

Issue

1

Wednesday
9 April 2025

FLIGHT DAILY NEWS



BY TEXTRON AVIATION



CITATION CJ4 GEN3

FLY WITH THE FUTURE



BillyPix

Step Beyond

hydrogen electric future as show spotlights sustainability

seous hydrogen mounted elec-
tors.
o provide a
vice entry,
ieves its jet
rket "in the early
ed by a growing
structure.
up to 800nm
e that addresses
outes - at a
kt (666km/h),
maximum take-
ne upper limit of
ass aircraft.
ays it is pursuing
tification as it
ble class for a
right sector for

innovation" before technological
advances are applied to bigger
aircraft.
Evidence of burgeoning interest
in battery- or fuel cell-powered
aircraft can be seen elsewhere at
Aero with the "e-flight expo" in
hall A7, a dedicated "sustainable
aviation trail" and the "e-flight
airshow" taking place on Thursday.
But harnessing these new power
sources is not without risk. Also
presenting at the summit was
Philipp Schildt, head of propulsion
system engineering at Apus Zero
Emission - a hydrogen aircraft
developer that entered provisional
insolvency at the start of March.
Work on the Apus i-2 four-seater
continues in parallel with the search

for a new investor - a process that
needs to be concluded by early June.
Despite overcoming technical
hurdles - for instance using
hydrogen storage tanks to form
part of the wing structure - the
Strausberg-based company
foundered due to the tricky funding
environment for zero-emission
aircraft.
Schildt says although the
company "is not in the best
situation at the moment", it is "still
very optimistic that we will find new
finance and we will be able to get
the Apus i-2 into the air".
For Beyond, however, the funding
issue is less pressing having
concluded a Series A round in late
2024 that raised \$20 million.

Save 25% when you join
FlightGlobal Premium, the leading
source of news and analysis for
the aviation industry

FlightGlobal
PREMIUM

Subscribe today at:
flightglobal.com/save25



Reach for the skies

“When I was a young girl, I felt aviation was a world I didn’t belong to,” says six-time French aerobatic champion Mélanie Astles, who is at Aero this week to help inspire the next generation of aviation professionals – or, as she explains, into “a job to make people dream”. Having flown into the show in her Extra 330SC to take part in Saturday’s flying display, the self-made aerobatic superstar’s passion for the cause is as evident on the ground as in the air; an ongoing commitment to what she calls “a long story of dedication and determination”.

After her first flight aged 21, Astles launched a career in a male-dominated segment that, as she readily admits, involved challenging her own prejudices about women’s place in aviation. Are these psychological barriers still there? “There are advantages and disadvantages,” she says. “The percentage of female directors in big companies is the same as the percentage of women pilots. It’s difficult as a woman because of the preconception that the woman ‘should manage,” she suggests.



BillyPik

One step Beyond

Start-up among those promising electric future as show spotlights sustainability

Dominic Perry

Aviation will be electric” – a bold claim that serves not just as the slogan for Toulouse-based business jet developer Beyond Aero but one that could just as easily apply to the wider industry.

Speaking at the Aero Hydrogen & Battery Summit yesterday, Beyond’s Yannick Schwartzenbart, head of programme industrialisation, predicted a bright future for electric aviation “based on strong demand from customers for zero-emission aircraft”.

Beyond’s proposed aircraft – called One – is a six-to-eight passenger business jet that uses fuel

cells running on gaseous hydrogen to power twin rear-mounted electric ducted fan motors.

While reluctant to provide a firm timeline for service entry, Schwartzenbart believes its jet could be on the market “in the early 2030s” accompanied by a growing hydrogen fuel infrastructure.

Capable of flying up to 800nm (1,480km) – a range that addresses 80% of European routes – at a cruise speed of 360kt (666km/h), the One will have a maximum take-off weight of 8.6t, the upper limit of European CS-23-class aircraft.

Schwartzenbart says it is pursuing CS-23 category certification as it is the “most accessible class for a new OEM” and “the right sector for

innovation” before technological advances are applied to bigger aircraft.

Evidence of burgeoning interest in battery- or fuel cell-powered aircraft can be seen elsewhere at Aero with the “e-flight expo” in hall A7, a dedicated “sustainable aviation trail” and the “e-flight airshow” taking place on Thursday.

But harnessing these new power sources is not without risk. Also presenting at the summit was Philipp Schildt, head of propulsion system engineering at Apus Zero Emission – a hydrogen aircraft developer that entered provisional insolvency at the start of March.

Work on the Apus i-2 four-seater continues in parallel with the search

for a new investor – a process that needs to be concluded by early June.

Despite overcoming technical hurdles – for instance using hydrogen storage tanks to form part of the wing structure – the Strausberg-based company foundered due to the tricky funding environment for zero-emission aircraft.

Schildt says although the company “is not in the best situation at the moment”, it is “still very optimistic that we will find new finance and we will be able to get the Apus i-2 into the air”.

For Beyond, however, the funding issue is less pressing having concluded a Series A round in late 2024 that raised \$20 million.

CITATION CJ4 GEN3
INTUITIVE
COMMAND

With Garmin®
G3000® PRIME

Explore more at
cessna.com/cj4-gen3

Save 25% when you join
FlightGlobal Premium, the leading
source of news and analysis for
the aviation industry

FlightGlobal
PREMIUM

Subscribe today at:
flightglobal.com/save25



55Th 16-22 JUNE 2025 INTERNATIONAL PARIS AIR SHOW

SALON INTERNATIONAL DE L'AÉRONAUTIQUE ET DE L'ESPACE

PARIS • LE BOURGET

Where
THE FUTURE OF
AEROSPACE
MEETS

BOOK
YOUR BADGE



An event by
GIFAS


siae.fr

flightglobal.com

Headlines

Local hero

As the sun rises on Aero 2025, so too does the latest iteration of the iconic airship that originated in Friedrichshafen almost 120 years ago.

Manufactured by local company Zeppelin Luftschifftechnik, the Zeppelin NT carries the "Next Generation Mobility" branding of local automotive transmissions company ZF – a Zeppelin spin-off – fittingly bridging the gap between the aerospace heritage and contemporary innovation synonymous with the region. Although with-

out the rigid internal framework of its illustrious predecessors, famous for First World War aerial bombing and luxury transatlantic transport in the years after, this lighter-than-air, powered craft made its maiden sortie in 1997 and has been used for local pleasure flights since 2001.



Elixir to boost production

Kate Sarsfield

Elixir Aircraft has returned to Aero Friedrichshafen to promote its two-seat Rotax 912iS and 915iS-powered piston-singles and announce plans to treble its assembly and manufacturing base in La Rochelle, France, reflecting the pair's popularity.

The company touts the types as low-cost "fourth generation" alternatives to the vast inventory of aging light aircraft. Fourth generation refers to Elixir's OneShot composite manufacturing technology, which uses an injection moulding process to make monolithic structural components.

"We are seeing particular interest in the baseline 912iS from aero clubs and flying schools with orders and letters of intent for this model now totalling over 300 air-



craft," says Elixir co-founder and head of sales and marketing Cyril Champenois (pictured). The 100hp (74.5kW) aircraft on display – serial number 33 – will be delivered to Greek training school Egnatia Aviation after the show, bringing the club's total 912 fleet to six aircraft. Elixir is now developing an instrument flight rules (IFR)

version of the aircraft, which Champenois hopes will be a "gamechanger" in the training market. Scheduled for European certification later this year, he says the model will be cover most training school requirements including ab initio and commercial pilot's licence instruction. "This small, cost-effective, versatile aircraft will do the

job of traditional four-seater models that are used in this market which are heavier and more expensive to operate," says Champenois.

The 912iS costs around €40 (\$44) an hour to operate including fuel and maintenance. It has a cruise speed of 120kt (220km/h), a range of 1,000nm (1,850km), a 94 litre (25USgal) fuel capacity giving it an endurance of 6h.

A few adjustments are needed to secure European validation for the variant, says Champenois, including an 55kg (120lb) increase in the 912's maximum take-off weight to 685kg and an upgrade to its bespoke Garmin G3X glass cockpit.

Following IFR approval of the 912, Champenois says Elixir will turn its attention to the larger, more powerful 915iS-powered sibling. "We put this programme on hold in 2022 to focus on improvements to the smaller model,

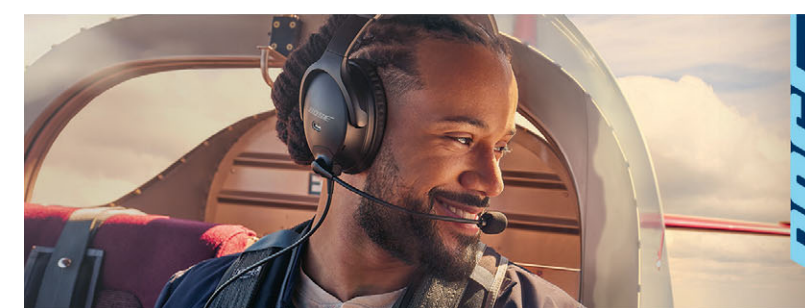
but we are now keen to get it to market," he says.

Targeted at private flyers, the aircraft is equipped with an extended wing and more powerful 140hp Rotax 915iS turbocharged engine delivering a cruise speed of around 160kt and a fuel-burn rate of up to 35l an hour.

Although a price tag has yet to be decided, Champenois says the aircraft will fill a niche in the market for small, high-performance piston-engined touring aircraft between the ultra-lights such as the JMB VL-3 and the top-end Cirrus SR-22.

"We expect the 915iS to be a very popular choice," he says.

In preparation for a surge in demand for both products, Elixir is planning to expand its La Rochelle base in 2026. The headquarters now boasts a 3,500sq m (37,700sq ft) final assembly line and 2,000sq m of composite production across two sites.



**Quiet the noise.
Amplify the experience.**
bose.de/aviation

Tuning up: Piper PA46



Aero's static stars

As Europe's general aviation industry gathers for its annual Friedrichshafen festival we round up the best of the outdoor exhibits, with the sights of the show halls in tomorrow's edition

German army NH Industries NH90

In by a nose:
Beechcraft
King Air 260FAI Aviation's Bombardier
Challenger 604

In training: Grob 120TP

Cessna's venerable Caravan
in amphibian guiseEmbraer Phenom 300E
light business jetV is for Vision Jet:
Cirrus Aircraft's G2+
standard single

The eyes have it: Luftwaffe Eurofighter





optionally-open cockpit was prompted by feedback at last year's show.

