takeoff to landing, enhancing both

the safety and fuel efficiency of flights, and helping airlines reduce operating costs.

Strong Demand for Commercial Aircraft

The aerospace avionics market is also benefiting from the increasing number of commercial aircraft deliveries. According to forecasts by the International Civil Aviation Organization (ICAO), both passenger and freight traffic are expected to double by 2035. Contributing factors include the rise of low-cost airlines, increasing disposable income, and growing population density, all of which are driving the demand for more aircraft.

This expanding demand is evident in the ambitious fleet expansion plans of airlines worldwide. For example, China Southern Airlines is aiming to double its fleet size to 2,000 aircraft by 2035. Additionally, the Chinese aerospace company COMAC is developing its C919 aircraft, set to compete with industry giants like Airbus and Boeing in the narrow-body market.

Growing Importance of Navigation and Communication Systems

Modern avionics are essential not only for flying but also for navigating on the ground. Advanced navigation systems in aircraft include components like magnetic field detectors, inertial navigation systems, and distance measuring equipment. Smaller Visual Flight Rule (VFR) aircraft feature basic navigational aids, while larger commercial airliners rely on more complex systems, including instrument landing systems (ILS), for precise navigation and landing.

The need for reliable communication and navigation systems is underscored by the role they play in operational safety. As air traffic increases, avionics systems that help pilots navigate in the air and on the ground are becoming ever more critical.

Market Segmentation: Subsystems, Platforms, and Fit

The aerospace avionics market is segmented into several categories, providing insights into specific growth areas:

- **Subsystems:** The market is divided into communication, navigation, and surveillance systems, flight management systems, flight control systems, health monitoring systems, and electrical and emergency systems. These subsystems are vital for ensuring the safe and efficient operation of modern aircraft.
- **Platforms:** The market spans across military aviation, commercial aviation, general aviation, and special mission aviation. Commercial aviation remains a significant revenue driver due to the growing demand for passenger and cargo air travel, while military aviation benefits from defence spending and fleet modernization.
- **Fit:** The market is further classified into retrofit and forward fit. The forward fit segment, which includes new aircraft outfitted with the latest avionics systems, contributed $30.38 billion in revenue in 2022 and is projected to reach $72.94 billion by 2032, growing at a CAGR of 9.42%.

Key Players and Regional Insights

Leading market players in the aerospace avionics sector include Raytheon Technologies Corporation, Honeywell International Inc., L3 Harris Technologies, BAE Systems, Thales Group, and Northrop Grumman, among others. These companies are at the forefront of developing and supplying advanced avionics systems to both commercial and military customers.

Geographically, North America leads the market, contributing $18.49 billion in revenue in 2022. The region is projected to reach $39.22 billion by 2032, growing at a CAGR of 8.07%. This dominance is driven by strong demand from the U.S. military and commercial sectors, as well as favorable government regulations supporting avionics upgrades.

A Market Primed for Innovation and Growth

The aerospace avionics market is undergoing a period of unprecedented growth as airlines and military operators alike seek to enhance their fleets with the latest technologies. The adoption of next-gen flight management systems, advanced navigation aids, and state-of-the-art communication systems is poised to transform the aviation industry over the next decade.

With continued investments in avionics systems, increased aircraft deliveries, and growing passenger demand, the aerospace avionics market is on track to become a key pillar of the global aerospace sector. For companies and stakeholders looking to stay ahead in this rapidly evolving landscape, it is crucial to embrace these innovations and capitalize on the market's long-term growth potential.

SOURCE: Allied Market Research
FOR MORE INFORMATION VISIT:
www.alliedmarketresearch.com

SAGETECH AVIONICS: THE UNSUNG HERO OF NEXT-GEN AIRSPACE SAFETY

In the fast-evolving world of aviation, one company is quietly revolutionising airspace safety for both manned and unmanned aircraft: Sagetech Avionics. Leading this charge is CEO Tom Furey, a former U.S. Navy pilot who is now steering the company toward innovations that will shape the future of aviation. Sagetech's mission is simple yet critical—develop cutting-edge technology to make the skies safer.

Sagetech Avionics CEO Tom Furey

From pioneering micro-transponders to enhancing collision avoidance systems, Sagetech's influence spans both civil and military airspace. The company is poised to transform Under Furey's leadership, Sagetech has expanded its reach, providing advanced transponders that ensure drones and manned aircraft can safely share airspace. The company's focus on smaller, more efficient devices has allowed it to carve out a niche, especially in Beyond Visual Line of Sight (BVLOS) operations—a crucial component of modern drone missions.

Sagetech's Role in Civil Aviation

One of the biggest challenges in civil aviation today is integrating Unmanned Aircraft Systems (UAS) into shared airspace. Drones must be able to operate safely around manned aircraft, which is no small feat. Enter Sagetech's certified transponders and prototype ACAS X collision avoidance systems. These innovations allow drones to "see" and avoid other airspace users while remaining visible to air traffic controllers.

A prime example of this technology in action is Chevron's drone inspections of oil pipelines. Using Sagetech's transponders, high-tech drones perform detailed inspections over long distances, all without visual observers. These BVLOS operations showcase the potential of autonomous aviation to revolutionize industries while maintaining rigorous safety standards.

Military Applications

Sagetech's contributions to military operations are equally impressive. The company's MX12B transponder, a compact device the size of a deck of cards, is used by the U.S. Department of Defense (DoD) to enhance airspace safety. What makes the MX12B stand out is its versatility—it can be used on small drones in combat zones or larger military aircraft, offering both civil compatibility and military-grade security.

In today's conflict zones, where identifying friend from foe is critical, Sagetech's IFF (Identify Friend or Foe) transponders are indispensable. These devices help prevent tragedies like friendly-fire incidents by ensuring friendly aircraft are easily identifiable, even in complex airspaces.

What's Next for Sagetech?

Sagetech isn't resting on its laurels. The company is currently developing the ACX 3000, a platform with even more advanced functionality, designed to further enhance collision avoidance and airspace safety. This new system has demonstrated its potential in BVLOS operations and could soon be a key player in autonomous commercial and military airspace management.

