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GLOBAL FLEET AND MRO MARKET FORECAST 2025 2035

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US CIVIL AVIATION MRO EMPLOYMENT AND ECONOMIC IMPACT

Air transport fleet & MRO	
Fleet size	29,079
2025–2035 fleet growth rate	2.8%
MRO market size	$119.7 BN
2025–2035 MRO growth rate	2.7%

Global civil MRO employment	
Firms	5,006
Small/medium enterprises (SME)	80%
MRO employees	449,765

US civil MRO employment	
Firms	4,071
Small/medium enterprises (SME)	85%
MRO employees	338,779

US economic activity	
Maintenance, repair and overhaul	$43.7 BN
Parts manufacturing/distribution	$24.9 BN
Total economic activity	$68.6 BN

25 YEARS OF THE GLOBAL FLEET AND MRO MARKET FORECAST

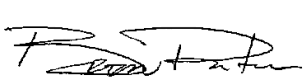
Oliver Wyman's Global Fleet and MRO Market Forecast 2025–2035 marks our firm's 25th assessment of the 10-year outlook for the commercial airline transport fleet and the associated maintenance, repair, and overhaul (MRO) market. We began this report at the dawn of the millennium, before we could conceive of the horrors of the September 11 terrorist attacks or COVID-19 pandemic that changed the industry forever.

Through it all, the forecast provided the sector with insights into what to expect next. We're honored and humbled to say that this annually produced research has become a staple resource for executives working in aerospace manufacturing, airlines, MRO, and aviation investment.

2025 has already been an eventful year for the aviation industry as passenger demand looks to expand beyond five billion passengers and the aviation industry races to keep up amid production shortfalls, delivery backlogs, supply chain delays, and worker shortages. As always, we hope you find the data and insights in our latest edition illuminating and helpful as you look to seize opportunities and better navigate the perils of the marketplace. We also invite you to take advantage of other signature research from Oliver Wyman, including the popular MRO and Flight Ops Surveys and the work done on ONE Order and sustainability. Later this year, we plan to launch a companion forecast on the global military fleet, so stay tuned.

The Global Fleet and MRO Market Forecast is part of our expanding aviation technical expertise. About a year ago, we brought together two dedicated teams, all driven by the same goal: raising the bar on aviation technical knowledge and expertise. The merger of Oliver Wyman CAVOK and SeaTec Consulting and the creation of Oliver Wyman Vector have been game changers for our firm, exponentially expanding our horizons. The data and analysis in this Forecast are the product of our dedicated Oliver Wyman Vector analysts and technicians and Oliver Wyman's Market Intelligence team.

While it has not been the easiest first half of the decade, we look forward to the next five and 10 years and feel confident they will be game changers for the industry as well. As they have for the past 24 years, our partners and vice presidents stand ready to answer questions and expand upon our 25th forecast. Oliver Wyman and Oliver Wyman Vector look forward to another year of collaborating with you.



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PRODUCTION SHORTFALLS AND THE AGING FLEET

While demand for air travel has grown beyond its 2019 peak, the production of aircraft has yet to match the high point it set in 2018. Every year since, the aerospace industry has fallen short of not only its all-time high but also of manufacturing enough aircraft to satisfy an expanding market for air travel.

Where in 2018 it produced over 1,800 aircraft, aerospace producers rolled out fewer than 1,300 by the end of 2024 — 30% less than it did six years before. Meanwhile, the number of passengers has hit an all-time high, and global revenue per kilometer (RPK) is up nearly 4% from its 2019 peak. Today, the backlog of unfilled aircraft orders stands at over 17,000 jets — the highest ever. Given current rates of production, those orders will take 14 years to clear — twice as long as airlines had to wait prior to 2019.

The shortage of aircraft means more airlines must fly older planes, which pushed up the average age of the global fleet by an unprecedented full year in 2024. It also is taking its toll on fuel efficiency, which benefits from the newer jets' improved design and technology. According to the International Air Transport Association (IATA), global fuel efficiency remained unchanged in 2024 — a significant departure from the 1.5% to 2% annual improvement that is typically realized as new aircraft enter the fleet. This hurts the bottom lines of airlines as well as the battle against climate change.

PLAYING CATCH-UP ON FLEET GROWTH

At the beginning of 2025, the global fleet comprised a little over 29,000 aircraft. Based on our analysis in the latest Global Fleet and MRO Market Forecast, it should expand to over 38,300 by 2035. While that represents a respectable 2.9% compound annual growth rate, the 2035 fleet will still be more than 2% below the number we predicted for the 2030 fleet in our last forecast before the declaration of the COVID pandemic.

The shortfall represents six years of lost growth. It also starkly illustrates the difficulty the industry faces in trying to expand production, as well as the struggles up and down the supply chain to support that effort. Based on current projections, we expect annual aircraft production worldwide to lag behind expected deliveries through 2030, with 2,000 fewer aircraft being produced than ordered through the midpoint of our current forecast period. In narrowbodies alone, we expect the sector to be short 1,200 aircraft.

