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ISSUE 2

Lufthansa Technik cabin ideas factory opens for business

BRENDAN GALLGHER

Lufthansa Technik last night officially inaugurated its brand-new Cabin Innovation Centre at the Hamburg Airport base.

Over the past few years the company's Innovation Engineering team has turned out a stream of leading-edge cabin systems that includes the NICE network, NICEview moving-map system, surround-sound flat-panel speakers and a wide range of other inflight entertainment subsystems. Now they have their own dedicated facility, newly completed at a cost of €10 million and housing offices, laboratories and test equipment, and a showroom for use by current and potential customers.

"This marks an expansion of our expertise in the field of cabin innovation while also paving the way for the long-term growth of this business unit," company chairman August Henningsen said last night. "By opening it on the first day of the world's most



Lufthansa's new innovation centre – with dedicated facility and dedicated staff.

important cabins show we are emphasising the importance of this sector to us as a company and to the Hamburg region in general."

The Cabin Innovation core team currently comprises around 60 people, a figure that's set to grow to around a hundred as the new centre is occupied. Third-

party suppliers operating in the centre will bring the total under its roof to a couple of hundred.

Airworthiness assessments of new products will be carried out in the centre's qualification lab, which includes an environmental chamber, electromagnetic compatibility equipment, and vibration and crash test facilities.

Lufthansa Technik's existing airworthiness and intellectual property management functions have relocated to the new building in a move designed to speed up decision making. ■



For more news/show images see flightglobal.com

PANASONIC SETS AUTUMN DATE FOR EXCONNECT BROADBAND

Panasonic (stand 6F25) plans to launch its eXconnect Ku-band satellite passenger connectivity service this autumn and says it has an initial customer base of five airlines.

"All five have also opted for the eXphone onboard mobile phone service offered by AeroMobile," says David Bruder, the company's vp for global communication services. "Two of them are from Europe, two from Asia and one from Africa."

First announced three years ago, the new Panasonic service will be rolled out initially on the North Atlantic, with Asia and



Panasonic's David Bruder ready for rollout.

South America, the South Pacific and Africa following a few months later.

The launch will come at least 12 months later than originally planned, following a protracted

antenna selection process.

"The antenna has been the biggest challenge," Bruder admits. "It was difficult to find one that worked everywhere in the world. But now we have a system from EMS Technologies/Starling in test at our own facility and it's proving to be very good."

The antenna stands out by virtue of its ability to generate a very tight beam to the satellite. "This is essential to avoid interference with neighbouring satellites or a reduction in the data rates that we can offer," explains Bruder.

Panasonic is promising generous data bandwidth to and from the aircraft – 30-50Mbit/sec from the satellite, 1.5Mbit/sec in the opposite direction. "But it's not all about bandwidth," says Bruder. "We estimate that our cost per bit will be a quarter that of SwiftBroadband, the Inmarsat L-band service."

Panasonic faces a number of key milestones in the next few months. It needs the regulatory approval of each of the countries that will be overflown by eXconnect-equipped aircraft. "So far we have about a hundred national approvals," says Bruder.

Weight savings key in new cabin products



For more news/show images see flightglobal.com

Airframe manufacturers have welcomed greater attention on development of lower weight products for cabin interiors, particularly in offering lighter and flexible solutions to the more sophisticated business class seating.

Speaking during a press conference at Aircraft Interiors yesterday, executives from Airbus and Boeing both pointed to the ramp up in business class over recent years – in particular the rush to have fully flat seats – creating a gulf between business and economy class.

“You have a growing gap between the products. We have to refill that gap,” says Boeing director passenger satisfaction and revenues Klaus Brauer. He says that it’s “all of our jobs” to ensure that business class travellers do not trade down to low. “In the interiors community what we can do is to see the appropriate product mix is available and look at what product better suits the current revenue environment,” he says.

Meanwhile Bob Lange, Airbus head of aircraft interiors marketing, says the new business class products being unveiled give airlines more flexibility and offer weight improvement to counter the increase in weight of the ever-more sophisticated business seat product compared to 15 years ago.

“We think seat weights have peaked,” he says. “What we will see is a new generation of fully flat products, better integrated, more flexible and with less weight,” adding, there is an



Boeing’s Klaus Brauer (left) speaking at the show yesterday and Airbus’ Bob Lange (below).

emergence of “new creative ways to arrange seats”.

Lange says: “Now we are starting to see the flow-through of weight saving innovations in the industry.”

Brauer adds it took the “giant shock” of the rocketing price of

fuel last year to focus attention on weight. And he is heartened that this remains the focus even with the subsequent dramatic fall in oil prices. “Fortunately it has not caused them [suppliers] to take their eye of the ball.”

■ For more on design – see p8



Industry still sees opportunities for life after crisis

Cabin interiors industry executives believe airlines will still look at opportunities to differentiate their products and to position themselves for a recovery in demand, despite the economic crisis currently engulfing them.

Addressing the impact of the economic turmoil facing the airline industry during a press conference at Aircraft Interiors, Lufthansa Technik senior vp and chief technology officer Bernhard Conrad said that without down-playing the depth of the crisis, it is important not to over-react. “We have to bear in mind there is a day after the crisis and there is always risk and opportunity,” he says.

Similarly, Bob Lange, Airbus head of aircraft interiors marketing, points to the experience of the last downturn when “there were quite a lot of airlines who took the opportunity to escalate their interiors programme so they would be better prepared to meet the recovery when it came”.

His colleague at Airbus, vp cabin and cargo Klaus Röwe, concedes it is a difficult environment for airlines to spend on innovations, but similarly sees opportunities. “It maybe be difficult [in this environment] as cash is king. But there will be winners and losers and airlines will need to differentiate.