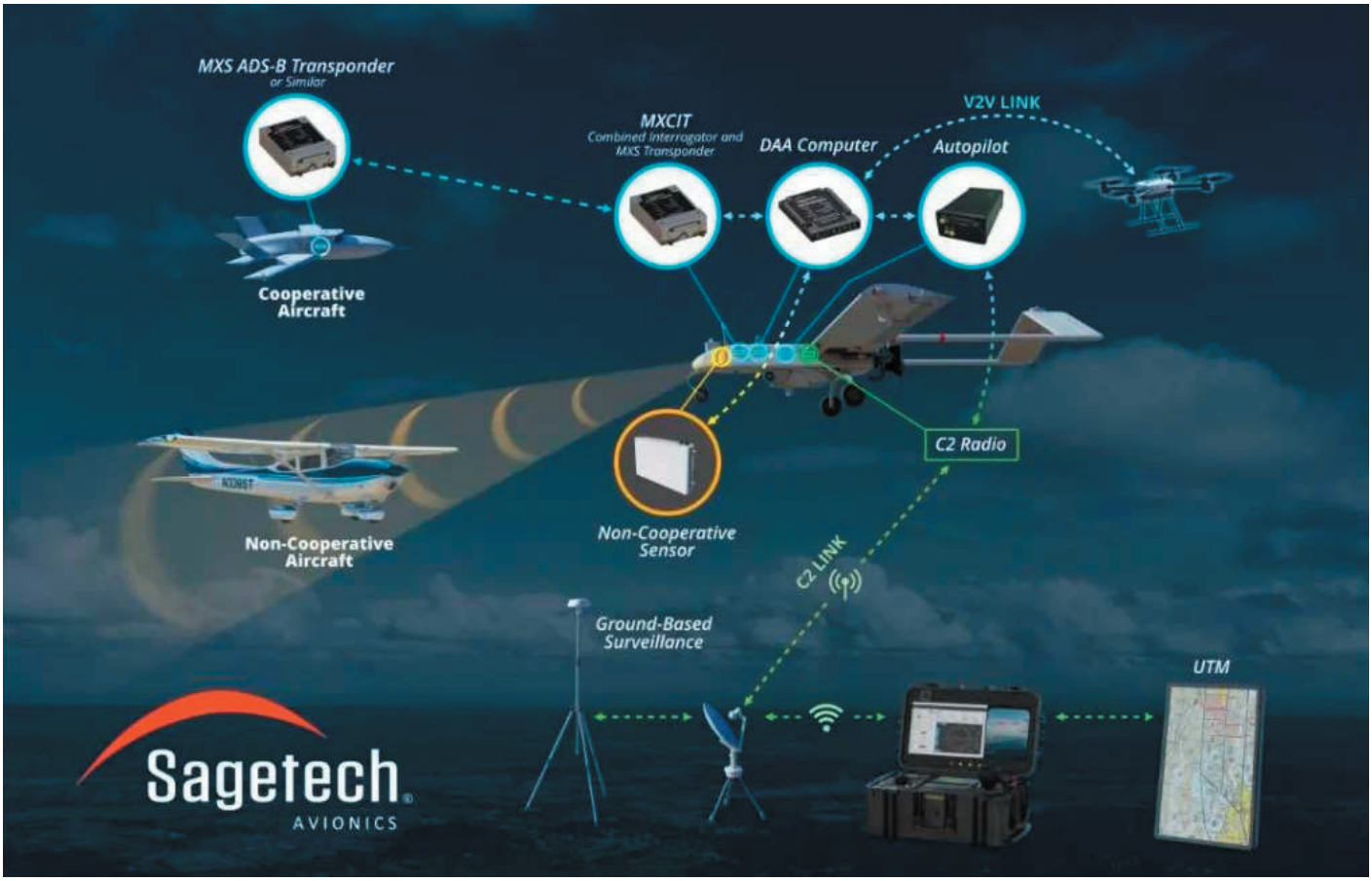
On the military front, Sagetech is diving deeper into counter-UAS capabilities and automated air defences, while on the civil side, the company is helping pave the way for more widespread drone operations. Sagetech's partnership with American Aerospace Technologies, testing drone solutions for Chevron, highlights how BVLOS missions can be performed safely and routinely without individual waivers.

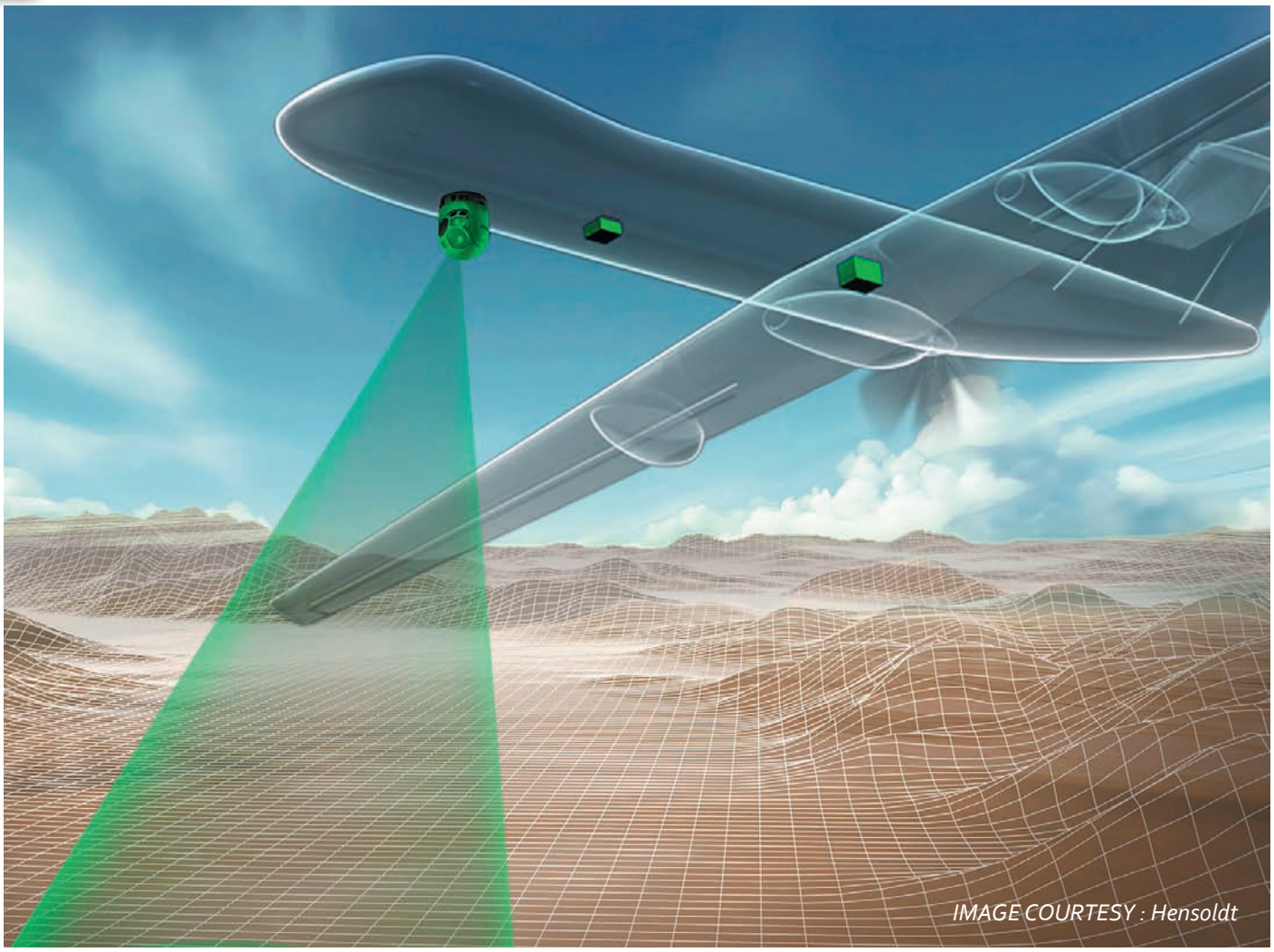
A Future of Safer Skies

As the skies become more congested with both manned and unmanned aircraft, the need for advanced safety systems will only grow. Sagetech Avionics is at the forefront of this shift, ensuring that whether it's drones delivering packages or military aircraft flying combat missions, everyone can operate safely in shared airspace.

