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COMAC JET CROSSES THE GULF

By Charlotte Bailey

The Commercial Aircraft Corporation of China (Comac) is making its Middle East debut at the Dubai Airshow this week as the Shanghai-based manufacturer seeks to foster “deeper cooperative relationships with global customers and partners.”

A China Southern Airlines C919 narrowbody airliner features alongside a Comac C909 business jet variant in the static lineup, and a second C919 is performing in the daily flying display.

Originally introduced as the ARJ21, the standard C909 regional jet seats up to 97 passengers in a single-class layout or 78 in a dual-class layout. The business jet variant, the C909 CBJ, accommodates up to 29 passengers. A selection

of models inside the exhibition hall indicates the C909's potential for medical services, firefighting, emergency management, and converted freighters.

China Southern Airlines' C919 on the airshow's static display has a 164-seat three-class cabin layout. According to Comac, its interior is designed “in an elegant Chinese style, like walking in the light.”

To date, more than 170 C909 business jets and 26 C919 airliners have been delivered, although no Comac aircraft have been certified by regulatory authorities outside of China.

The Chinese state-owned airframer also states that its C929 widebody aircraft, projected to have a range of 12,000 km (6,497 nm) and a standard configuration of 280 seats, is “steadily progressing in its development.”

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Etihad boosts widebody fleet with Airbus deal

By Charles Alcock

Etihad Airways is expanding its fleet of Airbus widebody airliners with a firm order for six A330-900s announced at the Dubai Airshow yesterday. The Abu Dhabi-based operator also agreed to lease a further nine of the same type from Avolon.

Airbus reported that Etihad is a confirmed customer for seven more of the larger A350-1000 long-range jets and three A350F cargo models covered by an earlier contract. This deal will increase the number of this type in its fleet to 27 aircraft.

The A350 backlog is set for a further boost with Air Europa signing a memorandum of understanding to buy up to 40 of the -900 model. The Spanish airline said this will refresh its long-haul fleet for key markets such as Latin America.

Later in the day, Airbus signed its biggest agreement during the show so far when low-cost carrier FlyDubai signed a memorandum

of understanding for 150 A321neo narrow-bodies. According to FlyDubai chairman HH Sheikh Ahmed bin Saeed Al Maktoum, who signed the agreement, the decision to become a new Airbus customer is part of the young airline's plans to expand operations at Al Maktoum International Airport. It currently operates a fleet consisting entirely of Boeing 737s.

"These aircraft strengthen our operations across medium-haul, long-haul, and cargo," Etihad CEO Antonaldo Neves commented. "The A330neo brings the right combination of efficiency and flexibility for our regional and mid-range growth, while the A350-1000 continues to deliver exceptional performance on our long-haul network. The A350F freighter adds significant capability to our cargo division as global demand continues to expand."

Powered by Rolls-Royce's Trent 7000 engines, the A330-900 can operate on routes of up to 7,350 nm. As part of the A330neo family, for which Etihad is the latest



A350-1000 long-range jet

DAVID MCINTOSH

customer, the aircraft includes Airbus' Airspace cabin interiors.

The A350-1000 can fly up to 9,700 nm, giving airlines extensive options for intercontinental routes. According to Airbus, the new A350F will have the largest main deck cargo door in the industry and is the only freighter that will meet new ICAO standards for carbon emissions that come into force in 2027. The manufacturer is now building the first A350F test aircraft in Toulouse.

In a separate agreement, Morocco's government has signed orders for 10 of Airbus's H225M helicopters. These will be equipped for combat search and rescue missions with the Royal Moroccan Air Force, replacing Puma rotorcraft that have been in service for 40 years. ■

African carriers expand networks with Boeing

AerCap is leasing three new Boeing 737 Max 8 airliners to African carrier FlySafair. The agreement was announced yesterday at the Dubai Airshow, with deliveries expected to

start in the first quarter of 2028.

In the third quarter of 2026, South Africa-based FlySafair is due to receive a pair of Boeing 737-800NG aircraft from AerCap. The carrier launched its services in 2014 and operates domestic routes to 10 cities in South Africa, as well as five international routes to neighboring countries.

In another show announcement, Gulf Air finalized firm orders for 15 of Boeing's 787 Dreamliners. The Bahrain-based carrier also booked options for three more of the widebody as part of plans to expand its international network. Having updated a contract first drawn up in July, the carrier has increased

the number of 787s it has on order to 17.

On Monday, West Africa's Air Senegal placed orders with Boeing for nine 737 Max aircraft, which it will use to expand its services from Dakar to Europe, the Middle East, and the Americas. The deal is the airline's largest fleet purchase to date, and its first Boeing order since 2004. According to the manufacturer, more than 80 airlines operate 737s around the world.

"This acquisition marks a major milestone for Air Senegal," said the carrier's CEO, Tidiane Ndiaye. "This order is part of Air Senegal's strategy to strengthen and modernize its fleet in order to support the expansion of its regional and intercontinental network and reinforce Dakar's position as a leading aviation hub in West Africa."

The 737-8 can carry up to 178 passengers in a two-class configuration and has a maximum range of 3,500 nm. **C.A.**



Boeing 777X widebody

DAVID MCINTOSH

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MQ-9B UAV to demonstrate airborne early warning radar

By David Donald

General Atomics and Saab are gearing up to fly an MQ-9B medium-altitude long-endurance UAV next summer that will be equipped with an airborne early warning (AEW) radar system. The demonstration, to be undertaken at GA's Desert Horizon test center in California, will mark a major step in the program to create the world's first uncrewed AEW platform.

GA and Saab have been looking at AEW for some time. An uncrewed solution has considerable advantages for extending the coverage of existing crewed aircraft or providing AEW capability to new users. There is obvious potential for operations from aircraft carriers. Uncrewed platforms can operate closer to high-threat airspace and sustain continuous

coverage more easily and cost-effectively. At present, a GlobalEye (for instance) can stay aloft for around 12 hours, whereas the MQ-9B offers 16 to 20 hours on station with much lower operating costs.

Saab's radar solution is packaged into two wing pods and a centerline fairing. The wing pods contain S-band AESA radar and L-band IFF arrays that draw heavily on the company's Erieye technology, which is fielded in the GlobalEye and other crewed platforms. The pods incorporate a liquid cooling system to handle the heat produced by the high-power system.

No modification is needed to allow the MQ-9B to carry the radar package, which includes equipment to process most of the data onboard prior to relaying it to surface stations via the MQ-9B's extensive array of communications options. ■



Active electronically scanned arrays for the Saab radar are housed in pods under the MQ-9B's wings.

BAE Systems helps pitch T-7 trainer to the UK

BAE Systems, Boeing, and Saab have signed a letter of intent to offer the Boeing T-7 advanced trainer to the Royal Air Force as part of an overall training system. The requirement could be for around 40 aircraft, including replacements for the Hawks currently used by the Red Arrows aerobatic display team.

UAE airlifter hopefuls court local companies

With an emerging requirement for eight to 10 tactical airlifters in the UAE to replace aging C-130H/L-100 Hercules, both Airbus and Embraer have outlined plans for industrial participation from Emirati companies.

Airbus is negotiating a deal for local companies to provide parts for several of its programs, primarily the A400M airlifter. These plans, unveiled earlier this year, involve local companies such as EPI from Edge Group and advanced composites aerostructure company Strata, part of the Mubadala portfolio.

Similarly, Embraer announced on Monday agreements with Advanced Military Maintenance, Repair, and Overhaul Center (AMMROC) and Global Aerospace Logistics (GAL)

to explore opportunities. This would include the establishment of an Embraer KC-390 MRO, training, and completion center for the Middle East region. This supersedes an earlier proposal for a similar organization in Saudi Arabia.

In the meantime, Lockheed Martin, which is offering the C-130J, points to its position

as the incumbent OEM. The U.S. giant helped establish AMMROC, which is now one of the largest MRO companies in the region.

All three types are represented in the Dubai Airshow static park, with A400Ms from both France's Armée de l'Air et de l'Espace (air and space force) and the United Kingdom's Royal Air Force. Embraer is displaying its new KC-390 demonstrator. **D.D.**



An A400M from the UK's Royal Air Force graces the airshow's static display.

