

FLIGHT

AIX DAILY NEWS

Aircraft Interiors | EXPO®
14 - 16 JUNE 2022
HAMBURG, GERMANY



Billy Pix

Take your seats

Murdo Morrison

The three-year gap since the last show has resulted in a flurry of new product development in the seating sector, with Recaro, Acro Aircraft Seating and Thompson Aero Seating among those revealing never-seen designs this week.

It came as industry professionals arrived at the Hamburg Messe this

morning for the first time since 2019 able to once again view and sample concepts and factory-fresh products in real life.

UK seat manufacturer Acro is unveiling its 7.5kg Series 9 economy class seat, which it says is 1.3kg lighter and creates more personal space than the Series 6 it will replace.

"It's extremely light with no compromise on living space," says Neil Cairns (pictured), chief executive

of the Chinese-owned company. Although it faces tough competition in the economy segment, Cairns says the 15-year-old firm differentiates itself from its larger rivals by being "small enough to be adaptable and always happy to customise."

The company is preparing for its busiest AIX yet. "We have never been so booked with appointments," says Cairns, who joined the ZTC subsidiary two years ago.

"We are looking forward to showing off the Series 9," adds Cairns, who says this week will be about "changing the perception of Acro as not just a low-cost carrier supplier". Budget airlines such as Allegiant, Frontier and Spirit are among Acro's oldest customers, but he believes the company can now start to increase its share with full-service and long-haul operators.

Continued on page 3



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Bucher's bionic wall

internal structure we've created that delivers those properties."

The bassinet's main advantage is the space saved when it is folded and stored. The patented folding mechanism means its size reduces to that of a small handbag. All this enables an airline to perhaps carry one or two more, so fewer babies end up sat on knees for the whole flight, while still offering more storage space flexibility for cabin crew.

Bucher is also showing the ARCTICart, a highly insulated cart which does not need active cooling for 20 hours to keep the temperature to 4 degrees Celsius. "With this, you don't need refrigeration in the galley, so you can get rid of the chiller," Burlet explains.

Twenty hours, of course, is basically the working day for an aircraft, so food and drinks can be loaded for the whole day, lowering energy and power consumption and thus reducing fuel usage.

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Bernie Baldwin

Bucher is leading its range of new products with its 16g 'bionic' aircraft cabin partition wall and an ultralight foldable baby bassinet.

The 16G certification on the partition enables a cabinet attendant seat to be attached to one side, but the key attribute is the weight it saves. "It's called bionic because it's lighter than all the

other products out there, with about 30% weight savings due to the bionic construction principle that we use," explains Bucher chief executive Beat Burlet (*pictured*). "It's made with carbon fibre, but it's the

Continued from page 1

Meanwhile, Recaro - which is marking its 50th birthday this week with an eye-catching redesigned stand - is showing its latest, CL3810 long-haul economy class seat, which Qatar Airways will start taking delivery of from the end of this year for its Airbus A321neo fleet.

The slimline seat is 1.5kg or 10% lighter than its CL3710 predecessor.

Also on view for the first time is its CL6720 business class seat, which Air China has ordered for its A350 fleet. The German manufacturer showed an early prototype of the seat at the 2019 show.

Recaro is best known for its economy products,

but it has been pushing hard in the premium segment. Chief executive Mark Hiller (*pictured*) says other customers, so far undisclosed, have committed to the product.

Business launch

Finally, Thompson Aero Seating is taking the wraps off its Vantage Duo business class seat at AIX, revealing more details about a product aimed at the fast-growing single-aisle, mid-range market.

The Northern Ireland-based manufacturer says the seat has a similar pitch to traditional narrowbody business-class recliner seats, at 41 inches, but offers "greater levels of comfort, privacy and

personal space".

Thompson claims that a key design difference is that the seat is not true lie-flat, but offers the ideal relationship between posture and pressure to establish "the most comfortable position possible".

It provides 130 degrees of recline, compared with the 110 degrees common on recliner seats, says the company. Other features include a fixed back shell that stays in place as the passenger reclines into what Thompson calls an "immersive relaxed position".

It adds: "Suspending the passenger in a neutral posture increases the feeling of weightlessness,



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allowing deep relaxation and comfort, taking pressure off the heart and allowing a stress-free position. The seat kinematics have been designed to ensure that the body is supported at all angles of recline."

A chance to mix

Mixologist Dennis Nimz shakes things up for guests at last night's Passenger Experience Conference Industry Networking Party, dubbed the must-attend social event of the week. Held after the conference and on the eve of AIX and WTCE, the occasion was a chance for delegates to renew acquaintances - some for the first time in three years - and make new contacts.





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Brand new thinking needed after crises

Kerry Reals

Welcome to the era of post-traumatic growth” where passenger priorities and expectations have changed after living through an unprecedented series of world events, brand and design specialist Paul Wylde (*pictured*) told delegates at yesterday’s Passenger Experience Conference.

The Covid-19 pandemic, Russia’s invasion of Ukraine and a growing sense of wealth inequality as inflation rises and the cost of living goes up have all had an impact on how people think about life, and brands must adapt to these changes, he believes.

“We’re all starting to think differently about life and there is a renewed appreciation of the moment and being more present,”



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says Wylde, adding that experiences have become more important than possessions. Good design is a reflection of changing attitudes to the world, and in this new world there needs to be a shift from “brand monologues to community dialogues”, with “major implications for service-oriented brands”

such as airlines.

Making the point that “great products will never save bad service”, Wylde emphasises the importance to airlines’ brands of their customer-facing staff, and asks whether we are “on the cusp of a human contact resurgence”.

“Your single biggest asset will be your people –

give them a stage and give them the props because they’re the stars of your organisation,” he suggests.

This point is echoed by Anthony Woodman, vice-president of customer journeys and reward at Virgin Atlantic, who says that “our people are our strongest asset”.

Noting that the novelty of travel has “slowly worn off”, Wylde says that personalisation and customising passengers’ in-flight experiences represent “the next paradigm shift”. However, offering a personalised passenger experience will “require innovation”, and airlines will need to “ignite and foster a culture of creativity” and “destroy” internal silo structures which, he says, “restrict entrepreneurial instincts”.

Despite the challenges, the new world presents a major opportunity for airlines to tailor their brands to meet passengers’ changing requirements.

Wylde concludes: “There are no rules to follow and the future is yours to create. This may be the best chance to create what customers deserve.”

Finnair adds warmth through cabin revamp

Finland’s climate may be cold but the country’s national carrier wanted to inject a feeling of warmth into its widebody cabins through the revamp of its Airbus A330 and A350 interiors, says Finnair head of customer experience and product design David Kondo (*pictured*).

Detailing the thinking behind the revamp during yesterday’s Passenger Experience Conference, Kondo described the A330s’ previous cabins as “cold, clinical and sterile”,

which “contrasts with my experience of Finland”.

A view of the setting sun during a flight into Helsinki inspired the changes made to the carrier’s cabin lighting, which is designed to show “warmth, texture and personality”, adds Kondo. While previously there were “lots of cold, harsh surfaces”, inside the new cabins “almost every surface has texture or colour on it”.

The airline’s decision to equip its business-class cabins with Collins



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Aerospace’s non-reclining AirLounge seats proved less controversial with passengers than Kondo had anticipated. The fixed contoured shell offers a variety of sitting and sleeping positions, the

flattest of which uses in-fill panels to create a surface on which to lay a mattress.

Kondo says he had been “expecting a lot more hate” for what he describes as the “Marmite” choice to install fixed-shell seats, but adds that feedback has been “very positive”.

However, while the lie-flat aspect of the seat offers a “fantastic sleeping position”, Kondo believes the airline “still needs to work on” the “in-between” setting.

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Seven in 10 shun IFC, OneWeb survey finds

Bernie Baldwin

OneWeb has published its *Connected Passenger Report*, which was commissioned to enable the airline industry to understand passengers' demands regarding in-flight connectivity.

"We decided that, rather than rely on data and passenger survey information that's years old and pretending it's current, we'd do a new survey," says OneWeb's vice-president mobility, Ben Griffin.

"This is probably the first survey since the pandemic, so this information is quite precious and very relevant.

"It is designed primarily to give us a better idea of what's going on out there, what passengers want. It's certainly not designed to point out the shortfalls in connectivity, rather to foretell the opportunities, understand what customers want and work out how to meet those expectations," he adds.

The qualitative sample was collected in 27 individual, hour-long interviews with frequent flyers across five key groups including corporate travel bookers, digital nomads, travel bloggers and young frequent flyers. The qualitative data was obtained through a detailed survey completed by 4,110 individuals from across the USA, UK, Singapore and the UAE.

"The key findings, unsurprisingly, show that well-being and sustainability are much more important to passengers now



Ben Griffin, OneWeb's vice-president mobility, (right) with colleague Nick Maynard

than they were pre-2020," Griffin notes. "For example, lack of connectivity in the sky creates undue stress before the flight. I don't think that's a new thing, but it may be slightly more amplified at the current time.

"Inconsistency of wi-fi connectivity services, inaccurate marketing – setting the expectation of passengers and what they're likely to get versus what they actually do get – and usage restrictions are among the top frustrations represented within the survey," he continues.

Coping strategies

A highlight of the results is that 70% of travellers have not even used in-flight connectivity. In fact, 15% of people reported not even knowing that it is available,

while others have trouble getting through the portal to make a payment.

"A lot of people have adopted coping strategies," Griffin observes. "That means good old fashioned things like books or magazines, or in-flight entertainment and also downloading media onto devices as well – not necessarily waiting to get on board to stream content.

"And we have to be real to the fact that not every passenger will want to connect on a flight, especially night flights or short flights. The important point is to make sure there's a choice," he says.

The digital generation – 18 to 24 year olds – is far more likely to have tried to stream audio and video content over in-flight connectivity. And they are

far less impressed with the quality available, with 50% of them returning a verdict of 'good', whereas a much higher percentage gave that verdict among the 25+ age group.

Entertainment access

Among the other statistics, 56% of respondents say they would use better wi-fi to access entertainment of their choice. "This is particularly relevant and interesting," Griffin says. "When we consider IFE and the amount of money that airlines spend on content, 56% is a huge amount of passengers wishing to access their own subscriptions. That could spell a significant change in the way that IFE is consumed and, indeed, provisioned on an aircraft."

