JETNET iQ PULSE

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Don't You Know It's Gonna Be Alright

Spring has sprung in the Northern Hemisphere, and in many places families and friends have been gathering in numbers to celebrate Easter, Passover, Ramadan, and Spring Break, the latter focused on sun'n fun spots blessed with sand & sea or snow & mountains.

On April 18, 2021, the U.S. Centers for Disease Control and Prevention reported that ~130 million American adults, representing more than 50% of the adult population, had received at least one dose of a COVID-19 vaccine. As of April 19, and after many months of limited vaccine availability, every American 16 years and older is now eligible to sign up for vaccination. Fully 84 million American adults, representing about 1/3rd of the U.S. adult population, were "fully vaccinated" by April 18. This represents one of the highest vaccination rates of any country worldwide.

After more than a year of almost continuous negative news on the public health front, these are heartening developments that put the U.S. on a flightpath towards economic recovery. With demand outstripping supply across a wide array of product and service categories, the restart of the world's largest economy is clearly underway. Although some sectors of the U.S. economy remain supply constrained (try to find a nearly-new business aircraft if you don't agree), in the grand scheme of things these are arguably good 1st World problems to manage. Event planners (do you have them hired back yet?) are about to see a surge in demand for their highly valued skills and services as organizations prepare for a return to the "new normal" world, a trend we believe will accelerate in the second half of 2021.

Fifty-three years ago, a musical foursome from Liverpool was discovering what they wanted to do when they grew up. *Revolution*, the B-side release of *Hey Jude*, was amongst their later and more successful recordings. Much analyzed and widely interpreted, the song's lyrics spoke about a post-crisis world, much as we are shifting towards today. A future that is "gonna be alright" sounds like a good theme to carry forward as we reengage with our teams, customers, and suppliers and set our compass headings for the rest of this year and beyond.

"A future that is "gonna be alright" sounds like a good theme to carry forward as we reengage with our teams, customers, and suppliers…"

Business and general aviation, a still-youthful industry with enduring appeal, has already begun to serve a new and broader base of customers, many of whom have discovered the joy of creating their own music and shaping their own future.

We are joined in this issue of JETNET iQ PULSE by Tony Kioussis, one of the industry's preeminent practitioners of the art and science of aircraft valuations, maintenance analytics, and audits. His essay should be required reading for anyone seeking deeper insights into the factors that drive aircraft values in today's dynamic market. Value, as it turns out, appears to reside in the eyes – and wallets – of the beholder.

RIP John and George.

Outlook

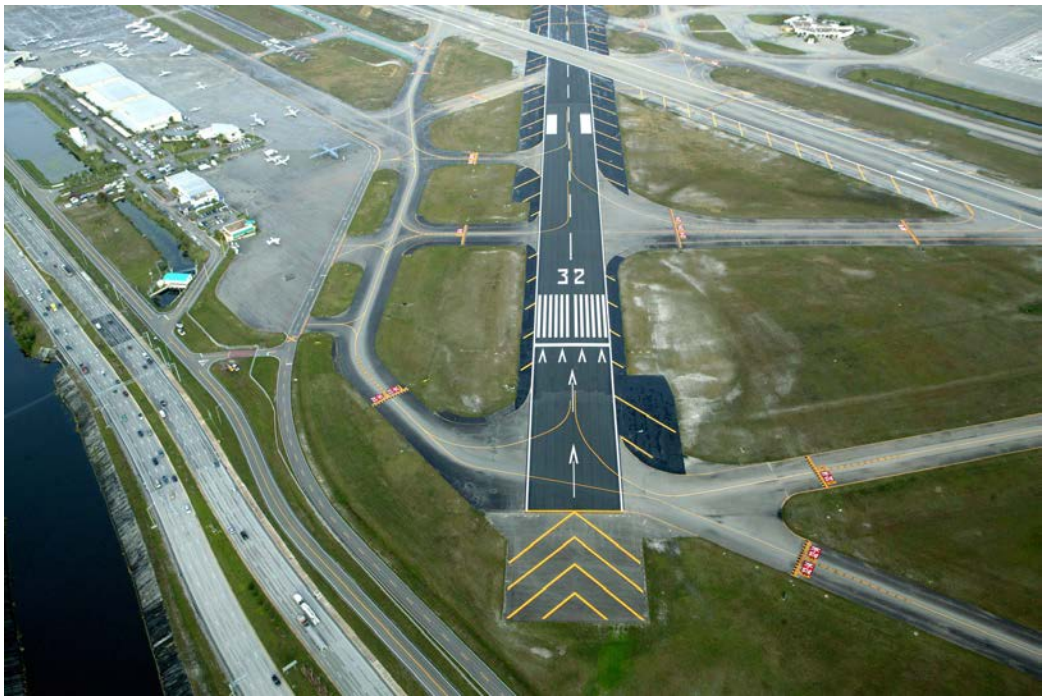
Utilization is one of the most fundamental activity metrics in the business and general aviation industry (B&GA). Aircraft cycles (takeoffs and landings) and flight hours are amongst the most widely tracked and reported statistics in the industry, and for good reason. While make and model year are common starting points for determining an aircraft's fair market value, its history of utilization (both in cycles and hours), maintenance condition, and even country of registration factor into the valuation equation.

