

MRO DEMAND CHALLENGE

Finding resilience in productivity
and technology



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INTRODUCTION

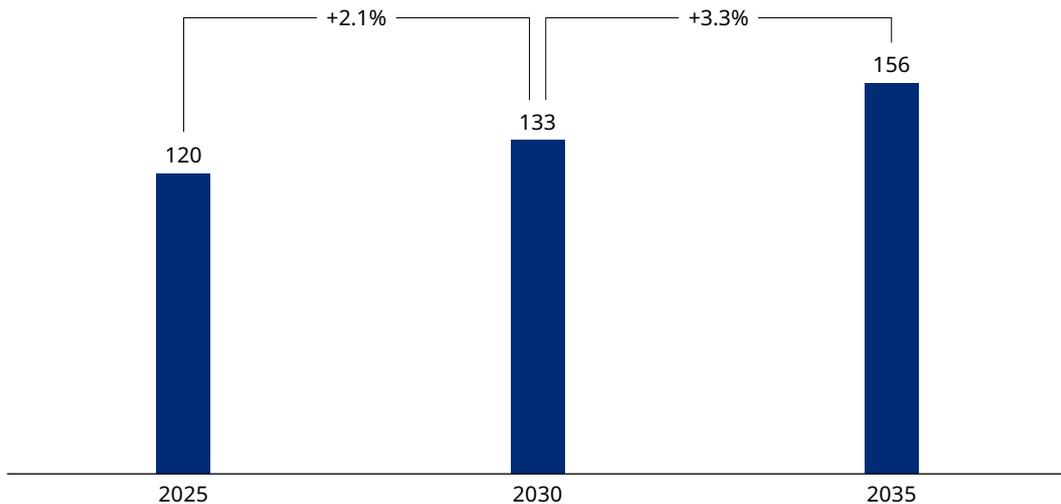
As it does every year, the Oliver Wyman MRO Survey asks executives from across the aviation industry what they think about key trends, challenges, and emerging changes in the maintenance, repair, and overhaul (MRO) sector. In this year’s survey, we examine ongoing supply chain and labor challenges and the impact of artificial intelligence (AI) on the MRO industry.

In all, 172 aviation professionals participated in the survey, providing expertise drawn from airline and independent MROs, airline operators, original equipment manufacturers (OEMs), and others. The survey is international in scope; nearly 70% of respondents have a primary base of operations outside of North America. Just over half are senior executives (C-suite, vice presidents, and above) and 82% are director level or above. As a backdrop, we have leveraged the Oliver Wyman [2025–2035 Global Fleet and MRO Forecast](#) to provide additional color and data to augment our findings.

The MRO industry has fully recovered from the impacts of the COVID-19 pandemic. Per Oliver Wyman’s latest forecast for MRO spend, the market reached over \$114 billion in 2024, an increase of 7.2% above the 2019 pre-COVID peak in real dollars (Exhibit 1). This year, MRO spending is forecast to be \$120 billion. The increase in spend is attributed to newer aircraft experiencing unforeseen durability and reliability issues, inflation in labor and material costs, and an MRO “super cycle” — a combination of increased aircraft utilization and an aging fleet that needs higher maintenance to stay operational. Over the next 10 years, we expect the MRO industry to grow by an annual rate of 2.7% through 2035, reaching \$156 billion.

Exhibit 1: Global MRO spending forecast 2025-2035

US\$ billions, CAGR



Note: CAGR stands for compound annual growth rate

Source: Oliver Wyman [Global Fleet and MRO Market Forecast 2025-2035](#)

BUSINESS CLIMATE

By all accounts, business is good for MRO's: 68% of survey respondents said they believe the industry's financial performance improved over the past year, and 72% expect that it will continue to improve over the next two years. This strong financial performance is not going unnoticed, as the MRO sector continues to attract investment attention. Nearly three-quarters of survey respondents expect outside investment and deal activity to increase over the next two years.

When asked which MRO segments they expect to attract the most investment and deal activity in the next 1-2 years, respondents overwhelmingly voted for engines. Components slightly edged out heavy airframes for second place, with line maintenance a distant fourth. Engines are receiving significant investor attention for two reasons: One is that supply chain pain points are particularly pronounced in this segment. The other is that the engine segment has better margins than more labor-intensive segments, due to higher materials content. Activity for engine-related transactions was high in 2024, including Standard Aero, Lockheed Martin Commercial Engine Solutions, BP Aero, Barnes, AeroTurbine, Farsound, and Component Repair Technologies.

Respondents also told us that components are ripe for consolidation (followed in order by engines, airframe, and line maintenance). Despite consolidation to date in the component aftermarket, it is still highly fragmented, with competitors ranging in size from "end of the runway" operations, focused on specific component categories and select customers, to highly diversified competitors able to offer comprehensive solutions.

TOP DISRUPTORS

Each year, we ask survey respondents to share what they think will be the top disruptors in the MRO industry over the next five years (Exhibit 2). We introduced a new category this year, material shortages, and it came in as the top disruptor, with more than two-thirds of respondents selecting it. For the fourth year in a row, cost management and labor shortages were also cited as top disruptors by two-thirds of respondents. All major industry groups — operators, OEMs, and MROs — are aligned on these top disruptors.

