FLIGHTPATH TO RECOVERY
Executive summary

Aerospace companies navigated a turbulent 2020. The global pandemic sent the industry into a deep crisis, spurred by plummeting demand, aircraft order deferrals and cancellations, fleet reductions and redundancies. However, the coming months and years promise clearer skies, as governments begin to ease restrictions and air travel regains momentum.

Accordingly, aerospace executives are cautiously optimistic about the future. Of those surveyed by Accenture, 24% view the next 6 months as challenging, whilst 76% foresee greater stability, with opportunities for growth increasing. This optimism builds beyond the new year, with nearly half of executives anticipating growth in 2022.¹

Growth, however, is likely to vary across geographies. Asia Pacific could witness 4% growth in 2021 compared to 2019 levels. This would represent a much faster commercial aerospace recovery compared to North America or Europe, which respectively may still be 21% and 29% down on 2019 levels.

Emerging signs of recovery

Our outlook shows a 13% growth YoY in 2022 for commercial aerospace globally, which would be 4% down on 2019 levels. For the first 9 months of 2021, Boeing and Airbus respectively reported revenues amounting to $47.5B, increasing 11% YoY, and €35.2B, increasing 17% YoY. Their combined deliveries increased 17% YoY. Their combined deliveries increased 11% YoY, and €35.2B, increasing 17% YoY.

Macroeconomic concerns weigh on executives’ minds

The uncertainty created by the pandemic and worsening economic conditions are the areas of greatest short-term concern highlighted by executives. There are, however, some reasons for cautious optimism. The 5-year suspension of retaliatory tariffs by the EU and US, and the post-Brexit trade and cooperation agreement between the EU and UK, are both positive signs. The Biden administration’s proposed corporate tax rate increases are likely to affect capital investments and R&D spending by US aerospace companies. However, the administration plans to increase R&D and provide tax incentives for sustainable aircraft technologies.

Supply chain challenges worsen

Small suppliers continue to face challenges due to depleted inventories and cash flow issues. They will have to rebalance production lines as uncertainty persists and demand changes. Larger tier 1 suppliers have survived through government support, debt sales and cost-reduction actions.

The next 6 months are likely to be difficult, with 55% of executives reporting reduced confidence in their supply chain timeliness and quality for this period. This is an all-time low since we started producing this report in 2015. But executives are optimistic for a return to pre-pandemic supplier execution over the next 12 to 18 months, with 91% hopeful that suppliers will meet or exceed delivery expectations.

Aftermarket growth still around the corner

Aftermarket spend has been negatively affected by lower aircraft utilization, as airlines deferred overhauls to conserve cash. The demand for passenger to freight aircraft conversion, short-term aircraft storage services, out-of-storage checks, and return-to-service maintenance, continue to drive 2021 aftermarket recovery. That said, it’s still expected to be 25% to 35% lower compared to pre-crisis levels.

Executives are, however, optimistic in the longer-term, with 71% expecting growth in the next 12 to 18 months. However, this long-term optimism is tempered by expectations in the short-term: 67% of executives expect MRO spending to remain the same or even to fall over the next 6 months.

Embracing sustainability beyond flight operations

Across every sector, sustainability is a hot topic and aerospace is no different. The industry is embracing a sustainability agenda that goes far beyond reducing aircraft emissions and extends to reducing the industry’s environmental impact across the entire value chain. Of the aerospace executives surveyed by Accenture, 70% see sustainability as a main focus over the next 5 years and understand that it will need to be addressed at every stage of the supply chain. In particular, it will be vital to ensure that digital investments and advances in product technology are driving the evolution of a more sustainable industry, touching areas from energy consumption to resource utilization, to recycling of waste and end-of-life assets.
**Global outlook**

We anticipate the 2021 global commercial aerospace market to grow 5.5% YoY (figure 1) as the impact of the pandemic eases and aviation travel demand begins to revive. However, the global industry will still be 15% smaller when compared with 2019.

The industry is poised for a moderate recovery in 2022, following resumption of 737 MAX deliveries and several airlines restructuring their fleet to emerge from the pandemic crisis.