Although the A50 Heritage includes analogue instruments, the A60RG adopts the same 10in Garmin G3 display. "We took the decision to propose something relatively modern," says Boesch, who highlights how the contemporary cockpit setup fits well with the aircraft's intended ease of operation. Along with its nosewheel configuration and notable lack of flaps, the A60 serves

Junkers Aircraft's intention to attract everyone from seasoned aviation veterans to relatively new pilots. "It's our vision to inspire more people to learn to fly. For this, we have created aircraft that are easy to enjoy," he says.

All units are built by hand at the Black Forest manufacturing site, each representing some 2,500 hours of manual work. With certification of the A60RG expected by the end of the year, deliveries should commence in around a year's time, with demand expected to be roughly split between the A60 family, the A50 Junior and the A50 Heritage range. With demand rising, Junkers Aircraft is looking to open its second European sales facility next year at Nicelli airport on Venice Lido.

BillyPix

Red alert

Charlotte Bailey

Junkers Aircraft has unveiled the new A60RG, the fourth aircraft in a contemporary product line that merges traditional designs with modern

manufacturing methods and avionics. Distinctive for its corrugated 0.3mm thick aluminium skin that marks the so-called signature of Hugo Junkers, this family of aircraft embodies vintage aesthetic with modern ease of operation. Junkers aims

to attract a new generation of ownership within the 600kg ultralight category.

A variant of the existing A60 airframe revealed last year, the open-cockpit A60RG (pictured here in a striking red colour scheme) features an Edge Perfor-

mance 130hp engine to replace its sibling's 100hp Rotax 912ES. Both tricycle-configured variants are available in a choice of fixed or retractable gear, although Junkers Aircraft head of sales of marketing Dominique Boesch explains that the

Gulfstream flies to twin certification

Gulfstream is one of the big beasts of business aviation at Aero this year, displaying its G600 (pictured) for the first time. It comes as the US manufacturer prepares to bolster its portfolio with two types currently in flight test: the G400 and its flagship G800.

Gulfstream hopes to certify the 8,000nm- (1,480km-) range G800 this year, while the G400, which has a range of 4,200nm, flew for the first time in August last year. Both aircraft were unveiled in 2021.

The G400 is one of three Pratt & Whitney Canada G800 family-powered jets in the Gulfstream stable, alongside the in-service G600 and its G500 sibling.

The Rolls-Royce Pearl 700-powered G700 - which shares many features with the G800 and has a 7,500nm range - has been in service for a year. The super-midsize G280 makes up the line-up from the Savannah-based airframer.

Michael Swift, Gulfstream's group vice president of sales for Europe, the Middle East, Africa and Asia Pacific, says the company's products are "seeing strong demand" in Europe, with the G400 "ideal" for multiple European city pairs.



BillyPix

Integral R is part of company's display



BillyPix

Dijon Voltige to debut Aura Aero's Integral R

Aura Aero has delivered the first Integral R to launch customer Dijon Voltige, a French aerobatics club, a milestone coming just three months after securing type certification for the trainer.

"Dijon Voltige has trusted us from the beginning and has supported us throughout the aircraft development process. We are very proud to share with them this key moment in the company's history," says Jeremy Causade, Aura co-founder and chief executive.

"The Integral R is the safest aircraft in its category, especially with its whole aircraft rescue parachute," adds Stephane Thibodaux, president of Dijon Voltige.

"Safety is paramount for us in the choice

of an aerobatic aircraft."

European approval for the Integral R - displayed on the company's Aero stand - was obtained in December 2024, around four and a half years after the Lycoming AEIO-390-powered aircraft's first flight.

Serial production of the Integral R is now in full swing at Aura's Francal airport site in Toulouse, southwest France, with the goal of building 15 examples this year.

Aura is additionally developing a digital interface for customers allowing them access to flight data - including pilot and aircraft behaviour - and forthcoming maintenance needs. This feature will go live in the second half of 2025.



THE LEADING SHOW FOR GENERAL AVIATION

April 22 - 25, 2026

Friedrichshafen | Germany

SAVE THE DATE

aero-expo.com



Textron's 10 at Dusseldorf

Textron Aviation is celebrating the 10th anniversary of its European distribution centre, which supplies parts to Beechcraft, Cessna and Hawker customers.

Located in Dusseldorf in western Germany, the facility is now the company's second largest, fulfilling more than 50% of all European parts orders. It also supports customers in the Asia-Pacific region.

"Since opening, our European distribution centre has doubled in size, added a customer support parts and warranty team and quadrupled inventory value to continue providing unrivalled support in the region," says Brad White, senior vice-president, global parts distribution.

Recently, the site has increased the number of products handled by 40%. This is "supporting less downtime for our customers and bolstering our commitment to provide the most robust services in the industry," says White.

Since its inception, the 2,000sq m (21,500sq ft) facility has increased shipment volume year on year, leading to faster shipping and less downtime for customers.

Textron Aviation has also added a Europe, Middle East and Africa customer support and warranty team, trade compliance team, human resources and finance department and in 2024 set up a training centre on site.

Global 8000 takes shape ahead of service entry

Dominic Perry

Bombardier maintains its flagship Global 8000 is on track for service entry later this year, with the first aircraft currently progressing through final assembly.

Major components for the ultra-long-range jet have been delivered to schedule, says the Canadian airframer, which occupies a prime position in Aero Friedrichshafen's new Business

Aviation Show Hub.

Additionally, Bombardier's Flight Test Centre in Wichita, Kansas recently put the Global 8000 flight-test aircraft through its paces, flying missions to Europe.

"Bombardier's Global 8000 possesses outstanding short-field capabilities, with the ability to access smaller airports other aircraft in its category can't access," says Stephen McCullough, the company's senior vice-president, engineering and product development.

"This helps make it the clear choice for discerning owners and operators who prioritize convenience and flexibility."

Boasting an industry-leading range of 8,000nm (14,800km) and an unequalled top speed of Mach 0.94, the Global 8000 will compete at the top of the segment with the forthcoming Gulfstream G800 and Dassault Falcon 10X.

"The first Global 8000 production aircraft is steadily progressing through

final assembly, and we are on track to meet our targets for this incredible aircraft – the industry's fastest and most impressive ultra-long-range business jet," adds David Murray, executive vice-president, manufacturing, IT and Bombardier operational excellence system.

"Our engineering and production teams continue to display unmatched levels of commitment, innovation and expertise at all stages of the manufacturing process."



A Global 8000 under construction at Bombardier's Toronto Pearson plant

Autoland now available on King Air 200s

European operators of some Beechcraft King Air 200s can now have their aircraft equipped with Garmin's Autoland and autothrottle systems.

The European Union

Aviation Safety Agency has certificated those systems for aftermarket installation on King Air 200s equipped with Garmin's G1000 NXi avionics, Garmin said ahead of the show.

The approval marks continued success by Garmin in expanding the market for the automated systems, which it has rolled out for several single- and twin-engine small aircraft in recent years.

"This certification marks the first time Garmin Autoland and autothrottle have been offered to European owners and operators as a retrofit solution," Garmin says.

The autothrottle system can fully control throttle levers throughout flights, including during take-offs and landings. The system can also "activate automatically" if an aircraft is flying

too fast or too slow, while accounting for flap settings and gear position.

Autothrottle "reduces crew workload in the cockpit by managing aircraft speed and power, and provides engine protection against potential engine excursions," says Garmin.

The company's Autoland system has made waves in recent years. It can fully control and land an aircraft in the event that a pilot becomes incapacitated. Activated by a button in the cockpit, the technology identifies a suitable airport, "initiates an approach to the runway and automatically lands".

It also "provides simple visual and verbal communications in plain language, so passengers have the information and know what to expect".

Garmin has already been delivering Autoland-retrofitted King Air 200s in the USA. The system is now available on other types including Piper M600s, Cessna Citations, Cirrus Vision Jets, Daher TBMs and Honda Aircraft HA-420 HondaJets. It is also fitted on Beechcraft's single-turboprop Denali, which that manufacturer aims to have certificated in 2026, and Garmin intends to make it available for King Air 300s.



Autoland on a King Air G1000 cockpit

Doral with the DovePower prototype at the Avalon air show



Dovetail powers up

Australian alternative propulsion start-up Dovetail, which is exhibiting at Aero, officially unveiled its DovePower retrofittable electric propulsion system at the country's Avalon air show, which took place two weeks ago.

The first aircraft equipped

with the proprietary product, a Textron Aviation Cessna Caravan 208, is slated to fly later this year, says the company, which is targeting service entry for 2027.

DovePower, which is designed to replace conventional turboprop engines on European Union Aviation

Safety Agency CS-23 class aircraft, includes an electric motor, an inverter, and a propeller pitch control unit designed by Hartzell.

Dovetail says it wants to "play a central role in certifying the world's first full electric retrofit propulsion system for existing commercial

aircraft under EASA rules".

The company, which has locations in Melbourne and Seville, Spain, is a venture formed by much-travelled Spanish/Australian aerospace engineer David Doral and the founders of Sydney Seaplanes, a charter operator that offers scenic flights.

It hopes to offer the system for installation on Cessna Caravans and eventually Beechcraft King Airs, De Havilland Canada Twin Otters and Pilatus PC-12s through supplemental type certificates (STCs).

By promising to reduce operating costs by 40%, Doral believes the propulsion system will make short-haul routes viable that would not be economic to operate with a conventionally powered aircraft of 10 to 20 seats. Initial customers include Norway's Scandinavian Seaplanes, which last year signed for five conversions on Caravans that it plans to add to its fleet.

Dovetail, which has also attracted investment from the Victorian government's Invest Victoria agency, demonstrated its powerplant in a King Air in ground tests in Seville last July, and now plans to apply for an STC for the Caravan in Australia. "Once we have that, the plan is to industrialise to produce around 50 a year, initially for the Caravan and then, as we move forward, for the Twin Otter and King Air," says Doral, who has worked for Airbus and Boeing.

He sees the potential market for Caravans alone as up to 600 aircraft – roughly a fifth of the total global fleet that typically fly routes of less than 30min.

"However, in three years' time, as the technology improves, that could go up to 800," he says.

"In four or five years, we might be able to introduce a hydrogen-electric version and then the market will boom exponentially."

