



Global Fleet and MRO Market Forecast
2020-2030

UPDATE: IMPACT OF COVID-19 ON COMMERCIAL MRO

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AN INDUSTRY IN UPHEAVAL

It is difficult to overstate the effect the COVID-19 pandemic is having on commercial aviation. In the months since the new strain of coronavirus that causes COVID-19 first emerged, passenger air travel has come to a near standstill as a result of the need for social distancing and international travel restrictions to contain its rapid spread. Air carriers around the world are facing extreme financial pressures and are cutting capacity at unparalleled rates in the absence of meaningful passenger demand. Some airlines have shut down completely, many to never return.

Simultaneously, the global economy is in a tailspin, with unemployment rates at highs not seen since the Great Depression, making the road back for the industry that much harder. From the industry's perspective, there are no real precedents to provide lessons on a clear way forward, including the terrorist attacks on September 11, 2001 or the collapse of business that accompanied the 2008 global financial crisis and subsequent global recession that followed.

One fact is clear: All paths to recovery begin with epidemiology. Until we get a grasp on what lies ahead from COVID-19, we can't expect to rebuild either the economy or aviation on a firm foundation.

Anticipating the future

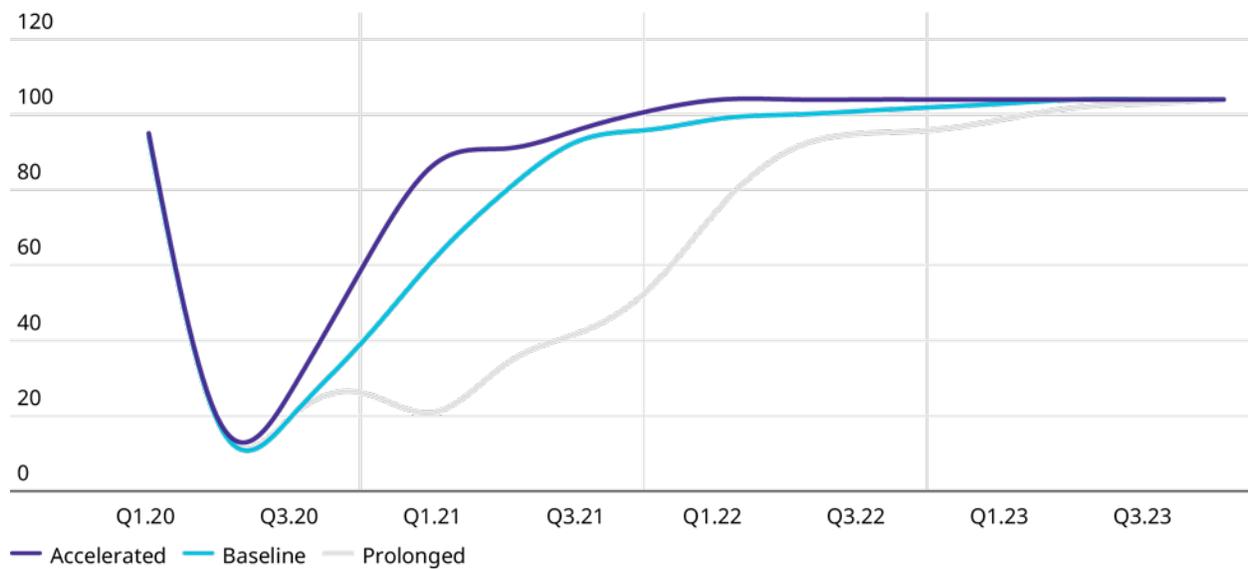
In an effort to get ahead of what's to come for various industries, Oliver Wyman has developed the [Pandemic Navigator](#). The model forecasts the number of new and cumulative coronavirus cases across nearly 40 countries, incorporating the effectiveness of public health containment and suppression measures. We combined its output with forecasts on gross domestic product growth and historical and near-term air travel booking data from the International Air Transport Association and developed three possible scenarios for passenger demand recovery.

