

EXECUTIVE & VIP AVIATION INTERNATIONAL

Gogo Business Aviation

Dave Glenn, SVP Customer Operations

Building Good Business

African Perception – Krimson Aviation, Vertis Aviation & Satcom Direct Ahead of the Curve – Simon Geere, CEO, Farnborough Airport Both Super and Versatile – EVA samples the PC-24 Enhancing Wonderment – Aero on returning the magic to flying

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Editor's NOTES



Paul E Eden

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Traditionally the 'EBACE edition', this summer 2021 EVA takes a rather European-centric view of business and VIP aviation, with the notable exceptions of our Gogo Business Aviation cover story and an examination of how the industry is expanding in Africa.

Dave Glenn, Gogo Business Aviation's SVP Customer Operations, reveals the heady mix of high-tech and adventure that brings air-to-ground connectivity into business aircraft cabins. He reminds us that behind every call made in the air, every email or text message sent, there is massive, constantly maintained infrastructure on the ground. But then, he also acknowledges that ours is a small industry where people genuinely do tend to know one another, which means exemplary customer service is a prerequisite for success.

It's a message repeated at Krimson Aviation, Vertis Aviation and SD, all of them serving the challenging, yet growing market for business aviation in Africa. Krimson Aviation founder and CEO Dawit Lemma, and Vertis Aviation's Chief Operating Officer James Foster, stress the somewhat different African perception of what business aviation is. Lemma says it could be a mission as simple as a farmer flying to the nearest market in a Cessna 172, while Foster notes that his customers' journeys within the continent are often more about taking the quickest and safest means of reaching their final destination than they are luxury travel.

The pandemic has seen more business aviation operators than ever taking on roles usually filled by general aviation and freight outfits as demand for some services has outstripped supply, or new missions have arisen requiring

the reach and expertise of business aviation. The definition of business aviation, even in Europe, therefore seems to be changing. Perhaps it is time to embrace elements of the general aviation industry more closely, for the greater good of all?

Meanwhile, the debate about whether there is still a place for business aviation in a world now so familiar with video calling continues to rage. For many, me included, Zoom, Teams, Google Meet and others, initially meant I could carry on doing what I do, but have subsequently enabled new opportunities. I've interviewed people across the world, often simultaneously, entertained recently by early morning on the UK interviewee's screen, late afternoon in Singapore and an Australian correspondent sitting in her garden in complete darkness.

Those interviews have been great. Do they mean I no longer need to travel to shows? To company facilities, to meet and talk with people, and discover how they do what they do? No. Instead, they mean I have a new tool and perhaps travel less, but with new possibilities that complement those trips I do take. Why? That's easy.

I'm guessing most people who've read this far have experienced a video call where the other party has laaaaa... gg... ed. Have you lost them? Should you try to reconnect? You're about to try but they're back all in a rush because now the system is catching up and you've already spoken and now you don't know if they've heard and they don't know what you said because you talked over them and now you've frozen anyway. I don't know how many people l've interviewed at shows, in hangars, cockpits and offices – it must he several hundred. I don't recall any of them lagging.

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Building Good Business

Gogo Business Aviation's air-to-ground connectivity service is founded on a mix of advanced technology and rugged infrastructure, as Dave Glenn, SVP Customer Operations, explains.

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Building Good Business

Gogo Business Aviation delivers high-speed internet to customers in North America via a proprietary air-to-ground network through a heady mix of advanced and advancing technology, and ground infrastructure, occasionally in locations so rugged that it requires survival training to reach them. EVA spoke to Dave Glenn, SVP Customer Operations, to find out more



Gogo Business Aviation prides itself on doing customer service really well, and a conversation on the subject with Dave Glenn, SVP Customer Operations, was always going to be interesting. He began with a broad view of Gogo's customer operations, technical support and network operations. "Gogo is unique because we not only build our connectivity systems, but we also built and operate our air-to-ground [ATG] network. Our people have aviation expertise to support flight departments and fleet operators, but we also have network operations expertise and support a wireless network with equipment at 270 locations, plus two data centres. It's a complex business because we not only have to support the products we build, but we're also a

We can pick the phone up and say, 'you had a problem, but we fixed it', or 'you have a problem let's work together to fix it

network operator with engineers who are constantly maintaining and optimising the network and infrastructure. "And yes, we do customer service very well, but there's always room to build, and we know that the customers we support require excellence. They demand that products work well and we know we can't rest on our laurels."

It's a bold statement and tacit recognition that Gogo's customers expect a product that always works and, on the rare occasions it doesn't, they want it working again quickly and with a minimum of fuss. Glenn continues: "In aviation at some point everything fails, but how you respond to it determines how you're perceived. For us, customer service is about meeting expectations, and being easy and enjoyable to do business with. By that, I mean making products that are reliable, simple and intuitive to use. And we never stop working to better understand the changing needs of our customers."

Talking Boxes

The Avance platform is a key component to Gogo's customer service capabilities. When customers have Gogo's Avance hardware installed, the company frequently recognises developing problems before they become aware of any issue. "Avance was designed to facilitate customer support, over-the-air updates, and remote diagnostics. It's more than an LRU or box on the airplane, it's a platform that is the digital engine that drives our systems," Glenn explains. "The Avance platform is self-diagnostic and regularly communicates with our Business Systems Gateway, the BSG. The Avance software 'talks' with the BSG, passing it up to 160 different message types which are used for analysis on the ground. By developing our Gogo artificial intelligence, we analyse the different messages to determine the appropriate action."













One of the very practical and useful messages that now gets sent is what LRU is installed on which aircraft. Glenn explains: "This simple feature now makes it much easier for flight departments and especially fleet operators to track what ATG equipment is onboard each aircraft. It has resulted in better and more accurate troubleshooting when an issue arises.

"We're also fine-tuning our AI to provide meaningful, actionable data for Gogo and the flight departments so we can proactively address problems before they become AOGs. That means we're opening tickets, calling the customer and telling them we see their box isn't working as well as it could be. We can pick the phone up and say, 'you had a problem, but we fixed it', or 'you have a problem let's work together to fix it'."

But surely it means a difficult conversation? When a customer calls with a problem, the conversation isn't expected to be an entirely happy one, but when a company calls to tell the customer the equipment they supplied is about to fail, isn't that a tricky proposition? "It's not," Glenn says. "We've seen that maintenance departments really appreciate it because it turns an unscheduled maintenance event



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into a scheduled event, thus avoiding an AOG situation. But it's not always about AOGs, sometimes it's about optimising performance. DOMs want to know if something's not right and they don't want to be the last ones to know. We had a recent issue where the Avance system was working, but we identified that one of the air cards was not operational, so the performance wasn't optimal. They were really pleased to find out from us that we identified the problem and we fixed it."

Gogo is doing a really smart job of monitoring system performance, detecting emerging issues and usually fixing problems remotely and much more quickly. In fact, it resolves most issues remotely. But what happens when a customer calls Gogo customer support? Can the person who answers actually help?

Real People

"In customer operations the most important thing is having responsible, talented people with expertise to solve problems," Glenn believes. "It's also important to design products that are reliable and maintainable, with self-help tools that are easy to use and understand."

Based on many years working with and for service organisations, Glenn says the linear extension of a support network as its customer base grows makes little financial sense. The key in Gogo's case is to have the right people supporting its products and network. Gogo also works to make its systems as reliable as possible and ensure they are updated, while providing the best possible tools to the customer service team to enable remote troubleshooting.

"Personal care is one of the tenets of our vision," Glenn says in response. "We have the technology, good equipment and reliability, but what's important is how we respond when something breaks. When they call, they want to talk to someone, not an automated system. We have consistently been rated number one in customer support and it's because of our people. We have the tools in place to support them but it's the people that make the difference."

But the fastest way to fix something is by avoiding an issue before it happens. That's



why Gogo is currently working on being able to update LRU software remotely, enabling it to add features and fix software issues faster and more easily.

"When people call us, we have a team of aviation, wireless communications and internet experts to resolve issues, 98% of which are done remotely. It's the quickest and cheapest way to do it and it makes the customer happy. There's a small percentage that require 'hands on boxes', so we invested in our field services support team, which puts mechanics on site at the busiest US business aviation airports much more quickly."

Another Gogo tenet is transparency and when it comes to maintenance and reliability, the company has developed its DASH app and web portal, which allows aircraft operators to see exactly what their systems are doing. "It means that a DOM, for example, can see how the Gogo system onboard is performing," Glenn explains.

This is a very different paradigm from when the DOM was the last person to know something wasn't operating properly, because now they know and can take action. "Allowing a DOM to work on a corrective plan, have insight into a problem and work

on an action plan before the aircraft lands is vitally important," Glenn notes.