With Tom Furey at the helm, Sagetech is perfectly positioned to play an even bigger role in the future of aviation. Their technologies are not just ensuring safety today—they are laying the groundwork for a future where airspace management is more efficient, interconnected, and safer for everyone involved.

In the rapidly evolving world of aviation, one thing is clear: Sagetech Avionics is making the skies safer, one innovative system at a time.





HENSOLDT SOUTH AFRICA AI-DRIVEN COMMUNICATIONS INTELLIGENCE IN DEFENCE

HENSOLDT South Africa, a leader in defence and security electronics, is making significant strides in the field of communications intelligence (COMINT) with the introduction of its revolutionary COMINT automation engine. Leveraging artificial intelligence (AI) and advanced signal processing, this cutting-edge technology promises to redefine how modern militaries gather, process, and act on crucial intelligence in the electromagnetic spectrum.

A New Era of Electromagnetic Warfare

At the core of HENSOLDT South Africa's new COMINT engine is an advanced AI-driven system that automates the detection and analysis of enemy communications. Traditionally, monitoring and decoding these signals has been a labour-intensive process, requiring a high level of operator input and extensive time to derive actionable intelligence. The introduction of AI, however, dramatically accelerates this process, allowing for faster and more accurate signal analysis.

The COMINT engine excels at detecting a range of communication signals, from agile frequency-hopping transmissions to drones and CEMA (Cyber-Electromagnetic Activities) networks using

GSM and LTE. This capability is critical as modern military operations are increasingly reliant on complex, digital communication infrastructures. By processing multiple signals at once and integrating wideband sensors, the system provides real-time intelligence with minimal operator intervention, giving defence forces a decisive edge in the electromagnetic warfare domain.

AI at the Forefront of Intelligence Gathering

Artificial intelligence plays a crucial role in transforming how military intelligence is gathered and utilized. The AI engine within HENSOLDT's COMINT system enables rapid classification of threats, minimizing the margin for human error and accelerating decision-making on the battlefield. The automation of signal detection and processing allows for quicker identification of potential threats, ensuring that commanders receive the intelligence they need at the speed required to make critical decisions.

Wimpie van den Berg, Portfolio Manager of GEW, a business unit of HENSOLDT South Africa, highlighted the transformative power of AI in defence: "AI is reshaping the landscape of military signal analysis. Our COMINT automation engine enhances the speed and precision of intelligence gathering, enabling commanders to react quickly and effectively to emerging threats."

Scalable, Adaptable, and Future-Ready

HENSOLDT South Africa's COMINT automation engine is designed with flexibility in mind. Its scalable architecture allows it to be tailored to the specific needs of each client, ensuring that it can be deployed across various operational environments. Additionally, the system's ability to integrate third-party decoders makes it future-proof, as it can adapt to evolving technological challenges and incorporate new tools for signal analysis.

The versatility of the engine extends beyond military applications. Its core technologies—sensors, effectors, and software—can be utilized in civil markets as well, including spectrum monitoring and security solutions. The system is an example of HENSOLDT's broader commitment to offering turnkey solutions that serve both defence and civilian customers across a wide range of operational requirements.

A Leading Force in Defence Technology

HENSOLDT South Africa is recognized as a major player in the global defence landscape. As part of the HENSOLDT Group, the company integrates decades of experience with a culture of innovation to provide comprehensive solutions for modern warfare. From electronic warfare and spectrum monitoring to optronics and security, HENSOLDT South Africa covers a wide range of capabilities critical to both defence and civil markets.

With almost 800 employees spread across four sites in South Africa, HENSOLDT South Africa is the group's largest industrial base outside Germany. This footprint underscores the company's importance as a key hub for defence technology innovation in Africa. Its portfolio of high-tech products, such as the COMINT automation engine, ensures that HENSOLDT continues to meet the needs of today's rapidly changing global security landscape.

Innovating for the Future

The introduction of HENSOLDT South Africa's COMINT automation engine signals the company's ongoing drive to lead in technological innovation. As AI, cyber security, and data fusion become increasingly important in defence electronics, HENSOLDT remains at the forefront of these developments, shaping the future of military intelligence.

Whether in defence or civil applications, HENSOLDT's advancements in electromagnetic warfare and signal processing set a new standard for scalable, flexible, and future-ready solutions.

IMAGE COURTESY : Eve Air

EVE AIR MOBILITY AND SIEMENS PARTNER FOR AAM

In an exciting move towards accelerating the Advanced Air Mobility (AAM) industry in the United States, Eve Air Mobility and Siemens Smart Infrastructure have signed a Memorandum of Understanding (MoU) to evaluate and develop the electrical infrastructure and energy management services required to support the future of electric vertical take-off and landing (eVTOL) operations. This partnership aims to create a scalable model for the energy needs of eVTOL aircraft, allowing these new technologies to safely integrate into the transportation ecosystem.

As a provider of electric and digital solutions, Siemens Smart Infrastructure will work alongside Eve Air Mobility, an innovative aerospace manufacturer specializing in eVTOL aircraft. The collaboration will help address the increasing energy service demands for these aircraft as the AAM industry grows, shaping a future where urban air mobility is part of everyday life.

The AAM industry is on the verge of commercializing eVTOL technology, with a market projected to exceed $760 billion by 2040. AAM promises to revolutionize urban transport with zero-emission solutions, reducing congestion, cutting down travel times, and contributing to global decarbonization efforts. The integration of eVTOL technology into current transportation systems is expected to drive significant investment in infrastructure and job creation, while also providing greater mobility options.

Eve Air Mobility is at the forefront of this movement, benefiting from Embraer S.A.'s 50-plus years of aerospace expertise. With an advanced eVTOL project and a unique air traffic management solution, Eve is working to realize a seamless urban air mobility ecosystem.