When we consider the outlook for business aviation, it is illuminating to monitor utilization levels across various market segments. After starting the year off on a hard-surface runway, average daily utilization across the business aircraft fleet fell precipitously in March / April 2020 and stayed low through most of the first half of the year. Recovery trajectories since then are the subject of much of this issue of JETNET iQ PULSE.

Few people may be aware that the New York City-area Teterboro Airport (KTEB), long the clear leader in U.S. business jet flight activity, has been recently surpassed in total business jet flight cycles by Palm Beach International Airport (KPBI). It is the 3rd busiest commercial airport in the Greater Miami metropolitan area, and home to 3 FBOs: Jet Aviation, Atlantic Aviation, and Signature Flight Support. Most of the increase in business jet cycles in the 1st quarter of 2021 versus the same period last year is due to demand for charter and fractional flying. The YOY trend in non-commercial flight operations (Part 91) has been relatively flat at various sunspot airports such as Palm Beach, Miami, Naples (all in Florida), and Scottsdale, AZ, but down significantly at airports that serve the large metro areas of the U.S. Northeast such as Teterboro, NJ and White Plains, NY.

While charter and fractional demand at sunspot airports such as KPBI have clearly spiked in recent months, this may prove to be more than a temporary phenomenon. Florida has proven to be particularly successful in attracting HNWIs and their businesses seeking to relocate from traditional centers of commerce like New York City since the onset of the COVID-19 pandemic.

With little pure business travel (inter-office travel, plant and site visits, trade conventions, investor roadshows, etc.), a continuation of "work from anywhere" arrangements, and on-going international quarantine requirements, it will be some time before Part 91 flight operations will return to pre-COVID levels. In the meantime, airports like Palm Beach International will stay at or near the top of lists of high traffic facilities serving HNWI clientele flying to and from homesites and sunspot vacations.



The Aircraft Value Conundrum

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Everyone knows that when supply is tight and/or demand is high, the cost of a product or service is likely to increase. This simple "irrefutable fact" has guided pricing decisions for many managers since they graduated business school. Accordingly, based on the limited supply of younger, lower-time aircraft – such as exists at the moment – prices will increase. Well … maybe not!

The supposition that aircraft pricing will follow the rules of supply and demand is logical, but aircraft pricing is anything but a follower of standards. Perhaps the ability held by high net-worth individuals, and profitable companies, to purchase what they want is partly responsible for this breach in pricing etiquette. I have listened to a buyer preparing to take delivery of their new aircraft ask for the time and cost to change the interior color scheme, simply because their significant other preferred another color.

Perhaps it is because aircraft do not become more valuable with time, such as antique cars or certain "adult beverages". In fact, aircraft are depreciating assets whose value decreases whether they are flying or simply sitting in a pristine hangar; as the calendar continually imposes ongoing costs to maintain the asset in airworthy condition.

So, is there a standard metric we can use to predict aircraft values?

