

- 1 Editorial
- 2 Outlook
- 3 Navigating through the COVID-19 Pandemic
- 5 Business Conditions
- 6 U.S. BizJet Cycles by Segment
- 7 Pre-owned Jet Transactions
- 9 Loss of Residual Value
- 10 New Aircraft Financing
- 11 Pre-owned Aircraft Financing
- 12 On the Radar
- 13 About JETNET iQ
- 14 Appendix

Here Comes the Sun

For those suffering its harshest consequences, it may indeed seem like years since COVID-19 has been here, despite its pandemic declaration by the World Health Organization just 99 days ago. And what an unprecedented time it has been – with impacts that nobody foresaw, and that look to be with us through a blazing hot Northern Summer and beyond. With massive disruptions to our economies, businesses, and ways of life, it is clear that pressures are mounting to return to “normal,” although this may need to be redefined. Across the business and general aviation (B&GA) industry, individuals and organizations are already in advanced preparations to return to serving their customers in ways that demonstrate both their commitment to the Golden Rule and to sustainable business practices.

We are delighted to welcome Pete Bunce, GAMA’s President and CEO, in this issue of JETNET iQ PULSE, as he shares his insights on the many ways the B&GA industry is preparing for a return to business. Along with NBAA’s Ed Bolen and EBAA’s Athar Khan, Pete has been an insightful speaker and industry advocate – and one of our JETNET iQ Summit “regulars” – over the years.

It seems fitting that this issue of JETNET iQ PULSE is sponsored by Embraer. One of the pioneer companies in the rejuvenation of the U.S. Space

Coast, the company is joined by other leading aerospace employers, including SpaceX, Boeing, Northrop Grumman, Collins Aerospace, Leonardo DRS, L3 Harris, Satcom Direct, and soon Aerion Supersonic. In some ways anchoring these organizations together is Florida Institute of Technology, a Tier 1-ranked university offering doctoral-level degrees in fields as varied and vital as aerospace and biomedical engineering, and (one of my personal favorites) human-centered design. If there is one thing that distinguishes many of the most successful organizations in our industry, it is that they take a people-centric approach to their business. Much like the second-act success of the Space Coast, the “secret sauce” begins with smart designs that span much more than the physical hardware for which our industry is known. Mix in bright-eyed and well-trained talent, under-utilized airport facilities, and communities eager to support entrepreneurial investments, and the future, like the rising sun, suddenly becomes brighter.

“The “secret sauce” begins with smart designs that span much more than the physical hardware for which our industry is known.”

Rollie Vincent
JETNET iQ Creator/Director



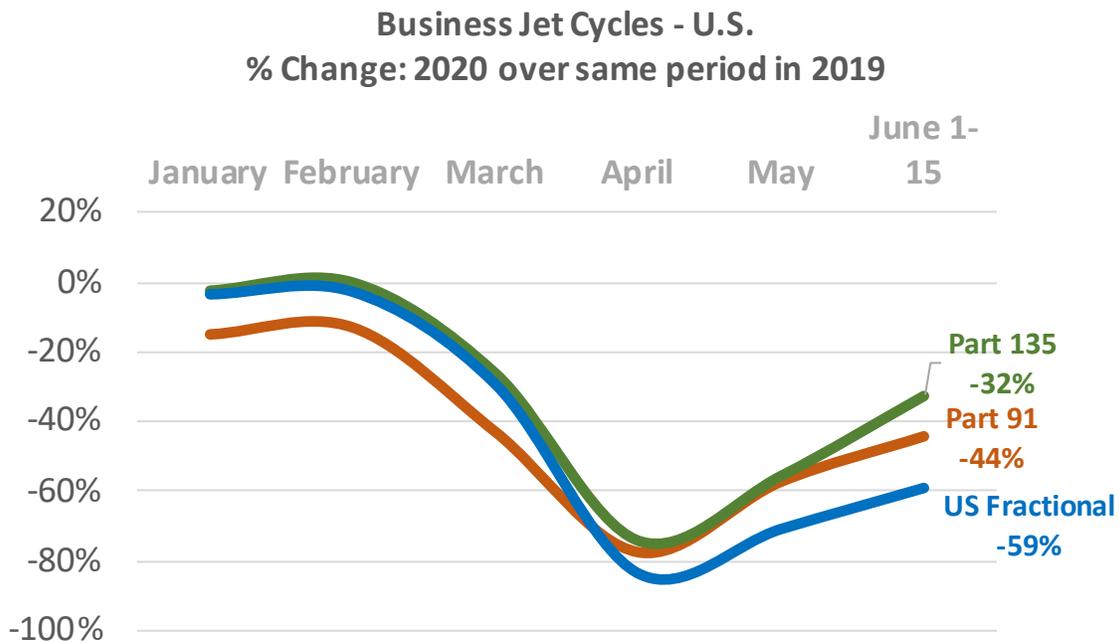
This issue of JETNET iQ PULSE is sponsored by:



Outlook

Business jet activity has been rebounding off of April 2020 lows, an activity level that will be one for the history books. As we had expected, on-demand commercial charter operations (so-called Part 135) in the United States have bounced back faster than other operating segments, including non-commercial Part 91, and fractional ownership programs (Part 91K). The troughs reached in April 2020 were off 74% (U.S. Part 135), 78% (U.S. Part 91), and 84% (U.S. Part 91K) year-over-year (YOY), an historical drop-off that has tested any aviator’s tolerance for negative g-forces. The stress cracks that such a deceleration may have caused were blunted somewhat by the quick response of customers, operators, and (impressively) legislators who recognized a Black Swan when one hit the windshield at FL450.

We continue to believe that aircraft utilization will be amongst the first of the many industry metrics to recover, although the timing of any recovery is contingent upon the discovery of a vaccine, and not our patience with the slow pace of our return to “normal.” In late March 2020, Dr. Anthony Fauci, America’s top infectious disease expert, put a realistic spin on a schedule for both the discovery and widespread deployment of a vaccine: “.....you’ve got to understand that you don’t make the timeline, the virus makes the timeline.” If in fact there is a dreaded second wave of COVID-19 infections and fatalities in the U.S., the recovery of business jet operations will be further disrupted and the trajectory curve flattened, pushing out a return to the way things once were. While no one wants this, the relaxation of requirements and guidelines for social distancing and a “let’s get back to work” enthusiasm without precautions will put more lives unnecessarily at risk. Whereas the trajectory of the utilization recovery would appear to put us back to normal in a matter of months, the deep impact of COVID-19 will likely be evident in annualized flight operations data through the 2nd half of 2021, and even longer if we experience a 2nd wave of infections and deaths. The good news is that new methods and sanitized work procedures are already widely implemented across the B&GA industry, where safety has long been ingrained in the work culture, and the up-and-down economic cycles seem completely appropriate for a business based on moving people safely and securely from A to B and beyond.



Navigating through the COVID-19 Pandemic



By Pete Bunce
President and CEO
General Aviation Manufacturers Association (GAMA)

The general and business aviation industry has been facing stiff headwinds and significant turbulence throughout the COVID-19 pandemic. While we have had some success, there remains many obstacles that need to be overcome as the recovery process begins to take shape for this vital sector of the global economy.

The industry has been somewhat fortunate that in the U.S., aviation manufacturing, maintenance and repair operations have been deemed essential, enabling many to continue at some level of production throughout the shutdowns. As such, companies rapidly implemented a wide range of health protocols in accordance with local, regional and national level guidance to keep production, maintenance and training activity churning. Unfortunately, this “essential industry” designation did not extend worldwide, and unique nation by nation health and safety restrictions put in place to respond to the pandemic significantly impeded global operations, supply chains, sales and deliveries.

Throughout this crisis, the General Aviation Manufacturers Association (GAMA) has been closely monitoring activity and working with authorities, regulators and other industry organizations to facilitate regulatory compliance and advocate on behalf of the industry. Preserving jobs in manufacturing and the vitality of our supply chains will be key not only

for our industry’s recovery but also for the global economic recovery. We want to ensure that restrictions do not inhibit the manufacturing, trade or shipments of aircraft, critical parts and components, as well as operations of aircraft. As government loan programs are being updated, we want to make certain those that qualify and need assistance can get the necessary support. As regulatory rules and policies are amended, postponed or altered, we want to ensure that these changes are widely communicated and implemented. Additionally, as we begin to take back the skies, we want to make sure that health and safety guidelines are done in a responsible manner to protect individuals as well as the aircraft.

“..... as we begin to take back the skies, we want to make sure that health and safety guidelines are done in a responsible manner to protect individuals as well as the aircraft.....”

Our industry has a rich history of quickly pivoting and adapting to help humankind in times of crisis. Throughout the pandemic, the general and business aviation industry has played an integral role in the fight against COVID-19. Companies across the globe have supplemented ongoing activities to assist with the relief efforts through the production of masks, shields, gowns and ventilator parts, while others have transported medical personnel and supplies for front line health care workers. We have also seen companies working with their supply chain partners to provide information about financial assistance opportunities as well as best business practices in areas like procurement. Actions like these serve as a testament to the adaptability of our industry, which will play a pivotal role in the recovery process.