Our baseline forecast for global virus containment represents a more moderate view of what lies ahead for the industry and the one we consider most likely. It assumes multiple waves of contagion. Under this scenario, passenger revenue begins its recovery in late summer 2020 and reaches 60 percent of pre-COVID levels by late autumn when it will plateau as new infection hotspots flair up. Growth remains suppressed until a vaccine is developed, which we expect to happen sometime between spring and summer of 2021 assuming fast-tracking by regulators. Global air travel will finally return to pre-COVID levels by the end of 2021, nearly two years after the initial outbreaks. Regional, domestic and international variations will apply.

To underscore the degree of uncertainty behind any forecast, we have also developed two alternative scenarios. One assumes a single wave of outbreaks, which allows for continuous recovery beginning in late summer 2020. Passenger revenue would steadily climb to 90 percent of pre-COVID levels by early 2021. While the United States and some European countries are still struggling to effectively contain emerging outbreaks, this scenario remains plausible, particularly in specific nations like China where COVID-19 seems to be under control.

The third scenario envisions a prolonged epidemiological response during which there are multiple waves of contagion and delayed vaccine development. It also assumes an extended global economic recession. In this most pessimistic scenario, the virus is not contained until early 2021. The recovery is much more gradual, not reaching pre-COVID levels until 2023.

Exhibit 1: Three scenarios for recovery in global airline revenue



Source: Oliver Wyman modeling for epidemiological curves, macro-economic factors, past infectious disease outbreak and financial crisis data

Fleet impact

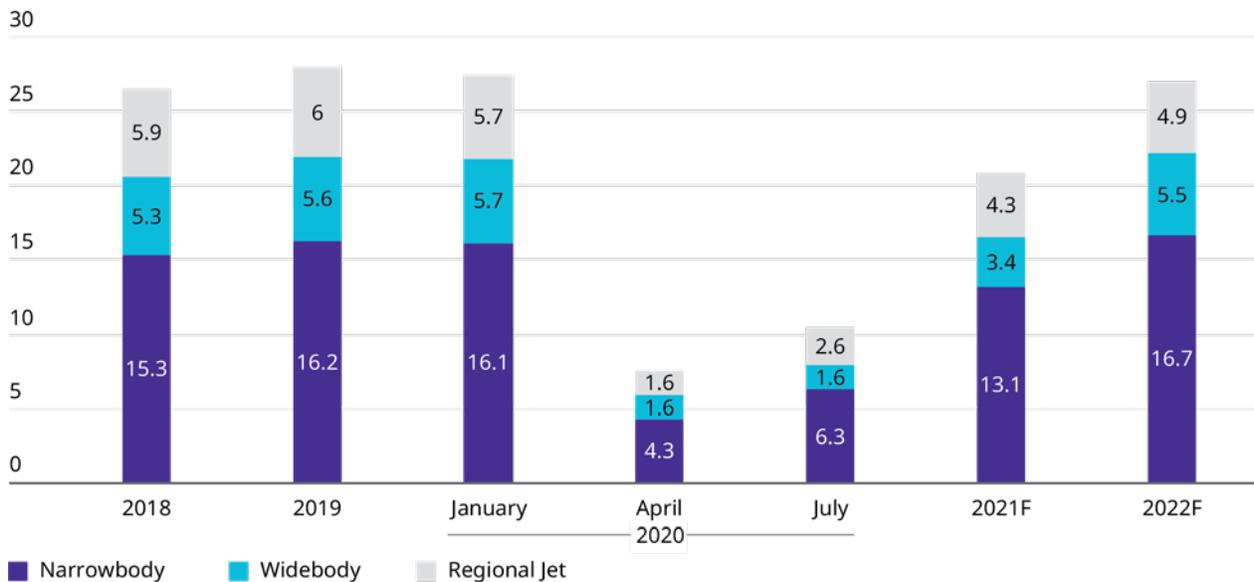
During 9/11, the 2003 SARS epidemic, and the 2008-2009 financial crisis — which also included the H1N1 pandemic — the in-service fleet contracted quickly, between three and 4.5 percent over a two-to-four-month period. Recovery was more extended — typically four to 4.5 months for every percentage point reduction. These shocks were the primary drivers of aviation industry contraction, although other factors also contributed between 2001 and 2010, including the Iraq war, high oil prices, and the weak financial condition of US airlines — which ultimately led to several bankruptcies.