FLIGHT DAILYNEWS

Produced by FlightGlobal, 1st Floor, Chancery House, St Nicholas Way, Sutton, Surrey SM1 1JB, UK

©2025 DVV Media International

HOW TO CONTACT US

We are located in the Administration Building, 5th floor, meeting room 5B

Editor

Murdo Morrison murdo.morrison@flightglobal.com

News editor

Dominic Perry dominic.perry@flightglobal.com

Reporting team

Charlotte Bailey, Kate Sarsfield

Production Louise Murrell

Designer Sarah Eversfield

Picture editor Ian Billinghamurst

Photography Tom Gordon

Distribution Beatrice Olsen

Sales director, FlightGlobal

Andrew Walker

Divisional director, FlightGlobal

Sophie Wild

Printers Druckhaus Müller

OHG, Germany

Collins' Pro Line push

Collins is pushing the upgrade potential of its Pro Line Fusion and older Pro Line 21 flightdecks on a host of aircraft types and is exhibiting the latest versions of the avionics on its stand.

In February, operators of in-service Cessna Citation CJ1+, CJ2+, CJ3, CJ4 and XLS+ aircraft became the latest to be offered an updated version of Pro Line 21, covering communications, weather data and connectivity, available from the second half of this year.

In December, the RTX business offered a suite of improvements for Textron Beechcraft King Air and Hawker aircraft, including upgrading Pro Line 21-equipped King Air 200 and 200 series types to Fusion, as well as system updates for factory-installed Fusion cockpits on the same aircraft.

Owners of Hawker 750, 800, and 900 series aircraft can also modernize their Pro Line 21 packages to meet next-

generation airspace requirements.

Fusion upgrades are already available on Embraer Legacy 450 and 500 and Praetor 500 and 600, as well as Gulfstream G280s, Bombardier Global 5000/6000 series and Challenger 604 aircraft.

Meanwhile, Pro Line 21 modernisation options can be installed on Dassault Falcon 50s and 2000s, as well as Textron Premier I and IAs.

Collins is also demonstrating for the first time in Europe its Airshow HD on-board entertainment system, which is compatible with the Venue cabin management system.

According to the company, it offers "ultra-high definition viewing experiences, replacing outdated monitors and simplifying cabin integration".

Collins announced the first deliveries of the latest version of its Venue CMS system in October. The company says that Venue has been installed 1,700 times on 50 aircraft models.



New home for Aero South Africa

The South African version of Aero takes place at Johannesburg's Lanseria airport on 25-27 June.

The event – which was launched in 2019 – is moving from its previous location of Wonderboom airport, north of Pretoria. Lanseria is a busy business and general aviation airport that also offers low-cost scheduled services, and chief executive Rampa Rammpo says the partnership with show organizer Fairnamic is a good fit.

"We have partnered with Aero South Africa to showcase what the airport has to offer the GA community in terms of upgraded facilities and new facilities we are constructing," he says.

These include a fixed-base operator (FBO) precinct, currently being built, and a recently expanded runway capable of handling larger aircraft.

Dassault is exhibiting one of its veteran models, the Falcon 2000LXS, as it focuses on first flight and certification of its latest jet, the Falcon 10X

Dominic Perry

Dassault Aviation is displaying one of its venerable but still popular business jets at Aero – the Falcon 2000LXS.

It comes after the French manufacturer secured a sale for the Pratt & Whitney Canada PW308C-powered twinjet from Dubai-based lessor IC Leasing in December 2024 – the aircraft will go into service with German operator DC Aviation this quarter. It will be the Stuttgart-based company's third Falcon 2000 and sixth Falcon out of a total fleet of 37 business jets.

Almost 700 Falcon 2000s have been delivered since the original version was certificated in 1994. The LXS, which has a range of 4,000nm (7,400km), was introduced 11 years ago.

Meanwhile, Dassault Aviation's ultra-long-range Falcon 10X business jet remains on track to hit a revised service-entry target in late 2027, but the French airframer is staying tight-lipped on when its maiden sortie will take place.

"On principle we never say when the first flight will come," said chief executive Eric Trappier, speaking to FlightGlobal in Paris on 5 March.

"But if you say you may deliver the first one at the end of 2027, for sure 2025 should be such a year."

Despite the veil of secrecy around the likely date of the first flight, there is ample evidence of progress, not least that Dassault's initial flying prototype is coming together at the airframer's site in Merignac near Bordeaux.

"We are not far from having a complete first aircraft," he adds.

Engine supplier Rolls-Royce has already shipped the Pearl 10X powerplants for the maiden sortie following completion last year of test flights aboard its Boeing 747-200 testbed.

"We are very happy with Rolls," says Trappier. "We were able to go and meet the teams and check the good progress of their work."

Earlier concerns about Rolls-Royce's financial position as it emerged from the Covid-19 pandemic have also eased.

"We are confident, because we were a little bit afraid by the Rolls-Royce financial problems two years ago, but it looks like it is a lot better now," he says.

Trappier, however, still refuses to disclose the thrust rating of those engines, stating only that "we are very happy with them".

To date, all that either party has said is that the Pearl 10X will offer more power than the 18,250lb (81kN) produced by the Gulfstream G700-powering Pearl 700.

In early 2024, Dassault pushed back the Falcon 10X's planned service entry by around two years from end-2025, citing problems caused by developing

The 2000LXS, the latest version of a family that began in 1994, remains a popular Falcon jet



Old to new

the jet during Covid-19.

Interaction with suppliers was disrupted by the restrictions put in place to control the pandemic "which affected a little bit the efficiency of the time schedule" and meant "we had to reschedule completely the timing".

Broader disruption in the supply chain from the lingering after-effects of Covid continues and is likely to

persist in 2025 before easing in 2026, Trappier adds.

Late deliveries from aerostructures suppliers proved a particular pinch point in 2024, causing Dassault to miss its guidance for Falcon shipments, handing over 31 rather than 35 of the jets.

On top of the supply chain challenges, 2024's delivery total was further impacted by the slower-than-

hoped service entry of the Falcon 6X.

While the process itself has been relatively pain-free and "reliability looks to be good", overall, it was "too slow to my mind regarding the schedule that was planned for 2024", he says.

"We should have delivered more [6Xs] than we did in 2024 and that was one of the reasons we didn't reach our guidance as far as the Falcon was concerned."

Modifications to the fuel system of some early-build jets required by the European regulator were a particular drag on deliveries, says Trappier.

Dassault had to carry out much of that work at its completions centre in Little Rock, Arkansas, which proved a "little bit more difficult" than performing it on the final assembly line.

"This is why we had some delay in the deliveries of the 6X – now we are not too far to be back on schedule."

Meanwhile, Dassault continues working on the transfer of its Falcon 2000 final assembly to India.

Dassault has been moving some aerostructures work to partners in the country both for cost reasons and as an offset for New Delhi's purchase of Rafale fighters, but Trappier only sees the relationship deepening.

It will be a "matter of years" before Falcon 2000 final assembly is switched, but "we are convinced by the feasibility", he adds. ▀



The 10X remains on target for service entry in 2027, says Dassault

Murdo Morrison

Daher plans to start assembling TBM aircraft at its new Florida campus in 2027 as part of a strategy to expand capacity to meet a growing orderbook and hedge against US tariffs on European imports.

The French manufacturer – most of whose customers are in the USA – also intends to introduce an assembly line at the Stuart facility for its Kodiak series of utility aircraft, currently built in Sandpoint, Idaho – although this will come later, according to chief executive Didier Kayat.

It comes as the family-owned company – which also has aerostructures, logistics, and industrial services divisions – on 5 February reported revenues of €1.8 billion (\$1.88 billion) for 2024, up from €1.65 billion the previous year. This was helped by strong aircraft deliveries, at 82 units compared with 74 in 2023.

Daher acquired the Stuart factory in 2022 from Triumph – with whom it is embroiled in a legal dispute over the due diligence process. The facility makes aerostructures, including the centre fuselage section for Boeing's 767 freighter and related KC-46 tanker, and the purchase made Daher a supplier to the US airframer for the first time.

Daher now plans to start construction around September on an adjacent new-build assembly line, which will be able to produce up to 60 aircraft a year, roughly the capacity of its TBM line in Tarbes, France. Earlier this month, the company announced that it had secured a long-term lease with landowner Florida's Martin County, allowing building to start.

With Daher taking orders for 200 TBM and Kodiak aircraft over the past two years – and its largely owner-pilot customers reluctant to have lengthy waits for deliveries – there is a pressing need to increase capacity. "We must deliver faster," says Kayat.



Daher produced 11 Kodiak 900s last year

Coming to America



Daher will initially produce its TBM range at its new Florida factory

Daher produces far fewer Kodiak aircraft than TBMs – 11 Kodiak 900s and 15 Kodiak 100s compared with 56 TBM 960s last year. However, increasing output at the Sandpoint facility is in itself difficult because high property prices in the ski resort make it hard to recruit blue-collar workers, maintains Kayat. "Real estate is expensive, so it makes sense to expand to Florida with a dual assembly line in the near future," he says.

With four out of five TBM aircraft operated in the USA, it also makes sense to have domestic production if the Trump administration ends up imposing tariffs on European aircraft, maintains Kayat. "We had some trade risks with tariffs eight years ago. We hope [a] Trump 2.0

[administration] takes into account warnings from [the General Aviation Manufacturers Association] and others, but if they don't it makes sense to have a TBM line where we have 80% of our sales," he says.

Although Daher has been making progress on its five-year plan to transform the company by 2027 –

shedding non-core activities to focus on the aerospace sector, increasing profitability, and becoming a €2 billion revenue business – it faces challenges, particularly in its aerostructures division.

Last March, Dassault Aviation chief executive Eric Trappier singled out late and incomplete deliveries from Daher, GKN Aerospace, and Latecoere for contributing to lower-than-expected output of Falcon jets in 2023.

Kayat acknowledges that the division has faced similar challenges to its peers – who also include Triumph and Spirit AeroSystems – and is loss-making, but that, unlike its "pure play" rivals Daher has other profitable units to balance the deficit. "We are losing money but not at the group level, so we are a more resilient player than our competitors," he says.

Daher is in the process of transferring aerostructures work on the A320 family at two sites near Nantes in France to Airbus Atlantic, a process Kayat hopes will be concluded by June.

The company is about 18 months into its protracted dispute with Triumph after discovering what it says were undisclosed issues with the plant concerning software licences and unpaid supplier invoices. Kayat says it meant "we had to work hard to win back Boeing's trust" and concedes that "had we had the right information at the right time, we might not have gone ahead [with the acquisition]" ▀

Kayat: 'We must deliver faster'



A Swiss start-up with a unique concept aims to deliver the first purpose-built electric training aircraft, offering an environmentally-friendly solution to tackling the global pilot shortage



Smartflyer team unveiled the SF-1 in November 2024 during a ceremony at Switzerland's Grenchen airport

Flying smart

Pilar Wolfsteller

In a low-slung factory hall just a stone's throw from Europe's largest nesting and hunting area for white storks, a new bird is coming to life under the watchful eyes and expert hands of a group of ambitious Swiss pilots and engineers.

