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Eight Days a Week

Europe is one of the world's largest and wealthiest economies, with an unmatched heritage of leadership and innovation in far ranging fields from the arts to the sciences and beyond. Discoveries that shape our lives in countless ways have been born in Europe. Democracy, The Magna Carta, The University, The Renaissance, The Agricultural and Industrial Revolutions, The Printing Press, The French Revolution, The Locomotive, The Automobile, The Olympics, Nationalism, Globalism – all emerged from European origins. Some of the earliest advancements in the field of aeronautics were made in Europe, including da Vinci's early designs of flying machines and Newton's foundational work on the laws of motion. From ballooning to dirigible airships and the earliest gliders, Europeans have always been at the leading edge of human flight. The Wright Brothers were embraced not so much at home as in France, becoming instant celebrities with their Wright Flyer at Le Mans in 1908 and adding to an excitement about all things aeronautics and aviation that continues throughout Europe today. And who can ever dismiss the many contributions of a foursome from Liverpool who jetted across the world while teaching us about love and life – Eight Days a Week. For those of us who are inspired by the work and who look forward to making a difference in the days ahead, eight days a week never seems like enough time.

Industry leaders, advocates, and stakeholders

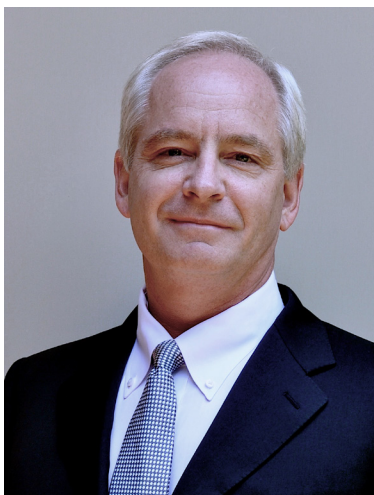
have been working tirelessly to understand the new realities in our world of COVID-19, and some are shaping policy. In this issue of JETNET iQ PULSE, at a time when many of us would have been en-route to Geneva and EBACE 2020, our focus is on Europe, and we are delighted to be joined by Athar Husain Kahn, Secretary-General of the European Business Aviation Association (EBAA), who shares his views on how the industry gets back to business in the days and months ahead.

Around the world, lockdowns, shutdowns,

“Europeans have always been at the leading edge of human flight”

closures, and other forms of necessary restrictions to contain the rapid spread of the deadly coronavirus appear to be working – both in containing outbreaks and limiting the ensuing healthcare crisis. Nevertheless, aircraft groundings, shuttered factories and facilities, and furloughed employees are tragic, highly visible, but thankfully temporary manifestations of well-intended policies. Every day of the week, it is all about keeping people safe and ensuring business continuity in the epic COVID-19 shock of unimaginable proportions.

Rollie Vincent
JETNET iQ Creator/Director



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Outlook

Although this should normally be a time for unity, competing forces seem to be at work each day to tug at our sympathies, whether for the health and safety of our fellow man or that of our broader economy. This is a false dilemma – we need both, of course. The key to getting us all out of this quagmire is, without doubt, the discovery of a blessed vaccine, which itself almost demands international collaboration. Although internet connectivity, web-based tools, and the good old-fashioned telephone will have to do for now, these technologies are only complementary to face-to-face connections that are at the foundation of mutual trust and cooperation. Business aviation is uniquely positioned to serve these needs. Thankfully, air travel will eventually recover, led by business aviation. Signs of better days ahead include the beginnings of a modest rebound off of the floor – with ~70% lower business jet flight cycles and hours in Europe, and even higher in North America in April 2020 YOY. Early indicators for May 2020, supported by anecdotal insights from aviation professionals, suggest that month-over-month utilization is trending upwards, albeit at levels that are still way off where they were as recently as February 2020.