"DASH also enables people to self-serve with some of the more frequent questions, like, 'How do I upload movies?', 'How do I connect a device?'. And it gives them a near real-time view of how the system's working. In the past we've had people call and say something wasn't working when maybe four people had their devices connected properly and one didn't, and it was how they had attempted to connect that was causing the issue not the system itself. DASH shows that and it helps us understand the issue and the DOMs explain to their principals how to avoid it."

Gogo's ATG service reaches across the US, and north into Canada and Alaska. But some customers also subscribe to a global service. The Avance platform can integrate with satellite systems and is able to switch between ATG and satellite bearers as the aircraft moves out of tower range.

Our field techs send us photos showing snow caves in the mountains and rattlesnakes in the desert. They go through survival training but even so, reaching some of those towers can be quite an adventure

Predictably, as they travel beyond the US, Gogo's customers take its support package with them.

Network Operations

Every time a business aviation customer connects a device to the Gogo network, they really are standing on the very tip of the virtual iceberg. Beneath them, a massive ground infrastructure is constantly serviced and maintained.

"It's one thing to design a network, it's another to deploy it and keep it operating at peak levels, especially when thousands of aircraft are connected," Glenn says.



And Gogo's towers aren't always in easy-to-reach locations. Glenn confirms: "Some are on mountaintops where they get several feet of snow per year, others are in the desert – the conditions get pretty harsh. Our field techs send us photos showing snow caves in the mountains and rattlesnakes in the desert. They go through survival training but even so, reaching some of those towers can be quite an adventure.

"Sometimes we take the network for granted, but it's hard work out in the field, managing towers that have to bear the weight of the equipment and still withstand hurricanes and blizzards. We're currently working our ground infrastructure in preparation for 5G technology, which we'll release in 2022. The analysis, testing and construction on towers have begun. Gogo 5G will work in concert with our current technology to provide the best possible service as the appetite for bandwidth continues to grow."

Dedicated to Business Aviation

Back in December 2020, Gogo completed the sale of its Commercial Aviation business to Intelsat. The benefits to Gogo and its customers are that Gogo is now singularly focused on serving business aviation, and it is much stronger financially which greatly enhances its ability to invest in development of innovative products and new growth opportunities, including Gogo 5G. The deal ensured that Gogo would still own and operate the ATG network, which is critical for business aviation, and Glenn revealed some other interesting observations.

"We saw network usage peak in the 2017 time frame, after which the larger airliners, those capable of taking a 2Ku satellite system, began moving away from ATG. The result was that available capacity on the ATG network increased exponentially for our business aviation customers, especially in the east and west corridors, where we saw a really nice improvement in available bandwidth."

Glenn also notes that Gogo has seen strong interest in aftermarket Avance upgrades and that, even during the worst months of pandemic, those aircraft that were flying tended to use considerably





more bandwidth than had been the case in 2019. As US business aviation traffic returns to or, increasingly, on a month-bymonth basis, exceed 2019 levels, he sees that trend continuing.

It's clear from taking with him that Dave Glenn takes huge pride in his customer service team. He acknowledges that system capabilities are crucial to Gogo customers and that how the company fixes issues is a key component within that proposition. But, noting that business aviation is a small industry in which word of mouth still matters, he emphasises that he and his teams invest considerable time and effort into ensuring their customers feel good about doing business with Gogo.







Ahead of the Curve

"In everything we do, we want to excel." That's the message from Simon Geere, the new CEO at Farnborough Airport, as he looks to the facility's long-term future

Today, Farnborough Airport is among the UK's premier business aviation facilities, proudly describing itself as a 'gateway into London'. But the name, 'Farnborough', speaks to a legacy reaching back to the very beginnings of British aviation. Farnborough exudes heritage, a fact that's not lost on new CEO Simon Geere, who steers the hightech, carbon-neutral airport while carefully respecting everything it represents.

Geere took up the CEO post in July 2020, almost 112 years after the airfield witnessed its first heavier-than-air flight. To the historian, Farnborough is the birthplace of British flying. Samuel Cody completed the UK's first aeroplane flight there, in British

Army Aeroplane No. 1, on 16 October 1908. The airfield's association with military flying and, more recently, flight trials and experimentation, continued until 1994, although both BAE Systems and QinetiQ still have headquarters locally.

Today, the active airfield primarily serves Farnborough Airport's business and VIP aviation customers, albeit with a significant additional output every two years, when it hosts the iconic Farnborough International Airshow. To the aerospace industry and enthusiast community, therefore, 'Farnborough' means the show, with no supplementary description required to that single word. The 'Farnborough airshow'

grew out of the annual Society of British Aircraft Constructors event, which moved to the Hampshire airfield in 1948. After the 2020 event was cancelled, there is much anticipation for the show's return in 2022.

New Owner

Work to develop Farnborough as a major business aviation centre began early in the 2000s, when TAG Aviation bought the airfield and began creating much of the distinctive infrastructure that defines the airport today. Macquarie Infrastructure and Real Assets acquired the facility in September 2019, so that it had been operating no more than six months when the spectre of COVID-19 began looming large, and less than a year when Geere joined.

Could fate have chosen a worse time for a new CEO to take over a business aviation airport? Geere reckons it wasn't as bad as all that: "Prior to joining as CEO, I had been heavily involved in the acquisition and transition of Farnborough Airport on behalf of the new owners, Macquarie, so I was already very familiar with the business. It was a case of eyes wide open really. Naturally, our traffic activity had already been materially impacted and in fact we ended 2020 handling circa 60% of 2019 levels. Relatively speaking of course this is a strong performance. For long periods we've been busier than many other airports."

Under its previous ownership, Farnborough Airport grew rapidly and Geere says now it is important to build a business ready for the next stage of development. "We've set ambitious plans to invest and develop the operational facilities, including additional hangarage, with improved taxiways and

The only thing that will stop us is the limit of our own ambition. And just so you know, we're feeling pretty ambitious

further expansion of our maintenance facilities." Significantly, Macquarie is committed to achieving this development and growth sustainably.

Farnborough Airport became the world's first carbon neutral business aviation airport in 2018, a fact Geere is keen to emphasise, although he also acknowledges

the commitment required to remain carbon neutral. "We continually make advances in improving our environmental performance, whether that is the electrification of our vehicle fleet or investing in the LED light replacement programme. We are not resting on our laurels though. We have said that we want Farnborough Airport to be a global showcase for airport sustainability. SAF



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[sustainable alternative fuel] is one element of that quest and we are actively working with fuel providers and operators to deliver something that takes a meaningful step forward. We want customers to choose Farnborough Airport because of our environmental credentials, that is the goal."

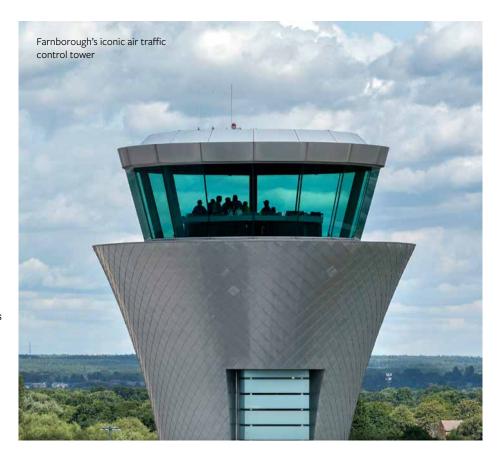
Societal Role

Under its continuing sustainability efforts, the airport has engaged with local authorities, schools and other organisations, planting large numbers of trees in the area and creating connections that extend the airfield's influence further into the community. Geere continues: "Like any airport, Farnborough has an important societal role to play. Engagement with the local community is paramount to our success and the economic well-being of the region. Our role in providing employment, both directly and indirectly, is fundamental.

"Throughout the pandemic we steadfastly refused to make any redundancies and instead we have taken the opportunity to recruit new talent into our organisation. From a community support perspective we continue to participate in a number of initiatives. A particularly rewarding example was where we provided free packed lunches to local families during the school holidays, using the teams and resources from our hospitality businesses, the Aviator Hotel and The Swan public house. In terms of employment and economic impact, the resilience of Farnborough Airport is a huge strength for the local region."

Indeed, people are at the airport's heart and Geere states: "We are immensely proud of our people, the reputation that Farnborough Airport has and the recognition we have achieved over the years. We have a hugely capable and proficient team, and it is these colleagues that make the day-to-day magic happen, be it our first-class customer service delivery or maintaining our record for operational excellence. I see my role as setting the strategic milestones and building a business that can achieve our long-term goals."