One could point to high Demand as that metric. However, except for the buying frenzy between 2003 and 2007, when irrational buying exuberance, fueled primarily by purchasers from emerging markets, did not allow OEMs to keep up with demand, I cannot recall another time-period where a strong correlation between Demand and Values was apparent.

Since business aviation is a data-rich environment, and since we thrive on pre-owned aircraft statistics at Asset Insight, we examined several datapoints (dating from the last quarter of 2015 through March of 2021) to determine if any metric held a strong correlation with aircraft Values. We ran these analytics at the serial number level and rolled the figures up to a fleet average for each period analyzed. The results were interesting, surprising, in some cases confusing, but ultimately made sense … sort of.

We began by comparing Values with Days on Market for the 134 aircraft models we track. The correlation between these two datapoint proved to be virtually non-existent, coming in at 9.1%. One would think that as the number of days to sell an aircraft increase, the seller's price expectations would decrease. Perhaps that's true at some level. However, the data showed too many sellers were firm on the price they expected their asset to attain and were willing to hold onto their aircraft long enough to prove it. A few may have had the good fortune to come across an uninformed buyer willing to pay the price they sought, while others eventually became "motivated sellers" due to the impending delivery of their replacement aircraft.

The Aircraft Value Conundrum (cont.)

We then looked at how Maintenance Exposure might correlate with Values. We define Maintenance Exposure as an aircraft's embedded/accrued maintenance. We thought it would stand to reason that aircraft with more accrued maintenance would sell for a lower price than aircraft with lower Maintenance Exposure.

For example, an aircraft that is 75% of the way toward a major maintenance event, such as a double-engine overhaul, would be priced lower than another serial number of the same model that recently completed that same maintenance event. The correlation between Maintenance Exposure and Value came in at 22.3%. Not what we were expecting.

With nothing useful thus far, we elected to compare Quarterly Sales (units) with Values postulating that an active market would lead to higher pricing. That comparison came back with a correlation of 27.5%. While this outcome appeared to be counterintuitive, we could point to numerous deals where an uninformed buyer – usually an entity acquiring an aircraft without the assistance of an experienced broker/consultant – paid more than they should have for an asset.

We felt certain that the number of pre-owned Inventory Aircraft and Values would produce a higher correlation. Prices should rise with limited supply and fall when supply is plentiful. Not so in the case of business aircraft, however, as that correlation was only 33%.

Our fifth comparison was a datapoint computed by Asset Insight for each aircraft, its Quality Rating. This figure calculates the remaining useful life associated with each aircraft component and individual maintenance event, while also accounting for the cost to replace each part and/or complete each maintenance event, compared to the aircraft's condition the day it came off the OEM's production line. The correlation between an aircraft's Quality Rating and its Value came in at nearly 68%. A somewhat respectable figure, although a strong correlation still eluded us.

Based on the minimal correlation between Inventory Aircraft and Values, we were truly surprised when the correlation between Values and the percentage of each model's active fleet listed for sale exceeded 80%. After checking to ensure this was not a case of "garbage in; garbage out" analytics, we were able to convince ourselves that the high correlation figure was accurate. The problem is, the correlation strongly suggests that Values decrease as the percentage of each model's active fleet ***decreases***.

We asked ourselves how that was possible, and one thought was that when a small percentage of a model's fleet is listed for sale, it might be comprised of assets holding low customer appeal. While it seems reasonable to assume Values for a popular model would increase when inventory is limited, the statistics we crunched could not prove that assumption.

As an industry, we tend to use the terms "price" and "value" interchangeably. This exercise demonstrated their stark difference. It might seem rational to seek datapoints that can be used to predict aircraft prices. However, the reality is that correlations between statistical measurements and Value are unlikely to exist, as an aircraft's "value" is based on its relative worth, utility, and/or importance placed on that asset ***by the purchaser***.

While an aircraft might be priced by the seller using objective statistics, its value to the buyer will always be influenced by subjective thinking that may seem illogical to others.