6 SIX OF THE BEST

The Crystal Cabin Award competition reached its highlight at the Empire Riverside Hotel last night as the winners of this year’s competition were announced

The list of 51 candidates from had been whittled down to 18 finalists and the international panel of experts selected the six winners: B/E Aerospace, Boeing, James Lee, Lufthansa Technik and Recaro.

The competition was initiated two years ago as the world’s only award to recognise

outstanding and innovative aircraft cabin products and concepts

German company Recaro picked up two awards, winning the Passenger Comfort category for its CL 3620 seating structure, and in the Industrial Design/Interior Concept category for the SL 3510 economy class seat that weighs less than 10kg.

In the Greener Cabin, Health and Safety category, Boeing’s recyclable aircraft carpet was the winner. Produced without using harmful chemicals, the 100% recyclable carpet is returned to the manufacturer at the end of its useful service life and completely recycled into a new carpet.

First place in the Material and Components category went to B/E Aerospace for its vacuum toilet assemblies, generators and waste tanks that will not only provide a minimum of 30% weight savings, but also eliminate the need for costly hardware removals.

The winner in the Entertainment and Communication category was Lufthansa Technik for its ‘niceview’ infotainment system.

The winner of the Judges’ Commendation Prize, which extends beyond the category classifications, was Hong Kong-based designer James Lee. For his “Paperclip” armrest concept shown in yesterday’s *Flight Daily News*.

Living the American dream

The show organisers of the Aircraft Interiors Expo at Hamburg are still celebrating their success across the Atlantic.

The launch of Aircraft Interiors Expo into the Americas market last year saw more than 3,500 attendees and over 40 airlines attend the Long Beach, California event.

The focus of the event was a 'Flying in the 21st Century' open forum, featuring speakers from designers, airlines and OEMs. "Attendees said they felt the seminars were on target and extremely relevant to the challenges they are facing in the volatile airline industry. There were few sessions that weren't standing room only,"

said Event Director Katie Murphy.

Going forward, Aircraft Interiors Expo – Americas will alternate with Aircraft Interiors Expo Asia. The next Americas event will take place in California from the 14 to 16 September 2010. "The 2010 event will once again be co-located with the World Airline Entertainment Association. "I am also pleased to announce that the International Flight Services Association will be co-locating with us in 2010 creating a one stop shop for airlines," added Murphy.

If you are interested in the event visit stand 6H40 in Hall B6 or the website at www.aircraftinteriorsexpo-us.com



April Scherz – Make my day! The hologram and how it looks this morning.

IFE NEXT GENERATION HERE TODAY

American scientists are expected this morning to announce an amazing new technology that could revolutionise the whole IFE industry. NASA-based experts have developed what is described as an atomized restructuring display system which will transmit images as holograms that appear to be life sized when displayed against a new translucent headrest on the seat in front. Because they use no cables or screens the weight saving will be phenomenal.

Chief Imagineer, April Scherz, said, "This is really unbelievable – but the day had to come – and this is that day." Details can be seen on stand 1-04.

Goodrich sees the light from SaFTGlo

Goodrich signed up with STG at the show yesterday to receive the company's photoluminescent (PL) lighting system, "SaFTGlo".

SaFTGlo is currently installed in a third of the world's operating aircraft and will now be available to more customers through Goodrich. The system simultaneously stores and emits light, offering up to 16 hours of light in darkness.

Peter Stokes, chief executive, STG Aerospace says, "Our industry-leading PL floorpath marking system can reduce costs by thousands of dollars on each aircraft on which it is installed. As a supplier of PL systems to Goodrich, these savings will be easily available to many more operators."



Signing on the glowing line are (L-R) Goodrich's Sven Koppert and Franz-Josef Beerman with Douglas Nowinski and Ian McCutcheon from STG Aerospace.



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Panasonic's Ku-band inflight revolution will be televised

Panasonic (stand 6F25) has set out to revolutionise the inflight television market, announcing the creation of a Ku-band satellite-based network designed to deliver content worldwide.

Unlike existing offerings from providers like LiveTV and Rockwell Collins, which for commercial reasons are confined to regions like North America, Australasia and the Middle East, the Panasonic Airline Television Network will be available around the world, according to the Lake Forest, California-based company.

The service will feature a selection of leading TV channels specifically licensed for worldwide distribution to aircraft in flight. Panasonic says it has negotiated all the necessary licensing and distribution agreements directly with the content providers. Existing inflight TV distribution agreements are generally limited to specific geopolitical areas, which up to

now has ruled out the emergence of anything resembling a seamless worldwide network.

Panasonic has full control of the content encryption format, resulting in a simplified system design and content management process, the company says. The world's No 1 IFE provider also emphasises the scalability and flexibility of the service, declaring that channels and content can readily be added to meet passenger demand or an airline's specific regional needs.

COMMON INFRASTRUCTURE

The announcement is seen as straw in the wind indicating progress with the company's eXconnect passenger broadband connectivity offering, which has been in development for some time and is due to take to the air with a North American airline this year. The two services will use a common infrastructure comprising leased Ku-band satellite capacity, aircraft antennas and other onboard



Scott Scheer switches on for live television.

equipment. Panasonic says it is now seeking the necessary regulatory approvals for the TV service in partnership with potential airline customers. Attractions for the carriers

include not only the possibility of an important new string for their passenger service bows but also an opportunity to earn extra cash through advertising insertions and pay-per-view access.