While the aerospace sector is committed to moving forward, it faces challenges. Airbus, currently the world's largest aircraft manufacturer, has pledged to produce 75 A320 aircraft per month by 2027. But by the end of 2024, the European company had reached a monthly production rate of only 47 — more than 11% short of its 2019 peak of 53. Airbus attributes the lower production to supply chain delays and worker shortages.

Similarly, Boeing is producing narrowbodies at a level well below its 2018 peak of 52 aircraft per month and its stated goal of 56 per month. A production cap of 38 737 MAX jets per month, imposed by the Federal Aviation Administration after the blowout of an Alaska Air 737 MAX 9 door plug shortly after takeoff in 2024, is curbing monthly production.

HURDLES TO HIGHER PRODUCTION

What's clear from that incident and others involving various aerospace companies is that production problems go far beyond supply chain constraints and other lingering effects of COVID. The industry — once known for its tight quality control — has been plagued by production issues starting before the pandemic. First, it was the mass grounding of the 737 MAX in 2019 after two fatal crashes involving the aircraft, which took nearly 1,000 planes out of service for the better part of two years.

More recently, there were issues with Pratt & Whitney geared turbo fan (GTF) engines because of contaminated titanium metal powder used to produce engine parts. That discovery will result in hundreds of aircraft — mostly Airbus A320neos and, to a lesser extent, A220s and Embraer E-Jets — being taken out of service at various times through 2027 so engines could be checked.

The same tainted titanium powder affected some LEAP engines as well. In addition, CFM International LEAP engines — powering both A320s and 737 MAX aircraft — also developed durability issues in dusty and high-temperature environments and will require unanticipated engine visits to address the flaw. Finally, the FAA has delayed the certification of the 737 MAX 7 and 10 models as it further evaluates each aircraft's anti-ice system, likely pushing full production to the second half of 2025.

A GENERATIONAL TRANSITION AFFECTS THE INDUSTRY

What is behind the supply chain delays, quality control issues, and insufficient production in aerospace? One clear contributor is a shortage of the right kind of workers. Even before the pandemic, an aging workforce and diminishing numbers of younger candidates in the pipeline caused concern across the global industry.

It began in 2020 with the sidelining of hundreds of thousands of workers as COVID shut down production lines. Many decided to move on to other jobs or retire. But even without COVID, the massive retirements of baby boomers have cut into not only the size of the workforce but also the quality of it — with a lot of institutional knowledge and expertise hanging up their coveralls.

This global trend is changing the composition of the aerospace workforce, making it considerably younger and less experienced. In the United States, the median age of aviation technicians has dropped five years since 2018, and nearly one-quarter now have less than five years' experience, compared with 16% a few years ago. It is also leading to pronounced labor shortages globally among the sector's most highly skilled workers, including mechanics and aircraft maintenance

workers. In North America, for instance, Oliver Wyman estimates the gap between the number of workers available and the number needed will top 18,500 this year, more than doubling to 37,000 by 2028. A similar situation exists across other parts of the world, including Western Europe and some of Asia. While retirements are a big part of the squeeze, there is also an insufficient pipeline of Generation Z and millennial workers ready to take the places of those retiring. This is despite average wage increases in the US of 30% since 2023 and entry-level pay rising 12%.

Aerospace is hardly alone facing severe shortages in highly skilled labor, but it needs to follow the lead of other industries to bring in more new technology to help offset the skill and worker shortage.

NOT BAD NEWS FOR EVERYONE

The one segment of the industry on track to benefit from insufficient new aircraft is the maintenance, repair, and overhaul (MRO) aftermarket, which is experiencing a super cycle as a result. Spending this year is expected to reach $119 billion, surging past 2019's historic high by 12%. By the end of the current forecast period, total global MRO spend will reach $156 billion, up more than 31% from 2025 and 46% above its previous peak in 2019. As a result of the super cycle, the industry will see long queues and increased turnaround times at MRO facilities, where capacity across the board was already tight, particularly for engine MRO.

A big chunk of that increased demand is tied to the greater maintenance needs of an aging fleet. The average age of planes in service rose to 13.4 years in 2024 from 12.5 in 2023 — an unprecedented rise for just one year. For older aircraft, maintenance expenses grow as more servicing and parts replacements are required to ensure reliability and safety.

But it is not just the age of the fleet pushing up the cost of maintenance. The undersupply also means aircraft in service are regularly flying more hours. Average flight hours per aircraft increased almost 15% to 2,800 hours per year in 2024 from just over 2,400 in 2022. The more hours a plane flies, the more maintenance it needs — particularly in the engine, component, and line segments of MRO. In 2024, total global utilization of aircraft exceeded 78 million flight hours, three million flight hours above the 2019 record high. Utilization is projected to grow at an annual rate of 3.4% — slightly outpacing fleet growth — to more than 112 million hours over the 10-year forecast period.

