

The Aviation Maintenance Sector: Will the Good Times Last?

By Vik Krishnan and Daniel Leblanc

Be careful what you ask for. During the pandemic, aviation industry leaders were desperate for traffic to come back. Now it has. Indeed, revenue passenger kilometers (RPK) are forecast to be 4.2 percent above 2019 levels in 2024 and are likely to keep growing for years after that. Ditto for commercial demand.

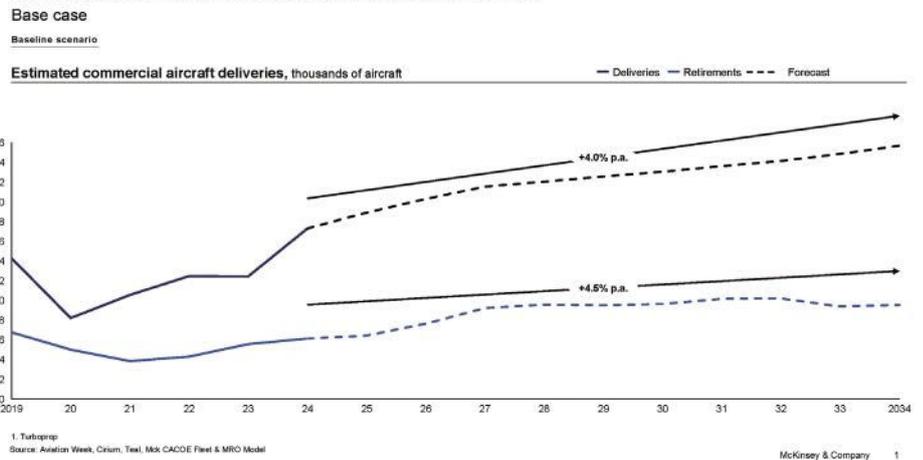
But there is a sting in the tail. There are not enough new aircraft to support growing demand, and there is a backlog of more than 16,000 narrow- and widebody aircraft. Challenges with aircraft production rates and new engine technologies have exacerbated the supply shortage.

To cope, there are two major approaches.

The first approach is to keep current aircraft in service; retirement rates are projected to be about 24 percent lower from 2024-26 compared to the decade before the pandemic. Keeping aircraft in the air longer will require more maintenance, repair and overhaul (MRO) services to engines and airframes. These are expensive and getting more so: MRO costs have risen sharply over the last five years.

Moreover, this effort could cause ripple effects throughout the value chain. For example, fewer retirements will limit the availability of the used serviceable materials (USM) that are often used to lower MRO costs. Meanwhile, aircraft lessors are responding by either placing aircraft at significantly higher lease rates or extending

Exhibit 2: Commercial deliveries are projected to increase while retirement rates remain at historic lows.



at attractive rates while avoiding what would otherwise be financially meaningful remarking and retrofit downtime.

Current market conditions will promote continued MRO growth for the next decade, with spend rising to \$135 billion by 2034. During the first few years, growth will likely come primarily from the high demand for maintenance on older fleets. Engine MRO could account for the largest share of MRO spending, with demand expected to be particularly strong in the short term as previous generation engines enter major shop visit cycles.

After that, there will likely be a slight growth dip, due to the impact of lower aircraft production rates and deliveries from 2019 and into the pandemic years. Over the whole period, and beyond, MRO will grow simply because the aviation industry is. But there could be wrinkles.

Specifically, elevated fleet ages and the commensurate increase in maintenance needs for older aircraft are not likely to persist. From 2028 onward, we estimate that aircraft retirement levels will return to historic levels — about 2.7 percent of the fleet per annum

Right: Daniel Leblanc
Left: Vik Krishnan

— bringing down the average fleet age from today's historic high of 13.3 years to 12.3 years by 2034.

In addition, airlines regularly transport cargo in the belly of passenger aircraft. During the pandemic, to keep trade flowing, cargo airlines converted passenger aircraft to freighters, which helped increase MRO revenues for passenger-to-freighter (P2F) specialists. As international belly cargo capacity continues to recover, P2F conversions have started to fall and this is expected to continue.

The second approach to narrow the gap is to build and deliver more planes. This is beginning to happen. The supplychain disruptions that have hindered production are expected to ease over the next two to three years; we expect total deliveries will increase an average of 4 percent a year from 2024-34. Fleet growth will be slightly slower than passenger travel demand, however, because new aircraft being delivered are larger gauge than the ones being retired.

The introduction of next-generation aircraft and engines will likely influence MRO spending. Many deliveries will consist of aircraft with composite airframes or wings, as well as next-generation engines. New engines entering the market are experiencing more frequent maintenance visits because of the technical and production quality issues that are common with innovation. But once these are solved, the engines are

expected to have comparable or lower maintenance costs than their predecessors. Moreover, even though fleet size is growing, demand for airframe services will likely remain flat, because the composite structures of next-generation aircraft require less maintenance than their mostly metallic predecessors.

The picture, then, is multifaceted: more aircraft will mean more demand for MRO services, but each aircraft will likely need less.

MRO providers today are focused on servicing aging fleets, which account for the majority of demand for their services. But they must also build capabilities for the future. A forthcoming McKinsey survey, for example, found that few MRO providers had integrated digital and analytics at scale throughout the organization. Partly for regulatory reasons, the industry is surprisingly reliant on paper-based record keeping, which makes collating and analyzing data difficult.

Digital transformations are not easy; indeed, most struggle. Preparing now is the best way to get positioned for long-term success. **AM**

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