

THE FIRST COMPLETED BOEING BBJ 787 VVIP

Kestrel Aviation Management and Pierrejean Design Studio jointly designed the cabin for the first Boeing BBJ 787 VVIP aircraft. Kestrel, the originator of the cabin layout, chose Pierrejean to assist with the detailed design and material choices. The aircraft was completed at Greenpoint Technologies, a Zodiac Aerospace Company and BBJ Completion Center located in Kirkland, Washington, U.S.A. It is now operated by Deerjet and affiliate Hong Kong Jet, and is available for charter.

By Sylvie Peron

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In May, the brand new BBJ 787-8 VVIP stole the show on the Geneva static display during EBACE 2016. A few privileged people had a sneak preview of the cabin even though the FAA certification process was not yet completed. According to CEO Stephen Vella, Kestrel took delivery of the aircraft from the cabin outfitter in August and delivered it to Deerjet, the buyer's operator. Deerjet and its affiliate Hong Kong Jet are the operators of this BBJ 787-8 – not the owners. Kestrel has turnkey managed this aircraft since it was purchased from Boeing on behalf of an investor.

JOINT EFFORT

The design of the BBJ 787-8 cabin was a joint effort of Kestrel Aviation Management and Pierrejean Design Studio of Paris, France. The parties have worked together for the past 15 years in pushing the boundaries of large corporate aircraft cabin designs and premium airline cabins. Most of their work is focused on the cabins of Airbus and Boeing aircraft, both widebody and narrowbody, ranging in size from the Airbus ACJ319 to the Boeing BBJ 747-8.

As most of their work has been for Governments or high net worth individuals who value their privacy, they rarely get to show their work in public and therefore much of their continuous innovation goes unseen. "This BBJ 787-8 is the first widebody corporate aircraft we have been able to unveil and the reaction at the European Business Aircraft Convention and Exhibition in Geneva, Switzerland last May was resoundingly positive," said Vella.

CHALLENGES OF A NEW ORDER

"A huge challenge we faced was to integrate this cabin innovation on a composite 787," comments Vella. "Our previous creations were installed on metal aircraft with an established knowledge base. The new technology aircraft presented a steep learning curve in the installation of the cabin. Kestrel had been involved with the 787 airliner since inception and this knowledge proved invaluable for the first BBJ 787."

Certification of innovative materials was less critical that might be imagined because Kestrel and its suppliers had previously used similar materials in much more modest applications on other aircraft as a means of controlling risk. It was the much larger elements in the widebody 787-8 that presented manufacturing and installation risk.

DESIGN CONTINUITY

Design continuity and coherence throughout the cabin was an important overall objective.



"We aimed for a sense of peace and calm essential for an aircraft with over 17 hours of flight capability," says designer Jacques Pierrejean.

"The conceptual design was to imagine an envelop inside the fuselage and to create a sort of double skin. The interior design has to be in harmony with the original concept and should offer the passengers a bespoke environment, a travel worth remembering as 'wrapped in the wings' of the aircraft!" he adds.

For the sense of sight, the designers strove for an oasis of peace, soft earth tones and uncluttered flowing lines with the absence of sharp edges, good control of natural and artificial mood lighting. To the touch, they wanted a design that felt organic with surfaces that invited emotional as well as physical connection; this would dictate the use of innovative materials. Noise and vibration are very debilitating, so they set the bar very high to address these problems through detailed design, including provisions for extensive soundproofing. For smell and taste they focused on air distribution and fil-



The entrance of the aircraft was created like a hotel lobby



tration and the segregation of zones with hard and soft barriers. “Our task was made easier by the fact that Boeing had addressed a few of these stimuli in the basic 787 airliner; in our VVIP cabin they would be taken to new heights.”

COMPLEMENTARY SKILLS

So what does underpin the Kestrel / Pierrejean co-operation? Primarily it is because each company has complementary skills required to design a complex cabin. Kestrel has unmatched aircraft-related knowledge and Pierrejean is a master of industrial design and style. Each company pushes the boundaries of its own expertise but the other acts as an auditor of what is technically feasible and aesthetically acceptable. This was to prove critical on the world’s first carbon-fibre large corporate aircraft.