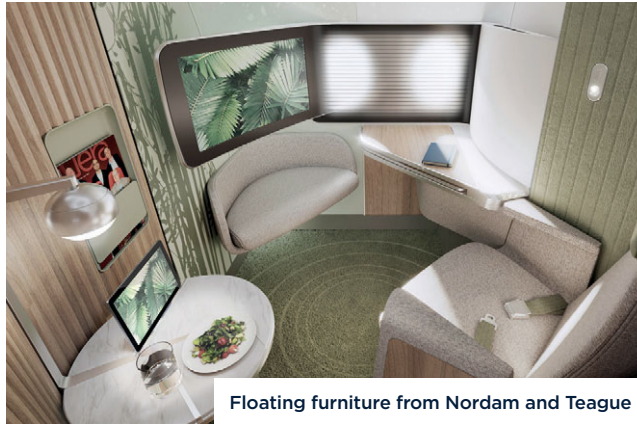
Elevating spaces

Pilar Wolfsteller

Teague and Nordam are presenting a revolutionary furniture concept designed to offer passengers more space, privacy and comfort in a home-like cabin.

The companies say that their Elevate product is the world's first single-aisle cabin that uses so-called "floating" furniture, creating a lighter and more efficient suite environment for front-row and business class passengers.

"By utilising mounted fixtures in the sidewall that eliminate restrictive structures around the



Floating furniture from Nordam and Teague

monitor, side-furniture, and ottoman, the Elevate concept increases the bed size, living space and stowage capacity for every passenger," the partners

say, noting it provides a larger floorspace and more expansive living space.

Teague senior director of airline experience Anthony Harcup says: "At a time

when passenger well-being and sustainability are industry priorities, 'Elevate' heralds-in a new generation of beautiful, simplified cabin products that will enable airlines to deliver exceptional experiences for their passengers with the economic efficiency that these smaller aircraft were designed to deliver."

The concept uses Nordam's Nbrace composite seat attachment and the company's chief executive Meredith Siegfried Madden says: "By revolutionising how seats and other monuments attach to an aircraft, Nbrace recruits previously wasted space, transforming it into new aesthetic possibilities and dramatically improved passenger comfort, space and privacy."

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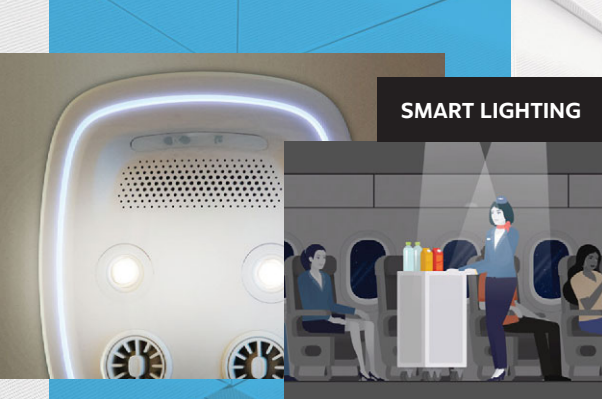
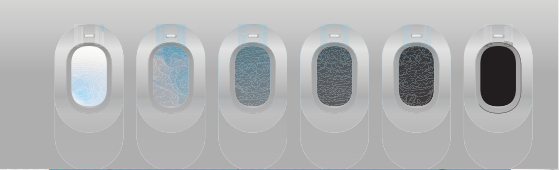
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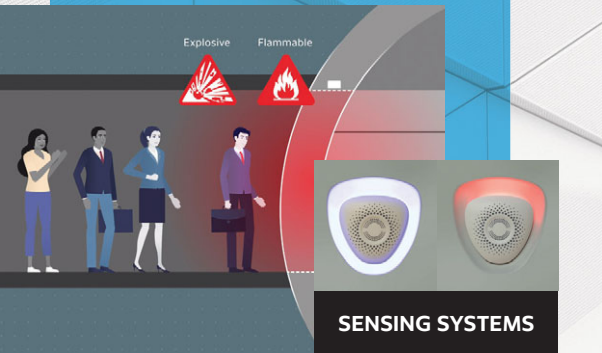
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Covarians to clear the air

Covarians is launching its Aerometrix product here at AIX, describing it as the first global service to monitor air quality, passenger comfort and other environmental parameters.

The French company says the system uses non-intrusive autonomous sensors, requiring no modifications for fitting.

Aerometrix aims to highlight the fume events controversy and make cabin air quality monitoring an affordable reality for airlines and passengers. Such events create considerable costs for airlines “in terms of diverted flights, maintenance operations, social dialogue, legal risks and brand image,” the company notes.

Covarians notes that one of the challenges it has had to meet is that to ensure good measurement, sensors often have to be in sight of passengers and so must be discreet and blend into the cabin style.

“This has been a four-year long development programme with the sensors having flown more than 22,000 hours in regular passenger flights,” says Covarians chief executive Frederic Griffe, who declares the argument that there was no solution to monitor onboard air quality is finally over.

Panasonic sees data delivery with Adobe

Graham Dunn

Panasonic Avionics has teamed with Adobe to enhance content delivery and data collection capabilities on the next generation of in-flight entertainment and connectivity (IFEC) services to drive airline loyalty, ancillary revenue and operational efficiencies.

Under the link-up Panasonic will integrate Adobe Experience Cloud’s content delivery, data, journey orchestration and experience intelligence capabilities into its onboard IFEC systems, with the aim of easing the distribution of content for in-flight services while generating and activating

on data from passengers’ real-time onboard services, transactions, and in-trip experiences.

Panasonic says airlines will gain behavioral insights from customers’ IFEC interactions to accelerate service and enhance loyalty while connecting the in-flight experience throughout passengers’ journey. It adds that airlines will benefit from data updates in real time and, by utilising AI-driven insights, can deliver and activate the right passenger experience across every channel.

Panasonic Avionics’ vice-president, digital solutions Andrew Mohr says: “The cabin experience offers enormous untapped potential to deliver new value to airlines and their

passengers through IFEC. Pre-integrating Adobe’s services will provide valuable and insightful data to airlines so they can further improve the in-flight experience for their customers.”

Adobe’s global head of industry strategy for travel, Julie Hoffmann, says: “Working with Panasonic Avionics, Adobe Experience Cloud transforms all airline passenger data to create actionable customer profiles, whilst ensuring privacy is respected and data is securely stored.

“Together with Panasonic Avionics, we are unlocking the value of data for airline teams, accelerating personalised experiences and services in-flight, that passengers now expect.”

Starlux debuts Skylounge seats



Starlux Airlines has flown its first Airbus A330neo equipped with Safran Seats’ Skylounge Core business class seats.

The Taipei-based carrier was the launch customer and the first of eight A330neos it has on order was delivered in February.

The A330s are configured with 28 Skylounge Core seats, which are also designed for the Boeing 787, says Safran.

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Pexco AirShield reduces shared cabin air particles



Pexco Aerospace

has been shown to reduce shared air particles between neighbouring passengers in an economy cabin by some 76%, the company says.

"Airlines recognise that privacy and hygiene are now equally important to the in-flight experience as comfort and safety, especially on narrowbody aircraft where passengers are much closer together," says Jon Page, president of Pexco Aerospace.

"As an industry we cannot ignore that the world has changed, and cabin interiors need to evolve with passenger needs and desires.

"Pexco has already completed extensive on-wing tests in collaboration with some of the world's pioneering airlines, including American Airlines, Southwest Airlines and Alaska Airlines," the company adds.

Its engineers will spend the next month completing further on-wing testing of AirShield onboard Airbus A320 aircraft, with a view to receiving final certification in July 2022.

Pilar Wolfsteller

Pexco Aerospace's AirShield technology, an enhanced aircraft air filtration system designed to protect

passengers from germs and odours entering their personal space, has entered the final stage of US Federal Aviation Administration (FAA) certification, the company is confirming at the show today.

The FAA has granted Pexco a Project Specific Certification Plan (PSCP) number for AirShield, which the company spent the last two years developing.

The innovative system

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HOW TO CONTACT US

We are located in Marseille 1, 2nd floor, Hall B3

Editor Murdo Morrison
murdo.morrison@flightglobal.com

Executive Editor, Flightglobal
Graham Dunn
graham.dunn@flightglobal.com

Reporting team Bernie Baldwin, Kerry Reals, Pilar Wolfsteller

Production Louise Murrell

Design Sarah Eversfield

Picture editor Ian Billingham

Photography Tom Gordon, Jim Robbins

Distribution Dawn Hartwell, Steve Wood

Divisional Director, FlightGlobal
Sophie Wild

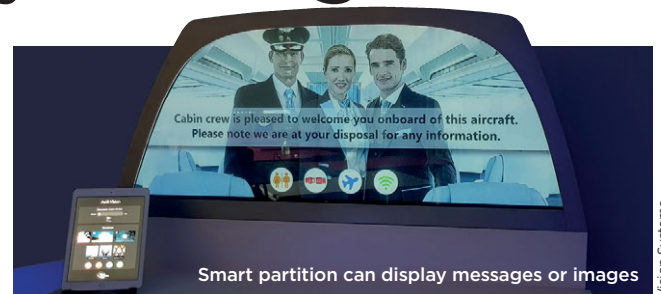
Printers v. Stern'schen Druckerei

Vision Systems' glass act

Vision Systems is known for its electronically dimmable windows and shades, but at this year's AIX it is presenting what it calls "ambience management systems" pitched largely at premium passengers.

The first is a "smart glass" cabin partition, which the crew can programme remotely to show either messages or images, or be left transparent or opaque.

The second product is a motorised triple window shade that, synchronised with dimmable windows



Smart partition can display messages or images

Vision Systems

and cabin lighting, can reflect a range of "moods". The passenger can select the appropriate lighting level for reading, sleeping or waking up. The system integrates with other elements of cabin

ambience, such as sound and temperature, says the French company.

Vision Systems, based near Lyon, is a subsidiary of Gauzy, a specialist in material systems and nanotechnology.



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Condor's classy cabins

Airline unveils interiors for incoming Airbus A330neos

Murdo Morrison

German leisure airline Condor has unveiled the new business, premium economy and economy cabins that will feature in its Airbus A330neos, the first of which arrives in October and which will serve destinations including the Dominican Republic, Mexico and Seattle.

Condor, which has 16 of the widebody twins on order, will add one a month. They will replace Boeing 767s.

The A330neos will come



Business cabin has 30 seats

with 30 Safran-supplied business class seats in a 1-2-1 configuration with direct aisle access for all, along with 64 premium economy and 216 economy seats, provided by Haeco.

“With the new cabin

design, we are focusing on modern elegance, and the colour set creates a clear reference to our brand identity,” says Condor chief executive Ralf Teckentrup. In addition to the new seats, passengers will

be offered a Bluetooth headset interface, internet connectivity, and “the most diverse and largest in-flight entertainment programme to date”.