A Collaborative Effort to Scale eVTOL Operations

John Kasuda, Head of the Airports and Vertiports market at Siemens Smart Infrastructure, stated, "As a market leader in electrical infrastructure, Siemens is excited to continue driving the evolution of this futuristic industry alongside Eve Air Mobility." This partnership will evaluate and establish the most effective approach to providing energy services for eVTOL operators, airports, and other AAM stakeholders.

Luiz Mauad, Vice President of Customer Services at Eve Air Mobility, added, "The results and insights that Siemens and Eve Air Mobility gain from this collaboration will help us prepare the ecosystem and develop services at scale for U.S. customers, with potential global applications."

The models developed by Eve and Siemens aim to reduce upfront capital barriers, making it easier for stakeholders to adopt AAM technology. This partnership is critical in addressing energy needs and creating a sustainable, efficient future for eVTOL operations.

About Siemens and Eve Air Mobility

Siemens Smart Infrastructure, a leader in intelligent infrastructure solutions, is committed to helping industries and communities thrive by connecting energy systems, buildings, and industries. With a global presence and around 75,000 employees worldwide, Siemens is poised to contribute significantly to the advancement of AAM technology.

Eve Air Mobility, listed on the New York Stock Exchange, is driving innovation in urban air mobility with its holistic approach to developing eVTOL technology. By fostering partnerships and leveraging decades of aerospace expertise, Eve is determined to make urban air mobility a reality in cities across the globe.

This collaboration between Eve Air Mobility and Siemens marks an important milestone in the development of the AAM ecosystem, setting the stage for the future of clean, efficient, and scalable urban air transport solutions.

SETTING MILESTONES IN COLLABORATION AND INNOVATION

Global aviation industry leaders converged in South Africa for the Aviation Africa Summit and Exhibition 2024, held at the Sandton Convention Centre in Gauteng on 16 & 17 September 2024. The event, themed "Bridging Skies and Leveraging Growth," surpassed expectations, establishing new milestones in aviation collaborations and innovations.

This year's event was co-sponsored by the South African Civil Aviation Authority (SACAA), alongside Times Aerospace Events. The collaboration united industry leaders for discussions on the future of aviation, particularly within the African continent. A significant first for the event was the partnership with the African Business Aviation Association (AfBAA), forming a three-way collaboration that fostered engagement between airlines, regulators, airports, original equipment manufacturers (OEMs), and business aviation companies.

Ms. Poppy Khoza, Director of Civil Aviation at SACAA, emphasised the importance of events like Aviation Africa in fostering collaboration among stakeholders to strengthen the aviation industry. She stated, "Despite past social and humanitarian challenges, we are now a continent with great potential for growth on condition that we make use of the networks and collaborative opportunities in this and similar events."

Summit Chairperson Alan Peaford, in his opening remarks, paid tribute to the late Nick Fadugba, the former Chairperson of AfBAA and Secretary-General of the African Airlines Association.

There was an open spirit of honest debate about the issues that are holding back Africa's aviation industry from realising its true potential."

The summit featured a range of panel discussions, addressing critical topics, such as:

- Developing a skilled workforce to match Africa's growth potential, both in the air and on the ground.
- Challenges in financing Africa's aviation ambitions.
- Human capital for sustainable airport projects.
- Adapting to climate change challenges

Several significant announcements were made at the summit, including a strategic agreement between Air Traffic and Navigation Services (ATNS) and Global Air Navigation Services (GANS). The collaboration is expected to enhance various aspects of air traffic management, a critical component in the ongoing modernisation of Africa's aviation infrastructure.

As the event drew to a close, the official flag was passed to the Honourable Olivier Kabera, Rwanda's Minister of Infrastructure, marking the Republic of Rwanda as the next host of the Aviation Africa Summit in 2025.

IMAGE COURTESY : Airbus

HMOTION'S NEW TRAINING HUB FOR H135 & H145 HELICOPTERS

Airbus step forward in its mission to enhance the proficiency and safety of helicopter operations with the creation of HMotion, a cutting-edge simulation and training centre for the H135 and H145 family of helicopters. In partnership with ADAC HEMS Academy, the new centre will offer advanced training solutions designed to improve operational safety and efficiency.

Launched in 2024, HMotion is the result of a close collaboration between Airbus Helicopters and ADAC HEMS Academy, bringing together the technical knowledge of the helicopter manufacturer and the operational expertise of ADAC Luftrettung, one of the world's leading helicopter emergency medical services. This partnership aims to provide a comprehensive and cost-effective training platform for helicopter pilots, flight crews, and technicians.

Bruno Even, CEO of Airbus Helicopters, expressed his enthusiasm about the joint venture: "With the creation of HMotion, we will further enhance the training capabilities for our H135 and H145 customers. We will combine the best of two worlds: the data and knowledge of Airbus as the helicopter manufacturer with the experience of ADAC Luftrettung, a world-renowned helicopter operator."

Frédéric Bruder, Managing Director of ADAC Luftrettung, echoed this sentiment, stating, "The collaboration between our two companies will create the world's most modern simulator training centre for H135 and H145 helicopters."

HMotion officially began its operations on March 1, 2024, and is currently based in Germany, operating three full flight simulators. The training centre provides a wide array of courses for the EC135/H135 and EC145/H145 helicopter personnel. These offerings include mission-specific and critical flight training, ensuring that both pilots and crews maintain a high level of proficiency throughout their careers.

The joint venture has already integrated full flight simulators at Airbus Helicopters' site in Donauwörth and the ADAC HEMS Academy in Bonn-Hangelar. These training centres aim to deliver affordable, high-quality education to operators of the H135 and H145 helicopters.

The next phase of HMotion's development will see the opening of a state-of-the-art training facility in Oberpfaffenhofen, near Munich, in 2025. This new location will consolidate all simulator activities, providing an easily accessible hub for international customers, with close proximity to Munich International Airport.

The integration of full flight simulators will allow for comprehensive training, including emergency procedures, mission-specific scenarios, and critical flight operations, all designed to improve the safety and operational efficiency of helicopter personnel.

HMotion is part of Airbus Helicopters' broader strategy to accompany its customers throughout their careers, offering innovative solutions to support efficient helicopter operations. Airbus understands that operational safety is directly linked to the skills of pilots, flight crews, and technicians. With HMotion, Airbus and ADAC are setting a new standard for helicopter training, focusing on safety, efficiency, and proficiency. The centre is poised to become a vital resource for the next generation of H135 and H145 operators worldwide.

CRANFIELD AVIATION TRAINING ACCESSIBLE WORKFORCE SOLUTIONS

Cranfield Aviation Training, based in Johannesburg, South Africa, stands as one of the leading institutions for aviation education, registered and accredited by the South African Civil Aviation Authority (SACAA). Established in 1999, Cranfield has since trained over 15,000 aviation professionals across various sectors, including flight crews, cabin crews, maintenance personnel, ground crews, and airport staff.