THALES LANDS BA TOPSERIES RETROFIT ORDER

British Airways (BA) has placed an order with in-flight entertainment provider Thales (stand 6B20) to retrofit 18 Boeing 777 aircraft with the manufacturer's TopSeries IFE system. It comes after the Oneworld carrier last November selected the Thales TopSeries IFE system for its on order Airbus A380s, Boeing 787s and Boeing 777-300ERs. Thales notes the retrofit selection for the 777s provides passengers with a "constant travel experience in line with the new aircraft orders".

MINI OFFERS MORE

Teledyne Microelectronic Technologies (stand 6D97) is showcasing its miniaturised transceiver from its Optoelectronics division. It says the mini is available in pigtail or detachable versions. And that its fibre optic transmitters are capable of data rates up to 4.25Gbps.

Aeromobile looks forward to customer surge

Onboard mobile phone service provider AeroMobile (stand 6F35) could see its customer base almost quadruple in size in the next 12 months, according chief commercial officer Peter Tuggey.

UK-based AeroMobile is currently fully operational with Emirates, which is carrying out a fleet fit. It is also being trialled by Malaysia Airlines, and Qantas, V Australia and Saudi Arabian Airlines have said they will implement the service.

Here at Aircraft Interiors

AeroMobile partner Panasonic has revealed that AeroMobile's eXphone offering has been selected alongside the eXconnect satellite broadband service by the five launch airlines.

"In addition to those five we expect to see an Asian carrier rolling out soon on its Boeing 777s and a European airline putting us into its fleet as part of an IFE deployment," says Tuggey. "We also have a new Middle East customer in prospect. Contracts have been signed with two of

these airlines, and we also have tenders out to a further four operators."

The company is spotlighting a range of value-added services designed to exploit the connectivity capability that it provides. Yesterday it announced a facility that will allow cabin staff to check credit cards in-flight. "Onboard duty-free sales are very vulnerable to card fraud because the airlines can't access payment networks to authorise the transactions," says Tuggey. "We can offer a solution by allowing airlines to make secure transactions through our system. Cabin crew will be able to use the handheld credit-card machines commonly found in restaurants on the ground."

AeroMobile plans to trial the system with existing customers and is presenting it to duty-free providers. "Not only will it protect airlines and duty-free providers from fraud losses, but it will also encourage them to offer more expensive goods because they will have a much higher probability of being paid," he says.

Peter Tuggey sees more customers onboard.



Thompson makes Economy a Cozy Suite

Thompson Aero Seating (stand 6G80) has publicly revealed its rejuvenated Cozy Suite for Economy class passengers.

Using a staggered configuration the seat also has a patented tilting seat pan that not only helps with passenger egress but also with in-flight comfort according to sales vice president Brian Rogers.

"It's not just a seat, it's a new business plan for any airline customer," he says.

And the seat is ready for 2010 production. Rogers explains that the company has already signed up two customers, but remains tight-lipped about who they are.

Presently the seat is configured for the long-haul segment and while it weighs in at around 14kg "we're working on reducing it to less than 12kg per passenger" says Rogers.

While the display version has no IFE provisions Rogers says the seat has IFE capability and

compatibility. "For example on a 767-400 switching to our seat would give you 14% more seats," adds Rogers. A standard -400 configuration would offer 182 seats. By using Cozy it can accommodate 208 fare-paying travellers.

The company says that if the revenue per seat is \$500 per day then with 300 flying days per year the Cozy would increase revenue by \$150,000 per seat, per year. Or \$3.9m on its 767 example...

"The new Cozy Suite is a lot roomier and we've changed it to increase the comfort and living space. We have also redesigned the seat back too and now there is 30 to 50% more space," he says.

Cozy offers each individual economy passenger shoulder room of 22" with individual armrests. Because of the staggered design it also has a "sleeping area" where passengers



Brian Rogers: It's not just a seat, it's a new business plan.

can rest their heads for a more peaceful sleep.

It has what the company calls 32" of "butt to knee space".

Weight loss guaranteed with Design Q's Close-Couple Seat

Design Q (stand 7A43) is highlighting its ability to help aircraft manufacturers, and operators, to lose weight.

Commercial operators, and especially the airlines, are always keen to shave off a few pounds as this translates into cost savings. Design Q showcased its Close-Couple Seat at last year's AIX as an idea. Since then it has further developed the design and is actively seeking a launch customer.

Director of the UK-based design consultancy Gary Doy says: "We are using Cobra AS to manufacture

the seat and have a lot of interest and intent generated."

Doy points out that the seat is designed to fit in a 28" pitch environment, but because of the fixed back design and specially designed knee-friendly back passengers will feel like they are sitting in a bigger pitch. "The fixed back design gives you the feeling of 3" more space. You are sitting in a 28" pitch seat but feel like you are at 31", he says.

But Doy is also keen to point out that because of the company's previous experiences in the auto-

motive industry it has picked up on how car manufacturers develop and design seating, and subsequently applied some of these principles.

For example the Close-Couple doesn't use Velcro for the coverings, it uses an integrated retainer that is often used by car manufacturers. And it isn't just the design that benefits from links with the car makers.

"The automotive industry is a great industry to borrow ideas from," explains Doy. And that is partly why Design Q is using Cobra to manufacture the seats. The seats will be manufactured in the same way that automotive seats are which ensures that high volumes can be produced very quickly.

Ultimately the seat's goal is to save an airline or operator weight, to that extent the target weight is 7.5kg "which is where we are roughly at," explains Doy.

"There are lot of techniques we can use to reduce weight. We can already halve the weight of a seat-belt, and even though it may only be a few grammes it is still weight saved," he says.



Design Q director Howard Guy with the innovative design.

B/E has Oasis and highlights Pinnacle

B/E Aerospace (stand 5C55) is introducing two new seating applications at Hamburg. Pinnacle is its new economy seat and the company says that it is up to 20% lighter than other seats currently available. Furthermore, B/E says it comes pre-engineered for the latest IFE offerings.