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AMAC AEROSPACE

Edge & Anduril partner on autonomous aircraft

By David Donald

Emirati defense technology group Edge is to enter into a joint venture with U.S. defense tech company Anduril to develop and produce next-generation Omen autonomous air vehicles (AAVs). The collaboration announced on Monday will include the establishment of the Edge-Anduril Production Alliance in the Emirates that will provide sales and sustainment support, as well as produce a range of AAVs aimed at both civil and defense requirements.

Omen is the first product of the joint venture, a recently developed hover-to-cruise AAV that has been designed to provide the endurance, payload, and mission flexibility of larger vehicles in a runway-independent Group 3 airframe. It draws on Anduril's Lattice for Mission Autonomy

software and Group 3 VTOL development, with heavy investment from Edge.

The AAV will use a proprietary electric powertrain developed by eVTOL aircraft manufacturer Archer Aviation. Announcing the partnership with Edge and Anduril, Archer said this is the first time the U.S.-made propulsion system (already flying on its Midnight aircraft) is being made available to a third party in what the company says will provide a new revenue source.

Omen is intended to provide long-range and high-payload capacity for distributed and expeditionary operations. It can be assembled by a two-person crew in minutes without the need for specialized equipment, and can be employed on a number of tasks, ranging from maritime surveillance and communications relay through to logistics resupply.



Omen AAV will feature Archer's electric powertrain.

Omen already has an initial purchase commitment from the UAE for 50 systems, enabling a secure local supply chain and robust production base to be established at an early stage. The Edge-Anduril partnership aims to achieve full-rate production by the end of 2028.

As the first product of what is intended to become a central hub for the development and manufacturing of AAVs in the UAE, the Omen program marks a transition from co-development of AAVs to domestic mass production, as well as paving the way for additional AAV designs. In addition to satisfying domestic requirements, the Edge-Anduril joint venture aims to export products in the future. ■

ACJ brings AMAC into its service center network

By Charlotte Bailey

Airbus Corporate Jets has appointed AMAC Aerospace's Turkish operation as the latest addition to its service center network. Announcing the agreement on Tuesday, the manufacturer said AMAC's facility in Bodrum will provide "a wide spectrum of tailored capabilities, including maintenance, engineering, VIP cabin refurbishment, and upgrade services."

Government and business aviation operators of ACJ aircraft already have access to



Kadri Muhiddin, AMAC Aerospace's group executive chairman and CEO (left), signed a service center support agreement with Chadi Saade, president of Airbus Corporate Jets.

service centers in the U.S., Switzerland, Dubai, France, and Singapore. Airbus signed the agreement with AMAC during the Dubai Airshow, adding to its roster of support partners, which also includes AMAC's Basel facility, as well as Comlux, Jet Aviation, Sabena Technics, and Citadel Completions.

"The enlargement of the [Airbus] service center network will allow both organizations to truly maximize client expectations,"

commented AMAC Aerospace group executive chairman and CEO Kadri Muhiddin. The maintenance, repair, and overhaul group has worked extensively on Airbus aircraft, and its capabilities include cabin refurbishment.

On Monday, SunExpress signed a four-year support contract for AMAC's Bodrum facility to support its fleet of seven Boeing 737-800 airliners through 2029. The carrier is a joint venture between Turkish Airlines and Lufthansa. ■

Skunk Works targets foreign sales with Vectis

By David Donald

While the U.S. Air Force's Increment 1 Collaborative Combat Aircraft (CCA) program is now defined and in evaluation with two competing types (General Atomics YFQ-42A and Anduril YFQ-44A), Lockheed Martin's Skunk Works is forging ahead with a larger and more sophisticated CCA that could end up informing the definition of requirements for Increment 2 while also meeting the CCA needs of international partners.

Known as Vectis, the CCA was developed with internal funding, initially with the international market in mind. Lockheed Martin has chosen this route rather than wait for Increment 2 to be defined, although the U.S. is following the program closely. The design adheres to the U.S. reference architecture for autonomy and mission systems to ensure its compatibility with future USAF requirements.

Lockheed Martin holds licenses to work with 15 approved nations, many of which have shown considerable interest, with at least two strongly interested. Industrial participation is on the table, particularly with nations that have expertise in advanced manufacturing and composites.

Drawing on the Skunk Works' long experience of advanced projects and uncrewed air vehicles, Vectis has been designed to occupy the upper end of the autonomous collaborative

platform spectrum and is intended to be a fully survivable CCA. The target cost is around \$20 million. It features a Williams turbofan and has an mtow of 12,500 pounds. It has a high subsonic design with a top speed of Mach 0.8/0.85. Range is greater than 1,000 nm with an endurance of at least two hours.

Slightly smaller than an F-16, the low-observable Vectis features a lambda wing planform and a wide, flattened fuselage that can accommodate large payloads internally. These can include air-to-air weapons (up to three AIM-120 AMRAAMs), air-to-ground weapons such as the SDB, and ISR payloads. Combinations of these can also be carried.

With elements of the design having been tested and validated on other platforms—including some classified projects—the program is progressing at pace. The first vehicle is already in build at the Skunk Works in Palm-dale, California, and a first flight is planned for 2027.

Thanks to systems testing on other platforms and the use of digital design technology, the first vehicle will fly in a production-representative configuration. Early flight trials are primarily aimed at validating computer predictions, rather than more traditional test flights, which enables an aggressive fielding schedule. This could see initial operating capability achieved in 2029, with full operational clearance in the early 2030s. ■



Autonomous Black Hawk on track for first flight in 2026

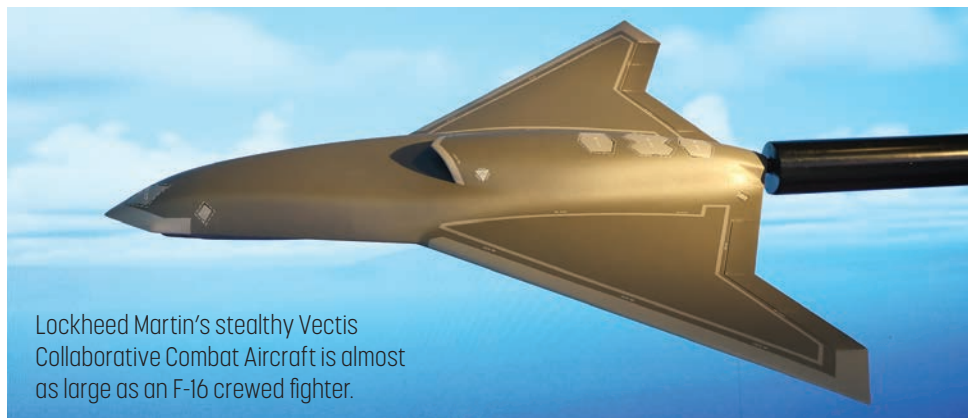
Sikorsky Aircraft's upcoming fully autonomous UH-60L Black Hawk variant, the S-70UAS U-Hawk, is on track to perform its first test flight next year. Speaking to reporters during the Dubai Airshow on Monday, Sikorsky confirmed that the program has already registered worldwide interest in a capability that could include "reusing airframes that are already in the system."

Revealed in October, the U-Hawk went from "concept to what we call concrete in 10 months," Ramsey Bentley, Sikorsky's director of strategy and business development for advanced programs, told reporters during the briefing.

The platform trades a cockpit for 25% more cargo space and employs a fly-by-wire flight control system that integrates with Sikorsky's Matrix autonomous flight technology. Bentley described this as "a very mature system working on multiple configurations of aircraft—rotary, fixed-wing aircraft, and also [uncrewed]."

U-Hawk flights are remotely operated using tablets, and the development team tested the flight control system by giving the tablet to four-star generals and 19-year-old trainees. "They've all had no issue," Bentley said.

"The tablet allows you to actually take the aircraft from a ground start all the way through the flight and shut down the aircraft," Bentley noted, "so the aircraft is fully able to handle all the emergency procedures and everything else, just like a human pilot would in the aircraft." **C.B.**



Lockheed Martin's stealthy Vectis Collaborative Combat Aircraft is almost as large as an F-16 crewed fighter.