Premium economy and economy cabins are arranged 2-4-2, with the former offering 15cm more seat pitch and 15cm more of a backrest angle. Both seats have 13.3in monitors with touchscreens.

Condor, which has a fleet of 50 aircraft, in April revealed a striking livery which it says was inspired by striped beach towels and parasols to evoke a holiday atmosphere. The yellow, red, blue, green and beige paint scheme, coupled with a new logo, is being applied to the fleet, with six aircraft operating under the new colours this summer.



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Geven

Eurowings keeps it in the family with Geven

Kerry Reals

Eurowings is the latest Lufthansa Group carrier to opt for Geven's slimline Essenza economy-class seat, as

part of its fleet retrofit programme.

The Dusseldorf-based low-cost carrier is taking delivery of 23 shipsets of Essenza seats at a pace of two per week between April and July of this year.

The seats will be installed on its existing Airbus narrowbody fleet. Geven says it has a record of 100% on-time delivery, which it aims to keep "unblemished".

Eurowings' order follows on from a deal signed between Lufthansa Group and Geven in 2018, which saw the German airline group select the Essenza seat for line-fit installations across 93 new Airbus A320/A321neo aircraft operated by its Austrian Airlines, Lufthansa and Swiss units.

Geven says that Eurowings' Essenza seats feature an "exclusive design scheme and dedicated Eurowings trim and finish". The seat cushions are light and dark grey while the backrest covers feature

a "personalised accent of violet-red". The seats have in-arm and rear meal tables, along with a personal electronic device holder, coat hook and amenity pocket.

"We are delighted at the success of our co-operation with the Lufthansa Group and proud of the satisfaction with the product they have expressed," says Geven managing director Alberto Veneruso.

When Lufthansa Group ordered the Essenza seat in 2018 for Austrian, Lufthansa and Swiss, it marked the first time it had jointly introduced standardised seats across its airline subsidiaries. Eurowings will now join those carriers in offering a harmonised short- and medium-haul seating product.



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MIRUS

Polly Magraw, AIX event director, explains why, after a three-year absence, this year's show will witness an explosion of new product development

Innovation unleashed

Q What are your expectations for 2022, the first in-person AIX in three years?

A AIX 2022 is resuming its role as the leading global marketplace for the world's cabin interiors and inflight entertainment industry, yet with added significance. The backdrop this year's show arrives in is dramatically different due to the industry upheaval caused by the Covid-19 pandemic, which will naturally distinguish the show from previous years. We anticipate there being a greater emphasis on reconnecting and doing business face to face, as well as a greater number of new products and innovations on display.

Q What can we look forward to seeing at AIX this year?

A In short - unparalleled innovation. The pandemic has acted as a catalyst for the industry to focus on developing new products and solutions that respond to changes in passenger expectations.

These, in addition to the number of delays to product launches, has led to a pipeline of new product development just waiting to be announced.

For many, it will be the first opportunity to try, touch and experience in person a number of products designed in response to changing market expectations due to the pandemic.

Q What will be different?

A To meet the anticipated surge in demand for face-to-face connections, we have introduced AIX Connect. The show planning tool has been designed to help key airline buyers meet with exhibitors during the show, build business connections and discuss new projects.

Q What are the educational opportunities at AIX 2022?

A We have an exciting roster of speakers over the three days that will provide thought-provoking insights from across the value chain. The popular Passenger Experience Conference took place yesterday at the newly renovated, state-of-the-art Congress Center Hamburg (CCH). Speakers from the likes of Air France,

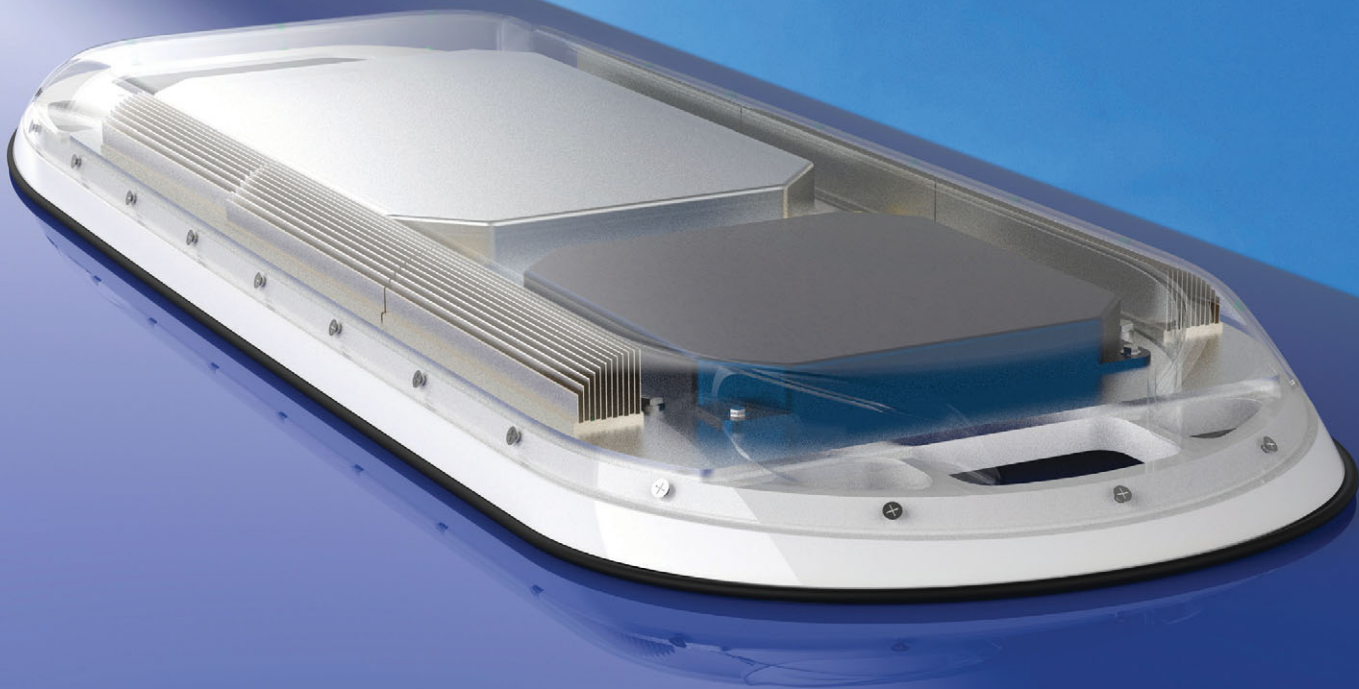
TAP Portugal, Virgin Atlantic, Finnair, Collins Aerospace, Boeing Commercial Airplanes, Safran Cabin and Inmarsat explored the ways the passenger experience community is helping the industry be more resilient.

Similarly, more than 30 aviation industry experts will come together to speak at CabinSpace Live over the next three days. The free-to-attend seminar programme will shine a light on the most pressing innovations impacting the cabin interiors sector - including making sustainable aviation a reality; designing a collaborative experience between seatback and personal electronic devices; streamlining connectivity; the latest cabin interior hygiene innovations, and more.

Q What do you think will be the main trends?

A We are expecting sustainability to be near the top of the agenda. It will be exciting to see how aircraft interior suppliers will interpret it through their new solutions, whether that's through weight reductions, use of renewable natural fibres or by encouraging circularity through re-use, refurbishment, or recycling. I also expect in-flight entertainment and connectivity (IFEC) to be an inescapable highlight. There have been tremendous strides in this space, not just through better Wi-Fi but also with regard to the passengers' end to end journey. Passengers' reliance on being connected inflight has only been accelerated by the pandemic, reflected in the growth of contactless and "Bring Your Own Device" (BYOD). We expect there to be significant product innovation, lots of references in conference sessions, as well as important discussions between buyers and exhibitors on IFEC. ▶





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From an in-depth market outlook to sessions on cabin hygiene and disabled access, the CabinSpace Live programme has something for everyone

Talking shop

CabinSpace Live, AIX's three-day programme of seminars covering all aspects of interiors, kicks off this morning with a discussion on how cabin modifications boost aircraft values and a commercial aviation and interiors market outlook, featuring briefings by Ascend by Cirium and Tronos Aviation Consulting. After the deepest downturn in aviation history, experts from the two organisations will examine the likely pace of recovery and how it will affect traffic, orders and deliveries in each segment of commercial aviation.

There are nine CabinSpace Live sessions in total, featuring more than 30 industry experts from companies such as ATR, Finnair, Inflight Dublin, Inmarsat, Polygiene and Safran Seats.

Topics covered include making sustainable aviation a reality, how seatback and personal electric devices can work in harmony, and cabin hygiene innovations.

At 12:45 today, a panel debate led by Lukas Kaestner of Sustainable Aero Lab will explore the road to becoming a net-zero industry and the role that new technology will play. Joining him will be representatives from Lufthansa CleanTech Hub, ATR, and the ZAL Center of Applied Aeronautical Research.

At 15:30, the focus switches to onboard accessibility for wheelchair users and other passengers with mobility issues. Christopher Wood, founder of Flying Disabled, will discuss the challenges and latest initiatives with a panel that includes Glenn Johnson, a fellow in industrial design with Collins Aerospace, and John Morris of WheelchairTravel.org.

Tomorrow's sessions begin at 10:00 with a discussion on business jet interior trends, featuring designer



FD21 Pic Credit

Elizabeth Harvey, Michael Reichenecker of Movation, and Seymourpowell's Jeremy White. The day's second discussion, at 11:15, looks at how to design a "collaborative experience between seatback and personal electronic devices to become more responsive to passenger needs". Speakers include Andy Masson from Panasonic and David Miller of Inflight Dublin.

At 14:00, following the previous evening's Crystal Cabin gala dinner where the eight category winners were announced, there is a chance to hear from the victors, who will be presenting their winning entries.

Rounding off the day, at 15:45, there is the opportunity to celebrate the success stories of women in aviation, and reflect on the steps the sector needs to take to create a more diverse industry by recruiting and keeping more women staff, and creating a workplace environment that is inclusive and accommodating.

At the outset of the pandemic, we heard a lot about the potential of new cabin hygiene innovations to reassure wary passengers returning to the skies. Is this still a trend? The final session of the week, at 10:30 on Thursday, will put antimicrobial technology under the microscope, and look at its potential to reduce the spread of the Covid-19 virus on-board.