During its development B/E has focused on minimal weight and a low total operating cost which it says is in-line with the economic challenges facing airlines presently. It also has 'plug and play' ability with modular comfort features.

It is scalable and can be configured for narrow-body and wide-body configurations.

At the sharp end though the seating giant is introducing a high-density version of its Oasis modular super first class suite.

B/E says that the modular suite provides a platform for an airline to offer an exclusive product that has flexibility from low to high complexity and an open plan or private environment.

Its high density seating arrangement would allow a six-abreast configuration and can be arranged in two variants – an 'in-line' version that provides 'traditional' double seats, and a staggered version that allows direct aisle access for all passengers. These high-density variants feature a lighter version of the company's popular fully equipped Oasis seat.



Premium economy launch "good timing"

The launch of Air France-KLM's new premium economy product on its long-haul flights was not originally planned to coincide with the global economic downturn but the timing has unwittingly worked out well, says the carrier's vice-president of marketing Patrick Roux.

Air France-KLM recently announced that tickets for its new Premium Voyageur product will go on sale today, and the new cabin will be introduced throughout its long-haul fleet from this autumn. Premium Voyageur, which will feature an average of 22 fixed-shell seats offering 40% more space than Air France-KLM's economy cabin, will be available on all long-haul flights by the end of 2010.

The product was not intended as a response to the downturn,

which has seen demand for business class travel plummet, but Roux says it could help to absorb some of the shocks of the crisis.

"The initial purpose was to offer a product to passengers travelling for leisure who want to pay for extra comfort, or to small and medium-sized enterprises that don't have a corporate contract with Air France-KLM," he says. "Since then, we believe that Premium Voyageur could be a good alternative to business travellers [who might have otherwise downgraded from the front of the cabin to the back]."

Roux describes Premium Voyageur as an "opportunity for us to compete with other carriers that

have a premium economy product, and also with new entrants such as OpenSkies, which offer medium-class comfort at a medium price". Other airlines that offer premium economy cabins include Virgin Atlantic, British Airways, Japan Airlines, Air New Zealand and United Airlines.

If demand for Premium Voyageur is strong, Air France-KLM could look at expanding the size of the cabin in the future. "The first reactions from the market have been very promising and we plan to enlarge the cabin if demand is high. It can be expanded by one or two extra rows," says Roux. The seats will offer a 97cm pitch and a 123-degree recline.



RECARO STINGRAY: BUZZING WITH WEIGHTLOSS

Recaro (stand 7G40) has developed the ultimate lightweight economy concept seat. Weighing in at a staggering 6kg the German seat is reassuringly slim.

"We took things a step further with our seat prototype and maximised weight reduction to show what is possible in an aircraft interior," explains chief executive Axel Kahrenitz.

The company's engineers were able to reduce the weight by integrating what it calls intelligent new designs and innovative materials in the primary structure.

The seat structure is similar to the company's SL3510 seat but uses a new aluminium alloy along with titanium and carbon fibre reinforced plastics.

Lufthansa Technik and EADS Sogerma get into beds

Lufthansa Technik (stand 6D65) and French-headquartered interiors specialist EADS Sogerma (stand 6B80) have teamed to attempt the summit of the aircraft seating market.

EADS Sogerma is to offer the Aerosleeper – Hamburg-based Lufthansa Technik's concept for a premium-class bed – as an element of its existing Ultimate 17 super first-class seat under the overall designation Ultimate Sleeper.

Created by the German company's Innovation Centre, Aerosleeper is intended to iron out the wrinkles still to be found in first-class seats when they recline fully flat. To

ensure that the passenger sleeps comfortably, the design incorporates a genuine bed that can be folded out over the fully reclined seat as required.

"Even the best ideas are useless if they can't be implemented in practice," comments Innovation Centre managing director Andrew Muirhead. "In EADS Sogerma we've found the right partner to realise the Aerosleeper concept." Sogerma is productionising Aerosleeper and intends to bring the combined Ultimate Sleeper to market in the middle of this year.



For more news/show images see flightglobal.com

WASP takes the sting out of seat controls

Airlines looking to give their premium passengers an improvement on the sometimes user-hostile control units found in most seats are calling on WASP Switches (stand 5A35) of the UK.

This specialist in seat and suite controls is debuting its new cordless graphic user interface. Working like a domestic television remote control, the device features a large touchscreen displaying icons for the control of seat functions and IFE as well as any other facilities that the airline may offer, including shopping, destination guides and connectivity.

IFPL designs and manufactures passenger products for all IFE systems

The company has developed docking stations compatible with all MP4, MP3, Zunes and DVD players, while incorporating USB and Audio output jacks as standard. The designs can be tailored to customer requirements.



Docking station with recessed iPod cradle



Docking station with pop-out iPod cradle

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CONNECTIONS FOR INFLIGHT ENTERTAINMENT SYSTEMS

WEIGHTY MATTERS

Niall O’Keeffe reports on how aircraft interior manufacturers are ‘making light’ of weight-saving cabin design issues

Weight saving is critical in cabin interior design, in keeping with the overarching imperative to reduce fuel burn. However, obstacles arising from regulatory requirements, customer perceptions and issues of maintainability need to be overcome.

Past attempts to deploy lightweight composite materials in seats – the major driver of total cabin weight, ahead of galleys and in-flight entertainment – have been hampered by the fact that they are “extremely problematic” to certificate, says Airbus’s head of aircraft interiors marketing Bob Lange.