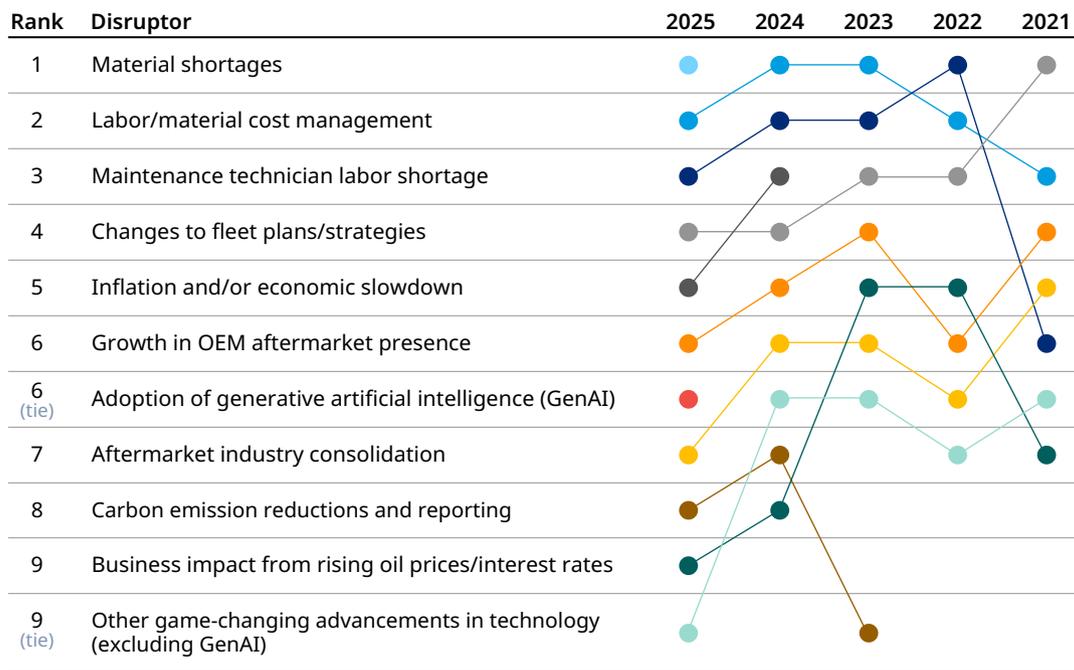
Just under half of respondents cited changes to fleet plans/strategies as a top four disruptor. Such changes have significant implications for operational efficiency, supply chain dynamics, and financial performance. According to Oliver Wyman's fleet forecast, there is a notable trend of "upgauging" in domestic markets, with carriers opting to replace smaller jets with larger, more cost-efficient narrowbody aircraft. In some international markets, however, carriers are doing just the opposite, replacing widebodies and opening new routes with a new generation of long-range narrowbody aircraft. These shifts highlight the potential inefficiencies operators may encounter as they adjust their fleet sizes and compositions. And it signals to MRO providers the need to be adaptable to sudden changes in maintenance

requirements due to fleet adjustments, which can impact their service offerings and an already strained workforce.

We also introduced another new category this year: adoption of generative artificial intelligence (GenAI), which tied with growth in OEM aftermarket presence as a disruptor. This is remarkable, given that GenAI is still relatively new and the MRO industry is only beginning to deploy it.

Exhibit 2: Top disruptors, 2021–2025

As ranked by survey respondents



Note: Items 1 and 6 (tie) are new to this survey. Tie ranking for 2025

Source: 2021–2025 MRO Surveys

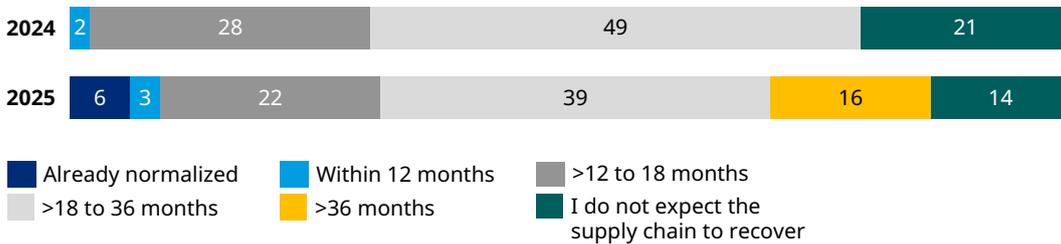
SUPPLY CHAIN WEAKNESS PERSISTS

Post-pandemic, supply chain challenges continue to plague the industry, with more than half of survey respondents expecting at least another 18 months before these subside. Some 14% think the changes to the supply chain are permanent. These results are not materially more positive than in 2024 (Exhibit 3).

For the MRO industry to gain more confidence in the supply chain, two-thirds or more of respondents said they would need to see more consistent supplier performance (for example, less lead time volatility), improved inventory availability, and decreased lead times. This a trio of problems that need to improve in sync — more parts with faster and on-time delivery — before sentiments are likely to improve.

Exhibit 3: “When do you believe that the supply chain challenges will subside?”

