

Aircraft *interiors* INTERNATIONAL

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STOWAGE

Concepts and ideas that could improve the efficiency and ergonomics of overhead stowages

FUTURE-PROOFING

Our CMF experts predict what tomorrow's flyers will want cabins to look like

CABIN LIGHTING

Exploit lighting technology to enhance the appearance and enjoyment of the cabin



Small miracles

BIG ADVANCES IN TINY TECHNOLOGY: WHY NANOMATERIALS ARE THE NEXT BIG THING IN AIRCRAFT INTERIORS

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GET RID OF OVERHEADS!

The newFACE airliner concept uses a 2+2+2 layout, with no overhead bins. So where does Almadesign, the creator of the concept, intend passengers to stow their belongings?

André Castro, design manager at the studio, states, "A flip-up seat enables the storage of a predefined maximum size of hand luggage under the seatpan, which allows faster ingress by removing 'aisle interference' while boarding – passengers do not need to stand in the aisle to store luggage in overhead bins."

The concept uses a raised double cabin floor, which provides extra space for luggage to fit under the seatpan. The height and weight is compensated for by the removal of the overhead bins. Meanwhile the air and lighting systems are integrated into the central upper console. The system allows each passenger's space to be customized, so items can be stowed more quickly and in a more user-friendly way. The seat numbers indicate each passenger's storage space.

Boeing explores space

Boeing has developed larger overhead bins – named Space Bins – as a line-fit option on new B737NGs and B737 MAXs and retrofit on in-service B737NGs. Each Space Bin can accommodate six bags, two more than the current pivot bins installed on next-generation B737s with the Boeing Sky Interior, based on a standard size carry-on bag.

In addition, the lower lip height of the bins provides increased visibility into the back of the bins and makes bag loading easier. They're also as easy to close as the current pivot bins, but require no bin assist mechanism. Alaska Airlines is launch customer for the bins.



Maximum bag capacity based on B737-900ER and B737 MAX 9

Bin type (introduction)	Total number of bags
Standard bins (1998)	77
Big bins (2002)	125
Pivot bins (2010)	132
Space bins (2015)	194

SHRINK OVERHEADS!

"We have reached a point where stowage availability has modified passenger behavior," states Cristian Sutter (left), a cabin design specialist at British Airways.

"Passengers are now bringing more items on board, creating not only boarding delays and reducing vertical space in the cabin, but also impeding emergency evacuations due to passengers retrieving their luggage before jumping to safety via the evacuation slides.

"The vertical dimension has not been fully exploited when it comes to optimizing cabin real estate, and