OEMs are regaining revenue momentum following a steep decline in business last year. The commercial aircraft divisions of Boeing and Airbus have respectively reported revenues amounting to $14.7B, increasing 29% YoY, and €24.6B, increasing 21% YoY, for the first 9 months of 2021.5

While 2021 is only expected to witness single digit growth in global commercial aerospace revenues, we project that 2022 will see an increase of 13% YoY. Underlying this growth, IATA estimates show the airline industry is expected to witness recovery across all regions in 2022, cutting their losses to $12B compared to $52B losses for 2021.6

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Airline performance

The airline industry has seen only slow recovery in 2021, largely due to the emergence of virus variants and ongoing international travel restrictions. After witnessing a sharp 66% decline in 2020, passenger traffic in terms of global RPKs (revenue passenger kilometers) is expected to improve by 18% YoY in 2021 and 51% YoY in 2022.\(^7\)

IATA’s recently revised estimates show that global RPKs are expected to reach 44% of pre-crisis levels by the fourth quarter of 2022\(^8\) (figure 2).

Figure 2: global revenue passenger kilometers (quarterly RPKs % of 2019)

Accelerated vaccination rollout and the easing of government restrictions boosted consumer confidence in air travel. However, 43% of executives expect airline industry revenues to take between 24 to 36 months to recover to 2019 levels, whereas 39% expect a recovery period of between 12 to 24 months (figure 3).

Figure 3: airline industry recovery outlook compared to 2019 levels

Airlines are currently going through an unprecedented liquidity crisis, with most continuing to rely on financial support. This support has totaled more than $240B globally,\(^9\) in the form of government support or strategic bank loans. US airlines primarily relied on relief measures through the CARES Act and the American Rescue Plan, receiving $75B in federal aid,\(^10\) and EU states funneled almost €30B in government aid to various airlines.\(^11\)
Aircraft delivery deferrals and cancellations have slowed down this year. Narrow-body deliveries should pick up, and will perhaps reach 2018 levels by 2022 (1,221 in 2022 versus 1,214 in 2018), while widebody deliveries are expected to settle at a lower annual level (252 in 2022 versus 360 in 2018) than where they were prior to the COVID-19 pandemic\textsuperscript{12} (figure 4).

**Figure 4: historic and committed deliveries by year (Boeing and Airbus)**

As we look towards the first half of 2022, airlines will likely continue to recover and reduce their ongoing losses, whilst still confronting broadly the same concerns as they do today. Strategies to induce recovery will likely include a combination of careful management of daily cash losses and balance-sheet risk, attempts to stimulate passenger demand through safety and pricing, and the postponement of any real growth prospects until the pandemic and travelling economy have recovered. There will, however, remain a significant portion of the global airline fleet which will need replacement in the next 5 years. This will be the primary driver of new aircraft deliveries.
What keeps aerospace executives up at night?

Uncertainty due to the pandemic, worsening economic conditions and interest rate changes are all short-term concerns for aerospace executives

Executives expect that the disruption caused by the pandemic will reduce over the next 2 years. However, interest rate changes appear to be a greater concern in both the short and long term. Executives seem less concerned about geopolitical risk factors such as political instability, terrorism, regional armed conflicts, and exchange rate changes, either in the immediate future or over the next 1 to 2 years (figure 5).

Figure 5: risk factors for commercial aerospace: concern for executives (Greater/Same/Less)

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<td>Political instability</td>
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<td>Worsening economic conditions</td>
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<td>Regional armed conflicts</td>
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<td>Interest rate changes</td>
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<td>Exchange rate changes</td>
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The cancellation of redundancies by Boeing after their second quarter results, and by Airbus in Germany, France, and Britain, are encouraging signs of recovery after the fallout from the pandemic. The 5-year suspension of retaliatory tariffs by the EU and US, announced as result of the Boeing-Airbus WTO dispute over aircraft subsidies, is also positive news for OEMs in the short term.