Percent of respondents selecting each option, 2024 and 2025 surveys



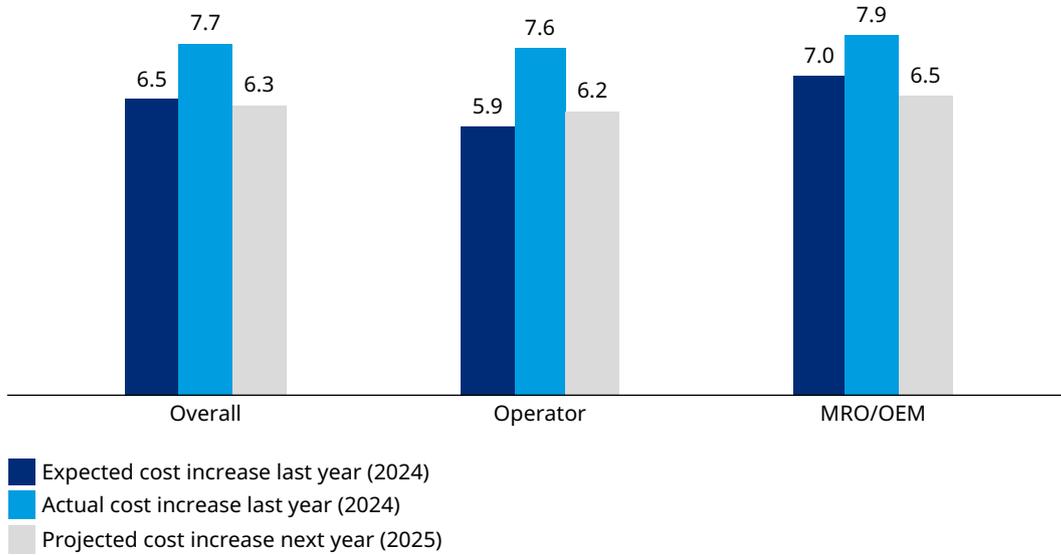
Source: Oliver Wyman 2024 and 2025 MRO Surveys

MATERIAL COST INFLATION

Increases in material costs are not showing signs of abating anytime soon. In last year’s survey, respondents expected material cost inflation of 6.5% this year, but got 7.7% on average instead. This was just slightly lower than last year’s reported average cost increase of 8.3%. By industry segment, MRO/OEM costs increased slightly more than operator costs last year.

Respondents remain hopeful, however, as on average they estimate material costs will rise by only 6.3% next year (Exhibit 4). We agree that costs are coming down, but it is unclear if this will happen as fast as the industry would like, given continuing supply chain constraints.

Exhibit 4: Material cost increases: 2024 expected and actual, 2025 projected
 In percent; average of survey responses by segment



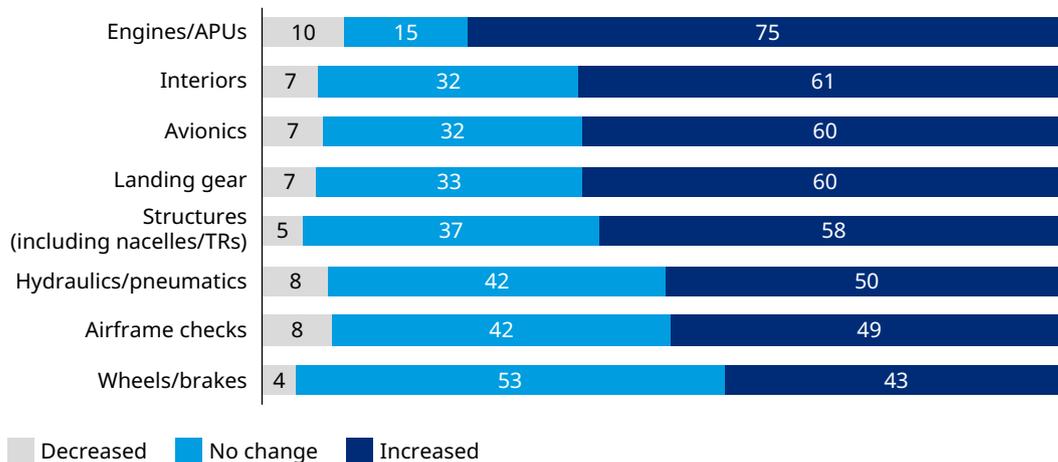
Source: Oliver Wyman 2024 and 2025 MRO Surveys

TURN-TIME PERFORMANCE

To gain perspective on repair performance, we asked respondents how turnaround times (TATs) have trended over the past year. We hoped to see some improvement or at least stabilization, compared to the previous year. Instead, TATs on average appear to have worsened across all segments (Exhibit 5).

No part of the aircraft appears to have been spared from increasing TATs, with three-quarters of respondents seeing worse performance for engines and auxiliary power units, and half or more for nearly all other categories. Respondents overall said that piece part availability is the leading cause for increased TATs, followed by lack of repair capacity and inadequate labor skills.

Exhibit 5: “In the past year, how have turnaround times (TATs) changed by category?”
 Percent of respondents selecting each option



Note: APU = auxiliary power unit, TR = thrust reverser
 Source: Oliver Wyman 2025 MRO Survey

INDUSTRY RESPONSES

The MRO industry does have levers at its disposal to compensate for poor supply chain performance — such as parts manufacturing authority (PMA), owner-operator produced parts (OOPP), full engine and hull purchases, and increased use of brokers and distributors. Both in this year’s survey and prior years, however, the overwhelming response has been to hold more inventory: 69% of respondents indicated that they have increased inventory by more than 5%, and some by more than 15% (Exhibit 6). There is little difference between operators and MRO/OEMs in this regard. Holding more inventory is simply the fastest, most effective lever to respond to supply chain issues. Unfortunately, this response stresses the manufacturing supply chain, exacerbating the piece part shortages contributing to longer TATs.

Another lever to manage TAT performance is increasing the number of on-site representatives at suppliers, something that three-quarters of respondents said they have *not* done. But one in five have expanded their presence at existing suppliers, while only 5% have expanded to new suppliers. Of those that did add staff, while a small proportion of total respondents, 70% of MROs/OEMs and 54% of operators reported moderate or better performance improvement.