A full-scale eVTOL prototype of the E20+ developed by Autocraft and TCab Tech

DAVID MCINTOSH

Abu Dhabi-backed E20+ eVTOL to fly in Q1 2026

By Charlotte Bailey

Autocraft and TCab Tech are set to make the first flight of the full-scale E20+ eVTOL prototype in the UAE in the first quarter of 2026. This follows recent completion of the first full-scale airworthy prototype.

A mockup of the aircraft is on display at the Dubai Airshow at the Autocraft exhibit. Autocraft, the aerospace-specific subsidiary of K2—a UAE company owned by the Abu Dhabi

government—signed an agreement with Chinese aircraft developer TCab Tech in July 2024 for the potential delivery of up to 350 units.

The lift-and-cruise-configured Autocraft E20 was unveiled in 2022. It features two pairs of tiltrotors on forward-facing fixed booms, two on the tilting ends of the main wings, and a final pair on horizontal appendages affixed to the tail. Flight testing of a “skeleton prototype” began two years ago, and flight tests of subscale demonstrators

have been complemented by a full-scale “iron bird” laboratory version to validate the rotor configuration. In the coming years, the first test aircraft will be augmented by a fleet of up to nine additional test units, according to K2 v-p of strategy Waleed Alblooshi.

“We are working with multinational partners from other countries, but our eVTOL is special because it’s a Gulf Cooperation Council variant,” he said. “We had to tailor-make our specifications,” he added, referencing the humidity, heat, and sand that characterizes the region’s harsh local operating environment. Nevertheless, Autocraft believes the fully-electric E20+ can offer a range of up to 200 kilometers (108 nm), a payload of up to 450 kilograms (992 pounds), and a top speed of 172 knots. Current fast-charging profiles offer 85% charge in 20 minutes.

Autocraft is confident that the E20+ will receive regulatory approval from the General Civil Aviation Authority of the UAE. Alblooshi believes certification expectations of 2027 to 2028 are “very realistic.”

Commenting on what makes this region so suited to eVTOL operations, he said, “It’s the government, it’s the regulatory authorities. Here in Abu Dhabi and Dubai, you make things go fast—that’s why all the companies want to start their operations here.”

This accelerated appetite for development is accompanied by a firm focus on ensuring safety. “I believe we can make it fast and execute perfectly,” Alblooshi concluded. ■

Dubai hospital teams with FAI Air Ambulance

Dubai’s Medcare Royal Speciality Hospital has agreed to provide medical specialists to support air ambulance operator FAI. The co-operation agreement was signed by hospital executives and the German operator’s local subsidiary, FAI Aviation Services, on Monday at the Dubai Airshow.

Medcare’s intensive care unit doctors and other staff will be available for FAI’s air ambulance flights. The partners have agreed to hold joint training and clinical readiness exercises as part of efforts to shorten emergency response

times for urgent or critical patient transfers.

According to FAI, enhancing air ambulance services in the UAE is important as part of the country’s efforts to become a hub for medical tourism. The Medcare Royal Specialty Hospital, which has a specialist trauma unit, has been providing critical support for inbound medical evacuation missions for some time, and some of its doctors have already supported FAI flights since 2008.

A recent mission involved a young U.S. expatriate woman, a resident in the UAE, who sus-

tained severe injuries in a car accident while on vacation in Kyrgyzstan. After her doctors advised against a flight back to the U.S., FAI flew her to Dubai on a Bombardier Challenger 604, and she was discharged from the hospital six weeks later.

C.A.



Qatar 787s will get mx analytics from Collins



Qatar Airways chose Collins Aerospace's Ascentia analytics solution for managing maintenance of its Boeing 787 Dreamliner fleet.

By Matt Thurber

Qatar Airways has selected Collins Aerospace's Ascentia analytics solution to help manage maintenance of its fleet of 52 Boeing 787s. At the Dubai Airshow, Collins also announced that Emirates has expanded its long-term agreement for A380 landing gear MRO services.

Using sensor data from the aircraft, Ascentia compares that data to historic fleet records and statistical models both to monitor aircraft systems and deliver predictive insights into component health and performance,

according to Collins. "Airlines can utilize these data elements to help reduce unscheduled maintenance events, limit aircraft downtime, and improve on-time performance."

"What sets the Collins Ascentia solution apart is our role as the system OEM, enabling us to deliver precise, real-time recommendations that minimize flight disruptions and enhance the reliability of air travel," said Nicole White, v-p and general manager of connected aviation. "With Ascentia analytics supporting nearly 40% of the 787s in operation today, we provide unique insights, seamless

system integration, and robust technical support, empowering airlines to effortlessly monitor, analyze, and act on critical operational data to drive efficiency and performance."

As part of the Emirates A380 agreement, work on the airline's landing gear will continue at Collins' UAE and Miami MRO facilities. The company will also train Emirates mechanics to conduct work onsite at Emirates' Dubai MRO facility.

"Collins Aerospace is committed to delivering value-added support," said Matt Maurer, v-p and general manager of landing systems. ■

Collins on final to transform its approach to market

Collins Aerospace has "been on a journey of transformation," according to Cynthia Muklevicz, v-p of global airlines and lessors customer excellence. The transformation is intended to improve customer service, continue development of innovative solutions, and return a profit to shareholders.

Speaking with **AIN** at the Dubai Airshow, Muklevicz explained that the company's approach to customers too often resulted in sending multiple sales experts to call on a customer, and the transformation is designed to streamline that process.

"We listened to a bunch of different customers, and we got a consensus that it would be a better way to have a single point of contact, because it would be faster, more expeditious, more accountable, and we could bring solutions across the board," she said.

Now Collins is splitting this approach into three channels: airlines and lessors (Muklevicz's purview), commercial aircraft manufacturers, and defense. Each of those channels will have leaders in charge of teams that will cover two to four customers—for example, airlines or lessors—and there will be only one point of contact (an account executive) for those customers.

"They will be the one point of contact to go into that airline, cultivating the relationship, or expanding on one that they have today, and then go across the Collins businesses and be the accountable party, to be that conduit into the organization so that we can be faster with our information," she said. "We can be more aligned on when a customer tells us what their needs are, and this person can take it back into the organization and educate the organization."

Instead of being subject matter experts, the

account executives will be product-agnostic, Muklevicz explained. "They're going to be relationship experts for that airline or lessor customer." However, Collins will still have subject matter experts so the account executives can call on them when necessary.

Collins Aerospace has some experience with this approach through its interiors team, which already covers a variety of product lines. "We're just going to take the goodness that we've had on [those] products, and scale that to something larger," she said. Plans call for an official rollout of this effort in late December or early January. "We're populating the team right now and assigning customers, as well as getting some initial training so that we can speak intelligently about the different product lines.

"I think with that one point of contact, we're going to try and eliminate some of the processes of trying to flow information into the organization," Muklevicz concluded. "There are going to be fewer entry points, so we're faster and more nimble to respond to what customers' needs are." **M.T.**



Six-motor "Vampire" hexacopter

DAVID MCINTOSH

Skyfall's Vampire sinks its teeth into Russia

By Charlotte Bailey

Ukrainian drone manufacturer Skyfall is certainly sinking its teeth into the enemy with its "Vampire" heavy bomber. This six-motor hexacopter has risen from the shadows to become the most popular UAV of its type, responsible for around two-thirds of missions on the battlefield since entering the fight in 2023. Just over three years since its formation, Skyfall has grown exponentially to become the largest and most prolific drone manufacturer in Ukraine.

As its namesake would suggest, the Vampire "works at night, and it's pretty scary—flying up to 500 meters above the target and dropping munitions," a Skyfall spokesperson told **AIN**. (It's usually 100 meters on average, since this is the most convenient with non-guided munitions.)

The platform was specifically designed to address the challenges posed by the Russian invasion and was operational within a year. Since then, its effectiveness against a variety of targets has earned it the unofficial moniker of the "Baba Yaga" drone by Russian personnel, referencing a mythical witch of Slavic folklore. Tens of thousands of units are operational on the battlefield.