The Biden administration’s budget proposal for 2022, which will see corporate tax rates increase from 21% to 28%, is likely to affect capital investments by US aerospace companies. However, the administration proposes to offset this in part by increasing R&D and by providing tax incentives for sustainable aircraft technologies.
OEMs are recovering from their huge losses last year. Third quarter results show an improvement in operating margins for commercial airplane business.

While clearly not at pre-pandemic levels, Boeing’s operating margin for commercial airplanes business improved to -15% in the third quarter of 2021, versus -38% in the same period of 2020. Airbus’ operating margin improved to +7% in the third quarter of 2021, from -8% in the same period of 2020. Overall, net new orders for the third quarter of 2021 were positive, as Boeing and Airbus reported 59 and 95 net orders respectively, with new orders outpacing cancellations.13

Nearly 50% of executives expect revenue to increase over the next 12 months. Executive optimism in the possibility of recovery increases over a longer timeframe, with 76% expecting revenues to increase in the next 18 months (figure 6).

With the 737 MAX receiving clearance to fly from both US and EU regulators, the pace of deliveries from inventory looks set to be a key driver of market growth both this year and in 2022.

**Figure 6: business-cycle stance outlook (commercial aerospace revenues)**

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Of the executives Accenture surveyed, 79% expect the second half of 2021 to see an increase or flatlining of commercial aerospace products unit deliveries compared with the same period in 2020. Only 24% expect a reduction in unit delivery rates in 2021 compared with 2020 (figure 7).

In 2021, commercial aircraft deliveries for Boeing and Airbus are expected to be around 900 to 1,100, compared to approximately 720 deliveries in 2020 and 1,200 in 2019. Boeing delivered 241 aircraft in the first 9 months of 2021, whereas Airbus delivered 424 aircraft during the same period, with their combined deliveries increasing 51% YoY. The third quarter growth in deliveries was primarily driven by Boeing, which reported a massive increase of 204% YoY, whereas Airbus’ deliveries declined 12% YoY.14

Several airlines have signaled their intentions to renew their fleets in the coming years, by phasing out older aircraft and by focusing on fuel usage to reduce carbon emissions and operating costs. Lufthansa, for example, retired 150 older and less efficient aircraft and is adding 175 new aircraft, including A350-900 and B787-9 models, over the next decade. This is expected to reduce operating costs by 15%.15

Figure 7: Delivery outlook: Commercial aerospace products

There is an expectation among 67% of executives that narrow-body aircraft deliveries will be the same or greater in 2021 compared to a year ago, while 76% expect wide-body deliveries to decrease or remain the same over the same period (figures 8 and 9).
Aftermarket

Aftermarket spend has been negatively affected due to lower aircraft utilization and airlines deferring overhauls to conserve cash. Global MRO aftermarket revenue declined by between 50% and 60% in 2020, as reflected in the financial results of MRO providers. Demand for passenger to freight aircraft conversion, short-term aircraft storage services, out-of-storage checks and return-to-service maintenance continues to drive an incremental 2021 aftermarket recovery. However, the market is still expected to be 25% to 35% down on pre-pandemic levels.

In the short-term, these conditions look set to continue, with 67% of executives expecting MRO spend to remain flat or even to go down over the next 6 months. However, this reduces to 54% over the next 12 months and 39% over the next 18 months, suggesting greater optimism in the long-term (figure 10).

Figure 10: maintenance, repair and overhaul (MRO) activity outlook

MROs and airlines are increasing their interest in digitalization efforts, with paperless maintenance and virtual inspections driving the adoption of digital records management, predictive analytics platforms, and AR/VR solutions. While the focus right now isn’t necessarily on full scale digital transformation projects, MROs and airlines are seeking to invest in digital collaboration tools and cloud-enabled technologies that support their recovery plans. Technology architecture is becoming increasingly important, with 77% of executives suggesting that it will become essential to the overall success of their organizations. MRO providers are also exploring advanced technologies. For example, Delta TechOps partnered with Sarcos Robotics to design a robotic exoskeleton to boost physical capabilities and safety for the lifting of heavy payloads. And Collins Aerospace Singapore innovation hub is gearing up to develop at least 40 proofs of concept for future MRO technologies and solutions.
Both Boeing and Airbus are steadily recovering from their ongoing commercial aerospace losses, with third quarter results showing improvement in their operating margins.

