

BusinessJet *interiors* INTERNATIONAL

SEPTEMBER 2012

THE INTERNATIONAL REVIEW OF BUSINESS JET INTERIOR DESIGN AND COMPLETION

NBAA & MEBA
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Experts outline the challenges involved in installing medical equipment on VIP aircraft

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Renowned designers from across the USA discuss their latest and greatest interior projects

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AUTOMOTIVE COMPANIES, MATERIALS AND MANUFACTURING TECHNIQUES CONTINUE TO INFLUENCE THE BUSINESS JET INTERIOR INDUSTRY

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siblingrivalry

You may or may not have noticed that we have put a car – the beautiful Daimler Maybach – on the front cover of this issue. If you didn't notice – don't worry – for a long time the two sectors have been so entwined in terms of materials and design language that it can be difficult to see where one ends and the other begins. The influence of car aesthetics isn't just obvious in the first business jet designs of automotive stalwarts like Brabus and DC Design; it's plain to see the racing lines in OEM designs ranging from the new Bombardier Learjets to the Cessna Corvalis TTx. This is only natural given the shared end users, the overlapping pool of design talent and the cross-pollination of suppliers. All of which is explored in depth in our feature on page 22, where we also assess what each sector can learn from the other – it's not one-way traffic.

Manufacturing differences, too, are not as great as some might think. The lean manufacturing principles that were forged and developed in the automotive industry are now reaching maturity in the business jet arena, as explored in our feature on page 30. I saw this for myself when I toured the facilities of Bombardier and Flying Colours Corp in March. Each was dedicated to continually honing their techniques to meet their needs – principally to complete aircraft to the highest possible quality, on time. These, like short-run supercar lines, are no mass-production operations.

The automotive thread that runs through this issue also provides a car designer's perspective (page 14), crops up in the cross-sector portfolios of some of the USA's finest designers (page 72), takes in the possibilities of carbon fibre (page 118) and even takes over our lifestyle section (page 128)! But fear not, non-petrolheads, it does make lots of pit stops – for articles on showrooms (page 38), medical installations (page 56), and Edese Doret's BBJ designs for Royal Jet (page 64), as well as previews of this year's NBAA and MEBA tradeshow (pages 85 and 92, respectively). There is also a profile of Steve Taylor (page 48), whose amazingly varied career prior to becoming BBJ president took in engineering, flight testing and piloting. In May I was lucky enough to be a passenger on a BBJ for the first time, piloted by Steve and chief pilot Rene Gonzalez. Although the car and jet industries may quibble about who's better, for me personally, nothing beats the magic of travelling through the air in a VIP jumbo.



Izzy Kington, editor



Cover Image:
The Daimler Maybach

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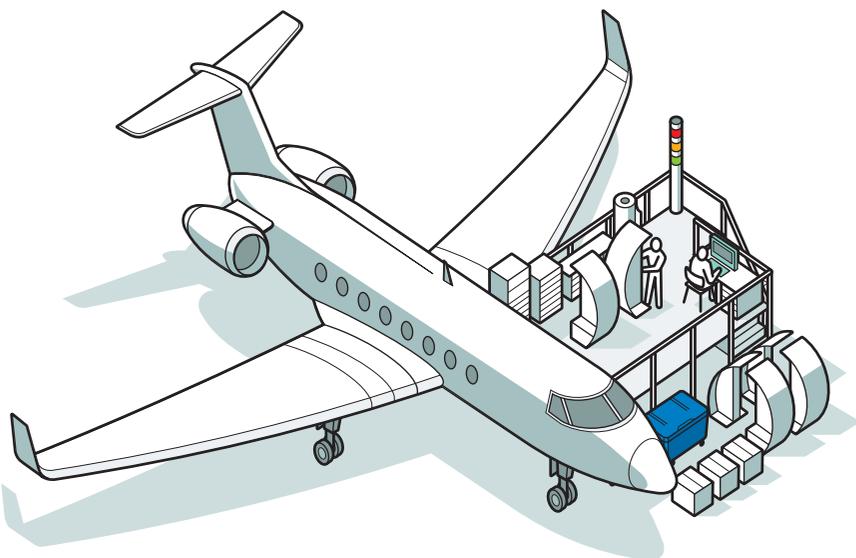