Prior to the pandemic, the outlook for the industry looked encouraging, particularly given that in 2019 piston airplane and business jet shipments reached decade highs. The future of our industry shows great promise, especially given the ongoing development of new manufacturing techniques, advanced designs and avionics, supersonic aircraft and smaller electrically propelled vehicles. To overcome the impacts of the pandemic, we will need to draw on the resilience of our industry and the talent and strength of our industry’s phenomenal workforce to pave the way for recovery.

PRAETOR 600: CERTIFIED OUTPERFORMANCE.

Announcing the certified Praetor 600, the world's most disruptive and technologically advanced super-midsize aircraft that leads the way in performance, comfort and technology.

Unveiled at NBAA in October 2018 and now certified by ANAC, FAA and EASA, the Praetor 600 did not just meet initial expectations, it exceeded them. Named for the Latin root that means "lead the way," the Praetor 600 is a jet of firsts. It is the first super-midsize jet certified since 2014. The first to fly beyond 3,700 nm at M0.80. The first with over 4,000 nm range at LRC. The first with full fly-by-wire. The first with turbulence reduction capability. The first with a cabin altitude as low as 5,800 feet. The first with high-capacity, ultra-high-speed connectivity from Viasat's Ka-band. And all of this, backed by a top-ranked Customer Support network.

Learn more at executive.embraer.com/praeator600.



LEADING THE WAY

PRAETOR 600
BY E M B R A E R



CHALLENGE.
CREATE.
OUTPERFORM.

Business Conditions

GDP

The Economist's **GDP forecast** is for the U.S. and Euro Area economies to shrink by 3.8% and by 8.0% respectively in 2020; U.K.'s 2020 growth rate is -8.7%; China is the only major business aviation economy expected to grow in 2020, but by just 1.0%



Business jet cycles (take-offs and landings) in May 2020 were down YOY, by -59% for U.S. Part 91 (an improvement from -78% in April YOY), by -54% for U.S. Part 135 (vs. -74%), by -71% for U.S. Part 91K (vs. -84%), and by -58% for Europe – all operations (vs. -69%)



The **S&P 500 Index** (U.S.) was down 6% YTD from January 2 to June 15, 2020 but up 6% YOY; The **FTSE 100** (U.K.) was down 20% YTD from January 2 to June 15, 2020, and down by 18% YOY



U.S. Index of **Consumer Sentiment** was 71.8 in April 2020, down 29% from 101.0 in February 2020; Euro Area **Economic Sentiment Indicator** was 67.5 in May 2020, down 35% from 103.4 in February 2020 at the onset of the COVID-19 pandemic



U.S. initial **unemployment claims** were 44.2 million in the 12 weeks ending June 6, 2020; U.S. unemployment fell to 13.3% in May 2020, although undercounting of ~5 million "temporary layoffs" would have added 3% points to the totals



U.S. **Purchasing Manager Index** (PMI) was 43.1% in May 2020, down from 50.9% at the beginning of the year; Euro Area **Business Climate Indicator** fell to -2.43 in May 2020, its lowest reading since September 2009



Transactions of pre-owned business jets (retail sales and leases) in January-April 2020 were down 17% to 153/month YOY while days-on-market were up 13% to 293 days/month YOY based on JETNET data



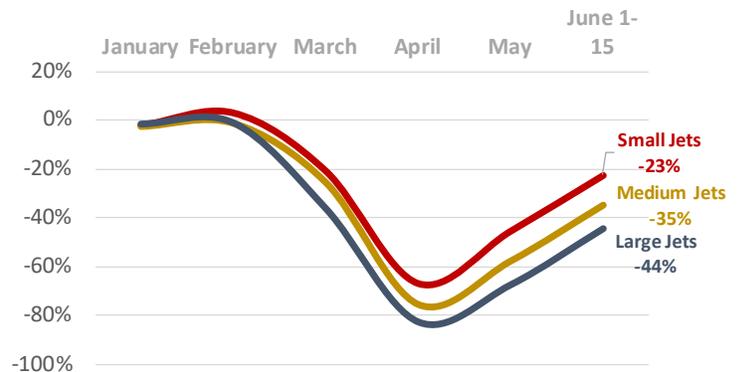
GAMA's Q1 2020 shipments of business jets (114 units) and turboprops (71 units) were down by 19% and 42% YOY, respectively; Q2 2020 shipments are expected to be the low point of the current COVID-19 down cycle