Consider the buyer preparing to take delivery of a new aircraft who seeks to change the interior's color scheme. The aircraft's "price" would increase a specific amount. The "value" it would provide can only be established ***by the purchaser***. What datapoint could possibly exist able to predict this transaction's final figure?

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Business Conditions

GDP

The Economist's **GDP growth forecasts** for 2021 are: U.S. +5.5%, Euro Area +4.2%, U.K. +5.1%, Mexico +5.1%, Brazil +3.2%, Canada +4.8%, China +8.5%, Russia +2.7%, and Australia +3.1%

Business jet cycles (take-offs and landings) in Q1 2021 were *down* by 11% YOY for U.S. Part 91, *up* by 61% YOY for U.S. Part 91K, *up* by 45% YOY for U.S. Part 135, and *down* by 9% at European airports

Dow Jones Index (U.S.) was up 44%, **FTSE 100** (U.K.) was up 24%, **CAC 40** (France) was up 45%, and **DAX 30** (Germany) was up 44% YOY from Apr. 20, 2020 to Apr. 19, 2021

U.S. Index of **Consumer Sentiment** was 84.9 in Mar. 2021, versus 76.8 in Feb. 2021 and 89.1 in Mar. 2020 YOY; Euro Area **Economic Sentiment Indicator** was 101.0 in Mar. 2021, versus 93.4 in Mar. 2021 and 94.5 in Mar. 2020

U.S. unemployment rate (seasonally adjusted) was 6.0% in Mar. 2021 (representing ~9.6 million people); Job gains in March of .9M were driven by leisure & hospitality, public and private education, and construction sectors

U.S. **Purchasing Manager Index** (Manufacturing PMI) was 64.7% in Mar. 2021, versus 60.8% in Mar. 2020; Euro Area **Business Climate Indicator** was -.30 in Mar. 2021, versus -.13 in Mar. 2020

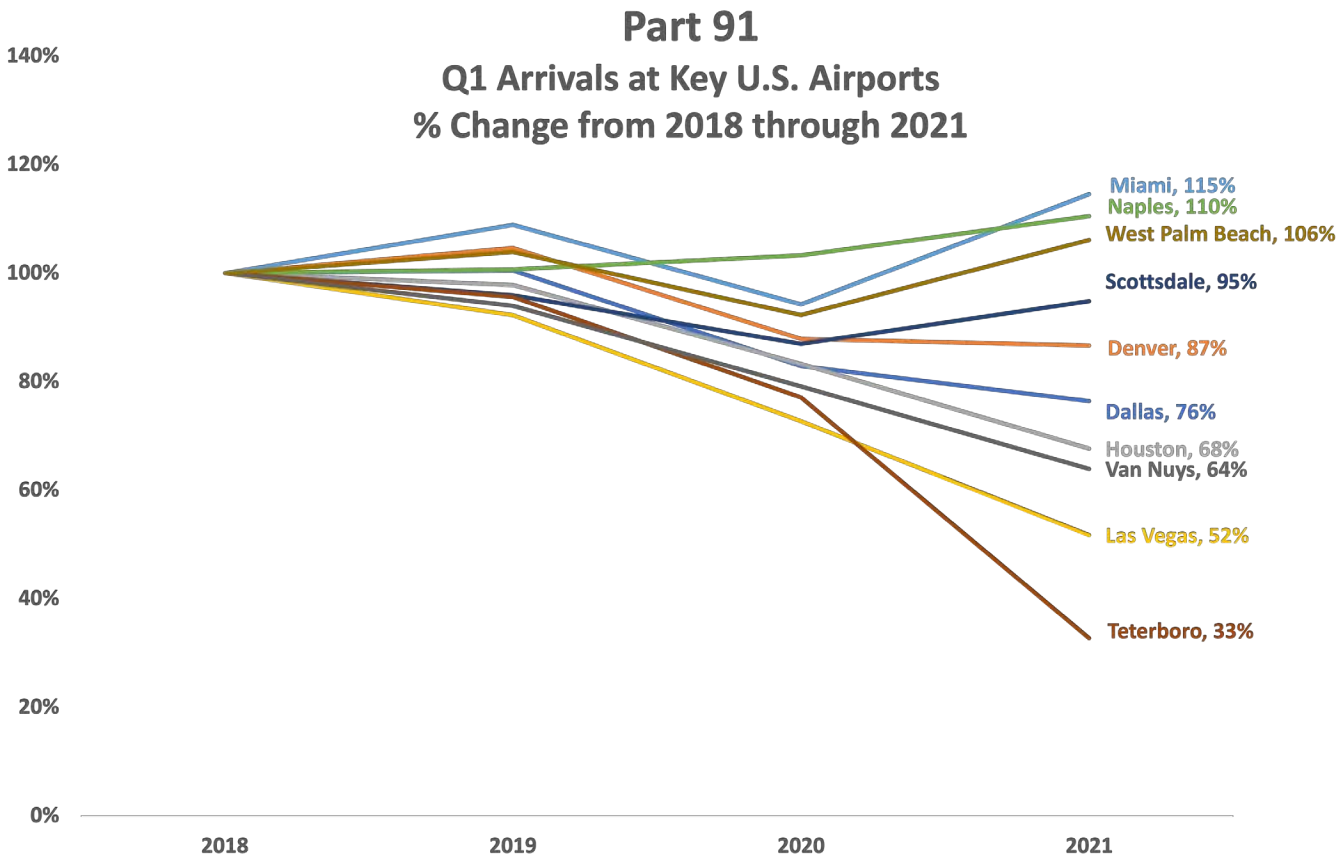
Transactions of pre-owned business jets (retail sales & leases) in Jan/Feb. 2021 were 326 units, down 6% YOY; days-on-market were up 17% YOY to 318 days (JETNET as of Apr. 20, 2021)