Cranfield's broad course offerings cater to the critical needs of professionals in the aviation sector. Their programs are not only designed to meet SACAA regulatory requirements but also go beyond to enhance safety, service quality, and operational security. Cranfield's curriculum includes essential non-regulated training courses such as Hostile Environment Awareness Training (HEAT), Human Trafficking Prevention in Aviation, Drug and Alcohol Management Programs (DAMP), and Wildlife Hazard Management. These courses are tailored to address emerging threats and industry demands, ensuring professionals remain well-equipped to meet the dynamic challenges of modern aviation.

The company provides training solutions for key personnel such as flight deck crew, cabin crew, aircraft maintenance engineers, and ground crew. Specialized courses include Cold Weather Operations (CWO), Low Visibility Operations (LVO), Fuel Tank Safety (FTS), and Electrical Wiring Interconnect Systems (EWIS), among others.

A Cost-Effective training for Aviation Aspirants

One of Cranfield's main strengths lies in its accessibility and affordability, making aviation training achievable for a wide range of students. The training institute's holistic approach ensures that both new entrants and seasoned professionals can access the courses necessary for career progression without prohibitive costs.

Cranfield Aviation Training provides a conducive learning environment in the heart of Fourways, Johannesburg. Their campus features a relaxed garden setting with bush lodge-style classrooms that can accommodate up to 135 delegates.

Additionally, Cranfield offers a variety of training options, including classroom-based learning, instructor-led sessions via Teams or Zoom, and interactive e-learning courses for students who prefer remote study.

With an experienced team of 11 administrative staff and 15 instructors, Cranfield ensures that training is delivered efficiently, professionally, and with a personal touch.

Expanding Opportunities in the Drone Industry

In line with the rapid evolution of the aviation industry, Cranfield has developed comprehensive training programs for Unmanned Aerial Systems (UAS), commonly known as drones. The Remote Pilot Certificate (RPC) equips students with the knowledge and skills required for commercial drone operations.

Commitment to Quality and Continuous Development

Cranfield Aviation Training is committed to continuous research and development of its training materials, techniques, and aids. The institution's dedication to maintaining the highest training standards is reflected in its reputation for producing skilled, industry-ready professionals.

Cranfield Aviation Training remains an essential provider of aviation workforce solutions, offering accessible, cost-effective training programs designed to meet industry needs. Whether for new recruits or seasoned professionals, Cranfield's broad range of courses ensures that the aviation sector continues to be supplied with highly trained, safety-conscious personnel ready to tackle the demands of modern aviation.

With over 15,000 trained professionals and a solid reputation both locally and internationally, Cranfield Aviation Training is a key player in shaping the future of aviation in South Africa and beyond.

For more information on Cranfield Courses

Email: info@cranfield.co.za

Visit: https://cranfield.co.za/

L3HARRIS UAS TRACER

A GAME CHANGER IN COUNTER-DRONE TECHNOLOGY

In an era where unmanned aerial systems (UAS) are becoming increasingly prevalent, the need for advanced counter-drone technology is more critical than ever. Whether it's for military, commercial, or security purposes, the ability to detect, track, and neutralize rogue drones is essential to maintaining safe airspace and protecting infrastructure. L3Harris is leading the charge with their cutting-edge UAS TRACER, a comprehensive system designed to identify and eliminate UAS threats swiftly and effectively.

Reducing Clutter, Enhancing Focus

At the core of UAS TRACER is an innovative algorithm developed by L3Harris that minimizes electro-optical/infrared (EO/IR) scene clutter. This clutter, which can include irrelevant objects like birds or environmental distortions, typically complicates the task of identifying real threats. By significantly reducing such clutter, UAS TRACER allows operators and algorithms to focus more effectively on actual dangers, such as inbound unmanned aircraft systems, mortars, or rockets. The reduction in noise means faster decision-making, enabling operators to respond in real-time to threats.

IMAGE COURTESY : L3 Harris

Precision in a Complex Environment

UAS TRACER integrates data from a wide range of detection technologies, including radar, optical radio frequencies, and acoustic sensors. This multisensor approach allows the system to alert operators when a UAS or multiple drones encroach into a designated area. With the growing usage of drones in both civilian and military sectors, distinguishing between routine and potentially harmful drones is paramount. UAS TRACER ensures that no threat goes unnoticed by providing comprehensive coverage of the airspace.

Tracking and Identifying Drones

Once a drone is detected, UAS TRACER tracks its path, giving operators situational awareness of its trajectory and intent. But the system does more than just track; it discriminates between drones and benign objects like birds or other non-threatening elements. Using machine learning, UAS TRACER can also identify if the detected drone is friendly or hostile. This is crucial for organizations, particularly those that use drones in their daily operations. The system's Machine Learning Operations Pipeline (MLOps) is continuously trained to differentiate between various drones and recognize the specific nature of the threat—whether it's kinetic or surveillance-related. This ensures that authorized drones continue operating without interference, while rogue drones are neutralized.

A Multitude of Countermeasures

Once a threat is identified, UAS TRACER activates a wide array of kinetic and non-kinetic defeat technologies, allowing operators to neutralize the UAS. These technologies include:

- Jamming: Disrupting the radio signals that control the drone.
- Directed Energy Engagement: Using high energy beams to disable the drone's electronics.
- Kinetic Mitigation: Physically intercepting the drone using projectiles or other methods.

This end-to-end approach, from detection to defeat, makes UAS TRACER a key player in comprehensive UAS defence strategies.

Advanced Counter-UAS Sensors

The success of UAS TRACER is built on the foundation of its sensor technologies. The system is capable of integrating a variety of sensor types, making it sensor and defeat technology agnostic.

UAS TRACER uses the following sensors to detect, identify, and track UAS threats in real-time:

- Radar: Detects UAS from a distance, providing early warning.
- Radio Frequency (RF) Analysers: Identifies drones by detecting their control signals.
- Counter-Drone Acoustic Sensors: Uses sound waves to detect nearby UAS.
- Electro-Optical Sensors: Provides visual confirmation of UAS in the area.

These sensors feed crucial data to UAS TRACER, which then analyses the information and initiates the most appropriate response. This real-time analysis and response capability are vital for ensuring airspace safety in dynamic and complex environments.

Defeat Technologies: The Final Layer of Defence

Once a UAS is detected and tracked, UAS TRACER activates defeat technologies to neutralize the threat. These include:

- RF Jammers: Disrupt the drone's communications with its operator.
- Kinetic Solutions: Physically neutralize the drone, typically using projectiles.
- Directed Energy Weapons: Employ high-powered energy beams to disable the drone's electronic systems.
- Cyber Takeover: Hacks into the drone's control systems to take control of it.

Each defeat technology is tailored to the specific threat and mission requirements, ensuring maximum flexibility in responding to a variety of UAS challenges.