All sessions take place in the CabinSpace Live theatre in Hall B4 lower. ▶



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The Oscars of the interiors industry take place tonight for the first time in-person in three years. As ever, there is an impressive list of contenders, but only a select few will walk away with trophies

What's the big idea?

Kerry Reals

Eight finalists will tonight pick up one of the aircraft interiors world's most coveted trophies when the Crystal Cabin Awards ceremony returns as an in-person event for the first time since 2019.

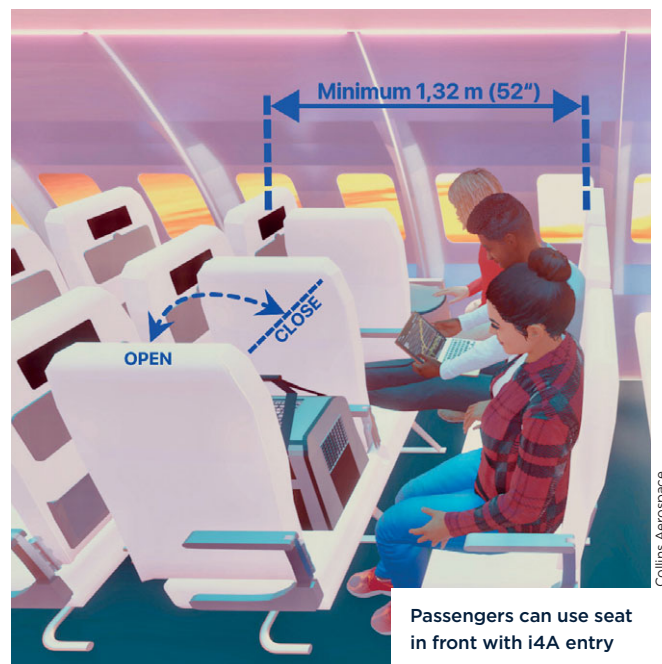
Trophies will be handed out to the winners of eight unique categories during a gala dinner at Hamburg's Altonaer Kaispeicher event studio, in what promises to be a much-anticipated and long-awaited evening of celebration, recognition and reunion.

Competition is fierce in each of the eight categories. A total of 24 hopefuls will pitch their ideas in person to a 27-strong jury of international aircraft interiors experts, who will then decide on the winners. After receiving their prizes, the winners will present their concepts to Aircraft Interiors Expo attendees in the Cabin Space LIVE Auditorium at Hamburg Messe on 15 June.

This year's finalists range from concepts enabling disabled passengers to bring their own wheelchairs on board and remain in them for the duration of the flight, to a proposed airflow system which removes exhaled breath from the cabin and creates protective air barriers between passengers, to a thermoplastics manufacturing process that produces 100% recyclable panels for cabin interiors – traditionally one of the most difficult parts of an aircraft to recycle.

The eight categories in this year's Crystal Cabin Awards are as follows: Cabin Concepts; Cabin Systems; Health and Safety; Passenger Comfort; IFEC and Digital Services; Material & Components; Sustainable Cabin; and University.

In the Cabin Concepts category – where entries must show innovation in using space in novel ways – Collins Aerospace, in conjunction with Finnair, PriestmanGoode and Tangerine, will be hoping its AirLounge business-class seat wins over the judges. Billed as “a breakthrough

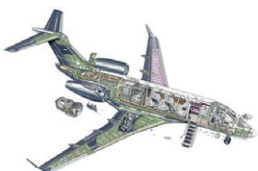


Passengers can use seat in front with i4A entry

Collins Aerospace

business-class seat, designed to bring the comfort of home to the skies”, AirLounge features a fixed, ergonomically-shaped shell that provides a large bed surface without employing recline mechanisms. Once inside, passengers are promised a personal, quiet, “cocoon-like home environment” in which to spend their flight.

AirLounge is up against Teague and Nordam's Elevate concept, and i4A's Smart Space 4 Passengers entry. The former uses an attachment system to create “floating furniture” within the premium cabin of a single-aisle aircraft. Instead of the typical floor-mounted seat



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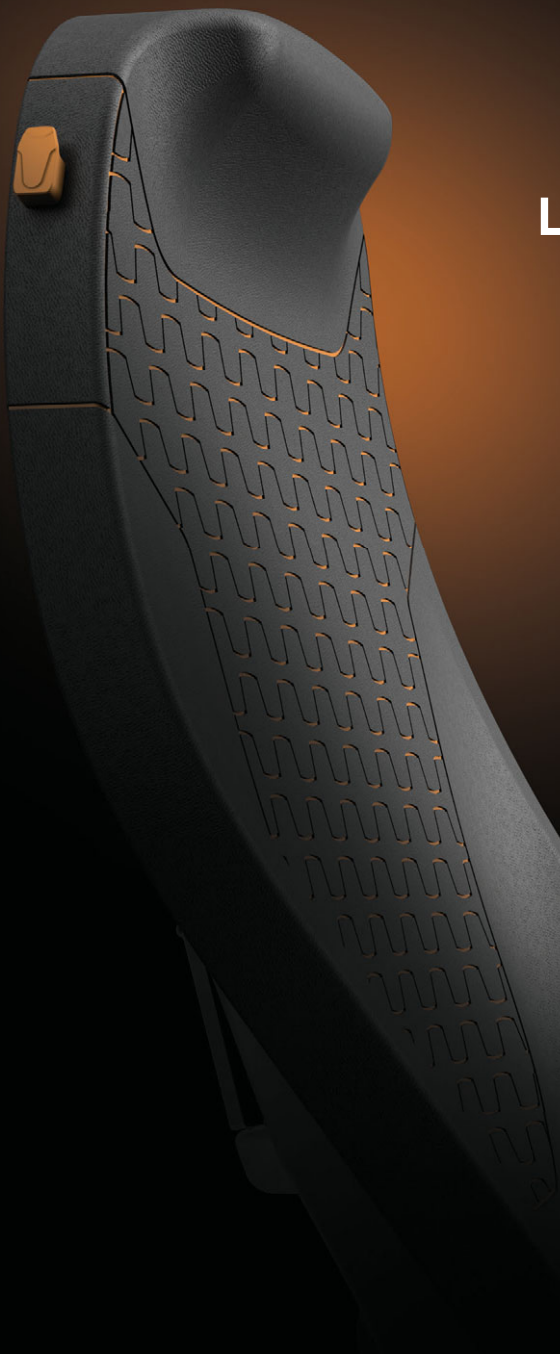
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tracks, Elevate suspends furniture from the sidewall, which its designers say creates more space and privacy for passengers.

The i4A Smart Space 4 Passengers concept, developed by Charalambos Savvidis, enables passengers to use an additionally-booked or available front seat for their own travel needs, by rotating the backrest of the front seat up to 90° to the side, like a door. This allows, for instance, pregnant women or passengers travelling with infants in carry cots to make use of the surface of the seat in front of them.

Duking it out in the Cabin Systems category are Caeli Nova with a carbon dioxide-saving emergency oxygen system, Airbus Operations/Recaro Aircraft Seating with a wafer-thin HD display, and a consortium that has designed an in-cabin wheelchair attachment concept known as Air 4 All. The latter was designed by PriestmanGoode, in conjunction with Flying Disabled, SWS Certification and Sunrise Medical. The system enables travellers with reduced mobility to attach their wheelchairs into a seating space by folding the seat up into the backrest. Its designers say the concept revolutionises air travel for disabled passengers by enabling them to remain seated in their own wheelchairs throughout their entire journey, while allowing airlines to easily flip the seat surface back down when the space is not required by a wheelchair user.



Air 4 All provides secure wheelchair attachment



Battery fire-resistant container from Safran

Caeli Nova's Cordillera emergency oxygen system uses patented technology to increase the duration that aircraft are able to fly at high altitudes after a cabin decompression from 22min to over 180min, without any increase in weight or maintenance. The possibility of sudden in-flight decompression means that aircraft must carry large reserves of fuel to comply with Extended-range Twin-engine Operational Performance Standards (ETOPS). Caeli Nova says its system could save the aviation industry \$500 million, or 1.2 million tonnes of CO2, by opening up direct routes over high terrain. It is working with airlines and OEMs to deliver a first retrofit of Cordillera in 2022, with a linefit system to be offered "soon afterwards".

The third contender in this category, Airbus and Recaro's Flex OLED kit, is a lightweight, wafer-thin HD display that can be placed anywhere in the cabin, including in seatbacks and ceilings for video playback. The technology works as a sticker, meaning it can be adapted to any cabin surface. Airbus and Recaro describe it as "the human machine interface of the future for both automotive and aeronautics".



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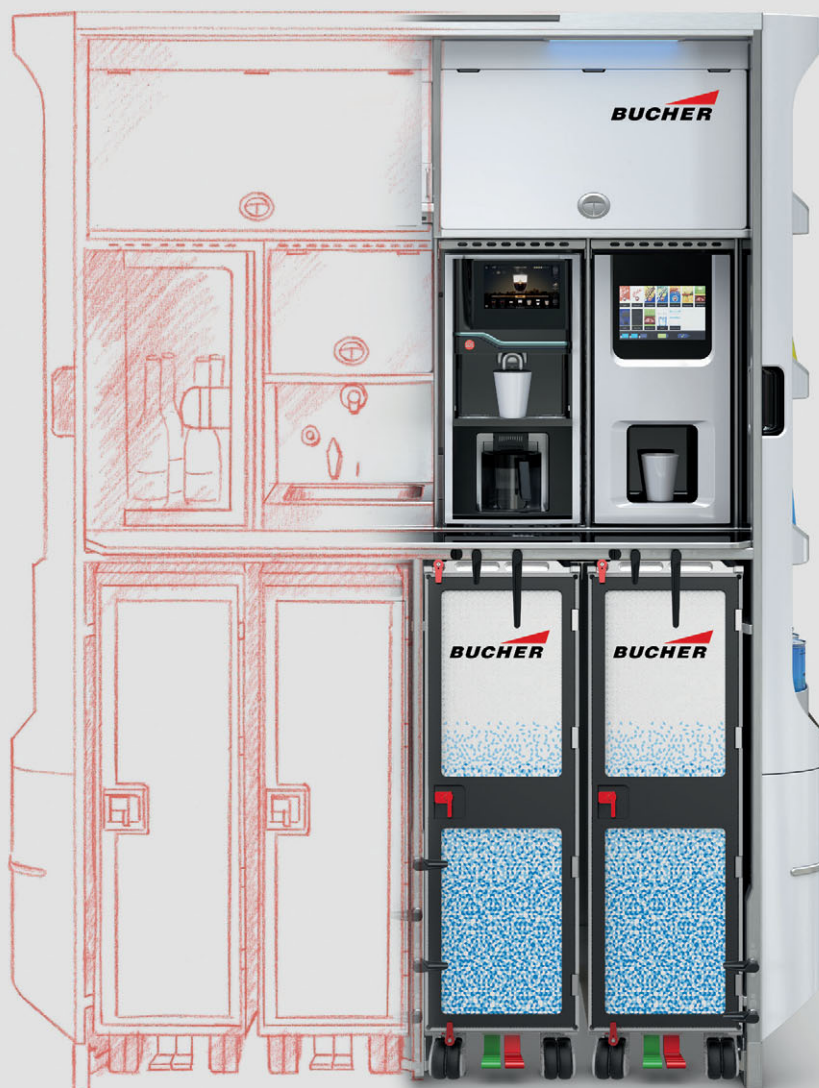


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Jamco's Personalised Sound Zone

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Thales Avionics' Optiq QLED IFE display

Thales Avionics

In the Health and Safety category, Collins Aerospace makes another appearance with a new cabin lighting system that is attuned to human biology, alongside Safran Cabin with its Fire Resistant Cargo Container, and Pexco Aerospace/Teague with their AirShield cabin airflow system. AirShield is a patent-pending cabin-air wellbeing device that re-purposes the airflow from existing overhead air vents to create protective air barriers around and in-between each passenger.

