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## Up - Up and Away

The Year 1967 was witness to an explosion of R&B and pop music, including the Grammy Award-winning debut hit *Up – Up and Away* by The 5<sup>th</sup> Dimension. The song became a cornerstone of U.S. airline TWA's branding that year, featuring in TV ads that enticed would-be world travelers into the skies. Many of them transited through the Trans World Flight Center, the airline's iconic Eero Saarinen-designed "jet age" terminal that opened its doors wide in 1962. Like some of the music of the 1960s, the TWA Flight Center continues to fascinate those who appreciate great design and the prominent role of aviation in charting pathways to the future.

Our 10<sup>th</sup> JETNET iQ Global Business Aviation Summit was nothing short of a spectacular success, bringing leaders from across the industry together and in person, many for the first time in 18+ months. Aptly described as a "gathering of eagles," the 2021 Summit welcomed industry titan after titan to the podium, with an agenda focused on thought leadership and strategic action. Key topics of focus throughout the day-and-a-half agenda included market and technological development, talent, environmental sustainability, investor expectations and investment strategies, industry advocacy, customer service experiences, supply chain constraints, and aircraft valuations. Consultant

David Porter masterfully brought Day 1 to a conclusion with a powerful commentary on leading through momentous change, a topic that resonated throughout the wide-spanning conference facility.

NATA head Tim Obitts moderated a high-powered environmental sustainability panel to close out Day 2 that provided fresh insights into progress that is being made on many fronts towards our greener skies.

With the largest attendance to-date of any JETNET iQ Summit, the feedback from attendees was exceptional, with an average satisfaction rating of 4.9 on a 1-to-5 scale in on-line exit surveys.

***"...the feedback from attendees was exceptional, with an average satisfaction rating of 4.9 on a 1-to-5 scale in on-line exit surveys."***

The Summit was also a technological success, incorporating audience participation and the occasional remote panelist through on-line technologies that worked crisply and without interruption. Even the weather cooperated, as attendees took full advantage of the iconic venue to enjoy a special outdoor reception by the hotel's Lockheed Constellation lounge. Will we be back in '22? Oh ya. Our 2022 Summit planning team is already up, up and away!

Rollie Vincent  
JETNET iQ Creator/Director



## Outlook

The mood of the worldwide business aircraft owner / operator community has rebounded sharply from the depths of the COVID crisis and associated economic recession, which reached its nadir in the middle of 2020. Net Optimism, which measures the difference in the percentage of respondents who believe that the business aviation industry is past the low point in the current business cycle less those who believe we have not yet reached the low point, reached above 68% and an 11-year high in Q3 2021, after cratering at -43% in Q2 2020.

With the current survey more than 80% complete, “Optimists” outnumber “Pessimists” by a factor of 8-to-1 so far in Q3 2021, a noteworthy customer metric that is fueling the demand for new and pre-owned aircraft and driving higher flight activity in 2021. With pre-owned business aircraft inventory as a percentage of the in-service fleet at all-time lows in late September 2021, would-be pre-owned buyers are flocking with their

brokers / dealers to the doors of the business aircraft manufacturers, helping to restore order backlogs after a seemingly endless drought since the Global Financial Crisis.

How sustainable is the current demand? That’s a good question. Perhaps an even more poignant question is: How well is the supply chain coping with the current level of demand? While pricing power has certainly returned to the OEMs, and market conditions continue to favor the seller, aircraft factories are only now beginning to ramp back up, and talent has become both hard to find and more expensive – or has it? The talent topic was front-and-center at the 2021 JETNET iQ Summit, with conversations focused on diversity, equity, and inclusion. We are today facing a classic 1<sup>st</sup> World problem of more demand than supply, a challenge facing many industries today. What a difference a few quarters make!

### Where is the Business Aviation Industry in the Current Business Cycle?

JETNET iQ Global Business Aviation Surveys of Aircraft Owners / Operators Worldwide

### Overall Worldwide Net Optimism by Quarter



Source: JETNET iQ Global Business Aviation Surveys; Q3 2021 Survey in progress (n=404 respondents from 52 countries to date)

## Business Conditions

### GDP

The Economist's **GDP growth forecasts** for 2021 are: U.S. +6.0%, Euro Area +4.8%, U.K. +6.6%, Mexico +6.4%, Brazil +5.5%, Canada +5.4%, China +8.0%, Russia +3.8%, and Australia +4.3%



**Business jet cycles** (take-offs and landings) in August 2021 were up by 19% YOY for U.S. Part 91, up by 100% YOY for U.S. Part 91K, up by 77% YOY for U.S. Part 135, and up by 29% for European EASA 145 operations



**Dow Jones Index** (U.S.) was up 25%,  
**FTSE 100** (U.K.) was up 19%,  
**CAC 40** (France) was up 35%, and  
**DAX 30** (Germany) was up 19%  
YOY from Sept. 29, 2020 to Sept. 28, 2021