“An aircraft seat has to go through deceleration testing and crash testing, and the behaviour of the composite material is harder to model than metallic materials, which means the testing becomes empirical – trial and error,” says Lange. “The consequence is that the testing becomes very costly. You need to do more iterations to get the seat certificated. That’s meant that the two strongest attempts that I’ve seen in the last 10 years to introduce composite seats have led to either the composites being taken out or the scope of commercialisation of the seat – and its market impact – being limited.”

Customer perceptions also pose a challenge in seat design, to the extent that a seat’s thickness is seen as a measure of its comfort. British Airways design executive Peter Cooke explains: “A very ergonomically designed seat doesn’t have to have 4in [100mm] of



foam, whereas if you showed that in a customer focus group they’d probably pick the thicker seat because it looks more comfortable.” Many lightweight materials are not durable enough to last in service on long-haul flights, he adds.

TARGET WEIGHTS

Until recently a vogue for differentiating cabins through premium seating led some airlines to buck the weight-saving trend. “The weight of premium seats has in some cases doubled, in some cases quadrupled,” says Lange. “We have seen the weight of more sophisticated in-flight entertainment systems increasing [as] the service options that premium carriers are delivering to their customers have increased.” However, the dramatic spike in oil prices last summer and the onset of recession gave even premium operators “pause for reflection”, leading to “stronger assessments...of how a product will influence the airline’s market share or generate revenues, rather than reacting as a kind of arms race to a competitor”.

BA is targeting the heavy actuators deployed in adjustable motorised seats. One option is to replace such seats with hydraulically oper-

Above:
Bombardier’s
Learjet 85 interior.

Below: Airbus’s
weight saving
SPICE galley.

“We’d love to go down the route of Kevlar carbonfibre type materials,” says Cooke, citing innovations that have been achieved in design of Formula One cars and racing bikes

ated ones, though the technology is not yet cabin ready. Additionally, the carrier may look to replace solid dividing screens with translucent ones, or go a step further by breaking up cabins with light or fabric curtains instead of screens. It is also investigating increased deployment of composite panels in cabin furniture, although the need to satisfy flammability and smoke toxicity regulations stretches the timeframe.

“We’d love to go down the route of Kevlar carbonfibre type materials,” says Cooke, citing innovations that have been achieved in design of Formula One cars and racing bikes.

Weight saving through innovative material use has been prioritised by Bombardier Aerospace in its cabin design for its Learjet 85, a corporate jet with an all-composite airframe due to enter service in 2013. Bombardier has introduced new forms of thermal and noise insulation, as well as seeking to reduce the level of foam deployed in seats.

Additionally, the Learjet 85 has single-ply side panels strong enough to eliminate the need for a skeleton within, an innovation intended to simplify assembly and manufacturing as well as save weight. Similar imperatives led the airframer to deploy a double-club seating configuration, allowing components to be switched between different areas of the cabin and symmetric tools and repeated patterns to be used in design and manufacture.

Meanwhile, the possibility of



FOCUS ON CABIN INTERIOR DESIGN



reducing weight in catering equipment is being explored by Airbus via a project named Spice (Space Innovative Catering Equipment). "It's something where the standards we have today haven't moved forward since the 1960s," says Lange. "They're becoming blocking points to further innovation. The common denominator of today's galleys is the catering trolley – they weigh 20kg [44lb] each when they're empty and 100kg when they're loaded. You've got anything between 10kg in a single-aisle aircraft and 80kg or more in an A380, and all of this weight is dead-weight, which for most of the flight is not actually offering any function."

Within Spice, Airbus has mooted replacement of catering trolleys with "lightweight low-cost boxes and foldable carts for service", alongside other measures. Cumulatively, these innovations could allow an airline to add up to 11 seats in the cabin of a typical widebody and eliminate up to 20% of the weight of galley systems, says the airframer. Airbus will offer Spice for new aircraft and as a retrofit from "early next decade".

While BA is considering replacing disposable catering products with rotatable products, Cooke warns that there are marketing priorities. "We're a premium airline," he says. "We like to make sure that the feel of a product is

of a quality. Having said that, we know there are some products out there [applying] new ceramic technology that is lightweight."

Cooke is confident that as technology advances it will become easier to achieve weight reductions without compromising "look and feel". In seeking to stay abreast of developments BA works in conjunction with the small pool of suppliers with sufficient scale to deliver the volumes it requires to standardise across its fleet. "I think it's the airlines that tend to push the innovation rather than the suppliers [but] it's changed a bit recently," says Cooke. "Suppliers are now getting on board with weight-saving opportunities."

LIGHT ENTERTAINMENT

A natural lag exists between developments in ground-based technology and their application in the air, for regulatory and economic reasons. "The particularity of aircraft cabins is that compared with ground-based uses we have relatively small volumes," says Lange. "We don't go to Dupont and buy tens of thousands of tonnes of plastics. We buy a few tonnes. So, a lot of it is not just the technical capability of the material, but its economic readiness."

Despite the lag, the pace of change in the area of in-flight entertainment has been rapid. "I think the entertainment that we offer is leaps ahead of where it was almost 10 years ago, where we were still doing pull-down screens," says Cooke. "But the expectation with respect to connectivity, iPods, etc, is still relatively

Above: Could this be the aircraft interior of the future...

Left: iPod connectivity a must for the future.



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show images see
flightglobal.com

difficult to achieve. Things like IFE screens, entertainment screens, etc, are becoming much thinner now, much lighter, but due to technological constraints they're not as thin and light as your standard laptop."

However, a major breakthrough may be imminent. "Once the ability is there to get full connectivity and we're able to transmit our entertainment from the ground, not carry it on the aeroplane, then the opportunity's there for weight saving," says Cooke. "It's not far off."