Pexco says the device has been proven to reduce sharing of exhaled particles between passengers by 76% while increasing the droplets purged from the cabin by 230%, something it believes will relieve post-pandemic anxiety about air travel. AirShield is targeted to be certified by the US Federal Aviation Administration (FAA) in the second quarter of 2022.

Safran Cabin says its newly-developed Fire Resistant Container is the first-of-its-kind to have the capability to contain a Class D fire involving lithium-ion batteries for up to 6h. The container is equipped with high temperature-resistant panels and a unique door fabric, offering long-lasting fire protection to passenger airlines and freighters.

Collins Aerospace's Hypergamut Light is a lighting system which, it says, is attuned to human circadian rhythms and can reduce feelings of jetlag. By doubling the number of coloured LEDs in the cabin and removing blue light, the system promotes sleep and reduces jetlag. The blue light can be added back in prior to landing, to ensure that passengers arrive at their destinations alert.

Competing for the Passenger Comfort prize are ZIM Aircraft Seating with its ZIMprivacy seat, Jamco Corporation and NTT Sonority with a personalised sound system, and Collins Aerospace with its SpaceChiller personal refrigeration product.

ZIMprivacy prioritises privacy and personal space in the Premium Economy cabin through the use of a fixed backrest shell, which shields the passenger and prevents a reclining passenger in front from encroaching on their space. A special recline system adjusts to accommodate several different body positions, to support better breathing and blood circulation, and the seat includes other amenities such as a cocktail table, a personal reading light and an extra-large IFE screen.

Jamco and NTT's Personalised Sound Zone is a next-generation speaker system where audio sound is confined in a spherical zone, enabling passengers to ditch their headsets. Two speakers are built into the headrest but the sound does not travel outside the spherical zone. The

system, available in 2023, will enable airlines to "reduce the economic cost and workload of managing headsets, and facilitate smoother communication between passengers", says Jamco.

Collins Aerospace aims to bring advanced cooling technology to small enclosures throughout the cabin with its SpaceChiller modular cooling system. Aimed at premium passengers, SpaceChiller "provides cold beverages and snacks at food-safe temperatures within arm's reach of a passenger", says Collins. It can also be used in other parts of the cabin, enabling airlines to provide self-service catering areas without encroaching on flight attendant workspaces.

In the IFEC & Digital Services category, Anuvu and Southwest Airlines are hoping their Dedicated Space in-flight connectivity technology will win the judges over. The system promises a five-fold increase in available personal bandwidth and a dramatic reduction in latency. Anuvu says the system will provide passengers with more stable in-flight connectivity, and faster downloading and uploading speeds.

Competing against Anuvu are Thales Avionics and Harman with their Optiq QLED IFE display, and Airbus Corporate Jets and Latecoere Interconnection Systems with their Smart Lifi Monitor. Optiq aims to bring 4K video quality to aircraft, while Smart Lifi Monitor puts the customer's device centre stage by combining a powerful QLED display with mobile processing power. The latter



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It pairs with passengers' personal digital devices, which can then be used as a remote control.

Lufthansa Technik hopes to outshine its rivals in the Material & Components category with its CabinSHINE repair solution, which it says is up to eight times cheaper and nine times faster than conventional methods. CabinSHINE renews and refreshes VIP cabins through the use of a wide range of cabin surface materials, reducing the need to replace fixtures and furniture.

Up against Lufthansa Technik in this category are Thales Avionics with a lightweight power supply unit, and Diehl Aviation with a security device for crew handheld devices. Thales' Pulse unit lets passengers recharge their personal devices on-wing, via USB-A, USB-C or wireless charging, while Diehl's Smart Lock Door device enables crew to use digital devices behind a screen mounted in a lockable door, helping to keep tablets safe from theft.

The aviation industry has come under intense pressure over its environmental impact in recent years, making the Sustainable Cabin category more important than ever. Vying for the top spot here are Sweden's Diab, which has pioneered a thermoplastics manufacturing process to produce 100% recyclable panels for cabin interiors, Lantal Textiles and Olivenleder with their Sustainable Genuine Leather, and Lufthansa Technik with its AeroFLAX renewable prepreg.

In co-operation with AkzoNobel, Rescoll and Roctool, Diab has developed a 100% recyclable thermoplastic sandwich panel for aircraft cabin interiors. It is made from thermoplastic skins and a thermoplastic foam core, which can be welded together without the use of an adhesive film. The panel is 8-10% lighter than the phenolic-honeycomb panels currently used in aircraft interiors, and production costs are up to 20% lower.

Sticking with the recyclable interiors theme, Lufthansa Technik's AeroFLAX entry is a renewable, eco-efficient prepreg for aviation. Featuring a combination of flax fibres and a bio-based resin system, AeroFLAX is up to 20% lighter than existing alternatives and offers carbon dioxide savings over its lifecycle, says Lufthansa Technik.

The third finalist in the Sustainable Cabin category has focused on making leather interiors products more eco-friendly. Lantal and Olivenleder have come up with a "wet-green" tanning process which replaces petrol-based chemicals with a plant-based solution derived from olive solid waste, to create what they say is a "100% natural,



Lantal's environmentally-friendly leathers

sustainable leather" for aircraft seat covers.

In the final University category of this year's Crystal Cabin Awards, Wichita State University's National Institute for Aviation Research, in collaboration with Collins Aerospace and wheelchair tie-down specialist Q'Strain, has developed a conceptual Fly Your Wheels Suite that enables passengers with disabilities to bring their own manual and powered wheelchairs into the cabin. The concept is based on the modification of the front cabin closet on a single-aisle aircraft, to provide a spacious suite for passengers in wheelchairs.

Wheelchairs can be fastened into place with Q'Strain's tie-downs, enabling passengers to remain seated in them throughout their flight. By using the closet space, the Fly Your Wheels Suite does not require the removal of any seats or any lost revenue for airlines.

Another US-based university, Georgia Institute of Technology, has also made it to the final three in this category with Portal – an electric short-haul airline designed by Ken Kirtland. Portal is based around an electric aircraft with an emphasis on a calmer flight experience at slower speeds. It promises "an unrivalled passenger experience" and dramatically reduced operating costs, by allowing flights between thousands of under-utilised non-primary airports across the USA.

The third finalist in this category is Jiayi Yu from the University of Reutlingen in Germany, who has designed the Shift Cabin Interior. This concept features business-class seats that can swivel into multiple positions, providing passengers with more leg room and enabling airlines to fit more seats into their business-class cabins. ▶



Seats that swivel from Reutlingen University

University of Reutlingen

The Crystal Cabin Awards are an initiative of Hamburg Aviation and have been running for 15 years. An overview of all 24 of this year's finalists will be displayed at the Hamburg Pavilion in Hall B6, Stand 6B90.

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It has been all about survival for seating manufacturers during the pandemic. But with travel and orders ramping up again, they face new challenges as they return to AIX

Hamburg will be the first chance seat manufacturers have had in three years to show their latest products to the market in person



Recovery position

Murdo Morrison

For aircraft seating manufacturers the past two years have been anything but a comfortable ride. The grounding of commercial aviation in 2020 saw heavyweights such as Collins, Recaro and Safran drastically scale back production. Meanwhile, for some start-ups that had ventured into the market in the booming second half of the past decade, the orders drought threatened their very existence.

Seating suppliers have two main sources of revenue. The lucrative supplier furnished equipment segment is when aircraft manufacturers list a seat as exclusive or an option on new aircraft, or an airline – usually one with significant buying power – is able to negotiate to have a unique, bespoke seat designed for its premium cabin.

However, for many seat makers, retrofit – often when an older airliner changes hands and is refurbished – is the easiest route in for start-up suppliers.

The approval process from the aircraft manufacturer is simpler and it is a more cost-effective option for smaller carriers. But both parts of the market ground to a near halt from March 2020.

Yet, in the same way troubled airlines were able to hunker down and sit out the Covid-19 crisis, so the seating sector has seen vendors survive and emerge bruised but confident of a swift recovery. Almost all are keen to show off products that have been up to three years in gestation at AIX.

There is even a new name in seating, despite the sector's notoriously high entry barriers. Unum is the brainchild of Chris Brady, who was chief executive for more than a decade of the now Chinese-run economy seating firm Acro. He set up Unum in late 2019 after being released from a non-compete agreement with Acro's new owners.

However, the one-time Virgin Atlantic manager has no intention of taking on his former employer and others in the high-volume economy segment. Instead Unum will try its chances in the higher-margin but extremely competitive business class space, where suppliers work for years to design and finesse products that meet the exacting brand requirements of premium airlines.

Growing opportunity

Long-haul is also the part of the market that suffered most during the crisis and faces the lengthiest recovery. However, Brady is undaunted. He sees a growing opportunity for retrofit business on older widebodies, particularly the Airbus A330, which he describes as “underserved” by the major seating manufacturers. The segment, he says, also has fewer competitors.

The company's introductory lie-flat seat – developed with design consultancy Acumen – is intended to sit in an outward herringbone configuration with direct aisle access. And, while Brady says it has been shaped with comfort in mind and will be “competitive” with leading products in the market such as Safran's Optima, he admits the product is not “ground-breaking”.