The versatile Vampire has the capacity to

carry up to four munitions with an optimum payload of 15 kilograms, complemented by a stabilization system aiding precision. Among the most effective targets destroyed to date has been a \$200 million electronic warfare system (which, while still operational, wasn't able to jam or spoof the Vampire). Built-in redundancy allows it to fly with at least two rotors inoperable. Around 30% to 40% of its missions support humanitarian requirements.

While more than 150 Skyfall products are currently in the R&D phase, the company's latest product to enter theater is the P1-SUN: a fast interceptor specializing in hunting and destroying Shahed drones and their variants from an altitude of up to 5,000 meters. "This is the cheapest way to destroy them," the spokesperson said, adding that the use of the new drone is up to 1,000 times cheaper than alternatives such as missile-based solutions.

The P1-SUN's research and development team has confirmed a recent successful Shahed strike 25 kilometers from the launch point with the latest P1-SUN modification. Skyfall also offers 24/7 technical support, free-of-charge service hubs close to the frontline, and a pilot academy that has trained more than 15,000 personnel to date.

UAE may mandate SAF blends

As the UAE works toward implementing its sustainable aviation fuel (SAF) roadmap, a current "soft requirement" for a voluntary 1% blend could soon be superseded by a mandate. Speaking at an Airbus event on the opening morning of the Dubai Airshow, Sharif Al Olama, undersecretary for energy and petroleum affairs at the UAE's ministry of energy and infrastructure, explained that over the next year, a "comprehensive assessment" on the initiative's economic impact will inform future regulation.

"We want to hit the ground running [regarding SAF]," Al Olama said. "We in the UAE have the power to drive this at a global scale." Indeed, over the next week, he will be holding meetings with Abu Dhabi Airport, Dubai Airport, Etihad Airways, and Emirates to discuss "when we can move to the next phase."

Overall, he cites these parties' reactions as "very positive," with the UAE's SAF and LCAF [Lower Carbon Aviation Fuel] Committee also "playing a role in terms of mediating between the offtakers and the suppliers."

Al Olama believes the region is well poised to help spearhead SAF for a number of reasons. "First and most important is [the UAE's] capability of attracting investment, availing finance, and then also the ease of doing business. The second is a very agile government. [...] And third, we do have certain resources that can help us deliver these kinds of mandates," he told **AIN**. An initiative underway in Hong Kong to convert airport waste into SAF is also a "blueprint we can apply immediately elsewhere," he added.

Maryam Ali AlBalooshi, environment manager at the UAE's General Civil Aviation Authority, added that the pressure is on to deliver "a good result" by 2028. "We are trying to build our model in a different way [to other countries]," she suggested.

C.B.



Tahseen Aviation Services CEO Abdullah Almutareb and Jekta CEO George Alafinov shake hands behind a PHA-ZE seaplane model at the Dubai Airshow.

Jekta eyes Middle East for amphibious aircraft

By Charlotte Bailey

Amphibious aircraft developer Jekta is eyeing the Middle East as the launch region for its upcoming amphibious aircraft. The Switzerland-based company believes its hydrogen-electric PHA-ZE 100 will initially find favor in the area's luxury tourism segment, a growing use case reflected in a collaboration signed with UAE air charter provider Tahseen Aviation Services.

Jekta CEO and co-founder George Alafinov believes the region is "one of the most important markets" for the seaplane startup. Blending favorable geographic topography with what Alafinov describes as underserved infrastructure, he thinks this part of the world represents "an enormous market for amphibious aviation." He also cites the combination of the region's lack of regional airports, a willingness to embrace future mobility, and "enormous and ever-growing investment."

Jekta began engaging in discussions with countries in the region two years ago, with Alafinov describing "current proposals in this sector [as] very much outdated." This builds on existing regulations for amphibious aviation, complemented by the absence of landing fees on water, which reduces operating costs. Tahseen and Jekta will now work to assess routes across

missions including business aviation, cargo, and oil field services.

Jekta sees the Middle East as its main initial market, although Alafinov predicts that the Asian sector is ultimately "going to overtake it in real numbers of aircraft simply because of

the size of the Asian tourism market and the amount of people" potentially able to benefit from amphibious transport.

However, ongoing development must also "take into consideration the environment of the operations that this aircraft is intended for," continued Alafinov. In the Middle East in particular, this entails elevated temperatures, moisture, and sand, as well as sea salt after evaporation. Jekta will collaborate with Innovate Aerosystems to jointly evolve what Jekta terms a "highly customized, next-generation iteration of [Innovate's existing] Liberty Integrated Flight Deck."

Innovative Aerosystems is already a supplier for C-130 Hercules military transport aircraft that have been extensively used in the Middle East for the last 30 years. The company "certainly has that experience in building those types of avionics that have elevated protection against fine sand," clarified Alafinov.

A long-term goal is to develop an automatic takeoff and landing capability, augmenting safety while potentially paving the way for single-pilot operations.

"Ultimately, the challenge for us is to show the world that this niche needs to be here, and it is here to support communities and economies: taking us into the future by looking into the past," Alafinov concluded.

U.S. Marines trial seaglider for rescue missions

Regent Craft and the U.S. Marine Corps have completed operational trials to demonstrate how the company's seaglider can be used for rescue missions. The electric-powered vessel was deployed for medical and casualty evacuation exercises, the start-up announced on November 16.

Three missions were successfully completed during the sea trials: boarding a non-ambulatory patient on a litter from a dockside, a beach extraction of an injured patient from the shore, and an open-water life raft rescue. According to Regent Craft, the exercises proved the vessel's ability to approach, secure, and recover survivors in challenging sea conditions.

Regent, which is exhibiting at the Dubai Airshow this week, holds agreements with the Abu Dhabi Investment Office and the Strategic Development Fund (SDF) to bring its seaglider manufacturing and aftermarket services to the UAE.

The company is developing the Viceroy seaglider for multiple missions that could include commercial services with 12 passengers traveling up to 160 nm. While an initial version of the vessel is electric-powered, Regent has plans for a hybrid-electric option that would have a longer range of up to 1,400 nm, and both types would have speeds of up to 160 knots. It is also planning to introduce a 100-passenger vessel called the Monarch. **C.A.**



The UAE's first Rafale was handed over in a ceremony at Dassault's Istres test center in late January.

UAE fighter deal leads Rafale's global orders

By David Donald

Dassault Aviation has enjoyed a resurgence in sales for the Rafale multirole fighter in recent years, with the UAE's record-breaking deal for 80 upgraded combat aircraft leading a wave of international orders for the French manufacturer. This renewed interest was further underlined on Monday when Ukraine announced an intention to purchase 100.

The UAE accepted delivery of its first Rafale in January during a ceremony attended by Emirati defense minister Mohammed bin Mubarak Fadhel Al Mazrouei and his French counterpart, Sébastien Lecornu. That ceremony took place in Istres, France, where the two-seater remains for testing—a step that indicates the UAE's aircraft may differ in equipment from the Standard F4 version of the Rafale that Dassault is building for other customers.

Valued at €16 billion (\$18 billion), the UAE

deal for the Rafale was sealed during a visit to Abu Dhabi by French President Emmanuel Macron in 2021—in the wake of the U.S. government's refusal to sell the Lockheed Martin F-35 to the UAE on security grounds. Deliveries to the Air Force and Air Defence are expected to begin late next year.

According to the French defense ministry, the UAE deal represents the European country's largest-ever weapons export contract. For Dassault, it represents the biggest jewel in a resurgence of international interest in the Rafale.

Egypt, India, and Qatar had ordered the type in 2015 and 2016, but it was not until 2020 that the next customer, Greece, was announced. Dassault added Croatia to its Rafale orderbook by the end of 2020, with the UAE following in 2021 and Indonesia in 2022. Serbia has also recently joined the ranks of Rafale customers, while the Indian Navy has selected the type to equip one of its carriers.

Together with France, the eight export customers have increased the current Rafale order book to 533. Dassault completed the 300th Rafale aircraft in early October, leaving 53 further units to be supplied to France and 180 for export plus further orders yet to be finalized.

New Cergy Factory Boosts Capacity

In 2021, Dassault began constructing a new manufacturing plant in Cergy, to the northwest of Paris. The facility is taking over operations previously carried out at the increasingly obsolete factory in Argenteuil and increasing capacity. The Cergy site began operations in mid-2024, and Dassault formally inaugurated the factory in September 2025.