Business aircraft deliveries in 2021 YTD are 110 jets (including Cirrus, Boeing, Airbus) and 44 turboprops (JETNET as of Apr. 20, 2021)

U.S. Business Jet Utilization – Part 91

Q1 Arrivals at Key U.S. Airports
2018 - 2021

Part 91 aircraft operations are non-commercial in nature, and include private, corporate flight department, and other not-for-hire / not-for-compensation forms of air transport. These types of operations have been relatively hard hit in the COVID-19 era, with flight activity well below a baseline 2018 level at traditional high-activity airports including Teterboro and Las Vegas McCarran International (KLAS).

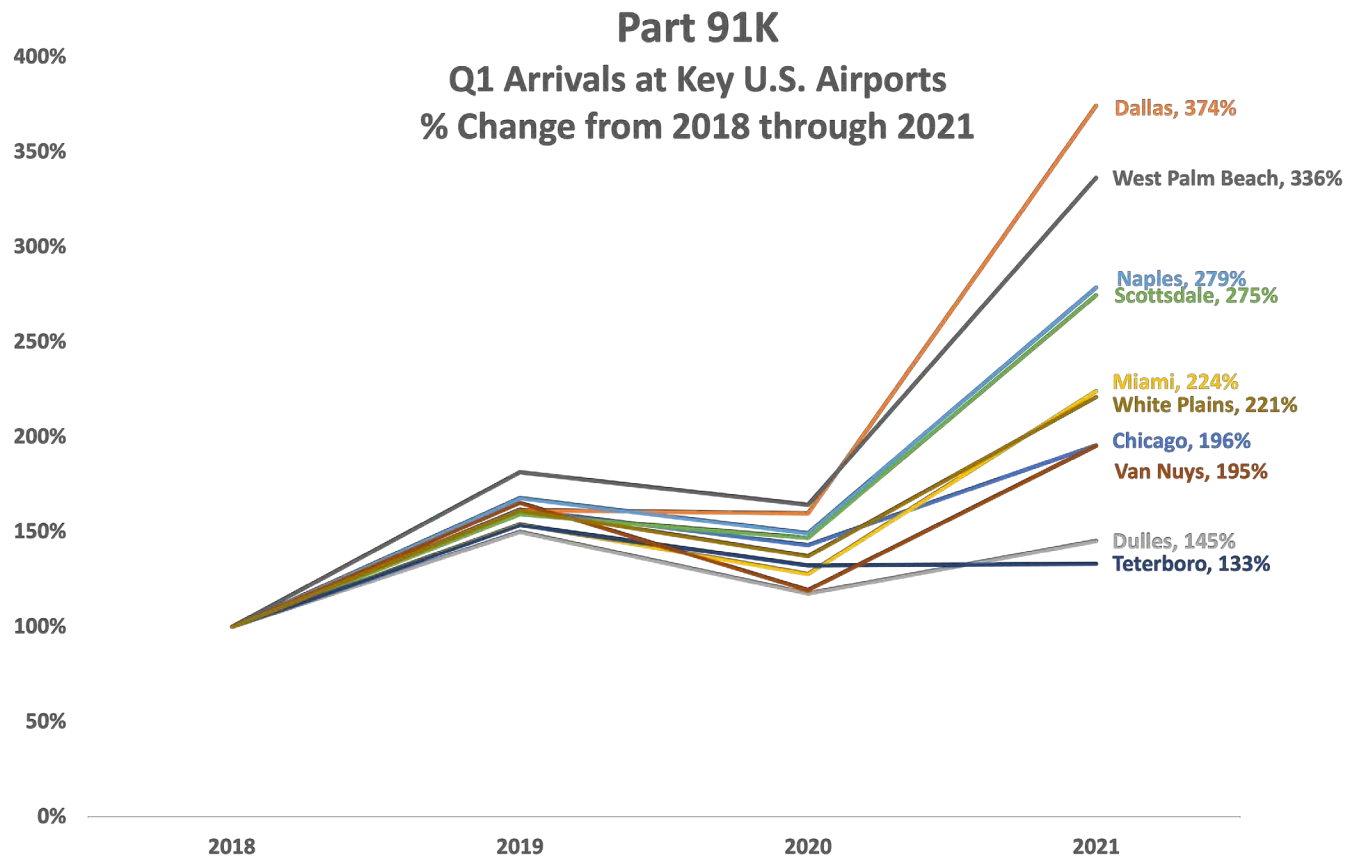


Sources: U.S. FAA / DOT; JETNET ADS-B network signals

U.S. Business Jet Utilization – Part 91K

Q1 Arrivals at Key U.S. Airports
2018 - 2021

Part 91K aircraft operations encompass fractional program flying. While flight activity at Teterboro was essentially unchanged in Q1 2021 versus the same period YOY, growth has been remarkable at a number of airports, including West Palm Beach, FL (KPBI), Dallas Love Field, TX (KDAL), Naples, FL (KAPF), and Scottsdale, AZ (KSDL).