Smartflyer's SF-1 – a sleek, high-wing, tricycle-gear, hybrid-electric aircraft – seeks to revolutionise flight training, bringing down the cost, while also reducing noise pollution and emissions.

At first glance, what stands out are its prominent, elongated nose, smooth and light composite fuselage, broad wraparound cockpit window, and the forward-facing propeller on the empennage.

"It's because of physics," says Rolf Stuber, mastermind, founder, chief executive and head of design at Smartflyer. He, too, admits that the SF-1 requires some getting used to.

Right configuration

Stuber says he first saw the unusual configuration on E-Genius, a light aircraft project that emerged from the Institute of Aircraft Design of Germany's University of Stuttgart

about 15 years ago. Its maiden flight was in 2011.

"I initially thought, 'They are idiots. So dumb. A propeller on the tail construction is the dumbest idea'. But then they explained it to me, and I thought maybe they are on to something."

He also found inspiration in the Poeschel P300 Equator prototype: an amphibious aircraft of which three examples were built in the 1970s.

"I did some drawings and sketches, and I got to fly the E-Genius, and then I thought, 'Okay, that's the way it has to look, it has to be built this way'."

The SF-1 is a pretty stark departure from most single-engine piston trainers on the market today, and its appearance does not deceive. It is the first electric aircraft designed from the ground up for the electric motor, rather than it replacing a combustion engine.



Rolf Stuber founded the company in 2016 with a handful of fellow pilots

Stuber, a former pilot for the Swiss air force and Swiss International Air Lines, took his cues from the glider world.

"A glider is basically maintenance-free," he says. "You don't have to do anything with it. On an aircraft, the only thing that requires maintenance is the combustion engine. That was the problem. We had to get rid of that."

He was drawn to electric flight while still earning his keep in the left seat of Swiss's Airbus A340s. Piloting the lumbering giant, often ridiculed by frequent flyers for its anaemic climb rate, paid the bills. But in his free time, he began dreaming of and tinkering on his contribution to 'Aviation 3.0': the electric aviation revolution.

The SF-1 looks sprightly and light, with its all-carbon construction, futuristic interior and intuitive avionics fitting right into today's advanced aviation designs. But Stuber says the real innovation is under the skin.

"From the beginning we knew that the hybrid propulsion system was the core piece of the whole thing," he says.

He founded Smartflyer in 2016, and along with a handful of fellow pilots, set about building the aircraft's engine. It took four years of

trial and error and testing to perfect the concept.

The pure electric engine, which is powered by high-capacity batteries, will provide an emissions-free endurance of 2.5h at 120kt (222km/h). Take-off power is 160kW, which translates to 215hp. Adding a range extender – a small combustion engine that drives a generator to charge the batteries in-flight – will bring the range to about 432nm (800km).

Eventually, Stuber plans a fuel cell-powered variant of the aircraft with a flight endurance of more than 5h. The team promises a 25% reduction of emissions and 50% lower operating costs for potential flight school customers.

Stuber envisions a "plug-and-fly" concept. Swappable nose cones containing either the pure electric or range-extender propulsion units will be available and used according to what kind of flight is planned. Training flights in the airport environment, such as for touch-and-gos, would be done with the electric motor only, seeing as noise sensitivity is always an issue. Cross-country flights would be conducted with the range-extender. Charging can be done with a conventional 220V European socket.

He says that after some basic instruction, any pilot can safely switch out the modules in less than 15min. A flight school could, for example, purchase two electric engines and one range extender per airframe, which would allow the four-seat aircraft to be in operation and earning revenue all day.

The propeller's location on the tail is striking, but its positioning serves an important purpose. Stuber explains that the electric motor is "about five times lighter than a conventional combustion engine" and as such, designers were able to reconsider where the thrust would come from.

"We thought it would be best to put the propeller in the back, because the accelerated air mass can flow away freely and is not blocked by the broad fuselage cross-section if the prop were at the front."

The cockpit controls and displays will be manageable and intuitive, and the wide canopy gives adequate visibility in all directions, including above the aircraft.

The current in-service training fleet, he says, is antiquated, expensive (due to increasing age and maintenance costs), and widely inaccessible due to the heavy financial burden of flight training – three factors that contribute to the world's critical shortage of pilots.

Common purpose

He compares a 1968 Beech Bonanza to a 2024 Cirrus Aircraft SR-22 – both with the same Continental IO-550 engine – which serve similar purposes.

"The advancement in 50 years is that the Cirrus has a USB port and an air conditioner," he says.

So why haven't other OEMs figured this out yet?

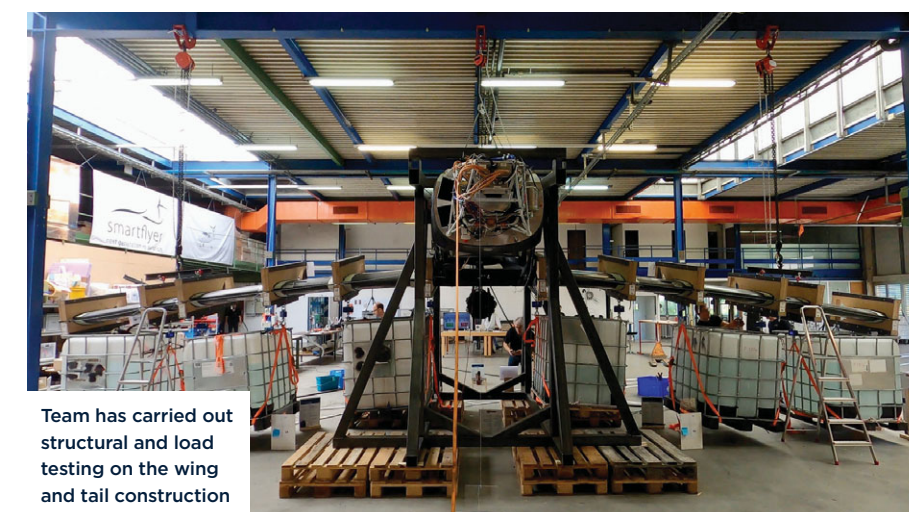
"They can't just take a regular airplane and put an electric motor in it. We are optimising all sorts of things, and building from scratch," he says.

That optimisation, though, does not come cheap.

The Selzach-based company



Light weight of SF-1's electric motor allows aircraft's propeller to be located on tail



Team has carried out structural and load testing on the wing and tail construction

received support from a government fund financed by aviation fuel taxes, which promised the start-up up to 72% of its initial CHF4.1 million (\$4.5 million) budget proposal. The funds were linked to milestones – which is where the innovators clashed hard with Swiss civil servants.

"From the beginning it was a difficult conversation," he says. "It took a few years until we spoke the same language, and until they figured out what we were all about and what we needed."

Stuber is not alone in expressing this annoyance. Countless European start-up CEOs before him have experienced the benefits of state support, but also confronted the aggravations and limitations of government bureaucracy. Over and over again, across the continent, entrepreneurs and innovators have complained about rigid guidelines and a lack of understanding for a new product, design or type.

"We delivered thousands of pages of information to the authorities and met numerous regulatory milestones," Stuber says. "The bureaucratic processes within the Federal Office make it impossible to handle a complex project that extends over several years."

The fund suspended its support of Smartflyer in 2023. Of the promised CHF2.95 million, the company has so far received CHF1.4 million, and has taken legal action in a bid to recover the rest.

An external investor, Invero AG, provided CHF1 million, and Smartflyer is now seeking another CHF1 million-plus it needs to complete its

first flight-test phase.

Certification under the European Union Aviation Safety Agency's CS-23 rules will likely require another CHF25 million and five more years – a modest sum compared to the more than half-billion that electric vertical take-off and landing aircraft developers typically face, for example.

"We are building a conventional aircraft, with conventional controls, but with the massive advantage of an electric propulsion system," he says.

But while gathering the dossier of 4,500 pages to satisfy the Swiss civil aviation regulator was time-consuming at best and infuriating at worst, Stuber now knows that his aircraft design is sound.

"Compiling all the documents cost us time, but we have now proven that everything is certifiable, we have completed that step already," he says. "That is very valuable. All the processes and information, we now have everything that any other aircraft manufacturer has."

The company's timeline sees series aircraft production beginning in 2028, and first deliveries at the beginning of the next decade.

Market potential

Stuber is convinced that the market potential is massive. He quotes a recent Airbus Global Services forecast which said that in the next 20 years the aviation industry will need an additional 2.2 million skilled professionals, including 590,000 new pilots.

"The need for training aircraft is massive, especially in Asia," he says.

"That's where growth will come from, and they will need modern equipment."

The Smartflyer team presented its SF-1 to the world in November, at a glittering unveiling at Grenchen airport that was broadcast live on Swiss national television.

"We had to put a stake in the ground and say, 'okay, we are ready to go,'" Stuber says. "The point was to show that we are beyond renderings, we are beyond concept studies, we have a real aircraft prototype to show, with everything installed. This bird is ready to fly."

The biggest issue now is the high-voltage battery cells, which are expensive to acquire as they will be custom-made for the aircraft. The team has already completed a series of runaway thermal tests, as well as structural and load testing on the wing and tail construction.

In June, Smartflyer will display its prototype on the Paris air show flight line in Le Bourget, in an attempt to attract the attention of major OEMs.

"Our priority now is to get this aircraft in the air, do the initial tests, so that we can prove it can perform," he says. "That is our focus. After that when we have a package and can say, 'here is the prototype, initial development is secured, performance is achieved', that's when we will hope to bring in industrial partners."

In late 2025, a test campaign will begin at the military airfield in Payerne, which features a 2,740m (9,000ft)-long runway in a relatively sparsely populated part of west-central Switzerland. The SF-1's maiden sortie is scheduled for "the fall".

More than eight years since work began, Stuber says Smartflyer's journey has been an adventure, and that it is still fun. He is convinced that the industry is on the doorstep of an electric aviation breakthrough, with technical problems having been solved one after the other.

"Electric aviation is our future, and when people see how much more fun it is to fly, it will take off," he says.

Solving those technical challenges was hard, with battery integration among the toughest nuts to crack. But the most difficult part for the start-up now is one that has flummoxed entrepreneurs and visionaries since time immemorial.