A stepwise progression upwards in business aviation’s pyramid of customers is in its early stages. A bizarre consequence of COVID-19 - but one that we should gladly and collectively embrace (when we are permitted to embrace as a society once again) is that the demand for business and private aviation will almost certainly increase in the future. Qualified prospective customers who need to travel as the recovery takes hold are already struggling with the thought of getting into a potentially unsafe situation that is one of the realities of public transportation. Whether at car parking or curbside drop-off, check-in counter, security and customs lineup, boarding area and loading bridge, or airliner cabin, the dense-packed nature of the commercial airline travel experience is well established. Sprinkle in the realities of traveling with team and family members (both young and old) and many organizations and individuals of means will be evaluating their best options. Some will experiment while others will shift their travel spend; in any event, and barring any unfair burden imposed by fee-charging and taxing authorities, business aviation operators should expect and be planning for bluer skies ahead. Talent (remember the talent shortage?) is suddenly widely available, in a world where London Heathrow (LHR) and Frankfurt Airport (FRA) passenger traffic was down 97% in April 2020 YOY. Tellingly, air cargo tonnage processed through FRA was off only 21% over the same timeframe at one of Europe’s key air logistics hubs, driven down mostly by lower belly capacity normally available on passenger airliners. Flight cycles at what is today’s busiest European airport were down 85% in April 2020 YOY, a spectacular drop that mirrors the seriousness of measures being taken to contain the coronavirus. The good news is that the business of moving goods by air – buoyed now by hyper time-sensitive medical supplies and equipment – is more than alive, it has grown.

The safest and most flexible way to travel by air over long distances is in a professionally-flown business aircraft, yet asset utilization levels have with a few notable exceptions been just a fraction of those of commercial airliners. We believe that here are business models waiting to incubate in the post-COVID-19 world of business aviation. A collective challenge that may take the next da Vinci to resolve is the discovery and perfection of technologies that drive much higher business & general aviation aircraft utilization, dramatically lower the all-in costs of ownership and operation, while enhancing safety and environmental sustainability to levels we have yet to experience. Crises like COVID-19 are the well-disguised keys to fundamental change that then can quickly become the new norm. If history is a teacher, Europeans will once again be amongst the vanguards – *les avant-gardes* – of these future-shaping discoveries. Whether in the form of web-enabled networking and automation, “Big Data” mining, electric propulsion, super-lightweight materials and nanotechnologies, next-generation design and precision manufacturing tools, robotics, 6th generation fighter aircraft and unmanned aerial systems, ultra-efficient and highspeed powerplants, and the next horizons in space, Europe will take the backseat to no one.



Preparing the Return to Service for European Business Aviation



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*“As the voice of Business Aviation in Europe,
we are working tirelessly with policy-makers
and our community to plan a return to
normal operations as soon and as safe as possible.”*

Just like the broader aviation industry, the COVID-19 crisis severely impacted the European Business Aviation sector. In April, EUROCONTROL observed a 71% decrease in European business aviation traffic compared to the same period last year. The flights still operating are largely attributed to COVID-19 humanitarian efforts. Now that the first shock is behind us, many Business Aviation operators, and their teams are thinking, “when – and how – will we be able to start up again?”

In March 2020, we started publishing regular operational guidance to our COVID-19 Resource Centre to aid the industry in continuing to operate during the peak of the crisis. At the same time, we published an open letter calling for policymakers across Europe to consider all recovery and relief measures available to safeguard our members’ operational and business continuity. To better understand the effects of the crisis, we launched a study amongst Business Aviation CEOs in Europe. It revealed that estimated financial losses due to the crisis range from 50-90%, with the most pressing financial issues being staff retention, fixed location costs and taxes. The operational guidance and data we gathered proved to be essential in our discussions with EU policymakers by keeping them informed of the impact and ways of working of our industry during this crisis.

Working together towards a return to service

As the voice of Business Aviation in Europe, we are working tirelessly with policy-makers and our community to plan a return to normal operations as soon and as safe as possible. On 30 April, we presented a second open letter. It outlined our recommendations for a safe return to operations and highlighted business aviation’s ability to support and accelerate Europe’s post-crisis recovery. We are glad to see that the guidelines published by the European Commission last week reflect many of the points we have raised. The guidelines recognize connectivity and transport as key enablers in the recovery and highlights that cooperation between all aviation stakeholders will be crucial to facilitate a gradual return to service.

Moving forward, EBAA will work with our community to prepare the sector’s exit strategy, develop industry guidance and facilitate its implementation. Safety is – and always will be – our priority.



