Aftermarket Looks To Hangar Expansions, Operational Efficiencies

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After a capacity-constrained couple of years, shop volumes are set to remain tight for maintenance providers in 2024. Aftermarket demand will continue to outstrip supply. Lagging repair lead times due to shortages of parts and material supply, workforce shortfalls and sluggish OEM production rates have all helped create bottlenecks in the global MRO supply chain.

In the face of this, airframe demand is on an upward trajectory. Aviation Week’s 2024 Commercial Fleet & MRO Forecast projects healthy demand for heavy maintenance events, encompassing C and D checks, with the overall market close to surpassing 2019 levels this year. It expects approximately 10,206 C checks, which typically can take 7-14 days or longer, depending on the aircraft type. Demand for heavier D checks, which occur every 6-10 years, depending on the aircraft, is predicted to be robust, with 2,643 events projected.

MRO companies are wise to this reality and have spent the past two years driving operational efficiencies in areas such as lean processes and technology adoption to maintain throughput in spite of longer turnaround times (TAT) and tighter hangar space.

Oscar Perez, managing director at Globalia Maintenance, which specializes in base and line maintenance for both narrowbodies and widebodies, says the repair specialist has implemented a series of initiatives to drive efficiency at its maintenance hangar in Palma on the Spanish island of Mallorca. These include “a clear and well-communicated vision and strategy to all our employees, process digitalization on engineering requests, automation such as vending machines for consumables, tailored [key performance indicators] at shop level owned by bay personnel and launching a program to implement predictive maintenance,” he says.

A conventional route pursued by MRO providers is adding capacity through constructing more hangar space either at an existing site or a new location. Ready-built hangars for lease or purchase are scarce, as MRO providers snap them up as soon as they become available. Larger industry players established at major airports have utilized their footprint for more growth.

In the U.S., AAR is set to expand airframe capability at its Miami facility this year. In Singapore, ST Engineering is growing its base after breaking ground last year on a new four-bay widebody hangar. That expansion comes in addition to its ramp-up in operations in Pensacola, Florida,and Guangzhou in China. Meanwhile in the Middle East, following on from Etihad expanding Abu Dhabi operations last year, other regional providers such as Joramco and Saudia Technic are also targeting capacity and capability growth through this year and beyond.

In Europe, Globalia opted to build a hangar close to Madrid-Barajas Airport with capacity for three widebodies. The facility recently received its first aircraft: a [Boeing 787](https://aviationweek.com/awin/program/639) operated by Air Europa. The company chose the Spanish capital as its new base due to its position as a major European airport hub for both passengers and airlines.

Perez sees strong widebody MRO demand for Airbus A330s and 787s, as well as many requests for delivery and redelivery on the narrowbody Airbus A320s and Boeing 737s. “There’s no doubt we are living an extraordinarily high demand on maintenance, not just aircraft-related,” he says. “While the airline market is back to pre-pandemic figures, we are seeing strong demand on both widebody and narrowbody [aircraft].”

Perez adds that he has seen timescales to book slots increasing rather than easing. This contradicts previous market expectations that an easing of market conditions would follow the 2021-22 capacity strains when backlogged airlines reactivated their fleets in large volumes.

In Europe’s constrained MRO segment, some providers have found that adding substantial capacity still falls short of serving the market. Italian MRO company Atitech acquired defunct airline Alitalia’s maintenance business in 2022, including four hangars with capacity for six narrowbody and five widebody aircraft. In addition, it acquired 21 former Alitalia line stations in Italy and 11 abroad, plus shops for wheels and brakes repairs, airframe related components, avionics,  Part 147 basic and advanced training functions and approvals for CAMO, Part-M, DOA Part 21 subpart J and G. Atitech’s inherited workforce has grown to 1,500 people from around 950 as it ramps up operational capacity in addition to its main base in Naples.

“Since last summer, we’ve increased the capacity and activity in Rome and are now operating all six lines of narrowbody and five bays of widebody, which are full for long periods of time,” says Pietro Pascale, managing director at Atitech. He adds that the MRO is booking slots for 2025 but often must turn away carriers as demand outstrips available capacity.

[ITA Airways](https://aviationweek.com/awin/company/475084), launched as a successor to Alitalia in October 2021, is a primary maintenance customer, accounting for about 60% of all work Atitech performs in Rome. Third-party airlines make up the remaining 40%. [ITA Airways](https://aviationweek.com/awin/company/475084)’ widebodies permanently occupy two hangars in Rome, where they undergo light maintenance.

“They need the widebody hangars to undergo A-B checks and work packages on their A330s, A330neos and A350s,” notes Vincenzo Quaranta, head of marketing and sales at Atitech. Pascale says the company is exploring the possibility of setting up an MRO facility outside of Italy, but he did not specify where.

The constraints Atitech faces are a general frustration among MROs and carriers alike, particularly those looking for maintenance slots on relatively short notice if they are in a position of flexibility.

**Airlines Consider In-House**

“Among the biggest challenges are finding slots for maintenance,” says Asoke Timkerd, head of airframe overhaul for Thai Airways’ maintenance operations at Bangkok’s Don Mueang International Airport. Timkerd says the airline has overcome serious capacity issues by leaning on its in-house MRO operation, Thai Technical, to cover many core maintenance requirements. “Some components will be sent to our shop for repair and overhaul, if required,” he says. “Moreover, we have had agreements with outside service providers for the repair or overhaul of any part which is beyond our capacity.”

