

# BusinessJet *interiors* INTERNATIONAL

APRIL 2012

THE INTERNATIONAL REVIEW OF BUSINESS JET INTERIOR DESIGN AND COMPLETION



## talentshow

GET TO KNOW EUROPE'S TOP VIP AIRCRAFT  
INTERIOR DESIGNERS AHEAD OF EBACE 2012



## realitycheck

Lufthansa Technik enlists the  
virtual world to speed completions

## windowshopping

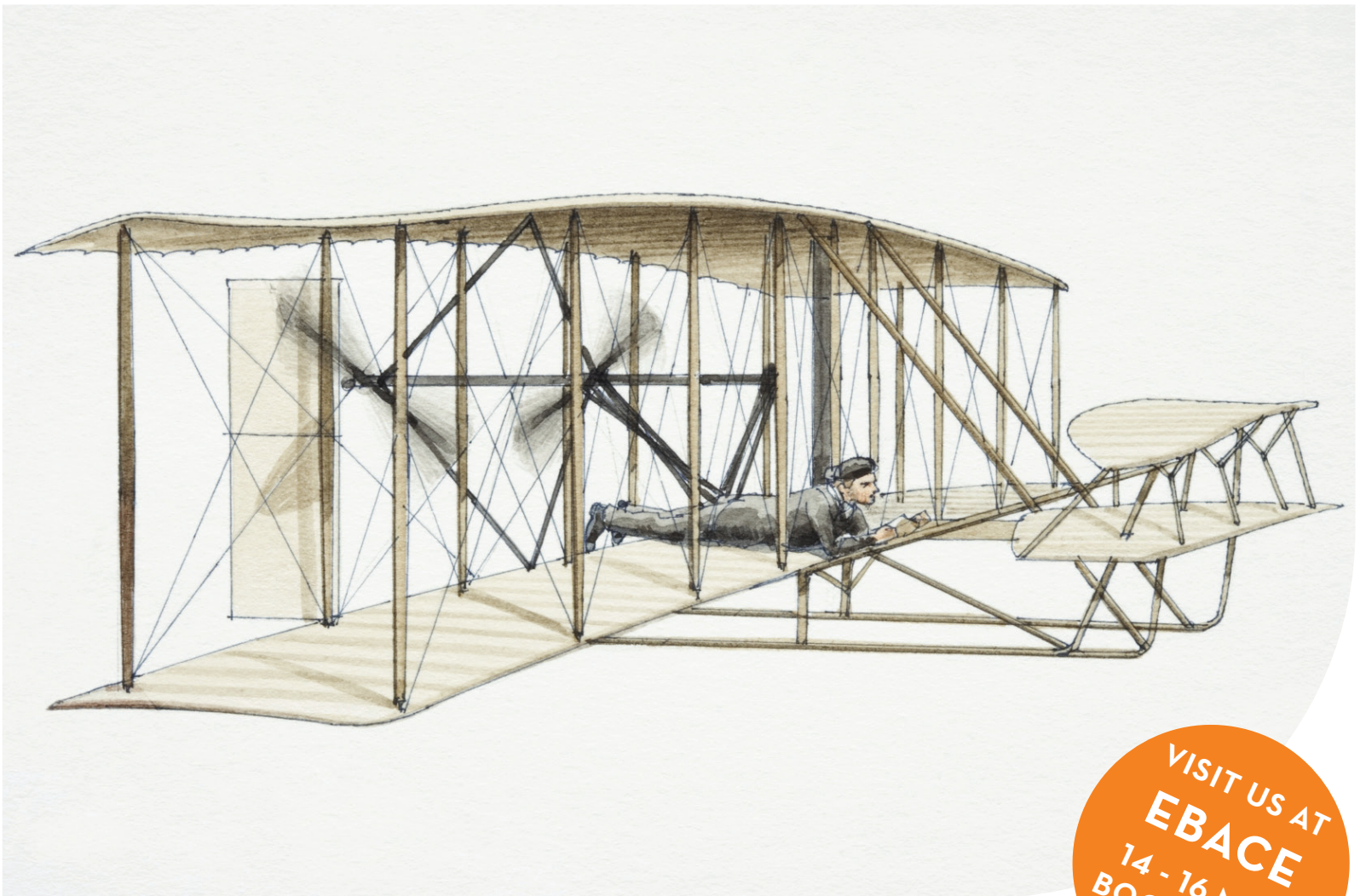
A street-level corporate jet sales  
room opens in London

**EBACE SHOW  
ISSUE!**



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# peoplepower

It's not all doom and gloom in Europe. In the interiors sector, the 'old continent' is lucky enough to have a strong pool of artisans and designers backed up by years of tradition. Ahead of this year's European Business Aviation Convention & Exhibition (EBACE) we caught up with many of Europe's major designers (p40). They reveal their latest projects, key considerations and perspectives on trends in technology, design and demand. A common acknowledgement is that growing economic powers such as China are the markets to tap into to secure future success. Europe knows it can't bask in past glories. To secure its place in a changing industry dynamic it must ally its bank of talent with a keen eye for the latest technological advancements.

One company doing just that is Lufthansa Technik, which has embarked on an exciting project that taps virtual reality technology for cabin fit-checks, potentially shaving up to three months off completion times (see feature on page 32). Employee training is a huge part of the effort. "If you only have technology, you will have an important tool, but no one will work with it. You need the soft skills to work with it," says Oliver Thomaschewski of Lufthansa Technik's VIP & Executive Jet Solutions division. For other innovations likely to take centre stage at EBACE, see our feature on Embraer's new Legacy 600 and 650 options on page 68, and a wider show preview on page 23.

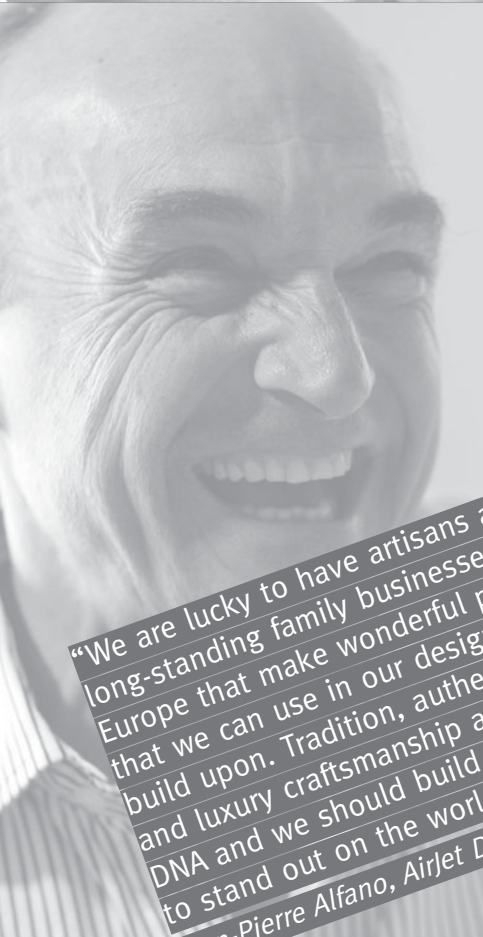
Another event that provides inspiration for this issue is the conference held at Business Jet Interiors World Expo 2012, which took place in February in Cannes, France (see review on page 28). For example, on page 76, we explore the challenges of designing aircraft for charter use; on page 94, experts delve into the intricacies of VIP helicopter cabin design; and on page 86, I assess customer care improvements at Bombardier's facilities in Montreal, Canada. The manufacturer hopes to engage more directly with its customers – a similar aim to that behind the opening of The Jet Business, a corporate jet brokerage/sales room, in London this year (see feature on page 58). Clearly face-to-face meetings are still the best way to do business. Accordingly I look forward to seeing you at both EBACE and the next Business Jet Interiors World Expo, which will be held at London Farnborough on 19-21 March 2013.



Izzy Kington, editor

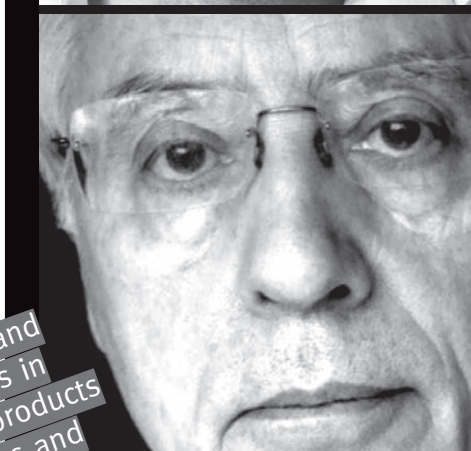






"We are lucky to have artisans and long-standing family businesses in Europe that make wonderful products that we can use in our designs and build upon. Tradition, authenticity and luxury craftsmanship are our DNA and we should build upon this to stand out on the world stage"

Jean-Pierre Alfano, Airjet Designs

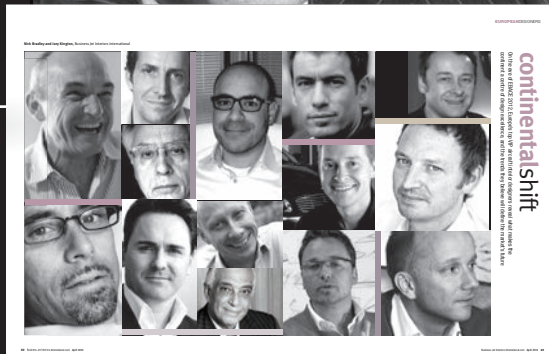


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Nick Bradley and Izzy Kington,  
Business Jet Interiors International





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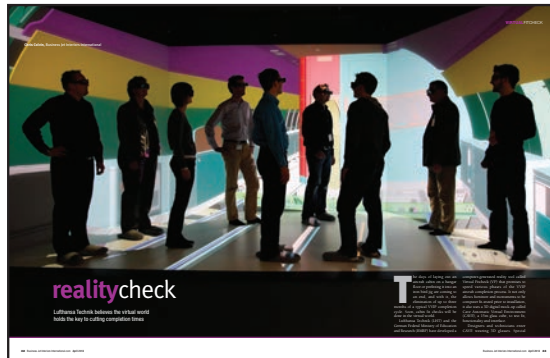
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*Ben Frain, Business Jet Interiors International*



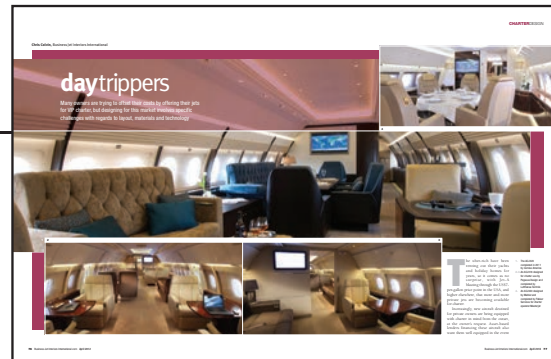


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## warmwelcome

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The lounge and dining area features an L-shaped divan, two VIP club seats, a large sideboard and a dining table surrounded by a divan and three VIP seats



## Boeing delivers first VIP 747-8 Intercontinental

Boeing has delivered the first 747-8 Intercontinental VIP aircraft, to an undisclosed customer. The aircraft (pictured below), which was delivered with a minimal interior, is due to enter service in 2014 after its VIP interior is installed. This VIP 747-8 will include Greenpoint Technologies' Aeroloft above the main cabin between the upper deck and tail. It adds 393ft<sup>2</sup> (36.5m<sup>2</sup>) space to the original 4,786ft<sup>2</sup> (444.6m<sup>2</sup>) cabin, for a total of 5,179ft<sup>2</sup> (481.1m<sup>2</sup>). The Aeroloft is a modular product designed specifically for the VIP 747-8 aircraft, providing eight private sleeping berths.

In other news, at the Asian Business Aviation Conference & Exhibition (ABACE) in Shanghai, China, Boeing Business Jets announced its latest jet to enter service – a 737-700 with -800 wings and other modifications for longer range, which was delivered to a private businessman in the USA in March. Able to carry 19 passengers, this is the first BBJ to feature Honeywell's Ovation Select digital system. The JetTech-designed luxury interior also includes a large personal stateroom with a king-size bed, private lavatory and shower. It also has a smaller guest stateroom with divans that convert into beds, enabling the aircraft to sleep eight passengers.

The BBJ has a centre island and typical kitchen appliances including convection and microwave ovens, a refrigerator, wine cooler and rubbish compactor.



## ACJC delivers 10<sup>th</sup> VIP ACJ cabin

Airbus Corporate Jet Centre (ACJC) has delivered its 10<sup>th</sup> ACJ VIP cabin, to an undisclosed customer in Europe. The ACJ319 can carry up to 18 passengers. The contemporary interior includes a lounge and dining area, bedroom with two movable beds, bathroom with shower, and 12-seat aft cabin. The aircraft boasts a new telephony system with WiFi handsets, as well as connectivity based on a complete SwiftBroadband satcom solution. As with ACJC's 9<sup>th</sup> VIP completion (delivered in December 2011), the 10<sup>th</sup> cabin includes an HD video system based on HDMI wiring, allowing passengers to enjoy 1080p in VIP zones, as in the forward lounge with a 52in full HD screen.

## Jet Aviation Hong Kong opens new interior shop

Jet Aviation Hong Kong has recently expanded its service offerings to include interior services.

Each of the four work bays in the new, 483.10m<sup>2</sup> (5,200ft<sup>2</sup>) Tsuen Wan, Kowloon area-based facility provides broad support for upholstery, carpeting, faux finishing and eco-friendly spray-painting. A clean room, a buffing area with the brightest lights available and a cyclone dust collection system are also integrated, along with a rotary screw air compressor.

"We provide a wide range of additional interior support offerings to our customers, including WiFi capability, certified iTouch and iPad connectivity, partial to full interior cabin soundproofing, 3D and LED monitors, as well as wireless Bluetooth headsets and handsets," commented Nigel Parker, managing director at Jet Aviation Hong Kong.

Jet Aviation Hong Kong is the company's closest base to mainland China where MRO services can be performed, and is also home to an aircraft management and charter operation.

## BBJ completion license for BizJet International

Boeing and BizJet International, Lufthansa Technik's US subsidiary, have recently signed a Supplemental License Agreement that gives BizJet the status of a Boeing-approved completion centre, enabling it to become an official member of the BBJ completion network.

"BizJet's membership in the BBJ completion network is a milestone for us to offer a comprehensive service portfolio to our VIP customers, especially in the USA and the Asian market," said Walter Heerdt, senior vice president of marketing and sales at Lufthansa Technik.

"We are now able to offer refurbishment, completion and maintenance services for single-aisle aircraft of the two world-leading aircraft manufacturers," said Kai Roepke, president and CEO of BizJet International. "Over the past two years we have already delivered three completion projects to Chinese customers and have currently a further four projects in our order books, including a BBJ completion that was announced just a few weeks ago."

"A new level of luxury"



AST continues to push the envelope with its latest innovation with interactive massage feature in its "Serenity Series" full electric seat for both narrow and wide body jets, which features full flat recline and the latest in interactive audio massage technology.

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NetJet's firm order is valued at approximately US\$2.8 billion based on list prices

## NetJets' first Global in completion

The first of NetJets' Global aircraft has been officially handed over from Bombardier's assembly line in Toronto, Ontario, Canada, to the Global Completion Centre in Dorval, Quebec, Canada. NetJets' Global 6000 will be configured for up to 13 passengers and feature an aft cabin stateroom and full-service galley with flight attendant service for ultra-long-range flights. NetJets placed a firm order for 50 Global business jets with options for an additional 70 Global aircraft on 1 March 2011. The firm order includes 30 Global 5000 and 6000 aircraft (deliveries to begin in the fourth quarter of 2012) and 20 Global 7000 and Global 8000 jets (deliveries scheduled to begin in 2017).

### New manager at Dassault Falcon completion centre



Dassault Falcon has promoted Antoine Ajarrista to senior vice president and general manager of its Little Rock Completion Center in Arkansas, USA. Ajarrista

replaced Frederic Lherm, who was named senior vice president of industrial operations for Dassault Aviation in St Cloud, France. Ajarrista now oversees the day-to-day operations of Dassault's largest facility, which is responsible for the completion of nearly all Falcon aircraft. For the past 3.5 years, he has served as senior vice president of operational control in Little Rock. "Delivering aircraft on time and with the highest level of quality expected by our customers is our main focus," said John Rosanvallon, president and CEO of Dassault Falcon. "Antoine's first-hand experience in Little Rock, coupled with his long-term performance in Dassault's industrial operations, are key factors that will help us achieve our delivery goals."

### Royal Jet selects Sabena technics for BBJ refurb

Abu Dhabi-based Royal Jet has selected Sabena technics to upgrade one of its six Boeing Business Jets (BBJs). Sabena technics will be carrying out an in-depth cabin refurbishment, livery painting, maintenance and systems upgrade including IFE, satcom, WiFi and global mobile systems (GSM). The refurbishment will give the 12-year-old BBJ a new and more modern interior, luxury seats and sleeper beds. The work will be completed at Sabena technics' VIP completion centre in Bordeaux, France.

"The project will last five months and we are leasing a replacement aircraft to ensure that customer service is maintained," said Ahmed Al Mamari, chief operations/technical officer at Royal Jet. "I am confident that Sabena technics will be able to minimise the downtime for the aircraft through its Part 21G certification and its extensive MRO workforce."

"I am confident that this first collaboration will set the pace for future projects," said Christophe Bernardini, CEO of Sabena technics.

### App keeps owners updated on completions

An app aimed at aircraft completion managers is now available from Hong Kong-based Sky Dragon Pacific. The app – simply known as Sky Dragon – enables independent project managers or completion facility managers to keep their clients informed about the progression of aircraft build or large aircraft refurbishment projects, with a simple click of a button.

Using the Sky Dragon website, completion managers can upload PDF documents and exterior and interior photographs, as well as videos and descriptions of the build. Aircraft owners can access this content via the app on their iPad, at any time, anywhere.

"Aircraft owners can scroll through the latest images and view recent videos and of course, share all the content with friends and family," said Matthias Karl, director at Sky Dragon Pacific. "This builds excitement around the project and creates an emotional attachment to the aircraft. So by the time they take delivery they will know their aircraft inside out – quite literally – because they would have seen it being built. And, of course, it also helps build a great relationship between the project manager and the owner."

The app includes a timeline showing every stage of the build, a wheel that indicates how much of the build has been completed and an image gallery. Project managers have total control over what content to upload and when.

Sky Dragon comes with a confidential and secure login as well as multiple security levels that can be set by the project manager or the owner. If owners have more than one project in progress they can access them all via the app. One project can be accessed via multiple iPads.



Highlights of ExecuJet's new Lineage 1000 include a bedroom, shower and large baggage capacity



## Flying Colours delivers Challenger 850 to Lily Jet

Flying Colours Corp has delivered its fourth Chinese-registered aircraft – a Bombardier Challenger 850 – to Shenyang-based air charter company Lily Jet.

“The Lily Jet aircraft is extremely well equipped and the interior is tastefully decorated,” said Sean Gillespie, director of completion sales and management at Flying Colours. “The completion included a cabin management system, broadband enabling WiFi, a high-definition camera system, a mid cabin custom desk, and coloured LED lighting in the restrooms.”

Flying Colours worked directly with Lily Jet to have the aircraft fully certified with the Civil Aviation Administration of China (CAAC). The 17-seat VIP-configured aircraft was completed at Flying Colours’ facility in Chesterfield, Missouri, USA, on schedule. “Our implementation of lean technology management systems has increased our efficiency and ensures clients receive their aircraft on time and to budget,” said Gillespie.

This latest delivery follows the refurbishment of a similar two Challenger 850s, which were delivered to BAA Jet Management’s Shenzhen base earlier in 2011. A further three 850s destined for China are currently undergoing completion at the company’s facilities in Peterborough, Canada, and Chesterfield. These are anticipated to be ready for delivery in 2012.



## Lineage 1000 for ExecuJet Middle East

ExecuJet Middle East has welcomed the largest and latest addition to its 22-strong managed fleet in the region – a new Embraer Lineage. Based at Dubai International Airport, the 19-seat VIP jet is now available for third-party charter. “Not only is it the largest in our management fleet but, it offers very competitive operating economics,” said Paul van der Blom, business development director and head of aircraft management, ExecuJet Middle East. Embraer’s Lineage 1000 was also recently ordered by China’s Minsheng Financial Leasing, which signed for three of the aircraft.

## AAC achieves Aircell internet STC for B757-200

Associated Air Center (AAC), a VIP completions centre in Dallas, Texas, USA, has achieved an STC for the installation of an Aircell ATG-5000 wireless internet system on a Boeing 757-200. The STC was accomplished with the support of the company’s business aviation completion facility in Springfield, Illinois, USA (SPI).

This cooperation between AAC and StandardAero Springfield also resulted in STC approval and installation of the ATG-5000 wireless internet on several other Boeing Business Jet (BBJ) aircraft.

The Boeing 757-200 is owned by MLW Aviation and operated by Elan Express – the air transportation provider of NBA team the Dallas Mavericks. AAC performed the original interior completion on this aircraft back in 2001 and has since regularly provided MLW Aviation with MRO services, incorporating numerous cabin system upgrades. AAC and StandardAero Springfield are both STC Organization Designation Authorization (ODA) facilities authorised by the FAA to conduct aircraft alterations on behalf of the FAA.

## Gulfstream launches brokerage services

Gulfstream will expand its pre-owned aircraft sales to include brokerage services. The company says it will leverage its customer and prospect database to present sellers’ aircraft, offer detailed market summaries of competitive listings and helps the seller evaluate offers in the context of real-time market activity. Gulfstream will also assist with finance options and rates and consult with the new owner regarding aircraft customisation.

“No one knows the Gulfstream fleet better than the manufacturer,” said Jim Ross (pictured), Gulfstream’s VP of Pre-owned Aircraft Sales.



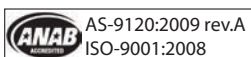
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Other new features include three-position recline and the LATCH child seat restraint system

## 2012 Cirrus sports boosted capacity

The Cirrus single-engine piston aircraft has been updated to offer room for a fifth passenger, more versatility, worldwide connectivity and new interior options. The wider rear 60/40 backseat now provides space for three and features over-the-shoulder seatbelts. It can be folded down for maximum load utility. The new Perspective Global Connect system is fully integrated into the Perspective cockpit, offering worldwide weather; satellite phone through Iridium Communications for calls through the cabin headsets; and text messaging accessed through the MFD. Text messages are inputted through the Perspective keyboard and displayed on the MFD screen.

## IWG's UV water treatment on Legacy 600 and 650

International Water-Guard (IWG) has signed a letter of agreement with Embraer for the optional installation of the IWG-A4 ultraviolet (UV) water treatment unit on Legacy 600 and Legacy 650 aircraft.

"For us, this is the beginning of a formal relationship with a very important and growing airframe manufacturer," said David Fox, IWG's president and CEO. "For Embraer, this marks the introduction of active UV water treatment as a product option for its business jets. This will allow passengers and crew to benefit from a unique water-borne contamination protection system, wherever they are."

The first installation will be on Embraer's demonstrator Legacy 650 in San Jose dos Campos, Brazil. The installation has been designed by IWG and its Brazilian partner Avionics Services of Sao Paulo. It will be authorised under an ANAC STC, which will be followed by an FAA STC. The package will then be available for order for green Legacy 600/650 aircraft as well as retrofit, and may be ordered through Embraer Business Jets as well as IWG.

## Iacobucci HF VIP seat flies with Altitude

Iacobucci HF's VIP seat has been selected for use on a new BBJ completions programme designed and developed by Altitude Aerospace Interiors. The two companies' in-house engineering and technical teams have worked together on the product.

The VIP seat model for this BBJ programme features either a 21in (53.34cm) or 23in (58.42cm) seat width, fixed track fitting installation, and a 45in (114.3cm) high and wide backrest with personalised recline mechanism, including a three-way headrest. The seat is designed for maximum comfort with an extendable leg rest; foldable manual footrest (allowing a total bed length of more than 6ft; a wide armrest with in-arm table; PCU and audio jack; and mechanical 360° swivel. The result from the project team is a seat that ergonomically responds to the form of the human body. The team says its light structure and smooth movements make it extremely lightweight and easy to install and maintain, which should reduce operational costs.

## Alison Price On Air to provide inflight chefs

London-based inflight caterer Alison Price On Air has launched a service called Chef in the Sky, whereby a personal chef accompanies a private flight to prepare and cook meals for clients on board. "We anticipate that Chef in the Sky will appeal to corporations, private owners of the heavy jet airliners such as the BBJs, ACJs, and VIP charter companies," said Daniel Hulme, director of inflight services at Alison Price On Air.

Chef in the Sky is designed to accommodate large and complex menus such as those with between three and eight courses. Bespoke menu design enables clients to tailor the menu. Alternatively, clients may simply request chef-prepared meals from a pre-selected menu. The offering also includes a complimentary sommelier service. Flight attendants can call for specialist advice on storing and purchasing wine, as well as recommendations for wines that work well at altitude and with particular dishes.

Charging will work on an hourly basis plus expenses for the onboard Chef in the Sky service, with menu design offered on a complimentary basis. Consultancy fees will be charged for complex menu design requests and daily rates will apply if chefs are required for a return journey. Chef in the Sky is available immediately on all private heavy jet flights including BBJs and ACJs from all London airports.





# endgame



Sean McGeough, Hawker Beechcraft Corporation (HBC) president for Europe, the Middle East and Africa, discusses options for Europe's ageing business jet fleet

What does HBC's latest research reveal about the age of Europe's business jets? HBC analysed JetNet data for pistons, turboprops and business jets in Europe that were in active service. Only countries with a minimum of 30 active business aircraft have been analysed separately. The research revealed that the average age of European business aircraft is 13 years and that one in six (17%) of all business aircraft in Europe are at least 30 years old. Germany has cemented its position as having the largest European fleet, with a base of 753 aircraft. Sweden and the Isle of Man are at opposite ends of the age bands – Sweden has the oldest business aircraft of any European fleet, with an average age of 20 years, while the Isle of Man has the youngest with an average age of just six years. This is followed closely by Portugal, with an average age of just eight years. When it comes to Europe as a whole, 296 aircraft could be retired in the next five years as they reach the end of their economically viable lifespan. This equates to around 7% of the total European fleet and could lead to a significant increase in demand for new business aircraft as companies and individuals look to replace their ageing aircraft.

How are you prepared for demand? Our current European market share within our competitive segments stands at 25% (including both business jets and turboprops) and we are confident that with our current aircraft line-up we

can maintain and even increase this share. We continually focus on ensuring that we have the right people in the right places to meet demand. HBC has full refurbishment and recompletion capabilities at several of our existing Hawker Beechcraft Services (HBS) facilities. For example, our Chester, UK, facility has space, equipment and a highly skilled workforce already engaged in many refurbishment projects. With the existing capacity within HBC and HBS, we are well positioned to satisfy increased demand.