ONE JOURNEY TOGETHER

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you safe, secure and connected.



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Business Conditions

GDP



IMF's GDP growth forecast

is for the US and Euro Area economies to shrink by 5.9% and by 7.9% in 2020, an unprecedented adjustment in its outlook from January 2020



Business jet cycles (take-offs and landings) in April 2020 were down YOY, by 78% (U.S. Part 91), 74% (U.S. Part 135), 84% (U.S. Part 91K) and 68% (Europe - all operations)



The **Dow Jones Industrial Average** (New York) was down 18% from January 2 to May 15, 2020 and 8% YOY; The **FTSE 100** (London) was down 24% over the beginning of the year and 21% YOY



U.S. and Euro Area **consumer confidence** was down sharply by 11.8% and 95.7% respectively in April 2020 vs. March; fear and containment of COVID-19 continue to be the dominant concerns today in restoration of global confidence



U.S. initial **unemployment claims** were 36.5 million in the 8 weeks ending May 9, 2020; U.S. official unemployment was 14.7% in April 2020



U.S. and Euro Area **business confidence** dropped by 15.5% (from 49.1 to 41.5) and by 547% (from -0.28 to -1.81) respectively in April 2020 vs. March



Transactions of pre-owned business jets (retail sales and leases) in March 2020 were down 21% YOY and down 15% month-over-month based on the latest JETNET data



Q1 2020 earnings reports highlighted furloughs, logistics and supply chain challenges that are constraining customer deliveries and new sales; some OEMs are much better positioned than others to weather the storms

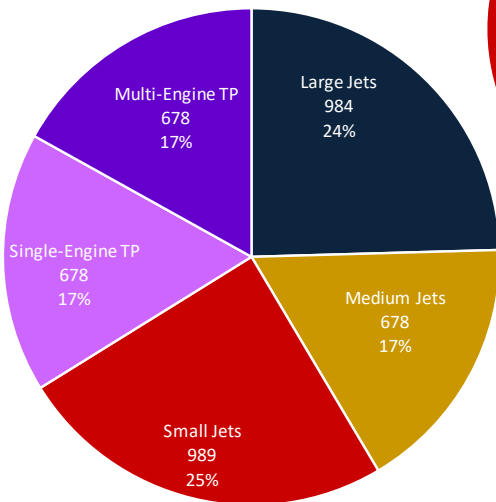
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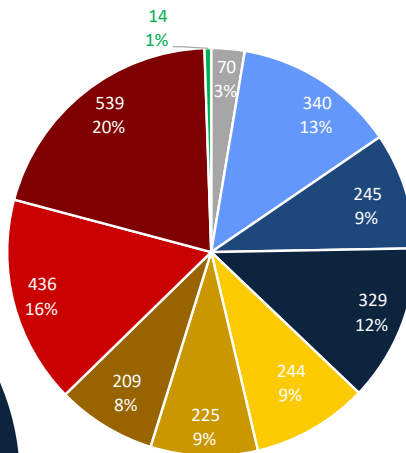
Business Aircraft Fleet

Europe - March 31, 2020

Business Jet and Turboprop Fleet



Business Jet Fleet



- Airliner Business Jets
- Large Ultra Long-Range Jets
- Large Long-Range Jets
- Large Jets
- Super Mid-Size Jets
- Mid-Size Jets
- Super Light Jets
- Light Jets
- Very Light Jets
- Personal Jets
- Single-Engine Turboprops
- Multi-Engine Turboprops

Current Fleet	Europe
Large Jets	984
Medium Jets	678
Small Jets	989
Single-Engine TP	678
Multi-Engine TP	678
Total	4,007

JETNET databases updated through March 31, 2020 provide rich details on the business aircraft fleet in Europe, which includes ~4,000 aircraft, split between business jets (66% of the total) and turboprops (34%). Very Light Jets make up about 20% of the European business jet fleet, compared to 15% in both North America (U.S. and Canada) and the rest of the world. About 37% of European-based business jets are large-cabin models or airliner business jets, considerably higher than in North America (~25%) and worldwide (~29%).