In the case of the ongoing COVID-19 pandemic, the contraction of the global commercial in-service fleet is already more pronounced than in any of the prior crises: As of late April, over 65 percent of the pre-COVID fleet of 27,500 commercial aircraft have been parked, with many never to return to service. Previous shocks to aviation have also led to early aircraft retirements, and COVID-19 will be no different. While for the last five years annual retirements have ranged from 550 to 750 planes, we expect to see a surge to well over 2,600 during the next 12 months.

As previously described, the pace of fleet recovery is expected to require several years. Our baseline scenario does not expect the fleet to return to its pre-COVID size until the end of 2022.

Exhibit 2: Drop in demand means no growth in global fleet through 2022

In-service fleet size in thousands, 2018-2022F*



CAGR 2019-2022 (-0.7%): Narrowbody 1.0%, Widebody -0.6%, Regional Jet -6.5%,

*As of beginning of year

Source: Oliver Wyman Global Fleet and MRO Market Forecast, 2020-2030, Revised; Oliver Wyman analysis

For nearly a decade, order books with Boeing and Airbus continued to hit new historic highs as demand for aircraft exceeded the manufacturers' capacity to produce. COVID-19 has now upended that picture with frightening speed. In April, Boeing and Airbus both announced production slowdowns of 30 to 50 percent, depending upon model type, and we believe more downward adjustments are likely to be needed before the year is over. In addition, we expect to see this year anywhere from 100 to 200 so-called white tails — aircraft built without identified customers — creating an imbalance in supply and demand that could require further cutbacks in aircraft production at some point. While production rates are expected to gradually improve in 2021 and 2022, we do not expect a return to pre-COVID levels for five years, even for narrowbody aircraft which are expected to continue to gain favor over less flexible and more expensive widebodies.

Impact to MRO demand

Assuming our baseline scenario that anticipates recovery starting later this summer, the current trajectory for fleet reductions and lower aircraft utilization would reduce global demand for maintenance, repair, and overhaul (MRO) in 2020 by more than \$48 billion, or 53 percent, from our original pre-COVID forecast of \$91.2 billion. All regions of the world will experience declines of 40 percent or more.

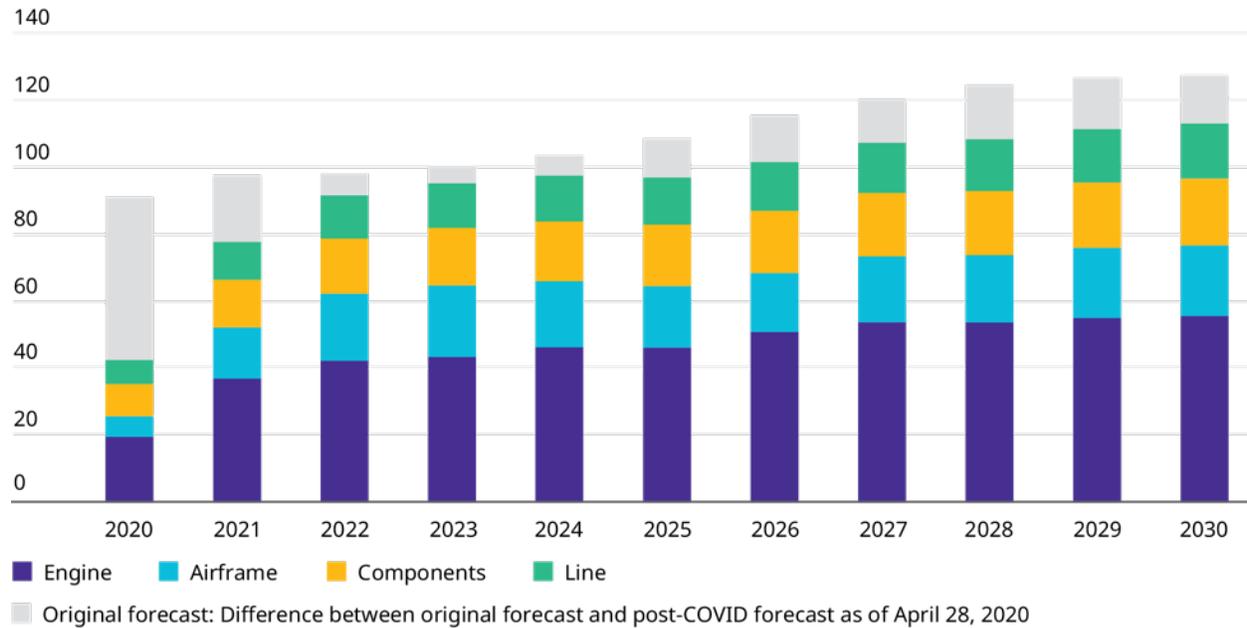
Exhibit 3: 2020 MRO spend will drop more than 50 percent from what was expected
US\$ billions