U.S. Index of **Consumer Sentiment** was 71.0 in Sept. 2021 vs. 70.3 in Aug. 2021 and 80.4 in Sept. 2020 YOY;  
Euro Area **Economic Sentiment Indicator** was 117.5 in Aug. 2021 vs. 119.0 in July 2021, and 92.3 in Sept. 2020



**U.S. unemployment rate** (seasonally adjusted) was 5.2% in August 2021 representing ~8.4 million people, down 318K from July 2021 (5.4%)



U.S. **Purchasing Manager Index** (Manufacturing PMI) was 59.9 in Aug. 2021, versus 55.7 in Sept. 2020;  
Euro Area **Business Climate Indicator** was 1.70 in Aug. 2021 vs. 1.90 in July 2021, and -1.4 in Aug. 2020



**Transactions of pre-owned business aircraft** in Jan.-Jul. 2021 were 1,731 jets and 902 turboprops, up 26% and up 41% YOY (JETNET as of Sept. 28, 2021)



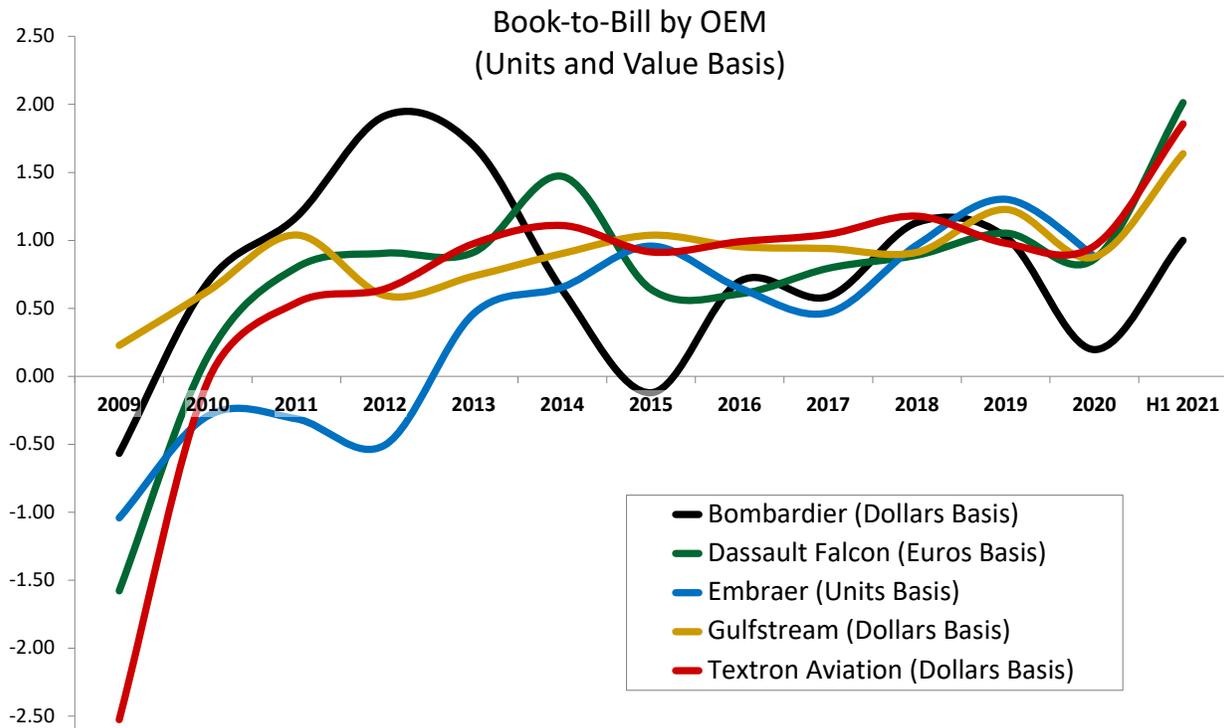
**Business aircraft deliveries** in 2021 YTD are 379 jets (including Cirrus, Boeing, Airbus) and 189 turboprops (JETNET as of Sept. 28, 2021)

## The Moment of Lift

### Business Aircraft OEM Book-to-Bill Performance in 2021

The “Big Five” business aircraft OEMs are experiencing a sharp improvement in demand, reflected in net new order intake and growth in order backlogs. After a short-lived uptick in 2019, collective book-to-bill performance is today stronger than at any time since before the Global Financial Crisis. This is indeed welcome news after a long period of the doldrums. We estimate that backlogs declined ~18% in 2020 on a value basis at the 5

largest OEMs but have essentially recovered that lost business already in the first half of 2021. While we expect book-to-bill ratios to temper somewhat in H2 2021 with the traditional Q4 delivery spikes, there is little doubt that the good times have returned and that the foundations for longer-term success are being poured as new orders continue to be written.