U.S. BizJet Cycles by Segment

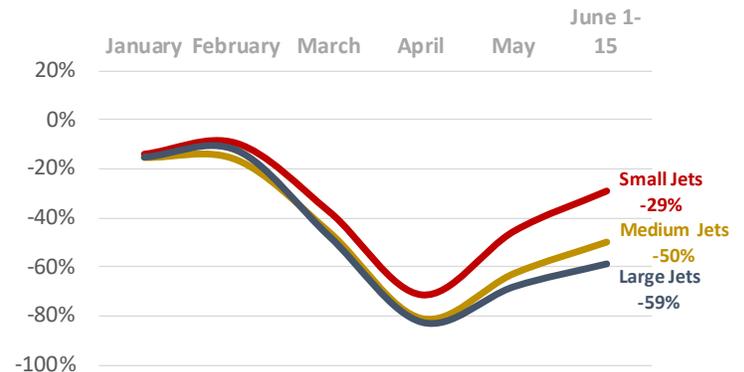
U.S. business jet cycles are rebounding after hitting an historic low-point across all key operating segments in April 2020. On-demand charter operations (Part 135) are faring better than other market segments, apparently buoyed by personal travel and repositioning, and sharp cutbacks in scheduled airline services. As the Small Jet charter segment of the industry is a point of entry for many customers and prospects, a rebound in activity – if it can be sustained – is some very good news indeed.

With their long-range capabilities, Large Jets have been the most impacted to date, reflecting the changed international operating environment, with tightened border controls and quarantining requirements. Although international flights account for only about 15% of total U.S. business jet activity, the ratio of international-to-total flying increases with the size of the aircraft.

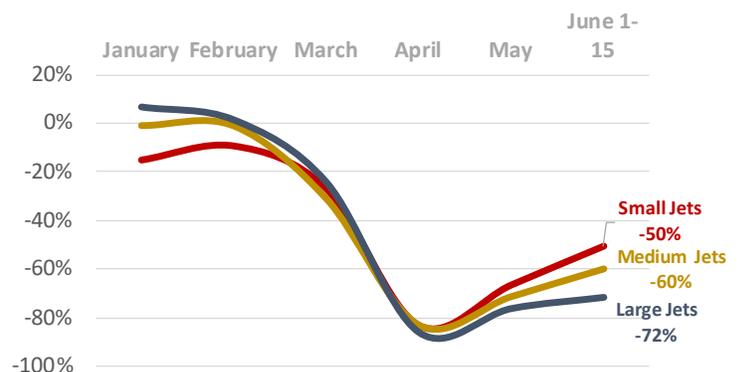
Part 135 Business Jet Cycles - U.S.
% Change: 2020 over same period in 2019



Part 91 Business Jet Cycles - U.S.
% Change: 2020 over same period in 2019

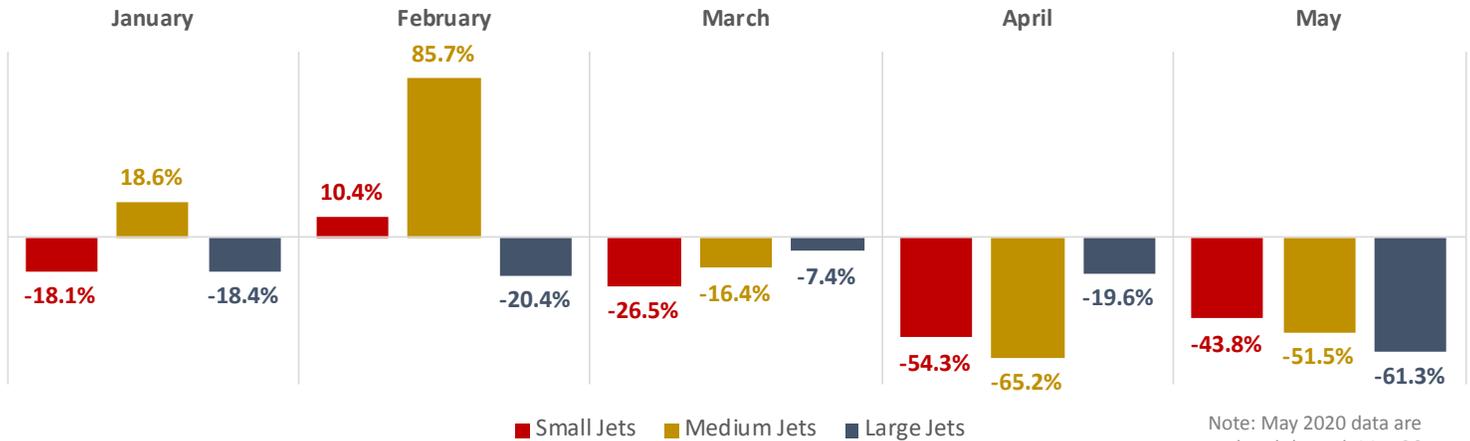


Fractional Operator Business Jet Cycles - U.S.
% Change: 2020 over same period in 2019