Thai Airways is in the process of financial restructuring due to the pandemic, which has led to the reduction of maintenance capacity considered less necessary. However, with the airline expected to complete its rehabilitation plan soon, Timkerd suggests it may look to reinstate capacity across its MRO facility network. “We will reconsider again which capacity should be needed in order to serve the maintenance of the aircraft in our fleet in the future,” he says. “Our fleet is now gradually increasing, and it is certain that our current capacity is unavoidably expanded as well.”

Timkerd adds that Thai Airways still plans to set up a new MRO at U-Tapao International Airport in the country’s eastern region. Originally announced as a joint venture, the project was delayed by the pandemic, and the airframe OEM later pulled out. Thai Airways intends to continue the venture and has earmarked a 2028 start date.

Other airlines operating large fleets or expecting expansions have explored taking services in-house to mitigate capacity constraints and supply chain bottlenecks. Among these is flag carrier British Airways, which late last year said it was reluctantly exploring what could be taken in-house out of necessity. Irish low-cost carrier Ryan-air also plans to increase in-house maintenance at a new Dublin facility earmarked for 2025, coinciding with the growth of its fleet to 600 aircraft by 2026.

On the smaller end, [Air Serbia](https://aviationweek.com/awin/company/19170) is looking into either entering an MRO joint venture or building its own hangar to mitigate capacity and supply chain pressures as its fleet expands to more than 30 aircraft.

Other carriers expected to undergo major fleet growth have shored up capacity for functions such as line and base maintenance. Low-cost carrier EasyJet, which has commitments for more than 250 A320neo-family aircraft, opened a new maintenance facility at [Berlin Brandenburg Airport](https://aviationweek.com/awin/company/22964) last year. Dubai-based [Emirates](https://aviationweek.com/awin/company/13957) is scheduled to begin construction this year on a facility at Al Maktoum International Airport, composed of nine maintenance bays and a paint shop, with completion set for 2027, as it prepares for deliveries of new aircraft such as [Boeing 787](https://aviationweek.com/awin/program/639)-9s and -10s as well as 777s and 777-9s starting in 2025.

**Engine Market**

The biggest part of the commercial aftermarket is engine maintenance, which is expected to account for 48% of market share in 2024. CFM International CFM56s and IAE V2500s are forecast to be the primary drivers in the near term, ramping up to their predicted shop visit peak of 2025-26, with quick-turn services and hospital visits also expected to retain demand.

New-generation narrowbody engines, still in their infancy, also will affect engine overhaul demand over the next 2-3 years. “Lower-than-expected time on wing for new-generation engines is leading to early removals and a higher volume of shop visits than the market initially anticipated,” says Adam Guthorn, managing director at Alton Aviation Consultancy. He notes that the situation has been exacerbated by a lack of engine retirements to supply used serviceable materials to the market.

“Supply chain constraints and material availability continue to be a bottleneck for MROs, leading to increased TAT and lower throughput capacity,” Guthorn says. He believes this has led to a new environment of MRO providers actively growing inventory, in contrast to the pandemic years when some shops and several cash-conscious airlines actively relinquished parts stocks.

“To mitigate these constraints, MROs are increasing inventory holdings and pre-buying more materials to avoid lead-time issues once engines are inducted for shop visits,” he adds.

An added capacity headache: ongoing quality issues with new-generation narrowbody engines. About 350 Pratt & Whitney PW1000G-powered A320neos will be grounded annually through 2026 to facilitate inspections. Meanwhile, CFM International will roll out component upgrades on its Leap engines to increase durability and time on wing.

Both OEMs have turned to their in-house aftermarket networks as well as external MRO providers for capacity to implement the fixes underway since late 2023. CFM plans to expand its shop network to up to 20 locations, while Pratt has expanded at PW1000G-capable shops such as its Eagle Services Asia joint venture in Singapore.

Widebody engine MRO also will generate a steady volume of work. Aviation Week projects 2,424 overhauls will be performed this year. This has led Germany-based N3 Engine Overhaul Services, a Rolls-Royce-Lufthansa Technik joint venture specializing in Trent engine repairs, to expand its operation in Arnstadt as part of a €150 million ($161.9 million) investment. N3 says it overhauled 160 engines last year and plans to increase to nearly 200 in 2024, after which it expects to ramp up to 250 annually.

While construction projects numbering more than two dozen globally are sure to add much-needed hangar space, an unsurprising yet considerable challenge will lie in sourcing skilled personnel. Companies such as N3 plan to increase their head count to 1,200 people from 900 in the next few years, reflecting a wider global trend to hire more technical labor. ST Engineering, which is expanding its Singapore engine capabilities alongside its airframe MRO, says it will look for a mix of skilled labor and automation to drive efficiencies in its engine shops.

Thai Airways’ Timkerd says insufficient maintenance personnel is the biggest challenge going forward—not just for airline MRO but also for the wider aftermarket, particularly in the pool of licensed mechanics. “The aircraft maintenance business is recovered and needs to have more aircraft maintenance personnel . . . but we could not find these personnel in due time,” he says.

However, on the issue of capacity, Timkerd remains optimistic about the near-to-medium term. “We believe that this situation will be soon relieved in next 2-3 years when demand is no longer outstripping supply and there will be more MRO capacity established,” he says.



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