In April 2020, utilization of the European-based Very Light Jet fleet (consisting of aircraft such as the Citation CJ1 and M2, Embraer Phenom 100, and HondaJet) was holding up better than any other

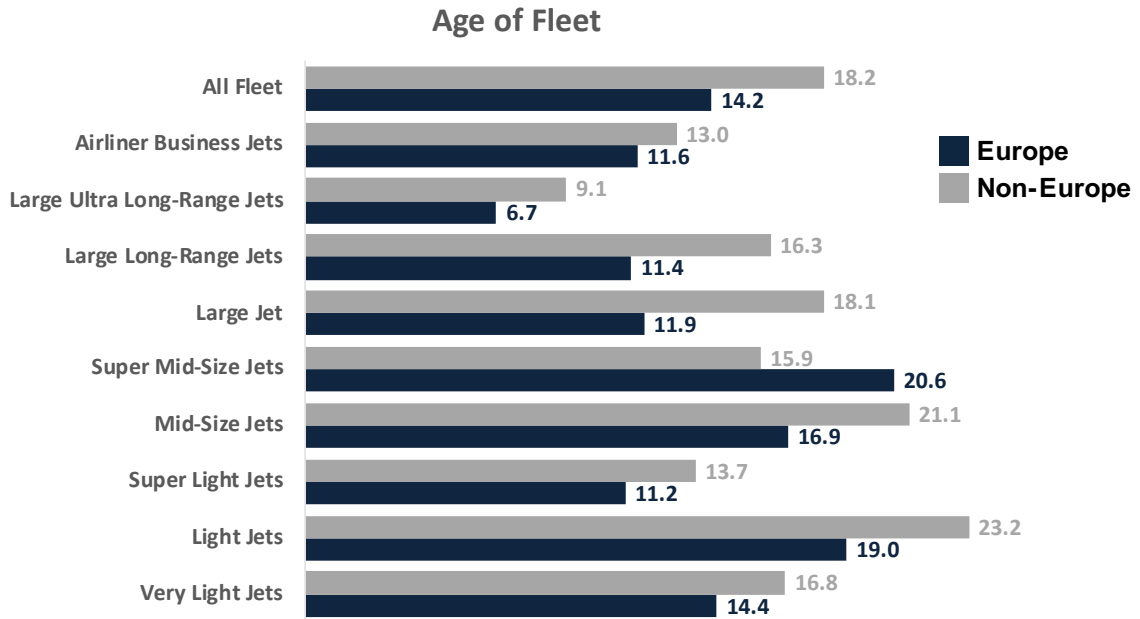
business jet size category, yet was still down by 59% YOY. Large-cabin jet cycles were off by ~75% in April 2020 YOY, as social distancing, stay-at-home orders, and border closures keep the majority of business aircraft on the ground for the time being.

The European-based business aircraft fleet average utilization was ~350 flight hours per aircraft per year for the 12-months ending Q1 2020, according to JETNET iQ Survey respondents. This was about 6% higher than the global average for business jets and turboprops combined, no doubt influenced by the somewhat younger fleet in operation across Europe.

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Fleet Age

By Business Jet Size Category in Years Since Delivery – Worldwide
March 31, 2020



The European-based business jet fleet is about 14 years old on average, about 22% younger than the worldwide average based on JETNET databases through May 15, 2020. Almost 87% of business jets ever delivered were still in operation worldwide at the end of Q1 2020, a testament to their robust and reliable designs, and on-going utility. Worldwide, ~200 business jets that were originally delivered in