Although both Boeing and Airbus have increased production as air travel recovers, earlier production cuts badly affected suppliers. However, there are signs that suppliers are becoming more bullish in their outlook. Airbus has been more aggressive with its recovery plans than Boeing and aims to increase production of narrow-body programs by 45 A320 models per month by the fourth quarter of 2021, while Boeing aims to increase production of its 737 model by 31 per month by early 2022.

Production capacity looks to be broadly stable over the next 6 months, with 58% of executives expecting capacity to remain the same in that period, while nearly half expect an increase over the next 12 months. With international travel restrictions easing up across the world, OEMs are hoping to move forward with their plans to ramp up production. Indeed, 79% of executives expect their production capacity to increase over the next 18 months (figure 11).

**Figure 11: production capacity outlook**
Of the executives Accenture surveyed, 69% reported that their organization faced moderate to complete supply chain disruption due to the pandemic. Supply chains will ultimately meet OEM expectations as they adjust to changes in demand. However, challenges remain for small-sized Tier 3 suppliers as they continue to deal with depleted inventories and cash flow issues. OEMs and Tier 1 suppliers continue to assess the availability of critical components and ensure production scheduling can rebalance production lines as demand changes. Executive confidence in supply chains is generally low, with 55% expressing reduced confidence in their supply chain timeliness and quality for the next 6 months. However, executives are more optimistic for a return to pre-pandemic supplier execution over the next 12 to 18 months, with 91% hopeful of suppliers meeting or exceeding delivery expectations in that period (figure 12).

Figure 12: supplier delivery outlook

Larger Tier 1 suppliers have managed to survive the crisis, either through government support, debt sale or by undertaking cost reduction actions such as facility closures and redundancies. Some smaller tier 3 suppliers filed for bankruptcy. TECT Aerospace, for example, filed for bankruptcy and was acquired by Wipro’s infrastructure engineering division.

OEMs are working closely with their suppliers to manage risk and to adjust delivery schedules to accommodate current supply chain issues. Boeing’s CEO, David Calhoun, indicated that the company is willing to take some risks with respect to the readiness of their suppliers. Airbus’ CEO, Guillaume Faury, stated that supply chain management will be the most challenging aspect of their recovery over the next 12 to 18 months.
Of the executives Accenture surveyed, more than 60% expect raw material costs to increase over the next 6 to 12 months (figure 13), whereas more than half expect costs to remain the same across production labor and parts in the equivalent period. (figures 14 and 15)

A resurgence in cases of Covid-19 in Asia led to port closures and supply chain disruptions, which in turn affected global supply chains and the price of raw materials and spurred an increase in the price of steel and aluminum.

Figure 13: raw materials cost outlook

Subsystem and parts cost are expected to rise, with 52% of executives anticipating an increase by early 2022. A global shortage of semiconductor chips affected several industries, including aerospace. For example, Honeywell curtailed its aerospace unit production due to a shortage of components.24

Companies are facing challenges pricing parts, and it’s difficult for them to pass the increased costs onto their customers as demand is weak. However, this is likely to change as demand picks up. For example, aerospace coatings supplier PPG industries reported raw material cost inflation of 25% YoY in their third quarter financial results.25

Figure 14: sub-system or parts cost outlook

The market for highly skilled workers for parts manufacturing remains competitive, with companies embracing digital technologies to connect their disparate systems and to share data across different functions. For example, Spirit AeroSystems accelerated its digitization processes, including the implementation of a manufacturing execution system (MES) on the 737 MAX fuselage line and a digital workflow system.26

The industry is also increasingly focused on how to make manufacturing and production more sustainable. Digital investments and product technology will help by reducing the energy consumption and emissions associated with manufacturing and production. In addition to deploying digital technologies such as IoT, utilizing renewable energy at manufacturing facilities will help lower the environmental impact of production operations. Over half of executives are already engaged in green initiatives to make production carbon neutral.27

Figure 15: production labor cost outlook
Environmental sustainability

The commercial aerospace industry is evolving and embracing a sustainability agenda that goes far beyond reducing aircraft emissions. The aim is now to reduce environmental harm across the entire value chain.