How long do business jets typically last? Each case is different and the value to each aircraft owner of the various options can change with their individual requirements. One of the main factors as aircraft age is that the increase in unscheduled maintenance requirements means an increase in aircraft downtime. Some studies (in particular, estimates of in-service rates by Conklin & de Decker) have shown that whereas an aircraft up to 20 years of age is likely to only spend 5% of its year in maintenance, a 25-year-old aircraft will be unavailable through maintenance for 25% of the time, and a 30-year-old aircraft could spend 45% of its time in maintenance.

What commonly needs replacing first? Depending upon how well it is maintained, the interior of a business jet can last up to 10 years or more. It is not uncommon to replace soft goods (seat upholstery, carpet, etc) in the five- to eight-year time frame. Often, changes are driven by technology and style upgrades and can coincide with major maintenance intervals.

When is an aircraft beyond patching up? This varies greatly and is driven by the economics of the situation. If the aircraft will cost more to upgrade or repair than it will be worth once complete, it is not financially feasible to perform the work. There are occasions when the owner of the aircraft is more interested in keeping his/her aircraft than the financial equation.

What are some of the oldest jets flying? This year is the 50<sup>th</sup> anniversary of the Hawker 125, one of the world's first business jets, making its maiden voyage. The strong mechanics and the quality of the original design of this machine mean that today there are 45 of those early-model 125s still in operation.



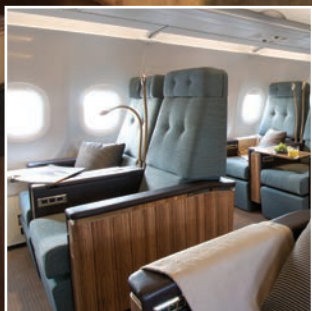
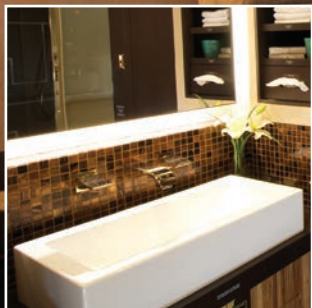
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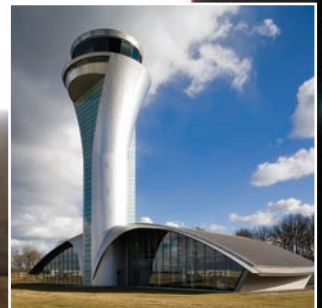
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# fullthrottle



## Brief:

A core offering from Canada-based Flying Colours Corp is the conversion of 50-seat Bombardier CRJ 200/100s into 14-18 seat corporate shuttles. However, for one North American client, the company is transforming a CRJ into a totally customised VIP aircraft with just six seats, a bed, shower and all the modern conveniences you can think of. The interior and exterior is being designed by Flying Colours Corp's design team (led by Kate Ahrens) and Harry Schnaper, who Architectural Digest has named as one of the 100 best designers in the world. Although highly personalised for the client, the aircraft will also be available for limited worldwide charter through Maine Aviation.

## Description:

The IFEC, being designed in conjunction with Esoteric, will include Viasat Ku band internet; WiFi; video teleconferencing; dual HD monitors with built-in cameras in the main cabin; a large HD monitor in the bedroom; 20TB server holding in excess of 7,500 films and 52,000 songs; Tailwind Direct TV satellite system; utilisation of iPads and iPods as controls and streaming endpoints for films, television, video chatting, output from glare shield, tail zoom and underbelly zoom cameras and from infrared cockpit vision; five dedicated telephone lines courtesy of TrueNorth; wireless printer, fax, scanner and copier; and the ability to project presentations on all monitors and/or iPads and to print from each station. There will be two pull-out desks for laptops in the main cabin – one set up for Windows and the other for Macs. This is an aircraft kitted out for every eventuality. Other gadgets include MSA electric window shades and a smoke extraction system for the entire cabin.

The bedroom will feature a bed set at an angle to face a bulkhead IFE monitor but that pivots against the wall to ease egress. There will be forward and aft bathrooms with Dornbracht plumbing fixtures, vacuum lavatories and touchscreen controls. The aft lavatory will feature a shower with a hinged, curved single door, and a little seat, handholds and non-slip coefficient flooring to deal with turbulence.

The cabin seats are being manufactured with AST Seating and will include electric recline, vertical adjustment, legrests, winged headrests, memory presets, electric heating, massage, lumbar support and armrest compartments for iPads.

The galley will include hot and cold running water, a convection oven, microwave, refrigerator, freezer, Nespresso machine, blender and ice storage with drain.

The overall finish is very masculine, dominated by California walnut burl with a mahogany stain and high-gloss finish, black ebony gloss inlays, polished platinum plating and dark granite countertops from List Components & Furniture. Soft furnishings include black Dreamcow seat leather from Edelman and Tapis' UltraSuede and Geneve for sidewalls. The carpet has been sourced by the client.







### Verdict:

The client's specifications call for a level and variety of equipment rarely if ever seen on this aircraft type, and not just in terms of the gadgetry. Flying Colours Corp has not installed a shower on this aircraft type before, or heard of anyone else doing so, but reports that everything is certainly feasible from a certification perspective. The company's engineering department is now working on the specifics – for example, how long the shower can operate, what water pressure they can achieve and how many water tanks are needed.

The certification will be based off Flying Colours Corp's existing STC but completed via a new FAA STC. The shower is positioned where the centre usually installs a wardrobe. When it comes to completion (the project is nearing the end of the design phase), the company's lean manufacturing principles should help it come in on time – it is expected to complete in early 2013.

Certainly it's clear that the client's vision and the completion centre's know-how should lead to something very special indeed. Keep an eye out for updates in future issues of *Business Jet Interiors International*!



### CONTACT:

info@flyingcolourscorp.com  
www.flyingcolourscorp.com



# splitpersonality



## Brief:

In 2008 an aircraft owner was looking for a designer for the cabin of the ACJ319 he had just ordered. While on a charter flight on board Comlux's ACJ319 he fell in love with the 'Prestige' cabin interior concept and selected Comlux Creatives to develop the design for his cabin. "During the first briefing the client expressed his desire to use his aircraft for both private and commercial operations," says Tim Callies, head of Comlux Creatives. "This was a real challenge. We had to demonstrate our skills in designing a cabin that not only satisfied the personal taste of the owner but was also attractive for the charter market." The concept was developed from the idea of creating an elegant and sophisticated gentlemen's club with a touch of art deco style.

## Description:

The ACJ319 cabin space is big enough to house two distinct areas – private quarters and a guest area – which is ideal for the Russian and Middle Eastern charter markets. The private area features a large cinema lounge with a spacious yet cosy and convertible L-shaped sofa, two elegant club seats, which can be turned to face the sofa, and a state-of-the-art 52in HD screen. In the aft section, fully independent from the front section, there is a rectangular dining table with outboard sofa and inboard single seats, providing space for six passengers. The table top can be moved to ease access to the seats. This area also has 12 business-class seats that can be reclined to a fully flat sleeping position, ensuring all guests can rest. In the enclosed private bedroom – which has its own luxurious bathroom featuring mosaic tiles – the double bed can be transformed easily into two single beds to provide as many sleeping positions as possible in a charter configuration.

Comlux Creatives is keeping to its signature style concept of 'luxury without being obvious', to which it believes both private and charter customers have been adhering over the past six years. Warm colour tones, beautiful stitching and metal details, contrasting wood veneers and elegant forms for the monuments give the cabin interior its exclusive appearance.

"The idea was to create an elegantly luxurious style and defined contemporary beauty that gives rise to perfect harmony between precious materials that are even further refined through sophisticated details," explains Callies. "All of the materials were specifically selected for their warmth of tone and contrasting textures."







### Verdict:

The project was completed in early 2012, and the aircraft entered into service with Fly Comlux in January 2012. The elegant interior design not only gives a warm and welcoming atmosphere during the flight but also proves that the cabin's functionality is ideal – and this is one of the keys to success when operating an aircraft for the private as well charter market. “The feedback that Comlux Creatives has received from the owner is very positive and the finished cabin even exceeds his expectations,” reveals Callies. “We have also had excellent comments from our VIP charter clients after they have flown with us on this beautiful ACJ319.”



### CONTACT:

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[www.comluxaviation.com](http://www.comluxaviation.com)





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List's stone flooring  
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## Set in stone

Austria's List components & furniture will highlight its €14 million investment in the future. The company has built a 10,000m<sup>2</sup> high-tech production plant equipped with sophisticated machines and systems, many of which have been tailored for the company. The customised equipment includes a CNC system and a surfacing system with clean room level which enables "incomparable" high-gloss finishing. The new production plant is being built next to the existing plant and is expected to be completed in the middle of 2012.

List's products include ultra-light, thin stone veneer and stone flooring for business jets

## EBACE 2012

This year's EBACE returns once again to Geneva, Switzerland, on 14-16 May 2012. Nearly 300 exhibitors are expected to fill the halls, with more than 60 aircraft at the nearby static display. The following pages will give you a taste of what's in store – from new products through to expanded completion capabilities and technological advances.



### Multiple choice

Embraer will highlight the latest improvements to its Legacy 600/650 jets. The new versions, with a host of new options, are now available for standard aircraft produced in 2012.

The new interior includes the Honeywell Ovation Select all digital cabin management system; improved interior storage and a new wireless handset Iridium telephone system. The company is also offering restyled seats with side-pocket storage and greater swivel movement in the third zone. For more details, see feature on page 68.



Imaging. HelioJet features a new LED lighting technology designed to provide better cabin lighting while using only a fifth of the LEDs as conventional LED strips.

### Leading lights

Lufthansa Technik's Innovation Center will exhibit a mock-up to show several Nice HD functions and hardware, including a pop-up screen. Additionally, it will show the HelioJet cabin lighting system (pictured), a joint development with Schott Lighting and



### Hot stuff

International Water-Guard will present its newly introduced IWG-ES series of On-Demand Water Heaters, designed to meet customer needs for high volumes of hot water in showers, galleys and lavatories on VIP airliners and large business jets.

IWG is building on the reputation of the Keltech product line, which it acquired in 2011, adding upgraded certification and manufacturing in accordance with the AS9100C quality standard. Over the last 25 years, IWG has supplied more than 2,500 UV water treatment units.



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The UCT 2.0 seat, which features wireless controls and hydraulic actuation

### Complete collection

B/E Aerospace will showcase a complete line-up of products designed for business jet and VIP aircraft – including Ultimate Comfort Technology (UCT) seats and divans, architectural and system lighting and specialised galley equipment.

B/E offers a wide variety of seat and divan products, featuring the latest in wireless connectivity and integrated seat controls.

Meanwhile a broad line of architectural and system lighting will be demonstrated, providing jet owners with the ability to create customised environments to meet their specific needs.

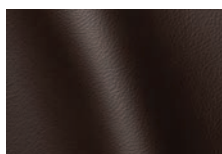
Finally, a new multifunctional gourmet beverage maker, designed specifically for the business jet market, will be introduced. The gourmet beverage maker produces single servings of espresso, ristretto, cappuccino, coffee and hot water.



### Creative vision

On a stand more than 100m<sup>2</sup> in size, OHS Aviation Services of Berlin will show a wide variety of samples in leather, fabric, wood veneer, metal and stone. It will be the third

time the interior refurbishment and cabin repair specialist has exhibited at EBACE. A particular eyecatcher will be a virtual 3D film, where various cabin sections appear with the aid of 3D glasses. As well as internet terminals, OHS Aviation will also host a 'Berlin Bar'.



### Full pelt

At this year's show, Moore & Giles will launch its new Ascot leather collection. Created for the company's VIP clientele, Ascot is a full grain semi-aniline leather with

a soft buttery hand. The leather is designed in Germany on native hides. The production process is managed exclusively by the tannery from start to finish. The company says the hides are skillfully trimmed to provide excellent cutting yields; and treated in the drum to pass FAR 25.853 (i) (ii).

All Moore & Giles aviation leathers are treated to meet aviation technical specifications. Additionally, many of the company's more fashion-forward leathers can be treated to meet these standards.

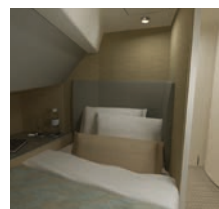
A 78-year-old leather design and development company, Moore & Giles is committed to designing natural leathers with the highest level of quality, originality and craftsmanship.



### Life line

Following its acquisition of Winslow Marine Products in 2011, Goodrich Corporation will showcase a range of life rafts. Winslow products are used by leading corporate and business aircraft manufacturers, and are custom-

designed to fit in a variety of aircraft interior configurations. Winslow has also successfully applied its aviation life raft design capabilities to the commercial helicopter market.



### Lofty ambitions

Greenpoint Technologies will highlight its AeroLoft product, which is now being installed for the first time on a VIP Boeing 747-8. The aircraft inducted at the completion centre at the end of February 2012. The AeroLoft installation

will last an estimated six months.

Designed in cooperation with Boeing specifically for the VIP 747-8, the modular AeroLoft provides eight private sleeping berths above the main deck in the aft section of the aircraft. It adds 393ft<sup>2</sup> (36.5m<sup>2</sup>) of space to the original 4,786ft<sup>2</sup> (444.6m<sup>2</sup>) cabin, for a total of 5,179ft<sup>2</sup> (481.1m<sup>2</sup>) of cabin space.

The company will also showcase its turn-key BBJ completion services and VIP cabinetry and manufacturing capabilities.





The mount includes a 28V to 5V power converter to charge the iPad

### Hold the floor

Flight Display Systems will show its iPad Arm Mount, which has been updated to fit Apple's third-generation iPad. This new mount has all the same features as previous models, except that it is designed for the form factor of the latest iPad. "As third-party technology progresses, so do we," says David Gray, president of Flight Display Systems. "We're happy to make these advances available for our VIP clients."

The iPad Arm Mount can tilt forward and aft approximately 15° in both landscape and portrait modes, allowing the user to adjust the viewing angle of the display. Each configuration of FDARM-IPD is also available as an AV version with the ability to output audio and video from the iPad, iPad 2 and third-generation iPad to an existing IFE system, as well as charge the unit.



### Total textiles

Swiss company Tisca Tiara mobility textiles will showcase its capacity as an all-inclusive manufacturer by displaying a selection from every product category it manufactures – hand-tufted and hand-

woven carpets, embroidered carpets, pass-machine tufted carpets, machine-woven and tufted carpets, as well as upholstery, curtain and decorative fabrics. Also on display will be steam-pleated, ready-to-install curtains.

Moreover, Tisca will showcase its new Allure collection of carefully harmonised carpets, upholstery, decorative and curtain fabrics. This new collection is designed to reflect the latest global trends in terms of designs, textures, materials and colour combinations.

The company manufactures its carpets and fabrics exactly according to customers' design wishes and requirements. In addition, the company maintains a huge stock programme – all sorts of carpets, upholsteries and curtain fabrics are ready for immediate shipment, available with no minimum order quantity.



### Only connect

Willem Kasselmann (marketing director) and Debbie de Goveia (European account manager) will be on hand to talk visitors

through Cobham Cape Town's Inmarsat aeronautical antenna and system products. These include SwiftBroadband Safety Services capable systems, a four-channel SwiftBroadband system and the Ultra-light SwiftBroadband system.



### Expert advice

The delegation from Altitude VIP Completions will include representatives from the company's Commercial, Procurement and Engineering divisions. Also supporting the team this year will be

Altitude's general manager, Michael Pervan. This experienced team will be able to provide BBJ owners and operators with advice on any maintenance, refurbishment and green completion requirements they may have.

Altitude is an independent provider of VIP jet and commercial airline interior services based in Auckland and Christchurch, New Zealand. The Boeing-recognised completion centre is able to undertake refurbishments, personalised product design and fully certified green completions as well as maintenance and repair engineering.



### Luscious leather

Townsend Leather will launch its new Shimmering Suede Collection, which features four patterns on suede splits.

The first pattern is the classic Houndstooth. The second, Excalibur, features the refined look of textured linen.

Next up is Lovely Lines, which has vertical and velvety ribs and features a glimmering effect throughout their length. Finally, Chameleon has a reptilian look.

Townsend says the leathers meets all aircraft industry standards and are all in stock, available for immediate shipment.

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## Business Jet Interiors World Expo 2012 – a hugely successful inaugural event

More than 2,250 attendees from 50 countries attended the first Business Jet Interiors World Expo and its sister show Business Airport World Expo – the FBO and destinations exhibition – in Cannes, France, on 22-23 February 2012.

“We were delighted with the quality and quantity of attendees this year. You could see business being done all around the exhibition hall,” says Graham Johnson, managing director of UKIP Media & Events Ltd, organiser of the event and publisher of *Business Jet Interiors International*. “Indeed, Business Jet Interiors Expo 2013 is already almost 55% sold out, so we are going to have to make more exhibition space available. The show, which will once again be held alongside Business Airport World Expo, moves to London Farnborough from 19-21 March 2013. I’d be disappointed if visitors don’t have 60+ exhibitors to see in 2013 – and a further 170 exhibitors at Business Airport World Expo.”



**“THE SHOW IS GREAT; IT PROVIDES FANTASTIC NETWORKING OPPORTUNITIES”**

**Christine Hadley,**  
*manager of sales and marketing, Greenpoint*



### Standing room only at highly regarded conference

Attracting a constant audience of more than 150 key decision-makers in the business aviation sector, the free-to-attend Business Aviation Conference was so popular that for most of the time there was standing room only.

Chaired by Anthony James, editorial director of *Business Jet Interiors International*, the conference boasted what was probably the best speaker line-up of the year. Sandra Henry, manager of design, visualisation and customer experience at Bombardier’s Global Completions Center, intrigued delegates by exploring the role of the product definition team in the completion phase, while Paul Priestman, director of design firm Priestmangoode, focused on the past and

future of cabin design. Meanwhile, Tim Callies, head of Comlux Creatives, offered his expert opinion on designing interiors for the charter market, with Elisabeth Harvey, manager of the Interior Design Department at Jet Aviation Basel, explaining how to bridge the gap between design and engineering.

There were plenty of other experts on hand, too, such as Andrew Muirhead, CEO of IDAIR, revealing the latest trends in IFE and CMS, while Jim Dixon, director of aviation at Andrew Winch Designs, explained how lessons learned in yacht design can be applied to VIP aircraft. Airbus Corporate Jets’ David Velupillai also sparked some interesting debate about how best to utilise cabin space on board.

### Visitors delighted with networking evening

The show’s organisers put on a networking event on the evening of 22 February at the Grand Hotel on La Croisette. The event provided a great opportunity for visitors to make new contacts in the industry. More than 600 people attended.





## "WE HAVE FOUND THE CONFERENCE HIGHLY INTERESTING"

*Eugen Hartl, EH Aviation Advisors*



### DMD uses show to launch ShowBiz IFE product

Dawson Media Direct (DMD) launched a new IFE product, ShowBiz, on the exhibition floor. ShowBiz's content – film, TV and digital entertainment – is tailored to an international business traveller profile, and includes international sports highlights from IMG, factual and entertainment titles by the BBC, and drama and comedy from Fox.

The TV schedule delivers 18 hours of content per quarter: six hours of drama, five hours of factual programming, four hours of comedy and three hours of performance. Meanwhile the ShowBiz Sports programme

features two hours of major events highlights each week. Over the next few months this will include weekly wraps of the London Olympic Games, UEFA Euro 2012, Ryder Cup golf, and Grand Slam tennis tournaments.

ShowBiz is available for all fitted and portable platforms as digital media files or DVD. The premium ShowBiz+ product is available for iPad2 via the Bluebox Ai application – an enhancement that includes early window Hollywood movies, 100-title music library, best-selling iPad games and apps, and a monthly e-magazine rack.



### Who attended?

- Aircraft and helicopter manufacturers;
- Brokers;
- Completion centres;
- Completion supervisors;
- Executive jet operators;
- Executive jet owners;
- Interior component and equipment suppliers;
- Interior designers

### Venue BBJ contract announced at show

On the first day of the show, Rockwell Collins announced its selection by Jet Aviation Basel to retrofit its Venue HD CMS on a narrow-body BBJ2.

"Venue has quickly become the most selected HD cabin system in all market segments, with more than 120 installations ranging from turboprops to large VIP jets," says Dave Austin, vice president and general manager, cabin systems for Rockwell Collins. "Operators and passengers greatly benefit from its modern user interfaces, flexibility in third-party product integration, and highly reliable fibre-optic backbone."

"Part of our strategy is to provide our customers with a CMS that supports the wide variety of advanced audio and media applications and systems," adds Neil Boyle, vice president, completions centre at Jet Aviation Basel. "Today's market has several CMS options, which are extremely competitive, but the commercial appeal and technical capabilities of Venue was the perfect fit for our narrow-body programme."

The BBJ2 will be the first BBJ to feature the system's newest enhancements, including a personal 10.6in HD touchscreen that allows passengers to easily control cabin functions and view entertainment from their seat; a 10.6in HD galley touchscreen that allows flight attendants to easily manage entertainment and environmental settings; and touchscreen personal seat controls. An easy-to-use 4in personal programmable switch panel incorporates a touch-enabled LED backlit screen that supports swipes and gestures to select lights and audio/video content. The touchscreen switch can be changed on the fly to function as a VIP switch and can display flight information such as time to destination and local time.





# “PRESENTATIONS WERE HIGH QUALITY, AND I ENJOYED LISTENING TO THEM”

*David Velupillai,*  
marketing director, Airbus Corporate Jets



## Brazilian design house unveils futuristic concept

As part of its presentation at the Business Aviation Conference, Studio Marcelo Teixeira Ideas In Motion of Brazil presented an original interior concept for a large executive aircraft, developed in cooperation with shoe designer Mauricio Medeiros. The idea was mainly to break away from a classic configuration to “express a new Brazilian aesthetic” based on innovation, wellbeing, colourfulness, rich handicraft, creativity and high technology.

The cabin is divided into three main areas – a lounge and galley with a ‘cook in the sky’ concept; a meeting room defined by natural

imagery; and a cozy and warm area for relaxation. The futuristic concept imagines an aircraft with a huge viewing area to enable passengers to observe the sun and stars.

The cocoon seats feature contrasting carbon fibre and leather with exotic patterns, and LEDs inside the armrest. In the middle, an aquarium is surrounded by grass, again connecting the aircraft with nature.

In the last area, a sofa can be transformed into a bed and is surrounded by a big bubble made of a translucent surface with nanotechnology to support big projections.



## Exhibitor makes an impression with glass



One of many show highlights was a new unbreakable glass for aircraft cabins from Aviation Glass & Technology.

This new product is designed to be more than 50% lighter than conventional glass, while a mirror product is also available. Formed by the Netherlands' Glass Deco International, Aviation Glass & Technology has since won investment from Ramphastos Investments to further develop its product, marketing and production facility.

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BOEING BUSINESS JETS

BBJ [boeing.com/commercial/bbj](http://boeing.com/commercial/bbj)



A group of five people, three men and two women, are standing in a virtual environment. They are all wearing VR headsets and looking towards the right. The environment features large, brightly colored geometric shapes in shades of purple, yellow, and green. The floor is a light blue-grey color with some white lines. The overall atmosphere is futuristic and immersive.

Chris Colvin, Business Jet Interiors International

# realitycheck

Lufthansa Technik believes the virtual world  
holds the key to cutting completion times



**T**he days of laying out an aircraft cabin on a hangar floor or prefitting it into an iron bird jig are coming to an end, and with it, the elimination of up to three months of a typical VVIP completion cycle. Soon, cabin fit checks will be done in the virtual world.

Lufthansa Technik (LHT) and the German Federal Ministry of Education and Research (BMBF) have developed a

computer-generated reality tool called Virtual Fitcheck (VF) that promises to speed various phases of the VVIP aircraft completion process. It not only allows furniture and monuments to be computer fit-tested prior to installation, it also uses a 3D digital mock-up called Cave Automatic Virtual Environment (CAVE), a 15m glass cube, to test fit, functionality and interface.

Designers and technicians enter CAVE wearing 3D glasses. Special





1-2.CAVE allows designers and technicians to step into the cabin virtually

infrared cameras on the ceiling track all human movement, and with the help of specially developed software, alter 3D image projections to simulate changing views as visitors move about. The projection is refreshed 20 to 30 times a second. Data and images for an entire Boeing 747 can be loaded into the system in two to three hours, according to project manager Oliver Thomaschewski of LHT's VIP & Executive Jet Solutions division. "We can integrate an entire VIP cabin into the aircraft in one shot," he says.

The multimillion dollar project began in 2009 and LHT plans to have it in production use by the second half of 2013. While the project sounds exotic, Thomaschewski says most of it uses off-the-shelf technology combined with some custom software developed in cooperation with university researchers. Solid Works engineering software is the image backbone of the



system, although it can also accept drawings done in (and converted from) Catia.

"It is extremely expensive but not special," says Thomaschewski. "We had to figure out how to combine things that were on the market in a very clever way to make them work for such a complex thing without breaking the budget. About 80% of the tools are industry standards." The other 20%

were crafted by LHT and its development partners.