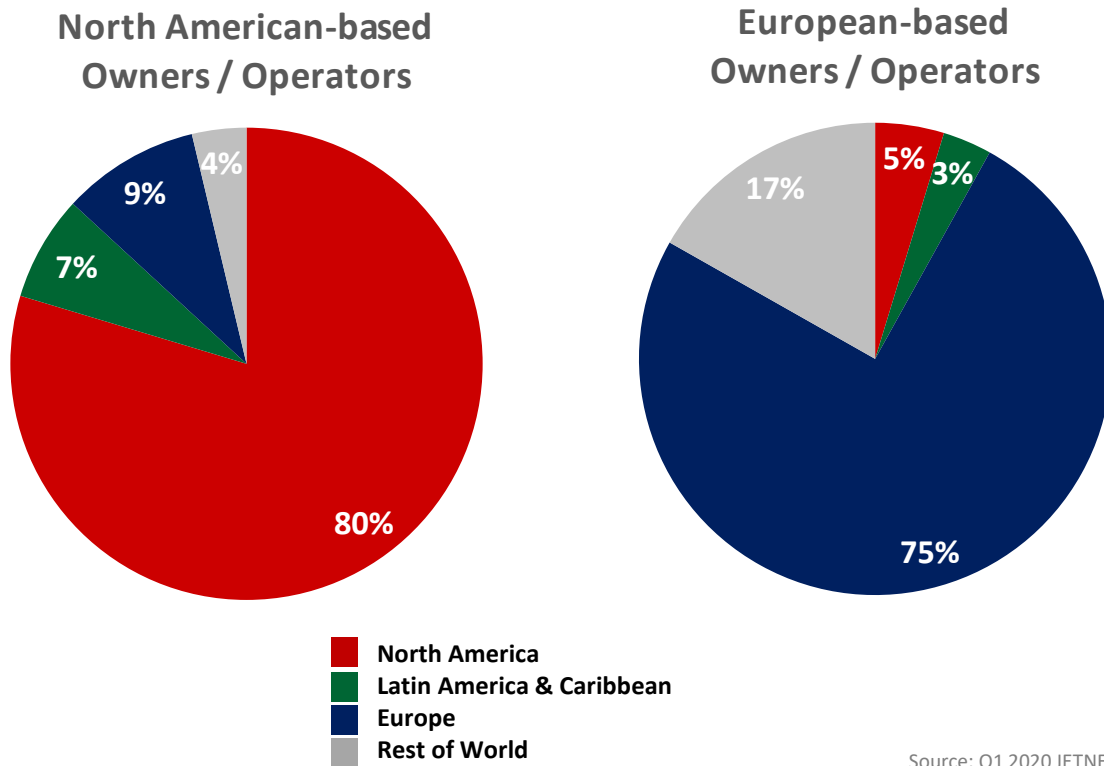
the 1960s remain in operational service, led by the venerable Falcon 20C and HS125-1B.



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Landings

Two Different Worlds: Where JETNET iQ Survey Respondents Landed Their Aircraft in the Past 12 Months



Source: Q1 2020 JETNET iQ Survey

Based on flight operations insights gleaned from the Q1 2020 JETNET iQ Global Business Aviation Survey (which included 508 respondents from 59 countries worldwide), North American and European owners and operators in some ways live in two different worlds. North American-based respondents (U.S. and Canada) indicated that they landed their aircraft at a North American airport 80% of the time in the prior 12 months. During the same period, European respondents

also focused their flight operations locally, with 75% of landings at a European airport, and just 5% of the time in North America. While there is considerable overlap in the types of aircraft in operation in these two regional markets (accounting for 72% of the world business aircraft fleet), the challenges faced by owners / operators can be quite unique.

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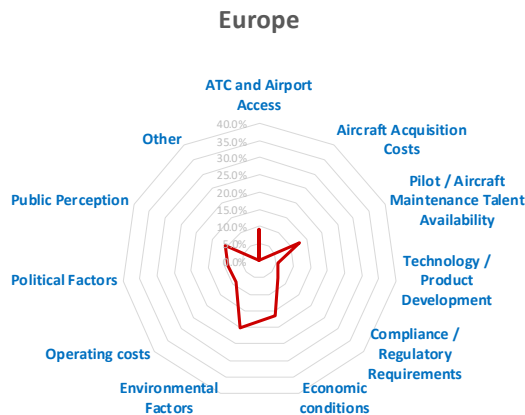
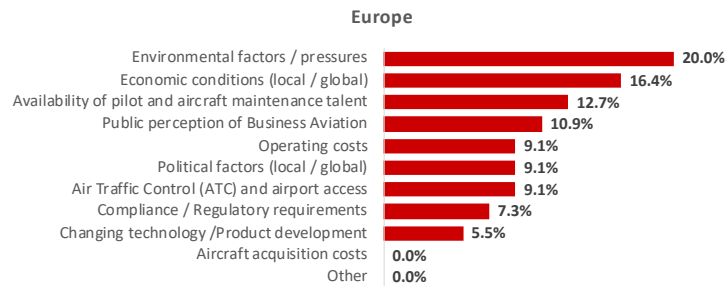
Challenges in Next 5-10 Years

What's Greta Thunberg Got To Do With It?

