



In the world of aircraft interiors there is no such thing as impossible.

The only thing that limits the world's leading designers and design houses is the ability to realise their imaginative interiors within the constraints of a large metal girde.

As technology evolves, limitations dissolve and we increasingly see aircraft that are so comfortable owners do not want to deplane for the night on a stopover. Not only is the design more luxurious, but also the time between drawing board and delivery to the client is becoming shorter and shorter.

Centres today frequently use full-size mock-ups to ensure the client is happy before actual work on the green aircraft starts. Designing for the luxury market demands a complex mix of skills to turn a tin can into a flying palace. All components have to conform to either a 16G (16x the earth's gravity force) dynamic test requirement or 9G, depending on the aircraft type. Not only that – but the clients are the most discerning in the world.

Teaming

Completions centres are increasingly teaming with designers, as clients want the guy who designs their boat to do their plane. In 2001 yacht designer Andrew Winch went to take a brief on a boat project and wound up designing the client's 737-800 instead – in collusion with Lufthansa Technik (LHT). In addition to his yacht work Winch now collaborates with outfitters all over the world and has created concepts for the Airbus A380 and Boeing's 787 Dreamliner.

He says, "Because of my understanding of sailing yacht hulls I know how to utilise the curve of the fuselage."

He is not the only yacht designer who has turned to aircraft – last year Jet Aviation partnered with Peder Eidsgaard to produce concepts for the 787. Other collaborations include Versace with TAG aviation and Studio E/Motion's Francis Munch with Jet Aviation.

Centres borrow expertise from each other. Last year Midcoast Aviation in the US partnered with Lufthansa Technik to distribute and

MISSION IN-POSSIBLE

The Middle East is the most sophisticated business aviation market in the world. When it comes to aircraft interiors scarcely a month goes by without a major completions announcement to a customer in the region.

Liz Moscrop takes a look at emerging trends before today's MEBA panel session.



Inside story: Above and top left: Peder Eidsgaard's concepts for the 787. Top right and centre: The futuristic Dreamliner.

support the German company's network integrated cabin equipment (NICE) system.

In another innovation QinetiQ and LHT have developed new trim panel speaker (TPS) technology to reduce noise and enhance sound. TPS uses surround sound and blends with NICE, seamlessly integrated with the trim as either flat or curved speaker panels.

The nature of business aviation means that when loyalties are formed they tend to run deep. This January Jet Aviation Basel delivered a VVIP A320-200 to Saudi Arabia's Saad Group. Francis Munch designed the interior, which was

completed in only ten months. The aircraft featured handcrafted art and high-end in flight entertainment (IFE) and communications electronics, including video conferencing facilities, satellite TV and Internet access.

Executive

The aircraft was also configured with an executive seating area, two bedrooms with en-suite bathrooms as well as a combined conference/dining area and first class seating at the back.

Saad was so pleased that it ordered a further VVIP A340-600. The green aircraft will arrive in Basel in April

2008, with delivery scheduled for mid 2009. Munch will again be the designer and the aircraft will feature guest suites, bars, and master bedrooms with lavatories, dining and private areas and first class seating. IFE will include satellite TV audio and video on demand, and Internet via SATCOM.

Designers constantly think of the flight experience. Winch has introduced cameras in aircraft tails and under bodies, as well as cameras in the cockpit and nose cameras to involve passengers in the entire flight experience. He says, "They can see and feel the touchdown, which is great fun and takes up 20 minutes

to half an hour of the flight." Munch, too, added a feature fin tip camera in his design for Saad's A320.

A carefully planned design process pays dividends for customers. Patricio Altuna, executive vice president of Landmark Aviation's Associated Air Center says, "For aircraft with a global reach, the customer expects to have long intercontinental journeys. This means we need to install a bedroom or a divan that is convertible into a day bed. We ask how many people will be on board? Will they be sleeping or working? What are their other preferences?"

Time in the air is crucial to the design concept. For example the 787

is an ultra-long range aircraft, which significantly impacts the design.

Winch explains, "Long flights change the psychology of flying." His version features 32 lie-flat seats, nine of which are double beds. There are also two ensuite guest cabins with a single bed, convertible to a double and ensuite bathrooms with showers. Eidsgaard and Winch integrated a cinema lounge with generous seating, and full surround sound for their Dreamliner designs.

The success of the Dreamliner is cause for glee in Wichita. Boeing's BBJ order book stands at 124.

Last year Boeing sold nine wide-body VIP jets, five 787s and four 747-8s, with a further two 787s purchased by leasing companies by VIP customers.

Interest

Aage Dünhaupt, LHT's director international communications, agrees, "There is a great deal of VIP interest. It's too early to tell when the first VIP version will arrive, but it could be as early as 2010."

Completions centres are in no doubt there will be a strong market for VVIP versions of both the 787 and the A380.

Last October Jet Aviation announced a CHF42m investment in its Basel facility, with a large hangar in development able to take an A380 or a 747-800 as well as extra shop and ramp space. With the top industry talent flexing its muscles, today's impossible will become tomorrow's probable.