Instead, Unum – which plans to establish a production site in Crawley, near London Gatwick airport – will set out its stall based on reliability of delivery. During the pre-Covid period, the rapid ramp-up of airliner production



Everything was ‘pushed to the right’ during Covid, says Mirus's Ben McGuire

“Without the benevolence of our shareholders, we would not be here. They kept us going”

Ben McGuire Chief executive, Mirus Aircraft

caught many established seating manufacturers on the hop, and the sector got a reputation for late deliveries. “It lost its agility,” says Brady.

While the pandemic and Boeing's well-documented programme troubles have turned that situation on its head, he insists smaller airlines, with less commercial clout, will consider disruptive start-up suppliers. “Turbulence is great for the entrepreneur. Our offering will be as much about good service,” he says, adding that Unum has modest market share aspirations of around 2%.

Brady is raising funds – he has secured £1 million (\$1.25 million) and needs another £4 million to take the business to the production stage. There is still no launch order. However, Unum is exhibiting at AIX and Brady says that if a customer comes on board by the end of this year, the company could be generating revenue by mid-2025 with a break-even production target of 18 to 20 seats per month.

While Unum had the advantage of having few overheads when Covid-19 struck, the timing could not have been worse for fellow start-up Mirus Aircraft Seating. Mirus set up near Norwich in the UK in late 2017

Etihad has introduced Recaro's long-haul CL3710 seat on its A350-1000s



After securing a launch order from AirAsia for 100,000 of its Hawk economy seats, as line fits and retrofits on the Malaysian carrier's existing and on-order fleet of A320s and A330s.

Sudden brake

Bolstered by a second order from leisure airline TUI to retrofit the Hawk seat to Boeing 767s, by the start of 2020 Mirus was gearing up to produce 3,000 seats per year. However, the pandemic put a sudden brake on its plans. While AirAsia did not cancel orders, "everything was pushed to the right", says chief executive Ben McGuire. The young company was forced to halve its 120-strong workforce.

While being a start-up helped "as we had no cost of stock", the dramatic slowdown in revenues created a cash crisis. "Without the benevolence of our shareholders, we would not be here. They kept us going," admits McGuire. The company is now rehiring staff as production restarts. "We are coming out the other end stronger," he says.

Evidence of that is clear from a visit to its factory in the Norfolk village of Hingham. A dynamic test facility, featuring a 30m (98ft) test sled, is due to open in July. It will avoid Mirus having to outsource to third-

"Certifications are complex, and there is a lot of competition from niche and big players – the same ones are still there in a market now half the size"

Mark Hiller Chief executive, Recaro

party labs where lead times are long, and will speed up product development. It will also be "a statement to customers and OEMs that we are a serious player", suggests McGuire.

Boosted by a third customer, whose identity McGuire will not reveal beyond saying it is "Middle Eastern", the company aims to produce around 4,000 seats this year. That is well below where it had hoped to be by now when the business was launched, but McGuire expects



Unum's business-class seat concept

production to double each year until “we are close to capacity in the 30,000s”.

Also helping to achieve that target could be the company's latest product, Kestrel. Mirus unveiled an “early prototype” at AIX 2019 and is showing the finished design – a lightweight, “hybrid composite” fixed-back seat – at this year's show, with a view to launching production in the second half of 2023. This will happen regardless of whether or not Mirus has secured a launch order by then, McGuire says.

Economic rival

Arguably Mirus's biggest rival in economy is Recaro. In common with its peers, the privately-owned German company has yet to rebound fully from the crisis – sales of just under €270 million (\$285 million) in 2021 were down on the previous year, but that was largely due to a strong first quarter in 2020. Deliveries of almost 60,000 seats were slightly up on 2020, but just 40% of the 2019 figure.

However, chief executive Mark Hiller sees strong signs of market recovery. “We have rock-solid programmes, and have had no cancellations from customers,” he says. “Demand is picking up from a passenger point of view, and business trips are coming back. We have been getting new [requests for quotes].”

The one area Hiller believes will be substantially slower is long-haul, with the sector further depressed by hitches to Boeing's 787 and 777X programmes. Recaro entered

the business-class market in earnest late last decade, with Hiller stating in 2019 that it was the company's intention that it could be the leader in this area – as well as economy – within 10 years.

“That is still our plan,” he says, noting “additional wins in recent months”, including a retrofit deal from an unnamed major airline. Last September, Air China became launch customer for the CL6720 business-class seat for its A350s, with an order for 10 shipsets. “There are fewer programmes in this segment,” admits Hiller, “but revenues [per unit] are 10 times higher than in economy.”

Crucial to those ambitions is its new research and development centre at its Schwaebisch Hall main site in south-west Germany, which opened last autumn. The €50 million investment is intended to cut the risks and costs of outsourcing testing. “It speeds up feedback loops,” says Hiller. “It also shows customers and partners the expertise we have in-house. It is the pride of our engineers.”

In addition, Recaro has spent €3 million refurbishing a final assembly line at Schwaebisch Hall for premium products. Hiller admits breaking into business class will not be easy. “We need to do it step by step,” he says. “Certifications are complex, and there is a lot of competition from niche and big players – the same ones are still there in a market now half the size.”

While the business-class segment is very much part of Recaro's long-term plans, the rapidly recovering economy market remains its core activity. One of its most recent deals has been with established customer Etihad

► Airways, which introduced Recaro's long-haul CL3710 seat to service in April on its A350-1000s.

Recaro has also been pitching at another niche market, regional jets, with KLM last year selecting its BL3710 and lighter SL3710 offerings for its subsidiary Cityhopper's 132-seat Embraer E195-E2s. It was the company's first regional aircraft contract, and was selected as a buyer-furnished option in preference to "preferred" original-fit seating supplier Safran.

"The regional market is not big volume for us, but it is important for us as a supplier to be able to deliver across an airline's range and offer commonality," says Hiller, who also hopes to secure future deals on A220s. "We want to be seen as a specialist in all areas of seating, so this kind of diversification is vital."

Collins' seating factory is by far the biggest employer in the Northern Ireland coastal town of Kilkeel and is one of the reasons that the province has become a world centre of excellence for aircraft seating. Premium specialist Thompson Aircraft Seating is based an hour's drive away in Portadown and there is an extensive local supply chain that feeds off both businesses.

Cultural history

Collins' factory was established in the late-1960s as Aircraft Furnishing and was bought by US interiors specialist B/E Aerospace in 1993, before that business's absorption into Rockwell Collins and eventually Raytheon-owned Collins Aerospace. While the workforce has shrunk from its 2019 peak of more than 1,000, 730 employees remain, making Kilkeel the world's largest aircraft seating plant.

With second- and even third-generation staff among them, the "culture is unlike any I've seen elsewhere in the industry", notes the factory's managing director Stuart

McKee. Good access to road, air and sea infrastructure, despite Kilkeel's semi-rural location, coupled with support from Northern Ireland's devolved government are major advantages, he adds.

Collins economy and premium seats are assembled at Kilkeel, which, along with two sites in North Carolina make up its seating business. Key lines produced at the Northern Ireland plant include Finnair's distinctive "fixed shell" seat, unveiled as its business-class product on A350s and A330s in March, and developed by Collins with design house PriestmanGoode.

The idea behind the Air Lounge seat, deliveries of which began earlier this year, is to remove many of the seat mechanisms and replace them with a rigid, curved structure that, nevertheless, provides a similar amount of personal space to a traditional business-class seat. Like the rest of the Finnair business-class cabin, the seat is influenced by Nordic themes and luxury hotel furniture, says Collins.

Mark Vaughan, vice-president of aircraft seating for Collins, admits the premium segment is more sluggish than economy, and says that "how nimble and agile you can be" will be a differentiator between suppliers as the market revives. With a hiatus in cabin innovation through the pandemic, airlines are keen to come back with strong products to entice returning travellers, he says.

Carriers with older legacy fleets are looking hard at retrofits to keep their brand appeal current, he suggests. Another trend is the rise in longer flights on narrowbodies, with airlines "pushing the cabin in different directions in a smaller space" rather than relying on the traditional business-class seating found on a US domestic service.

Northern Ireland's other seating supplier is Thompson, now part of Chinese-run Avic Cabin Systems, along with Bournemouth-based monument specialist AIM Altitude. The all-premium manufacturer made the unusual move of launching into the premium market, initially as a design house, before moving into manufacturing and delivering its first Vantage seats to Brussels Airlines in 2012.

"Market entrants traditionally start at the back but we went in at the deep end," says Andy Morris, vice-president commercial. Thompson endured two tough years even before Covid-19 struck, and had to be bailed out by its parent company. However, the firm is now "re-entering a growth phase and scaling for growth", says Morris.

Fresh innovation

Thompson's factory is certainly bustling again and, despite the financial challenges, the firm has been investing in innovation. Last year, US airline JetBlue Airways unveiled the company's Vantage Solo – claimed to be the first lie-flat product designed for narrowbodies – as the centerpiece of its revamped Mint business class product on A321LRs flying transatlantic routes.

The herringbone product, which has a 33in pitch, comes, unusually, with a suite door – the first business-class seat to have such a feature on an Airbus narrowbody – and offers direct aisle access, claims Thompson. JetBlue flies them in a 24-seat, 12-row configuration on European services, while its New York to Los Angeles route has them in a 16-seat layout.

New at this year's AIX is the Vantage Duo, a reclining version of Thompson's flagship product aimed at



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customers flying mid-haul routes who want a greater cabin density than lie-flat seats provide, but with the same comfort and privacy afforded by the Vantage Solo, says Morris. He explains: “Our aim was simple – greater comfort in the same space.”

The UK’s third big seating manufacturer is Safran, whose factory in Cwmbran, Wales, specialises in premium products. It was originally the main site of Contour, which was acquired by Zodiac in 2012. Zodiac was absorbed in 2018 by the giant French aerospace group, with the purchase including Zodiac’s other plants in France and the USA, which make economy and premium economy products.

Like her counterparts, Victoria Foy, chief executive of Safran Seats GB, concedes that the widebody market has “not woken up” as much as single-aisle post-Covid, but “we are starting to see opportunities again”. She says that Safran spent much of the 2020-2021 crisis focusing on new programmes “for the 2023-2024 timeframe”, some of which are being reviewed at AIX.

While the pandemic disrupted output, Foy says that, despite two order cancellations, “we never stopped the final assembly lines [FALs]” and continued to deliver, albeit at much slower rates than in 2019. “We took the opportunity to prepare for the ramp-up by streamlining the FALs, investing in digital tools, and managing our supply chain,” she says.