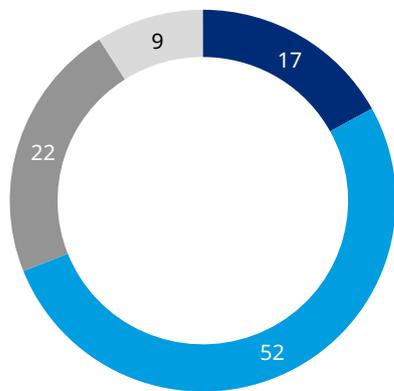
If and when the supply chain situation normalizes, more than half of survey respondents expect that inventory levels will decrease only slightly, and a third expect they will stay the same (Exhibit 6). This may indicate that the supply chain was already fragile pre-pandemic,

and that at least for the foreseeable future, industry participants have become more conservative in terms of their expectations for supply chain performance. Incremental, sustained investment in inventory not only drives up costs, however, but uses up funds that could be better deployed in areas such as frontline productivity, technology, and the labor pipeline.

Exhibit 6: Current inventory levels and outlook

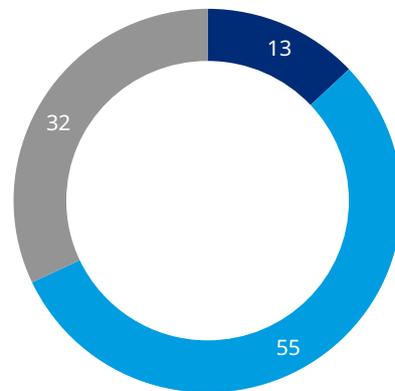
Percent of respondents selecting each option

“Have inventory levels at your company/ customers increased to compensate for longer lead times/supply chain uncertainty?”



- Increased by >15%
- Increased by 5-15%
- Have stayed about the same (+/-5%)
- Decreased

“Do you think that current levels of inventory will be maintained if/when the supply chain becomes more reliable?”



- Inventory levels will decrease substantially
- Will decrease slightly
- Will remain at current levels

Source: Oliver Wyman 2025 MRO Survey

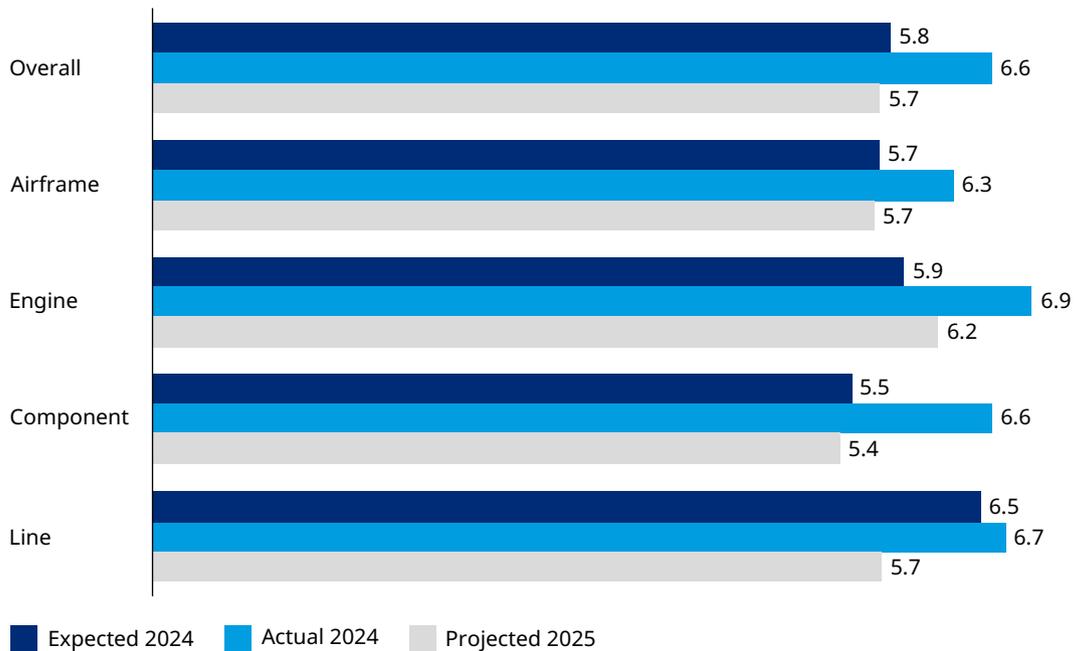
LABOR: STRAINED BUT MORE PRODUCTIVE

RATES AND ATTRITION

Securing labor at competitive rates continues to be a major challenge for the industry, with limited signs of relief. Respondents to last year’s survey were disappointed in their expectations of 5.8% wage inflation, seeing an increase of 6.6% instead — although this was a bit lower than the 7.3% increase in labor rates the previous year. A larger share of operators than MROs/OEMs reported wage inflation in excess of 7% for all segments. And around a third of operators reported maintenance labor rates growing by 10% or more for engine, components, and line. Looking forward to next year, respondents are projecting rate inflation to slow to 5.7%, with the engine segment continuing to see higher rates (Exhibit 7).

