

# 2022 BUSINESS AVIATION OUTLOOK CLEARED FOR TAKEOFF

In 2022, business aviation saw a surge in new aircraft purchases not seen since before the pandemic, according to Honeywell's Global Business Aviation Outlook. The report projects 8,500 business aircraft deliveries over the next decade.

**Honeywell**



# ABOUT THIS FORECAST

Honeywell's Global Business Aviation Outlook has been a bellwether for business aviation for more than three decades. For the 2022 edition of this report, we gathered and analyzed information from global economic forecasts, industry analysts' reports, aircraft manufacturers' development and production plans, and other sources.

The survey sample represents a broad cross section of the global business aviation community to create a clear picture of the market and enable us to analyze findings based on region, operating profile, aircraft class and other factors.

This annual process is just one of the methods Honeywell uses to stay in touch with the needs of our customers in this vital global industry. The findings inform our business planning efforts, technology development roadmaps and other core processes. We hope you find the 2022 Outlook interesting and useful.



# EXECUTIVE SUMMARY

Business aircraft operators are accelerating plans to acquire new aircraft between now and 2032. Honeywell's 2022 Business Aviation Outlook uncovered a healthy 15% surge in delivery projections compared to the 2021 Outlook. We anticipate as many as 8,500 business jets with a value of about \$247 billion will roll off assembly lines in the next 10 years.

Honeywell's analysis tells a compelling story about business aviation's future through the lens of aircraft deliveries over the course of a decade. But the industry's growth will be evident starting this year as aircraft manufacturers jumpstart the next phase of the business cycle.

For 2023, Honeywell foresees 820 new business jet deliveries valued at \$25 billion, which represents a steep climb from 612 jets with a combined price tag of \$18.3 billion projected for 2022. The findings are just as positive for the five-year time horizon.

“The year-over-year improvement in the aircraft delivery forecast is very encouraging. It shows **the industry has already recovered to 2019 levels after two down years** – which is faster than most people expected. **We feel positive about where the industry is today and where it appears to be headed.**”

**Heath Patrick** President, Honeywell Aerospace Americas Aftermarket

## 4 REASONS BEHIND THE UPSWING

**1** **32% of operators expect to fly more this year than they did in 2022.** Only 4% think their flight hours will go down.

**2** **17% of flight departments plan to purchase aircraft in the next five years.** 2% are adding aircraft to their fleets. (This is the highest increase since 2016).

**3** **Passengers expect a better flying experience post pandemic.** This has created a strong demand for business jets that can fly further, faster, and with greater levels of comfort.

**4** **Airline scheduling issues and health concerns topped the list of reasons many companies and individuals purchased their first aircraft during or shortly after the pandemic.**

As a result of these and other factors, large order backlogs for aircraft manufacturers and long lead times for aircraft buyers have become the norm. This is also reflected in a steady demand for quality preowned business jets, which 28% of operators expect to purchase in the next five years.

Corporations are putting more effort than ever into their environmental, social and governance (ESG) initiatives and flight departments are doing their part. For example, 14% of respondents have already switched to sustainable aviation fuel (SAF) blends to power their aircraft and 39% expect to move to SAF in the coming years.

The 2022 Outlook surfaced other operator concerns including a severe global shortage of pilots, inflation and an uncertain economy, volatile fuel prices and ongoing supply chain issues that make it hard to buy aircraft parts and other supplies.

Even so, operators feel generally positive about the state of their own operations in 2023. More than one-third told us they expect conditions in their flight department to be better in 2023 than they were in 2022 while 59% said they will be about the same.



**32% expect to fly more this year than they did in 2022**



**17% of flight departments plan to purchase aircraft in the next five years**



**28% of operators expect to purchase pre-owned business jets in the next five years**



**1/3 expect conditions in their flight department to be better in 2023 than in 2022**



**“The pandemic is over and there’s more business travel ... operations will get better with safety and efficacy ... the economy is improving and the boss wants to travel.”**

Outlook Respondents

# 2022 BUSINESS AVIATION OUTLOOK FINDINGS

## INDUSTRY RAMPS UP TO DELIVER 8,500 NEW BUSINESS JETS BY 2032

Operators need to bring their patience when placing an order for a new business jet from one of the leading original equipment manufacturers. Order backlogs are at or near record-high levels and aircraft ordered today may not be delivered for 2-3 years.

Strong order backlogs are just one of many indicators of a positive future for business aviation uncovered in the findings of Honeywell's 31st Annual Business Aviation Outlook.