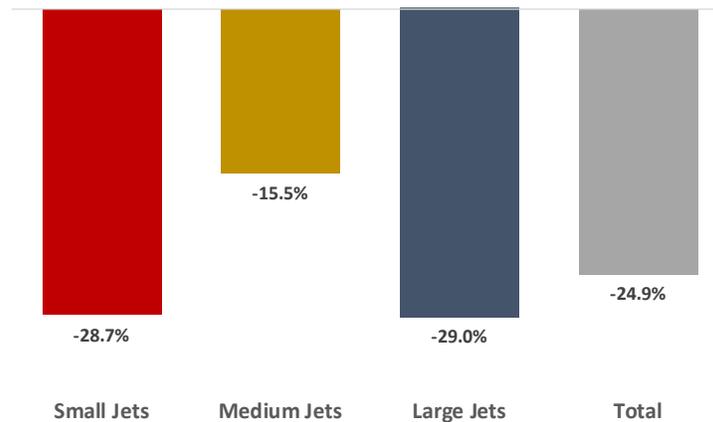
Pre-Owned Jet Transactions

Year-Over-Year % Change in Pre-Owned Business Jet Transactions by Size Category



Note: May 2020 data are updated through May 26 and do not yet reflect a full-month of transactions

% Change in Pre-Owned Retail Sales and Leases January - May 2020 versus January - May 2019



Worldwide retail sales and leases of pre-owned business jets are understandably down through the first 5 months of 2020 year-over-year, and particularly in April and May 2020. JETNET records updated through May 26 indicate that sales and leases are off ~25% YOY across all business jet size categories, with both Small Jets and Large Jets off by ~29% YOY. Despite lower sales and leases, there were 2,300 pre-owned business jets on the market at the end of May 2020, representing 10.3% of the in-service fleet. Just 9% of

these jets (~ 200 in total) were initially delivered in 2015 or later, representing only limited competition to OEMs seeking to sell new-build models. As of mid-June 2020, the on-market inventory levels have remain flat near 2,300 total aircraft and 10.3% of the fleet. In the midst of this historically challenging era for business aviation, and even in comparison to inventory levels in late 2008 / early 2009, the marketplace is functioning as well and arguably even better than expected at this time.

PRAETOR 600
BY EMBRAER

LEAD THE WAY

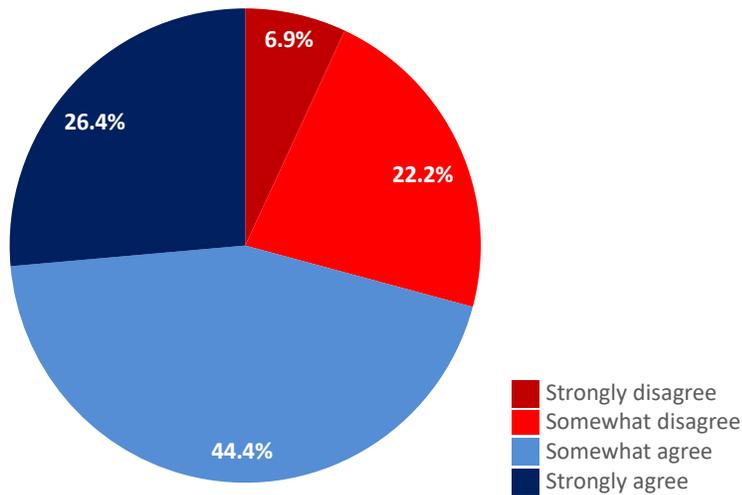


 **EMBRAER**

Loss of Residual Value

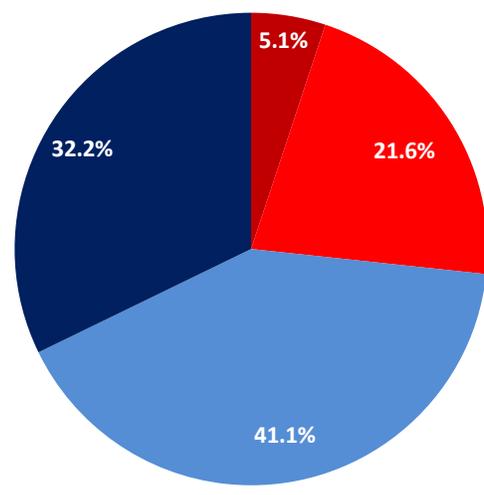
Assuming a 5-year-old airplane, I believe the residual values will decline at a faster rate over the next 12 months

