

# MRO

Aerospace Magazine



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Upgraded cabin seats on Iberia's A350 fleet.  
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## Deferred projects boost demand for **interior** refurbis

*AviTrader MRO* uncovers the status of recovery in the aircraft interior modifications market which was heavily impacted by the COVID-19 pandemic.

By Keith Mwanalushi

**A**nyone involved in cabin services headed to Hamburg, Germany in June for the Cabin Interiors Expo; a gathering of airlines, aircraft OEMs, IFE system suppliers, seat manufacturers to name a few and keenly observed by MROs too, considering they play a key role in cabin modifications and refurbishments.

Clearly, the Covid pandemic took its toll on the cabin upgrade market as airlines prioritised their cash to stay afloat, we now see strong indications of a comeback as the aviation industry begins to recover, as Sohaib Ahmed, Programme Manager – Interiors at AJW Technique observes. “There has been

some resurgence in the aircraft interior modification market, and technology is leading the way.” He says airlines are focusing on enhancing passenger comfort and improving the overall passenger experience using technologies such as virtual and augmented reality to provide passengers with a more interactive and immersive experience.

“There has been an increased demand for upgrading aircraft seats, in-flight entertainment systems, and seating arrangements, incorporating more personalisation such as noise-cancelling headrests and passengers



Sohaib Ahmed, Programme Manager - Interiors, AJW

having ambient light, which they can control from a panel.” Another trend AJW are seeing in aircraft cabins is touchless technologies such as touchless lavatories, overhead bins having an opening sensor, and smart seatbelts.

Ahmed adds: “Sustainability is high on the agenda in the aviation industry, with sustainable cabin interior solutions using recycled textiles, bio-based composites,

“**The materials used for any modifications must be compatible with the materials used in the fuselage. Incompatible materials can cause corrosion or weaken the overall structure of the aircraft.**”

*Sohaib Ahmed, AJW Technique*



Airlines are having to plan further ahead for modifications and maintenance.

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Jose Pevida, Senior Vice President of Engineering and Product Development, HAECO Cabin Solutions

bio-resins, and the use of bamboo and hemp technology becoming popular with those focusing on a greener industry.”

Jose Pevida, Senior Vice President of Engineering and Product Development at HAECO Cabin Solutions, has starting to see discretionary projects ramp up in demand, particularly in the twin-aisle market. “This market had been depressed severely during the downturn, but these deferred projects seem to all be coming back at the same time. We saw

high interest in interior modifications at the MRO Americas show and airlines are having to plan further ahead for modifications and maintenance due to the capacity constraints in the MRO market in general,” he notes.

Pevida also sees increased use of electronics in cabins, that is driving demand for equipment health monitoring for preventive maintenance – “In-flight entertainment in general is relatively reliable, but we see more demand for upgraded equipment as demands for bandwidth and content grow.”

At AFIKLM E&M they have noticed different trends in the recovery market, including some aircraft staying in service longer than planned due to difficulties in new aircraft deliveries – “They stay actively longer, and they require some refurbishment or transition modifications for their interiors. Therefore, we see a good share of demand for smaller modifications,” declares Thomas Sonigo, Head of Cabin Modification at AFI KLM E&M.

Additionally, Sonigo observes the market pushing towards capability to modify latest generation of aircraft. “Some of the B787s or A350s are now on the agenda for new interior modifications. Another trend we see is that the supply chain recovery is taking much longer than expected and it is impacting current and future projects.”

Sustainability is also increasingly entering the modifications space. At AFIKLM E&M, they are developing a tool that allows them to compare different scenarios of modifications in terms of overall CO2 footprint. “This pushes us to look at the full life cycle of interior design; weight, materials used, locations of our vendors, the recycle aspects, reparability, and so on and recycling parts is certainly our biggest leverage in designing new cabins. We do recycle as many parts as possible from previous design or dismantled aircraft. Our team of experts can optimise this aspect and we have an inventory available for the design teams,” Sonigo continues.

AJW Group have also recently committed to the United Nations Global Compact (UNGC), the world's largest global corporate sustainability initiative. Global movements such as this are leading businesses to take more responsibility in working towards reducing the carbon footprint of the aviation industry and operating under sustainable business practices, and Ahmed says this is why AJW Interiors offers its customers a product such as SkyLeather® as a greener alternative to hide leather.

**Greater connectivity versus maintenance demand?**

Passengers today are seeking greater connectivity around the cabin, seat, and increased touch points for interactivity, which may impact the level of maintenance performed. "There is an increased possibility of malfunctions or failures in these systems, which requires more frequent and specialised maintenance," comments Ahmed from AJW Technique. He says the addition of innovative technology and electronic systems in the cabin and seats means that maintenance personnel must have the technical expertise and training to maintain these systems properly.