*Based on extensive analysis of reliable industry data, input from aircraft manufacturers and interviews with 152 business aircraft operators, we project up to 8,500 new business jets will be delivered between 2022 and 2032. Valued at around \$247 billion, those aircraft will be manufactured by the major business aircraft companies including Bombardier, Dassault (Falcon), Embraer, Gulfstream and Textron Aviation (Cessna).*

### BETWEEN 2022 & 2032

**8,500  
JETS**



New business jets

**\$247  
BILLION**



Aircraft value manufactured by major business aircraft companies

The 2022 Outlook reverses a two-year downward trajectory in anticipated deliveries. Compared with the 10-year projection of 7,400 aircraft with a \$238 billion price tag anticipated by the 2021 report, it reflects a solid 15% increase in both measures. With this healthy growth rate, 2022 projections equal 2019 pre-pandemic levels and signal a stronger, faster rebound than many business aviation observers expected.

We see this welcome recovery beginning this year and so do operators. Based on their input and other data, we anticipate 820 aircraft deliveries in 2023 compared to just 700 projected in 2022 – that is a 17% increase. 612 deliveries, 30%+ growth in 2023 by units.

This upward trend will continue for at least the next few years, with 850 deliveries expected in 2024 and 870 in 2025, as operators execute ambitious acquisition plans and OEMs catch up on their considerable backlogs. In fact, over the next five years operators say they will acquire more than 4,200 aircraft, representing about 17% of their total combined fleets of business jets.

There continues to be high demand – and limited availability – in the used jet market. Demand for preowned aircraft peaked in 2015 when operators expected to acquire used aircraft at a rate equal to one-third of the global fleet. That number is down to 28% in the 2022 Outlook, down slightly from 30% in the previous year's forecast. Not surprisingly, long lead times from OEMs for new business jets is one factor driving demand for used aircraft.



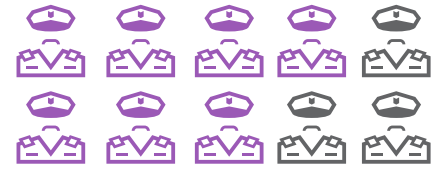


## MORE FLIGHT HOURS, FLEET EXPANSION AND NEW OPERATORS SPUR ORDERS

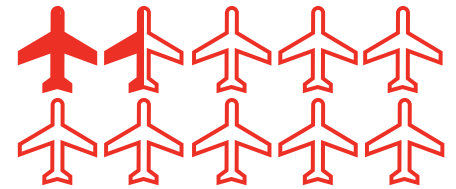
Operators expect their aircraft to spend more time in the air in 2023. About one-third of flight departments say flying hours will rise year-over-year and most of the rest (64%) think they will fly a comparable number of hours in 2023 as they did in 2022. As flight hours grow, so does the demand for newer, more efficient and more comfortable aircraft to meet the needs of business travelers.

As a result, many companies and individual owner-operators are either adding new aircraft to increase the size of their existing fleets or replacing their current aircraft with newer or different models. Two percent of respondents plan to add aircraft to their fleets within five years. The percentage of operators planning to expand their aircraft inventory doubled from last year's Outlook in the most bullish projection of fleet growth since 2016. They also anticipate replacing about 15% of their current fleets with new airplanes.

The number of business jet operators also continues to grow, as more companies and individuals recognize all the benefits of business aviation for the first time. New operators show a preference for small-cabin business jets and turboprops, with 70% of first-time buyers expecting to choose those classes of aircraft. Many operators who acquired their first aircraft in the 2020-2022 timeframe were motivated by the COVID-19 pandemic, its impact on airline schedules and first-class seating options, and the desire to reduce chances of exposure to the virus.



**70%** of first-time buyers choose small-cabin business jets and turboprops



Operators anticipate replacing **15%** of their current fleets with new airplanes