JETNET iQ COVID-19 Mini-Survey of Industry Professionals – Apr/May 2020



Source: JETNET iQ COVID-19 Mini-Survey, April/May 2020 (n=160)

JETNET iQ Global Business Aviation Survey of Aircraft Owners / Operators – Q2 2020



Source: JETNET iQ Q2 2020 Survey (n = 512)

Aircraft owners, lenders, and lessors are understandably concerned about residual values, especially as the effects of COVID-19 linger on and forward visibility remains clouded by basic questions like “When do things get back to normal again?” Two recent JETNET iQ Surveys of industry professionals and of aircraft owners / operators provide some insight into how residual values may be impacted

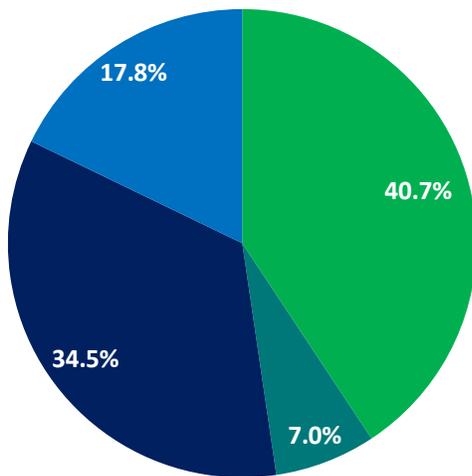
over the 12 month period. Assuming a 5-year-old airplane, and excluding those who were uncertain or did not know, a significant proportion of respondents believe that residual values will decline at an accelerated rate over the next year. This is particularly the case amongst the owner / operator community, where those who strongly agree outnumber those who strongly disagree by a factor of 6-to-1.

To subscribe to JETNET iQ Reports or inquire into sponsorship of Pulse, contact:
Paul Cardarelli - Tel: 1-315-797-4420, ext. 254 or paul@jetnet.com

New Aircraft Financing

How do you plan to finance your next new business aircraft purchase?

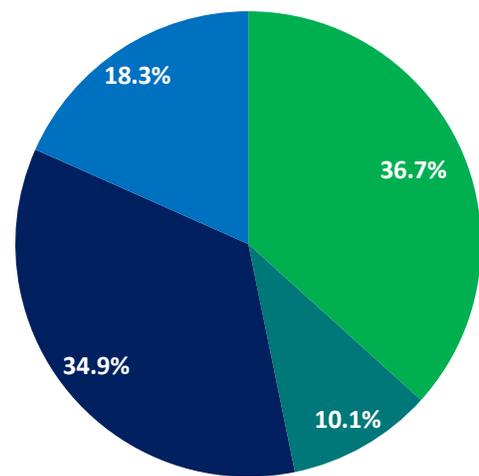
JETNET iQ Global Business Aviation Survey of Aircraft Owners / Operators – Q2 2019



- Cash
- Cash and subsequent Sales Lease Back
- Cash contribution and Loan Structure
- Operational Lease

Source: JETNET iQ Q2 2019 Survey (n = 513)

JETNET iQ Global Business Aviation Survey of Aircraft Owners / Operators – Q2 2020



Source: JETNET iQ Q2 2020 Survey (n = 512)

Despite the many signs of COVID-19 related turbulence in the marketplace, business aircraft owners / operators surveyed by JETNET iQ expect relatively little change in the ways they plan to finance their next aircraft purchase. Over a span of a year, our Q2 2019 and Q2 2020 Surveys each attracted more than 500 respondents. Excluding respondents who were uncertain or did not know, the perception

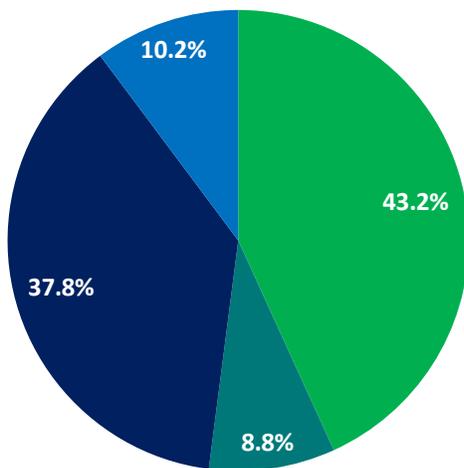
that the majority of buyers pay cash may be widespread, whereas the reality is more nuanced. Based on the opinions of JETNET iQ respondents, sales leasebacks, loans, and operating leases may ultimately be in play in 6 out of 10 business aircraft sales transactions.