**Devil in the detail** "A big challenge of the project was to bring the aircraft cabin model to a level of detail that is efficient, so we can check it cost-effectively," says Thomaschewski. Accordingly, precise shapes, rather than very detailed renderings, are projected onto the CAVE walls. Because VVIP



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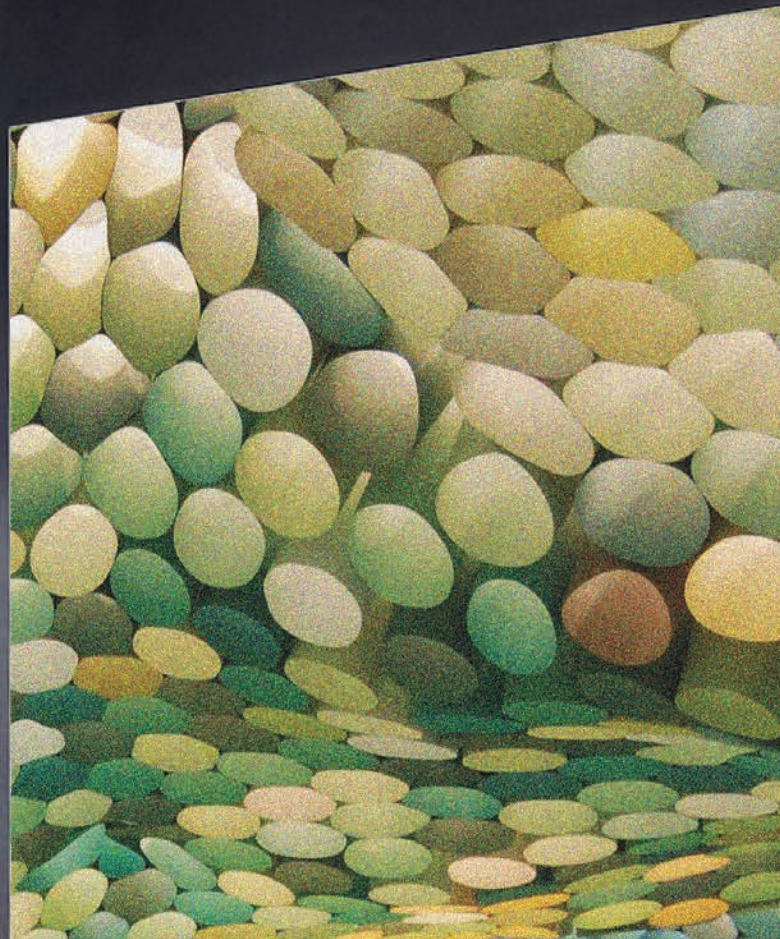
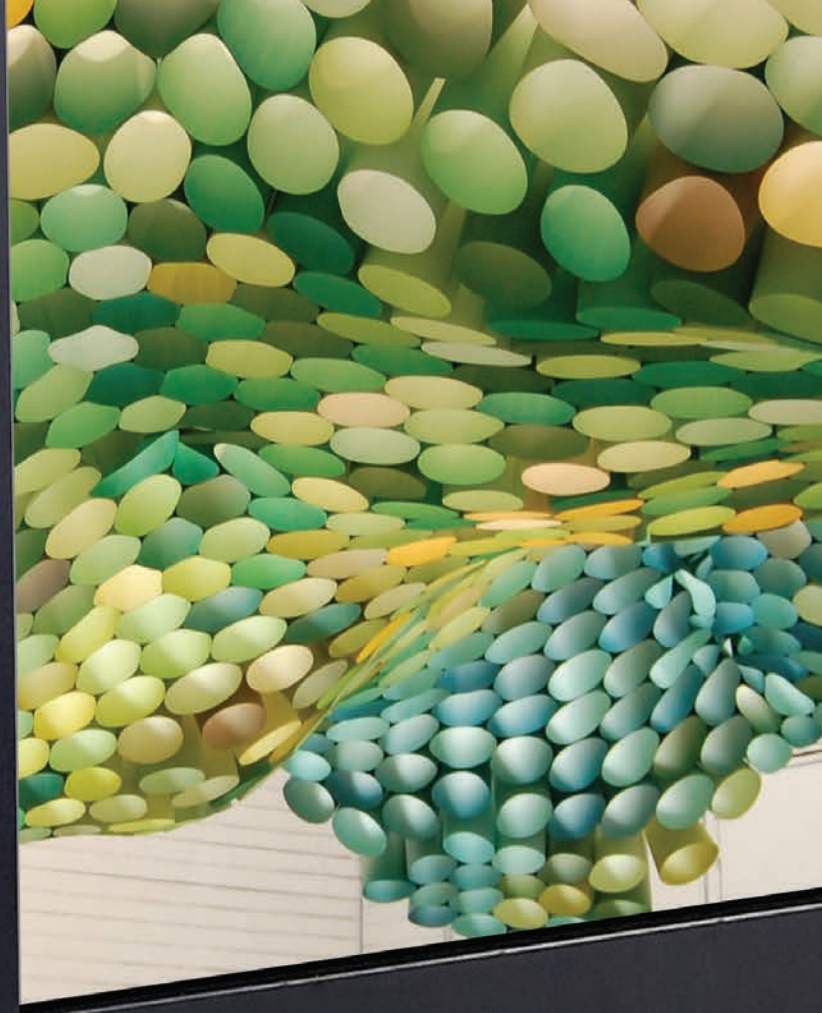
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## AT FIRST, PEOPLE WERE AFRAID OF MOVING AROUND ONCE INSIDE THE CAVE

3

cabin designs are rarely replicated, Thomaschewski says it was important not to go overboard with the level of detail VF can generate: “If this were a car, you design the technology once and produce the same model 10,000 times. In (VVIP) completions you produce the model once, maybe twice.

“The model verifies the shape and function,” Thomaschewski elaborates. “You can check geometry and function. Can you open a door? Does maintenance have enough room to work on things in a cabinet? Using the CAVE you can bring in all the experts and check the complete engineering data. We can see potential problems before an aircraft enters completion. It also allows employees and engineers to check and recheck drawings as they progress through several different levels of details. It enables employees to work with a new kind of media.”

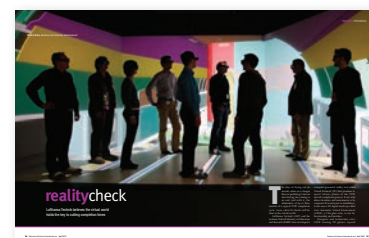
**Soft skills** Thomaschewski says the human interface, rather than the technical challenges, proved more difficult during key phases of VF development. At first, people were afraid of moving around once inside the CAVE. “The education part of the project, how to train employees to use the technology, was more complicated than the technical part of the process,” he says. “At first it took people five trips to the CAVE before they got used

to it, but now we can train someone in as little as 30 minutes. It comes down to a question of training and how to work with people. If you only have technology, you will have an important tool, but no one will work with it. You need the soft skills to work with it.”

So is the tool living up to its promise? “Most of the things on the prototype are stable and we’ve had very good results,” says Thomaschewski. However, he acknowledges that additional work is needed to make the system robust enough to use day in and day out over a prolonged period. LHT has already used VF on several zones in some projects and plans a slow roll-out of the system in 2013. “We selected two rooms of an aircraft to check very limited things and then checked it against the actual installation process. It was a success,” says Thomaschewski.

He estimates that use of the system will ramp up from 30% to 70% of all fit check work during its first year of official use in 2013/2014. A wide-body will be the first whole aircraft use of VF. “We are well on our way to doing the first complete aircraft (with VF),” Thomaschewski says.

**Growth potential** In the future it may be possible to grow VF to cut engineering time on the front end of a project and also use it as a selling tool



4



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- 3. CAVE shows precise shapes rather than detailed renderings
- 4-5. Lufthansa Technik offers in-house design as well as completions

to show customers what is possible in the aircraft. Just how much more efficient VF will make engineering is difficult to calculate at this point. “It is extremely hard to measure the economic effect of this,” Thomaschewski says. “It will shorten the installation process and make it smoother. We are pretty sure this stabilises the engineering process, but of course it is extremely hard to figure out at this point how many engineering hours we are going to save.”





## “AT THE MOMENT, IT IS A RESEARCH PROJECT”

Thomaschewski says that upgrading VF with enough detailed imagery to make it suitable for use as a customer sales tool was merely a question of embellishing the system with sufficient computing power and sophistication. “For the moment, all our models are engineering models and we are not able to render high-quality imagery,” he says. “They are coloured shapes and not high-gloss furniture renderings. You can show the customer the aircraft in this environment, but if you showed it to the customer it really has to work reliably. At the moment, it is a research project. It is not 100% stable. Now the system does have the potential for that application in the future and if you buy more sophisticated computers you can do that.”

6-8. Despite the technological advances, Lufthansa Technik stresses that training is the most important part of process improvements



For Thomaschewski, the more interesting question is how would to manage that process. “You could become very creative, but how does the customer figure out what he wants? With the CAVE you can change anything you want, but you have to be able to ensure you can produce something like this later on with regards to the aircraft’s limitations, such as centre of gravity restrictions. At the moment, we are trying to get our engineers to accept this virtual world and work with it. Once we have that experience, we can start to work with customers, but not within the next few years.”

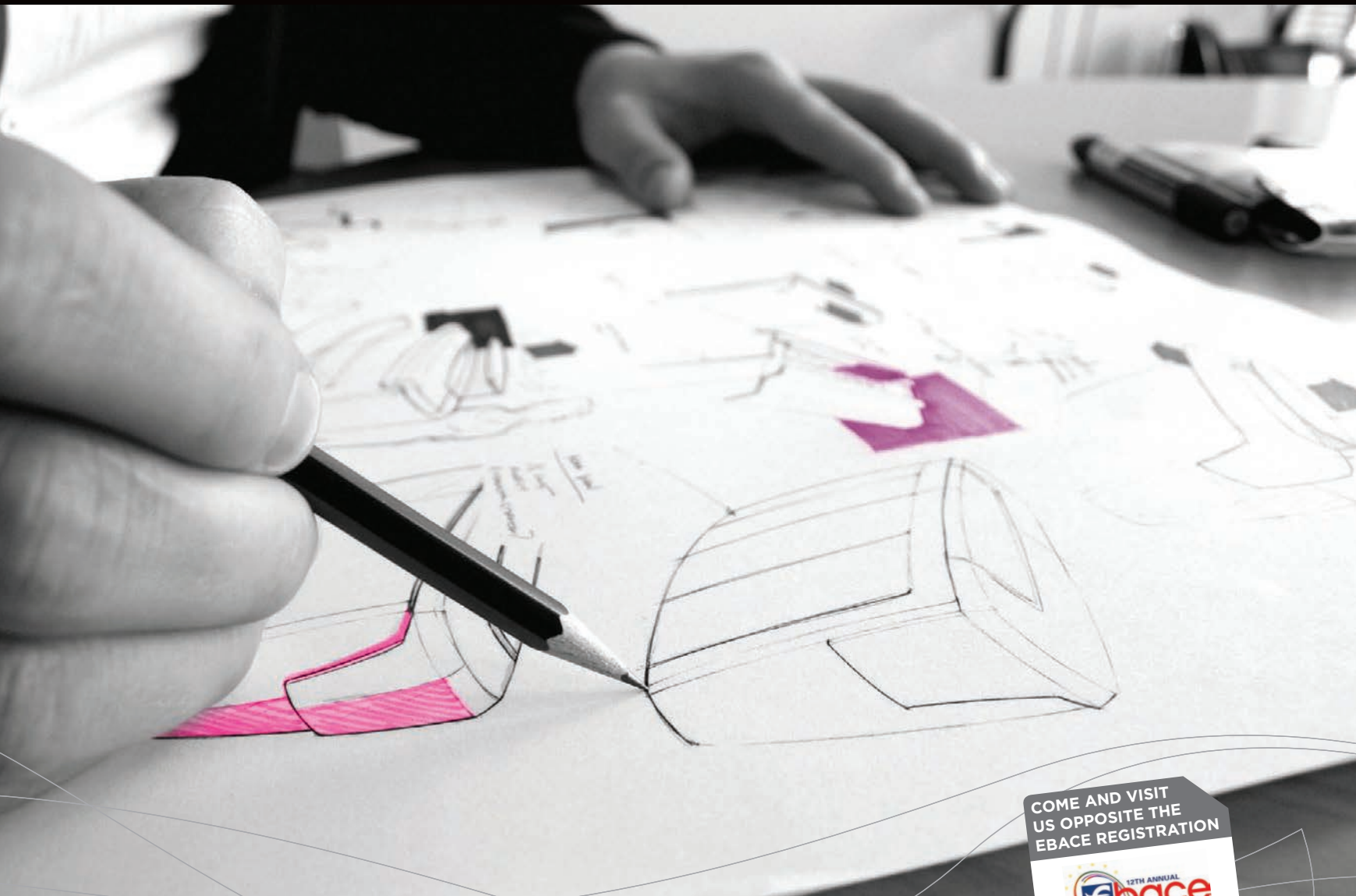
Thomaschewski believes that VF technology is less critical in legacy airframes such as the original Boeing Business Jet, but will demonstrate its usefulness on new VVIP airframes including the Boeing 787, Boeing 747-8, and possibly the A380. “Integrating a cabin in an unknown aircraft, that will be the major focus,” he says. However, VF will still be useful in older aircraft. “Every aircraft is a little different,” he says, because of differing manufacturing tolerances.

For now, a small development team continues to refine VF, a technology LHT is confident will help it shorten completion cycles and increase the throughput of its hangars. That’s not a virtual benefit, that’s reality. **END**

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# continental shift

On the eve of EBACE 2012, Europe's top VIP aircraft interior designers reveal what makes the continent a centre of design excellence, and the trends they believe will define the market's future







## Jacques Pierrejean



Company: **Pierrejean Design Studio**  
 Location: **Paris, France**  
 Founded: **1985**  
 Other key personnel: **Agnès Guiu, senior interior designer; Guillaume Delafosse, senior interior designer**

Jacques Pierrejean is not a fan of overdesigned atmospheres, hence why many of the French designer's interiors boast natural materials and colours – they're elegant, contemporary yet innovative all the while. "Each client has their own personality and taste; they're looking for an aircraft that reflects their own image and not that of the designer," Pierrejean believes.

Ongoing projects include a Challenger 604 refurbishment and a Boeing 747-800. "We're integrating a lot of innovative concepts relating to lighting sources, the cabin architecture and materials that have been specifically developed for this massive project," Pierrejean reveals regarding the latter project.

The fit-out on the Boeing 747-800 started three years ago and is due to be completed in 2014. "We're bound by confidentiality about the customer's identity, but they wanted something entirely unique and totally different from

1-2.VIP concepts by  
 Pierrejean Design  
 Studio

anything else that was out there already. In this case, the client knows a great deal about aircraft and what they've requested has been quite challenging in terms of aeronautical regulations. That's why it's important for us to be fully aware of the latest product developments from vendors, and why sometimes we're actually pushing them to invest more in research and creating new products."

Pierrejean feels the ambience within this particular Boeing 747-800 interior will be light, quiet and very comfortable, although he admits that one of the complexities was ensuring that what was conceived in the original designs would still be in vogue after a five to six-year completion schedule – and for many years beyond. For this reason, he is waiting until the last possible moment before finalising some of the technology on board. "We are on standby with IFE suppliers especially to install the very latest in entertainment systems – the

most up-to-date and technically advanced systems that are available."

Overall, Pierrejean says the sector appears to be much more professional than it might have been in the past. "Most of our customers already have an aircraft but might be looking for something bigger," he says. "They want a combination of the best features of their existing aircraft and anything new that's available. I'm finding that spas, fitness areas and home cinema technologies are increasingly popular and appreciated."

Pierrejean has also noted a definite trend towards recreating the at-home experience in the air. "So features such as internet connections, live TV, special lighting and enhanced galley features all help to create a more comforting and homely environment," he says. "At the same time, I also suspect that in the future more and more aircraft will be utilised as tools – perhaps the days of fancy designs are behind us."

## Vincent Rey & Florent Magnin



Company: **M & R associates design**

Location: **Geneva, Switzerland**

Founded: **2006**

Other key personnel: **N/A**

Vincent Rey (pictured above left) highlights two recent projects that especially showcase the expertise of his Geneva-based design house. "Late in 2011 we completed a full refurbishment of a Falcon 900 for a VIP client in Russia," reveals M & R's founding partner. "The aircraft was a 1992 model with an interior and technology that was far from up to date; the client wanted us to redesign the seats, divan, some cabinets, change all of the soft furnishings and veneers, add more monitors and completely overhaul the IFE system. We did all of this from start to finish in just four and a half months, which included developing the renderings for the first phase, the design package for the quotation phase and then following the project through to delivery."

Fortunately Rey and his partner, Florent Magnin (pictured above right), had more time to complete a green A319 for a client in the Middle East. "The contract was signed in June 2011 and we were given 12 months. For this VIP aircraft, we selected and combined a new high-tech pearlescent-effect paint. We've also employed a high-level luxury leather from a Rolls Royce supplier, plus an exclusive metal 'boreal accent' finish and natural fabrics. Overall, we feel we've given this interior a contemporary but understated opulence."

Rey recalls an interior that revolves around a 'black pearl' with particular fondness however. "Our material selection was articulated around black, beige and white colours with metal finish furniture featuring a special oxidised patina," he says. These nuances in bronze and blue-black steel produced colour variations that Rey suggests gave the overall cabin a 'precious' feel. A bespoke lining was developed to enlarge the feeling of space, while the seats were meticulously designed to not only

guarantee comfort and style but also to convey a light and flowing shape. "The lighting in the cabin was also finely tuned to become an integral part of the general architecture. We thoroughly studied and explored all aspects of the illumination – accent, decor, mood, scenario and floor lighting – to visually increase and animate the space."

M & R design associates was founded in 2006, although Magnin and Rey (hence 'M & R') previously spent eight years

working at companies including Airbus, Bombardier and Jet Aviation. "We attribute much of our success since to word of mouth," he adds. "We're currently talking with clients about of range of interior projects for mid-sized to large jets, narrow-body aircraft as well as one wide-body aircraft, which is pretty exciting. We define ourselves as an advanced design company – each of our projects is totally unique and reflects the individual customer's taste and lifestyle."

3. M & R's recent Falcon 900 refurbishment

## "EACH OF OUR PROJECTS IS TOTALLY UNIQUE AND REFLECTS THE INDIVIDUAL CUSTOMER'S TASTE"





## Gary Doy & Howard Guy



Company: **Design Q**  
 Location: **Redditch, UK**  
 Founded: **1997**  
 Other key personnel: **Greg Shilton,**  
**senior designer**

"With any luxury product, the purchase decision is a very emotional one and the ability to tap into these emotions to excite the customer is one of our core strengths," says Gary Doy (pictured above left), director of the UK-based consultancy Design Q.

This ethos extends beyond aerospace, though, with Doy able to reel off automotive projects for marques such as Ferrari, Maserati and Aston Martin, as well as numerous assignments in the marine space.

The firm's first foray into the aircraft sector was in 1998, a VIP design born from a project initiated by Boeing involving the preparation of what Doy refers to as an "unusual cabin layout". One of his favourite designs since, however, was the Vision flight deck for Bombardier. "This might seem like an odd choice given the projects we've been involved with, but many owners respect their pilots – or are indeed pilots themselves – so it was a smart strategic move on the part of Bombardier and I am

sure will help to reinforce the purchase decision of their prospective customers."

Having designed a full-sized ACJ interior for The Jet Business aircraft showroom in London, an extravagant A380 VIP interior and a VIP helicopter for Quest, Doy also cites the ABJ Explorer Concept as being particularly memorable, which sports a viewing deck on the side of the aircraft. He's pretty proud of the ABJ Q concept, too, notable for its extensive use of carbon fibre visible throughout the cabin. "It was a really modern aesthetic more usually associated with very high-end sports car interiors," he says.

Doy is seeing increasing interest in technical materials such as carbon fibre, although they're proving to be more successful when applied in a more creative way rather than a replacement finish for wood veneer, he feels. "There are some exciting new surface treatments available including textured metal, embossed leathers and materials that can be backlit to create an

4-5. A VIP Avro RJ70  
 designed for Hemus  
 Air by Design Q

interesting effect. Stone has also been developed to the extent where it can be used in larger quantities without major weight implications and the finishes are achieving a very natural look."

Advances in lighting systems are also welcomed by Doy, as they give designers the freedom to highlight the interiors in completely different ways. "They can help to provide an element of surprise and alter the mood," he says. "When applied in a smart way, we can even visually change the perception of the cabin size and volume to create both open and intimate areas."

"Our sensitive approach to design and surface finishes is a common characteristic of European aircraft design," concludes Doy. "We care about the small details and understand what makes a luxury product and the depth of thought required to meet the expectations of the most demanding design and product-aware customers. Internationally respected, European aircraft design has a strong future."



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## Heiko R. Mahler



Company: **Mahler Industrial Design**

Location: **Hamburg, Germany**

Founded: **1984**

Other key personnel: **N/A**



Heiko R. Mahler's long and illustrious career in aircraft interior design began in 1969, when he became head of industrial design at Airbus, a post he held until 1983. Milestone projects since include a VIP Boeing 747 for Dubai Airwing in 1984; an ACJ319 VIP sales mock-up in 1997; an ACJ VIP kit for Syrian Arab Airlines in 1997; and a VIP ACJ319 for Sharjah Ruler's Royal Flight in 1997. Mahler now concentrates on the development, design and monitoring of VIP, corporate and government aircraft interiors. Upcoming projects include an ACJ320 for a Chinese client; a VIP aircraft for an Indian client; and a VIP aircraft destined for Russia/Ukraine.

Mahler's style is passenger oriented, and focused on creating an individual character for each aircraft. He believes in spatial and systematic order, using principles such as the golden ratio and geometric forms like the three-centred arch, Cassini Oval, ellipse and cut radii. This goes hand in hand with a very

**“WE VALUE EFFICIENCY AS MUCH AS COMFORT AND AESTHETICS”**

6. A conference/dining table on a BBJ2 designed by Mahler

practical approach, focused on the strict observance of regulations; longevity; the optimisation of weight, space, comfort, costs and maintenance; reliability and adherence to schedules. Mahler also integrates the newest technologies – from lightweight parts to IFE.

He believes three or four other European aircraft interior designers follow more or less the same design philosophy. “We value efficiency as much as comfort and aesthetics,” he elaborates. “A successful aircraft interior design is not specifically Italian, French, German, Scandinavian or English but universal. Taking this into account, the European designers are at the head.”

## Robin Dunlop



Company: **CTM Design**

Location: **London, UK**

Founded: **2007**

Other key personnel: **Matt Wilkinson, designer; Ben May, special projects engineer**



7. An ACJ318 interior by CTM Design

CTM Design is a team player. Most notably it enjoys a partnership with completions centre 328 Support Services that has resulted in six Dornier 328 DBJ completions – the most recent three for Nigerian charter company Skybird Air. But it has also just embarked on a partnership with an Italian ‘home philosophy brand’ that is looking at new markets with existing clients who have aircraft and yachts. “They want to offer their style within these complex environments, so we will act as a design conduit and completion management agency,” says owner Robin Dunlop. He also

has an eye to the developing BRIC countries. “There is some hindrance in legislation for some of these emerging economies as far as aviation is concerned but there will be ways to overcome these,” says Dunlop. “We are building relationships in these areas in readiness for an opportunity.”

CTM Design doesn't have a house style and is not precious about the size or complexity of the project: “We will help and offer our services to those who understand the spirit of design and who have a desire to deliver above expectation,” says Dunlop. He believes simplicity will be a key trend going

forward. “Look at the technology industry, it's all about intuitive human interaction – no one wants to read an instructions manual,” he says. “Materials will increase in sophistication but be used in a simple, elegant and clean appearance, stressing their quality, letting the natural properties exude.”

Recent work for the narrow-body specialist includes a full concept for a prospective Boeing 787 customer; colour and material packages for a BBJ refurbishment; and seats for a green Global XRS. The company is also looking at yacht projects.





## Peder Thaulow Eidsgaard



Company: **Pegasus Design**  
 Location: **London, UK; Monaco**  
 Founded: **2006**  
 Other key personnel: **N/A**

A focus solely on the VVIP market allows Peder Thaulow Eidsgaard and his team of six designers and engineers to offer what he describes as a “superior level of creativity” and the “personal touch” that is essential for his clients. “We aim to stay small and dynamic – not to grow unnecessarily – in order to maintain this boutique-level service,” he explains.

Having completed 15 private jets – with a further six under contract – two narrow-body projects in particular stand out for the Norwegian designer; an ACJ and a BBJ. “These modern Art Deco-inspired aircraft were completed to a high level of craftsmanship,” says Eidsgaard, who also runs a design house that specialises in super-yachts. “We have completed six narrow-body jets, although within our portfolio you will also find great examples of how super-medium-sized aircraft can benefit from our custom design service. We’ve completed seven

8-9. A recently completed Falcon 900 designed by Pegasus Design

such aircraft, including Falcon 900s, Falcon 7Xs and Global XRSs.”

A green ACJ is next. “We started in 2008 and will complete this summer,” says Eidsgaard. “We were involved right from the beginning, creating the unique floorplan and the paint scheme. Although I would say it has a masculine feel – with grey exterior colours and warm grey leathers and silk carpets – our use of vibrant silk velour heightens that sense of luxury but was complex in terms of certification. We’ve also managed to integrate a very large, spacious saloon

for guests who are boarding, yet at the same time it all feels intimate when they’re seated.”

Pegasus Design can boast customers from Europe, the USA, the Middle East as well as the BRIC countries. For Eidsgaard, the thing that unites them is the desire to have something especially tailored. “They’re quite willing to invest a little bit more to ensure their aircraft stands out from the crowd,” he says. “Clients are younger, too, and we’re seeing increased levels of interest in contemporary but luxurious designs. More and more, they’re bringing their own handheld devices such as tablets on board, which reduces the demand for extremely sophisticated but sometimes complicated integration of A/V systems. Undeniably, our biggest and constant challenge is the demand for materials and finishes that are unique and special but still need to be certifiable.”

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## Tim Callies



Company: **Comlux Creatives**

Location: **Zürich, Switzerland**

Founded: **2007**

Other key personnel: **Simonida Pavicevic, junior designer**

## “INFLUENCES FROM THE AUTOMOTIVE INDUSTRY AND PRODUCT DESIGN WILL GROW”

Looking at Tim Callies' portfolio it's hard to believe he has only six years of experience in the aerospace sector, having worked as a contemporary architect and residential interior designer before joining Lufthansa in 2006 and becoming head of Comlux Creatives in 2009. The German's favourite aerospace projects so far have been the 'Jubilee' ACJ320 delivered to sister company Fly Comlux in 2011 for Middle East charter, and a new ACJ340 for the German government. Jubilee, on which he had pretty free rein, betrays his personal preference for modern design, but Callies says he has learned to “hide my own taste”. He believes the design studio's unique selling point is that it “does not have a recognisable design style, but adapts itself to the customer choices”. Thus the studio's interiors run the gamut from modern to classic. “Today I like the challenge of different design wishes. I learned to listen to the customer and I

love to delve into a new design style,” says Callies.

If the company does have a recognisable mandate, Callies believes it is that the team tries to create “flying apartments to let the passenger forget that they are flying”. Of course being under the Comlux Group umbrella, Creatives has built a solid reputation in charter aircraft design. But it is also branching out, and plans to work on yacht and residential projects in the future. At the moment it is working on an ACJ321, a BBJ and two apartments for Comlux clientele.

Comlux Creatives is mainly focused on large-cabin VIP aircraft. “For that reason most of the potential customers we find are from the Middle East, Eastern Europe and more and more the Asian market,” explains Callies. “Thanks to Comlux Group platforms in Bahrain and Russia, I have a great view of the different opportunities for VIP cabin

10. Comlux Creatives' Jubilee ACJ320 design

design. The US market is more attractive for the small Learjets.”

Callies believes the Asian market will provide huge opportunities for European designers: “European architects have been working for many years in this market already as European design is well known for comfort, quality and modernity. Countries like Italy, Sweden and Spain are famous for their design language. The young generation in the Middle East and Asia likes this kind of European design more and more.”

