

Inflection Point

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MRO is in a very active, somewhat strained growth phase, driven by post-pandemic demand, supply chain issues, workforce challenges and new technology. As all the forecasts predict, MRO demand is growing steadily at between 3% and 7% annually.

With aircraft production levels lagging, by some estimates 24% below 2019 levels, older aircraft are flying longer. Some estimates say they are operating for two years longer than the long-term average. The airlines have done a remarkable job getting utilization rates high and having planes flying more hours. All of that means more heavy checks, component replacements and life extensions. Simply put, older fleets means more maintenance.

The engine MRO segment is growing the fastest. Engines like LEAP and GTF are more efficient, but require more frequent and complex maintenance, creating backlog and cost pressure.

One airline is taking proactive steps to take control of its engine maintenance. Ryanair signed a multi-billion-dollar service agreement with engine maker CFM and will be bringing its engine maintenance in-house. The agreement included a multi-billion-dollar engine material services agreement under which CFM will support Ryanair's engine maintenance program which is expected to include the opening of two engine MRO shops, which Ryanair plan to open in 2029 to support its fleet of almost 2,000 B737 engines.

"From 2029 onwards, Ryanair expects to bring the maintenance of its engines 'in-house,' and we are pleased to do so with the help and support of our partners CFM," said Ryanair's Group CEO, Michael O'Leary. "Ryanair will place substantial orders for initial spare parts provisioning with CFM to support the opening of each of these two Ryanair engine maintenance facilities."

For more expert insight on the engine capacity crunch, check out our story beginning on page 30.

Supply chain problems are nothing new. Some are calling supply chain challenges the new normal. Persistent shortages of parts, labor and materials such as titanium impact manufacturing more than MRO. Engine makers and other suppliers are fighting competing demands from new plane assembly and maintenance for existing fleets. Some manufacturers and MRO have tried stockpiling engines and parts to alleviate the situation, but this creates production costs that add up down the line.

Digital and AI maintenance and training are speeding up. These formerly futuristic ideas are finally becoming if not mainstream, then at least they are gaining traction. We have two stories in this issue that take a look at these incredible technological systems. The first is our cover story about extended reality's (ER) use in training. Extended reality is

the combination of virtual reality (VR), augmented reality (AR), and mixed reality (MR). With the continuing shortage of maintenance professionals, being able to train quickly without risk to actual aircraft is crucial. Utilizing extended reality bridges the gap between the classroom and the hangar. It can be used for critical situations that can't be taught in real life. And the potential is limitless. Expect to see ER becoming rapidly more prevalent. Read more about ER used in maintenance training starting on page 42.

The second is a story on digital twins and threads. These virtual replicas of physical assets like aircraft and engines are coming into maturity but they are not without their challenges. Going from reactive maintenance to a more predictive, evidence-based format is key and every avoided disruption reinforces the business case. Data standardization and integration complexity are major hurdles to further implementation, as are silos and inconsistent data formats. These create a significant data engineering effort. And there is also the hefty price tag. Our story on digital twins begins on page 22.

Workforce shortages continue to dog the industry. More concerted efforts to entice workers into the industry are still needed. Successful MRO recruitment in 2026 and beyond will require a multi-faceted approach that combines competitive compensation, robust training programs, technological integration and strategic partnerships with educational institutions. Many companies are already doing some or all of these things, but the shortage persists. Our frequent contributor, Marijan Jozic, has some thoughts about knowledge management. After Covid packages encouraging retirements, a new generation of engineers is coming into the hangar. Jozic says reports abound that this new cohort was not operating efficiently. See what he says is a major player in this situation and how he suggests improving it. His column starts on page 66.

In another story, we take a look at smart tools that can help cut inspection downtime. Smart tools can help open up new opportunities for data-driven decision-making and optimization in aircraft maintenance, enhancing efficiency, productivity and overall performance. They can also prevent mistakes by warning users when they are not being used correctly. All of those things are not just helpful but necessary when workforce shortages exist or the hangar is full of FNGs. Check out the story on smart tools starting on page 50.

Since this issue will be with us at MRO Americas, let me also direct you to our map of the event showing each of our advertisers' booth locations, as well as a listing of our advertisers, without whom we would not be here. We are grateful to each and every advertiser and we thank you for your support. Map and listing can be found starting on page 38.

See you in Orlando! 

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