"The installation may require modifications to the aircraft's existing infrastructure, such as the electrical system, which could affect other areas of the aircraft. This means that maintenance personnel must be knowledgeable about the entire aircraft system, not just the new equipment or systems. This includes preventative maintenance, such as software updates and system checks, to ensure the systems are functioning properly," Ahmed explains.

In addition, Ahmed says the increased touch points for interactivity mean



Malcolm Chandler, Head of Commercial and Marketing at Vallair

there is a greater likelihood of wear and tear on the cabin interior and seats – "This requires more frequent cleaning and maintenance to keep the cabin and seats in good condition," he adds.

Malcolm Chandler, Head of Commercial and Marketing at Vallair sees more complexities arising from the longer range narrowbody aircraft – "the complexities are increasing as improved passenger amenities and facilities become more common on these aircraft types. In the past, such connectivity features were limited to the widebody and long-haul sector."

Chandler also notes the modifications necessary are tightly controlled under the certification process, however, the de-modification required at the end of a lease period, is often not thought about. He gives an example of a few B737-800s that required the "Row 44" satcom system removing. "Removing the antenna is not a

major task but due to the modifications, the de-modification necessitated the replacement of approximately four meters of crown skin, which in reality cost more than the original installation," he reveals.

At AFIKLM E&M they see customers being more demanding of a seamless connectivity experience throughout their travel. "It is leading to more complex integration between IFE, aircraft systems and even personal devices," notices Sonigo. He says the maintenance is impacted as it gets more difficult to identify "who should fix the issue" since multiple vendors are involved. "We have to be aware of not making the cabins too complicated or expensive to maintain once in operation," he adds.

Sonigo highlights that cabin services do not implement modifications that can compromise the integrity of the fuselage – "all modifications we design are staying within the allowable zones defined by aircraft manufacturers."

Ahmed indicates that when modifications are made to the cabin, such as adding new seats or changing the layout of the cabin, it can affect the weight distribution, which can lead to increased stress and load on certain areas of the fuselage, potentially leading to structural weakness or failure. To ensure the plane structure is reinforced



Thomas Sonigo, Head of Cabin Modification, AFI KLM E&M

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*Thomas Sonigo, AFIKLM E&M*



There has been some resurgence in the aircraft interior modification market.

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augmented reality technology provides detailed information about cabin modifications, including installation instructions and maintenance procedures. “Both innovations are helping to ensure maintenance is performed correctly and efficiently to reduce aircraft downtime.”

Innovations such as 3D printing technology can significantly reduce the components used and reduce production costs and assembly times. “These factors can benefit airlines by reducing their carbon footprint and improving profitability. Digitised manufacturing processes are changing the face of the industry with 3D modelling allowing the creation of virtual models of cabin modification enabling real-time testing of how cabin modifications might affect the structural integrity of the fuselage,” Ahmed continues.

While technology is driving cabin modification and innovations, Ahmed also points out the complexity with the composites used in newer aircraft. “As certification is required to support any cabin modifications, integrators need to do additional analyses and submit more complex reports, and these are underpinned by ongoing technological advancements that will benefit the aerospace industry in the future.”

properly when making modifications to the cabin, several considerations must be considered.

“Any changes to the weight or distribution of weight can affect the overall balance of the aircraft and potentially compromise the structural integrity of the fuselage,” says Ahmed. Additionally, modifications to the cabin must be made considering the structural design of the aircraft as it must be able to withstand the additional stress and load caused by any modifications. “The materials used for any modifications must be compatible with the materials used in the fuselage. Incompatible materials can cause corrosion or weaken the overall structure of the aircraft. Lastly, any modifications to the cabin must be certified by the relevant aviation authorities and undergo rigorous testing to ensure they do not compromise the safety or integrity of the aircraft,” he notes.

**Using technology to keep a lid on maintenance costs**

Technology is enabling much more data-driven preventive maintenance programmes and these technologies are addressing challenges specific to cabin modifications by providing maintenance

personnel with advanced tools and capabilities.

“More data is being collected and analysed than ever before, which keeps a lid on surprises and enables airline technical teams to focus on scheduled maintenance rather than surprises,” remarks Pevida from HAECO.

Ahmed explains that predictive analytics technology analyses data from various sources predicting when maintenance needs to be done and



Increased touch points for interactivity will impact how maintenance is performed.

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