For an airport to own an hotel is not unusual, but few lay claim to a pub. Geere places considerable importance on the 159-bedroom Aviator Hotel and The Swan pub as components of the



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wider Farnborough Airport offer, which he describes as 'the most amazing proposition'. "We are a fully integrated, dedicated business aviation airport, with the FBO, the airport, the fuelling and terminal operations all one product. Consequently, we are in full and total control of the customer experience.

"Meanwhile, the on-site Aviator luxury hotel and The Swan, one of the best public houses in Farnborough, enable us to extend our first-class boutique concierge FBO service into the delivery of our hospitality businesses, and vice versa. Our complete control over the customer experience enables us to focus and prioritise what really matters. Then, when you consider the wider airport community including Gulfstream, Dassault, Farnborough International and FlightSafety International, to name but a few very important business partners, it truly is a business aviation hub."

And it's a continually expanding hub, most recently with the addition of the On Air Café from private aviation catering specialist On Air Dining. "We are delighted that the On Air Café is open and trading





well," Geere remarks. "It is a high-quality offering that fits well with our own high service standards and the café is also a cornerstone of our airport community. I try to visit every day and it's amazing the people I bump into, including crew, employees, business partners and contractors."

Changing Perceptions

On Air Dining and Farnborough Airport alike have navigated the COVID pandemic through a mix of resilience, good business and community involvement. Business aviation is emerging into a COVID-compliant world, having changed how it is perceived by those outside the industry and, Geere says, "I think it has reaffirmed the importance of business aviation and our respective roles in providing essential air travel infrastructure.

"The overwhelming majority of our customers are travelling for business reasons, either coming to the UK, or based here and travelling internationally to manage their business affairs. During the pandemic, when restrictions allowed, such essential business activity needed

to continue. For many of our customers, there is no practical alternative to business aviation. Their business interests are often configured around international connectivity." And yet, he admits: "There is still a lot of misunderstanding around the role of business aviation and, of course, the headlines always gravitate to the exclusive nature of the sector. I think we have work to do in terms of the wider perception of business aviation."

It's a perception that will inevitably change as the flurry of eVTOL and other alternative aviation devices currently under development begin to deliver a handful of practical, commercially viable designs over the next few years. Small, autonomous aircraft may one day deliver the kind of urban mobility that some developers are already promising, but in the many years before that vision comes close to reality established airfields, especially those without regular airline customers, are likely to become hubs for next-generation capability.

Among those airfields, Farnborough is an obvious candidate and Geere says:

"Electrification technology and its application to air travel is clearly something that will develop, and I am sure will be part of the package of solutions to address the industry's response to climate change over time." Time is the critical factor and he is realistic over the prospect of Farnborough hosting eVTOL craft in the near term: "I think there is a role for Farnborough Airport, however it is difficult to see a paradigm shift in the demand for helicopters simply because they are electrified."

Scheduled for 18 to 22 July 2022, the next Farnborough International Airshow will no doubt provide a showcase for eVTOL developers and other practitioners in hybrid, electric and hydrogen power. But what does the show mean to the Farnborough Airport team? Does it create a hectic week or two that distract from the day-to-day work of running a business aviation hub, or is it a much bigger deal?

"It's a much bigger deal," Geere confirms.

"Every two years the show is an incredible opportunity to showcase Farnborough Airport to the rest of the world. Farnborough Airport

is synonymous with the airshow and we are proud to work with the organiser, Farnborough International, to ensure its success."

The Farnborough International Airshow – or just 'Farnborough' to those of us for whom it's a biennial pilgrimage – remains as a living reminder of the airfield's place in Britain's aviation heritage. Yet the airport always feels special. Visiting on a fine June morning to research the PC-24 article appearing elsewhere in this edition, I was forcibly reminded of Farnborough's past by its present.

Walking out to the Pilatus, I spotted a Hawker 800. The US-built jet's ancestry is through the British Aerospace 125-800 and Hawker Siddeley HS.125, all the way back to the de Havilland DH.125 Dragon Jet, first flown in 1962. In April 1911, Farnborough had become the Royal Aircraft Factory, employing Geoffrey de Havilland as a pilot/designer. De Havilland flew his first 'Farnborough' design at the airfield in June 1911; the company that ultimately bore his name went on to build many successful aircraft, of which the DH.125 was the last.

We've set ambitious plans
to invest and develop the
operational facilities, including
additional hangarage with
improved taxiways and further
expansion of our maintenance
facilities

Neither the airshow nor Geoffrey de Havilland have any real significance to passengers passing through Farnborough's impressive terminal. And yet, Geere maintains, "This is the legacy that truly reflects the spirit of Farnborough Airport. Over the decades we have demonstrated our pioneering ethos. From the first UK powered flight in 1908 to being the world's first business aviation airport to achieve

carbon neutral accreditation, we want to be leaders in the field.

"We talk about being 'Ahead of the Curve', which is a reference to the shape of our iconic hangars, but actually it is a statement of intent. In everything we do, we want to excel. The only thing that will stop us is the limit of our own ambition. And just so you know, we're feeling pretty ambitious."



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Both Super and Versatile

Your editor travelled to Farnborough to experience the PC-24, marketed by Pilatus as the 'Super Versatile Jet', only to find it both super and versatile



Cabin mock-ups are invariably beautiful, but without wings attached, the experience they provide is never quite the real deal. Which is why I was so keen to take up Oriens Aviation's offer to view a Pilatus PC-24 demonstrator. I'd seen the cabin mock-up and here was the opportunity to see the jet realised, wings and all.

The arrangement was somewhat fluid. As the UK's Pilatus Aircraft Authorised Centre, Oriens knew a demonstrator was coming to the UK from Switzerland, but changing COVID regulations and customer requirements meant the exact date and location for my visit were open to negotiation. After a couple of months of discussion while Oriens moved the various pieces of a jigsaw puzzle whose picture kept changing, 8 June firmed up as my viewing date.

At this point, the promise of getting up close to any aircraft again was exciting, but the PC-24 especially so. I know the PC-12 well, having



experienced its unusual combination of fine finish and rugged versatility first hand, and the prospect of finding those same qualities in a jet was intriguing. Then, Oriens told me where I'd be meeting the jet and the day got even better.

I'd anticipated driving down to Oriens' Biggin Hill base. It's always a pleasure to visit the former RAF flying station, where the air is thick with history, but the PC-24 was going to be at Farnborough, a place where aviation dreams have, quite literally, come true.

Arriving at the airport terminal on a beautifully bright, blue-sky morning, I found the small, socially-distanced, freshly tested Oriens team ensconced with coffee and COVID-safe pastries in a large and very well ventilated room. The jet, they assured me, was outside and I could go out just as soon as the current viewing was complete.

A spotter at heart, I'd already taken a good look at the ramp, where the only PC-24 was most definitely not the Pilatus demonstrator. It stood all alone in the sunshine, resplendent in orange, almost too bright to bear.

With the emergence of a new coronavirus strain, changing travel requirements had meant the new Pilatus demonstrator could not be brought to the UK in time for the beginning of Oriens' sales tour. The aircraft was fresh out of the factory and the British trip would have been its first engagement. But it was not to be, although it did touch down later that week in the Republic of Ireland.

Undaunted, Oriens chartered a German PC-24, operating under different COVID restrictions to those enforced by the Swiss authorities. Hence, the UK PC-24 tour began with the 'Jaffa Jet', an aircraft nonetheless equipped with a standard Pilatus cabin and essentially identical to the demonstrator in every detail but an addition to the luggage compartment, for AOC work, and that paint scheme.

Among the Oriens team there was a mix of obvious relief at having an aircraft to show off after all and disappointment that it wasn't the factory-fresh bird from Switzerland. But I liked the Jaffa Jet, mostly because its interior had already seen some use; a pristine, brand new interior will always impress, but as an ownership proposition a cabin that's seen some passenger traffic gives

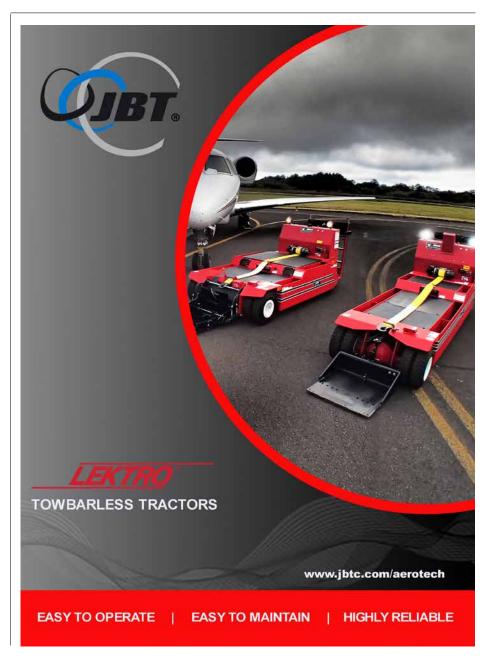
a better impression of how materials age and mechanicals last.