Sources : Regulatory filings; company press releases; JETNET IQ analysis

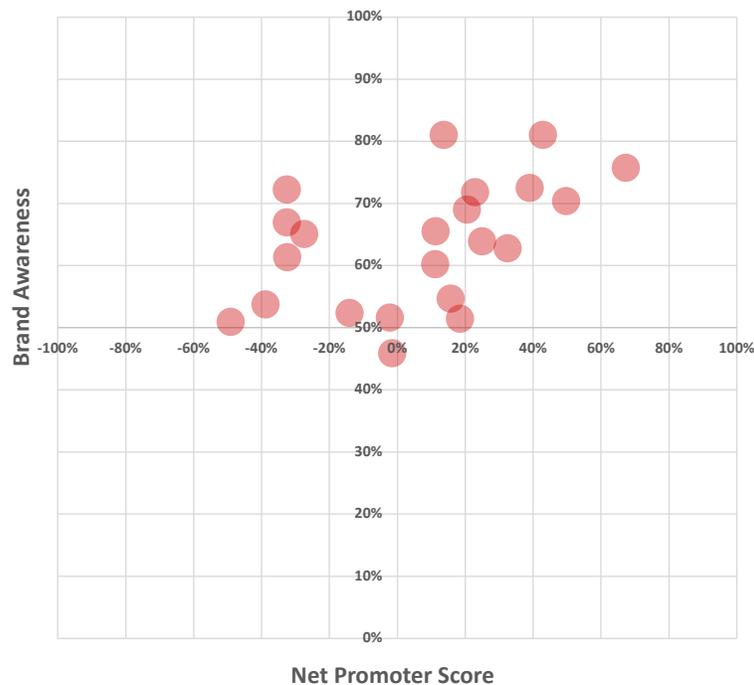
## Business Aircraft Brand Differentiation: It's Real

### JETNET iQ Q3 2021 Brand Awareness and Net Promoter Scores

There are significant differences amongst business aircraft OEMs on key metrics such as brand awareness and Net Promoter Scores (NPS). With most customers purchasing infrequently and one-at-a-time, brand factors are powerful differentiators in the business aircraft industry. Despite their importance in aircraft purchasing, pricing, and valuation, and our industry's focus on metrics management, brand considerations are often treated as intangibles. Our research suggests that about 1/3<sup>rd</sup> of in-production business aircraft brands only achieve about a 50% brand awareness score, and none score much above 80% amongst existing business aircraft owners / operators. Net promoter scores, a measure of a customer's likelihood to recommend the brand to a friend or colleague, vary widely from

+70% to -50%. Whereas an NPS score of +50% is considered "Excellent" (i.e., the number of "promoters" far outweighs the number of "detractors" amongst the customer base), only a handful of business aircraft OEM brands exceed or approach that level of performance in today's marketplace. More than 40% of business aircraft OEM brands that we monitor have more detractors than promoters amongst the customer base, with NPS scores below 0%. For those seeking to know more, our JETNET iQ survey research can shine a bright light on areas of high performance and work-to-be-done for those seeking to improve their market position, align themselves with market-leading brands, and/or to advise their clients and other stakeholders on these key performance indicators.

**Business Jet and Turboprop Brand Awareness Versus Net Promoter Score**

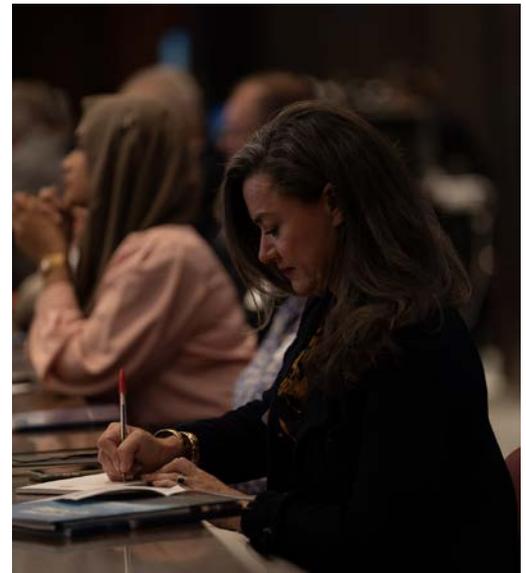


Source: Q3 2021 JETNET iQ Global Business Aviation Survey (in progress); n = 404 owner / operator respondents from 52 countries