The other interesting fact about the Kestrel / Pierrejean co-operation is that it is more proactive than most in aircraft cabin design. “We listen care-



The bedroom is designed in the same spirit as the dining room. The bed offers a highly comfortable sleeping thanks to an articulated mattress allowing a lot of angles -full flat, relax, cradle.... The passenger should enjoy each moment of life aboard

fully to our client’s needs and preferences but we are not afraid to show innovative solutions that go beyond what the customer first anticipated. The design innovation is not usually radical but certainly different and trend setting. We do not do ‘cookie cutter’ cabins!” comments Vella.

DESIGN PHILOSOPHY

The cabin design in this BBJ 787-8 was a case in point. Explains Vella: “We did not have an end user defined so we had to temper innovation with that fact and the need to appeal to multiple cultures, Asian, Middle Eastern or Northern European. We needed to blend timeless elegance and style with an acute sensitivity to perceived cross-cultural preferences. The way to achieve this was to select unique, modern architectural designs with innovative materials that form local points of interest and then integrate these features into a coherent, balanced cabin design. Not always easy!”



Stephen Vella & Tom Chatfield, Kestrel Aviation Management

KEY MATERIAL SUPPLIERS

Key to this design philosophy is further co-operation with key material suppliers that have the same appetite for product development with calculated risk. "These are suppliers with whom we have also had a long-term relationship and progressively jointly developed new products that not only meet our aesthetic expectations but also comply with flammability regulations and the strict durability and maintainability criteria that we define. We are generally a 'test bed' for such material, which the suppliers often go on to apply to other corporate aircraft and airliner projects," he adds.

On this BBJ 787-8, F/List of Austria and Metal Composites of France were two such suppliers that contributed to interested features in the cabin.

F/List is a specialist in wood and marble and were responsible for extensive wood flooring use in the elaborate entryway, hall, corridor and aft VIP bathroom. They also produced all the marble monuments in the Master bathroom and aft VIP bathroom. Metal Composites used their proprietary metal coating technique on many pieces designed by Kestrel and Pierrejean ranging from large credenzas in the main lounge to artistic lamp bases of various sizes throughout the cabin.

In many cases Kestrel and Pierrejean will origi-

nate a design and then work with a supplier to establish feasibility of execution. "Our long working relationship with a small group of trusted suppliers results in a high rate of success with these design experiments. Whether it is a textured 'wavy wall' in the corridor with LED accent lighting or a multifaceted credenza or a stylized, textured 'gong', each is an exercise in its own right but with a place in the overall, integrated design," explains Pierrejean. Notice the impressionist organic artwork designed by Kestrel and executed by Metal Composites in metallic coated composite.

CABIN WALK THROUGH

"The general harmony is very light in taupe, beige and pearl cream white colors. Decorative panels hide the led lighting sources. The I.D. concept is thought with a special attention to the weight impact of these additional structures," adds Pierrejean.

Passengers enter into a grand circular foyer adorned with cherry hardwood floors and walls sheathed in leather. The two main salons in the 2,400-square-foot interior are the dining and conference rooms, equipped with a row of coffee tables that, at the flick of a switch, rise and unfold into a long banquet table, and the main lounge featuring first-class-style, lay-flat armchairs, and twin divans that merge electrically into a daybed. The 40 passengers and 7 cabin crew can access WiFi for their iPads and laptops, and make calls on their smartphones over GSM, at any time and at any altitude. Entertainment programming is available on five large TV screens or streamed live via Internet onto passenger's tablets or laptops. Passenger couples can retreat to the master bedroom suite, a sanctuary offering what Vella calls "a California king-sized bed" and a dual-sink vanity clad in Italian marble.

The bathroom furniture is a wafer thin layer of marble crafted in Austria and attached with a flexible membrane to honeycomb aluminum structure to prevent cracking and reduce weight. The lamp bases and door fixtures are lightweight composite so expensively and artistically spray-painted that even the discerning eye would mistake them for solid brass.