First Impressions

Stepping out to the aircraft, several things quickly become apparent. The main landing gear units are quite short and carry twin wheels with surprisingly large tyres. There is also a subtle yet fundamental difference between how the PC-24 looked compared to other jets of comparable size on Farnborough's ramp. Almost without exception, the assembled aircraft were T-tailed, with their engines mounted either side of the rear fuselage, just like the PC-24. In basic configuration, therefore, it is similar.

The difference is in where the engines are positioned. Look carefully at just about any T-tailed twinjet and the engine nacelles are positioned so that their leading edges are close to or even overlap the wing trailing edge. On the PC-24 they are some way aft, creating additional design and engineering considerations that Pilatus took on with the aircraft's versatility in mind. Setting the engines so far back enabled the design team to place a large, upward-hinged door in the port side of the rear fuselage.

The door's low sill enables easy access to the luggage/cargo hold at the rear of the cabin,







easy meaning that even your vertically challenged correspondent could comfortably reach inside from the ground. And, in a concept proven with the PC-12, it also enables straight-in loading via forklift truck, with the moderately swept wing trailing edge managing not to impede access. Pilatus hasn't dubbed the PC-24 the 'Super Versatile Jet' for nothing.

Fantastic Lights

The PC-24 does not have winglets. Could Pilatus have forgotten this essential feature? Is it an option? No and no. It does have the tiniest upturn at the wing tip trailing edge, but otherwise there's seemingly little provision for relieving induced drag. But then neither are there vortex generators nor fences. Staring down the wing from tip to fuselage it becomes clear why – the wing is incredibly, precisely complex in shape, Pilatus having

engineered out the need for furniture to support its trademark rugged versatility.

Also noticeable by their absence are panels and any proliferation of fasteners, since the upper wing skin and underlying stringers are machined from individual aluminium billets for an incredibly smooth, lightweight and very strong result. Look underneath the wing and you'll find a set of impressive flap hinge fairings, serving the PC-24's truly huge flaps.



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Again, this is a versatile aircraft, designed for short-field operations from rough landing strips and the flaps are testament to that performance. Fully extended, they also prevent debris thrown up by the main wheels from reaching the engines. Given the large extent of the flaps, the ailerons are relatively small, but Pilatus has ensured effective roll control by activating the outer wing spoilers as required to supplement them.

The wing passes below the passenger cabin, its structure neatly smoothed into that of the fuselage under a deep fairing. The main landing gear is therefore short and this, combined with twin, low-pressure tyres and minimal exposed bay structure, is another nod towards the PC-24's real-world rough strip capability.

Walking forward towards the integral airstair, I noticed the wingtip light. A simple LED would have sufficed, but Pilatus has instead chosen an exquisitely crafted unit that might look just as good on an executive desk as it does on the ramp. Another equally impressive light, recessed ahead of the wing leading edge, sits adjacent to a panel covering a small hold for crew items, including the inevitable covers and removebefore-flight tags that would otherwise need to share space with the passenger bags stowed aft.

The door's low sill enables easy access to the luggage/cargo hold at the rear of the cabin, easy meaning that even your vertically challenged correspondent could comfortably reach inside from the ground.

The PC-24 is truly an aircraft of design features and distractions. I'd driven three hours to see its cabin and hadn't yet managed to set foot on the bottom step. Next, the nose landing gear, more specifically its tyre, caught my attention. At first glance it would be reasonable to assume that the PC-24's nosewheel tyres have been poorly moulded, with a rim of rubber left around the edge. In fact, the apparently extraneous material is carefully designed to

deflect water and debris away from the fuselage underside. An optional lightweight composite 'mudguard', known as the Gravel Kit, offers further protection, while the inside of the undercarriage bay is essentially smooth, with nothing for thrown debris to damage.

Light Touch

And so, finally, to the cabin. Anyone familiar with light jets will be impressed



by the size of the PC-24's cabin, which suggests it ought to reside in a class above. The combination of light coloured materials and dark veneer highlights added to the feeling of airy spaciousness, while the reclined 6ft 5in frame of Oriens' CEO Edwin Brenninkmeyer proved the space was no illusion. And not only does the roominess hint at a class above, but the cabin finish is exemplary, especially considering this was not a pampered demonstrator but a working aircraft.

The floor is flat and the seats comfortable, with multiple adjustment, as one might expect. They also entertain, which is perhaps less expected. The leather feels good, the retractable armrest action is endlessly fun to operate and the mixed materials used in the seatbelt buckle are a haptic delight.

Best of all though, at least to my mind, the cabin Wi-Fi enables passengers to control



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cabin temperature and lighting via their personal devices, with no need for an app. I entered the IP address into my old iPhone and immediately had access to the aircraft's IFE server and cabin controls. The server may be loaded with content as the user desires, but for my short stay, switching the lights on and off by tapping the screen, then adjusting their brightness instantaneously with the on-screen slider was entertainment enough.

Upfront, Paul Mulcahy, former Pilatus test pilot and now Director of Flight Operations at Oriens, was sitting in the PG-24's impressive cockpit. For once I managed to reach the left-hand seat without cracking my head or standing on anything important. I understood almost all of his tour of the expansive Honeywell Primus Epic 2.0 avionics suite forming the Pilatus Advanced Cockpit Environment (ACE), perhaps most importantly that it has much in common with that of the PG-12NGX, facilitating mixed fleet operations and rendering the turboprop an excellent stepping stone to the jet.

Mulcahy was intimately involved in the PC-24 test programme and therefore best placed to offer thoughts on its performance. Again, the aircraft's size misleads. He says that thanks to its aerodynamic configuration, the PC-24 flies like a big jet, providing an extremely smooth, comfortable ride. He likens the piloting experience to that of the Boeing 757, but combined with rough field capability and the possibility of a more sporting approach to passenger comfort should the situation demand it.

With consideration to operating the jet away from hard runways, Mulcahy explained that initial testing on unpaved surfaces, including gravel, dirt and dry grass was extremely successful and noted that unpaved surface characteristics were broadly similar to their paved counterparts. Later in the programme, when asked to 'look' at wet grass he admits to some initial scepticism and, indeed, reticence. Nonetheless, taking a step-by-step approach, the trials commenced as

the aircraft continued to evolve, with the result that its control systems prevent any deviation from straight ahead, no matter how wet the landing roll. Mulcahy says the aircraft is enjoyable to fly, generously equipped and, above all, safe, but reckons there's more capability to come and hints that Pilatus is continuing its evolution.

The object of the day was to experience a proper PC-24, wings and all. The experience proved that the cabin was beautifully finished and finely executed, although I'd expected that. I hadn't anticipated interacting with the cabin lights though, and the space was a big surprise, but the major take-away from the PC-24 is one of a carefully crafted precision product.

It looks as good as any other light – or medium – jet on the ramp, and better than some. But it really will operate off grass, or gravel. And it'll take a pallet, loaded by forklift. The PC-24, Pilatus' first jet and first twin-engined design is, by any measure, both super and versatile.

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African Perception

The African market continues to pose challenges even as it grows. EVA spoke with Krimson Aviation's Dawit Lemma, James Foster at Vertis Aviation and Satcom Direct's Evgeniy Pashkov to better understand the story in the air and on the ground

"It's not just in operational terms, but also from a regulatory and security standpoint, that everything in Africa is fluid," says Dawit Lemma, CEO at Ethiopian services provider Krimson Aviation. "It keeps us on our toes! We make no assumptions that just because an operation happened a particular way yesterday, it'll be the same tomorrow."

It presents challenges that Krimson continues to meet head on. In the past two years it has expanded from Lemma

and two staff, to the 12 employees he has today. Between them, they support flights not only in Ethiopia, but 12 other countries across Africa, using carefully audited local vendors.

Among the company's new initiatives, its Koncierge brand unfortunately launched immediately before the COVID outbreak but has nonetheless led to a new hire. Lemma explains: "Our core business will always be flight support, but we've

brought in house the third party services – including meet and assist, hotel booking, transportation and tours – that we used to organise for crew and passengers."