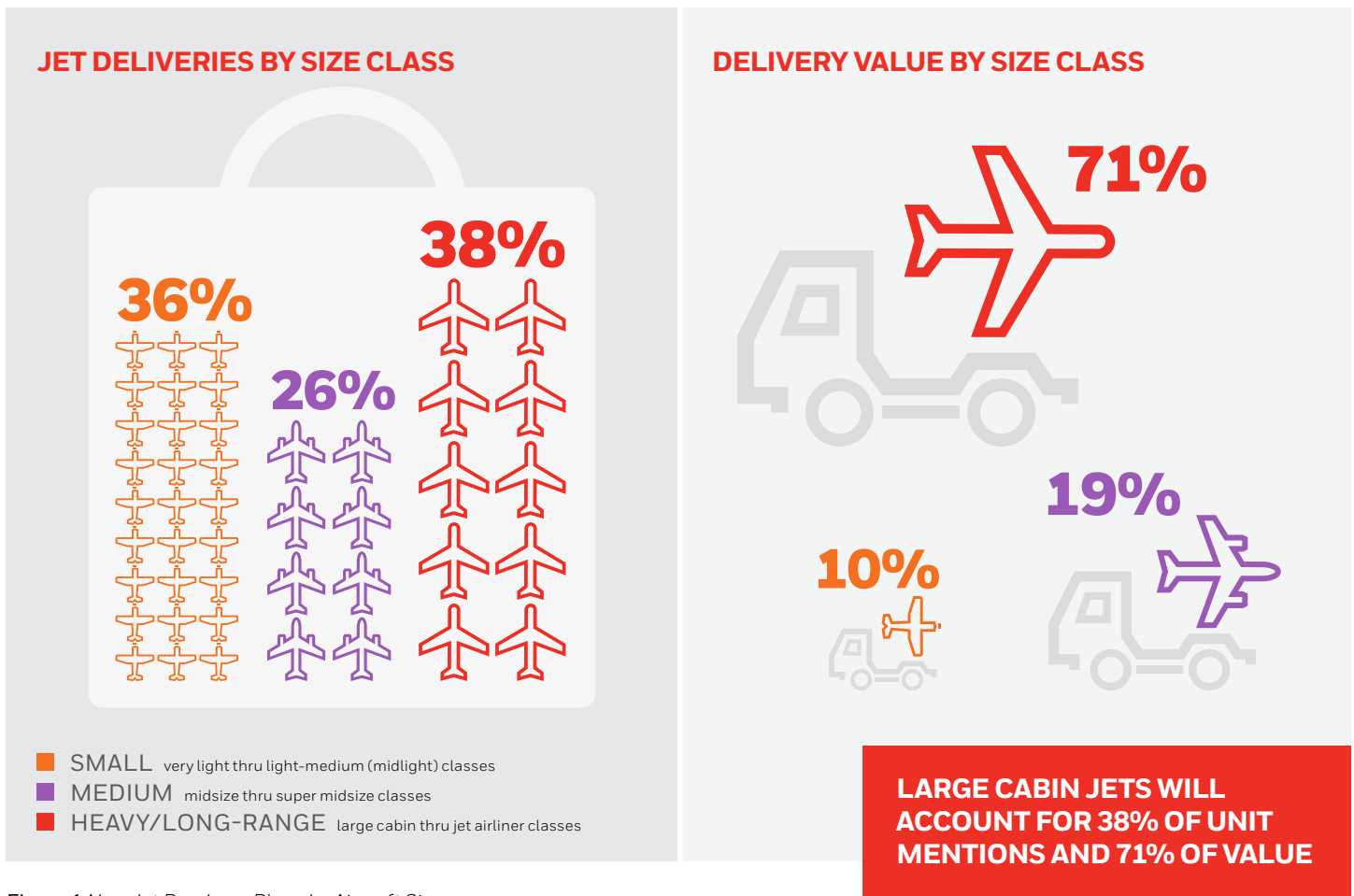


Figure 1 New Jet Purchase Plans by Aircraft Size

## AIRCRAFT DELIVERIES TAKE ON INTERNATIONAL FLAVOR

Business aviation is more global than ever. Leaders in every kind of enterprise rely on safe, efficient and comfortable business jets to take them wherever they need to go. Over the next five years, North American operators will account for about two-thirds of business aircraft deliveries, a figure that stayed relatively constant between the 2021 and 2022 surveys. Europe is the next-largest business jet market, followed by Asia-Pacific, Latin America and Africa/Middle East. Of these regions, only Latin American demand grew in 2023, from 5% to 7%.