"Finding the money," Stuber says with a laugh. ■

The Textron-owned Slovenian light aircraft developer has made significant progress on other programmes since its ground-breaking Velis Electro was certificated in 2020

Dominic Perry

With the year's first milestone already completed, the maiden hover flight in late January of its Nuuva V300 cargo drone, Pipistrel Aircraft is gearing up for a busy 2025 as it progresses development activities across multiple programmes.

A part of Textron Aviation since April 2022, the Slovenian airframer, for years best known as a manufacturer of gliders or light sport aircraft, has pivoted in recent times towards innovative electric or hybrid-powered designs.

European Union Aviation Safety Agency (EASA) certification for the two-seat Velis Electro was obtained in 2020 – a global first – and since then Pipistrel has been working to expand the type's reach and deliver upgrades for the platform.

Gabriel Massey, managing director of Pipistrel, says the Velis Electro is now operated in over 20 countries, including, crucially, the USA, where last year the Federal Aviation Administration granted an airworthiness exemption to class the type as a light sport aircraft, opening the door for flight-school use there.

"We have gained a couple of [US] schools that are now utilising the aircraft in a flight-school environment that could not previously," he says.

Additionally, Pipistrel continues to "work with potential customers in schools", providing "education" about the specific application, he says.

That work leverages "a lot of the proven results here in Europe", where there are 30-plus Velis Electros in France alone, the majority in flight schools.

Meanwhile, the company continues to "bring incremental improvements" to the Velis Electro. Last year saw the release of a cold weather kit – a battery pre-heating system to speed up charging – installation of which will also permit operations in temperatures down to -15°C (5°F).



The company continues to improve the pioneering Velis Electro

Flight tests have been taking place in Switzerland with the support of the European regulator, he says: "The team has proved with EASA on board that -15 degrees operational outside air temperature is very feasible."

Massey sees no impediment to the EASA approval, allowing its roll-out in "the next few months".

Pipistrel, which manufactures its own battery packs and power electronics, has already implemented a second generation of batteries on the Velis Electro since its service entry but there are further improvements to come.

"There is a continued strategy to

bring new cells to the Electro," says Massey. These will be retrofitted to the in-service fleet as part of scheduled overhaul work, delivering "more range and endurance".

Although reluctant to cite specific figures, he says the battery enhancements will bring the aircraft closer to achieving "an hour of practical flight time" in a flight-school environment. With the current cells, maximum flight time is around 45min, he says.

Despite the increasing focus on alternative power sources, Pipistrel is not neglecting the market for conventionally fuelled aircraft and development activities continue on its Lycoming IO-540V piston-engined Panthera four-seater.

Structural testing of the design was carried out over the last 12 months and "we are going into full-scale structural testing this year", Massey says.

Although a production-representative aircraft has yet to join the test fleet, the current prototypes are nonetheless performing forced-flight tests with EASA.

Massey will not be drawn on the certification timeline, with the Panthera already slipping beyond a previous 2024 target.

"The team is aiming towards type certification as early as we can. It's always your goal, but these are big projects and a significant amount of

work," he says.

While the initial version will be powered by a conventional engine, a hybrid version is "still part of the long-term plan".

Elsewhere, the company will this year continue flight testing the Nuuva V300, a hybrid-electric uncrewed cargo aircraft capable of vertical take-offs and landings.

While its maiden sortie was a modest one – rising to around 10m (32ft) above the ground for over 30s – the envelope and flight duration will be expanded progressively over the coming months from the company's facility in Gorizia – a town in northeast Italy straddling the Slovenian border.

A second prototype will also join the fleet later this year. That aircraft will be the first to test the critical transition from hover flight, using its eight Pipistrel electric motors, to wing-borne cruise powered by an internal combustion engine.

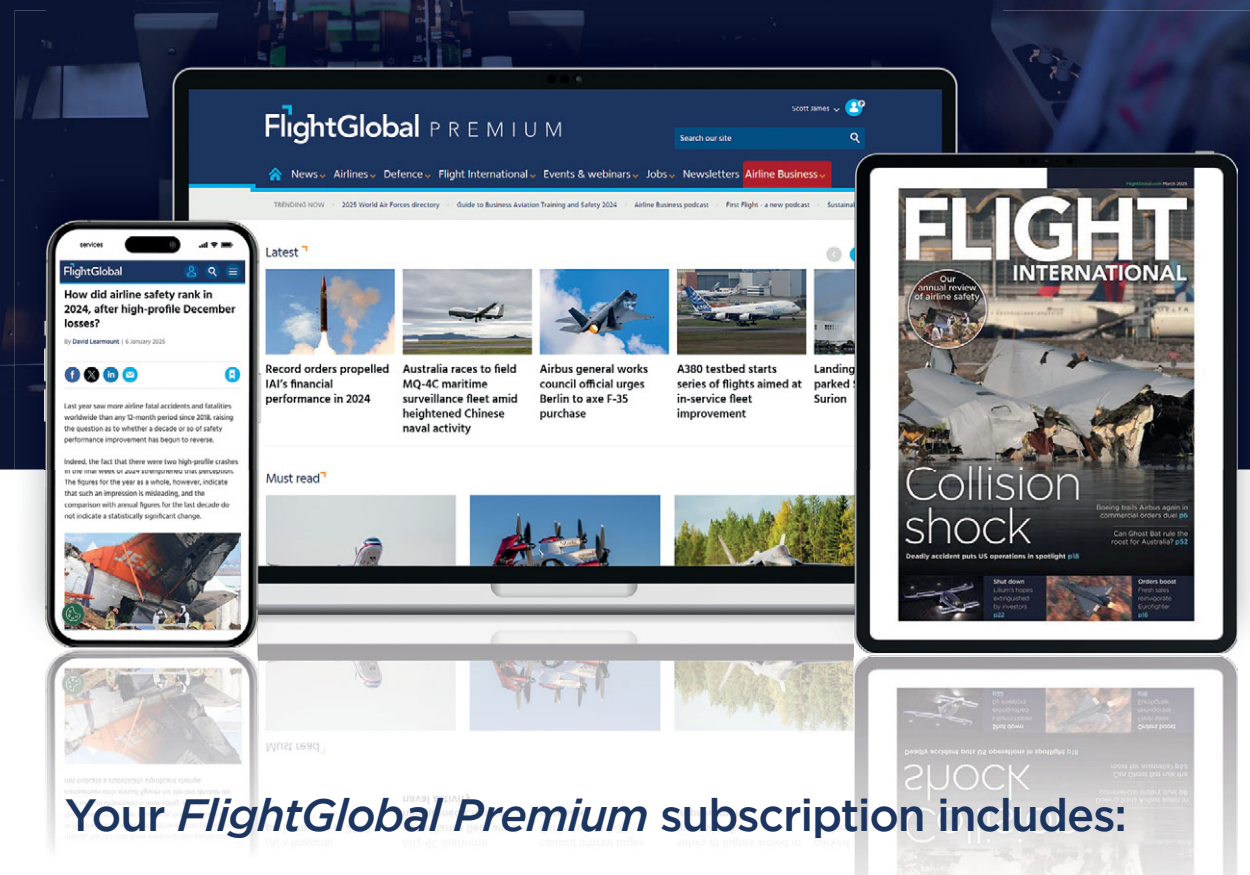
Pipistrel's development of the Nuuva's has been helped by its place in the wider Textron group, with unmanned systems specialist Textron Systems having supplied the ground-control station.

"Their history with uncrewed airplanes was a really nice plug-in to help our team and bring knowledge and expertise to us," Massey adds. **Tomorrow's edition of *Flight Daily News* has a feature on Velis Electro operator Saxon Air**



Pipistrel will this year continue flight testing the Nuuva V300

Save 25% when you join
FlightGlobal Premium, the leading
source of news and analysis for
the aviation industry

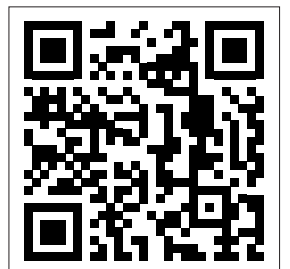


Your **FlightGlobal Premium** subscription includes:

- Unlimited access to FlightGlobal.com articles providing breaking news, industry analysis, and expert opinion
- In-depth articles and exclusive interviews with industry leaders from award-winning journalists
- Subscriber-only Daily Briefing email with the latest news
- Quarterly digital copies of *Flight International* magazine

FlightGlobal
PREMIUM

Subscribe today at:
flightglobal.com/save25



Bespoke corporate subscriptions packages available for 5 or more users.
Please contact corporatesubscriptions@flightglobal.com for more information.

Twelve years after buying the design to the seaplane, Dornier Seawings is aiming to certificate the Seastar CD2 this year

Making a splash

Murdo Morrison

Dornier Seawings is confident its Seastar CD2 will achieve European certification this year after an interrupted effort to revive production of the 1980s-designed nine-seat amphibian that began over a decade ago.

The Oberpfaffenhofen, Bavaria-based company has since September been stepping up its flight test campaign, including a

series of water trials in Norway, using three prototypes. The business – which is owned by Chinese concerns Wuxi Communications and Wuxi Industry, along with the Dornier family – has two additional aircraft in production, one at the original Dornier facility in Germany and one at a sister factory in China.

Dornier Seawings flew its first prototype in March 2020, but funding issues and complications with the pandemic forced a four-year delay before the second

aircraft's maiden sortie in March last year. The original Seastar, produced by the Dornier company, flew in 1984 but no examples were delivered before the programme was cancelled. Chinese-backed Dornier Seawings bought the design rights in 2013 and relaunched the aircraft in 2016 with an original entry into service target of 2021.

Head of sales and marketing Ana Alvarez-Munoz says that although there are no announced orders for the 900nm (1,670km)-range, Pratt & Whitney Canada PT-6A-135A-powered Seastar “we are focusing on getting certification” and finding customers for the first two aircraft, which it hopes to deliver in 2026. She adds: “We made some mistakes in the past with promises. Now what we want to do is create the climate for a potential market.”

Dornier Seawings has about 100 employees at Oberpfaffenhofen, with some 150 in China. Initially aircraft assembly will be in Germany, with China coming on stream when demand justifies it, she says.

The Seastar, which comes with two engines equipped with five-

blade propellers mounted in a tandem configuration above the high wings, is one of several seaplanes in development as the sector enjoys a revival. Like other amphibians, its lower fuselage forms a hull containing retractable landing gear, so it does not rely on floats.

However, while many developers are focusing on the electric-power

opportunity, Dornier Seawings is sticking with its P&WC turboprops. And while others identify the commercial air transport market, including airborne ferries for island communities, as the key opportunity, Dornier Seawings is positioning the Seastar primarily as a VIP aircraft, with customised, upscale interiors with four to six seats.