Exhibit 7: Maintenance labor rate increases: 2024 expected and actual, 2025 projected

In percent; average of survey responses by segment



Source: Oliver Wyman 2025 MRO Survey

Labor supply challenges are a significant driver of wage inflation. In the US, growth in certified mechanics ticked down from 2.8% in 2023 to 2.6% in 2024. This is only slightly above historic growth rates over the past several years. The number of new mechanic certificates issued also dropped slightly from 2023 to 2024. The supply of certified mechanics is simply not keeping pace with replacement needs and increased demand, and we forecast that this

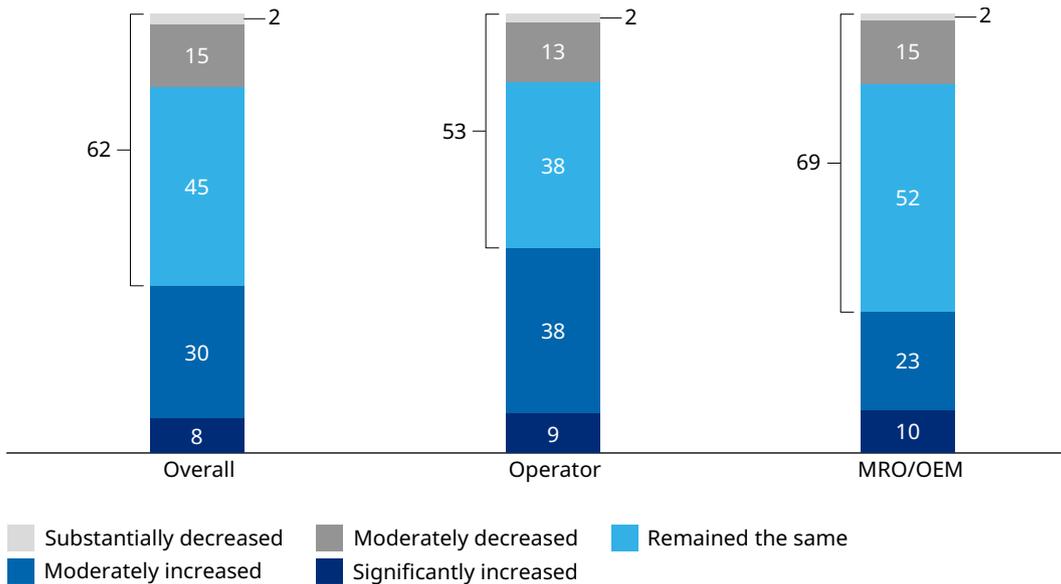
shortfall for North America will grow to 19% (31,000) by 2028. (For more information on the technical labor pipeline in the US, see the [2024 Pipeline Report](#) by the Aviation Technician Education Council and Oliver Wyman.)

While wage inflation remains stubbornly in place, there are signs that labor attrition may be leveling off, as 62% of respondents said attrition was the same or less last year than the year before. Interestingly, MRO/OEMs are seeing better retention improvement than operators (Exhibit 8). One possible reason is that operators, which tend to attract more senior workers, are being disproportionately impacted by the challenging demographics of the current mechanic population, given that a third of mechanics were older than 62 in 2023.

Looking forward, the outlook is less certain, with only 53% of survey respondents expecting attrition to remain the same or decrease; operators are slightly more pessimistic than MROs/OEMs (47% versus 56%).

Exhibit 8: “How would you rate your company’s frontline direct labor attrition in the past year?”

Percent of total respondents



Source: Oliver Wyman 2025 MRO Survey

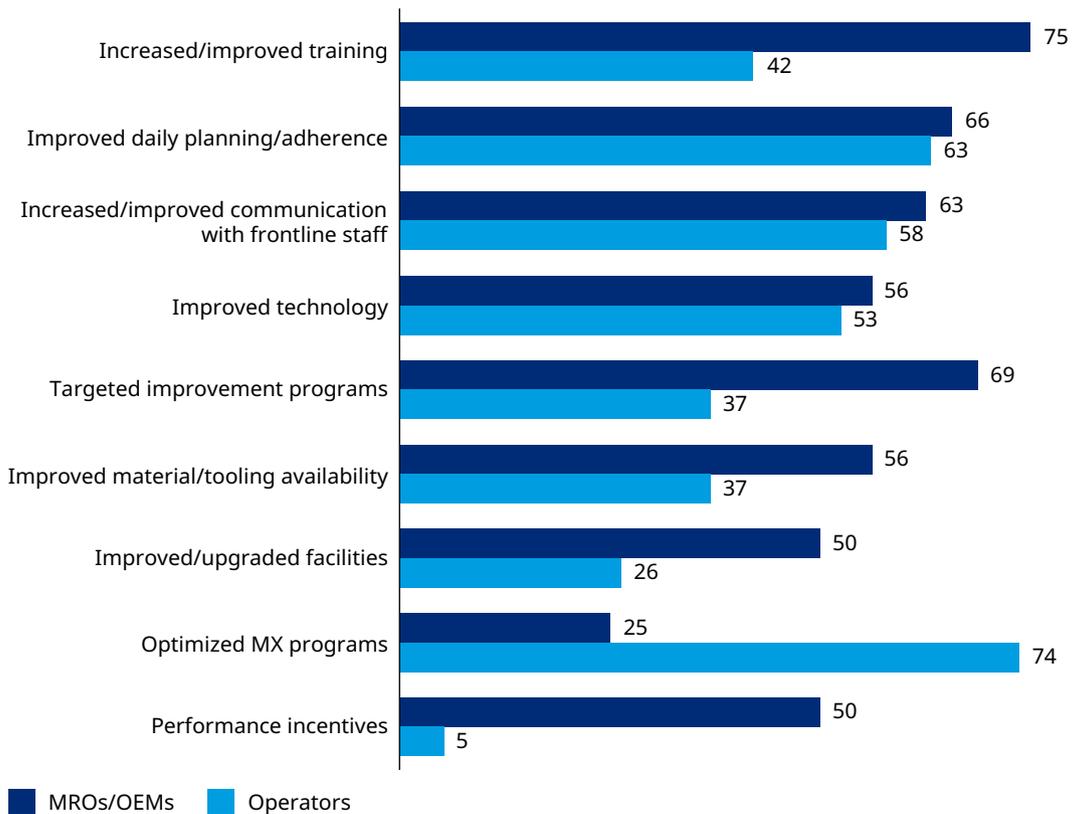
LABOR PRODUCTIVITY

Given the difficulties in securing sufficient labor and continuing wage increases, many industry participants are focusing on productivity to provide some relief. Here results have been more positive, with more than half of survey respondents seeing some level of improvement in frontline labor productivity over the past two years, while another quarter reported no change. MROs/OEMs reported slightly better labor productivity gains than operators (52% versus 44%).