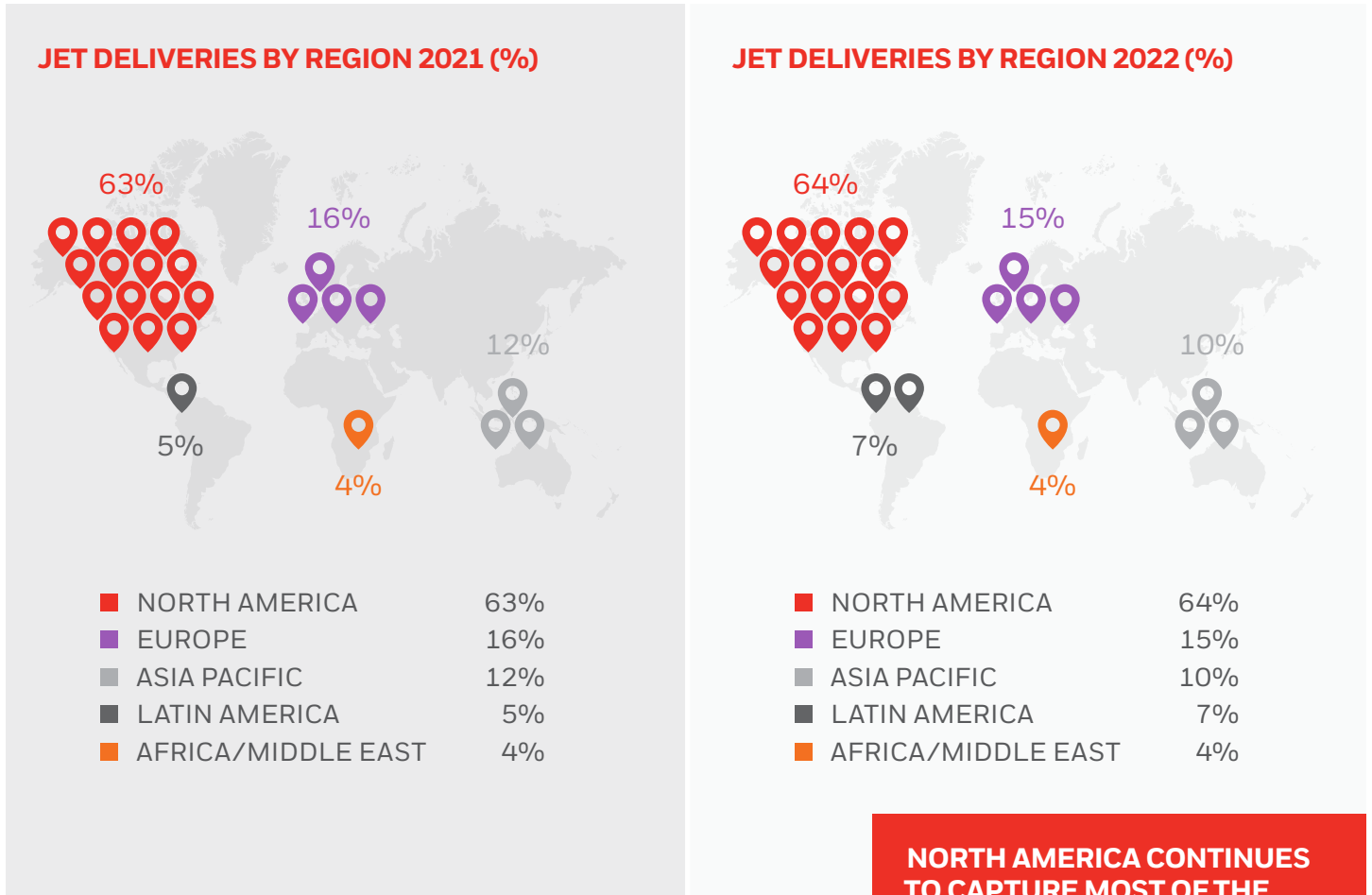


Figure 2 Regional Five-Year Demand for New Jets

**NORTH AMERICA CONTINUES TO CAPTURE MOST OF THE DEMAND AT 64%**

## OPERATORS SHOW BIG PREFERENCE FOR LARGE-CABIN JETS

Once again, aircraft operators show a strong preference for heavy/long-range business jets in the 2022 Outlook. Thirty-eight percent of projected deliveries are for aircraft in this size class, including large cabin, long range, ultra-long range and very high speed ultra-long-range models, along with jet airliner class business aircraft. Even more telling is that investment in heavy/long-range aircraft will account for 71% of delivery value, which is roughly equivalent to the number reported in last year's Outlook.



Aircraft operators show a strong preference for heavy/long-range business jets in the 2022 Outlook

# BUSINESS AVIATION LOOKS TO SHRINK AIR TRAVEL'S CARBON FOOTPRINT

Business aviation operators have a strong interest in sustainable aviation fuel as an alternative to the conventional fossil fuels most of them are using today. In fact, 14% already fuel their aircraft with a blend of SAF and conventional fuels and 37% expect to make the switch to SAF in the future to help shrink their flight operation's carbon footprint.