To subscribe to JETNET iQ Reports or inquire into sponsorship of Pulse, contact:
Paul Cardarelli - Tel: 1-315-797-4420, ext. 254 or paul@jetnet.com

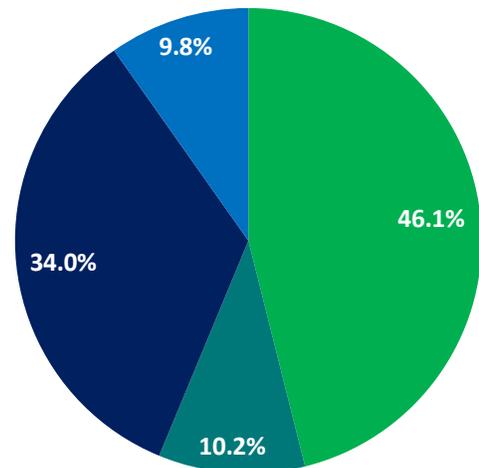
Pre-Owned Aircraft Financing

How do you plan to finance your next pre-owned business aircraft purchase?

JETNET iQ Global Business Aviation Survey of Aircraft Owners / Operators – Q2 2019



JETNET iQ Global Business Aviation Survey of Aircraft Owners / Operators – Q2 2020



- Cash
- Cash and subsequent Sales Lease Back
- Cash contribution and Loan Structure
- Operational Lease

Source: JETNET iQ Q2 2019 Survey (n = 513)

Source: JETNET iQ Q2 2020 Survey (n = 512)

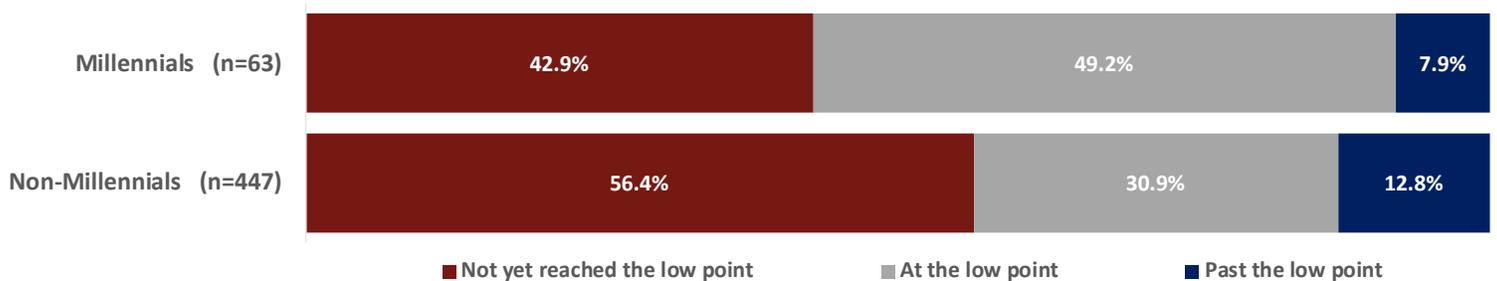
Due to their typically lower price points, pre-owned aircraft transactions are somewhat more likely to be “cash deals,” at least at the point of sale. Respondents to our JETNET iQ Surveys in Q2 2019 and in Q2 2020 were fairly consistent as regards their plans for financing their next aircraft deals. About 10% of respondents expect

to finance their aircraft through operating leases, noticeably lower than for new aircraft and quite likely a reflection of lessor (supplier) rather than lessee (customer) preferences.

To subscribe to JETNET iQ Reports or inquire into sponsorship of Pulse, contact:
Paul Cardarelli - Tel: 1-315-797-4420, ext. 254 or paul@jetnet.com

On the Radar

How would you describe current market conditions for business aviation?



Market sentiment amongst business aircraft owners and operators dropped significantly in Q2 2020, after registering a temporary uptick at the beginning of this year. Sentiment across the industry peaked most recently in Q2 2018, but has been slipping for 7 of the last 8 quarters based on results from our JETNET IQ Surveys. Millennials

(typically considered to be someone born between 1981 and 1996) appear to be more likely to think of the current market conditions in Q2 2020 as being at the low point of the business cycle, in contrast to the majority of other respondents who believe that we have not yet reached the low point.



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.

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 8 different levels**. JETNET iQ is a partnership between JETNET LLC of Utica, NY and Rolland Vincent Associates, LLC, of Plano, TX.