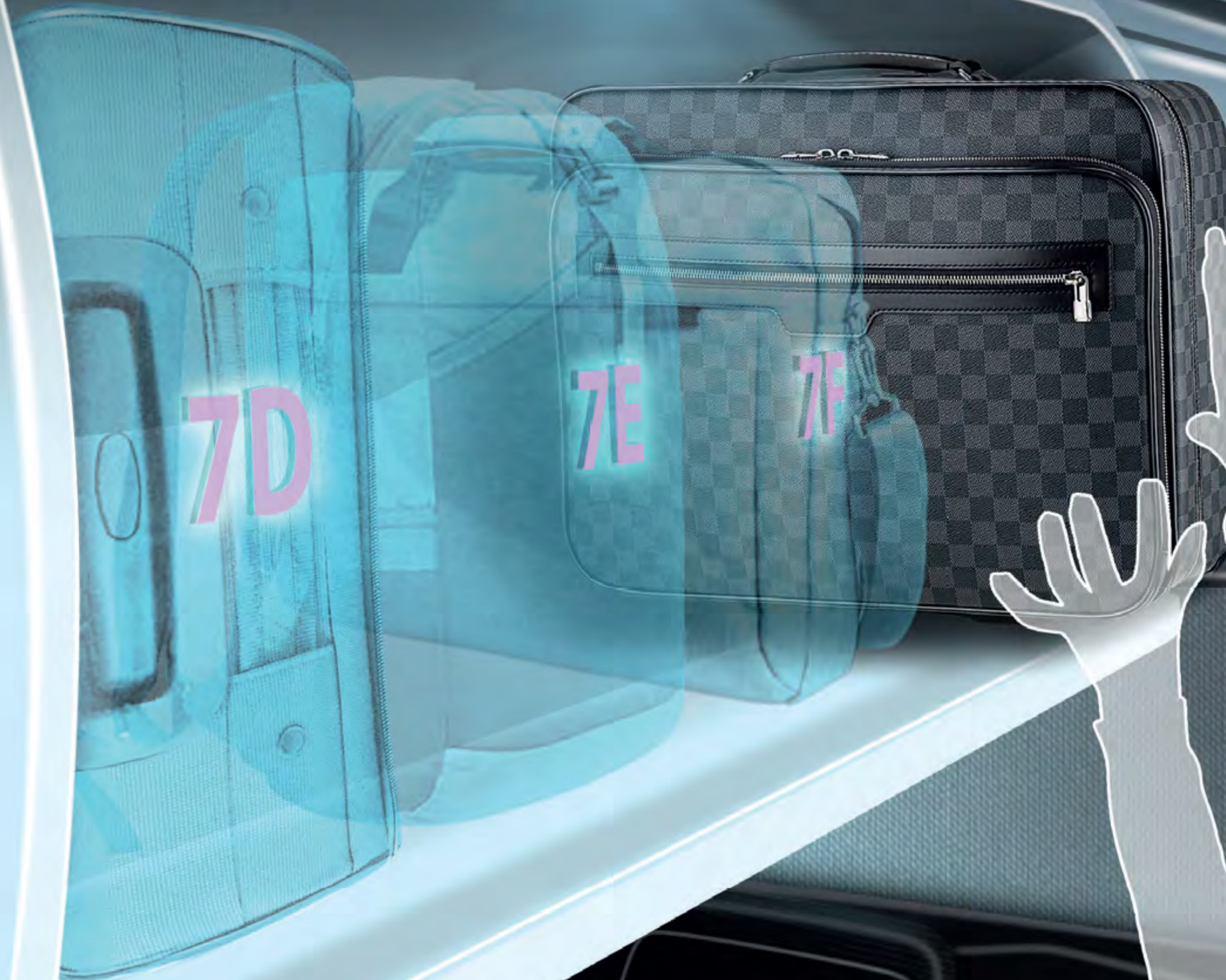
dedicating space for oversized hand luggage stowage instead of using it for comfort-related passenger propositions sounds inefficient, to say the least."

So what does Sutter envision for the future? "Regardless of whether overhead bins become electrically operated, or see-through with smart occupancy indicators, I believe they will decrease in size, releasing cabin space that could be used to create additional services and drive revenue that could justify (and pay) for sending oversized hand luggage to the hold – where it belongs."



binno variations

OVERHEAD STOWAGE BINS MEET THEIR SERVICE REQUIREMENTS ADMIRABLY, BUT THERE IS ALWAYS ROOM FOR IMPROVEMENT. LET'S SEE WHAT OUR PANEL OF EXPERTS IMAGINES FOR THE NEXT GENERATION OF STOWAGE SYSTEMS



material *world*

ALL ELEMENTS OF AN AIRLINE'S BRAND AND PASSENGER EXPERIENCE SHOULD MEET OR EXCEED EXPECTATIONS. THE LATEST CABIN MATERIALS AND FINISHES HELP ENSURE THE AIRCRAFT CABIN LOOKS AND FEELS GOOD FOR PASSENGERS, AND PERFORMS WELL FOR THE OPERATOR



trends forecast

BEGIN EVALUATING TOMORROW'S CABIN MATERIALS TODAY, AND HELP ENSURE LONGEVITY OF CABIN SCHEMES WITH THE HELP OF OUR TRENDS ROUNDUP. OUR PANEL OF TOP EXPERTS TRAWLED 2017'S MAJOR FASHION, FURNITURE AND AUTOMOTIVE SHOWS TO FIND THE TRENDS THAT WILL INFLUENCE FUTURE CONSUMER TASTES AND THE NEXT GENERATION OF AIRCRAFT TRIM AND FINISH

THE FUTURE WILL FEATURE BOTH BEAUTIFUL NATURAL MATERIALS AND HIGH-TECH 'SMART' MATERIALS, PREDICTS ALMADESIGN'S CMF EXPERT, CATARINA FERREIRA