As the proliferation of unmanned aerial systems continues, both in commercial and military applications, the need for robust counter-drone solutions becomes more critical. L3Harris' UAS TRACER stands at the forefront of this effort, combining cutting-edge detection, tracking, and defeat technologies to protect airspace from rogue drones and other airborne threats. With its advanced machine learning algorithms, sensor agnostic design, and comprehensive defeat capabilities, UAS TRACER is set to become a cornerstone of airspace security in the years to come.

By providing real-time airspace awareness and enabling rapid response to emerging threats, UAS TRACER is a game-changer in the on-going effort to maintain safe skies and defend critical infrastructure against UAS threats.

IMAGE COURTESY : Northorp Grumman

NORTHROP GRUMMAN COMPLETES HYBRID SATCOM DEMO, CONNECTING TO COMMERCIAL SPACE INTERNET

In a significant advancement for satellite communications, Northrop Grumman Corporation (NYSE: NOC) has successfully conducted its first over-the-air demonstration of a hybrid satellite communications (SATCOM) solution. This landmark demonstration established seamless connectivity between Viasat and a commercial proliferated low Earth orbit (PLEO) communications provider, showcasing a robust, multi-orbit, multi-constellation network capable of withstanding disruptions.

Enhancing Communication Resilience

The hybrid SATCOM solution developed by Northrop Grumman serves as a critical tool for enhancing communication capabilities among pilots and operators across space, air, and ground operations. The successful demonstration, conducted for the Air Force Research Laboratory, validated the system's ability to provide resilient and uninterrupted connectivity by rapidly switching between different constellations and orbits.

"This test is a crucial step towards the maturity of the Global Lightning program, enabling us to initiate flight testing soon," said Steven Conn, director of advanced communications and signals intelligence at Northrop Grumman. He emphasized that the demonstration reflects the U.S. Air Force's urgent need for rapid deployment of resilient communications technologies to support the demanding missions of today's warfighters.

Robust Technology Features

The innovative Northrop Grumman hybrid SATCOM terminal is designed to host nine modems equipped with advanced network routing, security, and encryption capabilities for mission networks. The terminal's ability to alternate among modems in the event of network failures ensures continued resilient connectivity for users, thereby enhancing mission effectiveness.

During the demonstration, the system successfully connected to a commercial PLEO communications provider operating at Ku frequencies in low-Earth orbit, while simultaneously linking to Viasat at Ka frequencies via its ViaSat-3 F1 satellite in geosynchronous orbit. This capability not only illustrates the versatility of the hybrid SATCOM terminal but also highlights its potential to secure communication channels against adversarial threats.

The hybrid SATCOM terminal incorporates a Northrop Grumman radio, complemented by an antenna provided by GetSat, further enhancing its operational capabilities.

A Commitment to Innovation

As a leading global aerospace and defense technology company, Northrop Grumman continues to push the boundaries of innovation in communication technologies. The recent demonstration underscores the company's commitment to equipping its customers with the necessary tools to connect and protect critical missions while advancing the frontiers of human exploration across the universe.

With this successful demonstration, Northrop Grumman not only showcases its technological prowess but also addresses the growing demand for enhanced communication systems in an era characterized by rapidly evolving threats and operational complexities. As the Global Lightning program progresses, the company remains focused on delivering pioneering solutions that empower warfighters and ensure mission success.

For more information on Northrop Grumman's hybrid SATCOM solutions and their applications in defense and communication, visit their official website.

STAR SAFIRE®TELEDYNE FLIR
A BOOST FOR MARITIME DEFENCE

In a significant boost to Japan's maritime defence capabilities, Teledyne FLIR Defence has announced the delivery of its cutting-edge Star SAFIRE® 380-HLD multi-spectral imaging systems to the Japan Maritime Self-Defence Force (JMSDF). The contract, worth up to $20.8 million, highlights Japan's strategic efforts to fortify its anti-submarine and anti-surface warfare capabilities amid growing regional tensions.

The Star SAFIRE 380-HLD systems will be integrated into the SH-60L helicopter—a licensed Japanese production version of the renowned Sikorsky SH-60. The SH-60L is designed primarily for anti-submarine warfare but is equally versatile for search and rescue operations as well as other maritime missions. This multi-purpose aircraft will now benefit from one of the world's most advanced airborne surveillance technologies.

Teledyne FLIR Defence has already delivered two of these systems to the JMSDF for test and evaluation, along with an additional spare unit. Over the next three years, ten more systems will be delivered, further strengthening Japan's ability to monitor and defend its territorial waters.

The Star SAFIRE 380-HLD is a highly advanced surveillance system that offers ultra-long-range performance in both visual and thermal imaging. It is particularly suited for intelligence, surveillance, reconnaissance, and targeting missions. Its superior image stabilization technology and the inclusion of a laser designator and rangefinder provide unparalleled accuracy for target identification and engagement. This makes it a vital tool in maritime warfare, search and rescue missions, and border protection.

Built for durability, the SS 380-HLD is capable of operating continuously in all weather conditions, ensuring 24/7 operational readiness. It is already the most widely deployed imaging system in the world for critical military applications.

Speaking about the deal, Robert Moss, Senior Director of Business Development for Asia Pacific at Teledyne FLIR Defence, said about the importance of the new capabilities being provided to Japan' "Growing threats in the region have moved Japan to improve its defence and security capabilities, especially those designed to safeguard its territorial waters and outlying territories," Moss said.

Japan's decision to invest in Teledyne FLIR's systems aligns with the country's broader strategy to modernise its defence capabilities in the face of growing regional threats. The new imaging systems will play a pivotal role in safeguarding Japan's territorial integrity and enhancing its maritime operations.

Teledyne FLIR Defence has established itself as a global leader in airborne and maritime surveillance systems, serving over a dozen countries across the Asia Pacific region and more than 70 countries worldwide.

From detecting chemical, biological, radiological, and explosive threats to providing real-time surveillance, Teledyne FLIR's products are trusted by militaries and security forces around the globe. Their rugged, intelligent systems are designed for air, land, and maritime use, making them indispensable tools in a rapidly changing security environment.

A CALL FOR SUSTAINABLE AIR TRAVEL

An international survey has highlighted a growing consensus among travellers: the time for sustainable air travel is now. Conducted among 4,000 adults across the US, UK, France, and Germany, the study reveals that a striking 65% of consumers believe it is imperative for air travel to adopt sustainable practices.

The findings, released by Lilium N.V. (NASDAQ:LILM), a leader in electric aircraft manufacturing and Regional Air Mobility (RAM), underscore a palpable shift in public sentiment towards the aviation industry's environmental impact. With increasing awareness about pollution and climate change, this survey captures a moment of urgency for transformation in air travel.