Brendan Gallagher

EIGHTEEN months before it's due to enter commercial service, the Boeing 787 is already well on the way to commercial success, with more than 400 examples ordered. Some of them are earmarked as VIP transports for Middle Eastern operators, and completions and support provider Lufthansa Technik is intent on winning a share of the business they will create.

"We are talking to Middle Eastern customers about interiors for 787s and a 747-8," says Walter Heerdt, the Hamburg-based company's senior vice president, marketing and sales.

With its broad spectrum of offerings for VIP and executive operators, which includes lifecycle support, modifications, refurbishments and completions, Lufthansa Technik already has plenty of work from the region on its books. "We're about to complete a complete cabin refurbishment on a widebody and we're also carrying out major work on a 747," says Heerdt. "Another 747 will arrive soon for a refurbishment so extensive that it's practically a completion, and we're negotiating for Airbus A330 and A340 interiors."

Geared

The company's recently constituted VIP and Executive Jet Solutions division is geared up to work on VIP and executive types all the way from the Airbus A380 – an interior concept was unveiled in May 2005 – down to the Bombardier Challenger 300 mid-size bizjet. But the new Boeing twin is currently the prime focus of LHT's drive for big-ticket completions business.

Back in November the company was in Dubai to present its 787 ideas, newly launched at the NBAA show in Florida, to press and potential customers in the Middle East. "We're the first completions centre to create a dedicated 787 VIP interior rather one that could fit any old widebody," says Heerdt.

The new concept's striking internal and external treatments are the work of British-based Andrew Winch Designs. The company created its first VIP aircraft interior – for a Boeing

Dreamliner spearheads LHT drive for VIP work

BBJ2 – five years ago and since then has worked on several similar projects, including the VIP A380.

The new interior's up-to-the-minute look is matched by lavish attention to the comfort of long-haul travellers. There are no fewer than 32 lie-flat seats or beds – nine of them doubles – throughout the cabin.

A prime feature is the dining and conference room with full communications facilities, a centrally located dining table accommodating ten people in seats fully certificated for take-off and landing, and a 42in plasma screen housed in a credenza aft of the table.

"Unlike some other potential interior providers, we're not wasting room by building in a dedicated cinema," says Heerdt. "Our approach is to use one room as both a cinema and a location for other activities."

Other facilities include a bar with fixed stools, reclining chairs, a dedicated audio system, a spacious master

stateroom with a sofa, 42in plasma screen, chaise longue and table.

Though the 787 is the current hot ticket, Lufthansa Technik is at MEBA to present its full range of capabilities.

Visitors to the booth will find information on programmes ranging from the NICE Ethernet-based cabin network, originally developed by LHT's Innovation Engineering team for VIP widebodies and now selected as a standard option on the Challenger 300, all the way up to the VIP A380.

In between come programmes like the Challenger 850 Business Jet – LHT is working on its seventh completion of this CRJ-based type – and the Airbus A318 Elite. For the latter the company is offering a combination of standardised interiors and a selection of materials and fabrics to allow operators to achieve an individual result.

Standing out from the crowd is important in the region, according to Heerdt. "We have completed a lot of Airbus ACJs and Boeing BBJs for Middle Eastern VIP customers and they are usually highly individualised," he says. "I expect the same to be true of the Challenger 850 and A318 Elite, though they are more likely to be used for executive travel, which is growing in importance here."

The same is true of the Middle East as a market for Lufthansa Technik, and the company is putting a special effort into the region.

"We are founding members of MEBA. I sit on its board, and we are participating with a booth and

sponsorships," says Heerdt. "We also set up a Dubai office two years ago to provide shorter lines of communication and seven-days-a-week support for customers."

Heerdt expects to see this and other efforts leading to significant growth in Lufthansa Technik's Middle Eastern business over the next five years.

Prospects

Immediate prospects include an existing MoU on VIP aviation support with Abu Dhabi's Amiri Flight, which could begin to bear fruit later this year, and VIP widebodies.

The region's VIP widebody fleet is ageing, Heerdt points out. "Some of these aircraft need not only maintenance but also major refurbishment. Others may not need a rework, but the operator could decide that he'd like a fresh look to the interior. At the same time, new airframes – A340-200s and -300s, Boeing 777s – are being acquired, and brand-new types like the 787 and 747-8 are beginning to come through."

Heerdt expects to see work starting on 787 completions in 2009, with 747-8 projects getting under way the following year. The new-generation 747 is also firmly on Lufthansa Technik's target list following the decision at the end of last year by parent company Lufthansa to order 20. "For us that's a stepping stone into this type, in the way that Lufthansa's 747-400 fleet helped us to get into VIP completions of that variant," says Heerdt.

If there's one message Walter Heerdt would like to leave with the MEBA attendance, it's his company's ability not only to produce elegant VIP conversions but also to support these aircraft throughout their operational lives.

"VIP aircraft usually fly much less than commercial aircraft," he points out. "We support 1,300 aircraft, most of them belonging to airlines, so we see airframes that are much older in terms of flight hours and cycles than the VIP fleet. We get to learn their weaknesses, and how to cure them, and can recommend preventive measures to our VIP customers long before problems show up on their aircraft."



Walter Heerdt: Sees significant growth in the Middle East.