“Luxury travel is booming. It's all about offering travellers unique experiences by being able to access places that have been difficult to access,” says Alvarez-Munoz. “So we are addressing high-end resorts, as well as high-net-worth individuals.”

Dornier Seawings offers a second product, the two-seat DS-2C light-sport amphibian. The aircraft was

formerly the Uniplanes Flywhale FW650 – which Dornier Seawings bought the design rights for two years ago – and competes with the US-built Icon Aircraft A5.

Some 12 aircraft were built by the former manufacturer, and around eight remain in service in Europe, although Dornier Seawings is not responsible for their support.

The company has relaunched production of the 540nm-range, Rotax 912is-powered aircraft at its Chinese factory, and the first two aircraft are ready for delivery following European regulatory approval, says Alvarez-Munoz. Dornier Seawings is showing the two examples at the show this week. ■



Dornier Seawings bought the design rights to the aircraft in 2013

Dornier Seawings



Dornier Seawings flew the prototype for the first time in March 2020

Dornier Seawings

The other Dornier projects

Several aircraft programmes of the 21st century have a connection with the illustrious German family brand, which traces its origins to 1918 and went through several iterations before its demise. These are three:

General Atomics AeroTec Systems Do 228 NXT

GA-ATS, the German-based offshoot of US defence giant General Atomics, aims this year to begin production of the NXT variant of the Dornier 228 after acquiring the programme from Switzerland's RUAG in 2020.

More than 100 examples of the original utility twin-turboprop are in service. The Honeywell TPE331-powered aircraft can carry up to 19 passengers in a civil configuration but is also used in roles from cargo transport to carrying paratroopers.

Oberpfaffenhofen-based GA-ATS last year delivered an extensively refurbished legacy Do 228 to its sister company, General Atomics Aeronautical Systems, in San Diego for use as an airborne research platform.

RUAG acquired the rights to the Dornier 228 after former owner Fairchild Dornier collapsed into insolvency in 2002.



GA-ATS

Deutsche Aircraft D328eco

Deutsche Aircraft, a subsidiary of US defence group Sierra Nevada, is the latest company to hold the rights to the Dornier 328, an aircraft produced in the 1990s, when Dornier was owned, somewhat confusingly, by Deutsche Aerospace, a division of Daimler Benz.

Deutsche Aircraft is developing the D328eco, a version of the 40-seat turboprop with “advanced eco-efficient technologies and flightdeck capabilities”, intended for service entry in 2027 (an original 2025 target having been pushed back).

Deutsche Aircraft is replacing the original Pratt & Whitney Canada PW119Cs with more powerful PW1275s and a new avionics suite.

Sierra Nevada acquired former type certificate-holder 328 Support Services in 2015, later relaunching it as Deutsche Aircraft with plans to resume production. Some 150 examples of the original D328 remain in service.



Deutsche Aircraft

Fairchild Dornier 728Jet

The 70-seat 728Jet was the flagship programme of then-Dornier owner Fairchild Dornier in the late 1990s and was a stretch of a jet version of the D328.

Fairchild Dornier, which had been acquired by two US venture capital firms in 1999, rolled the first 728Jet in 2002 at its Oberpfaffenhofen factory. A smaller 50-seat 528Jet and larger 90-seat 928Jet were also planned.

It was an audacious move to become a third player in a regional jet sector at that time dominated by Bombardier and Embraer, British Aerospace and Fokker having exited the market in the years before.

Lufthansa Cityline was lined up as launch operator and there were some 125 orders on the books – short of the company's self-declared break-even target of 200 aircraft.

The programme was cancelled weeks after roll out and before first flight (the roll out had been *Flight International's* cover story on 19 March 2002), when Fairchild Dornier was declared insolvent. Three prototypes were built.

A Chinese-funded attempt to rescue the business in 2003 failed.



Italian manufacturer Blackshape is looking at a raft of product developments as its new management aims to take the young company to the next stage of its development



The shape of things to come

Murdo Morrison

As it unveils its latest Prime Xplorer light sport variant at the show, Italian aircraft developer Blackshape is poised for further improvements to its line up and a major push into the lucrative US market. It follows the arrival of new chief executive Niccolo Chierroni, whose commercial strategy for the 14-year-old company – based in Monopoli on the country's southern Adriatic coast – includes upping output to two aircraft a month by the start of 2026.

Chierroni says the taildragger Xplorer is a response to feedback from potential stateside customers following the appointment of Blackshape's first dealer there last year. "This is an aircraft that the [US] market was asking for," says the former Alenia Aermacchi (now Leonardo) executive, who joined Blackshape in July 2023 after seven years in various strategic roles at majority shareholder Angel Holding.

Like Blackshape's other two products, the original Prime Veloce from 2011 and larger Gabriel BK160-200 single piston trainer, which was introduced in 2016, the Xplorer combines "manufacturing

excellence" and "the sophistication of Italian design" to "deliver an engaging flight experience", he says.

Blackshape has shipped more than 80 Primes and around 20 Gabriels since that aircraft received its European Union Aviation Safety Agency certification in 2019, following that with US approval in 2024. However, earlier ambitions to ramp up production faster were hampered by the impact of the pandemic on the training and



Chierroni took over at Blackshape in 2023

recreational sectors. A short-lived grounding of both types by EASA last year following a fatal accident was another hitch.

Now, with a new focus on manufacturing and product research and development, Chierroni insists the business is back on track with an ambition to be "at the top of both our segments". This includes establishing the tandem-seat, all-carbon Gabriel as a go-to type for both commercial and military introductory flight training.

"We are in negotiations with customers worldwide and are confident of receiving dozens of [Gabriel] orders this year. Our main target is flying schools but the military market is a huge area for us. There are lots of air forces looking for a platform with good teach effectiveness but at an affordable price," he says.

Blackshape's first product was the Prime, a low-wing, two-seat ultralight, powered by the 75kW (100hp) Rotax 912 or the larger 86kW Rotax 914, and certificated in 2012. Most of the operators are recreational pilots. However, the lure of then-fast growing business-to-business professional training market prompted the company to develop the Lycoming IO-320- or Rotax 916-powered Gabriel, which

was officially revealed at Aero Friedrichshafen in 2017.

The 9m (29ft)-wingspan aircraft has retractable landing gear and comes with an Aspen Avionics Evolution 1000 or Garmin G3X Touch glass cockpit. It is capable of a maximum level speed of 164kt (304km/h). The Lycoming version comes with Hartzell propellers, while the Rotax engine, designed to run on mogas or automotive unleaded petrol, uses those from MT Propeller.

In November, Blackshape displayed the Gabriel at the Air Expo in Abu Dhabi for the first time, flying it roughly 2,160nm (4,000km) from southern Italy to the United Arab Emirates as a "real-world demonstration of the aircraft's reliability and long-distance performance".

Last June, the company achieved another milestone with US certification of the Gabriel – and began shipping the first examples at the end of the year. In October, it announced its first US distributor, Sheridan, Indiana-based maintenance, repair and overhaul specialist BravoFox, which has taken delivery of a Prime demonstrator. Blackshape also plans to open an American legal subsidiary and appoint more dealers worldwide. "We want to create a global

network," says Chierroni.

On the product front, Blackshape plans a more powerful version of the Prime, with a Rotax 915 engine. It also intends to cooperate with Italian propulsion company CMD on a hybrid-electric version of the aircraft. CMD, based near Naples, is exhibiting alongside Blackshape at Aero this week.

The recent addition of an alternative Rotax engine on the Gabriel, capable of running on conventional mogas, is also helping to "open many doors" in markets such as Africa, India and Turkey where – unlike the USA – avgas is in short supply, says Chierroni.

There have been bumps along the way. In March last year, just as Blackshape was preparing for Aero and just months into Chierroni's tenure, came the shock news that European regulators were grounding both aircraft types following an in-flight break up of a Gabriel in Malaysia a month earlier.

The precautionary measure was lifted in June after a finding by the authorities in Kuala Lumpur that the aircraft had possibly been operated beyond its certified envelope, and that a suspected structural wing failure was not a factor. Describing the grounding as "exceedingly conservative", Blackshape said at the time that it would have a "negative impact on the company's business which is in a strong phase of relaunch and international positioning".

With the focus now firmly back on product, other developments Blackshape is considering include a redesigned bubble canopy for the Gabriel, which reflects the fact that the average pilot is becoming taller. Another step involves designing an aerobatic version of the aircraft, powered by a turboprop engine, which would make the Gabriel "relevant to the very top air forces", says Chierroni,



who is targeting potential certification within three years.

More radical still is a proposal to develop a side-by-side cockpit configuration for the type, which Chierroni admits would be "a completely new design, almost an entirely new aircraft". However, he insists the project is feasible: "We have the product in sight."

The company is also considering

moving its factory in Monopoli – where it is on an industrial park and not near an airport – to Grottaglie, one hour's drive away, where it carries out flight testing. It would still be part of the Apulian aerospace cluster, which the company describes as providing a pool of "highly qualified companies and certified suppliers, ensuring seamless integration into a network

of knowledge and expertise".

However, with more than 100 Blackshape aircraft now in service, and that tally set to grow fast, possibly the most pressing priority for the company is a more comprehensive maintenance network. "We really do need more active aftersales support," says Chierroni. "And it needs to be as close as possible to the customer."



The Japanese-owned airframer is preparing to open the orderbook for its second, larger type, the US coast-to-coast capable Echelon, as it shifts its sights from its core owner pilot customer base to the fleet market

Honda's big hope



Honda Aircraft has shipped around 260 examples of its original jet

Murdo Morrison

Since its certification 10 years ago, Honda Aircraft's HA-420 HondaJet has proved a favourite with owner pilots, with close to 260 of the type in service, around a tenth of them in Europe, and most operated privately. The US-based company is showing at Aero a customer-owned HondaJet Elite II, the latest iteration of the eye-catching aircraft that was developed in the late 1990s as the Japanese auto giant's first foray into aviation.

However, much of the talk at Aero and at other shows this year will be on Honda Aircraft's next programme, the larger Echelon, which the Greensboro, North Carolina-based airframer revealed as a concept in 2021, officially launched in 2023, and aims to fly in 2026, with a certification target of late 2028.

The Echelon is not on show at Aero in cabin mock-up form, as it has been at other events, but Honda Aircraft believes it will propel the Japanese-owned company from a niche player into the major league of business aviation manufacturers. This is because the aircraft's range and cabin size will appeal for the first time to fractional and other fleet operators, a market currently dominated by rivals Embraer, Pilatus, and Textron's Cessna Citation light jets.