He also predicts that there will be a change in interior styles in general as the next generation of buyers emerges. “Influences from the automotive industry and product design (such as Apple) will grow,” says Callies. “New technologies from the entertainment industry will influence cabin design. Special screens, ultra flat and flexible, will allow us to create new wall surfaces and ceilings with changing surfaces.”



10

## Jean-Pierre Alfano



Company: **AirJet Designs**  
Location: **Toulouse, France;**  
**Shanghai, China**  
Founded: **2010**  
Other key personnel: **Two interior designers**



11. A cabin design by AirJet Designs

Although the company was only founded in 2010, creative director Jean-Pierre Alfano has been working on VIP aircraft interior projects since 2000. The firm – which partners with other designers and 3D visualisation agencies when necessary (i.e. when on a tight schedule) – has already made its mark with the design of a private ACJ319, as well as a BBJ marketing concept for the Chinese sector, Xin Ge. “As a result of business presence in China, I know that demand is on the rise for private aircraft in the country,” says Alfano. “Private jet owners and companies expect, at a minimum, to have representatives who understand their culture and mindset and speak their

language, as they become more knowledgeable about the market and what is on offer.”

After spending much of 2011 focusing on the Chinese market, in 2012 the company wants to expand its client base in the Middle East. Although he prides himself on understanding these Eastern

**“JET OWNERS WANT TO RECOGNISE THEMSELVES IN THEIR AIRCRAFT”**

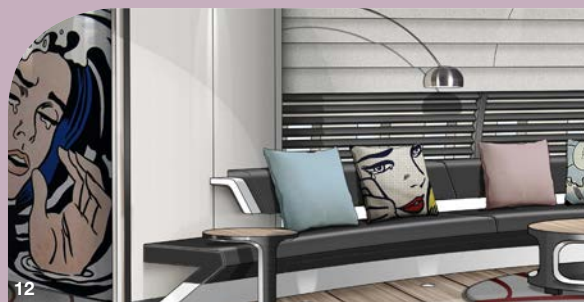
markets, Alfano hasn’t lost faith in European design: “We are lucky to have artisans and long-standing family businesses in Europe that make wonderful products that we can use in our designs and build upon. Tradition, authenticity and luxury craftsmanship are our DNA and we should build upon this to stand out on the world stage.”

Alfano believes that clients will increasingly want to integrate luxury brands more visibly. “We expect to integrate more art or furniture created by highly crafted artisans or artists,” he says. Another trend is for more personal interiors. “Jet owners want to recognise themselves in their aircraft,” says Alfano.

## Rupert Rainsford-Mann



Company: **RMD Air**  
Location: **London, UK**  
Founded: **2008**  
Other key personnel: **Nicholas Houghton, designer**



12. A contemporary BBJ interior concept by RMD Air

RMD Air favours a timeless, ‘contemporary classic’ style with a focus on quality materials and detailing showcased in flexible spaces. It is strongly influenced by super-yacht design, with a sister company in that field. “The big difference is the certification but we combat that by working hand in hand with STC21, a certification consultancy based in the UK,” says managing director Rupert Rainsford-Mann. “We can offer our clients full certification and detail drawings if required, for both minor modifications and full interior schemes.

The company is also embarking on a partnership with Greenline Aviation, the new aviation manufacturing arm of Greenline Yacht Interiors, based in Dubai, UAE, for large VVIP jets. To showcase the partner’s capabilities in both design and manufacturing, they will build a mock-up based on RMD Air’s ‘beach house’ style. The company debuted this style – using textured and natural materials – with an interior for a BBJ1.

Past projects have mainly focused on the larger aircraft models – green and grey Boeing 737s as well as the A320. An ongoing project is a BBJ1 refurbishment for a Chinese conglomerate. RMD Air

was awarded the contract in 2010 and completed the design and certification work in the same year, but the aircraft is still in build. “The interior is based on a modern interpretation of art deco style, using a mixture of straight grain and burr veneers to create a luxurious feel within a focused budget,” says Rainsford-Mann. “Flexibility is key with panels that can slide back to open up or segregate off areas.” The company is also designing a modern concept for a Russian client; and developing a hydrographic veneer bonded to an acoustic substrate to create the effect of wooden floorboards.



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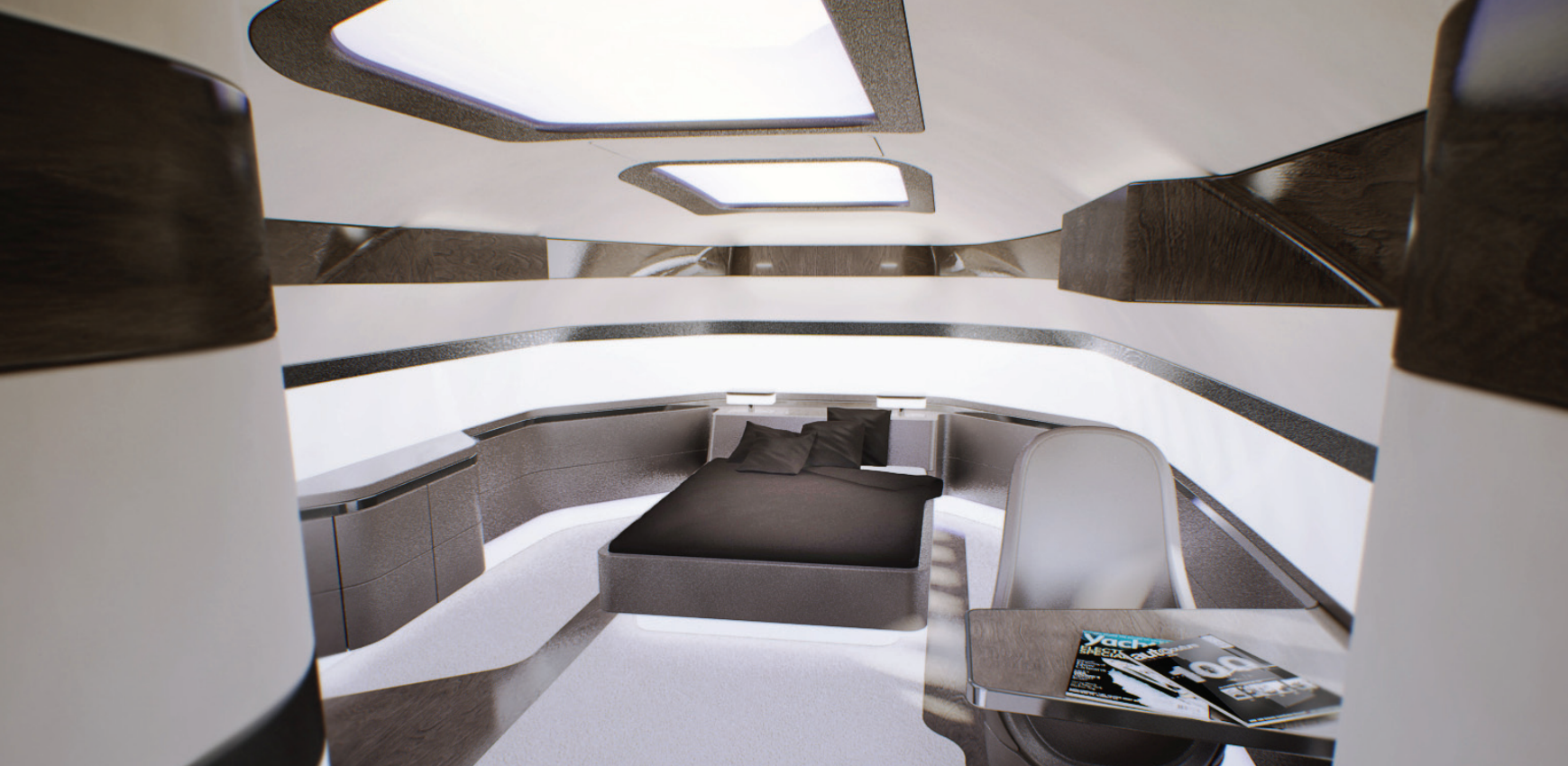


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13 14



## Alberto Pinto



Company: **Alberto Pinto International Interior Design**

Location: **Paris, France**

Founded: **1999 (aircraft department)**

Other key personnel: **Yves Pickardt, aircraft interiors project manager**

**“IT WILL BE THE MOST REFINED AND COMFORTABLE LARGE VIP AIRCRAFT EVER”**

The focus of this highly esteemed design house is simple: quality and ergonomics, with a style defined by director Alberto Pinto as “either modern classic or full modern”. It’s an ethos that has paid off – the company has been entrusted with some very high-level projects, including a Global Express XRS for the LVMH (Moët Hennessy - Louis Vuitton) group, and an ACJ319 for UK-based charter company

Acropolis. At the moment, the company has a green Boeing 747-8 in progress for a governmental client from the Middle East. Due to be delivered in 2014, Pinto says “it will be the most refined and comfortable large VIP aircraft ever”. The company also has a governmental Boeing 787 Dreamliner planned.

Pinto believes the future looks bright for European aircraft interior design – he

13. A G550 designed by Alberto Pinto

14. Alberto Pinto's current Boeing 747-8 project

says it is “still the most elegant”, “always ahead in trends” and that European designers are united in trying to avoid kitsch taste. He believes the focus going forward will be to combat design constraints for aircraft seats; points to increased demand from India, China and Brazil; and is excited by the prospect of implementing materials such as liquid metal lacquer and wooden flooring.

## Luke Hawes

Image: Fran Monks



Company: **Priestmangoode**  
 Location: **London, UK; Qingdao, China**  
 Founded: **1989**  
 Other key personnel: **Paul Priestman, director; Nigel Goode, director; Chris Parker, design director; Daniel MacInnes, technical head of aviation; Ben Rowan, creative head of aviation**



15. The Embraer Lineage 1000 design by Priestmangoode

Translating local culture into cabin interiors is one of Priestmangoode's key strengths. One of its biggest projects in the VIP market to date was working with Embraer in 2008 to develop cabin interiors (including trim and finish options) for the Lineage 1000 for three target markets – the Middle East, Russia and Europe. "Our modular interior scheme divided the main cabin into five zones, maximising flexibility and utility," says director Luke Hawes. "We created a luxurious foyer which leads you through a galley into the passenger compartment, which can accommodate various modular configurations. The space can

be used as a large open plan area or divided into separate areas to accommodate boardroom and dining facilities, a bar area or a master bedroom with full-size double bed and shower."

Priestmangoode entered the aviation sector in the late 1990s, when it designed a fully lie-flat seat for Virgin Atlantic. It has just opened an office in Qingdao, China. "We've been working out there for a few years already, most notably in the high-speed rail sector," says Hawes. "The aviation industry is fast expanding there, so having a local base is crucial."

Also looking to the future, Hawes sees a growing interest in personalising

spaces through technology – for example, through mood-enhancing light schemes and an increased focus on software and interface design.

"I think we're going to see more and more digital interfaces, touchscreen design, etc, integrated within product design," he says.

Hawes also believes the industry as a whole should push intuitive touch and voice-sensitive technology. "At the moment we're working with IFE vendors and suppliers to bridge the gap between products that people use in everyday life, like smartphones and tablets, and products on board the aircraft," he says.

## Jim Dixon



Company: **Andrew Winch Designs**  
 Location: **London, UK**  
 Founded: **1986**  
 Other key personnel: **Andrew Winch, creative director**



16. A yoga room on a BBJ by Andrew Winch Designs

Since founding in 1987, Andrew Winch Designs has established a vast breadth of experience, most notably in the super-yacht and residential arenas. It delivered its first VVIP aircraft – a Boeing 737-800 (BBJ 2) – in 2002, and has since delivered 13 major projects. A fourteenth delivery should be made very soon.

"Our unique selling point is creating totally unique projects that reflect the clients' tastes and lifestyle – whether it be an aircraft, yacht or work of architecture," says Jim Dixon,

head of the company's aviation team, which boasts 12 dedicated designers.

Individuality is indeed the name of the game – each project is completely based on the client's individual lifestyle requirements and expectations. "In

**"WE STRIVE TO DEVELOP NEW MATERIALS WITH OUR SUPPLIERS"**

addition, we strive to develop new materials with our suppliers to offer clients individuality in all aspects of their project," says Dixon.

With regards to trends, Dixon has noted strong demand for wide-bodies such as the Boeing Dreamliner and A350, as well as more clients in the BRIC countries, especially India and China, wishing to enter the larger jet market. "We look forward to developing and exploring these avenues," he says. Another strong market for the company is Russia.



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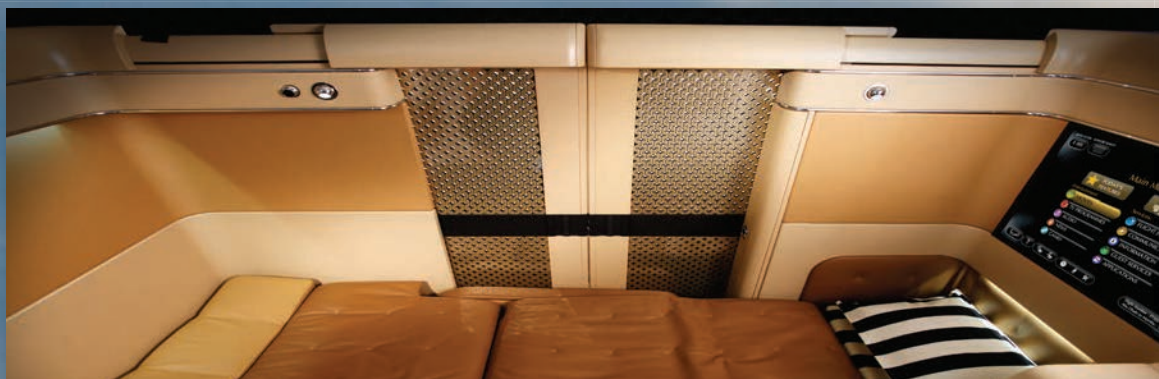
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# windowshopping

A new venture in central London aims to revolutionise the aircraft acquisition process by providing a neutral showroom for all aircraft types, complete with full-size fuselage, neat technological tools and couture detailing





**T**ake a walk along London's Grosvenor Place, in the heart of upmarket Belgravia and just south of super-busy Hyde Park Corner, and you may be surprised to find yourself staring into the full-size fuselage of an immaculately appointed Airbus Corporate Jet (ACJ). In the next window you see a vast video wall sweeping the room, while aircraft sales data tracks through the LED monitors of the trading floor like a mini stock exchange. This is The Jet Business, believed to be the world's first street-level corporate aviation showroom for the acquisition and sale of private jet aircraft and ancillary services.

It is the brainchild of Steve Varsano, who wanted to create a destination for clients that would enable them to learn about the market and what was available, from one place. He started to think seriously about the idea around five years ago, and took the plunge in mid-2010, bringing in brand consultancy and creative direction expert Andreas Zehntner. "Steve and I developed a blueprint, then we looked



1. Full-size cabin cross-sections can be displayed on the video wall
2. The "best window in four continents"





3

- 3-4. The ACJ fuselage
- 5. The LED lighting system can be controlled in zones
- 6. Everything is geared up to make clients feel well looked after

around, we explored and we came up with what we call 'The Wonder Team!'

says Zehntner. That team includes renowned aerospace, automotive and marine design consultancy Design Q, which took on the design and build of the fuselage and the trading floor.

Argent Design – which has brought couture design to many high-end residences and super yachts and around 13 private jets – came on board to tie the various spaces together with a super luxurious aesthetic befitting its clientele. "Really this could be a New York penthouse – the finish is of that calibre," says Nicola Fontanella, who heads up Argent. "If you're a buyer or seller of a jet, your home would be like this, your yacht is like this, your penthouse in Hong Kong – it's of the same calibre as what you're used to, be it your car, jet, aeroplane. It's a home away from home experience."

### Party people

An additional benefit for clients of The Jet Business is that they can use the space for meetings. As well as several well-equipped office spaces, the showroom and lobby can be used. The whole set-up is fitted with a sophisticated light system that means different zones can offer different moods.

"So it becomes a club in a sense – Steve will talk about it being Starbucks for billionaires," says Zehntner. "We're fully set up for catering, we have champagne, we have vodka, anything our client needs, we understand. The way the space is done in a series of zones means it is a great entertaining space. Not only does it showcase what an interior can be, but it showcases the lifestyle that you can have."

4





## “IF ONE OF THE LARGE BRANDS WANTS TO SHOWCASE A NEW MODEL WE CAN WORK WITH THEM ON THAT”

Argent selected all the materials and fittings, changed the lay-out and designed key elements such as the leather-inlaid doors, the ceiling and the silver portoro stone floor, which has a polished chrome inlay based on the idea of a propellor. Argent's understanding of the potential end

users has clearly taken the space beyond a typical retail experience. It was all achieved in a tight seven and a half months.

**Approaching the OEMs** Varsano didn't breathe a word about the project to the industry until NBAA 2011. “I didn't tell one person in the industry what I was doing, because I didn't know first of all what the response would be,” says Varsano. “I didn't want to have the contribution of funds; I didn't want their design input to tell me how to do it, if they became a partner; I didn't want them to be naysayers.”

However, getting manufacturers on board was important in creating a neutral environment in which clients can assess all aircraft models in one place. Varsano presented the progress he had made to each manufacturer at the show (held in October 2011), building on relationships created over his years in the business.

“Steve making the commitment to creating a showroom and a space like

this shows the OEMs what he's prepared to do and they've all responded in different, but all very positive, ways,” says Zehntner. “Some may have a showroom already in London, some may have a team here, so obviously within their business models they have constraints, but all of them have embraced The Jet Business and we represent them, we have their collateral in this space, we have imagery of theirs in our space, we have information in this space. We obviously are going to nurture those relationships and grow them.”

Another crucial factor was location. Varsano, an American, chose London as a magnet for high-net-worth individuals, particularly those from emerging markets. “Sixty per cent of jets are exported outside the USA and most of that is going to the emerging markets or the BRIC countries (Brazil, Russia, India and China),” he says. “Anybody who can afford to own or charter a jet that has come from Africa or the Middle East, Europe or CIS countries – they all come through London once in a while. And of course they're all pretty much between Mayfair, Knightsbridge and Belgravia and this is sort of the focal point of all that. So really when you think about it, this is the best window in four continents.”

**Fuselage** He's certainly made the most of that window. Ingeniously, the fuselage actually slides out and can be replaced with other aircraft types to showcase other designs, keeping things fresh and neutral. “If one of the large brands wants to showcase a new model that wasn't in production yet we can work with them on that and we're also talking to Design Q about some of their new designs and maybe showcasing some of them,” says Zehntner. “We could keep the fuselage shape and just redo the completion or we could change the whole thing. We haven't



## Fashion forward

Argent Design had the considerable job of bringing all the spaces together, and counterbalancing the technical aspects. “Otherwise it’d be so geek-like,” says the company’s head, Nicola Fontanella. “Geeks aren’t cool, they’re not fashionable and they’re not glamorous – and this is not like that all.”

To provide the luxurious atmosphere needed, Argent chose top-end materials and finishes. “We selected materials that went with the colour schemes that Steve liked – blacks and greys,” says Fontanella. “On the floor we used a silver portoro stone with a polished chrome inlay. We’ve also used piano finish lacquer for woods – a lot of this woodwork has been dyed to our specification. We’ve got inlays of chagrine, which is stingray skin, we’ve got exotic furs, croc leather. So it all looks very high-end, very opulent.”

Fontanella says the project has been a big challenge, particularly considering the “ridiculous time frame” and tight space. However, she adds “Considering we’re used to doing aircraft, anything’s possible!”

# “THERE’S NOTHING IN HERE THAT PRESENTS A REAL BIG PROBLEM FOR US TO DELIVER TO THE CUSTOMER”



7. The ACJ fuselage reflects the company's silver and black brand colour scheme

finalised how often it will be – maybe twice a year, three times a year.”

For Design Q, the prospect was irresistible. “To have something in the window in Mayfair was the driver for us – it’s not about money and the fees or anything, it’s about starting something with this company that actually has legs and is going somewhere quite exciting,” says Howard Guy, director at Design Q.

The ACJ319 skin (along with the trading floor components) was built for the facility with totally custom furnishings at Design Q’s base in the UK’s Midlands. It took around 12 weeks to install – not an easy task given the central London location.

“Everything in here is brand new, there is nothing that is off-the-shelf,” says Guy. “Everything had to be designed, engineered, sourced,

machined, made, brought together and assembled. Of course the most difficult thing is, you’ve got to try and put something so big into a space in an area where there are red lines everywhere outside so you can’t park, you can’t bring trucks.”

Despite the challenges, Design Q has delivered a beautiful space that succeeds in its purpose – presenting a vision of luxury that is actually attainable. “It’s a jet, it has to look like a jet, it has to feel like a jet – spatially, dimensionally and even from an approvals point of view,” says Guy. “There’s nothing in here that presents a real big problem for us to deliver to the customer, if he or she wants that.”

It’s also a thoughtful space that caters to its clientele with spaces for personal items and a chiller stocked with champagne. “All this sort of stuff

is there just for you and that makes the customer feel good, and it’s what they expect,” says Guy.

**Services** The main service that The Jet Business offers is matching clients to the right aircraft model and then sourcing that for them – whether they want a brand new aircraft straight off the manufacturer’s production line, or a used aircraft. “We’re adding value to the whole concept of buying an aircraft,” says Varsano. “So educating the client, but giving it a little bit more transparency. We’re giving them an environment that they can be in, we’re giving them information that they can understand themselves, not that’s told to them, but that they can actually learn themselves through the app.”

The ‘client mapping’ app runs on Apple iPads – drawing information



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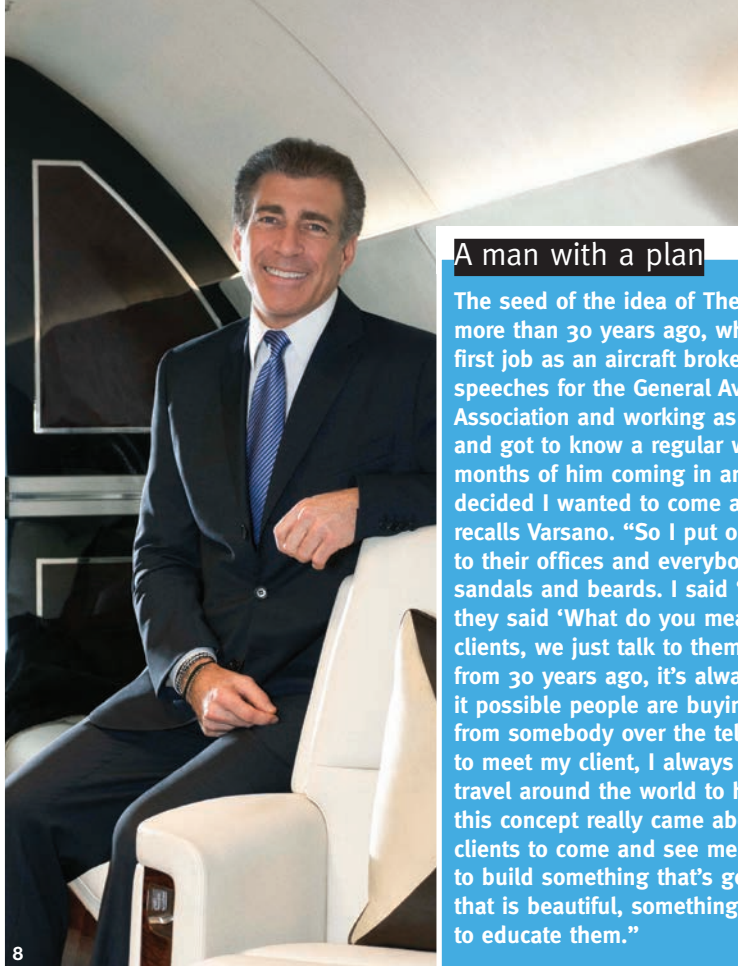
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### A man with a plan

The seed of the idea of The Jet Business was planted more than 30 years ago, when Steve Varsano got his first job as an aircraft broker. He had been writing speeches for the General Aviation Manufacturers Association and working as a waiter in the evenings, and got to know a regular who sold jets. "After a few months of him coming in and talking too much I decided I wanted to come and work at that company," recalls Varsano. "So I put on the only suit I had, went to their offices and everybody was in T shirts, shorts, sandals and beards. I said 'What's going on here?' And they said 'What do you mean? We never meet any clients, we just talk to them on the telephone'. And from 30 years ago, it's always been in my head, how is it possible people are buying multimillion dollar jets from somebody over the telephone? So I always want to meet my client, I always develop the relationship. I travel around the world to have face-to-face contact. So this concept really came about of how I can get these clients to come and see me, and to do that, you have to build something that's going to get their attention, that is beautiful, something they want to see and also to educate them."

from a regularly updated server – and can be mirrored on the huge computer wall and other screens – including a drop-down screen in Varsano's office. He can also use the app when visiting clients away from the showroom.

The app includes exterior and interior images and videos from the aircraft manufacturers (plus computer-generated images of nine 'hero' jets from each of the manufacturers, chosen by Varsano) and information collated from industry reference books. The app lets clients study specific manufacturers

8. Steve Varsano
9. Video screens behind the fuselage's 'windows' reinforce the feeling of being airborne
10. The cabin is built as a skin that slots into the space, so it can be replaced easily

and aircraft models, including their dimensions and performance. Clients can compare up to five aircraft at a time. Cabin cross-sections can be shown in actual size on the video wall, giving a better idea of how much space there actually is.

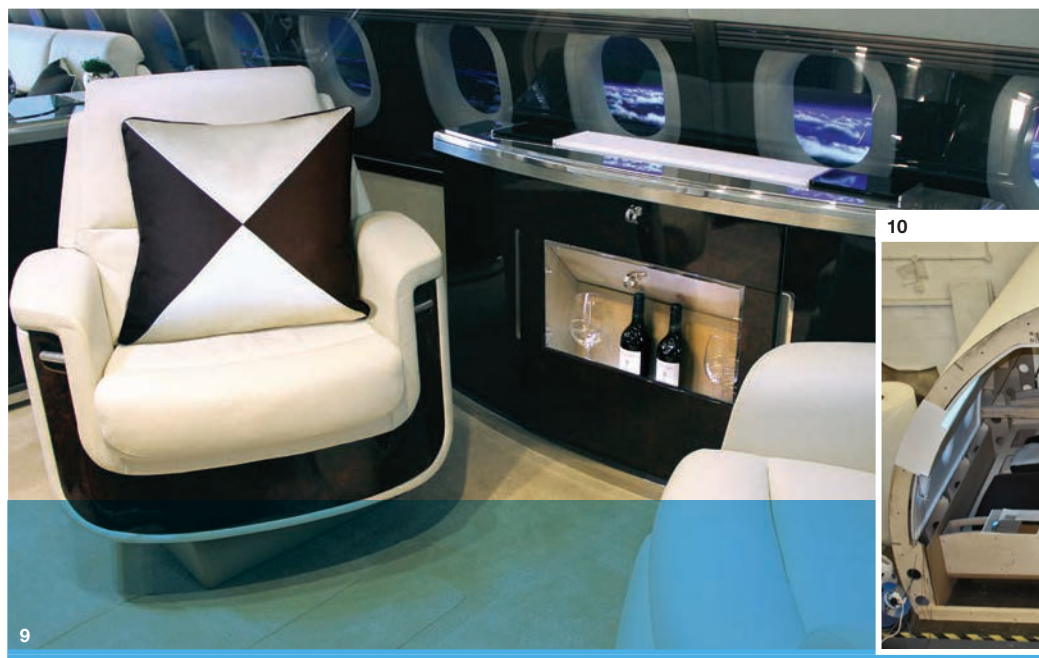
**Match-making** For those who don't know where to start, the app offers a set of four questions (scale of investment; required aircraft age range; number of passengers; and required geographical range) to match the

clients' needs to suitable aircraft types. This data is saved, along with favourites, to create a personal file for each client. "So when the client comes back in we have all that information and we can look in to the industry and see what's there," says Zehntner. "It takes the information that's in the market place and puts it in a very user-friendly dynamic tool."