A Call for Change

As air travel continues to recover post-pandemic, the survey reveals substantial concern over traditional aviation's environmental footprint. A staggering 73% of respondents expressed worry about aviation's contribution to pollution, with Germany leading this concern at 76%. Additionally, 70% of those surveyed acknowledged aviation's role in climate change.

The younger generation, particularly adults aged 18-34, are at the forefront of this shift, being 2.5 times more likely to prioritise sustainability in their travel decisions compared to those aged 55 and above. This trend reflects a broader societal move towards environmentally conscious consumer behavior.

Embracing Innovative Solutions

The survey indicates a significant interest in alternative forms of air transport. A notable 60% of participants indicated a willingness to try electric aviation, with 61% specifically expressing interest in eVTOL (electric vertical take-off and landing) aircraft, such as the Lilium Jet. The highest enthusiasm was observed in Germany, where 64% showed interest.

In terms of travel preferences for short journeys of around 100 miles, while cars were the top choice,

air travel emerged as the second most favoured option among US respondents, surpassing trains and buses. Common scenarios for these journeys included holiday travel (29%), exploring within one's country (28%), and nearby regions (23%).

Cost remains the primary concern among travellers, with 54% ranking it as their top priority. Comfort (46%) and convenience of access (39%) follow closely behind, suggesting that innovations like eVTOLs, which promise enhanced convenience, could see significant uptake.

urgent need for European support of electric aviation, stating, "The demand and excitement for this new form of transport is clear. The potential of electric aviation to address broader environmental issues in air transportation is significant."

The recent survey underscores a critical moment for the aviation industry, highlighting a strong public demand for sustainable travel options. As the landscape of air travel continues to evolve, the integration of innovative

Growing Awareness of eVTOLs

Awareness of eVTOL technology appears to play a crucial role in consumer attitudes toward future travel. Only 21% of respondents across the four countries reported familiarity with eVTOL aircraft. However, those aware of this technology expresse far greater enthusiasm about its potential, with 67% agreeing that electric aviation represents the future of air travel. This contrasts sharply with only 39% of those unaware of eVTOLs sharing the same sentiment.

Sebastien Borel, Chief Commercial Officer of Lilium, remarked, "The survey shows that people are ready for a new form of transport—one that's more comfortable, convenient to access, and meets their environmental concerns." With more than 100 binding orders already, Lilium is positioned as a leader in the burgeoning eVTOL market.

Klaus Roewe, CEO of Lilium, emphasized the

technologies like eVTOLs offers a pathway to a more sustainable future. With consumers increasingly prioritising environmental responsibility in their travel choices, the aviation industry must respond to these emerging demands to ensure its long-term viability and relevance.

The insights from this research serve as a clarion call for stakeholders in the aviation sector to prioritise sustainability and invest in technologies that can reshape the future of air travel for the better.

IMAGE COURTESY : LILIUM

ZERO-EMISSION JETS POISED FOR TAKEOFF BY 2035

A NEW ERA IN GREEN AVIATION

The aviation industry is on the verge of a ground-breaking transformation as experts forecast the arrival of carbon-emission-free aircraft by 2035. These next-generation jets, powered by electric or hydrogen technology, promise to radically reduce aviation's environmental footprint, marking a significant shift for an industry long associated with high carbon emissions.

Hydrogen-Powered Jets on the Horizon

According to industry insiders, airlines may be able to place down payments on hydrogen-powered jet engines as soon as 2028, with full-scale deployment expected by 2035. The aggressive timeline aligns with the European Union's goal of achieving climate neutrality by 2050. Hydrogen propulsion is seen as one of the most promising technologies in the drive toward sustainable aviation, with projections indicating that 75% of global aircraft could be using clean technologies by 2050.

To meet this goal, manufacturers like Airbus are under pressure to deliver hydrogen-powered aircraft by 2028, allowing airlines to renew their fleets in time for the 2035 deadline. The industry sees this as critical to ensuring that aviation can continue to thrive in an increasingly climate-conscious world.

Airbus Leading the Charge

Airbus, a key player in the global aviation market, is already taking steps to make zero-emission flying a reality. The company has announced plans to test a hydrogen-powered jet engine by 2025, positioning itself at the forefront of clean aviation technology. Initially, Airbus is focusing on short-haul flights under 4,000 km—routes that currently account for two-thirds of global aviation emissions. Once the technology proves successful, the company plans to scale up to larger aircraft capable of flying longer distances.

In an industry striving to reconcile growth with sustainability, Airbus believes the advancement of clean technologies could redefine the future of flying, eliminating concerns about aviation's environmental impact.

Economic and Environmental Benefits

The shift toward carbon-free aircraft isn't just an environmental imperative—it's a lucrative opportunity for the aviation industry. Experts estimate that the clean aviation market could generate as much as €5 trillion in economic value, placing Europe at the forefront of green aviation technology. However, developing entirely new, "clean sheet" designs presents significant financial challenges.

The European Union has already committed €1.7 billion to the Clean Aviation initiative through its Horizon Europe R&D program, with an additional €2.4 billion in funding coming from the aviation industry. Nevertheless, experts warn that approximately €12 billion in total investment will be required over the next decade to make zero-emission aircraft a reality.

Rethinking Long-Distance Travel

While short-haul flights are the immediate focus for electric and hydrogen-powered aircraft, the industry is also beginning to explore the feasibility of zero-emission long-haul travel. For flights exceeding 8,000 km, rethinking traditional travel models may be necessary. Clean aircraft have fuel limitations, which could lead to more frequent layovers during long-distance flights.

Sustainable Aviation Fuels (SAFs): A Crucial Interim Solution

As the industry works toward the 2035 goal for zero-emission aircraft, Sustainable Aviation Fuels (SAFs) are emerging as a vital stopgap. SAFs, which are made from renewable sources like biofuels, offer a 70-80% reduction in carbon emissions and can be used in existing aircraft engines without modification. The EU has proposed a mandate requiring all aircraft refueling within its territory to use a blend of kerosene and SAFs, scaling up to 63% SAF usage by 2050.

Airlines favor SAFs because they provide an immediate solution for decarbonizing long-haul flights without waiting for new aircraft technologies. However, industry leaders, including Willie Walsh, head of the International Air Transport Association (IATA), emphasize that more incentives are needed to scale up SAF production and meet the EU's ambitious climate goals.

A Sustainable Future for Aviation

As the aviation industry pushes the boundaries of green innovation, the journey toward zero-emission flying is both complex and costly. However, with significant technological advancements and continued investments, the future of sustainable aviation looks promising. The goal of a carbon-neutral aviation industry by 2050 is no longer a distant dream, but a tangible target that airlines, manufacturers, and governments are actively working to achieve.

The next decade will be critical as the industry gears up for the deployment of clean aircraft, promising to redefine air travel for generations to come.