*"We are using sustainable aviation fuel occasionally but have been limited by its lack of availability. We have seen no performance difference with SAF."*

**- U.S. OPERATOR**

Over the lifecycle of their production and use, renewable fuels can reduce carbon emissions by 80%.<sup>1</sup> Their use in jet engines and auxiliary power units (APUs) is one way flight departments can help achieve their corporate parents' sustainability goals, comply with ever-evolving environmental regulations, and keep up with industry best practices, including National Business Aviation Association (NBAA) carbon-reduction commitments.<sup>2</sup>

*"Regarding sustainability, we choose what makes sense economically. We know what SAF costs, so we're not purchasing it at this point."*

**- U.S. OPERATOR**

Several operators noted SAF currently costs more than conventional fuel and is harder to get. This implies that wider adoption of this preferred sustainability measure by flight departments may hinge on the oil and gas industry's ongoing efforts to scale up production and distribution, which is likely to drive down the price at the pump over time. Government incentives and tax credits, like those contained in the U.S. Inflation Reduction Act (IRA) of 2022, will also help drive supply and demand for SAF.<sup>3</sup>



**20%** of operators say they are flying less or flying slower to save fuel and reduce emissions



**14%** already fuel their aircraft with a blend of SAF and conventional fuels



**16%** plan to do more ride sharing or jet pooling to reduce fuel consumption

About 60% of operators plan to adopt or increase their sustainability efforts moving forward. Almost one-fourth (23%) expect to leverage carbon offsets, more than twice the number currently using this option (11%). Twenty percent of operators say they are flying less or flying slower to save fuel and reduce emissions, but only 11% anticipate using that approach in the future.

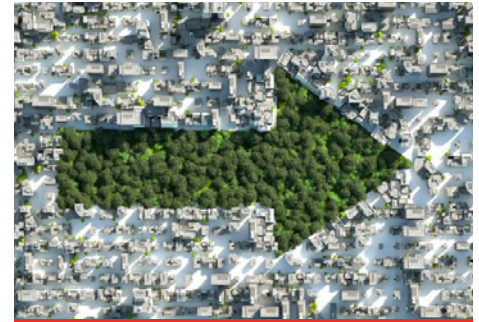
When it comes to reducing their environmental impact, very few operators think reducing the size of their fleet (4%) or moving to smaller aircraft (5%) are viable options. Sixteen percent plan to do more ride sharing or jet pooling to reduce fuel consumption.

1. Sustainable Aviation Fuel (SAF) Production: What's Next (honeywell.com)

2. Business Aviation Pledges Net-Zero Carbon By 2050 and Increasing Fuel Efficiency

as Part of Renewed Climate Commitments | NBAA – National Business Aviation Association

3. Treasury, IRS issue guidance on new Sustainable Aviation Fuel Credit | Internal Revenue Service



## HONEYWELL COMMITS TO CARBON NEUTRALITY BY 2035

Honeywell has helped customers in business aviation and other industries improve safety, efficiency and sustainability. We also are working to make our own operations and facilities carbon-neutral by 2035 – 15 years ahead of the deadline set in the Paris Agreement.

Honeywell greenhouse gas emission intensity is down 90% since we introduced our sustainability system in 2004 and about half our research and development investments for new products are focused on things that will improve environmental, safety and social outcomes for our customers and the planet.

**Honeywell greenhouse gas emission intensity is down 90% since we introduced our sustainability system in 2004.**



**Business aviation's global CO<sub>2</sub> emissions are very small at 0.04%, being approximately 2% of all aviation.**





# 4 WAYS FLIGHT DEPARTMENTS CAN REDUCE ENVIRONMENTAL IMPACT:



**1 SUSTAINABLE AVIATION FUEL (SAF)**  
Begin using sustainable aviation fuel, which can reduce greenhouse gas emissions by as much as 80% compared to conventional jet fuels. Honeywell UOP has developed an innovative process to make SAF from renewable feedstocks. Propulsion engines and APUs manufactured by Honeywell Aerospace need no modifications to burn SAF and SAF blends.

**2 CARBON OFFSET PROGRAMS**  
Consider carbon offset programs that let flight departments offset their environmental footprint by paying to reduce greenhouse gas emissions elsewhere. While this may sound complicated, multiple programs and offset calculators are available online by searching “business jet carbon offsets” or “business jet carbon offset calculator.”