Material in this publication may not be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the prior written permission of the publisher.

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.

For more information on JETNET iQ, please contact:

Rolland Vincent, JETNET iQ Creator/Director

Tel: 1-972-439-2069

e-mail: rollie@jetnet.com

To subscribe to JETNET iQ Reports or inquire into sponsorship of JETNET iQ Pulse, please contact:

Paul Cardarelli, JETNET Vice President of Sales

Tel: 1-315-797-4420, ext. 254

e-mail: paul@jetnet.com

Appendix

Data sources:

GAMA shipments report (Q1 2020): <https://gama.aero/wp-content/uploads/2020ShipmentReportQ1-05272020Final.pdf>

GDP growth forecasts (2020): The Economist – May 28, 2020

<https://www.economist.com/economic-and-financial-indicators/2020/05/28/economic-data-commodities-and-markets>

Stock Markets:

S&P 500 Index: <https://www.marketwatch.com/investing/index/spx>

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

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); <https://tradingeconomics.com/euro-area/business-confidence>

Business aircraft fleet, deliveries, transactions, utilization: JETNET

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

Photo credits: Page 3: www.nbaa.org

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.

S&P: Standard & Poor’s

EIS: Entry in Service

FTSE: Financial Times Stock Exchange (London)

GAMA: General Aviation Manufacturers Association

GDP: Gross Domestic Product

OEM: Original Equipment Manufacturer

TTM: Trailing Twelve Months

YOY: Year over Year

YTD: Year to Date

Disclaimer:

Certain statements in this report constitute forward-looking statements or statements which may be deemed or construed to be forward-looking statements. The words “forecast”, “anticipate”, “estimate”, “project”, “intend”, “expect”, “should”, “believe”, and similar expressions are intended to identify forward-looking statements. These forward-looking statements involve, and are subject to known and unknown risks, uncertainties and other factors which could cause actual results, performance (financial or operating) or achievements to differ from the future results, performance (financial or operating) or achievements expressed or implied by such forward-looking statements. These forward-looking statements are based on beliefs, assumptions and estimates based on information currently available to JETNET LLC (JETNET), and are subject to certain risks and uncertainties that could cause actual results to differ materially from historical results or those anticipated, depending on a variety of factors, including: significant disruptions in air travel (including as a result of terrorist acts), regulatory and tax changes, labor disruptions, currency exchange rate fluctuations, aerospace program development and management risks, aerospace supplier and customer financing issues, economic and aviation/aerospace market stability, competition, consolidation and profitability. Should one or more of these risks or uncertainties materialize adversely, or should underlying assumptions or estimates prove incorrect, actual results may vary materially from those described. All forward-looking statements attributable to JETNET and its officers, directors, shareholders, employees, agents, and affiliates herein are expressly qualified in their entirety by the abovementioned cautionary statement. JETNET disclaims any obligation to update forward-looking statements contained in this report, except as may be required by law. JETNET makes no representations or warranties concerning the accuracy and adequacy of any data, analyses, forecasts, or reports it provides, and shall not be liable, in any manner, for the Customer’s reliance on this information. In no event shall JETNET be liable for any direct, indirect, special or consequential damages in connection with or arising out of furnishing data, analyses, forecasts, or reports to the user.

© Copyright 2020 JETNET LLC. All rights reserved.

To subscribe to JETNET iQ Reports or inquire into sponsorship of Pulse, contact:

Paul Cardarelli - Tel: 1-315-797-4420, ext. 254 or paul@jetnet.com

>> FLY BY THE NUMBERS

Introducing...

OEM INSIDER

Our new JETNET iQ service is tailored for business aviation suppliers and financial professionals, and others seeking deep-dive insights into the key business aircraft manufacturers. This abridged, cost-effective business aviation overview allows you to stay current in today's dynamic marketplace with quarterly reports containing unique insights, independent perspectives, survey results, and forecasts to complement your own research capabilities.

- > 50 research professionals speaking with hundreds of owners and operators daily
- > 10 years of continuous surveying of owner and operator sentiment
- > 500+ owners and operators around the globe surveyed every quarter
- > 18,000+ owners and operators surveyed to date
- > 99+% demonstrated accuracy for business aircraft delivery forecasting
- > 30+ years experience in aviation market research
- > Your 1 source for business aviation market intelligence

The numbers don't lie. Stay one up on your competitors with JETNET iQ OEM Insider. Know More at JETNET.com, or by contacting us today.

JETNET iQ

>> KNOW MORE.

The World Leader in Aviation Market Intelligence
800.553.8638 +1.315.797.4420 jetnet.com