Krimson has also added a dedicated Aeromedical capability recognising, Lemma says, the complexities of operating air ambulance flights in Ethiopia. "Aeromedical flights are not recognised under the country's regulatory system and most of the aircraft come in from other countries. In fact,





We make no assumptions
that just because an
operation happened a
particular way yesterday,
it'll be the same
tomorrow

medical evacuations require even more paperwork than usual and that's not good when a life is on the line.

"We've worked with an Ethiopian operator so they can do a local evacuation and perform a wing-to-wing transfer to a visiting jet at Addis Ababa. We helped the Ethiopian Civil Aviation Authority establish procedures to smooth the process and, over time, we became the 'go to' company for medical evacuations in Ethiopia and, to some extent, the wider region. Now we're developing a dedicated aeromedical team



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JAMES FOSTER, COO, VERTIS AVIATION

Two of our founders are from
Africa, so the region is part
of our heritage and we've
always had a presence in
Africa, building on our initial
locations in the south and west

and the first thing they did was establish relationships with the local hospitals.

In Africa, just as it has in Europe and the US, the COVID pandemic has shone a spotlight on business and general aviation. But here, business aviation doesn't necessarily mean a jet or turboprop, since it encompasses every aircraft used in business, even if that's a piston single used by a farmer or doctor to travel between rural villages and town.

"Governments realised they could move people on essential trips using business aviation and it didn't have to be in a big cabin jet, it could be a helicopter, a Cessna 172 or a Caravan. It opened a lot of eyes and going forward it will open new opportunities in Africa," Lemma says. Indeed, as an African Business Aviation Association board member, he sees this type of flying as the foundation of the industry's expansion on the continent, but also emphasises that Africa is no longer a 'dumping ground' for old bizjets – "We're now comparable to Latin America in terms of new jet orders."

Flying in Africa

Business and VIP aviation providers have done an exceptional job coping with

COVID. But, as if global pandemic was insufficient a challenge, for those operating in and around Africa and the Middle East, security concerns and unrest mean these are particularly troubled times.

James Foster, Chief Operating Officer at Vertis Aviation, says: "Business aviation was already set up to deal with unexpected or unscheduled events, whether a result of geopolitics, international meetings or even sporting events – you don't know at the beginning of a tournament which teams will be in the final, for example. It means customers going to the same events with varying requirements and for quite different reasons.

"We adapted to the uncertainty and lack of traditional seasonal travel requirements that COVID caused quite quickly, but the changing restrictions in Europe and elsewhere were more of a challenge. Travel in Europe is generally without restriction and we needed to ensure that customers were aware regulations could change while they were away and affect their return journey."

Challenges are less unusual for travel in Africa, however, where some level of restriction is not unusual, whether it's between borders, lack of infrastructure or simply because commercial air services aren't available. Vertis saw demand for flights into the region remain strong and at the pandemic's 2020 peak, it was responsible for most of the international private traffic serving the continent.

Telling customers their chosen destination isn't a wise choice because of security concerns or COVID restrictions is, Foster admits, "pretty hard from a commercial point of view, because we always want to find a 'yes' solution. But once we'd factored in safety and border issues, we lost some flights because we felt we had to tell customers 'no', albeit in the knowledge they might get that flight elsewhere because some people would say 'let's take the flight and see what happens'."

Africa has always been a key market for Vertis, a message reinforced when a Ghana-based Challenger 604 joined its Virtual Charter Management Programme earlier this year. "Two of our founders are from Africa, so the region is part of our heritage and we've always



had a presence in Africa, building on our initial locations in the south and west. The Challenger is helping us serve the demand that was already in the region," Foster explains.

Onward journeys often require a little more planning in Africa than elsewhere and Foster says changing situations are a particular challenge. "Generally speaking, far less of the traffic is for leisure. Instead it could be people visiting a mine, a production facility, or governmental, and those types of mission, often multi-country, are far more complicated in Africa than in Europe."

He also echoes Dawit Lemma's views on the African definition of business aviation, which frequently has more relevance to reaching an inaccessible location than to luxury travel. Flying could shrink a visit timeline by road from days to a single day, for example, often with much improved security.

Connecting Africa

Africa may well be burgeoning as a business aviation market, but the unique requirements of this vast continent will only ever be satisfied by a diverse range of aircraft types. At the same time, passenger expectations for inflight connectivity are high and delivering on that expectation across a disparate selection of aircraft types and sizes presents a considerable challenge.

Evgeniy Pashkov, Regional Director, Eastern Europe, Middle East and Africa at SD, says the African business aviation connectivity market is evenly split between private and corporate users, and government operators, including head of state transportation, border patrol and military flights. Among the primary challenges, he identifies a lack of connectivity options for light to midsize jets. "Many of these types of aircraft operate private and official flights in the region and SD is aiming to support their requirements. Our new Plane Simple antenna series, for example, will provide access to more bandwidth, realising additional connectivity options for more aircraft, including light and midsize jets. We know the African business aviation sector will welcome the many opportunities this advanced technology hardware will bring."



Right now, most of SD's customers in Africa use Inmarsat SwiftBroadband, but Pashkov identifies an increasing number of inquiries regarding possible upgrade paths. "There are multiple options for GEO [geostationary orbit satellite] supported coverage in Africa, with both Inmarsat JX and Intelsat FlexExec offering great service. But we promote an agnostic approach to satellite solutions and welcome more choice for our customers, and the entry of multiple new LEO [low earth orbit] and MEO [medium earth orbit] satellite operators into the segment holds promise for even more coverage. Consistency and reliability of the user experience across the whole mission, not only parts of it, is our most important focus."

Getting that connectivity onto the aircraft requires an antenna and Pashkov believes the Plane Simple antenna series, designed specifically for the business aviation sector, will bring reliable connectivity to a much broader range of aircraft than ever before, at competitive price points attractive to African customers.

"The combination of these antennas with existing and future satellite constellations will go a long way to removing many of the connectivity access limits across a wider range of aircraft sizes. The smaller form antennas may be fitted onto aircraft including the Cessna CJ3, Embraer Phenom 300 and Pilatus

PC-12, which will enable many more owners and operators to maximise the benefits of powerful connectivity."

It's fair to say that for SD, connectivity is an enabler to achieve the customer's aims, while its own services – exemplified by SD Pro – and those of third parties, are what enables customers to realise its value. "Our agnostic architecture enables customers to 'plug-in' third-party systems to optimise the data that their aircraft generates," Pashkov explains. "We continue to add to this portfolio of third-party integration since we believe if we can deliver rich, validated, real-time data to the customer through our infrastructure, we can make the ownership experience better all round in terms of safety, efficiency and budgeting.

"This is helping advance African business aviation precisely because it is moving straight to the digital world. African regulators are increasingly sophisticated and African nations are often early adopters of technology. Look at the land communications sector. Mobile phone commerce was immediately successful since there was no need to switch mindset from a landline. To some extent this is replicated in the aviation industry, where a growing number of aviation users and stakeholders want to optimise the technology available. This is what makes it such an exciting place to be doing business right now."

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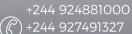
















Reimagine the Range Rover

Victoria Macmillan Bell drives the Range Rover SVAD from the manufacturer's Special Vehicle Operations division and examines where the brand is likely to go next

The very first Range Rover rolled off the production line in 1970 and until relatively recently it's been the proprietor of its own kingdom, with no challengers. Could anyone really have foreseen that by 2020, marques including Lamborghini, Rolls-Royce, Bentley and Aston Martin would be laying claim to the title of the world's most luxurious SUV, doing their best to dethrone the Range Rover lineage?

Here we are in 2021, coming to the end of the fourth generation of this swanky behemoth,

with more than 50,000 units sold since the current chapter began in 2012. Last September, Thierry Bolloré took over the reins from outgoing CEO Sir Ralph Speth and is now spearheading a fresh directive and a cleaner future via a new strategy – Reimagine.

Bolloré aims to create sustainable modern luxury – the new luxury – across the Jaguar Land Rover (JLR) group, with a radical overhaul of the entire manufacturing process, customer journey and ownership experience. In a little future gazing, I wonder if some Land Rover products will become sub-brands of their own.

With new platforms geared for the switch from fossil fuels to electrification coming across both brands, by 2025 Land Rover will have six 100% electric models. It is committing to being fully electric by the end of the decade while Bolloré has targeted 2039 as the year for JLR to be a zero-carbon manufacturer.

Dramatic locations

I've been fortunate to drive Land Rover products at various dramatic locations around the globe, including Land Rover's superb Les Comes 4×4 facility in the Catalonian mountains of Spain, Iceland, Botswana, Zambia and Kemble, in Gloucestershire, UK.