At the Cergy plant, Dassault manufactures and produces subassemblies for both the Rafale and the Falcon business jet family. Work for the fighter line includes assembly and integration of Rafale fuselages, systems, and equipment. Final assembly remains at Mérignac near Bordeaux.

Cergy's greater capacity supports a significant increase in Rafale production rate. In the early 2010s, the annual rate was nine or 10, but an expansion at Mérignac has permitted the rate to rise to the current figure of 25. Dassault plans to raise that number further to between 36 and 48, catering to the increased demand from new and existing customers.

Of the present opportunities, India represents the biggest potential sale. The Rafale is well-placed as a strong contender for the Indian Air Force's Multi-Role Fighter Aircraft (MRFA) competition, which seeks 114 aircraft.

In June, Dassault announced a deal with India's Tata Advanced Systems covering the production of fuselage components. While this would include Tata in the construction of fuselages for the 26 aircraft now on order for the Indian Navy, it would also secure a significant—and perhaps larger—part for local industry if the Rafale was selected for the MRFA. Tata will also make fuselages for other customers.

Among those potential customers is Indonesia, which has signaled an intention to add to the 42 Rafales it has on order. Another emerging opportunity is Taiwan, which is

seeking a replacement for its Mirage 2000 fleet, comprising 60 aircraft delivered in the early 1990s.

France Looks Ahead to the F5 Standard

Despite some speculation, it appears that the French military itself will not be buying more Rafales. Budget documents were released stating the acquisition of 286 Rafales for France, 61 more than the stated operational requirement. However, it was later clarified that the number included two aircraft already on order for delivery by 2030 as attrition replacements, as

well as those exported to Croatia and Greece.

France remains committed to operating 225 Rafales going forward, comprising 165 for the Armée de l'Air et de l'Espace (air and space force) and 40 Rafale Ms for the Marine Nationale (navy). From an expected entry-into-service date of 2030, the force will comprise Standard F5 aircraft with enhanced systems and sensors, improved stealth capabilities, and a range of other upgrades, including the ability to carry the AS4NG hypersonic nuclear missile. The upgrades will also allow the aircraft to interoperate seamlessly with

the forthcoming Next Generation Fighter as part of the Franco/German/Spanish FCAS program.

Among the F5's capabilities will be piloted-uncrewed aircraft teaming with a new stealthy uncrewed combat air vehicle (UCAV). Formally announced as part of the start of Standard F5 development in early October, the UCAV will likely draw heavily on the Dassault-led six-nation Neuron program, which resulted in a flight test program that began in late 2012 and has now achieved more than 170 sorties. ■

RTX's Raytheon expands the air defense shield

By David Donald

Proliferating threats, changing geopolitical environments, and lessons from other conflicts have led to an increase in requirements for ground-based air defenses in general, and in the Middle East region in particular. Having faced a primary threat coming from one direction for several years, Gulf nations now face missile and drone threats from a variety of directions, in turn driving the need for true 360-degree defenses.

RTX's Raytheon business has been a leader in air defense for decades, and continues to innovate its offerings to meet emerging demands. The company's missiles and radars have been widely adopted in the region, in addition to systems deployed by U.S. forces.

A key element of the regional air defense is the TPY-2 radar that provides long-range detection against aircraft and ballistic missiles, and which supports the Terminal High-Altitude Area Defense (THAAD) anti-ballistic missile interceptor. In addition to U.S. radars, TPY-2s are in service in the theater with Saudi Arabia and the UAE, with Qatar to receive them soon. Saudi Arabian Military Industries (SAMI) is now building power production units for TPY-2, part of a determined effort by RTX to expand the supplier base to cater to growing demand.

In the medium-range defensive layer, the Patriot is the primary effector, for which Raytheon is proposing its Lower Tier Air and Missile Defense Sensor that addresses the 360-degree coverage by adding additional arrays. The sensors employ gallium nitride (GaN) technology, which significantly improves radar range and discrimination performance. Raytheon is working with UAE company Tawazun on GaN component production.

In the missile sector, Raytheon's AMRAAM active-radar anti-aircraft missile remains a key product for both air-launched and surface-launched applications. In the latter, it forms part of the National Advanced Surface-to-Air Missile System (NASAMS) that was developed in cooperation with Norway's Kongsberg. In a layered air defense, the NASAMS acts as the short/medium-range "goalkeeper."

Oman and Kuwait have acquired NASAMS, as has Qatar, which is the first customer for the AMRAAM-ER extended-range missile. This adds the back end of the Enhanced Sea Sparrow missile to the front end of the AMRAAM. ■



The TPY-2 long-range air defense radar supports the THAAD theater-defense missile system.



Saudi Arabia welcomes Joby's eVTOL

DAVID MCINTOSH

Saudi regulator accepts FAA's approval of Joby

By Charles Alcock

Saudi Arabia's General Authority of Civil Aviation (GACA) has agreed to accept the FAA's certification standards for Joby's eVTOL aircraft. According to the U.S. manufacturer, the memorandum of understanding signed by the local regulator on November 12 will result in "a streamlined approval process" for launching air taxi services in the country.

GACA's decision is expected to facilitate Joby's existing partnership with Saudi company Abdul Latif Jameel, which has expressed interest in buying up to 200 of the four-passenger eVTOL vehicle. Under a deal announced in June, the family-owned group, which was an early investor in Joby, would become the manufacturer's local distributor.

Under the memorandum, GACA and Joby have agreed on three initiatives to support

the development of a regulatory framework for eVTOL air taxis in Saudi Arabia. They will share technical expertise covering design, production, and operations, as well as collaborating on airworthiness standards and regulations for the initial phase of operations, including pilot licensing, airspace integration, and maintenance.

Beyond the U.S., Joby is also working with the aviation regulator in the neighboring UAE, as well as with officials in the UK, Japan, and South Korea. It is involved in partnerships aimed at starting initial eVTOL operations in Dubai and Abu Dhabi in 2026, and has stated that these early use cases will likely precede the launch of services in the U.S. market.

This week, Joby also announced that it recently achieved a first flight with a hybrid-electric, uncrewed version of its aircraft. The flight in California happened on November 7, three months after the company announced the program through a partnership with L3Harris. The companies aim to conduct trials for possible government missions in 2026.

The autonomous VTOL aircraft uses Joby's SuperPilot flight control system, and L3Harris will add elements including sensors, effectors, and communications equipment. The autonomous flight system draws on technology developed by Xwing, which Joby acquired in June 2024.

Last chance to see it?

The UAE Air Force is displaying its Dassault Mirage 2000-9 in both the static and flying displays, and they also figure prominently in the mass flypast. With the type nearing the end of its service career, and with the entry into service of the Dassault Rafale replacement approaching, could this be the last time that the Mirage is on show at Dubai? First-generation Mirage 2000s were first delivered in 1989, and 30 survivors were upgraded to 2000-9 standard in the early 2000s to join 32 new-build Dash 9s. The aircraft have served the Air Force well and have been integrated with new weapons, including those of Emirati origin.