FERREIRA SEES POTENTIAL IN A MAJOR PORTUGUESE MATERIAL: CORK



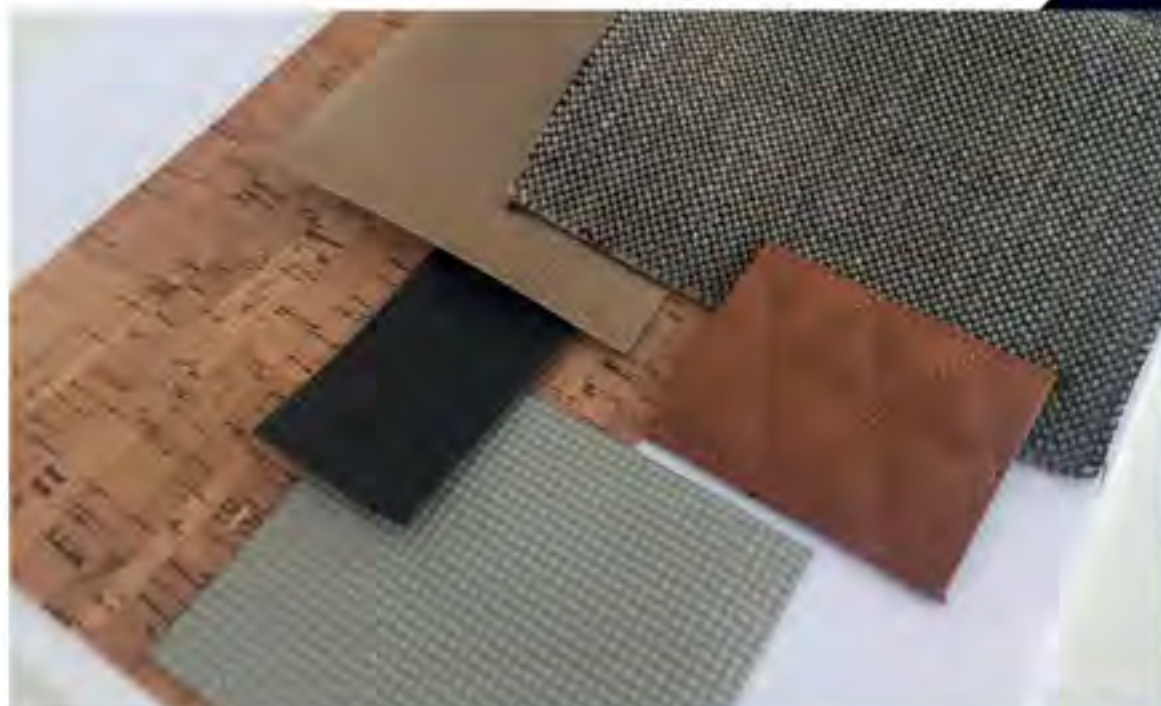
Cabin interiors will be influenced by the search for greater efficiencies, whether environmental, energetic or operational. We can foresee general trends for CMF, some resulting from incremental innovation of existing products, some from new processes such as new ways of combining materials or new ways of producing them. Lightweight materials, novel composite solutions, smart solutions, additive manufacturing processes, higher levels of complexity in detail and the increasing possibility of mass customization to match different users' expectations... all will contribute to improve operational efficiency and differentiate the passenger experience.

In the leather industry we see a move into ecological chrome-free leather, a natural anti-allergenic product that enables the development of all shades of finishes, matt or metallic colors, perforated double-layered patterns and increasingly technical textures. We are now able to introduce different technologies in the leather lamination processes, such as embedded electronics, sensor technologies, and skin-to-skin interfaces, in order to produce 'smart leather' solutions. On the other hand, the simple quality of natural leather, with its beautiful aging and material honesty, will be more and more

important in the development of sustainable, long-lasting solutions for cabin interiors.

In the textile industry we see an increasing possibility to customize solutions with new printing technologies that allow for the customization in low-volume production, and a revolution in the nanotechnologies required to produce smart materials that can be self-cleanable, with embedded sensors for temperature, pressure, connectivity, etc. New sustainable solutions are being developed, such as bio-colored substrates free from synthetic dyes, and customization with fragrance fibers, all of which can radically increase brand differentiation and improve the passenger experience.

We always seek to use local products with cultural heritage. In Portugal, cork offers great potential for CMF solutions and we have been developing natural and composite combinations in different projects, which will enable the use of this material for the development of novel and sustainable CMF solutions using a 100% natural, recyclable product.



ALMADESIGN'S 'LIFE' BUSINESS JET INTERIOR CONCEPT BLENDS NATURAL AND ARTIFICIAL ELEMENTS