JLR has an ace events team for product launches and for the 2013 launch of the new Range Rover Sport, they organised two off-road sections. One involved driving, nay slithering, up and down mud chutes in a rain-soaked forest, followed by a lengthy wade along a fairly fast-flowing river. The second challenge involved driving up and into a long-retired Boeing 747-200 at Kemble, inside which the team had created a series of asymmetric rails and other mind-focusing features that had to be navigated before a steep ascent from economy to first class. It was the real deal, with two wheels frequently off the ground and the cars seesawing as we swung between pivot points.







With impressive drops and climbs, we were reliant on the cameras to get us out of our own talent drop-offs.

Land Rover products are phenomenally capable off-road and anyone who's spent any time in a Range Rover will know how supremely luxurious and comfortable they are on-road. Whether in standard or long-wheelbase form, leg and headroom are plentiful, as is boot and storage space around the cabin.

Special Vehicle Operations

Now, allow me to introduce Special Vehicle Operations, JLR's bespoke arm, usually known by its acronym SVO. If your car has had the SVO treatment, it will be a finer, faster and unique version of the original, with a focus on performance, capability and luxury. In short, everything shifted up a notch.

The SVO inner sanctum, the place where you go to spec your product, is comprised of four areas, the VIP Commissioning Suite, Manufacturing Facility, Paint Facility and Technical Suite. An F1-style installation, the latter is research-lab clean and bright white.

The production line here runs separately from the much larger-scale main production line at Solihull but the main line is where EVA's Range Rover P565 SV Autobiography Dynamic (SVAD) test car was conceived. Just to be clear, the test car was not a uniquely commissioned Range Rover but one that carried many SVO enhancements over and above the standard vehicle.

Let's begin with the 'basics', comprising 80 lines on the standard specification list. Electronic air suspension provides the comfortable, glide ride that Range Rovers are known for, stability and roll control; plus there's Trailer Stability Assist, Apple CarPlay and Android Auto, for seemingly no end of connectivity and infotainment. The list goes on.

But since this was the Range Rover SVAD, a whole new page of additions signifies another level in luxury. Quilted, perforated semi-aniline leather abounds and where there is leather, there is padding and lots of it. Deeply comfortable seats offer heating and cold air, along with hot-stone massages. Above your head, a panoramic sunroof glides way back, flooding the cabin with light.

In the rear, more buttons allow the seat to glide forwards and a footrest to pop up, while another button controls the 10-inch screen, with headphones and acoustics, as part of the Meridian Signature Sound System. Back up

front, 360° surround cameras double as parking aids and supplement the head up display. Pulling this charger is a 5.0 V8 engine developing 700Nm torque and 565hp, for a limited top speed of 155mph, which you reach surprisingly quickly given the 0-60mph/100km/h time of around 5 seconds. The car offers every which way to personalise and maximise driving pleasure, at a price tag in the region of £144,000. However, if ownership isn't your sweet spot and you're in the UK, you could rent a Range Rover with https://www.theout.com/, while https://www.drivepivotal.com/ offers a subscription service.

Looking ahead, government policy, combined with Bolloré's Reimagine strategy, may have us driving fully electric SVAD Range Rovers before long. The future for all Land Rover products points to Modular Longitudinal Architecture (MLA) and Electrified Modular Architecture (EMA) platforms, with Software Over The Air (SOTA) updates, which will ultimately make the ownership experience even sweeter. Capability is and will remain at the core of Land Rover's being, so expect announcements in the next year or so. Oily wrench, your days are numbered.



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Crossing and Dotting

UK start-up Sentinel Aviation is already earning a reputation for personalised, bespoke charter in which no detail is left to chance. Company owner, former British Army tank commander and bizjet pilot Roland Dangerfield, says Sentinel is carving a very particular market niche

Military operators speak of 'capability', a term encompassing every aspect of task delivery, including people, equipment, operating procedures and contingency. Moving a senior commander or politician safely into a conflict zone, for example, is achieved through exercising well-practised and carefully applied capability.

Sentinel Aviation describes itself as a 'private jet and helicopter charter and management company' but is, in effect, a provider of VIP and VVIP transport capability. It's a fact that comes as no surprise when one realises that owner Roland Dangerfield is a former British Army tank commander.

Dangerfield worked on Challenger 2 tanks, before training as a business jet pilot. "My first flying job was on a Challenger 604 from Montreal to Farnborough," he quips, "and when people ask how I got the job I tell them someone must have seen that I'd commanded a squadron of Challengers and thought I'd flown lots of them."

Dangerfield first mooted the idea for Sentinel Aviation in 2019. The people he mentioned it too were often sceptical, pointing to the several companies already doing similar work. "But I had lots of connections and wanted to offer something different," he explains. "I'd been in private aviation for a decade or more, but a little of the Army is still in me

and I was noting my own frustration at things people thought they were doing well, and that were OK, but which I thought could be done better." In December 2019, he stopped flying and set up Sentinel Aviation.

Resonating USPs

Barely three months later, the UK was in national lockdown as the world reeled before a pandemic. Has the unfortunate timing of Sentinel's debut dented its early success? Dangerfield says the jury is still out, but: "I'm hugely optimistic for the future because our USPs are resonating within the industry.

"We aim to deliver a service that really is second to none, including everything from transport to the airport, meeting passengers at the terminal, to delivering exceptional catering and so on. Consider COVID security, for example. There's a belief that travelling through a private terminal is easier than through a main airport, but that's not strictly true.

"There are COVID procedures in the limo or taxi from home to the airport, and in the terminal. Then another set for the aircraft and operator – everyone does it differently, there's no standard – before another set of procedures at the arrival airport and then in the transport to the final destination. That's five sets of potentially different procedures, so we ensure everyone is comprehensively briefed with every 'T' crossed and 'I' dotted along the way."

Dangerfield has considerable experience 'crossing and dotting', perhaps better expressed as extreme attention to detail, from his British Army career. Alongside his extensive tank experience, he also wrote visit programmes for senior military and other public figures, including the British Royal Family. "Attention to detail means

ensuring the right person is where they need to be at the correct time with the required documentation, factoring in every aspect of the visit or trip.

"I think people like that level of planning and, on that basis, I've had some very interesting enquiries come directly through the website. One of them was from an experienced European executive who considered Sentinel the only choice for real, bespoke, individually designed travel."

Military Ethos

Drawing on his military connections,
Dangerfield has nurtured ties with travel
security and travel medicine companies.
The latter has 24/7 access to six UK-based
consultants, ready to advise on emerging
issues but also to offer advice – and bespoke
medical packs in cases where travellers
have known medical issues – before, during
and after flights. The security company can
deliver travel risk assessment and extend
its cover to include close protection should
their business take a passenger to a region

where personal safety is a concern. Its personnel, Dangerfield notes, are generally former special forces operatives.

"Our aim," he says, "is to deliver value for money through a level of service that always goes beyond the norm. We don't profess to be cheap – there are plenty of charter operators and brokers that will offer cheaper flights – but we do guarantee service that goes beyond, and in that context value for money and cheap are quite different things."

Sentinel's customers typically appreciate a personal approach that includes knowing the names of the staff handling their journey and, quite often, knowing them personally from previous experience. In terms of the companies providing additional services – medical and security, for example – Dangerfield's approach borrows much from the military experience. When he assigns security to a client, he knows not only the company handling the work, but also the operators

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on the ground, enabling an enhanced level of trust and reliability that ultimately benefits the customer.

"It's actually a key philosophy for the company," he says. "We aren't looking for hundreds of charter clients, but more like 100 clients that we know really well. We want to know their support and admin teams so that we become a seamless solution to their travel plans. I want people to

recommend us – 'Sentinel Aviation is the company to go to and I'll try to get you in...' – I'd like people to want to be our clients, to make it an exclusive service where we look after our customers properly and really understand their needs.

"And when we're faced with a problem or a challenge, we can usually get around it. The military is an amazing network of individuals doing really interesting jobs and even if I don't know someone with the solution, I can usually find someone with the right skills who recognises the Army background and is willing to help."

Dangerfield invests similar effort in sourcing exactly the right aircraft for his clients, preferring personal research and connections to marketplace apps. "I go to operators I have a good relationship with and tell them I have a very special client and here's how we're going to work with them."

Sentinel also offers aircraft management, on a predictably exclusive basis. "We're all pilots who've managed aircraft in the past and we're looking for maybe half a dozen owners of heavy jets. We believe that as soon as you go beyond five or six jets the service quality suffers, and we want people to be waiting to come to us because we are at our maximum capacity and won't dilute the service."

If one word were used to describe Sentinel Aviation's offer it would most likely be 'niche'. It delivers precise, bespoke and immensely flexible service to an exclusive clientele. To say that Roland Dangerfield has big plans for the company's future would be incorrect. Instead, he has rigorously defined plans for a carefully managed future where Sentinel Aviation becomes synonymous with its prestige clients and their particular needs, and refuses to water down its product by expanding into a wider market.