Better training, daily planning/adherence, and communication are the top three levers overall driving improvements in frontline staff productivity. Operators also mentioned optimized MX programs as key, while MROs/OEMs cited targeted improvement programs (Exhibit 9). MROs typically attract less experienced staff, have more work rule/labor flexibility (as they are less unionized), and more opportunities for lean improvement, giving them a few more tools to drive productivity via training, incentives, and shop floor optimization.

Exhibit 9: “What actions have you taken over the past 1–2 years to improve frontline productivity?”

Percent of all MRO/OEM and operator survey respondents



Source: Oliver Wyman 2025 MRO Survey

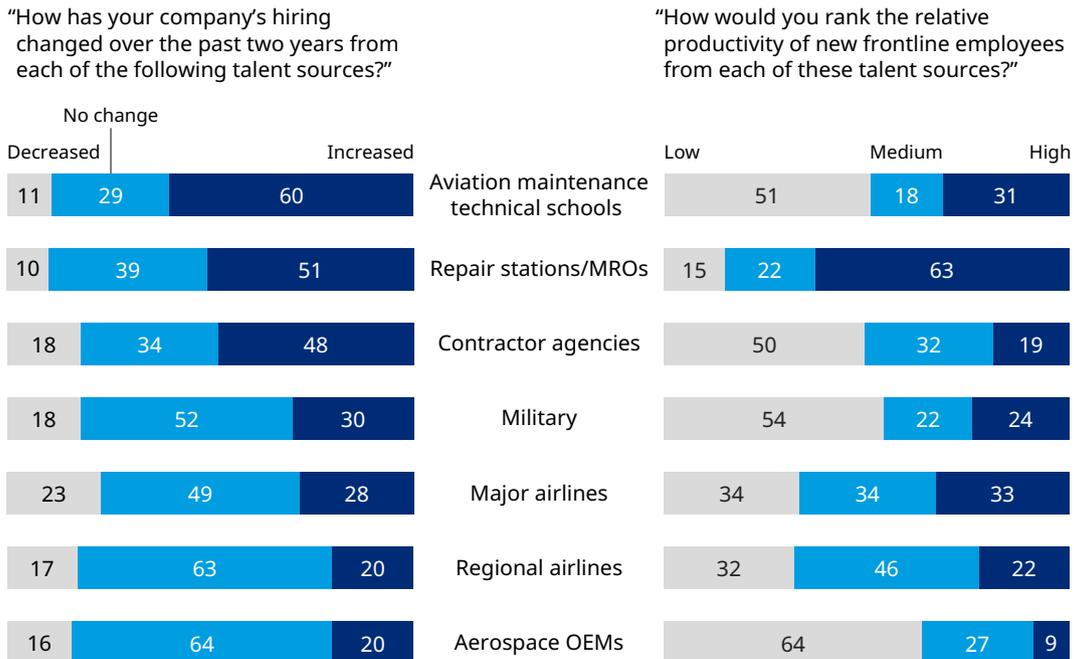
TALENT SOURCING

To source new employees, survey respondents said that over the past two years they have increased their hiring from aviation maintenance technical schools, repair stations/MROs, and contractor agencies (Exhibit 10). MROs clearly continue to trade staff, and other top sources are not surprising given that it is harder to hire from airlines, which generally pay more and provide better benefits.

However, in terms of productivity of new frontline employees by source, also shown in Exhibit 10, schools and contractor agencies rank rather lower than repair stations/MROs. We see this as indicating a need for maintenance school curricula to continue modernizing globally, to help increase the effectiveness of their graduates. In the United States, for example, changes to FAA Part 147, which governs technical education, have made it easier for schools to modernize curricula, adopt new technologies, and teach in a wider range of locations, opening up new partnership opportunities.

Exhibit 10: New frontline talent sources and productivity

Percent of survey respondents



Source: Oliver Wyman 2025 MRO Survey

FRONTLINE MANAGEMENT

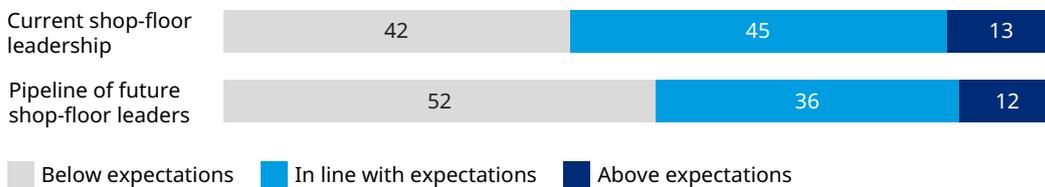
Another important piece of the overall labor productivity puzzle is the effectiveness of the frontline supervisors and crew chiefs who support maintenance technician staff. These employees are often the lynchpin in an operation — helping to quickly adapt and recover daily plans and ensure less productive workers get the support they need.