Another seat manufacturer that emerged just before the pandemic is Adient Aerospace, majority owned by Boeing with automotive seating specialist Adient as co-shareholder. In 2020, the company said it was pressing ahead with development of a lie-flat business-class seat for narrowbodies called Aspect, that it had intended to show at that year’s postponed AIX.

“We took the opportunity to prepare for the ramp-up by streamlining the FALs, investing in digital tools, and managing our supply chain”

Victoria Foy Chief executive, Safran Seats GB

The company’s first widebody business-class product, Ascent, which was presented at AIX 2018 for the first time, is flown by Qatar Airways and Hawaiian Airlines on their 787-9s. Interestingly, Adient is the second business-class seat provider to the Doha airline, which uses Collins Super Diamond product in its 787-8s and (currently grounded) A350s, respectively.

The launch of Adient Aerospace was a response to the need by Boeing to gain back some control of its supply chain. Boeing felt this had become strained during its ramp-up preceding the 737 Max grounding and the pandemic. Boeing had already bought in June 2019 Californian company Encore, which makes the

Thompson’s Vantage Duo



Thompson Aircraft Seating

Lift economy seat – the business transferred to Adient Aerospace control later that year.

Of course, this was before the Max crisis and the pandemic, which along with problems with the 787 programme has reduced Boeing’s need to broaden its seating supplier base. However, with demand for seating stepping up again, the question the sector faces is whether, after two years of slowdown, it can keep up with renewed demand.

As Vaughan at Collins remarks: “We have continued to invest in new products, and some of the things we have done in the past two years have been among our most complex projects. But the biggest challenge we have is managing our supply chain. Being able to innovate is important, but now we also have to deliver.”

Logistical pressures

A suspicion that the sector will return to its old ways of lapsed deadlines as demand ramps up, frustrating smaller airlines without purchasing muscle, is what the likes of Unum are banking on. But no matter how efficient factories and management are, small and large vendors alike will be subject to the same supply chain pressures over the next few years – from shortages of raw materials and rising prices to logistical complications resulting from China’s zero-Covid policy.

For now, however, the emphasis is on anticipating what the designers and engineers have been developing during AIX’s long absence – that, and meeting face to face again. For Safran’s Foy, this is her first Hamburg show – she switched from another Safran unit in January 2020. “I can’t wait to get in front of customers,” she told FlightGlobal in April. “The energy and excitement in my team is incredible.”

FLIGHT

WTCE DAILY NEWS

World Travel Catering®
& Onboard ServicesEXPO | 14-16 JUNE 2022
HAMBURG, GERMANY

Taste of Travel

Theatre

What's on at the
Taste of Travel Theatre

Hall A4

10:00-10:45

Onboard icons
Celebrating the WTCE
10th anniversary
- finding the most
influential people in
the industry

11:00-11:45

*The future of special
meals in aviation and
travel*
With expert panel

12:00-12:45

*Moving from push to
pull: how pre-ordering
and in-seat ordering
can reduce catering
waste and improve
revenues*
With expert panel

13:00-14:00

*An appetite for meat-
free dining*
Steve Walpole
Professional chef

14:15-15:15

*Passengers lead the
sustainability cause*
With expert panel

15:30-16:15

Going seasonal
Jean Michel Fort
Tom Abbott
Newrest's creative
chefs

16:30-17:30

*Onboard Hospitality
Awards results*

Murdo Morrison

Jean Michel Fort and Tom Abbott travel the world designing menus for some of the top airlines. However, the Newrest chefs are at the Taste of Travel Theatre today giving top tips about sourcing and cooking local food.

The provenance of what we consume is a major trend in the wider hospitality industry, and increasingly in aviation, says Abbott. "People want to know the story behind what they are eating," he says.

Catering group Newrest has been investing in local sourcing. It operates a farm next to its food preparation centre in Lagos, Nigeria.

Like Fort (left), Abbott comes from an aviation family.

His brother works for British Airways, while Fort's father was an Airbus employee. "For both of us, flying is in the blood," he says.

The pair are speaking at 15:30 in the theatre in Hall A4.

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The thinking drinks trolley

Pilar Wolfsteller

SkyTender Solutions is showcasing three trolley systems designed to significantly cut the carbon footprint of in-flight beverage service.

The German company has developed three trolleys for airlines and air caterers: One that serves coffee and hot chocolate drinks, another that can handle up to 12 different soft drinks, and a third for serving water.

It has caught the attention of numerous major international carriers already, and the company is on the verge of signing three deals.

“We want to get rid of plastics, wrappings, garbage, unnecessary transportation and over-

catering,” says Thomas Muetzel-von Schwartz (*pictured*), the company’s managing director of technical operations.

The mobile systems, which rely on integrated post-mix technology, have the potential to reduce the average beverage service carbon footprint by 50% compared to current solutions, he adds.

The coffee trolley, called SkyBarista One, has already achieved EASA certification, with the soft drink and water trolleys, SkyBar Splash and SkyBar Aqua+ respectively, slated to be certified later this year.

Interest in the sustainable trolley systems, he adds, is exploding.

“After the pandemic we saw sustainability become more and more important for carriers and

caterers,” Muetzel-von Schwartz says.

“We have been coming to AIX for years, and we

have never had so many meetings scheduled before we even got to the fair,” he adds.



BillyPix



Pictured are van der Velde and his colleague Melanie Berends

BillyPix

Appetite for change

Environmentally responsible catering is one of the inescapable themes of WTCE this year, and first-time exhibitor Sier believes its range of sustainably sourced cutlery and utensils will tempt aviation and rail operators.

The Dutch company has mainly supplied the hospitality sector since its foundation 12 years ago, but believes there is an increasing appetite among travel firms and their passengers for

greener food products.

“We are very confident there is a market and that’s why we’re here,” says Sier’s Albert-Jan van der Velde. “It would be nice to leave with some new clients.”

Sier – which means “ornamental” in Dutch – imports the products but designs much of its range itself. Included on its stand are bamboo cutlery; plates, bowls and burger boxes made from sugar cane; paper straws; and other items manufactured from palm leaf and coconut.

Sustainability is a major issue for on-board hospitality. We take a closer look at some of the green products taking the place of unnecessary plastics and other non-recyclable materials

War on waste

Kerry Reals

Spoons that can be eaten after use; straws and cutlery made from compostable agricultural waste; and in-flight meals with a shelf life of up to two years that have fed astronauts in space. These are some examples of the innovations taking place to make in-flight catering and services more sustainable, as airlines look for ways to reduce single-use plastics and food waste in the cabin.

Sustainability is a hot topic for the airline industry, which is under growing pressure to cut greenhouse gas emissions and find a flightpath to net zero. While much emphasis is placed on moving away from burning kerosene towards alternatives such as sustainable aviation fuel and, further into the future, electrification and hydrogen, a number of lower hanging fruits that can improve airlines' green credentials are ripe for the picking. Many of those relate to what carriers serve their passengers in the cabin, and what they use to serve it with.

A number of exhibitors at this year's WTCE are showcasing products with sustainability at their core. One of those is Incredible Eats, which has developed a spoon that can be eaten after it has served its purpose.

The Incredible Spoon is made from wheat, corn, chickpeas and brown rice, and comes in a variety of flavours. Its producer says that each spoon is designed to hold its shape for 30min in hot soup or cold dessert, after which it can be consumed by the diner. Even if it is discarded rather than eaten, the spoon will degrade - unlike the single-use plastic cutlery items it is seeking to replace.

"Our journey started at an ice cream shop," recalls Incredible Eats founder Dinesh Tadepalli. "Just spending 10 minutes eating our ice cream, a question occurred to me: 'Why didn't I think twice before

using a plastic spoon for a few minutes that's going to stay on the planet for hundreds of years?'"

Using his engineering background, Tadepalli set out to find a solution. With his co-founder, Kravil Patel, he invented a machine which mass-produces edible cutlery. After an initial run of 100 items a day, an order for 150,000 spoons from a caterer prompted Tadepalli to sell his home and expand the manufacturing facility.

"We scaled to manufacture 50,000 spoons per day and introduced edible sporks, edible straws and edible chopsticks, starting in 2022," he says. Now the company is targeting airlines and cruise ship companies, and is hoping its first time as an exhibitor at WTCE will help to secure its first customers from these sectors.

"We have a very famous international airline, based in the US, already exploring using our edible spoons with their yoghurt parfait at airport lounges. It's a work in progress and will be confirmed in a few months," says Tadepalli. "We believe WTCE will provide us with the right opportunities with the right airlines aiming to reduce single-use plastics."

He acknowledges that the spoons are more expensive than their plastic alternatives, but says the cost is coming down as production scales up, and it is a price worth paying for a more sustainable product.

"It is more expensive than cheap plastic, but since it's edible - in both sweet and savoury flavours - we hope it provides a fun and innovative reason to spend the extra few cents in an effort to preserve the planet for future generations," says Tadepalli.

Another exhibitor offering airlines an alternative to plastic onboard cutlery is Netherlands-based Cyclups, which makes plant-based compostable cutlery from wheat straw combined with lignin and cellulose from trees. Cyclups chief operating



Incredible Eats' spoon can be eaten after it has served its purpose



Cyclups makes plant-based compostable cutlery from wheat straw

Cyclups

officer Sean Colombon says the idea came about while backpacking in Asia and seeing first-hand the “enormous problem” of plastic waste.

Initially, the plan was to use wheat stalks – the straw-shaped part of the wheat plant that is normally discarded – as a replacement for single-use plastic straws. However, when requests came in from potential customers to change the diameter of the naturally-occurring straws the decision was made to partner with Chemelot, a subsidiary of Dutch thermoplastics group DSM, and combine crushed wheat straw with lignin and cellulose from trees to create granules known as PLQ that could be moulded into different shapes.

“This was a trigger then for people to say, ‘if you can make a straw then you can make forks and a knife and whatever,’” says Colombon, noting that Cyclups received requests for compostable products ranging from flower pots to coffins.

“Our main goal is to replace as many single-use plastic products with natural and compostable alternatives, so we said the Cyclups business is only going to make straws and cutlery,” he adds, although the company also provides the PLQ as a raw material for other manufacturers to use in their own products.

Colombon is hoping to persuade airlines to buy his products as a more environmentally-friendly alternative to plastic onboard cutlery. This year will mark Cyclups’ first physical presence at WTCE, although Colombon says its participation in the online event last year drew interest from several airlines and resulted in follow-up meetings afterwards. He hopes to secure the company’s first airline

customer by the end of this year.