The Jet Business can also give recommendations for other service providers, for example tax and finance experts, designers and completion centres. "We've put together a preferred vendor list," says Varsano. "There's no way you can be expert on all these things, but we can supervise or oversee that kind of thing. So we know who to go to for tax or we can give suggestions for completion."

Zehntner reveals that over the next six months, the company will add an interior completion portfolio. "We'll have key design brands that we've worked with, showcasing their work and facilitating that process, it's actually just started development now," he says. "Once again we'll use the same sort of interface that we've already developed using the iPad, making it very user friendly. So again it's very much looking at the client and simplifying down that process for them."

Although potential clients can walk in off the street, The Jet Business is not open to every person who fancies a browse. The company encourages clients to make an appointment in advance, but is very accommodating about when meetings are held. The team will even come in to meet jet-setting clients in the less sociable hours of the night, if that's when they are transiting through London.



10







- 11. Varsano in the trading floor area
- 12. Beautiful materials add to the couture look and feel

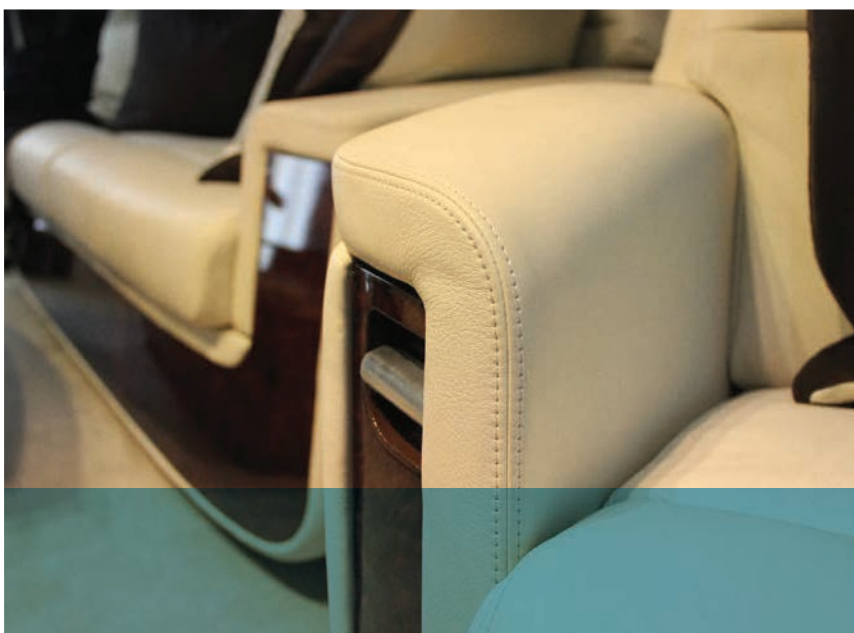
## Trading places

The idea behind the six-console trading floor was “about giving a feeling of seeing people trading and buying information about jets, about what’s on the market, what’s for sale, what isn’t,” says brand consultant Andreas Zehntner.

Design Q came up with a design that incorporates custom-built carbon fibre desks modelled on corporate jet cockpits. Specifically, Howard Guy, director at Design Q, says he took inspiration from the Global Vision flight deck that the company worked on about three years ago. “We took some of those cues and each desk was made specifically for The Jet Business,” he says.

The space brims with technological conveniences, which are offset by high-end leather and other luxurious touches. It certainly is a step up from your average office workspace!

12



Whether the world’s super rich will take to the idea of going to see the broker rather than the other way round has yet to be seen, but for Varsano, it was a risk worth taking. “When I built the place I said there’s no grey area, either I’m an idiot or a genius. This thing could work or it could be a complete flop and the whole industry says you’re an idiot,” says Varsano. “I thought if nobody comes in, then I have a beautiful office space and can carry on with the business model that I’ve been working under for the last umpteen years. But in fact it’s turned out to be exactly what it was intended for.”

Indeed Varsano reveals he is “overwhelmed” by the universally positive reaction he’s had from the

industry. “Even my competitors, even the manufacturers, the media; everybody has just been giving rave reviews, every place I turn,” he says. “It’s just mind-boggling the people that I would never have been able to touch if I didn’t have this location, if I didn’t have this environment.”

Looking to the future, the plan is to open other locations under the same brand, starting with Asia. “Thirty-five per cent of all the large-cabin and ultra-long-range aircraft made by the manufacturers was sold to China last year, 35% of that 60% that I was talking about,” says Varsano. “An enormous amount and Asia itself is growing, so whether it’s China or Hong Kong, that is the growth market for sure.”

As well as the business, an important outcome has been the partnership between the various parties involved. “Hopefully there will be lots more projects we’ll all work on together – obviously the next phase of The Jet Business, and I think what’s established is a really good network of teams,” says Zehntner. “Watch this space – I think there will be some great little projects that come out of The Jet Business and the team that was established from inside and outside of the aviation industry.” **END**

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Improvements to Embraer's Legacy 600 and 650 jets include more interior options, a new cabin management system and noise reduction



1-2. The new Legacy 650 interior



Embraer only certified its large/super-midsize Legacy 650 in 2010/2011, and yet it was no surprise in February 2012 when the Brazilian manufacturer announced interior enhancements. The cabin dimensions are very similar to its predecessor, the Legacy 600 (certified in 2001/2002), and it has been three years since that aircraft received an enhanced interior, in 2009. It makes sense to update the two aircraft at the same time with a common aesthetic.

The 2012 Legacy 600 and 650 feature improved avionics and the Honeywell Primus Elite suite, enabling power-up to engine start within 10 minutes. It comes with LCD displays and a Cursor Control Device (CCD) as well as charts and map capability with XM Weather for US operations. It also incorporates VNAV and RNP 0.3 for optimising airspace use, flight time and fuel burn.

However, the lion's share of the new features relate to passenger comfort and capabilities in the three-zone aircraft. For example, seats have been restyled with side-pocket storage and greater swivel movement in the third zone. At the heart of the entertainment facilities is the Honeywell Ovation Select cabin management system (CMS), which will also be optional on the super-light Legacy 450 (due to

enter service in 2013) and the mid-size Legacy 500 (expected in 2012). It's certainly well connected, sporting a full high-definition (HD) video system. Besides docking and input facilities for the ubiquitous iOS devices (iPod/iPhone), it also sports USB, HDMI, VGA and Composite video ports, alongside a Blu-ray player and a 3D moving map.

"HD entertainment systems are certainly expected in the Legacy class of aircraft," says Augusto Salgado da Rocha, senior manager of product strategy and sales engineering at Embraer. "HD video devices and games are all part of today's personal entertainment world. Bringing these to our aircraft was a logical move within our product strategy."

Master control of video, lighting, temperature, water and audio is all handled by an 8.9in touchscreen in the galley (with individual touch controls located throughout the cabin). In terms of audio and visual output, customers can choose from a 32in credenza-style LCD, a 24in bulkhead configuration or individual seat monitor displays. The standard 17.5in LCD offering sits squarely between these options

"The Legacy 600/650 sound system features six stereo speakers and three subwoofers distributed throughout the cabin," adds Salgado da Rocha. "Also, it offers the option of a two-zone







### Where can a Legacy take you?

The super-midsize Legacy 600 carries 13 passengers (standard configuration) and a crew of three in three distinct cabin zones. The jet has a cruising speed of Mach 0.80. With both NBAA IFR fuels reserves it has a range of 3,250 nautical miles (6,019km) with eight passengers. With just four passengers the range increases to 3,400 nautical miles (6,297km). In more simplistic terms this means that the jet can fly non-stop from Munich, London or Geneva to Dubai or from Frankfurt to Karachi.

If you need to go further, consider the Legacy 650 – its range is 3,900 nautical miles (7,223km). This means a non-stop flight from Beijing to Dubai or Hong Kong to Adelaide, carrying four passengers under NBAA IFR conditions.

Satcom-based ATC communications are available as options for transoceanic coverage, as are smart landing and runway surface awareness and advisory systems.

3. The 2012 Legacy 600 and 650 boast a full HD IFE system
4. The 650 can fit a club-four grouping
5. An iOS docking/input station on the 650

surround sound system with 10 additional speakers that further enhance passenger experience with a crisp, crystal-clear audio quality.”

The aircraft also comes complete with a wireless Iridium satellite phone, allowing worldwide voice and data communication services.

“In addition to global coverage, the system allows interphone functionality for improved communications between the cabin and cockpit and also features conference call functionalities such as ‘transfer’ and ‘on hold,’” says Salgado da Rocha.

For those that prefer to utilise VoIP (the system can accommodate wired and wireless handsets including BlackBerrys and IP phones), there is in-cabin WiFi. It uses the SwiftBroadband Inmarsat aeronautical service, with global coverage, compatible with government-grade encryption and secure communications standards. Data speeds of up to 432 kbps are possible, with a multi-standard (b & g wireless protocols) Wireless Local Area Network (WLAN).

Embraer has also carried out a lot of behind the scenes work to reduce noise levels in the cabin. “Embraer’s engineering team continuously analyses ways to improve cabin comfort,” says Salgado da Rocha. “The sound levels in today’s Legacy 600 and Legacy 650 aircraft have been reduced through a combination of new materials and innovative noise-isolating techniques. Some examples of how it was achieved include more efficient fuselage dampening, valance soundproofing and improved insulation of areas such as air conditioning ducts.”

The result is an acoustic level in the cabin more than 6dB SIL (Speech Interference Level) quieter than 600/650 models from 2007.

**Material options** The choice of finishing materials has also expanded for the 2012 aircraft, with 12 standard veneer choices and a further six





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**CABIN STATS**

**Legacy 650**

**Cabin width:** 6ft 11in

**Cabin height:** 6ft

**Cabin length:** 49ft 8in

**Seats:** 2 + 13/14 passengers

**Range:** 3,900 nautical miles with four passengers and NBAA IFR reserves

**High-speed cruise:** 529kts

**Max altitude:** 41,000ft

**Price:** US\$29.5 million (£18.65 million)

**“WE WERE ABLE TO MAP A WIDE VARIETY OF COLOUR AND PATTERN VENEER OPTIONS, SOME OF WHICH FEATURE ECCENTRIC PATTERNS”**



optional premium choices. “Each of our customers is unique and has their own style,” says Salgado da Rocha. “Our design teams follow market trends very closely and listen to our prospects and customers to develop an array of interior styling choices.”

Responding to this feedback has resulted in the additional options. “We

6. Lights and speakers are controlled via a new CMS
7. The restyled seats feature greater swivel movement



have expanded our veneer offerings with a variety of wood species, that allow each aircraft owner to express their individuality,” continues Salgado da Rocha. “We were able to map and build a wide variety of colour and pattern veneer options, some of which feature eccentric patterns to meet unique tastes.”

**Stone flooring** For wet areas such as the aft lavatory, clients can choose from six different natural stone floor coverings. Salgado da Rocha is keen to dispel any misconceptions regarding the weight of stone. “The stone flooring is a low-weight solution thanks to the exclusive technology from List







### Legacy 600

**Cabin width:** 6ft 11in

**Cabin height:** 6ft

**Cabin length:** 42ft 6in

**Seats:** 2 + 13/14 passengers

**Range:** 3,400 nautical miles with four passengers and NBAA IFR reserves

**High-speed cruise:** 529kts

**Max altitude:** 41,000ft

**Price:** US\$25.41 million (£16.07 million)

8. In-cabin WiFi utilises Inmarsat SwiftBroadband for global coverage

**“PROVIDING INNOVATION BASED ON OUR CUSTOMERS’ EXPECTATIONS HAS BEEN THE DRIVER”**

8



### Controlling the Honeywell Ovation CMS

The FAA-certified Honeywell Ovation Select system can be configured to work with a number of differing cabin control options. The membrane-styled button panel systems have 32 software programmable buttons with an optional eight-character LCD for displaying switch and source status. The LCD control panel presents source selection and status alongside a scrolling menu for cabin system controls. Besides the traditional LCD controls is the Organic LED (OLED) controller. This provides optimal contrast ratios and viewing angles and text auto-orientates depending on seat location. They also incorporate switches for common functions like the reading light and attendant call.

A full touchscreen controller, the Select 200C, is also available. The Select 200C weighs in at 1.25 lb (0.57kg) and was specifically designed as a form-fit-function replacement for the Ovation C-Series MHL4 VIP. The Select 200C can fit right into the existing PCU location with pin-for-pin compatibility. It can also be customised with a number of removable bezels to match the interior aesthetic. The full-colour 10.4in screen uses a graphical user interface, promising a menu with no more than three levels. Handily, each 200C on board is assigned a unique ID (controlled via jumpers on the aircraft-side connector) that defines the configuration of the personal control unit. Should a unit fail, it can be instantly replaced with any other 200C on board and simply assume the prior unit's configuration without further action by crew or passengers.

components and furniture that applies only an ultra-thin (2.5mm) granite stone layer,” he says.

Furthermore, it's part of what he feels is part of the Embraer DNA: “Providing innovation based on our customers’ expectations has been the driver of Embraer Executive Jets,” he says. “The application of natural granite in the galley and lavatory areas is a very appealing solution, enhancing luxury and refinement while bringing the innovation that is expected in business aviation market.” The option also exists for an additional (smaller) forward lavatory on the Legacy 650.

**Practical features** There are also a number of simple but effective features to ensure cabin crew can work efficiently. For example, in the wet galley, a cylindrical sink has a lid that

doubles as a chopping board. And an abundance of onboard space remains a key characteristic on the 650; it enjoys one of the largest fully pressurised baggage compartments on the market and a 6ft-high cabin to accommodate taller passengers.

Potential passengers will be able to try the 2012 Legacy cabins out for size during a demonstration tour that started in India in March 2012. The demonstrator is part of Embraer's static display presentation at India Aviation 2012, taking place in Hyderabad. Production of the first 2012 models is already under way, with the first customer having received their aircraft by the end of March 2012. **END**

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# daytrippers

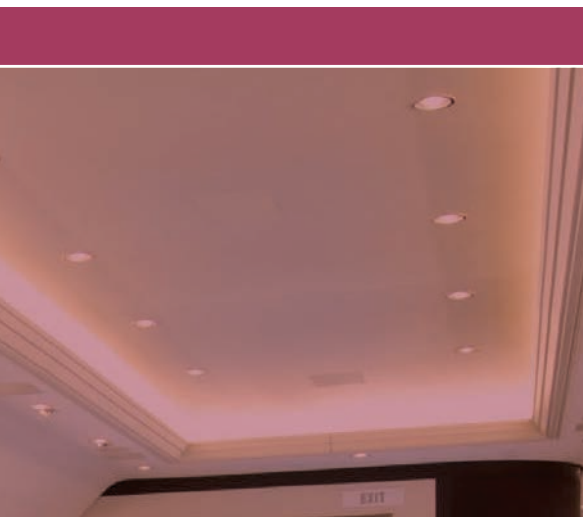
Many owners are trying to offset their costs by offering their jets for VIP charter, but designing for this market involves specific challenges with regards to layout, materials and technology



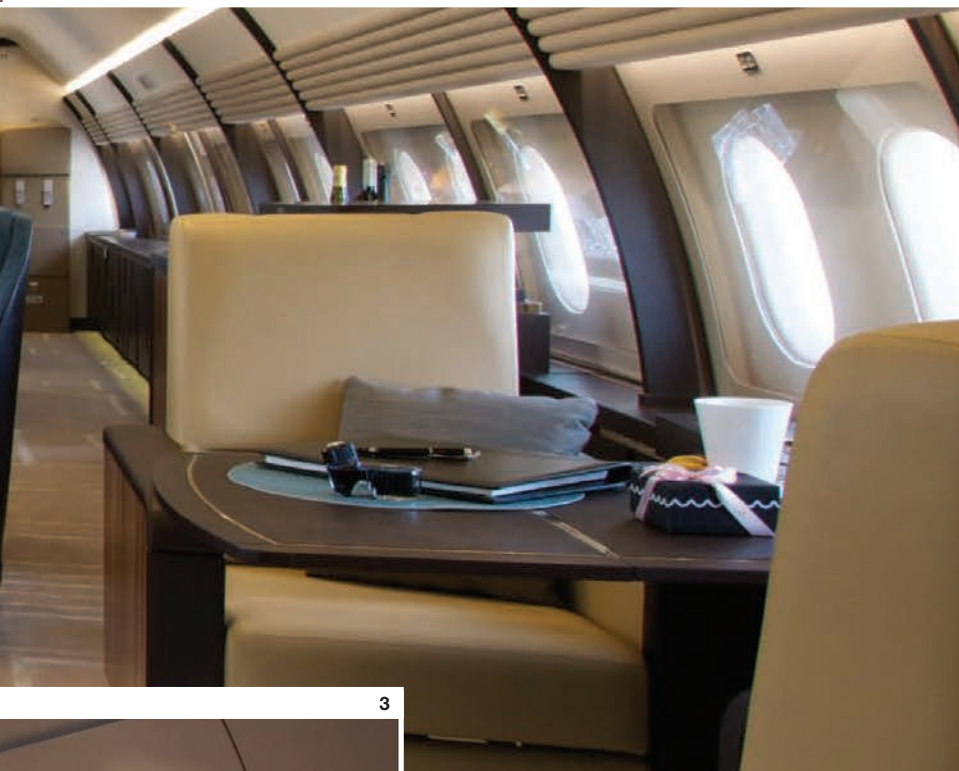
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The uber-rich have been renting out their yachts and holiday homes for years, so it comes as no surprise, with Jet-A blasting through the US\$7-per-gallon price point in the USA, and higher elsewhere, that more and more private jets are becoming available for charter.

Increasingly, new aircraft destined for private owners are being equipped with charter in mind from the outset, at the owner's request. Asset-based lenders financing these aircraft also want them well equipped in the event

1. The ACJ320 completed in 2011 by Comlux America
- 2-3. An ACJ318 designed for charter use by Pegasus Design and completed by Lufthansa Technik
4. An ACJ320 designed by Mahler and completed by Fokker Services for charter operator Masterjet



## “CARPETS AND THE NARROW WALLS IN HALLWAYS ARE VERY SENSITIVE TO DIRT”

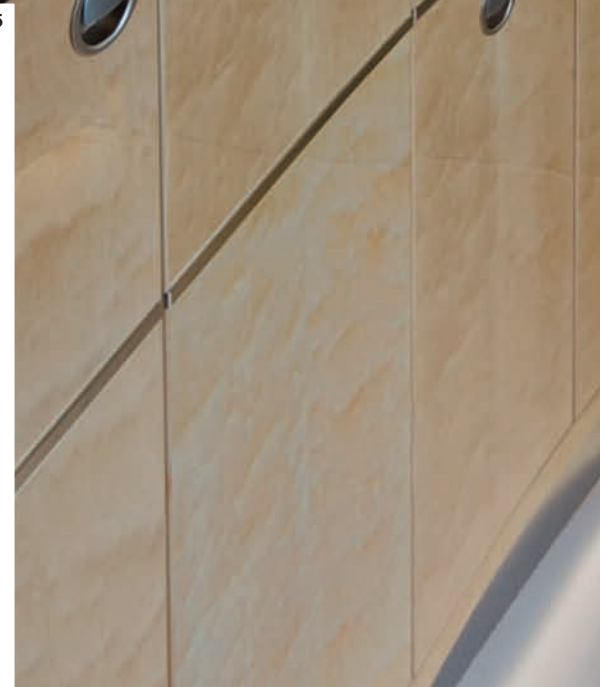
there needs to be a disposal. Chris Miller, managing director of business aircraft investments for New York’s Guggenheim Partners, says aircraft with extras such as high-speed internet charter more and sell first. “People want the latest technology,” he says.

Comlux Creatives is just one firm that has been called on to design aircraft for the VIP charter market. Its recent projects include an ACJ320 (‘Jubilee’) completed in 2011 by sister company Comlux America for Middle Eastern charter service; and a ACJ319 delivered in January 2012 that is being used for charter service from Moscow, Russia.

Both aircraft are managed by Fly Comlux on behalf of private customers and are designed for 19 passengers. Both feature a VIP lounge with L-shaped divan, two club seats and a large dining table for six people; a first-

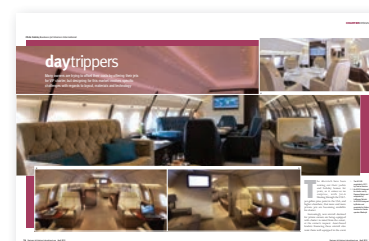
class seating area at the back for guests; and a VVIP bedroom with dedicated washroom (including shower). On the ACJ320 Prestige this VVIP area is in the middle of the aircraft and is outfitted with a divan that converts to a double bed; on the ACJ319 it is at the front and incorporates two beds. The cabins are equipped with the latest technologies such as GSM, thin touchscreens, adjustable moodlighting, high-speed wireless internet access and iPod/iPhone stands. Tim Callies, principal designer for Comlux Creatives, headed each design.

**Material matters** Callies says choosing the right materials on a charter/private mixed-use aircraft is crucial. “For example carpets are very sensitive to dirt, and the same with narrow walls in the hallways of an A320 or a BBJ with a central bedroom. As you pass through





5-7. A Dornier 328 DBJ designed by CTM Design and completed by 328 Support Services for Nigerian charter company Skybird Air



## Certification issues

Designing an aircraft for both private and charter use incurs some certification challenges. A privately owned VIP aircraft is usually certified for 'private flight' use. "But as soon as you want such an aircraft to be used for charter, the certification status changes to 'public flight', depending on the number of passengers," says Heiko Mahler of Mahler Industrial Design. "At more than 19 passengers, the certification rules for decorative materials change from private to public flight and you become extremely limited in the selection of decorative materials."

Mahler says this means materials have to be low heat release certified – "forget silk textiles, leathers and wood on walls," he adds. "Another restriction is the use of doors between compartments. This means that you have to find and design very clever solutions to meet the demands of the authorities – and of the customers as well."

first class you can easily touch the sidewall," he says. "In the open areas with a lot of traffic you should use a minimum amount of sensitive materials like cotton fabrics or silks. The high-end materials you would use in the more private rooms like a bedroom or an office."

The ACJ320 project reflects this thinking. "I used Ultraleather with nice designs on the upper part of the hallway wall," Callies says. "On the lower part I designed a special wood pattern with a satin finish that hides scratches better. You also do not need to polish it as much."

Floor treatments near the aircraft entry door are another concern in the high-wear charter world, particularly in harsh climates. "If you fly mainly in Russia and it is a hard winter – and it is dirty outside – then the carpet gets very dirty and you need to clean it every two weeks," says Callies. "That

is not very good for a carpet. So some customers prefer to have a non-textile floor with nice patterns that looks like marble."

Callies also says aircraft that sit outside in the extreme cold Russian winters can also suffer from cracking in veneers, so it is very important to take these environmental factors into consideration.

**Increased capacity** Charter also typically means more bodies on board and besides extra seats that also necessitates larger galleys with room for more meals and more services, more lavatories and more storage space. "A private aircraft flies with a maximum of 10 or 11 passengers while one under charter will fly with seats close to full," says Callies. On an ACJ or BBJ that usually means 19 passengers.

"You need more galley space for sure," Callies says. The ACJ320 has





8-9. An ACJ designed and completed by Airbus Corporate Jet Centre for Deer Jet



8

9

## “MIDDLE EASTERN CUSTOMERS LOVE TO CARRY ON AS MANY BAGS AND SHOPPING BAGS AS THEY CAN”

both forward and aft galleys – the large forward galley is designed to service VIP guests while the aft galley more closely resembles what is available on airliners. The aircraft also has extra lavatories – a forward crew lavatory, a private VIP lavatory in the middle and two guest lavatories. VIP lavatories are often equipped with a shower; however, Callies finds that most customers rarely use it.

The need for more onboard storage is “always a problem”, and Callies says this is a particular challenge for Middle Eastern customers. “They love to carry on as many bags and shopping bags as they can, especially on long flights,” he says. “The more storage you have on board the better.”

Sometimes this means adding more than just extra closets and storage nooks. In the 12-seat first-class area on the ACJ320, Callies actually added airline-style overhead bins with traditional overhead PSUs. He says baggage hold space on ACJs and BBJs is traditionally limited because of the presence of auxiliary fuel tanks in that area, so just about everything needs to fit inside the cabin. The presence of bins can lead to the inclusion of too many different styles of lighting in the ceiling, but generally this is not a problem, Callies says.

**Weight penalties** One particularly important issue in designing for charter is weight. More people with more stuff in more seats means you need to trim the fat out of charter aircraft wherever you can without sacrificing comfort or convenience. “You want to have a good-looking interior but you want to save as much weight as possible,” says Callies.