When asked to gauge the effectiveness of their supervisors and crew chiefs, the picture is mixed: 58% of respondents said these staff members are meeting or exceeding expectations, while 42% said they are not. The results were essentially the same for both operators and MROs/OEMs. The outlook for sourcing for these essential roles is slightly more negative, with better than half expecting the future pipeline will not meet expectations (Exhibit 11). Demographic challenges and recent attrition are certainly not helping this situation.

Given this outlook, respondents are looking internally at how they can improve shop-floor leadership effectiveness, particularly through better role-specific training and developing bonus programs that attract and reward talent (although some companies could be limited in the latter by collective bargaining agreements). There are additional levers we believe the industry could be testing to improve the outlook for shop-floor leadership, such as creating a clearer career path, more incentives where possible, and pairing developing crew chiefs with successful leaders with proven track records.

Exhibit 11: “How would you rate the effectiveness of your company’s current shop-floor level leadership and your future pipeline?”

Percent of total respondents



Source: Oliver Wyman 2025 Survey

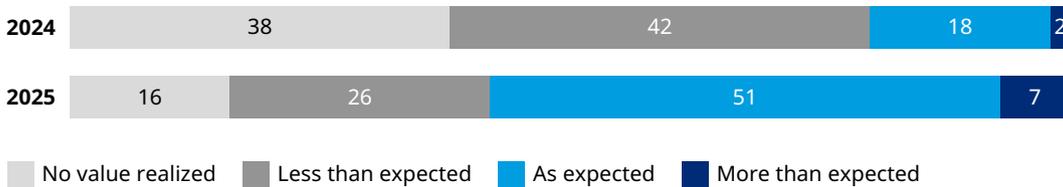
ARTIFICIAL INTELLIGENCE OUTLOOK

To gain insights into the impact of AI’s rapid evolution on the aviation maintenance sector, we asked survey respondents about their current adoption of AI and if this is yielding value for them. To start, AI adoption rates are rising, from 58% to 64% year-over-year. Notably, more respondents are now seeing their value expectations from AI investments realized or exceeded — with 58% reporting such outcomes compared to only 20% the previous year (Exhibit 12).

This improvement is likely due to a better understanding of AI’s strengths and weaknesses, enabling more suitable and successful use cases. For example, generative AI tools (such as large language models) have proven effective in data parsing and categorization, with growing applications in non-routine categorization, tagging, manual and procedure recommendations, and extracting data from complex unstructured documents, such as component maintenance manuals and service bulletins.

Exhibit 12: “Has your company realized value from its current AI efforts?”

Percent of all respondents, 2024 and 2025 surveys



Source: Oliver Wyman 2024 and 2025 MRO Surveys

Increasing adoption and value from AI in MRO mirror trends we have observed in the market broadly. In our 2024 report, [The New Growth Agenda](#), the Oliver Wyman Forum and the New York Stock Exchange surveyed 100 CEOs of NYSE-listed companies, nearly all of whom indicated that they view AI as an opportunity, not a risk. And more than 40% of these CEOs cited not moving fast enough on AI and being left behind by competitors as one of their top AI-related risks. The investments being made are significant, with mid- to mega-sized companies spending an average of 2.2% (and up to 3.5%) of their annual revenue as a fixed, up-front investment into AI.

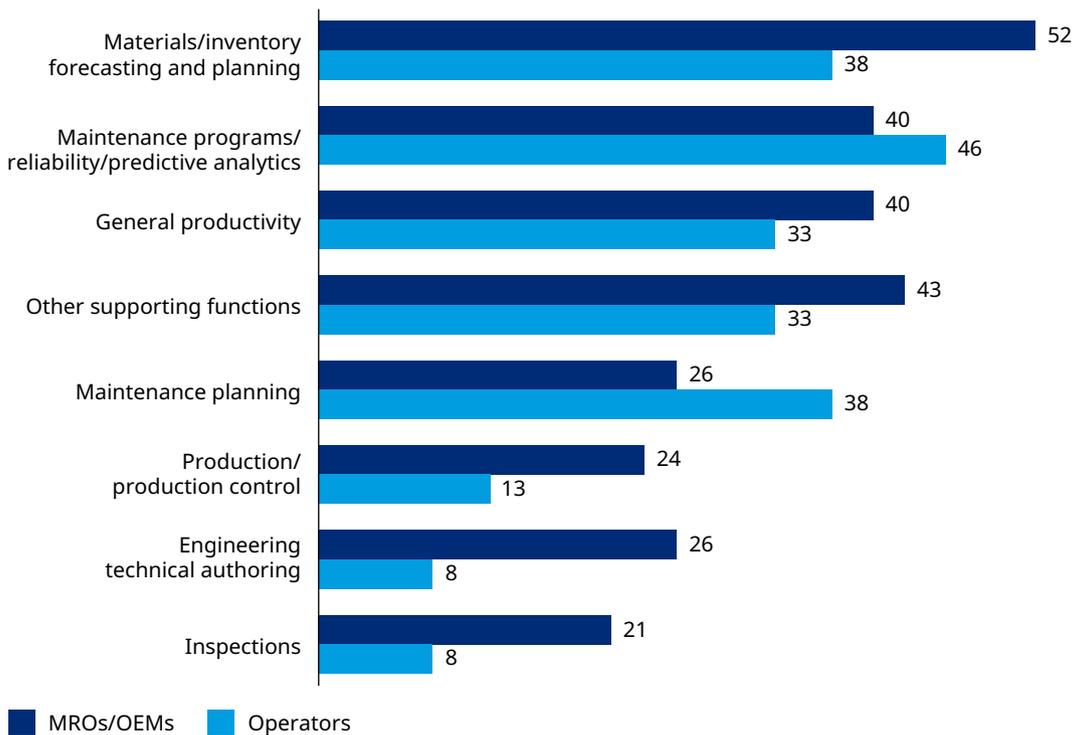
In terms of how the aviation maintenance industry is using AI, the overall focus appears to be on cost management and efficiency. MROs/OEMs also said they are applying AI to materials and inventory forecasting and to planning as well as supporting functions like finance, likely in an attempt to better control material-related costs and disruptions

(Exhibit 13). Operators on the other hand are using AI for maintenance programs, reliability, predictive analytics, and maintenance planning, as they work on improving maintenance efficiency.