“We think this is going to be the solution. We certified 100% zero plastic in our product and it’s compostable and doesn’t leave any microplastics, and that’s a combination few in this world can say in this moment,” he says. Cyclups’ products are pricier than single-use plastic items, but the company does not view plastics as a benchmark.

“We benchmark ourselves with wood. That’s our main competitor on cutlery and with straws the paper straw is our main competitor,” says Colombon. “I’m not going to, and I don’t want to, compare ourselves with plastic because it’s a completely different product. Obviously [our product] is more expensive, I cannot deny that, but it’s a different type of product with a way different impact on this world.”

In addition to reducing the amount of single-use plastics in onboard catering, cutting down on food waste from in-flight meals is also a key issue when it comes to sustainability.

It is an area of focus for aviation service company LSG Group, which is seeking to reduce food waste through the use of artificial intelligence and a special method of steam sterilisation known as autoclaving.

LSG recently developed four meals for German astronaut Matthias Maurer to eat during his visit to the International Space Station. The meals, which included venison ragout with dumplings and geheirade (a local speciality from Maurer’s home region of Saarland), can be kept for up to two years at ambient temperatures, thanks to a sterilisation process called autoclaving. This process, says LSG, increases the shelf life of the food while



Cutting waste is one way for aviation to achieve its climate goals

Huguette Roe/Shutterstock

retaining the majority of its vitamins and nutrients.

To comply with the unique requirements of space the food was packaged in cans, although LSG says autoclaved meals could be served in airline trays and used by the aviation industry as a sustainable in-flight catering solution. The ability to store in-flight meals at ambient temperatures for at least six months and up to two years, it says, can help to cut down on food waste.

“This is something very promising that we haven’t had in the past,” says Simon Frischemeier, head of sustainability management at LSG Group.

“We are looking right now for partners, for airlines to commercialise this product.”

Anything from braised meats to thick soups and desserts is ideal for autoclaving, says LSG. The company will be demonstrating some of its autoclaved meals during WTCE’s Taste of Travel Theatre.

LSG is also trying to cut down on in-flight food waste by using artificial intelligence to determine what type of food is most commonly wasted, and whether there are particular flight times or routes where more meals

and snacks go uneaten. LSG’s Consumption Analytics pilot, which started in November and is now in its closing phase, involves taking pictures of food trays post-flight and using artificial intelligence for image processing, to analyse what has been eaten, partially eaten or left untouched.

“When you do a walk on the shop floor and you’re passing by the in-bound area where the carts are offloaded after the flights, there is lots of untouched and uneaten food,” says Frischemeier. “In the past, many caterers saw it as a ‘how do we handle the waste?’ [issue], but we thought about it in a smarter way. This is not just waste, this is actually information and data arriving.” This data, he adds, can shed light on whether aircraft catering products have been loaded suitably, and how improvements could be made.

“With the data you can make very fast conclusions: Are there any shifts in needs for the passenger? Are there differences on different routes? And how are new concepts received by the passenger?” says Frischemeier.

The Consumption Analytics pilot has discovered that for some components on certain flights, as much as 50% of a particular food product is left uneaten by passengers and goes to waste. By collating and analysing the data, it is possible to glean whether there are certain times when an onboard catering service is provided but proves less popular with passengers.

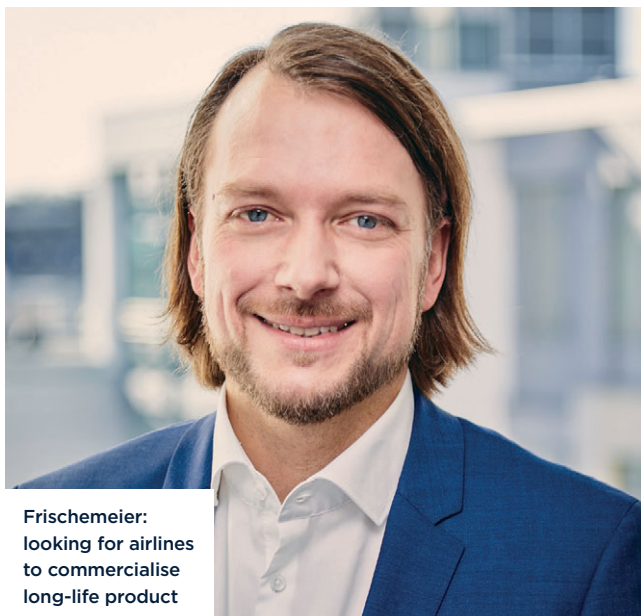
This data then “triggers a discussion” with chefs and in-flight management teams to understand when there are issues with the service and how it can be adjusted, says Frischemeier.

For example, “do we need to change concepts? Or do we need to change the amount of loading? Or do we need to have a totally different product?”

LSG has airline customers for the programme “in the pipeline” and is keen to work in partnership with carriers to implement it in the marketplace.

On the issue of single-use plastics in onboard catering, Frischemeier admits that “we can do much more”, but he is optimistic that things will continue to improve.

“We need to work together with our supply chains to find further alternative materials. This will be a new, interesting discussion [on how to] move away from disposable equipment in a meaningful way,” he says. “There are challenges, but I’m very optimistic that this can be covered in the coming months and years.”



Frischemeier: looking for airlines to commercialise long-life product

LSG

Roger Williams, managing director of Explore Catering and chairman of the International Rail Catering Group, shares his thoughts on pandemic recovery, technology trends, and sustainability

On the right track

Q The pandemic hit all segments of rail travel: from commuting to long-distance. Are things getting back to normal?

A With more of us working from home over the last couple of years, getting people back into the office has been slow. This has hit commuter train services, badly affecting station-based catering retail outlets across the network. However, the majority of onboard catering services are on long-distance trains, which have now mostly returned to full service. These provide customers with a great incentive to travel, even if it is mainly for leisure purposes at present. Hopefully they will help business travel return too.

Q Presumably the railway catering sector experienced a double-whammy during Covid-19 as enhanced hygiene and social distancing measures impacted the serving of food on-board? Have there been business casualties as a result?

A Catering onboard was certainly badly affected by the withdrawal of around 95% of train services, as well as other restrictions throughout the pandemic. It was not a good time to be in hospitality and travel, with IRCG members losing an estimated €1 billion (\$1.08 billion) in turnover. Many operations were closed completely, with staff furloughed or lost through the inevitable redundancy programmes. It is possible that some lines may not get catering back onboard, but these are in the minority with most now on the road to recovery.

Q What changes do you expect to see in the industry post-pandemic? What new trends are you seeing, and what role will technology, such as ordering by app, play?

A Hospitality and catering on board long-distance trains plays a key role in the journey experience, driving customer satisfaction and advocacy, with the resultant revenue benefits from repeat travel. The trick now is to engage with our returning customers who are perhaps hesitant at the thought of long-distance travel, but who have become much more comfortable using technology during the pandemic. By connecting with our customers through social media, advance purchase options and other digital interfaces, we can encourage increased use and appreciation of the catering on offer and extend

personalised menu options. It is particularly important to provide for a wider range of dietary needs as tastes are changing rapidly. However, customers are clear that one aspect of our service – the personal touch – must not be lost as a result of the increase in the use of technology.

Q The drive to shrink carbon footprints is common to every industry, from reducing waste and the use of plastic to cutting food miles. What is the rail catering sector doing to make its service more sustainable?

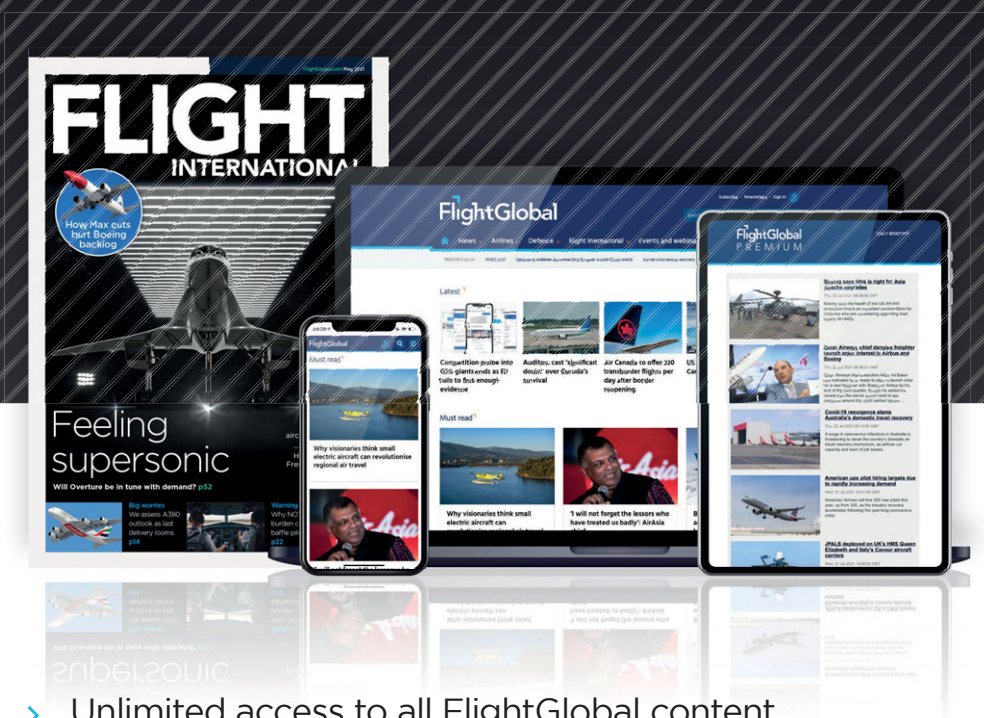
A Many train operators are doing great work in reducing packaging and single use plastics, as well as working closely with their route communities, supporting local suppliers and ensuring the sustainability of every product offered. Operationally, the biggest drive is to ensure primary food waste is kept to a minimum. This is difficult with a non-reserved, walk-on, walk-off service so some are moving to a more pre-determined catering offer that's directly driven by customer demand by train, requiring changes to ticketing, reservation and logistics systems. Again, the need for offering a wider range of dietary options is required, such as vegan, and plays an important part in food sustainability.

Q What are you looking forward to most at this year's WTCE?

A I can't wait to meet everyone face to face and see product innovations at first hand. The number of rail caterers looking to attend WTCE shows the desire to rejuvenate our onboard catering services and the return the sector back to health, and I applaud that. I always enjoy the Taste of Travel Theatre. This year there are some great panel discussions – look out for Philippa Cresswell of Avanti West Coast discussing 'Redefining Onboard Catering'. ▶



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