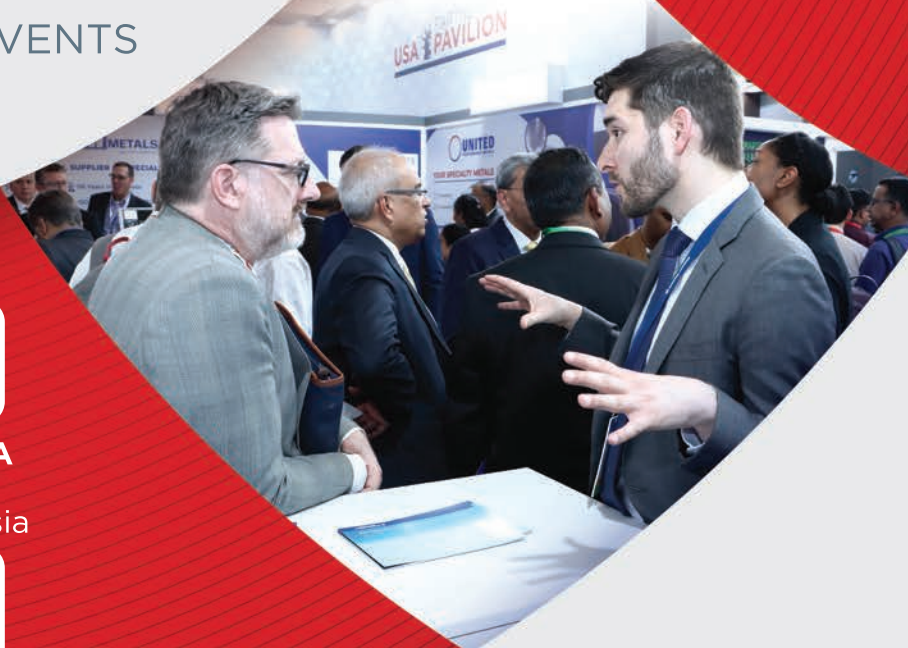


DAVID MCINTOSH



EXHIBIT WITH CONFIDENCE

AT THESE UPCOMING PREMIER EVENTS



SINGAPORE AIRSHOW

February 3-8, 2026
Singapore



DSA & NATSEC ASIA

April 20-23, 2026
Kuala Lumpur, Malaysia



FIDAE

April 7-12, 2026
Santiago, Chile



SOFEX

October 27-29, 2026
Aqaba, Jordan

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Evaluating next-generation airliner contenders: Part 2

By Scott Hamilton

In Monday's edition of AIN's Dubai Airshow News, **Leeham News and Analysis (LNA)** gave its take on prospects for five new airliner contenders. Today, we consider the case for concepts 6-13 from this list:

1. Airbus A220-500
2. Boeing's transonic truss-braced wing
3. Boom Overture supersonic transport aircraft
4. Blended-wing bodies
5. Boeing's concept for a hybrid aircraft
6. Airbus ZeroE hydrogen-powered mainline jet
7. Boeing's new midsize airplane
8. Boeing's new light twin
9. Comac C929
10. Leeham's light twin concept

11. CFM-powered Open Fan single-aisle airplane
12. Re-engined Boeing 787
13. Re-engined Airbus A350.

6. Airbus' ZeroE Hydrogen Airliner

The ZeroE hydrogen project was developed to be ready for production and entry into service by 2035. In February, Airbus announced that it would push back the start of commercial operations for a hydrogen airliner beyond its original 2035 target.

The problem was not so much the development of the necessary system components for a hydrogen airliner, but rather the need for an airport ecosystem to produce, store, and supply hydrogen for aircraft. Progress on the equipment for airports and green hydrogen production sites was not fast enough to allow

a start on commercial flights by 2035.

When Airbus announced the delay, it also stated that it had chosen the architecture for the aircraft it will produce as the ZeroE airliner. Originally, the decision was to be made in 2027 or 2028, after a hydrogen-powered GE Passport engine had been test-flown on Airbus' A380.

Airbus decided that the ZeroE airliner would use a hydrogen fuel cell system to power the electric motors that drive the aircraft's propellers. It probably means the airplane will be a 100-seater, since it will be difficult to design a fuel cell system to support more than 4- to 5-megawatt engines. The Bombardier Q400, a 90-seater, has 3.5-megawatt engines.

7. Boeing's New Midsize Airplane

The Boeing NMA was a project that spanned seven years, from 2013, when it was called the

MOM (Middle of the Market airplane), until 2020, when it was canceled. Boeing was by then deep in the 737 Max crisis, and Covid hit.

The NMA had a base model with 225 seats in a U.S. domestic cabin and a stretched model with 265 seats. The A321 has 196 seats offering the same comfort standard. The range of the base aircraft was 5,000 nm, utilizing engines with approximately 45,000 pounds of thrust; the stretched version lost about 500 nm in range.

The reason for not launching the NMA was a gradually shrinking market; Boeing initially stated 4,000 aircraft or more, but our market analysis suggested around 2,000 aircraft. Meanwhile, Airbus, with its A321LR and announced XLR, was gradually capturing the low end of the NMA market.

Another problem was that the production cost of the NMA, using an all-composite airframe, was too high. It meant the aircraft was significantly more expensive than the A321LR/XLR, with only a 15% higher capacity in the base version. The range of the NMA was 5,000 nm, with the A321XLR offering 4,400 nm. The problem was that the A321LR/XLR were aluminum aircraft produced more than 10,000 times, whereas the NMA would start a production cost learning curve. It would make it significantly more expensive to produce than the A321.

The primary issue was the use of a composite structure, which was identical to that of the 787. The 787 composite technology dates back to a 2003 decision to use prepreg composite tape and autoclave-cure of the composite. Of these technologies, autoclave curing is the primary issue.

As an example, baking a wingskin in the autoclave takes half a day, and when stringers are added to the skin, we are talking about a day per two wingskins that are loaded into the autoclave. As the NMA needed four wing skins, this means that the production of these wing components would occupy an autoclave for two days. The cost of such production is too high, and the rate is too low, for the high-volume segment around the present single-aisle aircraft, where daily production rates exceed two aircraft per day.

8. Boeing's New Light Twin

The New Light Twin can be seen as a rebirth of the NMA, albeit with a lower-cost production method. Boeing found that when marketing the NMA, airlines liked the concept of a larger aircraft in the A321XLR and 737 Max 10 market segment, which offered more seats and a slightly increased range (essentially the A321XLR range with a bit more margin for challenging routes and weather conditions).

A lower-cost, small twin-aisle aircraft with a seating capacity of 225 seats and a 5,000nm range would be attractive to the market. What the airlines didn't like was the price tag. The capacity increase over an A321XLR was 15% for the base NMA, but the net price was over 30% higher. That didn't work for the airlines, which told Boeing the NMA price had to come down.

The NMA's definition in terms of size and range was attractive, and an attraction that would increase with time. The reason is that the so-called "heart of the market" for domestic and short- to mid-range international flights is continually shifting upward. It

used to be the size of the 737-800NG, with 170 seats, 10 years ago. The market has moved by around 1.5 seats per year since then.

Several factors, including Boeing's \$50 billion debt, support the expectation that the A321neo and 737 Max 10 will continue production for at least another 10, if not 15, years. In that case, a replacement starting delivery in 2040 would be ordered with around 220 seats, and that would be for the start of the model's 40- to 50-year production run (the A320 is 37 years and the 737 is 58 years, so a planned product life of 40 to 50 years makes sense).

The \$15 billion question (the development cost of a single-aisle replacement) is, should the replacement be a single-aisle or a small widebody?

In this scenario, a lower-cost NMA would be an attractive option for the 2040s. The development time and initial production years, when only 10 to 20 aircraft are produced per year, easily span 10 years or more. It means the decision time for a New Light Twin would be around 2030.

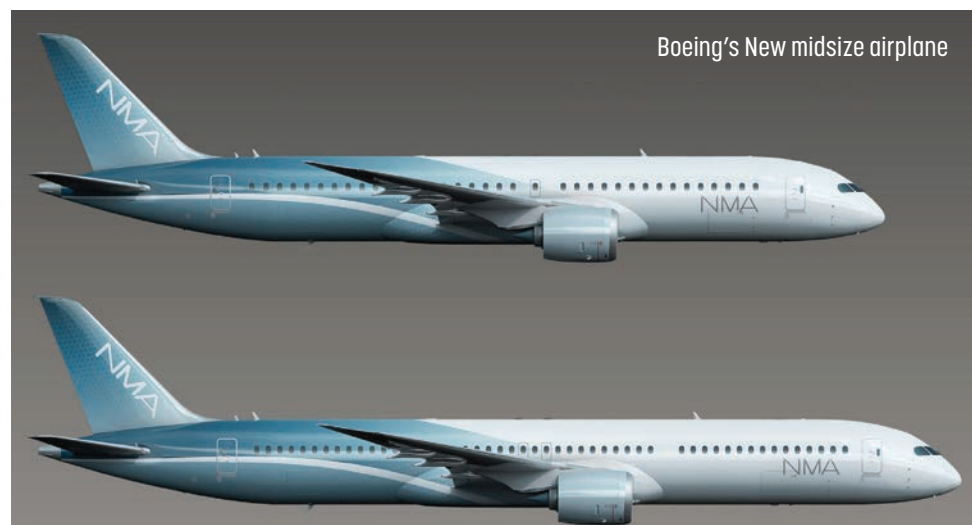
It would also leave the 737 Max 10, with 196 seats, untouched, which means Boeing could continue to produce and sell the Max 10 after introducing a New Light Twin. It would complement the Max range on top of the Max 10.