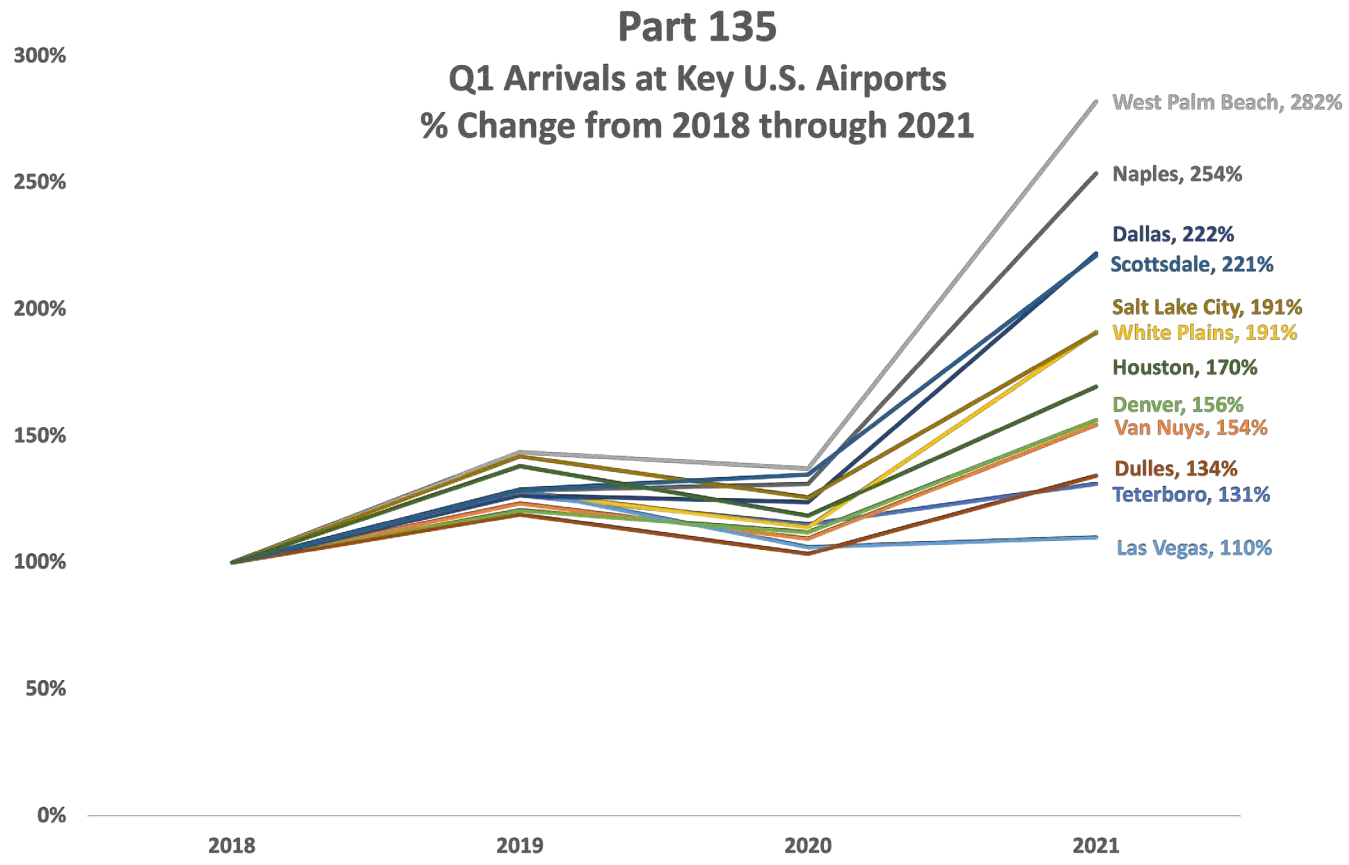


Sources: U.S. FAA / DOT; JETNET ADS-B network signals

U.S. Business Jet Utilization – Part 135

Q1 Arrivals at Key U.S. Airports
2018 - 2021

Part 135 aircraft operations include on-demand air charter and air taxi flying. The for-hire nature of Part 135 flying has attracted many new customers to business and private aviation since the onset of the COVID-19 pandemic in late Q1 2020. In dramatic fashion, Palm Beach International (KPBI) eclipsed Teterboro (KTEB) in Q1 2021 versus the same period last year. Other sunspot centers such as Naples, FL (KAPF) and Scottsdale, AZ (KSDL) have also seen sharp increases in flight activity. While any strains on capacity are "nice to have" problems these days, key considerations for FBO, fuel, and MRO providers are whether traffic can be sustained after scheduled airlines begin to serve these locations as well, as frequently, and as cost effectively as they did in the past.