Of the aerospace executives surveyed by Accenture, 70% see sustainability as a critical focus over the next 5 years and understand that it will need to be addressed at every stage of the supply chain. Already, 24% believe sustainability is ‘very important’ to their business (Figure 16). Across the industry, executives recognize the need to transform not just aircraft technologies, but also how their products are designed, manufactured, and serviced. In particular, it will be vital to ensure that digital investments and advances in product technology are driving the evolution of a more sustainable industry, touching areas from energy consumption to resource utilization, to recycling of waste and end-of-life assets.

Figure 16: importance of measuring positive environmental sustainability benefits across different stages of manufacturing or delivery of products or services

An extended ecosystem of startups is emerging to accelerate the research and development cycle for more eco-friendly products, and to move pilots into production at scale and speed. These ecosystem partnerships are vital to ensure the long-term sustainability of the industry. For example, Raytheon Technologies is collaborating with T-hub, India’s startup innovation ecosystem, to partner with companies that can help them to rethink aircraft engine repairs.28

Figure 17: importance of environmentally sustainable products and services to deliver differentiated offerings

Executives anticipate several barriers which may hinder the development of more sustainable products or services over the next 5 years. The top 3 barriers cited are: the ability to certificate new technologies (67%); supply chains failing to meet the demand for new components (64%) and government policy objectives not being realistic (60%). Nevertheless, there are developments that look set to aid the transition to a more sustainable industry. Collaboration with technology providers (64%), higher revenue (63%) and government policies to help reduce emissions (50%) are all cited by executives as the most significant factors driving the creation of more sustainable products and services over the next 5 years.

To transform into sustainable operations, aerospace companies will need to embed sustainability into their overall strategy and into every stage of the manufacturing and delivery of products and services.

The focus on environmental sustainability can be seen by looking at the emergence of a range of new products and services aimed at reducing the industry’s carbon footprint and putting it on a more sustainable track. Over the next 5 years, 58% of executives believe that environmentally sustainable products and services will be essential for delivering differentiated offerings to their customers (figure 17).
Regional outlooks
North America: 737 MAX deliveries boosted market recovery, however 787 manufacturing defects resulted in temporary rate cuts

Boeing’s order book outpaced its cancellations, logging a positive net orderbook of 59 orders in the third quarter for 302 aircraft, an indication that the North American market is getting back on track. United Airlines ordered 200 new 737 MAX aircraft, positioning its fleet for growth as the demand for air travel is expected to rise.

Figure 18: outlook for North America

With 2021 growth anticipated to increase 11.7% YoY versus last year’s low base, commercial aerospace is still 21% lower compared to 2019 and 27% lower compared to the 2018 pre-pandemic levels seen before the 737 Max groundings (Figure 19).

Growth is expected to accelerate in North America in 2022, closing the gap to reach pre-pandemic commercial aerospace revenues. However, the path to full recovery will be longer. Manufacturing defects discovered in 787 Dreamliner parts resulted in temporary production rate cuts for the program and the halting of its deliveries. The $3B payroll support relief package for aerospace supply chain workers – part of the American Rescue Plan and $7.2B Paycheck Protection Program – is expected to benefit manufacturers and small suppliers which are critical for commercial aerospace supply chains.

Figure 19: North America commercial aerospace index, (USD, 2018 = 100)
Europe: A320 production ramp up gains momentum

Airbus’ overall net order book for the third quarter stood at 95 aircraft, with 133 net orders for the year to date and 424 deliveries. That means they lead Boeing for deliveries but lag behind them on net orders. Airbus’ commercial revenues increased overall 21% YoY for the year up to the third quarter, but declined 12% YoY in the third quarter itself. It now expects to boost its production of A320, for which the production rate is anticipated to increase to 45 per month in the fourth quarter of 2021, and 64 per month by the second quarter of 2023. Airbus suffered a setback earlier in the first half of 2021, due to the cancellation of 92 aircraft by Norwegian Air, However, the company secured a major order in the US from Delta Airlines for 30 A321Neo aircraft as part of its fleet modernization. Major air carriers in Europe such as Lufthansa are currently restructuring their fleets to reduce operational costs, adding more fuel-efficient aircraft like the A321 Neo and A350-900.