How to lower the cost of the New Light Twin? The brunt of a cost down would come from producing the composite structure in a more modern method than the one defined for the 787 in 2003. Boeing is researching this method in the HICAM project, which aims to achieve at least a 30% cost reduction in the structure, ideally 50%.

9. Comac C929

China's Comac is developing its first twin-aisle airplane, which is essentially a composite Airbus A330-900 or a shorter-range Boeing 787-9. Will this be the airplane that truly puts China's young aerospace industry on the map? The concept was first considered in 2011 for this 290-seat aircraft.

For a time, Comac joined with Russia's United Aircraft to proceed as a joint venture. Russia would do the composite wing. Russia's invasion of Ukraine led to the dissolution of the joint venture, reverting it to a solo Chinese project.



There is little new technology outlined for the airplane. The C929 was planned as a full composite aircraft. Comac was responsible for the composite fuselage from the beginning. Initially, Comac contacted Boeing 787 structure suppliers, such as Italy's Leonardo, but today it's unclear whether external suppliers will participate in building the C929 airframe.

The engines were originally to be updated versions of the GE GENx from the 787 or Rolls-Royce Trent 7000s, used on the Airbus A330-900. However, with sanctions imposed on China for its support of Russia during the war in Ukraine, Western systems and engines intended for the C929 are now unlikely.

The Comac C919 single-aisle airplane—a competitor to the Airbus A320neo and Boeing 737 Max families—is the development ground for domestic aerospace. It, too, has recently been hampered by the sanctions. CFM Leap engine shipments were halted in the spring of 2025 but have recently resumed.

As a response, China is in the process of expanding its domestic supply chain and engine manufacturing. China's Aero Engine Corporation of China has progressed to flight tests on a mule aircraft for an engine called CJ-1000A for the single-aisle C919.

For the larger C929, an engine project called the CJ-2000 began 10 years ago. It's an engine in the GENx and Trent 7000 thrust class. Its ground test version was recently showcased on Chinese television by the CEO of AECC, but the development status remains unclear.

Given the uncertainty around the supply of key technologies, the C929's entry into service, initially scheduled for before 2030, has been pushed out. A best-guess date now is in the early 2030s.

By the time the C929 enters service, it may be little more than a “catch-up” airplane. The C929 could, when it finally arrives, compete with Airbus' A330-900 for Chinese orders, but the A330-900 is then based on 40-year-old technology. The C929 would not be competitive with an A350-900, as it has 35 fewer seats and 2,000 nm less range.

As for Boeing's 787, by the 2030s the basic design and technology will be 30 years old. The 787-9 will have the same seating capacity as the C929 but 1,500 nm more range. A significant refresh, as outlined below, will outclass the C929.

10. Leeham's New Light Twin

A Boeing New Light Twin (NLT) would be a cost-down version of the company's New Midsize Airplane (NMA) concept, entering the market as a complement to the 737 Max 10 in the late 2030s.

A new-generation turbofan will only reduce the fuel consumption by about 10%. An open-fan engine can achieve a 20% improvement.

In LNA's view, the principal reduction of CO₂ and NO_x emissions before 2050 comes from the replacement of the 19,000 aging aircraft of the total 27,000 that fly every day with newer, more efficient aircraft.

To achieve the maximum greenhouse gas emission reduction, the industry needs to reduce fuel consumption to the maximum. Consequently, it would make sense to equip an NLT with open-fan engines.

But the CFM RISE—the only large open-fan engine announced to date—is a 35,000-pound-thrust category engine, and we wrote that a 45,000-pound engine is needed for an NLT. Would the engine industry develop a larger

open-fan engine? The question mark around such a development makes it an ambitious concept.

11. CFM-powered Open Fan Single-aisle Airplane

The next generation of single-aisle airliners will focus on bringing increased efficiency while transporting more passengers. The projected size has increased by about 30 seats in the last 10 to 15 years. This means the replacement aircraft will start at around 210 to 215 seats, depending on when they enter the market, up from 200 seats right now.

The increased efficiency will mainly come from more efficient engines, though technologies such as wider wings and lighter structures will also contribute.

Regarding engines, CFM's joint venture partners, GE Aerospace and Safran, are developing the open-fan engine called RISE (Revolutionary Innovation for Sustainable Engines). GE claims the engine's technical challenges—noise, maintenance, cruising speed, and the risk of throwing a blade—have been solved. It also claims that the RISE will achieve 20% lower fuel burn, even after installation effects are accounted for.

So far, this is a theory, based on lab testing and ground rig testing. The engine hasn't flown on an airplane yet and won't until 2027, on an Airbus A380.

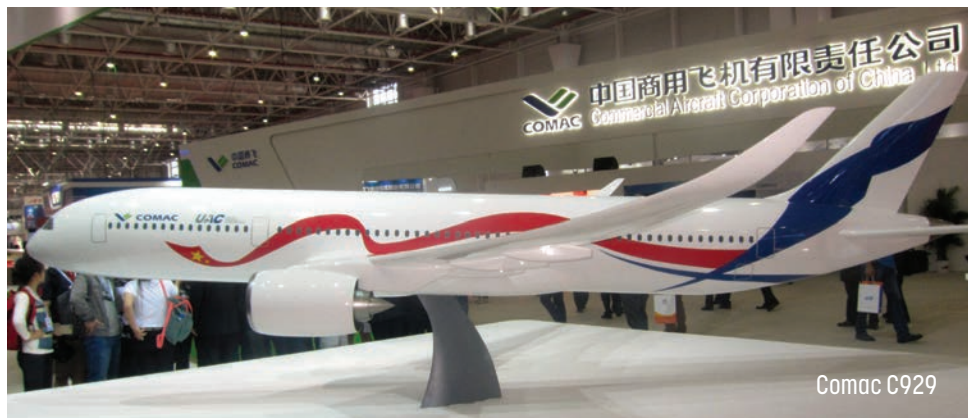
Pratt & Whitney and Rolls-Royce are betting on a conventional turbofan. But as noted below, the expected economic improvement from a new-generation turbofan with a bypass ratio of 15 is only about 10%.

The industry political game around engines for the next generation aircraft that will replace the A320/A321 and 737 Max is industrial poker in the super league. The outcome of all this will unfold over the coming years.

12. Re-engined Boeing 787

In 2035, the 787 will have been in service for 24 years. The engine technology will be at least 32 years old. The 787 will be due for a major engine upgrade. Will a re-engining be in the cards?

Rolls-Royce appears to have the only known development of this size engine underway. However, Pratt & Whitney has always said its Geared Turbofan (GTF) engine can be upscaled to as much as 100,000 pounds of thrust, and GE can



use technologies from the Boeing 777-9 GE9X to develop a new generation of GENx engines.

The improvement in fuel efficiency from these engines will be 10% or less. The reason is that the installation on existing airframes limits the possible engine bypass ratios to 15 or less. When the last generational engine update delivered a 15% improvement, it was because bypass ratios could be doubled—from four to five for the CFM56 and IAE V2500, to 10 or higher for the CFM Leap and Pratt & Whitney GTF.

But the bypass ratio increase now stays at 50% (from ~10 to ~15), effectively halving the fuel efficiency gain from propulsive efficiency. The second improvement area is core

efficiency, but it involves higher pressure ratios and temperatures. Given the reliability issues with the GE9x, Trent 1000, Leap, and GTF engines, airlines will likely be reluctant to accept a “hot core” next-generation engine.

13. Re-engined Airbus A350

The slightly younger A350 faces similar aging engine technology, and a similar need to upgrade the engine appears in the next decade. Rolls-Royce has an exclusive engine supplier position on the A350. If a re-engine or continual improvements and upgrades are the choice, Rolls-Royce will be the likely supplier.