INDEPENDENT OUTSIDE ADVISOR

Kestrel is contractually prohibited from disclosing the cost of the green aircraft and the cabin modification nor the sale price to the new owner. "Many in the media go to Boeing list price of a green BBJ 787 and then add a guesstimate for the cabin outfitting and management costs. The result is purely speculative as there are many factors that influence



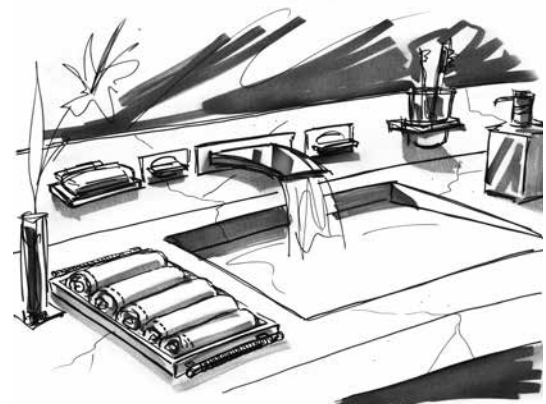
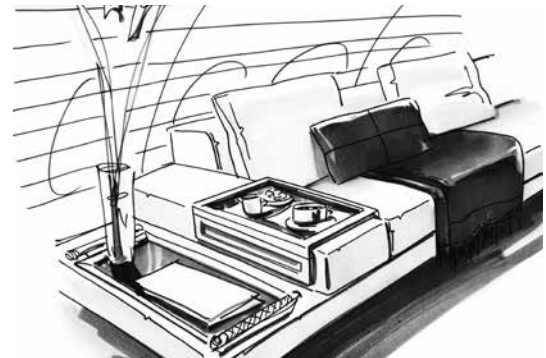
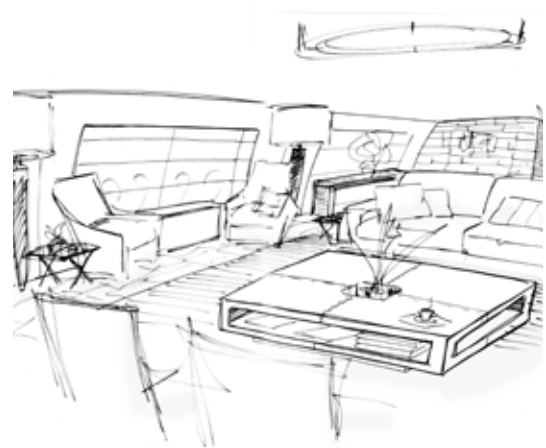
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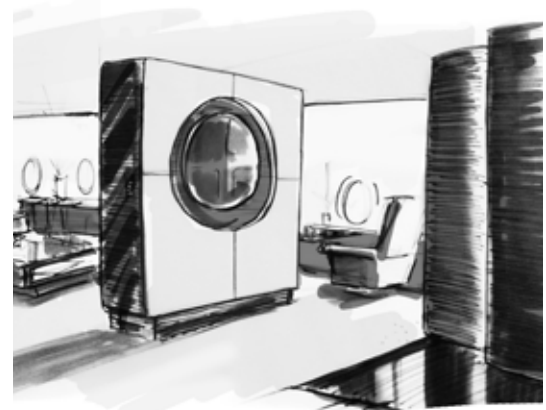
these two cost elements,” explains Vella. You can likely find industry sources telling you that the additional costs to take the aircraft from being ‘green’ to ‘completed’ can run as much as the cost of the green aircraft. Again this varies greatly on specification, build quality, type of aircraft, the project manager, who outfits it, and so forth. It is critical for a buyer of large, complex widebody aircraft to have an independent outside advisor, like Kestrel Aviation Management, to advocate for the client and mitigate risk.”

JUSTIFIABLY PROUD

“We are justifiably proud of what we have achieved on this BBJ 787-8 both technically and aesthetically. It has set the bar very high for others to match,” concludes Stephen Vella. Kestrel and Pierrejean are now moving on to a new project, which they are confident will push the boundaries of cabin design even further to the delight of a select customer base. ■



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In the main lounge, the double skin wall hides the standard shape of the window panels. This diffuses an indirect lighting by reflection on the original window panels



➡
A decorative ‘gong artwork’ divides the entrance from the main lounge