Finally, the super cycle also reflects price inflation on both parts and labor, with increased demand pushing up against a dwindling supply of both. There are shortages of raw materials, such as composites and titanium, which have resulted in planes waiting for parts before they can be delivered.

HIGHER COSTS, HIGHER AIRFARES

These additional costs for ensuring aircraft safety and reliability are already trickling down to consumers, with airfares rising across the board. The expectation should be for more of the same, as it will be years before aerospace can stop playing catch-up on production. For airlines looking to capitalize fully on the current cycle of commercial opportunity, the best path for fleet expansion may be through acquisitions.

To expand production will require the industry addressing its many capacity constraints up and down the supply chain. This includes labor and raw material shortages as well as enough manufacturing capacity. Investment will be required, and the balancing act will be to ensure that the emphasis is not just on more but on more efficient.

FLEET AND MRO FORECAST SUMMARY

Region	North America	Western Europe	Middle East	China	Latin Am, Caribbean	Eastern Europe	Russia	Africa	India	Asia	Oceania	World
2025 Fleet												
Narrowbody	4,976	3,645	679	3,491	1,251	516	437	488	577	1,732	356	18,148
Widebody	1,417	1,133	801	750	175	51	64	179	66	1,038	103	5,777
Regional jet	1,616	367	57	244	212	77	197	223	7	88	106	3,194
Turboprop	494	330	25	1	170	55	32	248	74	328	203	1,960
TOTAL	**8,503**	**5,475**	**1,562**	**4,486**	**1,808**	**699**	**730**	**1,138**	**724**	**3,186**	**768**	**29,079**
2035 Fleet												
Narrowbody	6,498	4,922	1,190	4,857	1,821	916	407	803	1,412	2,679	693	26,198
Widebody	1,357	1,238	1,307	832	176	50	30	294	111	1,359	225	6,979
Regional jet	1,409	511	23	573	149	66	157	122	5	126	111	3,252
Turboprop	378	285	37	8	173	94	15	258	111	352	169	1,880
TOTAL	**9,642**	**6,956**	**2,557**	**6,270**	**2,319**	**1,126**	**609**	**1,477**	**1,639**	**4,516**	**1,198**	**38,309**
Fleet growth rates												
2025–2030	1.3%	2.8%	6.1%	3.0%	2.1%	5.2%	-1.7%	0.8%	8.4%	4.1%	2.0%	2.7%
2030–2035	1.3%	2.1%	4.0%	3.8%	2.9%	4.6%	-1.9%	4.5%	8.6%	3.0%	7.1%	2.9%
2025–2035	**1.3%**	**2.4%**	**5.1%**	**3.4%**	**2.5%**	**4.9%**	**-1.8%**	**2.6%**	**8.5%**	**3.6%**	**4.5%**	**2.8%**
2025 MRO (US$ in billions)												
Airframe	5.7	4.6	2.4	3.6	1.1	0.5	0.5	0.5	0.2	3.2	0.4	22.8
Component	5.8	4.2	1.6	3.1	1.2	0.4	0.5	0.7	0.5	2.7	0.5	21.1
Engine	12.5	12.6	11.4	6.7	3.0	1.0	0.8	1.6	1.4	8.7	1.5	61.2
Line	3.7	3.7	1.0	2.0	0.8	0.3	0.3	0.3	0.4	1.7	0.3	14.6
TOTAL	**27.7**	**25.1**	**16.2**	**15.4**	**6.2**	**2.3**	**2.2**	**3.1**	**2.5**	**16.4**	**2.6**	**119.7**
2035 MRO (US$ in billions)												
Airframe	6.0	5.4	2.4	4.2	1.4	0.8	0.4	0.7	0.7	3.5	0.5	25.9
Component	7.9	6.1	2.9	4.7	1.9	0.8	0.5	1.1	1.7	4.2	0.8	32.5
Engine	15.3	14.0	13.7	9.0	3.5	1.7	0.9	1.9	3.8	13.0	1.7	78.6
Line	4.5	4.7	1.6	2.8	1.1	0.6	0.3	0.5	0.8	2.5	0.4	19.8
TOTAL	**33.7**	**30.3**	**20.6**	**20.7**	**7.8**	**3.9**	**2.1**	**4.2**	**6.9**	**23.2**	**3.4**	**156.8**
MRO growth rates												
2025–2030	1.5%	1.5%	-0.7%	6.2%	2.8%	2.6%	-0.4%	2.7%	5.4%	3.0%	-4.8%	2.1%
2030–2035	2.5%	2.2%	5.6%	-0.1%	2.0%	8.0%	-0.6%	3.3%	16.2%	4.1%	11.0%	3.3%
2025–2035	**2.0%**	**1.9%**	**2.4%**	**3.0%**	**2.4%**	**5.3%**	**-0.5%**	**3.0%**	**10.7%**	**3.5%**	**2.8%**	**2.7%**