With single digit recovery anticipated in 2021, EU commercial aerospace revenues will be 29% lower than 2019 (figures 20 and 21). There is a long and challenging period ahead for the EU to reach pre-pandemic levels. For example, the French government’s bailout funds require companies to invest in sustainable aircraft technologies. However, the EU and UK’s post-Brexit trade and cooperation agreement, focusing on acceptance of each other’s design or manufacturing related certificates for aircraft, parts and processes, is positive news for the region’s aerospace industry.

Figure 20: outlook for Europe

Figure 21: Europe commercial aerospace index, (USD, 2018 = 100)
Asia Pacific: domestic aviation supported by aftermarket MRO accelerates recovery

Commercial aerospace revenue for the Asia Pacific region in 2021 is expected to increase 2.4% YoY. This is slower YoY growth compared to North America and the EU, though this is partly due to the fact that the revenues of Chinese state-owned commercial aerospace companies weren’t so badly affected in 2020.

In 2020, revenues growth was in the low single digits in Asia Pacific. This negative impact wasn’t prominent in our analysis, partly due to the fact that some larger suppliers, such as Mitsubishi Heavy Industries, combined revenue reporting for both the commercial and defense aspects of their businesses and partly due to the limited availability of reported commercial aerospace revenue data for regional companies. While Chinese air carriers deferred deliveries of aircraft from Boeing and Airbus in 2020, they continued to add to their ARJ21 fleets via domestic manufacturer COMAC. Due to a faster recovery in domestic travel, China’s big 3 air carriers reduced their yearly losses through growth in passenger revenues, as well as an increase in cargo demand. As Boeing works towards the recertification of 737 MAX in China, the first C919 narrow-body aircraft is expected to be delivered to its launch customer China Eastern airlines in the second half of 2021.

Major Asian MROs are showing signs of recovery and moving towards their plans to expand capacity. For example, the Chinese company GAMECO’s overall revenue is expected to be down by 10% to 12% versus 2019 levels, and Singapore based ST Engineering’s airframe maintenance work recovered to around 90% to 95% of 2019 levels, largely due to the increase in freighter conversions.34

The region is expected to be 4.4% higher compared to 2019 levels, indicating a much faster recovery than other regions. This growth is expected to continue in 2022 (Figures 22 and 23).

**Figure 22: outlook for Asia Pacific**

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**Figure 23: Asia Pacific commercial aerospace index, (USD, 2018 = 100)**
Appendix

Global and Regional Commercial Aerospace Index Performance (QoQ percentage change)

Global

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Combining sophisticated econometric modeling methodologies to drive quantitative quarterly forecasts on the health of the commercial aviation market, with insights from leading aerospace executives worldwide, the Accenture Commercial Aerospace Insight Report provides a unique perspective on short- and medium-term trends and drivers in this market, covering a wide range of activities, from suppliers to MROs.

Regional forecasts are in the highest-impact regional currency, with the global index aggregated in US dollars, using current exchange rates (at time of writing). The index baseline year is 2018, and both regional and global indices are based on this year.

To complement the econometric modeling, executives at major commercial aerospace companies were polled for their insights on future supply and demand outlook. The outlook indicators in this report are based on the combination of the econometric modeling and a global commercial aerospace executive poll. Our poll was conducted in September 2021 and views are subject to considerable change as conditions can rapidly evolve.
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The views and opinions expressed in this document are meant to stimulate thought and discussion. As each business has unique requirements and objectives, these ideas should not be viewed as professional advice with respect to your business.
1. Accenture Commercial Aerospace Insight Survey, September 2021
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