There has always been some dispute over which category the HondaJet sits in – Honda itself describes the GE Honda Aero Engines HF-120-powered, 1,500nm-range type as a very-light jet, while much of the industry classes it as a light jet. However, what cannot be

argued is that the attraction of the original aircraft has largely been to owner pilots, who appreciate its performance and aesthetic ramp appeal. Though the 2,620nm (4,860km)-range Echelon is also officially a light jet – and will share many features with its smaller sibling, including the distinctive over-wing engines and Garmin G3000-based cockpit – it is much more than a HondaJet on steroids.

It has a completely new carbonfibre fuselage, containing a cabin capable of carrying 10 passengers with one pilot. Meanwhile, larger Williams International FJ44-4Cs will help deliver the coast-to-coast capabilities Honda Aircraft hopes will prove a winner with fleet buyers. Opting for the same engine that powers Cessna CJ3s and CJ4s and Pilatus PC-24s was deemed a more practical solution than redesigning the HF-120.

"The Echelon opens us up to a much bigger market," asserts Anders Solem, vice-president of

sales and marketing. "We are going to have a range-capacity equation that beats everything else. With two pilots and eight passengers, you can get just about from anywhere to anywhere in continental North America without a stop."

While it might not look radically different to the HondaJet, the Echelon, he says, is "twice the aircraft" with "twice the surface area, as my paint guys remind me". Although Honda has not yet officially opened its orderbook for the Echelon until prices are firmed later this year, Solem says there are "approaching 500 LOIs (letters of intent), and they are still coming in". He adds: "We expect to come out of the gate with some major fleet orders."

Honda Aircraft has been busy readying its site at Piedmont Triad International Airport for the two final assembly lines – it plans to continue HondaJet production once Echelon deliveries begin. In February this year, the company announced

it had begun production of the first Echelon test aircraft starting with the wing structures.

"All the tooling has been set up and we are in the middle of critical design reviews," says Solem, a former Bombardier and Lockheed Martin executive, who joined Honda Aircraft in November 2023. "We expect to have the first fuselage prepared by the fall. Then we'll be pretty much ready to start assembly."

Like all OEMs, Honda Aircraft has been hit by supply chain woes, and last year was particularly tough with the company shipping only 11 aircraft, according to General Aviation Manufacturers Association figures. This compared with 22 the previous year and 36 in 2019. It also saw Honda badly lagging rivals Cessna, Embraer, and Pilatus.

However, Solem insists this was almost entirely down to "terrible dislocations" in the supply chain and a calendar year "snapshot" that looked worse than the Japanese financial year that Honda Aircraft uses internally for its accounting. He says orderbooks are strong and he expects HondaJet production to settle at between 20 and 30 aircraft a year.

Another challenge for Honda might be uncertainty surrounding the future of Spirit AeroSystems non-Boeing activities pending the aerostructures manufacturer's imminent takeover by Boeing. The company is contracted to build the Echelon fuselage at its Kinston, North Carolina facility, 2h 30min drive from Greensboro, that also makes parts for the Airbus A350. All Solem will say is: "We're in negotiations with them and it's an issue we are going to resolve."



The Echelon, shown here as a cabin model at an earlier show, will be built alongside the HondaJet in Greensboro

The news, analysis, and data solution for the airline industry



Empowering your strategic decisions with award-winning insights and data-driven analysis.



Daily industry analysis articles



Weekly bespoke newsletters



Award-winning news coverage



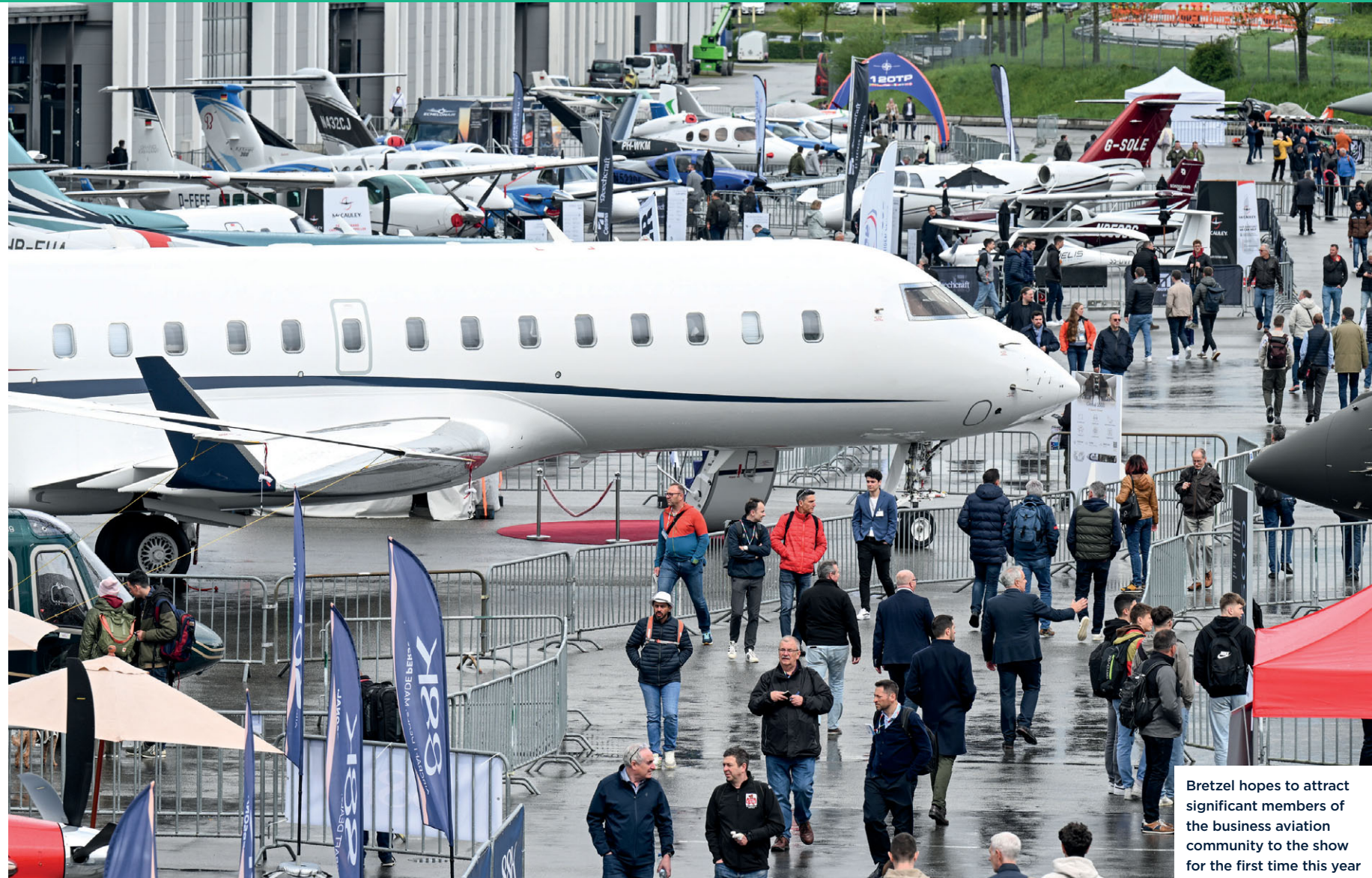
Interviews with industry leaders



Financial, fleet, and traffic data

Arrange a free product demonstration at
flightglobal.com/airline-business/subscriptions

We speak to Aero Friedrichshafen's show director Tobias Bretzel about how the event continues to evolve – with a business aviation hub one of several new features – and why its regular attendees keep returning



Bretzel hopes to attract significant members of the business aviation community to the show for the first time this year

Coming home

Charlotte Bailey

As Aero Friedrichshafen opens its doors, the annual event – unique among European shows for its diverse range of attractions – is expanding its offering still further for its 31st edition. Billed as “the global platform for all aspects of general aviation... from gliders, ultralights, piston aircraft and helicopters up to business aviation”, Aero truly is something of a pilgrimage for many in the aviation sector.

Tobias Bretzel, show director at Aero Friedrichshafen, has been watching the show take shape from his office window for some weeks; with the construction of the all-new Business Aviation Show Hub (BASH) just one part of the activity that has been happening behind the scenes. His passion is apparent

as we run through plans for a show that continues to attract aircraft large and small. Perhaps it is apt, therefore, that for this year's Aero he is most excited about the variety of “big stories and the little stories” woven throughout the event.

“Aero has always been a platform for highly innovative people with creative concepts, highly innovative SMEs [small and medium-sized enterprises] trying to get their message out,” Bretzel says. He is also curious to see the business aviation community coming together on a significant scale for the first time; something which might sit at odds with his enthusiasm for the experimental and home-built community already well-represented at Aero. But Bretzel does not see any conflict.

The appeal of a globally popular event described by Bretzel as a “special interest show” lies in the



Aero is a pilgrimage for many in aviation



The event's history goes back to the late 1970's

“mixture and the value that the people, both visitors and exhibitors, get out of that mixture”. Comprising business to business as well as business to consumer interactions, last year's iteration welcomed over 32,000 attendees, with a family entry ticket available on the show's final day.

Globally renowned

What started in 1977 as a small gathering of gliders – part of a regional motorsport exhibition – has grown steadily to become the globally renowned aviation exhibition it is today, switching from a biennial to annual event in 2009. After doubling its initial exhibitor numbers as early as its second year, the number of both visitors and exhibitors increased continually until, in 1985, the event was admitted to UFI (the global association of the exhibition industry). However, it was not until 1993 that the event became an independent trade show; subsequently relocating to the Messe Friedrichshafen in 2002: among the top ten venue locations in Germany in terms of size, and with the advantage of a neighbouring airport.

And while the show's physical roots may be elsewhere, it is this unique venue that has helped Aero Friedrichshafen grow to become the aviation exhibition powerhouse it is today. Not only is it located in what Bretzel rightly terms a “true cradle of aviation”, with the area along the coast of Lake Constance (Bodensee) birthplace to the likes of Dornier and Zeppelin, but aerospace manufacturing persists today: from Airbus Defence and Space's satellite technology operation to smaller suppliers like Zim Aircraft Seating.