In Lange's view IFE represents "the hardest part of the cabin to design for", partly because of the high expectations generated by the consumer goods market. There are also technical challenges attending the requirement to deliver services to a high concentration of people in a small space, at levels of higher service reliability higher than those that prevail on the ground. It is not, after all, easy to simply replace a faulty IFE screen during a long-haul flight.

"A European airline told me about a year ago that the maintenance cost of their in-flight entertainment was equivalent to that of a jet engine on one of their single-aisle aircraft," says Lange. "The IFE is the most expensive system on the aircraft after the engine, and we're seeing an interesting period of crossover in technologies. Among the airlines offering a lower-cost product, we've seen a proliferation of portable solutions developed essentially from the ground-based market [which] can be used in aircraft, but with limited functionalities."

According to Lange, the migration of technology from "the portable world into the aircraft embedded world" has been accompanied by a decline in the real cost of higher-end systems, reflecting the potential to generate ancillary revenue by charging for their use. "What we're convinced about Airbus is that there is a category of in-flight entertainment that offers on-demand video and connectivity without the level of choice of a high-end system, but at a significantly lower price point," he says. "A ballpark figure would be a quarter." ■

EMPOWER

Come visit the leading supplier of Intelligently Managed Airborne Power Solutions at Stand 6D30



EAM's director of operations/engineering Eloy Leal.

EAM makes waves

Hamburg is the launching pad for a new Radio Frequency Identification technology (RFID) by US company Eastern Aero Marine (EAM) (stand 7D60).

This latest advancement in aviation product inventory control can be fitted to life vests and life rafts with a chip that stores the birth record of the product.

"The RFID System is designed with two basic parts, a transponder tag that is attached to the inventory asset, and a reader, which is a transceiver and an antenna," says Eloy Leal, director of operations and engineering. "The reader processes the RFID tag data similar to a bar code and passes information to the company's asset management application. The portal reader could provide alert notifications including overhaul, missing assets, incorrect location and initialise paperwork or other numerous functions." The new application in aviation safety equipment provides benefits including cost savings and time efficiencies.

Director of sales Manny Gato adds: "You will now be able to complete an entire shipping container inventory check or an on-board airline safely check-in just seconds. The old manually-intensive process of checking each piece can be eliminated, thus, saving a company time and money."

EAM will be providing demonstrations of its RFID-enhanced products and showcasing its entire line of life vests, life rafts and safety products at the show.



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MEDICAL & EMERGENCY

flightdailynews.com 

AmSafe sees momentum for seatbelt airbags

Phoenix-based AmSafe Aviation (stand 5F40) is hoping to capitalise on new business opportunities for its seatbelt-mounted airbags fuelled by entry into force of 16g requirement rules this October to further their deployment across aircraft fleets, particularly in premium cabins.

From October newly delivered aircraft in the USA must be equipped with seats capable of withstanding a 16g dynamic longitudinal acceleration in a crash and be configured to limit the risk of severe head injury. But in some locations – primarily facing fixed bulkheads or behind non-articulating seats as found in exit rows – seats cannot meet the necessary targets.

AmSafe Aviation executive vice president Bill Hagan says the number of seats affected is dependent on the cabin configuration, but that typically it applies to 6% of seats and that the airbag provides a "no-brainer" economic decision compared to the cost of taking seats off the aircraft. He says this



AmSafe's executive vice president Bill Hagan.

has helped spur more demand for the product, which is already equipped on aircraft across a number of airlines.

"As October rolls up, there is a growing list [of new customers]. We have 20 new airlines that will be flying in the year that follows [implementation] now they have to be compliant," he says.

"That is the first driver, but as we get into the fleet there will be more adoptions of the product in premium seating," he says. The complexity of some premium seat area and layouts mean these

too could have a requirement and AmSafe is already present across a number of airline's premium cabins. "That in the end will be the bigger opportunity. That gets you from 6% of the seats to 15%."

Hagan also sees the opportunity for airlines to move to outfit full aircraft on a voluntary basis for marketing and product differentiation benefits and says AmSafe is in talks with a number of airlines in North America. "That is the big leap. We believe it is inevitable and it's only a matter of time."

Lufthansa Technik unfolds improved Aerostretcher

Lufthansa Technik (stand 6D65) is introducing an upgrade to its foldable Aerostretcher system which helps the transport of patients who are unable to use standard aircraft seats. With its weight now further reduced to 38kg the new Aerostretcher NG offers a number of additional improvements.

It can be secured by quick-

release locks to the seat tracks of most economy-class cabins in five to ten minutes. In the structure solid cross-beams are replaced by steel cables, reducing weight and making it possible to brace the unfolded assembly via a single knurled screw. Despite its lightweight construction, Aerostretcher NG is fully 16g-certificated.

A height-adjustable opaque

curtain assures privacy, and the legs, armrests and click-on desk can be adjusted to meet the needs of patients and their carers. When not in use, Aerostretcher NG can be folded and stowed in two compact boxes suitable for the aircraft's cargo bay. Launch customer Lufthansa has ordered 50 examples for delivery by the end of August.

In a second medical initiative, Lufthansa Technik has partnered with RDT of the UK to assure air-to-ground communications for the latter's Tempus IC airborne telemedicine system.

Lufthansa Technik's Mobile Access Router (MAR) can intelligently select the most appropriate air-to-ground communications link at any time and automatically make a connection for the transmission of data from Tempus IC.

Tempus IC allows a non-medical user to collect and transmit key vital signs – including blood pressure, pulse and blood oxygen.



Jessica Schiebeck shows off the Aerostretcher.

Muirhead makes leathers for the hottest seats

Safety matters at least as much as comfort and good looks to British seat leather manufacturer Andrew Muirhead & Son (stand 5E85b).