Three Pillars

Sentinel Aviation is founded on three business pillars: charter, management and consultancy. Describing the latter as "pretty much everything else with an aviation connection that we do," Roland Dangerfield says Sentinel's services beyond charter and aircraft management include cargo movement, air ambulance and drone operations. "In terms of cargo, we aren't looking to compete with any of the larger, well-established players. We're thinking about niche work again, government and diplomatic contracts, for example.

"When it comes to air ambulance operations, I've always had a desire to give back in life. I'm married to a GP [general practitioner] so I know an extensive network of medical personnel through her and within the military. My aim is that through charter we'll soon pick up management contracts, and through that we'll be able to establish a niche air ambulance company." It takes only a little thought to piece together the components of Dangerfield's network and realise that medical evacuation from regions were security is challenging could easily

become another of Sentinel's high-end nice capabilities.

Prior to establishing Sentinel Aviation as a charter and management company, Dangerfield had become involved in the drone industry a result, he reckons, of being a private jet pilot spending too many hours bored in hotels around the world. It's an aspect of the portfolio that's still developing, but considering Dangerfield's military background and expertise it seems logical that it will evolve to include private security solutions.



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Enhancing Wonderment

From black-painted jets to humancentric cabin design, luxury leisure airline Aero is all about carefully chosen destinations and magical flying experiences

There was a time, long ago, when flying commercially meant a magical adventure that began as a passenger stepped on the plane, not when they arrived at their destination. Cheaper tickets and the not unworthy ambition that flying ought to be available to most, if not all, have made the airlines more accessible, but airports have become crowded and airliners peoplemoving machines in which that sense of personal experience is easily lost.

Private flying has been the alternative for those who could afford and justify it, since neither first nor business class travel provides the same convenient experience. Operators have long attempted to strike a balance between airline and private jet operations and, in summer 2019, Aero, backed by Uber co-founder Garrett Camp, began flying bizjet-like operations between Mykonos and Ibiza, adding services out of Farnborough Airport, UK, to Ibiza and Nice in 2020.

For those willing to pay a not unreasonable premium over commercial travel, Aero offered an attractive, personalised service in its all-black, 16-seat ERJ135. It became a popular option into 2020, but then COVID

happened. While the airlines struggled on, Aero found itself offering exactly the type of service that made passengers feel safe and cared for, and avoided the need for them to use major airports.

Early in 2021 it launched a new enterprise, delivering a similar product from Van Nuys, California, ultimately serving Napa, Aspen, Jackson Hole and Sun Valley. Again, its destinations are carefully chosen and passengers are promised a luxury experience that begins the moment they arrive at the airport - because Aero operates exclusively from FBOs.

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Humancentric Design

Looking to understand more of the ethos behind the Aero brand, *EVA* spoke with Design Director Jessica Pastor and Chief Marketing Officer Zain Richardson. Pastor has an industrial design background, with a passion for humancentric design and, she says, 'lots of experience in lighting'. After joining Aero in 2019, Pastor has been the driving force behind how the cabin looks and feels, and how it reflects the company's brand. Richardson, meanwhile, is relatively new to aviation, but familiar with the luxury travel industry. His focus is on Aero's 'guest experience', based on delivering hospitality rather than a simple transport service from A to B.

It's fair to say that Pastor has created the physical expression of the Aero brand, designing the cabin for an immersive experience. "We want to help our customers chill when they need to relax, help them enjoy their meal, their quiet time, while enhancing their wonderment. Lighting is a very powerful

JESSICA PASTOR, DESIGN DIRECTOR, AERO

As advocates for humancentric design, we understand there is always something in the cabin that can be improved



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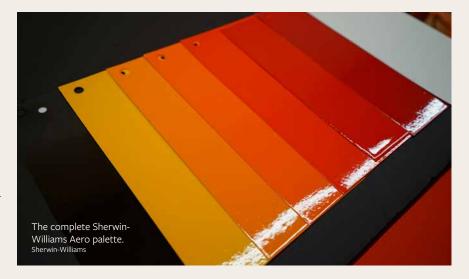


The Story of the Black Jets

Aero chose a distinctive black livery for its ERJ135s for an effect that highlights its brand colours so the viewer may have a hard time realising they only appear on the rudder and engine nacelles. Outside the military, entirely black-painted aircraft are unusual and Aero worked closely with C&L Aviation Group and paint supplier Sherwin-Williams to perfect the scheme.

The Europe-based aircraft was finished in a semi-gloss black, but the US jet is full gloss, the latter chosen for easier maintenance. The obvious question of how crews keep the cabin cool on the ground is answered by Tommy Andino, Aero's Aviation Maintenance Management Leader. "The cabin can heat up on the ground, but the standard air-conditioning mitigates that, with an air conditioning cart used if required. The cabin actually cools nicely."

Black-painted wings are unusual because they may cause fuel tanks to heat up but here, as with every aspect of its operation, Aero is on the case, as Andino explains: "Our maintenance and flight crews manage aircraft servicing and maintenance to a very safe, high standard, so we don't



fuel to top off the tanks when we know it will be very hot outside and we don't fuel until an hour before departure time."

Julie Voisin, Global Marketing Manager at Sherwin-Williams Aerospace Coatings, became personally involved in the project when Aero's designer was looking for a more vibrant red to match the brand colours. "C&L Aviation in Bangor, Maine had recommended our coatings for the project," she says, "and they reached out for our help. We looked at their samples and came up with some options, one of which they liked and used. It's a unique brand. Anyone seeing it will know it's an Aero plane and at the same time it looks really

luxurious. They came to us with a vision and we helped them choose the shades to make it work; it's how we operate with our customers every day."

Tasked with applying the scheme, C&L Aviation Group was equally enthused to work with Aero in helping achieve its vision. "It was a pleasure for our experienced paint technicians to assist in the design and painting of this unique-looking aircraft," Calvin Tuitt, SVP Business Development MRO, C&L Aviation Services says. "It required special attention, but we specialise in unique paint jobs and look forward to assisting others like this in the future."

tool for subtly shaping and guiding the journey experience, almost like an invisible hand. The immersive experience enables us to craft the entire journey.

"We looked into colour psychology to understand the colours we render in upwash versus downwash lighting and when they are combined very specifically, at the right moment, it triggers our brains so that we react appropriately at the correct time. We might begin with a peach colour, like a sunrise, and use a blue palette to re-energise the cabin."

Aero has clearly taken a high-tech approach to creating its cabin experience but, at the same time, its imagery includes a passenger with a book open on her lap, enjoying some traditional, low-tech inflight entertainment. It speaks to Aero's understanding that passengers want the freedom to relax and, if they so desire, read a book during their flight because that's the personal experience enabled for them.

Sound and physical space are also crucial to the experience. Immersive sound, delivered via Bongiovi's unusual speakerless acoustic system, enhances the journey, Pastor explains. "There's the 'wow' experience when you first step into the cabin, enhanced by music that will always be playing at that point in the journey and which becomes familiar and links to the brand - think about the sound you hear when you switch on an Apple computer. The audio is also important at other points in the journey, but never overwhelming or intrusive, so that it won't interfere when passengers want to watch movies, for example." Richardson adds that with the Bongiovi system using some of the cabin panels as speakers, the sound quality is notably rich, with enhanced bass tones.

Colour, lighting and sound are combined in a carefully curated mix, and it seems obvious that there ought to be a signature Aero scent. Richardson confirms that the team is 'working through the senses' and a scent is 'definitely on our radar'. "As advocates for humancentric design, we understand there is always something in the cabin that can be improved," Pastor continues. "As a start-up we gather customer feedback and react to it, quickly. I believe it's unprecedented in the airline industry and as we learn we improve,

especially in this post-pandemic world."

Pure Black

Aero has set itself up to disrupt the airline market and Richardson says that passion for disruption, built on Garrett Camp's experience with Uber, is part of the company DNA. And nowhere is it more evident than on the outside of the jet. "The idea is to create wonder and astonishment. Thinking about the resources people assign to their leisure travel we saw a

disconnect where travelling to the destination had become a chore. We wanted the flight with Aero to be the start of the vacation. It's all about wow moments and we've invested a lot in creating those through brand touchpoints, including that first look at the plane."