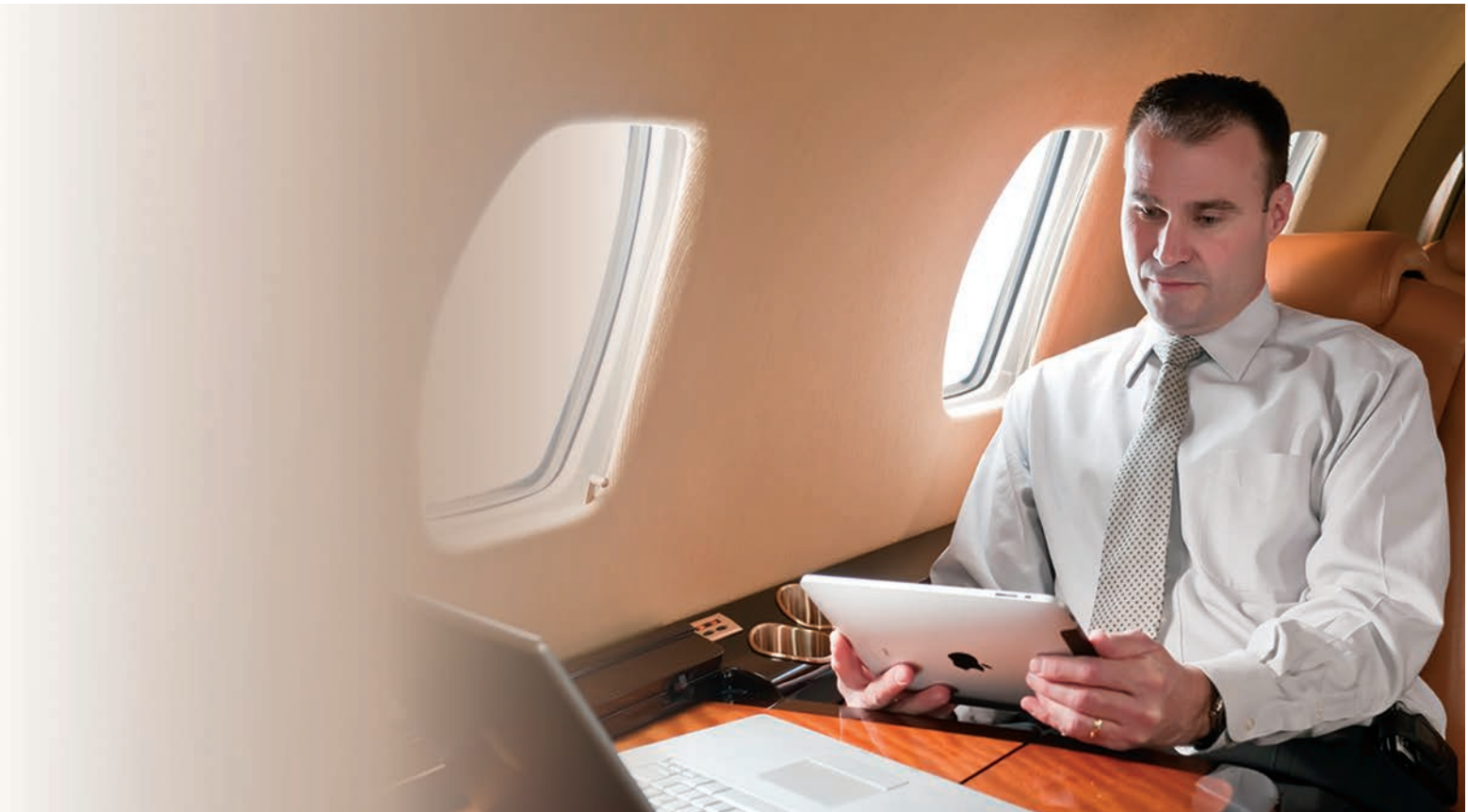
He does this by minimising monuments (“Do you really need that credenza?”); going with lightweight faux finishes wherever possible as opposed to actual marble or granite; and choosing thinner carpets where practical.



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Rendering by Joseph Burns

#### RWR Designs' Boeing 787-8 charter concept

USA-based RWR Designs and Hong-Kong Talco Aviation are currently working on a Boeing 787-8 concept for possible charter use. The VVIP design is aimed at the Asian market and features a conference/dining room, two private meeting rooms, two galleys and four open lounges – but no designated stateroom. RWR principal Rick Roseman calls the design “classically modern but with cultural influences – one that would resonate to the broadest audience of charter customers”.

Roseman has mixed traditional silk tapestries, wool and silk carpets, and a host of other soft goods that provide a way of “tying the free-migrating cabins together. We used an enriched partially dyed cherry wood throughout and all the plating is proposed as a combination of polished and satin nickels.”

Custom designed lamps and cabin accessories by Warren Rossman Luxury complete the look and help to tie various sections of the layout together.

## “IT IS STILL EASIER TO HAVE ELECTRONIC WINDOW SHADES, ESPECIALLY FOR THE CREW”

10. The Boeing 787-8 VVIP charter concept designed by RWR Designs and Talco Aviation

Aircraft owners also want to mitigate noise and that imposes a weight penalty, so Callies tries to limit the use of extra sound dampening blankets to the lounge area or the principal's suite. “Usually you try to be below 54dB in the executive area, but the less noise, the more sound insulation you need,” he says. Callies finds that convincing customers to place their design aspirations on a diet is generally not difficult when you point out the range penalties.

However, there are some areas where they traditionally do not relent. Electric window shades add weight but the convenience factor seems to outweigh the penalty and customers, so far, have been unwilling to part with them. “It is still easier to have

electronic window shades, especially for the crew,” Callies says.

The same goes for individual seating, which is highly customised and a habitual source of bloat for aircraft in this category. “If you have enough space the charter companies all prefer full-function, full-berthing seats, but it depends on which seats are available from the suppliers,” Callies says. “The big seating companies all have big airline orders for these seats, so if you want this style of seat they are more difficult to get.”

On the recent ACJ319 project, Callies went with B/E Aerospace's Cocoon seat but still ended up customising it. “The standard for charter is even higher than first class on the airlines,” he explains. “You usually

just get the seat frame and maximise your own design with the seat.” Sometimes this can create challenges for certification engineers, but customers have come to demand super-comfortable seating for these types of aircraft.

Increasingly, certain areas of the aircraft must either be equipped with, or be able to quickly accommodate, medevac stretchers and other medical equipment. This is especially true when it comes to flying royalty, Callies reveals: “They frequently want to carry their own private doctor and have provisions for a stretcher. If you have a VIP area with standard airline seats, then it is not a big deal to change it to make the accommodation.” However, provisioning the executive lounge area





11



12

as a makeshift medical suite generally is “too complicated” according to Callies. Those customers who have chronic medical needs generally provision an aft suite with any required medical supplies.

**Technological wizardry** One area where there is less compromise is the need for these charter aircraft to have the latest and greatest cabin electronics including state-of-the-art IFE, wireless high-speed internet and satcom. “For an executive lounge I usually design in one or two big-screen monitors with a nice sound system like Dolby Surround or Dolby Digital,” says Callies. Sometimes this is tied into single seat arm monitors as well.

However, not even this is without some complication when you have an eye on charter. “Switch control design is very important,” Callies says. “Do you want to have English or just picturegrams? Generally, because you never know what kind of customers you are carrying and what language they understand, it is better to have the picturegrams.”

It is just this kind of detail that can make an aircraft better equipped for charter, the kind of detail that is much more likely to be provided when the aircraft is designed for charter from the outset. More VIP aircraft will be seeing charter duty in the years to come and savvy aircraft owners will be planning for it during their cabin design. **END**

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11-13. The new ACJ319 designed by Comlux Creatives and now based with Fly Comlux in Moscow



13



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**M**ontreal in Canada is a great metropolitan city to visit, but it is a little off the beaten track for the elite international jet set.

With this in mind, and recognising that its facilities were in need of a facelift, Bombardier has ploughed a great deal of effort and money into making a trip to its business aircraft completion centres more enticing.

Two of Bombardier's three business jet families have interiors completed at the Montreal site – the mid-size Challenger 300 and 605 (the 850 is completed externally) and the long-range Global 5000 and 6000. The upcoming Global 7000 and 8000 will also have their interiors completed in Montreal – the 7000 should enter service in 2016, with the 8000 following in 2017. The Learjet family (40XR, 45XR, 60XR and 85) is completed in Wichita, Kansas, USA.

To ensure consistent service across these brands, representatives from each formed a customer care team around three years ago. "Whether it's Learjet, Challenger or Global, we want to make sure that the experience is the same," says Sandra Henry, manager of design, visualisation and customer experience, Bombardier Global Completion Centre.

The Challenger facility has now completed this process, and both the Global and Learjet lines are currently being updated in a similar vein.

Work at the Global Completion Centre includes updates to the delivery centre – with two floors given over to customer facilities and two more for customer-facing employees. There will be a new delivery hangar, a grand entrance, a bistro for entertaining clients' representatives and a new showroom. It should all be complete by December 2012. "Our facility is now 15 years old, it's due for a refresh and so our focus is to have a world-class centre so that our customers can come here and feel like we're treating them with world-class service," explains Henry.

Part of that service is already evident in the impressive specification

# warmwelcome

Bombardier is pulling out all the stops to improve the customer experience at its completion centres in snowy Montreal



1. The Global specification room
2. Chinaware in the Challenger showroom
3. Full leather hides in the Global showroom







rooms, as well as in the customer focus of the 22-strong design team.

The Global showroom is loaded with samples of all the materials customers could possibly want in their jets – 12 x 12in squares of various live and reconstituted wood veneers; a huge in-stock range of leathers (including around 800 colour options); handmade carpets (one of which is fitted to demonstrate its durability); other soft goods; countertop materials; and loose equipment such as crystal, china and flatware.

One of the key advantages to customers in coming to Montreal in person is that they have the full range literally at their fingertips. However, more often than not, Global's travelling designers go to see the client instead, taking along as many samples as they can fit into their suitcases. They do their research first to make sure they take an appropriate selection. "We try





### London calling

Bombardier is “looking at the feasibility” of opening interior specification facilities in other locations to better cater for its global clientele, according to Marc Arpin, pictured, director of customer account management on the Challenger programme.



London would probably be the first location. “Typically London is a middle ground for a lot of connections and a lot of businesses,” explains Arpin. “For example, I would hire somebody to maintain the area and my team would still fly out, they would just fly out directly to London and meet at that area.”

If it did happen, the showroom would have to find a way to showcase materials for all three aircraft families separately – it could be frustrating for clients to fall in love with materials that they subsequently find aren’t available for their aircraft. For example, the large Global aircraft need a bigger log to provide enough veneer for the cabinetry, testing and back-up.

4. The Challenger specification room  
5-6. Backshops at the Global Completion Centre

to get some initial information as to the client’s likes and dislikes, if he has a current aircraft, if it’s a repeat customer or not and so on,” says Marianna Rivera, a designer at the Global Completion Centre.

Typically the Global specification process involves three meetings, the first being a fact-finding exercise. Back at the completion centre, a behind-the-scenes team works on feasibility studies

and getting the plans drawn up. “At the same time we get samples produced, contact our suppliers to see what’s available in terms of veneer, carpet and other materials. Veneer and carpet are the two main items that have a longer lead time, so we try to get those requests out as early as possible,” explains Rivera.

At the second meeting, the Global designers often go back with two or three proposals “to get a better direction in order to finalise the selection at the follow up meeting in the end,” says Rivera.

The team has renderings of signature schemes, updated every year or so, to act as a starting point with clients. If a client was ever to choose a scheme as it was, it would then be retired. If they get enough information beforehand, the designers can create specific schemes for individual customers. Henry says this helps build rapport between designer and client. “We go knowing what the customer wants, with specialised trend boards

and that makes it a better experience for our customers,” she says.

As well as the materials, the design team help with selecting the right layout for the customer. Both the Global 5000 and 6000 have three interior zones, with various pre-engineered monuments to choose from. For example, the mid-section can accommodate a credenza, a berthable divan, a workstation, or single seats. Within these interchangeable options, some customisation is available – for example, on the Global 7000 there will be three pre-engineered credenza shapes ranging from linear to organic.

Sometimes the company does do special customised floorplans, for example if a customer wants to incorporate a full bed. However, the



5



6

**“VENEER AND CARPET ARE THE TWO MAIN ITEMS THAT HAVE A LONGER LEAD TIME”**





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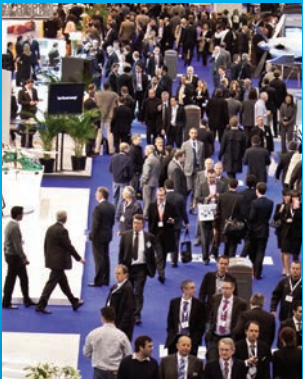
**TUESDAY, MAY 15;**

**& WEDNESDAY, MAY 16, 2012**

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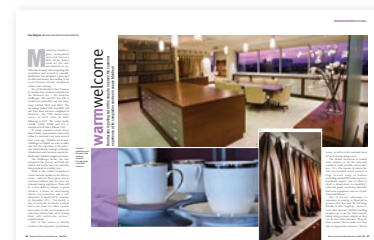


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behind-the-scenes elements like attachment points remain the same.

7-8. Challenger carpet and leather options

**Designer tools** All designers have access to a constantly updated trend database, which the travelling designers also help to feed from their personal observations. There is also a web-based cultural wizard tool that sets out the dos and don'ts of various cultures. In addition, the designers use a tool called E-Options to help customers visualise the final scheme. “The customer has to see a vision of what he’s going to get and for the longest time we weren’t showing him the visuals of the different

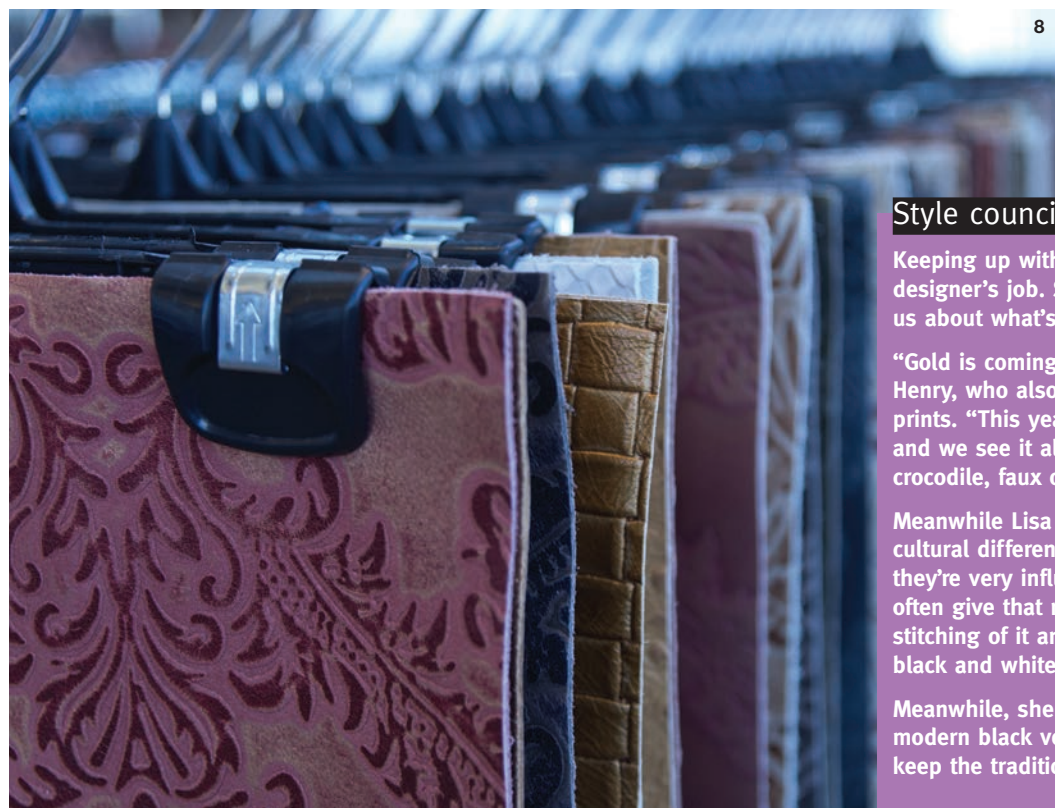
options available,” says Henry. “It’s a visual tool that’s backed up with pricing and part numbers so that in front of the customer it looks pretty, and then behind the scenes reports are generated so that we can launch that information to the rest of the organisation and they can start their engineering packages and we can start ordering materials.” The company is also currently looking at a virtual specification tool.

However, as Henry asserts, the best way to get an idea of the options is for the customer to come to Montreal. “Here in our showroom we can feel and

touch the fabrics, in a suitcase there’s only so much that we can take with us,” she says. “Montreal is not really a city that customers come through, it’s not like New York or London, it’s not a hub, but we encourage our customers to come here because it’s so much better to see the aircraft and the production facility, because soon their aircraft is going to go through that.”

It’s a similar scenario in the Challenger specification room, although the process can usually be condensed to one meeting. “Sometimes we’ll go into a second if it’s very highly customised,” says Lisa Ventimiglia, a designer for the Challenger Completion Centre. In that case, the second meeting is used to validate samples created specifically for that customer.

“As you get into the family of the products, the culture or the people



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### Style council

Keeping up with trends is obviously a key part of a designer’s job. So what can Bombardier’s creatives tell us about what’s being requested?

“Gold is coming back in quite strongly,” says Sandra Henry, who also points to pearlised finishes and animal prints. “This year, fashion is all about animal prints, and we see it also on the leather, a lot of faux crocodile, faux ostrich, faux stingray.”

Meanwhile Lisa Ventimiglia sheds light on some cultural differences. “Russian style is very modern and they’re very influenced by brands like Hermes, they often give that request,” she says. “They like the stitching of it and that type of look so there’s a lot of black and white planes that go there.”

Meanwhile, she says many Chinese clients are into modern black veneer right now, “but they also want to keep the traditional style, so they like the mix of two”.





actually showing up to do the buying or specification are a bit different,” explains Marc Arpin, director of customer account management on the Challenger programme. “With Challenger, we’re lucky enough that for specification maybe 50% of the time we’ll have the owners actually come down. Typically with a Global if they get 25% of the owners coming down, it’s very good.”

**Special deliveries** One aspect of the experience that many clients do come to Montreal for is the final delivery. As part of its recent improvements, the Challenger team now has a newly refurbished delivery hangar – an immaculate, minimalist space complete with a super-shiny white floor, bright lights, huge banners (including one of brand ambassador John Travolta) and a separate room for loose equipment. No other work takes place in this hangar when there is a delivery. It was just one of the changes made after the Challenger interior completion line was

9-10 Dinnerware and fabric samples in the Challenger showroom



## Sourcing veneer

Another part of the customer satisfaction equation is presenting options that are actually feasible and being able to explain why some things might be less suitable – particularly with veneers. Before they are put in the showroom, veneer samples go through rigorous burn and adhesion tests, as well as feasibility studies.



“Through the manufacturing process, the area that is the biggest challenge for us is the cabinetry and veneer, and so our goal is to be very proactive in the beginning, to do all the tests with the logs that we select,” says Henry, pictured. “Problems down the road mean that the customer may not get their aircraft on time, which means an unhappy customer.”

If the customer wants a real veneer for their Global the team explain that this entails sourcing one unique log per aircraft. This can make matching other aircraft in the owner’s fleet particularly tricky. And there are some species that are extremely rare or just won’t work. For example, Henry says that quality bird’s eye maple is now hard to find, and ebony is unsuitable as it is too oily – when they’ve tried to use it, the varnish has peeled off. One popular request that is difficult to source is burl. It is often only found accidentally – it grows attached to the trunk or underground in the roots. For some clients the answer is a reconstituted veneer made from real wood, which can make species like ebony viable and enable consistency across fleets.

**“MAYBE 50% OF THE TIME WE’LL HAVE OWNERS ACTUALLY COME DOWN”**

moved to Montreal in 2004 from Tucson, Arizona; Wichita, Kansas; and Saint Louis, Missouri, USA.

Before its transformation, the Challenger delivery hangar shared space with Bombardier’s regional jet pre-flight production. “Back then you’d walk in here and there were rigs, tools, toolboxes and scaffolds – we’d do engine runs,” says Arpin. “When we started doing deliveries, we did it out of here, so when customers walked in, they’d see a bunch of activities and you had to believe me that your aircraft was ready because it was on the other side of everything.”

The hangar refurbishment allows Bombardier to scale-up its Challenger

delivery events, depending on the client’s wishes. “I’ve done ceremonies of 30 people and I’ve shut down the plant and had 2,500 people in the hangar,” says Arpin.

The Global Completion Centre will have a similar hangar. However, that will also have a huge window at the front of the building, so when a client comes to pick up their aircraft it can be the focal point of attention. It’s just one of many thoughtful touches that Bombardier is bringing in to make the client feel special. **END**

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# bladeestunners

Helicopter manufacturers are increasingly having to replicate the levels of luxury found in private business jets

In the aftermath of the September 11 terrorist attacks on New York, Washington DC and rural Pennsylvania in 2001, both the US Secret Service and Navy came to the realisation that the fleet of 30-year-old 'white top' Sikorsky VH-3D and VH-60 helicopters used to ferry around the President of the United States and other government VIPs were woefully inadequate in terms of protection, communications and payload, not to mention comfort.

And so began the convoluted search for a replacement solution that, more than a decade later, remains a work in progress. The search to replace the President's helicopters is an extreme example of just how vexing the process to convert a ship designed for utility into a hovering super-limo can be.

More than US\$3 billion (£1.9 billion) has been spent on the programme to date without result. Before the plug was pulled on the current effort, the US Government Accountability Office estimated the total programme cost at US\$13 billion (£8.3 billion) – or about US\$400 million (£254 million) per helicopter.

To put this in perspective, the price of a new Boeing 747-8I jumbo jet with all the trimmings is around US\$308 million (£196 million). And Bell Helicopter is going to spend around US\$500 million (£318 million.) to develop and certify its new 525 Relentless, 16-passenger super-medium helicopter equipped with all the latest technology, including fly-by-wire and glass-panel avionics. When that hits the market, it is likely to cost between US\$18 million and US\$23 million (£11.4 million and £14.6 million).

Keep in mind that the new Marine One designator VH-71 was not a new design. The plan was to take an off-the-shelf AgustaWestland AW101 and modify it for the presidential mission. The problem was that that mission included virtually everything that could be done on the presidential Boeing 747 Air Force One. That meant the new helicopter had to be equipped with galley, lavatory, secure communications including video conferencing, and also had to be armoured to survive the

1. A new EC-155 concept by Andrew Winch Designs





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- 2-4. An American Eurocopter EC145 customised for a US-based customer with leatherwork and carpeting by Aero Comfort
5. An Agusta Westland AW139

latest threats. Not even a stock, three-engine AW101 could lift that kind of load, so a plan was hatched to modify the craft with more powerful engines, beefier transmissions, a longer tailboom and a larger main and tail rotor system – hence the rising cost.

**Great expectations** The US government's aspirations for a new presidential helicopter are a useful example for anyone designing VIP helicopter interiors, in terms of understanding customer expectations. Customers expect the same level of comfort and convenience in VIP helicopters that they can find in a business jet. What many fail to grasp is that everything on a helicopter tends to cost exponentially more and weight is a hypercritical issue. The old paradigm

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## CUSTOMERS EXPECT THE SAME LEVEL OF COMFORT AND CONVENIENCE IN VIP HELICOPTERS THAT THEY FIND IN A BUSINESS JET

was that customers tended to forgo certain things in exchange for the convenience of being able to travel from parking lot to parking lot, rather than airport to airport.

For years, rotorcraft VIP interiors traditionally meant sitting kneecap to kneecap in facing benches, either forgoing conversation because of the cabin noise, or having to wear bulky headsets. The IFE system was the view out the window, and beverage service consisted of bottled water out of a tiny drawer. And just about everyone put

up with it because your typical VIP helicopter flight was a matter of 20 minutes or less.

Those days are gone, and helicopter OEMs and completion houses are trying to get close to the same level of luxury as in a private jet, even with the more spartan interior packages.

“Attention to detail makes a difference,” says Juan Pablo Fernandez, CEO of Aero Comfort, based in San Antonio, Texas. Aero Comfort provides interior soft goods for a wide variety of aircraft, including VIP helicopters manufactured by American Eurocopter. Fernandez says VIP customers, even on relatively small helicopters, are asking for luxury touches such as accented French stitching on the seats, Ultraleather cabin interior panels, high-grade wool carpets, high-end plating, composite close-outs with accented colours and even carbon fibre. He says many of his helicopter customers want their interiors to have the same look and feel as their private jet.



“We had a customer with a Eurocopter EC-135 copying the same look as he had on his Cessna Citation. It had the same design on the seats, the same colour and the same carpet. It was the mirror image of his Citation,” Fernandez says.

The typical soft goods build-cycle on a VIP helicopter interior is six to eight weeks. Total completion costs for light singles to medium twins can range from just over US\$100,000 (£64,000) to more than US\$1 million (£640,000). The bigger the bird, the more people want to pack into it.

The Bell 407 single has been a popular executive ride for nearly two decades, thanks to its 54.8in-wide cabin. Completing/retrofitting one with air conditioning and a facing club four passenger cabin with the normal cabinet and cup-holder amenities will ring the register at around US\$100,000 (£64,000), says Jim Darr, general manager of United Rotorcraft Solutions in Decatur, Texas. Darr says not many customers opt for features beyond that, such as IFE systems, in helicopters in this price range. A new 407 sells for around US\$2.7 million (£1.7 million). However, the needs list quickly grows once you move up the food chain, especially in the light medium, light twin category.

**Flexible interiors** In 2006, MD Helicopters acquired Heritage Aviation, in part because of its ability to fashion executive interiors for its MD902 Explorer light twin. One of Heritage's early efforts was stunning: a modular design that quickly alternates between a four- and six-place interior. In the four-place configuration, the club seats are separated by two facing cabinets that are mounted on seat rails for quick change-out. The cabinets



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hold entertainment equipment and food and beverage storage. Onboard entertainment equipment includes CD/DVD/MP3 player and a moving map displayed on a 15in monitor on the cabin divider. Custom-machined and plated door-trim and bezels, and metallic-tinted inner-cabin windows complete the look. Insulation was added to reduce cabin noise.

**OEM designs** For AgustaWestland's AW119, AW109 Power, GrandNew, AW139 and AW101 models the VIP/corporate market is big business. It also has three models in development that have VIP transport applications – the AW169, AW189 and the tiltrotor AW609, which is scheduled for certification in 2016.

Eurocopter has offered branded luxury options for its EC135 and EC145 light/medium twins in recent years with mixed results. Since its launch in 2007, four models of the EC135 L'Helicoptere par Hermes were sold. The marquee interior adds US\$2 million (£1.3 million) to the helicopter's price, pushing the total cost near US\$8 million (£5 million). How many will opt for the larger, US\$8 million EC145 Mercedes-Benz Style (MBS), just now hitting the market, remains to be seen.

The MBS has the interior of a large sport utility vehicle: luxury leather



6. An AgustaWestland GrandNew  
7. MAG's new AW169 mock-up

### MAG unveils VIP interior for AW169

Mecaer Aviation Group (MAG) unveiled a full-scale mock-up of its new VIP interior for the AgustaWestland AW169 helicopter at this year's HAI Annual Meeting and Convention in Dallas, Texas. The VIP interior is the creation of the MAG Design Studio and was developed to maximise passenger comfort, reduce noise levels in all flight conditions, and provide a state-of-the-art IFE system. The six-passenger cabin configuration on display can be quickly reconfigured into a seven-passenger version, among a variety of different cabin layouts available to meet customer requirements.