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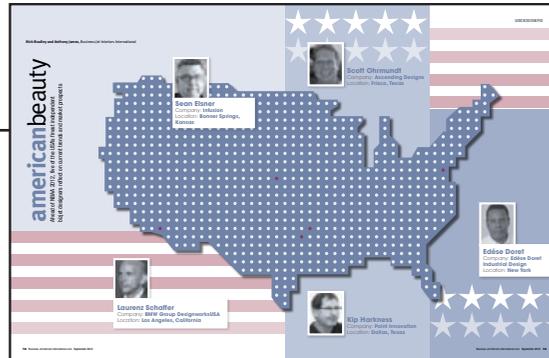


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FINISHING TOUCHES FOR THOSE WHO LOVE CARS AS MUCH AS THEY LOVE JETS





royalfamily

Abu Dhabi-based charter Royal Jet is modernising its Boeing Business Jet (BBJ) fleet with various designs by Edése Doret

The six BBJ 737-700s offered for charter operations by Royal Jet from Abu Dhabi Airport constitute the largest privately operated BBJ fleet in the world.

Three of these were refurbished relatively recently – one (registration A6-RJX) in 2007 and two (A6-RJY and A6-DFR) in 2010. However, the other three (A6-RJZ, A6-AIN and A6-DAS) have not been updated since their original interiors were installed in 2001, and Royal Jet decided it was time for a new look.

“The reason for the refurbishment is to keep our fleet interiors fresh and modern, in line with the expectations of our guests,” explains Shane O’Hare, CEO of Royal Jet. “At this end of the market, we must always keep up with customer expectations and offer the very best in cutting-edge technology and luxury.”

The company decided upon Edése Doret Industrial Design (EDID) to help them do just this; a company that is no stranger to exotic designs. “They wanted to do something different and cutting edge with their interiors,” says Edése Doret of EDID. “I think they were inspired by the living wall project we did last year.”

EDID’s living wall design involved the conceptual transformation of a BBJ 787-9 into a ‘flying garden’, complete with evergreen plant life growing from bulkheads in the entryway, master bedroom, lavatory and office. The reaction to such a leftfield concept is something Doret is clearly proud of. “When we presented the option for the living wall, the customer said that it wasn’t that we were thinking outside the box, rather that the box wasn’t even inside the room,” he jokes.

The first of Royal Jet’s BBJ fleet to benefit from Doret’s creativity is A6-AIN – currently being outfitted by

1. The first of EDID’s BBJ designs for Royal Jet



**“THE CHAIRMAN
CHOSE THE
MODERN OPTION; HIS
THINKING WAS MORE
PROGRESSIVE THAN
I HAD EXPECTED”**

Sabena technics in Bordeaux, France. EDID has also been asked to design interiors for A6-RJZ and A6-DAS – the first of these is on Doret’s drawing board right now.

Modern art “When we had the initial design meeting for A6-AIN, the chairman chose the modern option and I knew what direction they wanted the brand to go in,” relates Doret. “His thinking was more progressive than I had expected. He had a design vision for Royal Jet, which we now share – very cutting edge, modern and chic. He wanted to have what no one else has in terms of aviation interiors. He wanted

to get away from wood on the bulkheads and look for new materials and finishes.” Despite being presented with a number of choices, Royal Jet was decisive. “For the first BBJ, we did propose several options to them and their initial selection gave us a direction for where to take the remaining aircraft in terms of styling,” says Doret. “We offered a contemporary-style interior and a neo-classic interior, but what they went for was a very modern look, and that modern interior went through a number of further iterations to get to what we have now.”

A6-AIN’s new interior will have a quintessentially modern look with a

- 2. The VIP bedroom on the A6-AIN BBJ
- 3. EDID’s design for A6-AIN’s refurbished VIP lounge

number of surprising material choices, including ostrich skin on the seatbacks and bulkheads and jet glass on longitudinal bulkheads. Doret is also using some new finishes, such as metals covered in a new smoked nickel coating, made possible by metal specialists Techno-coat.

Geek chic In terms of technology, the upgrade includes the installation of a new AVOD system, which is able to distribute any type of source to any type of distribution point. Sources in the aircraft will include three Blu-ray players, five iPod docking stations, five iPad docking stations, two VGA ports



and a moving map. The AVOD server is able to distribute these sources to high-definition (HD) monitors, headset jacks and various loudspeakers throughout the aircraft.

Surround sound will be available in the VIP bedroom, first-class section and lounge, business- and economy-class areas. All loudspeakers are specified to fulfil bandwidth requirements of between 25Hz and 35Hz, with an efficiency of 90dB and above.

All the VIP seats will incorporate an individual 10.4in HD in-seat monitor and passenger control unit (PCU). This PCU includes individual attendant call push button, reading light, audio selection and volume controls.