An initial 14 or so exhibitors have now grown to around 700 from 40 nations, spread across 12 halls, a static display, and the new business aviation dome; broadly separated by speciality and catering to everyone from equipment providers to airframers, microlights to business jets. Certain halls are dedicated to single types of aircraft, for example governmental drone missions and helicopters, with Aero also celebrating the first time three major OEMs (Airbus, Bell and Leonardo) have exhibited in the rotary-wing segment. However, Bretzel says this division into discreet areas does

not mean visitors will be put off sampling the entire showground.

“Although people have the opportunity to do business at the show in their own specific areas, we need to bundle up our resources to have one stronger voice for the aviation industry here,” says Bretzel. Highlighting the synergy between the various aviation elements throughout the site, this interconnectivity is a key element of a community coming together: sharing a passion that transcends type. For example, while avionics giant Garmin has a huge stand on the aptly named Avionics Avenue, its products are visible in aircraft throughout the show.

Additionally, this year's addition of the BASH dome represents “a great way to extend into that mid and upper part of business aviation, so that a lot of long-term exhibitors, but also new exhibitors, have even more increased value out of the show”, says Bretzel. Although all segments of aircraft have seen steady momentum in recent years, ‘echo-class’ aircraft (four-seaters in the German classification system) have seen the most significant growth over the last two to three years.

Moving up to the larger ‘heavy metal’, having noted a “strong increase” in business aviation over the last few years, this year's dedicated business aviation dome was announced in late summer and sold out before Christmas. Already extended to 2,000sq m (21,500sq ft), it has attracted inaugural attendees such as Dassault Aviation. This year's largest aircraft is set to be a Bombardier Global 6000.

Sustainability incentives

Mindful of aviation's impact on the environment, Aero has also been ahead of the game when it comes to promoting sustainability incentives. About 15 years ago, Aero was among the first aviation shows in Europe to include an ‘E-Flight Expo’ element, with an initial small area now grown into an entire hall full of both fixed-wing and vertical electric flight. Additionally, a sustainable aviation trail (denoted by green balloons) runs throughout the entire show, with over 130 companies participating. Bretzel believes aviation's increasing commitment to sustainability is key in attracting future generations. “I have met so

Flying into Friedrichshafen

Given the show's popularity among private pilots, the opportunity to fly directly into Aero is one not to be missed, writes Charlotte Bailey. Unlike other conference venues around Europe, the additional dimension offered by the adjacent Bodensee-Airport Friedrichshafen is sought after by many owner-operators. Annual polls have indicated that around 60% of all visitors to the show possess a pilot's licence, described by Bretzel as a “very stable figure,” albeit one occasionally marred by inclement weather.

Fly-in places are capped at around 1,600 total movements (800 arrivals and departures) and typically sell out in advance. In anticipation of elevated demand, the show makes the most of available slots at a number of smaller airfields nearby (the closest around 20 minutes away by road) with shuttle bus services standing by to ferry pilots and passengers into the show.

Certainly, approaching Friedrichshafen from the UK is not the easiest endeavour; not least since Ryanair cut its direct route some years ago and easyJet's seasonal service does not run this early in the year. The airport's website lists Belfast, Copenhagen, Kuusamo (Finland), London, Skopje (North Macedonia) and Hurghada (Egypt) as among locations served by scheduled commercial services, although given the airport's proximity to the Austrian Alps, the winter skiing season seems to serve more customers than a typical summer tourist schedule.

Nevertheless, the anticipation of sitting in my local flying club when Aero fly-in slots went on sale last year was an excitement I had thus far reserved for rock band releases. Armed with this season's hot ticket and a Socata TB-20, a friend and I filed our flight plan from Blackbushe airport and flew southeast over the English Channel and down across France. Coming in on final approach over Lake Constance, Switzerland visible out to the starboard side, was certainly a memorable commute for me and something of a rite of passage for my pilot. It was also an excellent if impromptu IFR lesson, with unpredictable weather the only drawback for many a would-be attendee reliant upon visual meteorological conditions (VMC).

However, for visitors preferring to relax and let somebody else do the flying, Aero is currently looking at more mid- and long-term strategic initiatives to welcome more visitors from further afield. “We are very keen in looking into getting more chartered aircraft in,” Bretzel says, highlighting a current focus on additional chartered services from northern Germany. Last year, similar services ran from Sweden and Belgium. At a “certain stage in the future,” this could even be augmented to “trying to implement a temporary flight connection from different regions”.



The chance to fly into Aero via Friedrichshafen's Bodensee airport is not one to be missed

many people so far in the industry who are obsessed with reaching these goals,” he says. “They are strong believers, and they will make it happen”.

With the show seemingly packed, is there still room for growth? “Pretty much everything is full, although we still have capacity when we want to further extend,” says Bretzel. As well as optimising existing space, this could include “increasing the quality in different areas and also getting in even more international attendees”.

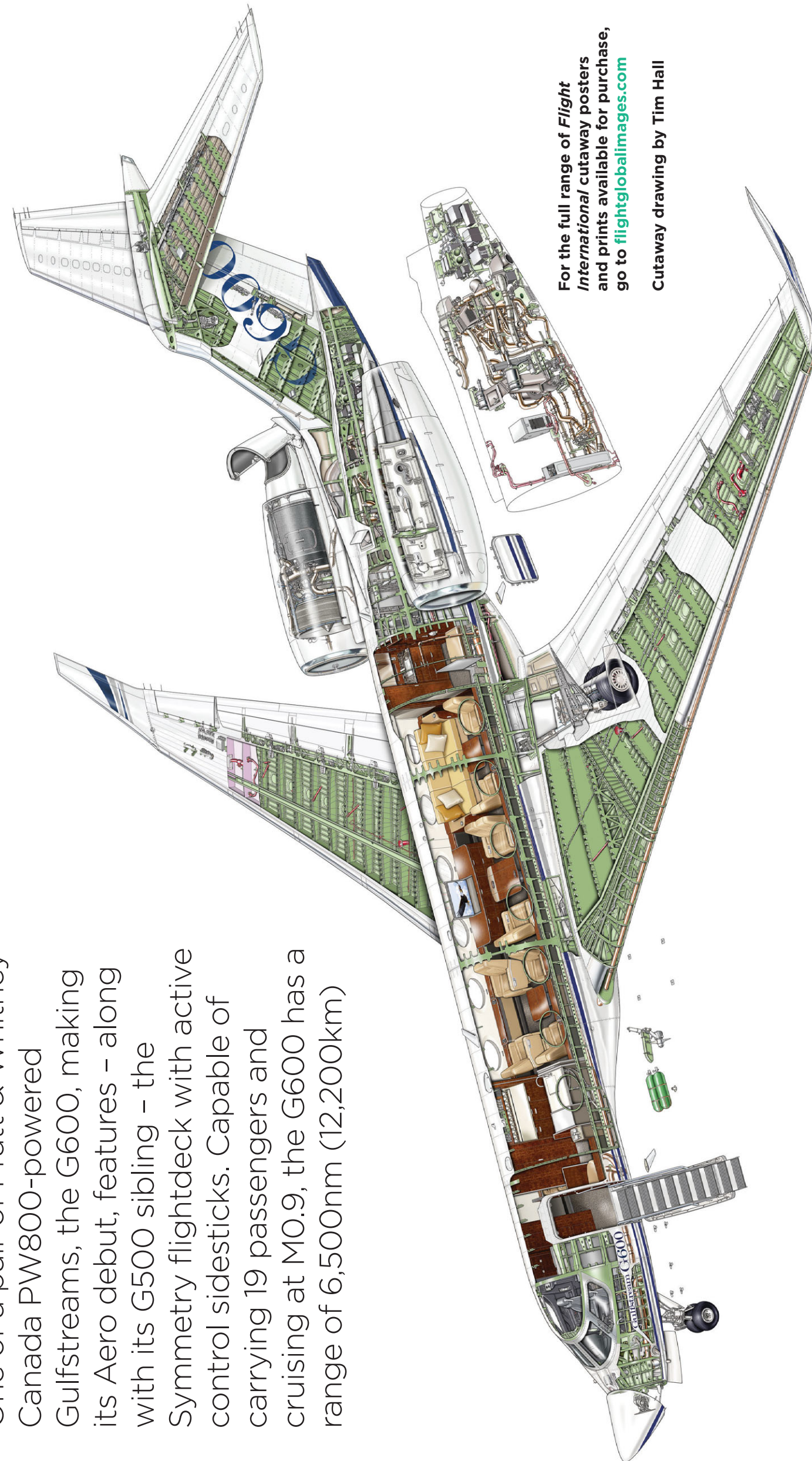
He adds: “We are very open to further extend the business aviation

footprint at our show without losing our other elements, which have made us strong over the years and decades.” Could EBACE's evolving direction have a bearing on the scale and scope of Aero's future business aviation segment? “What I want is a strong industry,” he replies. “What we need to achieve here is to provide the industry what they need. And at the end, you know, the industry and the exhibitors will decide”.

Ultimately, Aero has a loyal existing customer base that shows no signs of dissipating. “Coming here should feel like coming home,” Bretzel says. ■

Gulfstream G600

One of a pair of Pratt & Whitney Canada PW800-powered Gulfstreams, the G600, making its Aero debut, features – along with its G500 sibling – the Symmetry flightdeck with active control sidesticks. Capable of carrying 19 passengers and cruising at M0.9, the G600 has a range of 6,500nm (12,200km)



For the full range of *Flight International* cutaway posters and prints available for purchase, go to flightglobalimages.com

Cutaway drawing by Tim Hall

Dubai Airshow

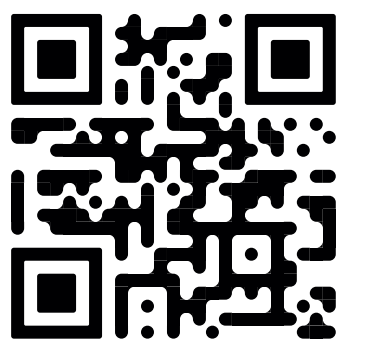
17 – 21 November 2025
DWC, Dubai Airshow Site

The future is here

Dubai Airshow 2025 is set to redefine the boundaries of aviation, space, and defence. Over five thrilling days, the event will unite visionary minds to showcase and focus on tomorrow's technology and innovations, shaping the future of the aerospace industry.

www.dubaiairshow.aero

#DubaiAirshow [f](#) [@](#) [X](#) [in](#) [d](#) [v](#)



Book your space

Strategic partners



Supporting partners





EVERYTHING IN REACH



Visit us at **Aero Friedrichshafen,**
Hall A3, Booth 400
or at cirrus.link/AeroG7



©Copyright 2025 Cirrus Design Corporation d/b/a Cirrus. All Rights Reserved.