Although it may be difficult to focus on or even imagine challenges facing the business aviation industry beyond COVID-19, it is important for all of us – from advocacy groups like EBAA, NBAA, and GAMA to the aircraft manufacturers and their suppliers, aircraft charter / fractional / management companies, FBOs, MROs, investors, and other stakeholders - to be prepared for what could be a strong rebound from the depths of the crisis. Our Q1 2020 JETNET iQ Survey of business aircraft owners / operators provided some insights into the challenges they believe we face as an industry over the next 5-10 years. In Europe, most prominently amongst these “top of mind”

issues are environmental factors, an issue that became a flashpoint in 2019 with the rise of the *flygskam* flight shaming movement, now essentially absent from the news headlines dominated by COVID-19. Interestingly, more than half of European respondents in Q1 2020 indicated that they would seriously consider operating with sustainable aviation fuel (SAF) in the next 24 months. Business aircraft owners / operator in other regions of the world, while acknowledging the importance of sustainability, do not rank environmental factors amongst their top concerns, and suggest that they are less likely to fly with SAF.

“Top of Mind” Challenges Facing the Business Aviation Industry in the Next 5-10 Years European Respondents to Q1 2020 JETNET iQ Survey



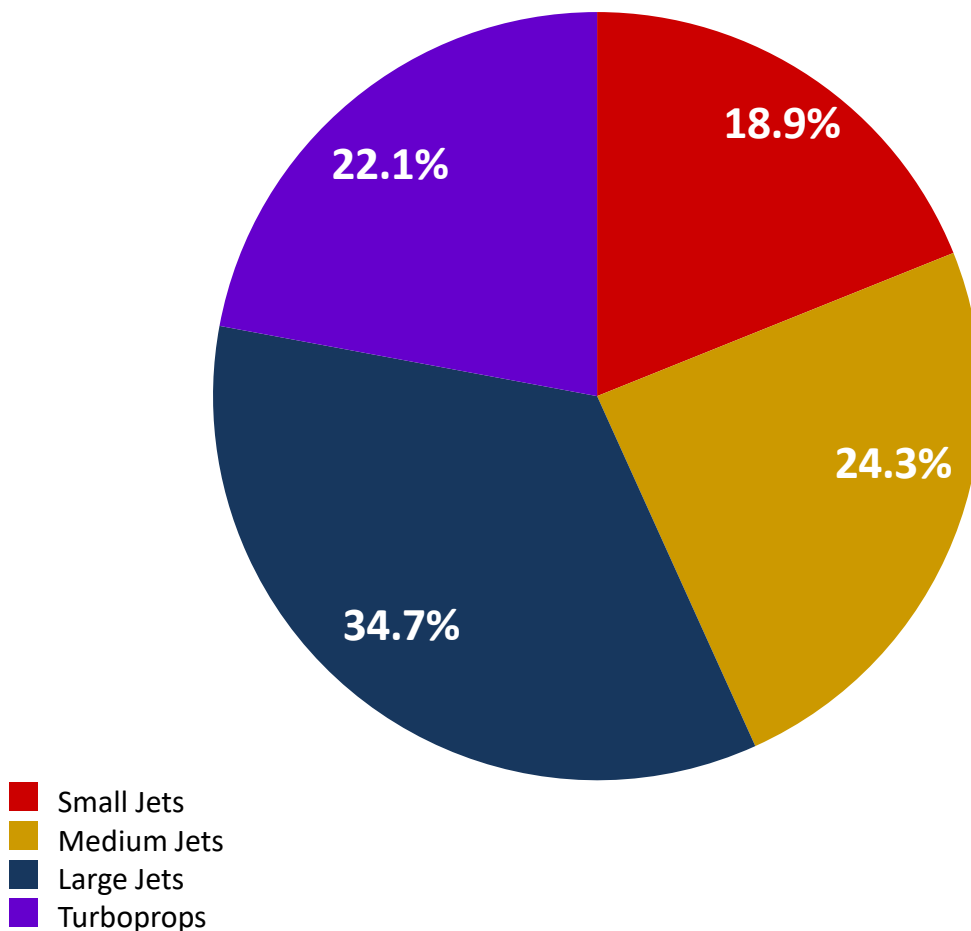
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On the Radar