The forward lounge will be finished with a 37in HD LCD monitor on the bulkhead, and other bulkhead monitors will be “a minimum of 20in HD” models, according to Doret.

The satcom upgrade includes providing SwiftBroadband (SBB) with the aid of a Generation 2 CNX-200 WiFi router to distribute wireless internet throughout. The Honeywell MCS 6000 will be upgraded to a Honeywell MCS 7163 and the avionics subsystem will also be upgraded to an HGA CMA 2102 SB system.

GSM phone connectivity will be added with an AeroMobile GSM system, while the Rockwell Collins Airshow 400 product, which provides worldwide coverage, will be upgraded to version two. All flight information will be presented in two languages – English and Arabic.

The layout of the aircraft remains unchanged. It consists of a bedroom at the front of the cabin, with the forward VIP lounge incorporating four club-



4. Royal Jet's Learjet 60, which was last refurbished in 2008
5. Bulkhead HD monitors on the A6-A1N BBJ will be at least 20in

four setups, followed by an eight-seat business-class cabin and a 12-seat economy-class section.

The aircraft is configurable for several seating layouts. The standard configuration will seat 36, but a high-density layout accommodates 46 passengers by replacing business-class seats with three rows of economy ones.

Doret's involvement also extended to the livery. “They were looking for a marriage between airline and private aviation,” he says. “After two meetings the chairman had settled on an option

– I don't know if that was luck or our ability to identify what they wanted.”

Bringing the design to life The task of performing the US\$9 million (approximately £5.67 million) upgrade falls on Sabena technics, which was awarded the contract in March 2012. As well as the cabin refurbishment, Sabena technics is responsible for painting the livery, performing aircraft maintenance and the aforementioned AVOD upgrade, including obtaining necessary certification – such as the

Covering all bases

As well as its six BBJs, Royal Jet also offers two Gulfstream G300s and a Bombardier Learjet 60 for charter. The G300s each have 10 VIP seats and a divan seating two more passengers, and boast MagnaStar C2000 satcom. They were introduced in 2003.

Meanwhile the Learjet 60 was made in 1998 and refurbished in 2008. It seats seven and is also equipped with the MagnaStar C2000 satcom.

The operator is confident that with these three aircraft types, it covers the gamut of charter needs in the region. “There is a limited number of BBJs in service worldwide, so there's a global market for our fleet,” says Shane O'Hare, CEO of Royal Jet. “It complements our other Learjet and Gulfstream aircraft perfectly.”

The company also eschews the idea of fleetwide design commonality adopted by others. “Each of our nine aircraft is like a five-star luxury hotel, and they are all very individual,” says O'Hare.

THE STANDARD CONFIGURATION WILL SEAT 36, BUT A HIGH-DENSITY LAYOUT ACCOMMODATES 46



The last refurbishment

Until A6-AIN is delivered later in 2012, the newest interiors in Royal Jet's fleet belong to the BBJs registered as A6-RJY and A6-DFR – which were refurbished in 2010.

A6-RJY features a majlis-style VIP meeting lounge, a more formal meeting and dining area, and a rest and relaxation zone. It seats up to 40 passengers, with 14 lie-flat VIP seats (equipped with in-armrest 10.4in screens), two three-place divans, eight more seats in the meeting/dining area and 12 standard seats in the aft cabin. Technological wizardry includes broadband WiFi, GSM mobile connectivity, satellite telephone, fax machines, live TV, and 42in and 28in screens.

Meanwhile, A6-DFR is configured for up to 21 passengers (three in VIP seats and 18 on divans), and includes two lounges, a private office and stateroom, as well as two shower rooms.



“WE SPENT SEVERAL MONTHS ON PRE-ENGINEERING FOR THIS PROJECT”

Alternate Means Of Compliance (AMOC) to FAA AD 2009-12-06, regarding the means for the flight crew to isolate and shutdown electrical power to the IFE/CMS in case of fire or any emergency condition.

“Pre-engineering is an essential step for this kind of project,” comments Philippe Rochet, chief operating officer, production, at Sabena technics. “It is during this period that our customer's vision is confronted with the reality of an aircraft's possibilities.”

The company is, however, well equipped to deal with the rigours and demands of discerning customers. “Our VIP completion centre, based in Bordeaux, can count on an in-house design office that is Part 21 J and G certified and which has carried out numerous VIP completion projects,”

- 6. The A6-AIN BBJ will have ostrich skin on the seatbacks and bulkheads
- 7. The current interior on the A6-DFR BBJ
- 8. A6-RJY's interior dates from 2007

says Rochet. “We spent several months on pre-engineering for this project.”