The Glasgow-based company is showing two product ranges – Sateen and the recently launched Arisaig for high-end applications – that incorporate its own fire-retardant barrier system. They are joined here by the Ingleston, Lustrana, Lustral and Metallic collections. All six meet the

highest safety, durability and environmental standards, the company says.

“We’re the first and only aviation leather manufacturer to be awarded ISO 14001 certification,” says programme manager Bernadette O’Shea. “We also control the entire manufacturing process from raw material to finished leather. Every hide sold is tested and certified in our own approved facilities.”



Ian Taylor shows off his leather.

Yarwood is ‘Hell yes!’ for leather in premium

British company Yarwood Leather (stand 6B82) is highlighting its SupaLite lightweight leather and its heat release compliant KalorLite leather.

KalorLite has been tested at the company’s UK Civil Aviation Authority approved Kerosene Burn testing facility to ensure it is heat release compliant.

This means that the leather can be used not just for the actual seat but for the surrounding frame as well.

Swiss Airlines has signed up as the launch customer in its business class seat. “Leather has that ostentatious feel and it is much more comfortable than vinyl or synthetic leather.

“We use 100% real leather, and it’s all sourced in the UK,” explains group managing director Matthew Nicholls.

Furthermore the company is offering free burns testing

(roughly \$1,400 in value) to anyone that switches to Yarwood from their competitors.

Nicholls says that with the burn testing facility it fills the missing gap in its offerings.

From the high temperature side it is also showcasing its SupaLite range which it says is real leather at half the load.

The company’s SupaLite weighs just 390g per square metre and claims to be 30% lighter than other “so called lightweight leathers” and 50% lighter than standard aviation grades.

This could mean a saving of 1kg per seat for many of the world’s airlines and therefore a massive potential for shaving off those extra pounds. It says that an Airbus A380 flying fully laden from London to Singapore when fitted with SupaLite would enable the aircraft to



Hell for leather with Jade Kemp and Stacey Harding.

carry an extra nine passengers and a potential carbon emissions savings of 10,800kg.

A resin that resonates

Gurit (stand 7F60) is highlighting its range of aircraft interior prepregs here at the Hamburg Messe.

It is showcasing its PB1000 a modified benzoxazine resin that uses no formaldehyde or phenol residues. This means it is more eco friendly and meets the latest environmental standards for aircraft such as Airbus’ AP2091.

It has a non-volatile rapid cure that the company says generates a non-porous surface, the result being there is no need for time and cost consuming reworking the company says.

Meeting increasing demands on cost efficiency in aircraft interior manufacturing, PB1000 is also designed for commonly used fast hot-in/hot-out curing processes.



The horizontal design on TapiSuede.

Optique’ opens opportunities for design

A new design and printing programme with limitless capability on its TapiSuede and UltraSuede is being showcased by Tapis Corporation (stand 6C55).

Designer fabric options are often limited to available patterns and materials, Optique’ allows designers the capability to be more creative and develop horizontal designs and provide a clean sheet material with lengths of up to 100 feet.

It also ensures that the colour palate matches both the original order and subsequent replacement orders. Tapis also offers Ultraleather, a leading lightweight faux leather product in the industry weighing just 310g/m. Ultraleather is available in various colors, patterns and textures, including a revolutionary multi-stretch fabric that extends around curves for a tight, seamless fit.

Ultraleather, TapiSuede, and

Ultr suede come in several different textures, and are used for many different applications including seating, headliners, bulkheads, upholstery, sidewalls, head rests, trim and more.

Tapis fabrics can be found in VIP and regional aircraft around the world, and on leading airlines including Singapore Airlines, Japan Airlines, ExpressJet, Emirates, Qantas and Korean Airlines.

**Come and see us
at booth 6D65**



Lufthansa Technik
More mobility for the world



Hellerman Tyton with long term ties

Hellerman Tyton (stand 6M2) is showing a range of ties and labels designed to prolong the life of individual cables and efficiently organise bundles.

"We pride ourselves on working closely with our customers to identify their needs and provide the most appropriate solutions," says marketing representative Inga Schütt.

The company's new Level 4 tie is serrated on the outside rather than the inside, reducing the space between the cable bundle and the tie itself. This eliminates the possibility of damage to the cable from inward-turned serrations and increases cable life.

Left: Inga Schütt – kind to cables.

KENYA AIRWAYS GLOWS IN THE DARK

Kenya Airways has ordered STG's (stand 6A86) new photoluminescent (PL) system, SaFTGlo, for all its Boeing 777s and 737 and 767 refits and is the first operator to use the system on a 777.

PL systems simultaneously store and emit light after charging in normal cabin light, marking emergency exit paths for up to 16 hours, potentially saving thousands of dollars. They are available in over carpet or low-profile systems and in over 300 colours.

Peter Stokes, chief executive, STG Aerospace says: "SaFTGlo will provide the safety they require while cutting operating and maintenance costs, essential at times when all operators are trying to keep costs low."

IFE Products aim to be light on airline pockets

InFlight Entertainment Products (stand 6F15) is looking to save the airlines money on the lights they use to illuminate their in-cabin logos.

Many carriers have dropped these useful brand-enhancers, turned off by the short lives and high power consumption of conventional filament bulbs. The US company believes it has the answer in a new range of high-power LED lights claimed to be two to three times brighter than traditional filament bulbs while using half the power and lasting up to 80 times longer.

The company is currently testing the lights with a number of airlines. Meantime, it has



All lit up – IFE's president Jim Shipley (right) with VRS president Robert Hickey.

begun shipping its range of plug-and-play LED reading lights, designed to cut power consumption and heat output in the cabin.