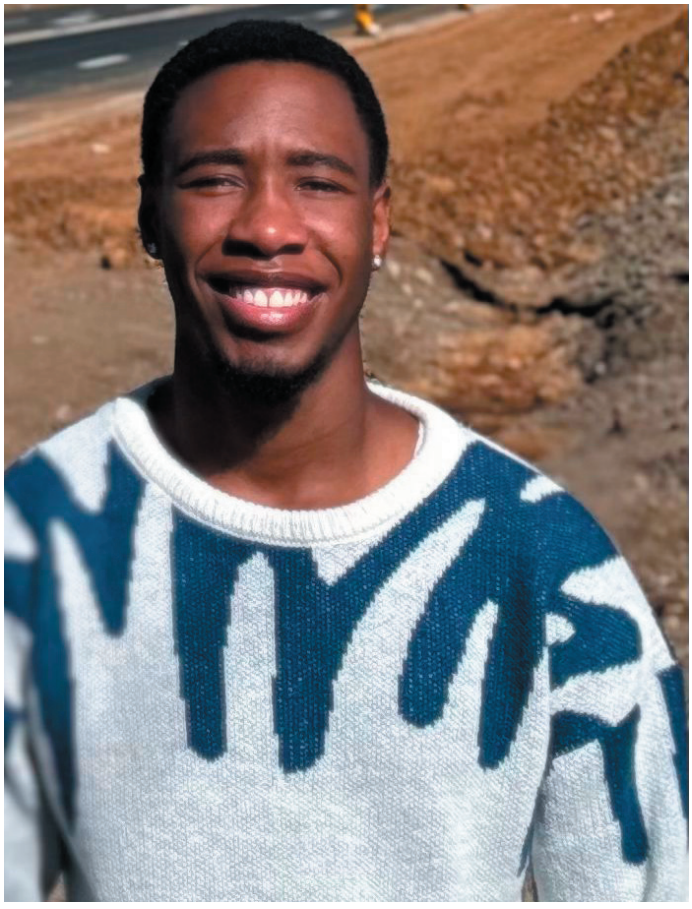
IMAGE COURTESY : JetZero

BEHIND THE SCENES AT AAD CELEBRATING TEAM EFFORT

The Africa Aerospace and Defence (AAD) expo is a significant event in the aerospace and defence industries, showcasing cutting-edge technologies and innovations. However, the success of such a grand event is not solely reliant on the exhibits and presentations; it is also the result of the dedicated individuals working tirelessly behind the scenes.

The AAD organization team, comprising marketing, communications, and logistics specialists, plays a crucial role in ensuring the event runs smoothly.

Their collaborative efforts ensure that all aspects of the expo—from media coordination to audience engagement—are executed flawlessly. This year, the team's hard work was particularly evident in their management of the media center, which facilitated seamless communication between journalists, exhibitors, and stakeholders.



Katleho Madibo

Tlale Radebe

With a focus on delivering accurate and timely information, the team worked diligently to enhance the event's visibility and coverage. Their proactive approach ensured that everyone involved, from attendees to exhibitors, was well-informed and engaged throughout the expo.

A special thanks goes to Tlale Radebe for his tireless assistance to World Airnews at AAD. His contributions helped facilitate smooth communication and collaboration, further enhancing the overall experience of the event. Additionally, we would like to acknowledge Katleho Madibo, who went the extra mile to assist Tlale, ensuring that World Airnews had a seamless expo experience.

We extend our gratitude to the entire AAD organization team for their commitment and hard work. Their collective efforts contributed significantly to the success of AAD, making it a premier platform for showcasing advancements in aerospace and defence.

DEFENCE DIPLOMACY DILEMMA

Inside a bustling aviation hangar, the scent of aviation fuel lingers in the air as a group of aviation enthusiasts huddle around a table cluttered with blueprints and coffee cups. The topic of conversation shifts to the recent Africa Aerospace and Defence (AAD) show, igniting a lively debate.

Dave: Did you guys catch the latest at the AAD show? South Africa really seemed to roll out the red carpet for China this year, didn't they?

Sara: Yeah, it's quite a shift! I mean, the US has always brought impressive equipment, like that C-17 Globemaster. It practically dominated the show before.

Mike: Right? I remember last time they showcased the Reaper drone and even had live concerts. It was all about friendship and military cooperation. But this year, they were nowhere to be seen!

Sara: Exactly! And it wasn't just a coincidence. The US pulled out because South Africa refused to sign the diplomatic guarantee. The defence minister only did that at the last minute, making it look like they didn't really care.

Dave: It feels like a deliberate snub. I mean, come on, the US has historical ties to South Africa. They could have positioned themselves as strong allies instead of pushing them away for China.

Mike: You think it's really about aligning more with BRICS? The world's changing, and so are alliances. But is it wise to snub the US? They might have more to offer than just military hardware.

Sara: That's a good point. With the US pulling back, China seized the moment, bringing their Xi'an Y-20. It's impressive to see them flexing their muscles in Africa, showcasing their growing influence.

Dave: And it's not just the Y-20! Did you see the Changhe Z-10ME attack helicopter? China is showing it can supply whatever South Africa needs in terms of defence systems. They're even competing with the Americans and Europeans for contracts here!

Mike: But that's the risk, isn't it? The Chinese may be filling the gap, but they have their own interests. Are we ready to lean on them fully? What happens when their interests don't align with ours?

Sara: It's definitely a gamble. The US might be losing interest in Africa due to economic factors—simply put, they don't see it as a priority market anymore. The dollars aren't flowing in like they used to, which makes it easier for countries to look elsewhere.

Dave: And with companies like Poly Technologies showcasing a 130-page brochure of their capabilities, it's a smorgasbord of options for any African nation. But does that mean they'll actually meet our needs? It's all well and good to show off big machines, but they need to fit into our strategy and capability.

Mike: South Africa's government might feel good about playing the neutral card, but it's dangerous. They might think it'll boost their standing in the BRICS group, but what if the US decides they're no longer interested in playing nice?

Sara: Exactly! The Biden administration isn't hostile towards South Africa. They might even be open to a balanced foreign policy that doesn't solely hinge on the West. It's a missed opportunity for cooperation!

Dave: Right now, it looks like South Africa is trying to assert its independence, but they're doing it at a cost. If they continue to snub Western allies, they could end up isolated, while other countries—like Turkey and Brazil—take the lead in Africa.

Mike: You know what they say, "One man's loss is another man's gain." But is it really beneficial for South Africa in the long run to hand over their defence needs to China?

Sara: Only time will tell. But if history has taught us anything, it's that a diversified approach to alliances is usually the best way forward.

As the discussion winds down, the enthusiasts reflect on the complexities of international relationships and the future of defence in South Africa. The murmur of engines and the bustle of the hangar remind them that the world of aviation and military diplomacy is ever-evolving.

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

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