The AW169 can also be equipped with the Silens system, MAG's proprietary passive cabin noise and vibration-reduction system. The Silens system is currently certified on the AW139 helicopter. Meanwhile the IFEEL, a multifunctional IFE system developed by MAG, offers a fully customised cabin management and entertainment system that interfaces with the latest consumer electronic devices. The AW169 VIP interior is aiming for certification by 2014.

"We are extremely proud of this new milestone in the history of our company. It represents a further confirmation of our philosophy of working closely with OEMs from the very beginning of a new project," comments Armando Sassoli, MAG's co-general manager. "After the successes achieved on the AW109, AW139 and, more recently on the EC145 Mercedes-Benz Style and the AW101 VVIP, this is a welcome addition in our helicopter interior products portfolio. We have continued to position MAG to meet the market demand of the 21<sup>st</sup> century by investing in new product development and allocating engineering resources. Most importantly, we have a world-class team of professionals all focused on customer satisfaction."

"The luxurious AW169 VIP interior features exquisite materials, refined woods and sophisticated ambient cabin lighting," says Alessandra Pasqua, head of MAG Design Studio.

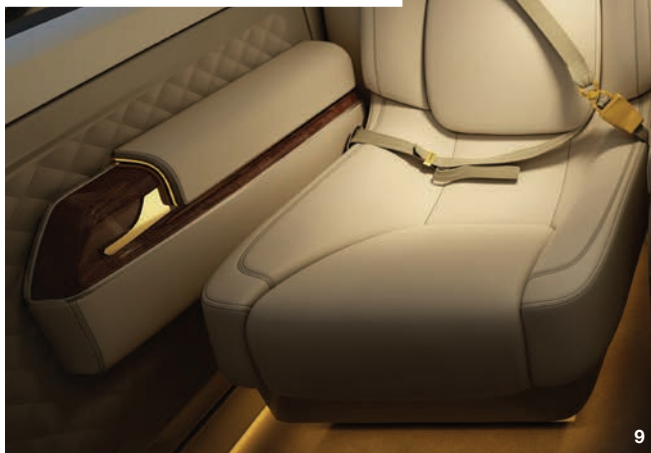
The AW169 is a twin-engine light intermediate category helicopter. The first flight is scheduled for 2012.

## HOW MANY WILL OPT FOR THE LARGER, EC145 MBS REMAINS TO BE SEEN





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seating for eight that can be quickly reduced to four, providing room for even more luggage, hunting/fishing gear, and other sporting equipment. MBS customers can adjust the intensity and tint of cabin lighting and opt for a broad choice of fabrics and finishes reminiscent of the iconic German luxury automotive brand. Eurocopter's new EC175 medium twin should be certified by the end of 2012, and VIP schemes are already being crafted for that cabin.

Overall, Eurocopter says 20% of its sales are in the executive/VIP market, and the increasing trend is encouraging it and other OEMs to incorporate executive amenities into new designs from the offset, adding technologies that increase comfort and reduce cabin vibration and noise.

**Reducing noise** The updated EC145 launched in 2011 – the EC145T2 – features a shrouded Fenestron tail-rotor and new composite main rotor-blades that reduce vibration. Sikorsky's new S-76D has a two-speed quiet main rotor system, Quiet Zone transmission technology and active vibration

- 8. The EC145 Mercedes-Benz Style interior
- 9. Design Q's Quest design
- 10. Eurocopter's EC135 L'Helicoptere par Hermes

control. Executive configurations also feature the Silencer cabin shell interior system with a secondary acoustic package. You can also operate one of the S-76D's two engines as a virtual APU, with the main rotor stopped, to maintain power to the air-conditioning unit during passenger loading and unloading. With a range of 425 nautical miles, the S-76D can be outfitted with a full range of beverage/snack storage and IFE options, including video and moving map.

The Mecaer Aviation Group (MAG) has developed a variety of executive interior packages for AgustaWestland helicopters, including the medium twin AW139 and AW169 models. Like Sikorsky, Mecaer also uses a special sound-

dampening system that it claims reduces cabin vibration and noise levels to the point where normal tone conversation can be conducted without using headsets.

Outfitting helicopters with VIP interiors will always be a balancing act between weight, range and costs. However, with much smaller cabins than those of their business jet counterparts, there is far less margin for error. **END**

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# stepping up

Qatar Airways' foray into business jet charter is based on a fleet of long-range Bombardier aircraft boasting roomy configurations, understated elegance and all the communication tools expected by its demanding clientele



1. One of Qatar Executive's two Global 5000s





**T**he thriving business jet offshoot of Qatar Airways, Qatar Executive, aims to provide seamless travel in the fullest possible sense.

Its customers step straight out of the parent company's aircraft at Doha International Airport to continue their journey on the corporate jet. A slick ground support system ensures that one of six Bombardier aircraft can be prepared for take-off at just four hours' notice if necessary. And although softer and lighter, the interiors share the same sense of refinement and elegance as Qatar Airways' premium classes.

"The brief for the interiors was to provide the next logical step from Qatar Airways' premium classes to a private corporate aircraft," explains the parent company's chief executive, Akbar Al Baker. "Within the group, emphasis is on quality of the highest standard in both service and interior products, be it across the global network airline or the executive charter operation." In short, both the corporate and commercial airlines underpin the total proposition.

In addition, because all Qatar Executive's aircraft come from the same manufacturer, the fleet has its own sense of continuity. The wholly owned fleet comprises three Challenger 605s, two Global 5000s and a Global 6000, the former XRS. But that's just for now – the company has been so pleasantly surprised by demand for its aircraft that it is already discussing possible expansion plans.

From the outset, Qatar Executive was designed to complement and add value to the parent airline in terms of luxury and reach. "It's a natural synergy to transfer our customers onto our corporate business aircraft to reach their final destinations," explains Al Baker. "In many of the cases these destinations are not served by scheduled airlines and we are looking at expanding globally by tapping into this market."

But even if Qatar Airways or other commercial airlines do fly these routes, there's a fast-growing demand in the Middle East to use luxury jets to make business meetings all over the Gulf and further afield in the shortest possible time, with multiple-destination flights.



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That's one reason why Qatar Executive calls its passengers just 10 minutes before departure.

Qatar Airways chose Bombardier aircraft after a lengthy and detailed analysis of all the alternatives. As Al Akbar explains, the objective was to acquire a fleet that reflected the business model, which was based on the capacity to take passengers just about anywhere in style and comfort and at high speed. "The fleet offers large stand-up cabins, superior performance and excellent economics for all our markets," comments Al Akbar. On long flights the headroom – 1.91m (6ft 3in) on the Global 6000 and 5000 – is a particular boon.

**In it for the long haul** Qatar Executive prides itself on its long-range ability. "When Qatar Airways launched the corporate jet division in 2009, what it had in mind were the highest levels of personalised service, comfort, privacy and convenience to any place in the world," explains Al Akbar. "Doha is a perfect geographical location for us. It means we can serve customers not just

## ALTHOUGH IT SHARES DESIGN CUES WITH THE REST OF THE FLEET, THE 6000 HAS PALER VENEERS

in the Middle East but also in Europe, Africa and Asia."

The flagship of the fleet is the Global 6000. Although it shares design cues with the rest of the fleet – notably the creamy textures and sense of space – the 6000 has paler veneers. With a passenger capacity of 13, it has a range of 6,150 nautical miles (11,390km).

Yet true to the original concept for Qatar Executive, the three Challenger 605s also have ultra-long capacity – with a range of 4,000 nautical miles (7,408km). Purpose-designed as comfortable working environments, they accommodate 11 passengers on reclining ergonomic armchairs and a berthable divan. Unusually spacious,

2. Qatar Executive's livery is recognisably similar to that of its parent airline
3. The flagship Global 6000 interior

with a capacity for 409kg, the Challenger's baggage compartment is accessible from the cabin. Business can be conducted around a four-seat conference table in the rear. Internet and satellite communications linked to 21in monitors keep passengers in touch with the office. The Challenger's large, 10in x 16in cabin windows, now mounted 2.5in higher on the fuselage, not only let in more light, they allow standing and seated passengers to see outside without having to bend down.

Additionally, the range of the Global 5000 has recently been extended. Able



### Bridging both worlds

Qatar Executive is not the only corporate jet company owned by a network airline. In February 2011, Lufthansa Private Jet, launched in 2008, reverted to its original arrangement with NetJets whereby Lufthansa acts as a booking agent for NetJets. In 2012 it extended the partnership into the USA.

Korean Air launched a business jet service in mid 2010 with a fleet comprising a customised Boeing 737, a Global Express XRS and a Gulfstream IV. Into USA its scheduled flights link up with Bombardier's Flexjet Connect service.

Meanwhile, Delta Private Jets, a wholly owned subsidiary of the parent carrier, has been expanding. In 2011 the charter company added another six aircraft, both medium-sized and long-range jets, to its USA-based fleet.



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### More than a charter service

Qatar Executive's business model is based primarily on synergies with the parent's sales and marketing, financial and maintenance divisions, but it's also growing on the back of add-on services. The rapid development of corporate jet travel in the Middle East – the number of private aircraft in the Arab world is expected to triple over the next 10 years – gives it a growth business to bolt on to the parent company.

Qatar Executive is investing heavily in hangarage, training and maintenance infrastructure. Based in a 6,400m<sup>2</sup> hangar at Doha International Airport, its new maintenance facility is Bombardier-accredited and has a full order book of work from other private jet operators in the Gulf as well as servicing Bombardier aircraft landing in Doha. Later in 2012 Qatar Executive plans to extend its suite of services when it opens an FBO at the airport to handle all VIP flights, not just its own.

4. One of three Challenger 605s in the fleet
5. A Qatar Executive Global 5000 flying over its Doha base

to fly nearly 5,000 nautical miles (9,300km) non-stop at Mach 0.80 in normal form, recent tweaks have added a further 400 nautical miles (741km). Qatar Executive's ultra-long-range Global 5000 can now connect Doha to Hong Kong non-stop with eight passengers and three crew.

**Roomy cabins** Spaces are similarly configured for long haul. Although the typical configuration of a Global 5000 is 18 fully berthable passenger seats, plus an aft lounge/bedroom, a full galley and two lavatories, Qatar Executive's Global 5000 spreads 13 seats over two cabins, with four seats and a four-place conference table in the forward cabin and a particularly congenial rear cabin featuring two single seats, a three-person divan and an aft private lavatory. The latest communications advances have also been installed in this 'office-in the sky' – large monitors, surround sound and WiFi connections among other air-to-ground technologies. In the company's current fleet it has decided against installing a crew rest area, but this may

be reinstated on newer versions. One specially trained cabin steward flies with each aircraft.

The interiors were the result of a close collaboration between the airline and the manufacturer. For between 12-24 months, depending on the type of aircraft, Qatar Airlines' executives, its product development team and Bombardier's interior design specialists worked on the design. The interiors were then installed at Bombardier's completion centre.

The broad philosophy of the interiors is "understated elegance", in the airline's words, with fine leather on the seats and polished veneers on the bulkheads, tables, side ledges, galley and entrances. The overall effect is one of generous space and lightness. The basic aft bulkhead of the Challenger 605's cabin has been given an arresting treatment with an unbroken, matched veneer facing. The carpets are of virgin wool while the lower panels and curtains are fashioned in wool and silk. Depending on the type of aircraft, the material for the headliners and sidewalls is Ultrasuede or Ultraleather.

Overall, Qatar Executive sought an unfussy and minimalist look.

This is a hard-working fleet and the interior requires considerable effort and maintenance to keep it up to standard. "Qatar Executive has a very high utilisation rate," says Al Baker. The lesson the fledgling corporate jet company has learned is that future additions to the fleet will require even harder-wearing materials on the most-used surfaces. "We're already working very closely with Bombardier and its partners to develop an even more inviting, bespoke cabin," reveals Al Baker. Although no announcement has yet been made, it sounds very much as though Qatar Airway's offspring is due for a growth spurt. **END**

**Web** [www.bombardier.com](http://www.bombardier.com);  
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**Berlin, Germany**



# softfocus

The industry's fabric and leather suppliers reveal their latest launches



## fantasticvoyage

**A**ndrew Muirhead & Son is soon to make its second-generation lightweight leather available to the business jet market. Voyager was launched to the commercial airline market in 2010, but since then the company has invested heavily in technology, developing the product with the aim of leading the field in sustainable leather manufacturing, as well as optimising the product's weight, fire retardancy and smoke density properties.

"Our policy of continuous improvement means that we are constantly reviewing our offering and tailoring it to customer demand," says Archie Browning, sales director for Andrew Muirhead & Son. "This recent investment, adding two additional technicians to our research and development department, allows us to offer bespoke products specifically tailored to different markets. Our vast experience in the commercial airline market is now being made available to business jet customers."

In addition to Voyager, the company is introducing a completely new print finish for leather, branded Tay (pictured). The new print has a cellular grain. A new Library of Leather card is also being developed that will show 150 colour variations and finishes, all available from stock.

[www.muirhead.co.uk](http://www.muirhead.co.uk)

## chicsheep

**T**ownsend has introduced a new collection of lambskin hides with a metallic glimmer – Brushed Metallic Lambskin. These skins are aniline-dyed and hand-rubbed with a glazing finish that features a metallic glimmer accentuating the unique texture of each individual skin. The product can be produced with flame treatment when required. It is available in 10 standard colours – Mesmerizing Moss, Shimmery Chestnut, Wrought Iron, Sparkly Sequin, Strawberry Glaze, Relic Bronze, Cinnamon Stick, Silver Mist, Enticing Red and Regency Gold. [www.townsendleather.com](http://www.townsendleather.com)





## trendfriend

**H**ighlights of Lantal Textiles' Conceptual Forecast 2012 include seat cover fabrics with large repeat colour gradations and relief effects, complemented by smooth stripes, granular textures and waffle patterns.

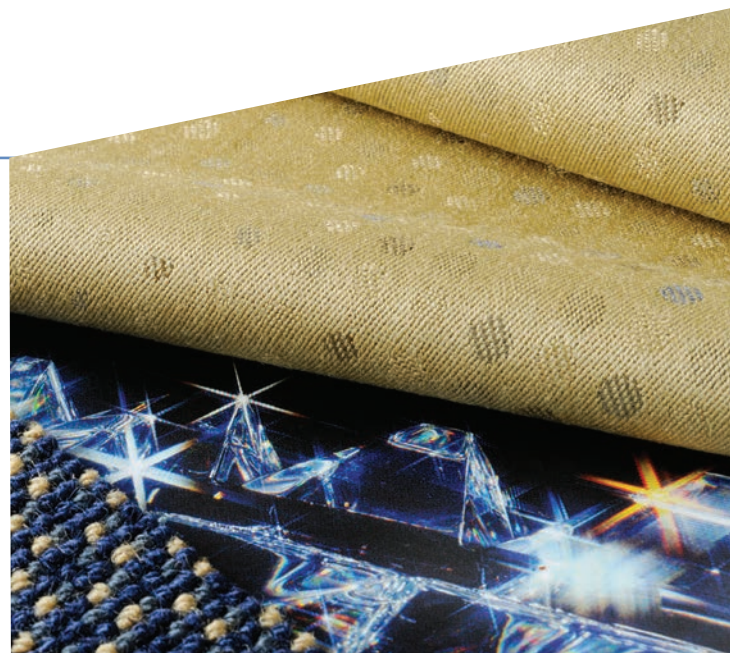
The collection's colourways emphasise subtle blues, graphite greys, earthy hues and zesty accents.

In carpets, fishbone and tweed classics have been reinterpreted and paired with structures as well as novel

patterns featuring generous faded repeats. Matching curtains and leathers round out the collection.

The collection is the result of the company's ongoing research on themes of relevance in mobility and materials. It is designed to minimise designers' investment risk by providing an objective, well-balanced selection with long-term validity for signature cabin interiors.

[www.lantaltextiles.com](http://www.lantaltextiles.com)



## incrediblesulk

**E**delman's latest leathers include Sulky (pictured), which is made from hand-antiqued European full-grain vegetable-tanned aniline-dyed cowhide. The Sulky pattern is designed for classic luxury. The leather is available in Antique White, Bridle, Black, Grey Mare, Cabernet, Marmalade, Aubergine, Pitch Brown

and Kelly (a shade of green) – encompassing both warm neutrals and some modern colours. Another recent addition to the company's product line is Hippie Cow, a tie-dyed hair-on-hide leather available in colours such as Lavender Sunset, Wild Strawberry and Man Grey.

[www.edelmanleather.com](http://www.edelmanleather.com)



## soundchoice

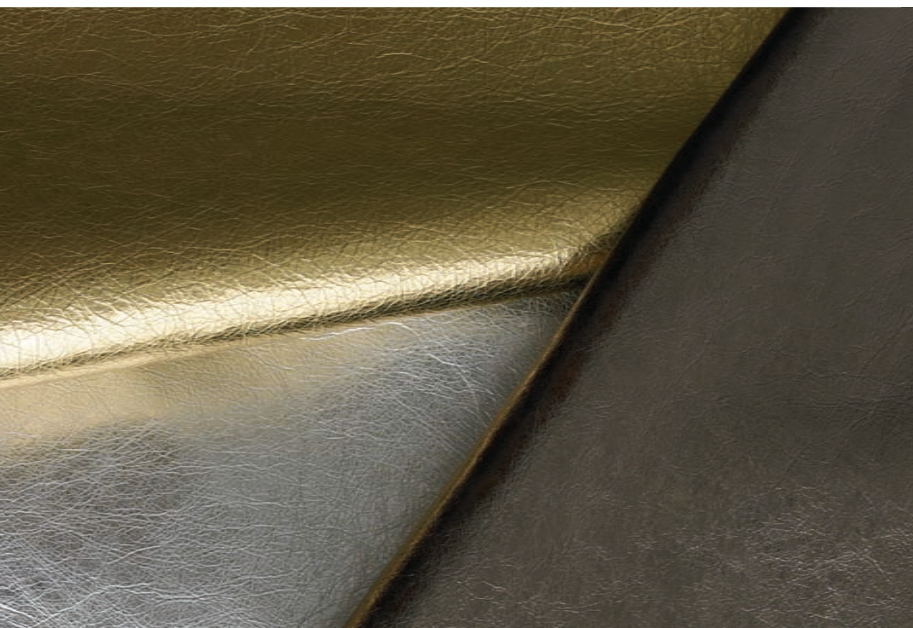
**T**his year Tapis is introducing Ultraleather Bolero, which is designed to improve improved low- and mid-frequency sound absorption, reducing cabin noise. Bolero was a hit at the recent Business Jet Interiors World Expo (held in February 2012), with many top designers expressing interest in its sound absorption qualities and ordering samples for possible use in upcoming projects.

Tapis says Ultraleather Bolero passes the most stringent commercial aviation standards without sacrificing luxury, durability and maintainability. In addition, all Ultraleather products are made of environmentally friendly polyurethane polycarbonate and don't contain volatile plasticisers and stabilisers.

[www.tapiscorp.com](http://www.tapiscorp.com)







## metalguru

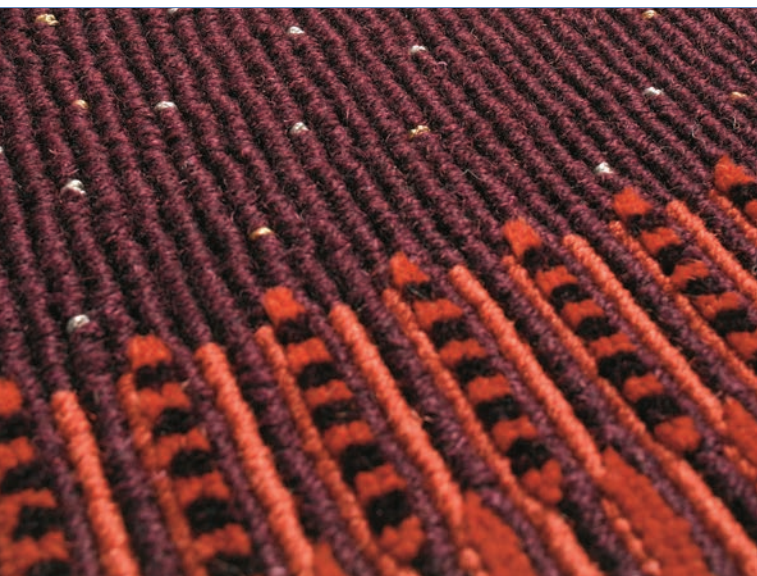
**G**reen Hides recently introduced Heavy Metal, a full-grain leather made from hand-selected European hides and then applied with a metallic foil effect. Green Hides says Heavy Metal is processed using environmentally friendly, low-emission mineral tanning formulas. The hides are re-tanned in aged oak drums using vegetable agents, natural fat liquors and oils along with dyes that ensure the leather is properly dyed. Water-based finishes are applied to provide an even colouration and protection to the leather. The company says the product can be after-market flame proofed to pass FAR 25.853.

[www.greenhides.com](http://www.greenhides.com)

## history repeats

**S**cott Group Custom Carpets' latest aviation collection is called the Torana Collection. This range of handmade carpets draws inspiration from the layered and interlocking patterns found in the architecture of ancient palaces and temples of the Far East. Scott Group's design team reinterpreted these traditional motifs, taking cues from current fashion and design trends. Nigel with silk (pictured), a design included in the collection, was inspired by the intricate lattice work found in ancient temples and the architectural details of ornately designed windows. The pattern is shown here in a charcoal grey cut pile, with an outline of gold silk loop, adding a luxurious touch, but is available in any colour combination. The carpets are all custom designed and handmade in Grand Rapids, Michigan, USA.

[www.scottgroup.com](http://www.scottgroup.com)



## attractive qualities

**S**wiss company Tisca Tiara recently unveiled its new Allure collection of carefully harmonised carpets, upholstery and curtain fabrics for VIP and business jets. This new range reflects the latest global trends in terms of designs, textures, materials and colour combinations. The company maintains a huge stock programme with more than 4,000 different carpets, upholstery and curtain fabrics to choose from on stock. All sorts of colours, patterns and qualities are ready for immediate shipment, available with no minimum order quantity. Moreover, the company produces ready-to-install carpets, as well as steam-pleated, ready-to-fly curtains; all under one roof without the need of subcontracting to other companies, which the company believes makes everything easier, faster and cheaper for its customers.

[www.tiscatiara.com](http://www.tiscatiara.com)



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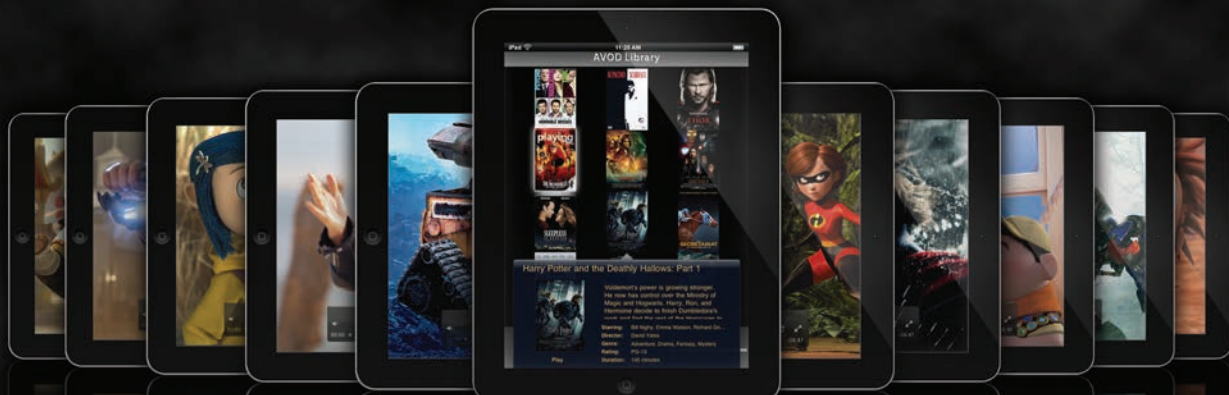
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# different strokes

EAD Aerospace believes its commitment to the aircraft owner's artistic vision separates it from some other completion centres

EAD Aerospace, based in France, provides VIP cabin renovation and completion services for all types of aircraft and helicopter. The turnkey service begins with the initial artistic design and carries through to the final physical modification of the aircraft, incorporating technical modifications to all decorative elements, including monuments, partitions, upholstery, soft goods, silverware, linens and lacquerware.

Seemingly, the offer looks similar to that of most outfitters. EAD Aerospace will first submit a complete layout of the proposed cabin, complemented by artistic renderings and trend boards for materials such as wood veneers, minerals, rare skins, leathers, precious metal plating, textiles and foils.

Once the layout and artistic design is agreed, the company's engineering department picks up the baton, managing all aspects of the project and specifying in detail how the various parts will actually be reworked, modified, replaced and installed. Modifications or additions such as monuments, wet monuments like showers, seats, carpets, electronic systems, lighting and communication systems are all engineered by EAD Aerospace.

Once complete, the package is handed over to the company's certification department, which processes the adequate airworthiness certificates with relevant local authorities. Once the aircraft is grounded, all furniture, seats, sofas, electronic systems and IFEC systems are removed and reworked by EAD Aerospace to be ready for reinstallation. Finally, the company

manages all aspects of the physical installation in the hangar.

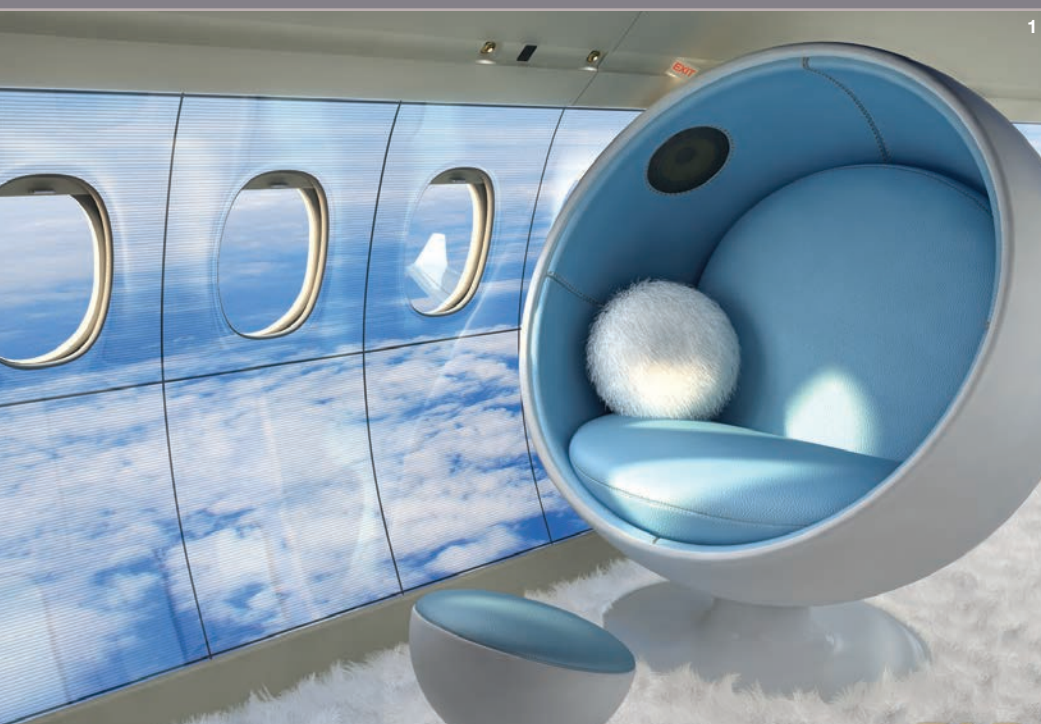
So far, so normal. However, EAD Aerospace believes it departs from other completions providers on a couple of points. One of these is its emphasis on artistic design. Very few of the renowned designers or artists it works with are specifically aeronautical designers. Most of them specialise in luxury design, or come from famous design agencies. Sometimes they are simply a private designer chosen by the aircraft owner. Aeronautical expertise is brought to the table by EAD Aerospace's engineering and certification departments, not by designers.