Aero's guests love how the jets look and Pastor says the appreciation of pure black comes directly from Camp. The brand colours, which manage to appear almost as shades of one







another, have evolved over time and manage to dominate the all-black finish. Inspired by the sky, sunset or sunrise, they reinforce the brand at various touchpoints in the cabin, in the carpet trim and as a small dash of colour on crew uniforms. The idea is to express the brand, through austere design, in a way that feels natural rather than overtly branding to the point where the customer no longer takes notice.

So early in its operation, it is a testament to Aero that even while there's a determination to constantly improve the brand and customer experience, it already has an expanding fan body. Richardson confirms: "We have guests requesting uniform items and other pieces. As part of the continuous process of improvement, we're collecting feedback on the items of the guest journey that they love the most and how we can help them take those home. The bespoke quality of our design naturally lends itself to creating a piece that helps a guest feel like part of our community."

Sourcing those pieces of exclusive fan merchandise also opens the door to associations with prestige brands and destinations, but Richardson sees it as more than simply branding existing items. "Our guests are increasingly looking to our concierge service to help plan every aspect of their journey and I believe they are also looking to us to become a curator or arbiter of different tastes, that can help educate them or immerse them in the new experiences that travel brings."

Aero's Embraers are beautifully configured with bespoke 16-seat cabins and, from the outside, they are essentially similar to the Legacy 600 business jet. The offer is akin to luxury corporate flying, but with the benefits of conciergerie, personal service and the ease of travelling via FBO. And, assuming that one or two small families are travelling on a flight, then the ambience and exactly who is occupying the space around you moves closer still to the private jet experience.

Yet it is more than that. Richardson uses the word 'curate' and 'curated' to describe Aero's product. "We want to become a curator of coveted destinations, where people base their next trip on where we're going next." Aero, it seems, is in the business of adventure through the magic of flight.





















Business as Usual,

Only Better!

Get Heli is delivering previously unknown levels of digital efficiency to the helicopter charter market. CEO Laurent Vallet reckons it facilitates: "...business as usual, only better!"



Several options exist for brokers and passengers looking to charter fixed-wing private aircraft via app or website, and many prefer a few taps on a phone screen as their route into a bizjet cabin. The market is adapting to a world with COVID in it, and that's driving new customers into private aviation. For many of them, an app is the ideal introduction.

The digital offering for helicopter brokers and passengers has been less robust, but now Get Heli is making rapid headway with its online platform. The service is more than an app, being closer in concept to a marketplace, for now centred on the UK but set for rapid expansion into mainland Europe, the US and beyond. *EVA* spoke to Get Heli CEO Laurent Vallet to find out more.

What was the inspiration behind Get Heli?

The company founders observed a market inefficient at all levels but with considerable growth potential. It was time for the charter booking process to become quicker and more transparent, but there was no technology just for helicopters. Get Heli was therefore formed as the first rotary-dedicated, fully integrated, end-to-end productivity tool and marketplace. It aims to prioritise rotary by digitalising the industry and connecting brokers and operators in a more efficient way, providing wider choice, simplicity and enhanced security.

The company has come a long way since it launched in 2019. We're currently developing new features to improve processes for charter professionals, revisiting the 'platform' concept and taking it to the next

level, way beyond the scope of being a place simply for requests and quotes.

Get Heli has global ambitions, but you've initially targeted the UK. What's the plan?

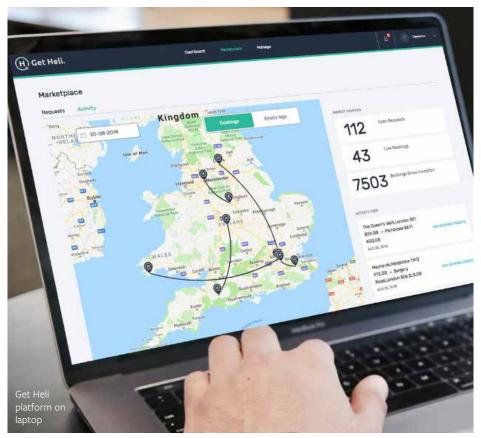
It is our vision to be a global platform. Charter professionals need a digital solution wherever they are, to do business wherever they need to. We've started with the UK because it's a great market for helicopters its geography is ideal. Road travel between many British towns and cities is slow, but the journey too short, or impractical, for fixed-wing connections. Helicopters make travel much faster and more convenient. The engagement we've seen from UK operators has been beyond our expectations and it's clear the industry was craving this technology. We've learned a lot from the UK market and we are optimising the platform for new countries, with Europe a significant next step. We've already had major European operators sign up and seen considerable interest from North American operators.

Some users will already have in-house solutions for aspects of the charter process. Can they interface Get Heli with their own software?

We have an API [application programming interface] in place and we're building white label capabilities to enable simple and efficient use of our technology on interested parties' platforms.

What's the process of signing up? Why should an already successful broker or operator bother?

Brokers and operators can sign up at our website. The process is quick and easy, and they don't need to contact anyone. Only registered users may access the platform, so sign-up is essential. The platform brings speed and convenience to the entire booking process, with important benefits including security,



vetting, standardisation, integration, wider choice and the ability to do business 24/7, on any device. The platform ensures that only quality requests and quotes are generated. There's no requirement to speak with us to sign up, but we love engaging with potential users to discuss how the platform can really help them and cater for their bespoke needs.

Get Heli guarantees that it will only generate quotes from quality operators, but how can you be sure that's the case, especially as you expand and perhaps serve countries where regulatory oversight is less robust than in other regions?

Anyone who signs up to Get Heli undergoes our vetting process – we only allow space on the platform for genuine charter professionals. For operators, we obtain documents about regulation and run background checks. We frequently maintain and update our database as a priority, ensuring active operators (those able to quote) are fit to do so. We are transparent about the vetting process to make brokers' lives easier. We also look at customer service, which is of paramount importance to the end user. We research operators, no



matter what country they are in. Brokers will be able to confidently reach operators in any country, where they otherwise may be unaware of what's available.

What's the process when a broker uses the platform to request quotes?

Brokers submit requests to operators via Get Heli's standardised request process, which includes all the information required by an operator while still allowing for a large degree of flexibility. This enables operators to return quotes that are as accurate as possible, so that brokers make the right choices for their customers. Operators are instantly alerted about new requests relevant to their fleet and location and, as a result, a broker may receive multiple quotes concurrently, offering a wide choice. Our real-time online chat function allows operators and brokers to communicate directly, suiting the bespoke, complex nature of booking helicopter charters. We've also recently added a progress bar to the broker's request page. It's a real-time indicator of their request's status in the marketplace, with updates on activity and quotes. It's business as usual, only better!

Is the platform suitable for corporate customers?

Corporations usually have a preferred agency for business travel, but there is no reason why our API couldn't work for a corporate travel agency. Our current focus is on brokers and operators in the B2B helicopter charter space, but corporate travel is something we're exploring and may move forward with if it makes sense.

Why have you chosen a headquarters close to London Heliport when your product seems not to require anyone to visit an office, ever?

Fundamentally, we're a tech company. Our vision is to bring the helicopter charter industry into the digital age and with that in mind, there will be no need for anyone to visit an office. But we love meeting our users, visiting their hangars and offices. It helps us keep in touch with them, build relationships and meet new clients. Our presence at the heliport seems logical for a heli-centric company and it is a unique place to work, especially for rotary people like us. It's ideal in terms of innovation and we want to help push it to become a thriving, helicopter charter hub, maybe even with capabilities for future eVTOLs.



Laurent Vallet, CEO Get Heli

"Get Heli could not have come at a better time for me," Laurent Vallet says. "Helicopters have mesmerised me ever since I saw them flying over the Champagne vineyards around my family home.

"I've been passionate about aircraft since I was very young and I have a pilot's license. After a long career in investment banking and private equity in London, a change in personal circumstances led me to reignite my passion and interest in helicopters.

I learned about Get Heli through a conversation at a flying club. I was impressed and inspired by the opportunity it presented. It quickly became clear that it was the perfect company for me to lead while helping the industry move forward."

How has business looked over these past, peculiar months?

The number of requests for helicopters has inevitably slowed during the pandemic, although we've kept busy. We have seen a great deal of interest from operators around the world, helping us spread the message that tech is a good thing that can help people capitalise on business opportunities. We've been able to focus intently on our tech development and taken time to prepare to grow the market. And our team has expanded, with a new Sales and Marketing Manager, and additions to the development team.

What are your hopes for the future?

We're working to perfect a globally accessible platform ready for anything the future may bring. We're making sure to keep up to speed with any advancements in drone operations too and, since the platform was built to understand all the parameters of bespoke flying, it is more than capable of catering for the coming generation of eVTOLs and anything else that emerges. The need for urban air mobility is approaching fast and we hope to work closely with operators. The future is looking very bright indeed!

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