The work has involved almost all areas of Sabena technic's workforce. “The number of people working on the Royal Jet BBJ varies depending on the progress of the project, but you could say that approximately 200 people are involved – from the design office and programme management team to those working on electrical and mechanical outfitting, monuments, seats and more,” says Rochet.

To lower the impact on Royal Jet's operations, Sabena has assigned a dedicated management team to the project. “Our goal is to provide the highest quality, be it for the technology installed on board, the materials used or the fitting of each element in the aircraft,” says Rochet. “We are also

working with a challenging timeframe, but our VIP completion centre is Part 145 certified, which allows us to fabricate electrical and mechanical kits ahead of schedule, saving some valuable time.”

The first of the refurbished BBJs – and indeed the combination of Doret's vision and Sabena technics' workmanship – should be unveiled in 2013. It will be put to work on corporate and VIP private charters across the globe from its base in Abu Dhabi. “This BBJ (A6-AIN) will be the pride of our fleet when she returns to service,” enthuses O'Hare. “This is the second such upgrade to our fleet and is part of Royal Jet's strategy to ensure that we continue to be the benchmark in the private jet travel market.”

Reflections With one design complete and another being finalised, Doret is able to offer some reflections on the process of working with Royal Jet so far. “They like to push the envelope,” he says. “They allow us to do things that sometimes we're held back from doing. We like to try to introduce something new that customers might not have thought of so that's what we're doing with Royal Jet. They know what they want and they have a good eye for design.” From a man who thinks nothing of putting a garden in an aircraft, that's praise indeed. **END**

Web www.edesedoret.com;
www.royaljetgroup.com;
www.sabenatechnics.com

americanbeauty

Ahead of NBAA 2012, five of the USA's finest independent bizjet designers reflect on current trends and market prospects



Sean Elsner

Company: **Infusion**

Location: **Bonner Springs, Kansas**



Laurenz Schaffer

Company: **BMW Group DesignworksUSA**

Location: **Los Angeles, California**



Scott Ohrmundt

Company: **Ascending Designs**

Location: **Frisco, Texas**



Edése Doret

Company: **Edése Doret**

Industrial Design

Location: **New York**



Kip Harkness

Company: **Point Innovation**

Location: **Dallas, Texas**



Edése Doret



Company: **Edése Doret Industrial Design**

Location: **New York**

Founded: **1991**

Other key personnel: **Luz Martinez, Rafia Ahmed Chowdhury and Torree Cline**

Founded as a design agency with a focus on product, graphic and interior design, Edése Doret Industrial Design (EDID) began its first foray into aviation in 1996, developing interiors for Agusta A109E Power helicopters.

“Our unique selling point is our creativity,” asserts company president Edése Doret. “If you look at projects like the ACJ 380 interior, this changed the way designers look at interiors, moving away from the mobile home-styled interiors to a more domestic feel.”

For creativity, check out Doret’s BBJ 787-9 concept with living walls in the entryway, master bedroom, master lavatory and office bulkheads (top right).

“We are also known for providing more service to our client than what we are contracted for, as well as the speed in which we can develop a design of an interior,” says Doret.

EDID specialises in VIP projects for ‘big iron’ – Doret’s portfolio includes interiors for Royal Jet’s new BBJs (see page 64), the BBJ 787-9 concept already mentioned and the biggest of the lot – an ACJ 380. EDID is currently working on an ACJ318 Elite, a BBJ3, BBJ 747SP and a BBJ 747-8i for a head of state.

“A lot of our clients find us through word-of-mouth,” is all Doret will reveal about his customers, many of whom hail from the Middle East. In fact Doret will shortly offer bespoke design direct from the region. “We are set to open an office in Jeddah, Saudi Arabia, to serve our clients in the kingdom,” he says. The Jeddah operation will be staffed by a marketing specialist and a designer.

Asked to describe ‘American design’, Doret instantly dismisses the question: “I don’t think you can pigeon hole North American designers in comparison to the

3-4. The ‘Flying Garden’ BBJ 787-9 concept with living walls

international market,” he says. “As designers we all have individual styles. It depends on the client and the type of interior they desire. Some designers may produce the same style interior for all their projects. As for myself, I study the client’s lifestyle to develop an interior.”

What clients generally want falls into two broad categories, according to Doret: “Younger clients from the Gulf states and North America are looking for a more contemporary and modern interior; older clients from the Gulf states prefer a more neo-classic interior. As far as technology is concerned, they all want the latest and greatest in WiFi, satellite phones and live television.”

Any hot design trends?

“Metal composites, jet glass and new leather textures are all of interest.”