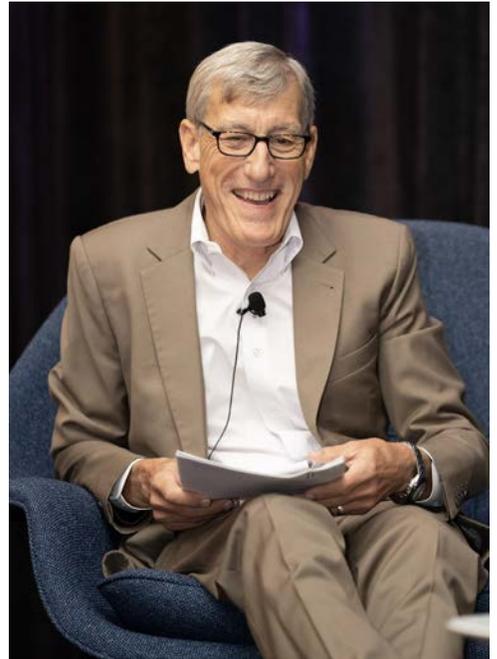
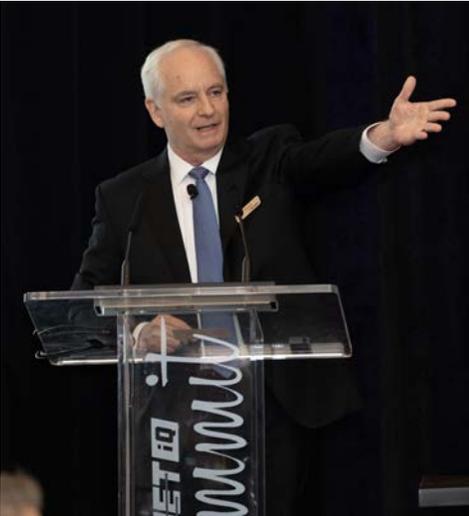
## The Eagles have Landed

2021 JETNET iQ Summit at TWA Hotel at New York JFK Airport: Our Largest-Ever















## 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 Advisory** provides customized research and analysis for clients on a project-by-project basis.

JETNET iQ Reports are available in various formats on a subscription basis, and are published regularly by JETNET LLC, 101 First Street, Utica, NY 13501 - **currently offered at 11 different levels**. JETNET iQ is a partnership between JETNET LLC of Utica, New York and Rolland Vincent Associates, LLC, of Plano, Texas.

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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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e-mail: paul@jetnet.com

## Appendix

### Data sources:

**Real GDP growth forecasts (2021):** The Economist – September 23, 2021

<https://www.economist.com/economic-and-financial-indicators/2021/09/23/economic-data-commodities-and-markets>

**Stock Markets:**

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

London Stock Exchange (FTSE 100): <https://www.londonstockexchange.com/indices/ftse-100>

Euronext Paris (CAC 40): <https://live.euronext.com/en/product/indices/FRO003500008-XPAR>

Frankfurt Stock Exchange (DAX 30): <https://www.boerse-frankfurt.de/indices/dax?mic=XETR>

**Initial Unemployment Claims:** Bureau of Labor Statistics (U.S.); <https://www.dol.gov/ui/data.pdf>; "SA" = seasonally adjusted

**Unemployment:** Bureau of Labor Statistics (U.S.); <https://www.bls.gov/news.release/pdf/empisit.pdf>

**Consumer Confidence:** University of Michigan Survey of Consumers (U.S.); <http://www.sca.isr.umich.edu>

European Commission (Euro Area) – Economic Sentiment Indicator; [https://ec.europa.eu/info/sites/info/files/full\\_bcs\\_2021\\_08\\_en.pdf](https://ec.europa.eu/info/sites/info/files/full_bcs_2021_08_en.pdf)

**Business Confidence:** U.S. ISM Manufacturing PMI (U.S.)

<https://www.ismworld.org/globalassets/pub/research-and-surveys/rob/pmi/rob202107pmi.pdf>

Eurostat (Euro Area); <https://ec.europa.eu/eurostat/databrowser/view/teibs010/default/table?lang=en>

[https://ec.europa.eu/eurostat/databrowser/view/ei\\_bsci\\_m\\_r2/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/ei_bsci_m_r2/default/table?lang=en)

**Business aircraft fleet, deliveries, transactions, days-on-market (DOM), utilization:** JETNET; GAMA

**Survey results:** JETNET iQ Global Business Aviation Surveys (Quarterly)

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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.

B&GA: Business & General Aviation  
EIS: Entry in Service  
FBO: Fixed Base Operator (private air terminal)  
FTSE: Financial Times Stock Exchange (London)  
GAMA: General Aviation Manufacturers Association  
GDP: Gross Domestic Product

HNWI: High Net Worth Individual  
MTOW: Maximum Takeoff Weight  
NGO: Non-Governmental Organization  
OEM: Original Equipment Manufacturer  
QOQ: Quarter over Quarter  
QTD: Quarter to Date

S&P: Standard & Poor's  
TTM: Trailing Twelve Months  
WHO: World Health Organization  
YOY: Year over Year  
YTD: Year to Date

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