The Trent XWB 84 on the A350-900 had superior entry-into-service reliability and

durability. The larger Trent XWB 97 on the larger A350-1000, on the other hand, had durability issues in the harsh Middle East and super-salty environments, giving Qatar Airways, Etihad Airways, and Cathay Pacific Airways far shorter on-wing time than expected.

Rolls-Royce has made great progress in resolving these issues. Further evolution of the Trent XWB engine or the new Ultra Fan will benefit from this experience. As explained above, we can expect an upgraded A350 to achieve about a 10% improvement in fuel consumption.

The timing of an upgrade will be influenced by fuel prices and airlines’ appetite for new, more efficient engines that avoid the durability dramas of recent engine introductions. ■

Since July, Leeham News and Analysis (LNA)—the premier source for in-depth aerospace and airline industry insights—has been owned by AIN Media Group. Its team of highly experienced journalists and analysts continue to provide coverage of topics including airframe and engine manufacturers, the aerospace supply chain, airline fleet planning, future technology, and maintenance repair and overhaul.

LNA is led by Scott Hamilton, founder and managing director of the Leeham company, and aeronautical and economics analyst Bjorn Fehm. Subscribers, who include C-suite industry leaders, have exclusive access to its expert coverage. Our news teams are increasingly collaborating on this content, making some of it available across AIN platforms including our FutureFlight channel and weekly newsletter and show daily publications.

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Chinese trainer lands in Dubai for the first time

A debutante in the static at this year’s show is the Zhongke TA-20 turboprop trainer from China. The type is based on the Dart 450 trainer from Austria, but with some enhancements. These include winglets and an anhedral tailplane.



DAVID McINTOSH

Gulf carrier Etihad to trial autonomous cargo aircraft

By Charlotte Bailey

Etihad Cargo is to trial fellow Abu Dhabi-based Lodd Autonomous' uncrewed vertical takeoff and landing (VTOL) craft in an attempt to augment its short-range air freight capacity. Under a collaboration signed on November 4, the UAE-based airline's cargo division will explore the integration of Lodd's "Hili" drone, which is to commence flight testing shortly.

In addition to playing an integral role in "experimental operations to test the efficiency, safety, and ground logistics compatibility" of the aircraft, Etihad said it will "explore the operational and commercial potential" of integrating the platform into its future fleet.

The VTOL-capable fixed-wing aircraft features a twin-boom tail, a rear pusher propeller, and two pairs of booms on each high wing,



Etihad Cargo will test out Lodd Autonomous' uncrewed VTOL aircraft, the "Hili" drone with a 250-kg payload, for increasing its short-range air freight capacity.

each equipped with a pair of rotors for vertical lift. It is powered by a hybrid-electric drivetrain and offers a payload of up to 250 kilograms (551 pounds), with a range of up to 700 kilometers (380 nm). Hili can accommodate two standard Euro-pallets.

Lodd's design impetus of addressing the middle-mile logistics sector fits in well with Etihad Cargo's intended use cases. The Gulf carrier believes the aircraft could "allow for rapid parcel and cargo deliveries directly

between logistics hubs and warehouses without the need for airports."

Lodd CEO Rashi Al Manai added that Hili's missions could include the transportation of shipments such as pharmaceuticals.

According to Lodd, it completed the final ground test in early November and is currently preparing for flight testing at its Al Ain facility. The technology startup stated that Hili is "the first heavy-lift cargo UAV engineered, built, and powered from the heart of the UAE." ■



DAVID McINTOSH

F-35 to be sold to Saudi Arabia

President Trump announced yesterday that the U.S. would sell the Lockheed Martin F-35 to Saudi Arabia, on the eve of a visit to the White House by Crown Prince Mohammed bin Salman. A U.S. Air Force example is being put through its paces in the daily flying display.

Knights in the sky

Formed in 1991, the Russian Knights have always flown versions of the Su-27 “Flanker.” They are back again in Dubai, now flying the Su-35S second-generation aircraft. This version is powered by the thrust-vectoring Saturn AL-41F engine, giving the aircraft a power-to-weight ratio of 1.13 with a half fuel load. The team performs as a six-ship, with a single aircraft demonstrating the Su-35’s extreme agility and power. They have flown at Dubai on a number of occasions.



DAVID MCINTOSH

Lufthansa Technik extends, adds support agreements

By Matt Thurber

At the Dubai Airshow, Lufthansa Technik and Royal Jordanian Airlines signed a contract to cover component support for the airline’s Airbus A320neo fleet. The Lufthansa Technik Total Component Support contract is in addition to Royal Jordanian’s previous agreements for the A320ceo, and it covers 20 A320neos and A321neos.

The 12-year contract includes component MRO, pooling services, and 24/7 AOG support. A base pool of components will be placed at Queen Alia International Airport near Amman.

Lufthansa Technik also announced a contract for engine MRO for Air Arabia’s CFM56-5B engines that power its Airbus A320ceo fleet. Engines needing service will be sent to Lufthansa Technik’s Hamburg facility.

Another agreement, with Air Arabia, covers nose radome repairs for five more years, with work provided by Lufthansa Technik Middle East, as part of the company’s airframe-related components portfolio. Air Arabia signed its first contract with Lufthansa Technik at

the Dubai Airshow in 2015, and the airline also has a multi-year Total Component Services contract.

Etihad Airways signed a number of contracts during the airshow as part of a new strategic MRO partnership with Lufthansa Technik. These include Total Component Support for Etihad’s Airbus A320 family along with AOG support and A380 landing gear maintenance at Lufthansa Technik Landing Gear Services UK.

When new Boeing 787s are delivered from the factory in Charleston, South Carolina, Lufthansa Technik will provide aircraft production inspection program experts for production oversight. In addition, the German company will use its EASA Part 21-J design organization approval to support Etihad’s technical operation with engineering services.

As the launch customer for Lufthansa Technik’s Aviatar APU and cabin temperature monitoring service, Etihad will gain real-time overview of APU and ground-based power provisioning, which will help the airline optimize APU usage and fuel consumption.

Aviatar was developed in collaboration with Revima Group’s FlightWatching.

In other news, after outfitting original Airbus A318s with VIP cabins between 2007 and 2015, Lufthansa Technik is now modernizing those aircraft to today’s standards of luxury and airborne connectivity. Airbus only delivered eight A318 Elites (the name was later changed to ACJ318 Elite).

The upgrades will offer customers replacement options for wood veneers, carpets, and upholstery with modern materials. Lufthansa Technik will also replace in-flight entertainment systems with high-definition displays, new speakers, up-to-date cabin management systems, and Gogo Galileo low-earth-orbit satcom.



Lufthansa Technik EMEA v-p Kai-Stefan Roepke (left) and Royal Jordanian CEO Samer Majali



More than 145 exhibitors attended the 2024 edition of the MEBAA show, including 65 first-timers.

MEBAA preps for even bigger event in 2026

By Matt Thurber

Next year, the Middle East and North Africa Business Aviation Association (MEBAA) will welcome the growing number of high-net-worth individuals in the UAE to the MEBAA 2026 show. Over the past decade, the number of millionaires based in the UAE has grown by 98%, according to MEBAA. With “\$63 billion in new investible wealth expected to flow into the country in 2025,” the association noted, “private aviation demand is accelerating fast, and it’s translating into real deals.”

During the last MEBAA show, the 10th edition held in 2025, more than 145 exhibitors—65 first-timers—were on hand. The static display hosted 30 aircraft from major business and general aviation manufacturers.

According to the association, 92% of exhibitors are likely to return for the 11th MEBAA show, scheduled for Dec. 8 to 10, 2026, at the Dubai World Central convention center at Al Maktoum International Airport. “This strong commitment highlights the show’s ongoing success and its crucial role in shaping the future of the industry,” MEBAA said. ■

Correction: Livery design for Fursan al-Emarat

A story published in the November 17 edition of **AIN**’s Dubai Airshow News included an incorrect reference to the paint scheme for the Leonardo MB-339NATS jets previously operated by the UAE’s Fursan al-Emarat national aerobatic team. This design was produced

by Alberto Anzellotti and not by the company responsible for the livery of the team’s new Hongdu L-15 aircraft. Anzellotti told **AIN** that he had also designed and copyrighted the team’s original flight suits, helmet decoration, logo, and ground vehicle livery. **C.A.**

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