Note: With COVID forecast updated as of April 28, 2020, Pre-COVID forecast was published February 11, 2020

Source: Oliver Wyman analysis

Exhibit 4: The 10-year forecast on MRO demand by sector 2020 to 2030 (US\$ billions)



Source: Oliver Wyman analysis

As a result of this unprecedented crisis, airlines have focused on cash management and survival. For many, that will translate into far lower demand for MRO services and months, if not years, of stripping parts from parked or retired airplanes. This cannibalization will create a substantial ripple effect throughout aviation's supply chain and will make it critical for MRO providers to consider supplier survival, as well as their own cash flow management. MRO response tactics need to focus on supply chain fixed costs during the crisis and preparation for a long recovery period.

For airlines, especially those receiving governmental support in the near term, it will mean restructuring to accommodate extended, depressed demand. Executives should be considering zero-cost budgeting, contract renegotiating, and the right-sizing of operations to create a more flexible and variable cost structure. In addition, airlines and MROs alike will need to consider how to maintain the existing talent in the market, so whenever the industry finally begins to get back on its feet the necessary experienced personnel are there to support renewed growth.

The MRO industry is comprised of an incredibly diverse set of companies. The largest providers have evolved through years of growth and consolidation. COVID-19 will represent another challenge in their evolution, likely the most significant in their history. However, the smaller MRO providers, which are much more numerous, may face an existential threat to their business. In less than three months, the COVID-19 pandemic has wiped out a substantial portion of industry value, both for shareholders and on balance sheets. This will take years to rebuild, but those who have reacted quickly to preserve cash and manage their underlying cost structures will be in a stronger position to capitalize on new and emerging opportunities, which history has shown will inevitably appear.

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BIGGER FLEET, BIGGER CHALLENGES

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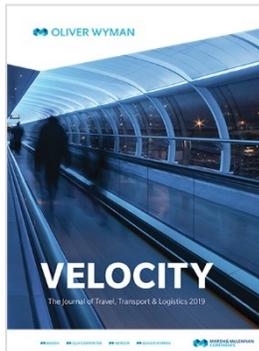
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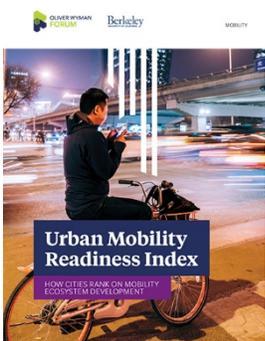
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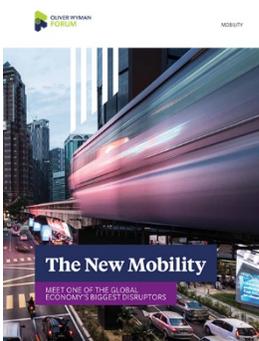
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[Visit our dedicated COVID-19 website](#)



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