The company is also ready to shed light on its contribution to

the new wave of compact, lightweight audio/video-on-demand (AVOD) inflight entertainment systems. As well as AVOD, the company says, its In-Seat Video System can support pay-per-view programming, games, live satellite television and more.

Based on a Gigabit Ethernet network, the system comprises a media server with capacity for up to a hundred films and the same number of music channels, 8.4in and 10.2in touchscreens for economy cabins, 15in and 17in premium-class units, 10.4in and 15in flight attendant control units, and passenger control units providing on-screen navigation and games functions.

Schott in the light for economy as well...

Passengers travelling in premium classes are familiar with one of Schott's (stand 5D45) in-seat reading lights, but now the company is offering them for economy class passengers too.

The compact light fits into the seatback and uses LEDs, leading to less disturbance to other passengers. It emits an arc of light that covers the tray area for a better reading environment.

Crucially it is also energy efficient because of the LEDs and the company says it uses

only a few watts per seat, which is significantly less than a normal room light.

"The new reading lights are very much in fashion at the moment. There's a lot of interest on the part of passengers and airlines," says the company's manager of Aviation Gerhard Zwickel.

The company is also highlighting its glass fibre faceplates that are designed to increase the visibility of displays in the cockpit or the cabin.

Because the monitors are typically located a few millime-

tres below the surface, lighting conditions or reflections can sometimes make the data or images difficult to see.

Schott's faceplates enable images or data to 'float' on the surface of the monitor. Thereby increase brilliance and ensuring a better contrast.

The faceplates look a lot like a typical sheet of glass. But, they are made of millions of glass fibres that are 0.025mm in thickness that 'guide the light' from the LCD or OLED display. The human eye is not able to detect this so the end user

remains oblivious to the secret, other than that they may notice that viewing the screens has become much easier. The company says it is as if the image is floating on top of the screen.

General manager for Business Development for Fiber Optics Burkhard Danielzik says "when people see this for the first time, they are absolutely amazed."



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Next gen ultra light carts shown by DKA

A new generation of ultra lightweight in-flight service carts by DKA, Diethelm Keller Aviation (stand 5B52) is showcasing here at Hamburg.

“Our main objective in developing the aluminium ultra lightweight carts is to support our customers’ increasing and compelling needs to reduce long term operating costs,” says sales manager Joshua Chang. “Through implementing effective weight reduction programmes it saves aircraft fuel consumption.”

Standard lightweight aluminium full sized carts can weigh from 19kg to 22kg but DKA’s new cart weighs from 16kg to 19kg depending on final configurations.

“These new carts still provide impressive gross weights of 113.4kg and 68kg for the full size and half size carts respectively. This clearly demonstrates that our new ultra lightweight carts poses the same strength, rigidity and build quality as the standard



Joshua Chang – reducing costs with latest cart.

lightweight and conventional carts,” says Chang.

The Swiss galley inserts manufacturer has also developed a composite full size cart prototype that weighs 14kg. “For now composite carts are going to cost much higher than aluminium made ones. Due to the significant

heavier investments and other uncertainties, airlines have been hesitant to change out its carts fleet to composite types. But we will persist to find more affordable, viable composite materials and develop a feasible composite product range which will cater for the market majority.”

For now DKA’s ultra lightweight range costs fractionally more than the current lightweight designs. “This is because it has better thermal performance owing to optimal engineering design with thicker side walls and doors, adding insulating to and bottom panels, a significant reduction of heat sinks,” explains Chang.

“Besides improving on the aesthetics our carts look more attractive adding to a better ambience in the cabin. Plus they are easier for the crew to move and use, overall reducing strain and fatigue on board.” The company is also displaying its new lightweight folding trolley at the show.

DRIESSEN EYES MORE NARROW BODY KITS WITH MAX-FLEX

Driessen Aircraft Interior Systems (stand 7D50) is launching its new A320 MAX-Flex galley here at Hamburg.



Driessen’s Wampie Kegal offers flexibility for A320s.

MAX-Flex stands for the highest performance and flexibility in the galley industry.

“MAX-Flex is the first and only complete module galley for the B737 and A320 aircraft,” says Abraham Sarraf director of sales and marketing. “It is configured especially for narrow bodies. Each compartment modular can accommodate several uses, a container can be removed and be turned into an oven or a fridge, all in the one kit” says Sarraf.

The galleys offer more than 175 different configurations.



Richard Leaper (l) and Heidi-Anna Gordon (r).

New Zealand’s Altitude rising higher

Interiors firm Altitude Aerospace Interiors (stand 6B85) has followed the recent entry into service of its bar design on newly launched V Australia by landing a five year contract to provide customised drink cabinets, stowage units and closets for first class cabins on 20 Boeing 747-8s destined for Lufthansa.

The Air New Zealand-owned interiors business is showcasing its first class bar design for V Australia, the Virgin Blue long-haul international arm which launched operations using Boeing 777-300s at the end of

February. “We were responsible for a lot of the furniture that was not the seat,” explains Altitude’s commercial manager Baden Smith.

Altitude was rebranded from Air New Zealand Engineering Services and corporatised as a separate wholly-owned company last year. “It recognises we are providing not just for Air New Zealand,” explains Smith. “We have a broader brief and our organisation is reflecting this.”

Altitude has been working with Nordam Group’s interiors and structures division on both the V

Australia 777-300 and Air New Zealand 777-200 bar contracts, and Nordam will also work on the 747-8 contract.

Nordam director of strategic accounts Jim Sweedyk says: “From that start, we have worked directly with Altitude and have progressed to the current projects of producing and delivering finished ship sets for various aircraft, ready for installation.” A ship set contains two bar units, two partitions, two closets, two ceiling panels, and one composite dome.

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