**3 EFFICIENT FLIGHT PROFILES**  
Fly the most efficient flight profile, which usually means flying the most direct route possible from point to point, using the flight management system and taking advantage of innovations like performance based navigation that help pilots fly the most efficient route.

**4 UPGRADE YOUR AIRCRAFT**  
Consider upgrading your aircraft, because new-generation business jets and turboprops have more efficient engines, burn much less fuel and produce fewer emissions. They also come equipped with advanced avionics, communications systems and the cabin amenities business aircraft passengers crave.



# PILOT SHORTAGE CHALLENGE GROWS FOR BUSINESS JET OPERATORS

Given the opportunity to talk about the challenges facing their operations, several respondents said they are having a hard time finding, hiring and retaining qualified pilots these days. From all indications, the pilot shortage is real, it is global and it is getting worse for the business aviation community, the airlines and even the military.

*According to some sources, the shortfall could be somewhere in the 34,000 to 50,000 range by 2025 and as high as 60,000 by the end of the decade.<sup>4</sup> When pilot retirements (which are mandatory at age 65 in the U.S.) are considered, filling that projected gap could require more than 250,000 new pilots to pin on wings in the next 10 years. Meanwhile, the FAA issued just under 50,000 student pilot certificates in 2020, compared to about 56,000 in 2010, which represents a 13% decline.<sup>5</sup>*

Business aviation operators are already feeling the crunch, according to survey participants. Several said they had trouble competing with the airlines when it comes to pay, benefits and perceived job security. Operators have their work cut out for them, according to one source that says flight departments need to hire 45,000 business jet pilots between 2019 and 2029 to replace retirees and accommodate the projected growth in flight hours.<sup>6</sup>

While there is no immediate relief in sight, the NBAA<sup>7</sup> and other industry groups have launched programs to encourage young people to consider aviation careers to fill the growing need for pilots, technicians and other professional roles. There also is a move afoot to raise the mandatory retirement age from 65 to 67. Finally, new and emerging automation technologies aim to reduce flight deck workload and enable more classes of aircraft to be flown by a single pilot instead of a two-pilot crew.



**60,000** pilot shortfall by the end of the decade



**250,000** new pilots required to pin on wings in the next 10 years



**45,000** business jet pilots required between 2019 and 2029 to replace retirees and accommodate the projected growth in flight hours

**“The pilot shortage is a real problem. Our pilots are aging out and we simply cannot compete with the airlines for the younger pilots.”**

U.S. Operator

4. After Covid-19, Aviation Faces A Pilot Shortage (oliverwyman.com)

5. Where Have All the Pilots Gone? - FLYING Magazine

6. Pilot Outlook Demand - Summary | CAE

7. Careers in Business Aviation | NBAA - National Business Aviation Association



## SUPPLY CHAIN PROBLEMS LINGER POST-COVID

This is the year the global supply chain is supposed to bounce back, which is welcome news for business aviation operators. In the 2022 Outlook, various operators expressed frustration with their ability to find essential aircraft parts and materials to make repairs and perform routine maintenance activities. They report that tires are especially hard to get.

The prolonged pandemic, trade wars and tariffs, skyrocketing fuel prices and other factors caused havoc throughout the global economy in recent years. Raw material shortages, transportation problems, factory shutdowns and skyrocketing prices affected nearly every link in the global supply chain. The aviation industry was not immune.

*“We have been searching for specific parts for our older aircraft, but the parts are no longer manufactured. We could be grounded.”*

**– U.S. OPERATOR**

Aircraft manufacturers and their major suppliers have worked hard to recover from these unavoidable supply chain disruptions, resume their normal operating rhythms and meet their customer commitments.

**“Supply chain issues are a major concern. Tires and electronic components are just not available – we have been waiting for months for replacement parts. It seems the manufacturers can’t support us due to their own logistical issues.”**

U.S. Operator





## **HONEYWELL DELIVERS FOR BUSINESS AVIATION OPERATORS**

For more than a century Honeywell has been finding ways to make flying safer, more efficient and more comfortable. Today we're a leading provider of aircraft engines and auxiliary power units, cockpit and cabin electronics, wireless connectivity systems, mechanical components and much more for leading business jets in every class segment, from very light to very high speed ultra-long range.

To hear more about how our products, systems and software solutions can improve your operations, visit us online or contact your Honeywell representative.



### **For more information**

To hear more about how our products, systems and software solutions can improve your operations, visit us online or contact your Honeywell representative [aerospace.honeywell.com](https://aerospace.honeywell.com)

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IS  
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