The company aims to hide the technological behind the artistic, to support the designer's dream with minimal technological restrictions, so as to fabricate an aircraft that really stands out. The emphasis is on the owner's wishes, and EAD Aerospace strives to enable the owner to create an environment defined by their own tastes, rather than by technical constraints.

The mission of EAD Aerospace's engineering and certification departments is to monitor the artists' designs carefully, possibly guide them, but at the same time make sure that no one will be aware of their existence when defining the cabin layout and materials. For example, the company says real antiques, pieces of art and old wooden furniture can be installed through the understanding of ancient fabrication technologies, and a strong artistic culture.

Another point of difference is that EAD Aerospace does not have its own physical installation facilities or completions staff, and instead partners with well-known European modification centres, which provide the hangar resources and highly qualified manpower. EAD Aerospace says the advantage of this approach is that it can work on multiple types of aircraft and helicopters without being limited by the hangar rating.

1. A cabin concept by EAD Aerospace



EAD Aerospace

Reader Enquiry No. 501



# solidgrowth

Since expanding into VIP completions in 2011, MRO veteran SR Technics has already converted a wide-body Airbus airliner

Over more than 80 years, SR Technics has gained valuable experience in delivering maintenance, repair and overhaul (MRO) services. In complex cabin modifications for premium airlines, its engineers have demonstrated their skills. "It therefore seemed a natural step to move into the VIP completions and refurbishment market. To enable this we have pulled together an exemplary team of experts drawn from the VIP sector internationally," says James Stewart, group chief executive officer for the Mubadala Aerospace MRO network, of which SR Technics is a part.

The decision saw SR Technics open its VIP Completion Center in Zurich, Switzerland, in April 2011, servicing the large-cabin business jet market. The dedicated 4,800m<sup>2</sup> hangar can accommodate one wide-body aircraft, up to an A340-300, or three narrow-bodies. It has been refurbished to create a state-of-the-art, comfortable interior, while retaining its historic character. SR Technics says that as a standalone facility, with secure key access, the hangar ensures confidentiality throughout the completion process. In addition, a modern office facility and VIP lounge with concierge services ensure customers can carry about their daily business and personal activities while they are overseeing their completion or refurbishment project.

The company believes the combination of its commitment to the highest standards, its attractive and accessible location at the international business hub of Switzerland, its long-standing MRO experience and its

passionate team of established VIP business experts is the key to its success.

"Our craftsmen, interior designers, engineers and project managers really are the best in the field," says André Wall, president, Europe, for the Mubadala MRO network. "This means customers can rely on our passion and innovation to turn their visions into a reality. Across the modification or completion process our experts relish the opportunity to challenge traditional boundaries, to create unique handmade interiors and cabin experiences that mark our customers' signatures in the sky. Their focus is on balancing design and functionality with weight and noise cancellation, all important factors in aviation, while all the time ensuring the aircraft fully meets the customer's lifestyle and demands. Our first VIP Airbus conversion contract was testament to this."

The wide-body aircraft was recently reconfigured from a conventional airline configuration to a modern interior with tailor-made VIP elements such as club seats, tables, custom design elements, the latest VIP IFE system and a new power system. In parallel, the aircraft underwent a heavy maintenance check.

"Being able to offer our MRO expertise in conjunction with VIP completion services brings many customer benefits," says Stewart. "By carrying out MRO and completion services in parallel we are able to deliver real-time savings to customers. Our on-time mindset and high level of reliability are most valuable for high-end modifications and completions."



Seamless customer care is a key consideration. "We want to put a stellar product into the market," says Wall. "We will differentiate ourselves by demonstrating to customers that we are there for them. The entire VIP team is committed to providing undivided customer support throughout the completion process."

Guidance and advice are provided throughout the project, the aim being to ensure an interior that perfectly balances business and pleasure. Meanwhile the wider team focus on the day-to-day needs of visiting customers, for example booking hotels, suggesting weekend excursions and securing tables at renowned restaurants.

SR Technics

Reader Enquiry No. 502

1. SR Technics' VIP customer lounge
2. The completion centre also offers in-house design
3. The refurbished VIP hangar





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# rest assured

The latest models, features and applications for AST's vast range of VIP seats



Headquartered in San Gabriel, California, USA, Aero Seating Technologies (AST) provides 9g and 16g executive aircraft seats for a wide range of customers worldwide, for wide- and narrow-body business and VIP aircraft. All the company's products are designed for quality, ergonomic comfort and lightweight construction, and can also be customised to accommodate specific owner/operator requirements for comfort and style.

For example, the next-generation 16g-certified Master Class seat is loaded with features designed to ensure the ultimate in seating comfort, including vertical adjustment for 3in of vertical recline. Fore, aft and lateral translation – including 360° swivel and full-flat berthing with drop-down armrests – is standard on all AST's 9g and 16g Master Class VIP seats. Other 16g seats include a power-assist feature for track and swivel, mechanical vertical lift and floor tracking. Powered massage and electric lumbar support systems and legrests are also available as options.

The company continues to expand its product offerings with new features designed to enhance the travel experience. Its new Serenity model for both wide- and narrow-body jets is a good example. The fully powered seat features 180° recline and the latest interactive audio massage system, including greater response and increased compatibility with plug-and-play hardware. The audio response massage feature interacts with the aircraft's IFE system, so the massage pulsation corresponds to what the passenger is listening to or watching.

AST also offers a 16g VIP seat for light jets, which when upholstered, weighs less than 93 lb (44kg). Standard features on this seat include fore, aft and lateral translation (9in x 5in), including 360° swivel and full-flat berthing. Additional features include electric lumbar support and a legrest. Optional power-assist mechanical controls are augmented by a 28V DC solenoid motor.

Meanwhile, the company's 16g divan offers a wide range of features in a single- or double-place modular design, which allows for various seating configurations. Standard and optional features include a flexible cushion design for various upholstery requirements. The divan also incorporates a storage drawer and doors, along with fold-down arms, and has a low back so as not to obscure windows. Completing the range, AST also offers 9g Master Class VIP seats and breathable divans.

The company's 16g Master Class single and double seats have been installed on Global 5000 and XRS aircraft. AST has also recently had its VIP seats installed on a Boeing Business Jet (BBJ) and on an executive DC-8. The company's seats have also been selected for CRJ-200 completions and other VVIP narrow- and wide-body aircraft.

New projects include customised seats for an executive/head-of-state Boeing 757 and a VVIP 737. The company is also developing a custom Operator seat for special-mission Global 6000 aircraft.

**Aero Seating Technologies**

Reader Enquiry No. 503



- 1-2. Master Class seats
- 3. A DC8 aircraft furnished with Master Class seats



# takingstock

## Sacs Aerospace offers a huge range of locking and connecting products for the aerospace sector

1. A table mechanism from the Sacs Aerospace Group
2. Metallic cupholders
3. The group offers a variety of inserts, studs, bolts, washers, nuts and screws



The Rottweil, Germany-based company Sacs was established in 2002 as a specialist in the production of fasteners and connecting systems, but is equally renowned for the development and manufacturing of aircraft interiors. In 2006, the merger of Sacs and Boysen created the Sacs Aerospace Group, with an emphasis on the development, production and sale of locking and connecting systems, as well as special solutions for the aviation industry. Further expansion continued in 2009 when the group acquired 100% of Rolf Boysen Beratungs.

The group's product range for business jets includes all types of table mechanisms, partition door mechanisms, damped hinges, armrests, flight book holders and all metallic parts within the aircraft. A variety of latches (pin, hook, trigger, double-button and emergency exit door), tie rods and struts are also offered, as well as standard parts such as inserts, studs, bolts, washers, nuts and screws. System offerings include the Ram air system for the A318-A321 aircraft, flanges fuel system for the A380 and Boeing 787 and assemblies for the ARJ21.

Boysen was founded in 1967. Its main business is the distribution of aerospace fasteners, and it boasts one of the world's

largest stocks – more than 12,000 different parts. The company's headquarters, sales office and warehouse is located in Munich, Germany, although it has additional sales offices in Hamburg as well as in France.

Sacs Aerospace Group says its global network of representatives ensures that it can respond to customers quickly and that orders are processed on time.

Boysen's product range at Munich incorporates (but is not limited to) metric and unified fasteners and electrical components, including screws, nuts, washers, rivets, inserts, hi-loks, latches, bolts, straps, bushings, collars, wires, springs, fitting, hinges, swivels, hinge bearings, sleeves, terminals, connectors, shims, balls, bearings, quick-release pins, ground straps, seals, rings, clamps, cables, split pins, pins, sockets, binders, cylinders and tools.

As well as being a regular exhibitor at the Aircraft Interiors Expo in Hamburg, in 2012 the Sacs Aerospace Group will also exhibit a selection of its products at Farnborough International Airshow (to be held on 9-15 July 2012 in the UK).

Sacs Aerospace

Reader Enquiry No. 504

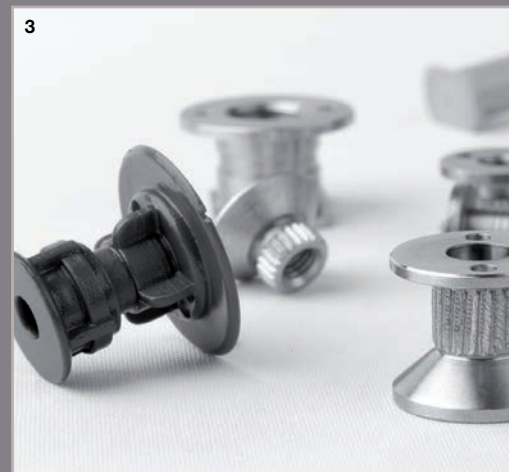




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## BERLETEX AERO DESIGN



Berletex Aero Design is an aerospace design and engineering firm supporting major aerospace companies worldwide. We pride ourselves on providing the engineering support required to offer a complete engineering solution based on our extensive corporate aircraft completion experience. With offices located in Montreal (Canada) and in Europe, our specialty lies in corporate VIP aircraft interior completions.

Using the latest technology in engineering tools (CATIA V4/V5, SolidWorks, AutoCAD), Berletex Aero Design provides a wide range of services so as to ensure a successful completion:

- Monument design
- Mechanical and Avionic Systems design
- Airframe Structural Modifications
- Stress Analysis,
- Certification (T/C, FAA, EASA)
- On-site engineering liaison support

To date, Berletex Aero Design has undertaken and successfully completed many mechanical and system design projects on the Bombardier Global Express / XRS / 6000 / G5000, Challenger 850 and 604/605, Boeing BBJ/BBJ2, Boeing 747SP, Bell 412EP and Eurocopter AS350B2 aircraft.

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Ross Bellingham, President, [ross@berletex.ca](mailto:ross@berletex.ca)

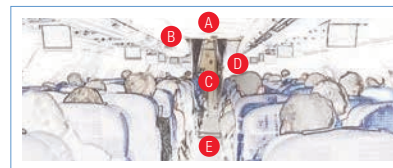
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# healthyinterest

## Berletex Aero Design is developing a medevac conversion STC for the Bombardier Challenger 850 and CRJ 100/200 market

Berletex Aero Design, which specialises in design engineering for corporate and VIP aircraft cabin completions, is developing a Supplemental Type Certificate (STC) for an executive interior completion with a medevac conversion option. The project is specifically targeting the Bombardier Challenger 850 and CRJ 100/200 market.

"I would like to believe that most corporations who operate CRJ 100/200 aircraft as corporate shuttles would welcome the opportunity to further support their employees, their families and the community in any way they can," says Ross Bellingham, president of Berletex Aero Design. "By working in conjunction with flight management teams to provide the medevac kit as an option for their CRJs, Berletex can adapt their corporate aircraft in a manner that would be both rewarding and cost effective."

The conversion to medevac usage is designed to take no longer than four hours and will accommodate up to four stretchers with accompanying seating for medical personnel and/or family.

"The demand is certainly there and we are encouraged by the responses we are getting from prospective clients who want to see this as an option on their aircraft," says Bellingham.

Berletex Aero Design (based in Montreal, Canada) is an engineering partner to Flying Colours Corp (based in Peterborough, Canada), which is an authorised completion centre for Bombardier on the Challenger 850. "It is a logical choice that we partner with Flying Colours, who will be able to offer this to their 850 clients," says Bellingham.

With a stylish galley annex just aft of the main cabin door, coupled with a gently swept S-shaped galley, the stretcher can be rotated 90° in the entry area. "Using Catia V5 kinematics we can clearly demonstrate to customers the path the stretcher will take as it enters the aircraft and travels down the main cabin aisle," says Bellingham. "From the outset of the programme, we wanted to assure our customers that there would be adequate clearance from all finished cabinet surfaces,

so they need not have concerns with regards to impact scratches."

By removing the forward- and mid-cabin executive seats, the stretcher can be secured to the existing seat tracks, with a concealed side attachment to handle fore and aft dynamic loading.

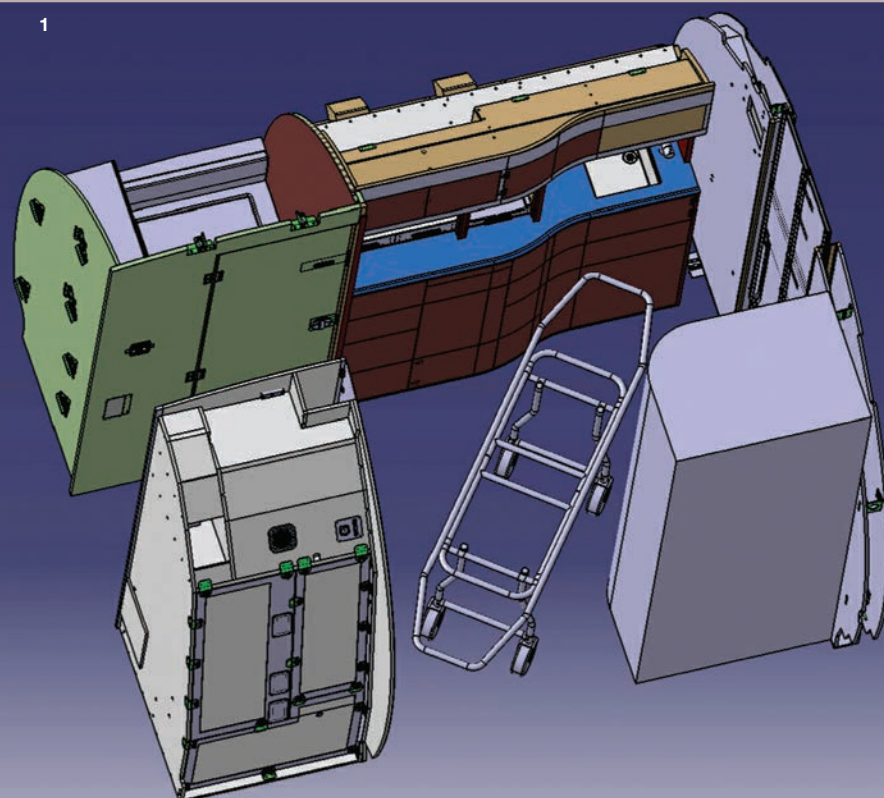
"Having contributed to 10 of Flying Colours Corp's Challenger 850 completions over the past three years, we feel we know what customers want and have developed this STC with them in mind," says Bellingham. "The FAA- and EASA-approved STC will allow us to offer a far-reaching product line that should be attractive to many players in the industry."

Berletex Aero Design offers a similar medevac concept targeting the corporate shuttle market. Working with potential customers, it sends a design team to survey the aircraft and propose ideas on how to convert that interior to support medevac operations while maintaining the integrity of the present configuration.

**Berletex Aero Design**

Reader Enquiry No. 505

1



1 The design allows plenty of clearance in the entryway to ensure the stretcher does not damage the surface finishes



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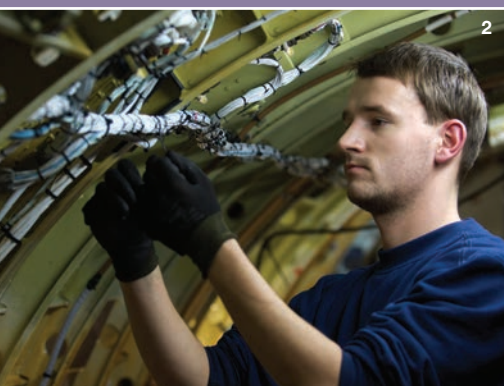
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# europeanunion

328SSG is applying its German craftsmanship to a wide variety of projects beyond its flagship DBJ conversions – the latest being the refit of a Gulfstream IV with new partner Turkish Technic

1-2. 328SSG prides itself on the skills of its craftsmen  
3. A DBJ interior



Based near Munich, Germany, 328 Support Services (328SSG) and 328 Design are a strong team when it comes to luxury bespoke aircraft interiors made by skilled Bavarian craftsmen. The team is particularly renowned for its Dornier 328 (DBJ) interiors, the creative inspiration for which comes from Robin Dunlop of CTM Design in London, England. The attraction of the DBJ interior scheme is summed up by a recent customer, who says: "My aircraft looks like brand new, but only my pilots and I know it isn't!"

But the alliance is not limited to this aircraft type. In fact, Dunlop is also supporting the design process for other VIP interior completions still in the pipeline. Indeed several airframe OEMs are now looking to 328SSG when a customer wants a one-off VIP interior as opposed to a production line one, for a new aircraft or an in-service airframe. Together 328SSG and 328 Design offer a suite of services ranging from avionics updates through to structural modification, interior modifications (including aircraft documentation and electrical load analysis) and also bespoke liveries courtesy of a paint shop at sister company JETS in the UK. 328SSG has also manufactured single monuments for other larger outfitters and has added A340, Boeing 767 and latterly A320 monument work to its portfolio.

Meanwhile, 328 Design recently embarked on a strategic collaboration with Turkish Technic Design Organisation. This pools their combined competencies to support operators in the Middle East such as Turkish Airlines. 328 Design and Turkish Technic offer design specialists including compliance verification engineers (CVEs) and airworthiness office specialists (AOSs) in all ATA chapters under EASA Part 21J organisation approval combined with a design organisation agreement for general STC ability on all other types of aircraft. The engineers will collaborate using cloud technology and frequent face-to-face meetings.

The first project for the new alliance is the refit of a Gulfstream IV. The project involves a major IFE upgrade with new high-definition displays interfaced with Rockwell Collins' Airshow 4000 and two Blu-ray players. The work will include replacing all veneer with exotic East Indian rosewood; reupholstering the seats with new leather and foam; installing new carpet; and replacing all metal surfaces with new polished copper plating. A major LOPA change will see a two-seat divan replaced by two club seats and a fold-out table. The existing galley will be modified to house a microwave oven and a cappuccino machine. All cabin lighting will be replaced by LED technology.

Other VIP refurbishment projects under discussion include A319 and A340 layout changes and the certification of 16g VIP divans for use during take-off and landing.

In all, it's clear that the company has built an impressive arsenal of skills on the 328 DBJ platform that it is now able to apply to other aircraft types. For example, TC modifications such as a new satcom SwiftBroadband system can be offered to a wider range of projects. The system enables passengers to stay connected via voice or data, with email and internet browsing. The company also offers a new Class 2 electronic flight bag utilising the Apple iPad 2G, which can host charts and maps including all handbooks, for a truly paperless cockpit.

328 Support Services

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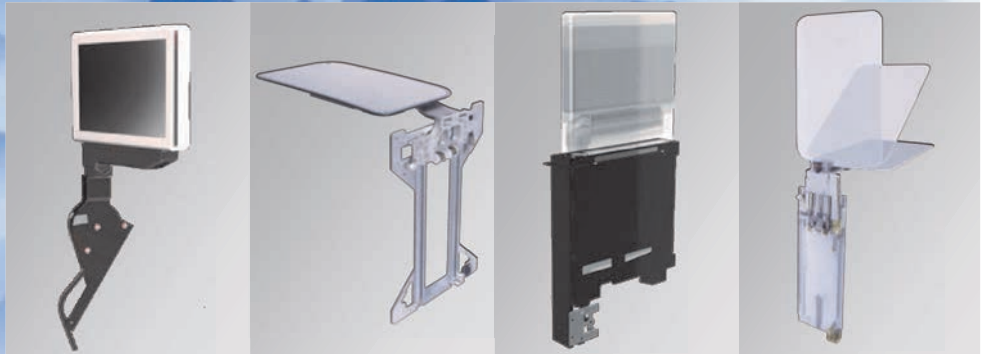
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## bearing fruit



The Apple iPad and other brands of tablet PC are steadily invading aircraft cabins as they grow in popularity with passengers. However, in aircraft environments, the iPad's portability can be considered both an asset and a liability, and the challenge is to mount the iPad so that it is not sitting loose during flight.

S&S Numerical Control, a division of Satterfield Aerospace, is a leading custom designer and manufacturer of display positioning systems. It has now developed a fully flexible seatback solution for the iPad and similar tablet PCs. The design allows the iPad to be mounted firmly and/or removed and manipulated manually by the passenger, thereby protecting the very important mobility feature of the device.

When mounted to the seatback, the tablet PC can be rotated into portrait or landscape mode or to any position in between, while also tilting back and forth to obtain the best viewing angle.

The company says its solution is easily adapted to any model of passenger seat, and while the tablet PC is fully encased and protected, it also retains a thin, compact configuration.

For those operators concerned about the certification of permanent installations, the tablet PC can be easily and rapidly removed during taxi, take-off and landing. The company also offers other iPad mounting configurations.

**S&S Numerical Control** Reader Enquiry No.507

## brand designs

Aviation Business Consultants International (ABC International), which provides cabin interior engineering and certification services, has developed a new product for operators seeking to show their corporate logo throughout the cabin.

The ABC Decorative Crest can replicate any type of company logo, and can be installed within the cabin on partitions, bulkheads, galleys and lavatories. Various styles, shapes and finishes can be proposed by ABC designers. The idea behind the ABC Decorative Crest is to strengthen the airline's image and enhance brand awareness across the cabin, the main interface with passengers.

The ABC Decorative Crest is accompanied by a Product Technical Specification (PTS), EASA Form One and installation instructions. The company says it can be installed on board aircraft by means of an EASA-approved Engineering Order issued by ABC as an EASA A-DOA company and easily implemented by a Part 145 maintenance station.

"The crests are manufactured in full accordance with the latest aviation industry standards and are in compliance with all the aviation authority regulations in terms of flammability (CS/FAR 25.853)," comments Alberto D'Ambrosio, CEO at the company. "The combination of lightweight materials ensures high durability and lower weight in comparison with traditional metallic milled decorative crests."

Thickness, dimensions and the final shape can be widely customised. The exposed surface is metal coated and then either polished or oxidised. The airline can choose from a wide range of metal finishes (aluminium, titanium, zinc, bronze, copper, etc.) or colours. The company offers a free 3D design study service.

**ABC International**

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# Skylounger

## Cabin Sleep System

In 1997 Cascade Designs pioneered the development of the world's first customised self inflating aircraft cabin mattress to fit all aircraft models under the brand Skylounger™. To date there are in excess of 15,000 units in service.

### About Us:

The Skylounger™ is lightweight and can be rolled up into a customised equipment bag and stored in a fraction of the space of a conventional sleeping unit. The underside is custom contoured to match the top surface of the users preferred seat configuration which ensures a flat top surface for sleeping. We design and manufacture for single, double and divan units.

To operate, open the valves, the mattress will self inflate in minutes. By closing the valves, the air is trapped inside the foam maintaining structural integrity. An electric pump can be provided as an accessory to assist with inflation and deflation.

### Skylounger Benefits:

- Compatibility - customised design to fit any aircraft model
- Flexibility - mattress can be armrest height
- Security - ability to use seat belts
- Stow ability - minimal volume when deflated
- Lightweight - approx weight (single = 8.0lbs - double = 13.0lbs)
- Easy to use - user friendly set up and packaging
- Comfort - self regulated comfort
- Stability - minimal rocking during flight
- Longevity - decompression valve fitted
- Reliability - 2 year warranty
- Value - the most competitive price on the market
- Trust - over 15 years product history



Mattress in Equipment Bag



1. Set seat configuration.



2. Open valves on mattress & fit.



3. Finished dressed beds.

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# peace of mind



Montreal-based Jem Aviation provides completion management services for business aircraft. From the initial concept design to the final delivery, the company's mission is to offer business jet owners and operators peace of mind while their jet is being completed or refurbished.

"Business jet owners want to know that their investment is well protected by someone who reports directly to them," comments Richard Plourde, president of Jem Aviation.

Through weekly visits at the completion centre, Jem Aviation provides clear visibility to the owners as to the status of the work on their aircraft, with detailed reports and photos.

With no quarter-end results to publish, the completion management consultant's focus is always the same – client satisfaction. Jem Aviation says that progressive inspections during the build allow the final delivery process to become somewhat of a formality, facilitating an

aircraft's entry into service. "Proactively identifying issues that could potentially impact quality, schedule or budget is what we're hired to do," says Plourde.

The company believes that the earlier consultants such as itself get involved with an aircraft completion project, the better it is for the client. "Identifying workmanship issues or items not completed to specification for the first time in the final stages of delivery is sometimes too late," says Plourde.

Acting as project manager, the completion management consultant is also expected to be a valuable advisor to the owners as well as a qualified inspector. "All cabinets and seats, the paint and documentation need to be meticulously inspected and reviewed with one goal in mind – perfection," says Plourde. "Good enough should never be good enough for the owner of a business jet!"

JEM Aviation

Reader Enquiry No.509



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