Regardless of specific use cases, aviation stakeholders should be aware that across industries, organizations report finding the most success in AI adoption by using rapid test-and-learn cycles to experiment, and then scaling from there. They also are choosing highly targeted paths for AI investment that align well with their business realities and constraints. (See Oliver Wyman Forum’s [Three Questions to Kickstart Your AI Transformation](#) for more on this topic.)

Exhibit 13: “In which areas have you applied artificial intelligence?”

Percent of all MRO/OEM and operator survey respondents



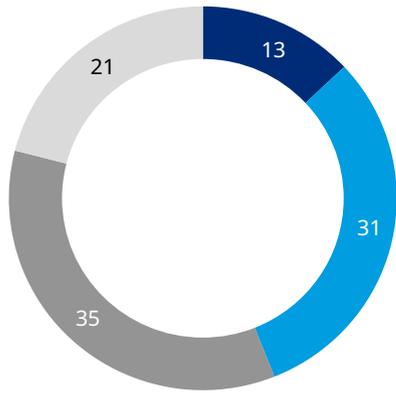
Source: Oliver Wyman 2025 MRO Survey

In MRO, early successes are fostering optimism about AI technology, with nearly a third of organizations forming dedicated MRO AI teams, and two-thirds anticipating widespread adoption within five years (Exhibit 14). If this holds true, it suggests that a rapid acceleration in productivity is on the horizon. Across industries, historical data on other transformative technologies indicates that productivity accelerates rapidly [once adoption approaches 60%](#).

Exhibit 14: MRO industry artificial intelligence support and expectations

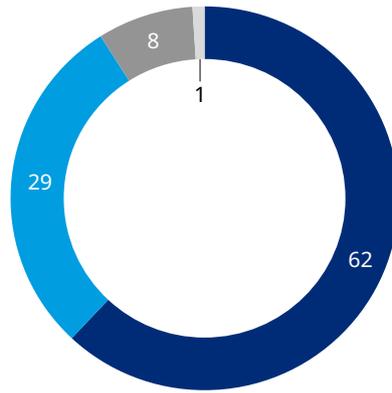
Percent of respondents selecting each option

“Within your MRO organization, who supports AI development efforts?”



- A dedicated AI team, shared with other non-MRO functions
- An MRO-dedicated AI team
- MRO resources as part of their day-to-day job
- Other

“How long do you expect it will be before some form of AI is in use across all/most of your company's MRO activities?”



- 0-5 years
- 5-10 years
- Over 10 years
- Unlikely to be achieved

Source: Oliver Wyman 2025 MRO Survey

CONCLUSION

The MRO industry finally surpassed its 2019 pre-COVID peak in 2024, reaching \$114 billion, and is on track to grow to \$120 billion this year. Most critically, the combination of increased aircraft utilization and an aging fleet is expected to charge up an MRO “super cycle” that will see the industry surpass \$150 billion over the next decade.

Supporting this demand growth will be a challenge for the industry, which continues to see material and labor cost inflation, supply chain weakness (such as limited piece parts availability and turnaround time performance below expectations), and labor supply constraints. On the positive side, the industry is leaning in on strategies to offset supply chain issues and increase labor productivity, although still not using all available levers. And it is good to see the industry beginning to embrace the potential of AI, which could deliver efficiency improvements on many fronts in a few years’ time.

As operators and suppliers continue to work through aligning supply chain, labor, and technology to support their growth prospects, we think the following questions are worth consideration:

- What levers, beyond holding more inventory, could operators, MROs, and OEMs use to counter supply chain performance issues? Are stakeholders sharing enough information up and down the supply chain to improve planning?
- What is the full range of levers that could be used to increase frontline productivity? Is technology being updated rapidly enough?
- Do plans reflect accurate assumptions for current workforce productivity and supply chain performance? Are plans dynamic enough to account for improved performance if/when it materializes?
- Are enough time and resources being spent on identifying and developing shop-floor management? Are the right behaviors being rewarded?
- Can AI use cases be built and tested more quickly to arrive at real solutions?

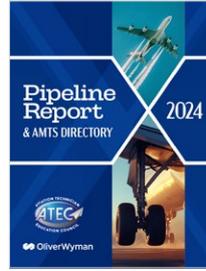
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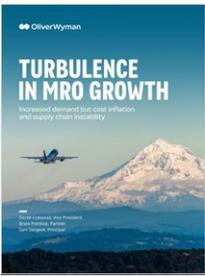
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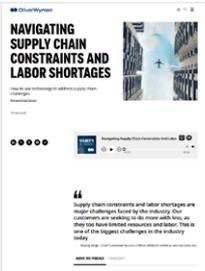
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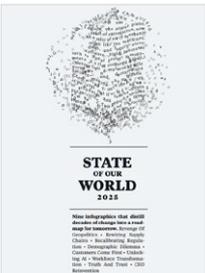
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