Despite the dark skies that seem to loom over much of the world, better days and bluer skies are ahead. Respondents to JETNET iQ Surveys over a 1-year period from Q2 2019 through Q1 2020 have expressed considerable interest in new or recently improved aircraft models. Based on more than 2,000 owner / operator respondents worldwide, the models that were mentioned most often as their

company's next new business aircraft purchase cover the spectrum from light jets through the ultra-long range size category. About 35% of business aircraft on customers' "next purchase" radar are large cabin business jet models offered by Gulfstream, Bombardier, and Dassault.

Most Likely Next New Business Aircraft Purchase Worldwide Respondents to Q2 2019-Q1 2020 JETNET iQ Surveys



About JETNET iQ

JETNET iQ is a business aviation market research, analysis and forecasting service consisting of three main elements:

JETNET iQ Reports are the definitive analytical reference for business aviation, incorporating quarterly state-of-the-industry analyses, owner / operator surveys, and detailed delivery and fleet forecasts;

JETNET iQ Summits are annual industry conferences providing unique data, insights and networking opportunities; and

JETNET iQ Consulting provides customized research and analysis for clients on a project-by-project basis.

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Since late 2010, JETNET has conducted quarterly surveys of the worldwide community of business aircraft owners and operators in order to gauge customer sentiment, brand perceptions, aircraft purchase, selling, and utilization expectations, and other factors. JETNET iQ Global Business Aviation Surveys are password-protected and by invitation-only. Potential respondents are drawn randomly from the JETNET worldwide database of business jet and business turboprop owners and operators; they are initially contacted by telephone and/or e-mail by JETNET's team of multilingual researchers. Target respondents include chief pilots, directors of aviation, and senior management. Each survey includes at least 500 respondents in 50 or more countries each quarter, and respondents closely reflect the worldwide distribution of the business jet and turboprop community.

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Appendix

Data sources:

London Heathrow Airport traffic: <https://www.standard.co.uk/business/heathrow-records-97-drop-in-april-passenger-numbers-as-boss-calls-for-borders-reopening-plan-a4436736.html>

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GDP growth forecasts (2020): International Monetary Fund – World Economic Outlook – April 2020
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Stock Markets:

Dow Jones Industrial Average (DJIA): <http://ca.spindices.com/indices/equity/dow-jones-industrial-average>

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Unemployment: Bureau of Labor Statistics (U.S.); <https://www.dol.gov/ui/data.pdf>

Consumer Confidence: University of Michigan Survey of Consumers (U.S.); European Commission (Euro Area) – Economic Sentiment Indicator

Business Confidence: US ISM Manufacturing PMI (U.S.); European Commission (Euro Area)

Business aircraft fleet, deliveries, transactions, utilization: JETNET

Survey results: JETNET iQ Global Business Aviation Surveys (Quarterly); JETNET iQ COVID-19 Mini-Survey (April 2020)

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Definitions and Abbreviations:

For the purposes of these Reports, business aircraft may be classified into 4 primary categories, reflecting propulsion, price, performance, and weight class differences. These categories are: Turboprops (Single-Engine Turboprops - SETP and Multi-Engine Turboprops - METP), Small Jets (Personal Jets, Very Light Jets, Light Jets), Medium Jets (Super-Light Jet, Mid-Size Jet, Super Mid-Size Jet), and Large Jets (Large Jet, Large Long-Range Jet, Large Ultra Long-Range Jet, Airline Business Jet). The "Personal Jet" category includes single-engine turboprop-powered models, today represented by the Cirrus Vision Jet.

DJIA: Dow Jones Industrial Average (New York)

EIS: Entry in Service

FTSE: Financial Times Stock Exchange (London)

GDP: Gross Domestic Product

OEM: Original Equipment Manufacturer

TTM: Trailing Twelve Months

YOY: Year over Year

YTD: Year to Date

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