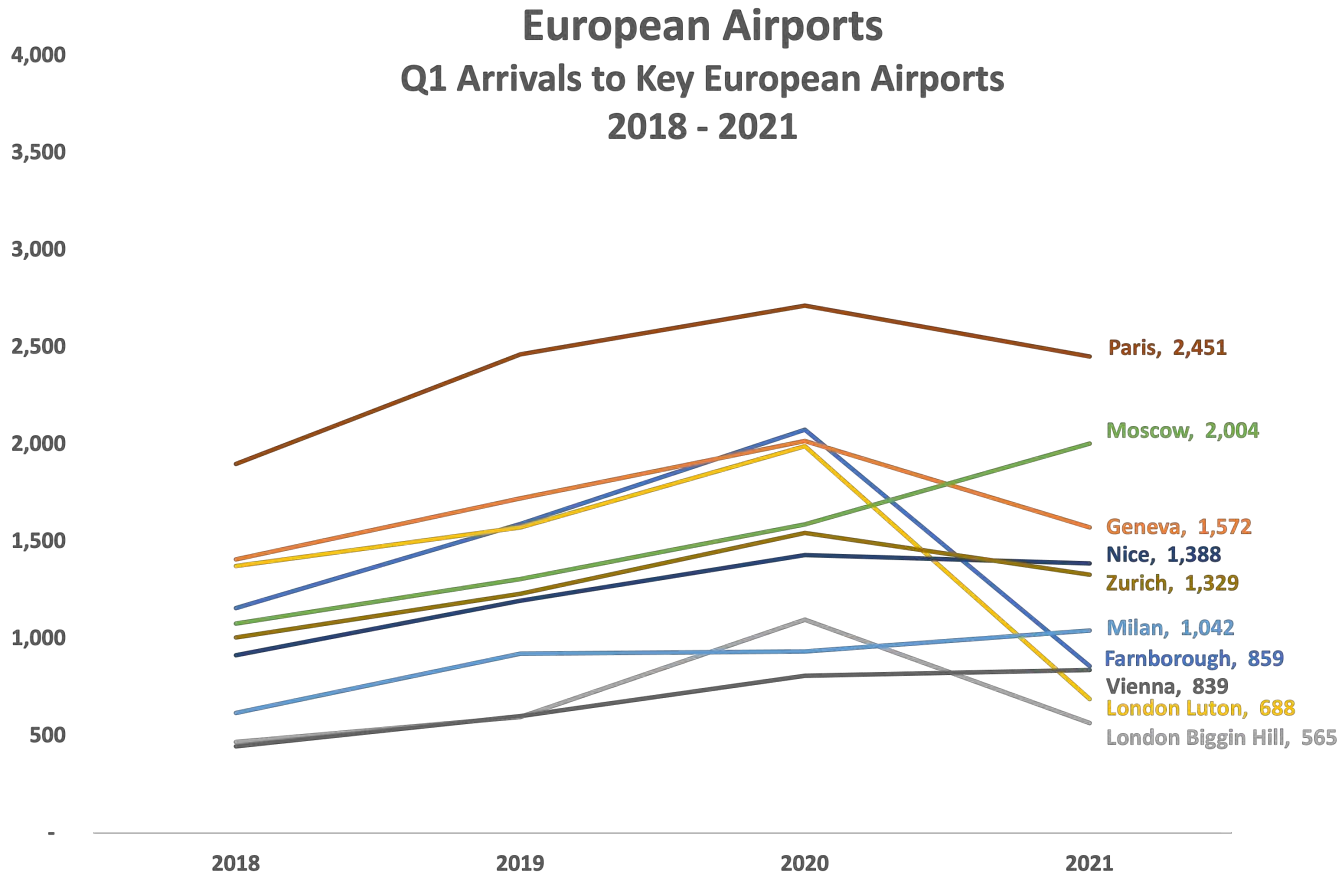


Sources: U.S. FAA / DOT; JETNET ADS-B network signals

European Business Jet Utilization

Q1 Arrivals at Key European Airports
2018 - 2021

With a few noticeable exceptions – Moscow, Vienna, Milan Linate – business jet flight operations across most key European airports have yet to recover from the effects of COVID-19. Hardest hit amongst a group of 10 of the highest-trafficked airports are those that serve the London, UK metropolitan area, which are also impacted by lower demand for Continental travel in the post-Brexit environment. With a slower roll-out of vaccination programs and the damaging impacts of new virus variants, Europe is on a very different trajectory than the U.S. with respect to the recovery in business jet utilization.



Sources: U.S. FAA / DOT; JETNET ADS-B network signals

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 11 different levels**. JETNET iQ is a partnership between JETNET LLC of Utica, New York and Rolland Vincent Associates, LLC, of Plano, Texas.

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:

Real GDP growth forecasts (2021): The Economist – April 15, 2021
https://www.economist.com/economic-and-financial-indicators/2021/04/15/economic-data-commodities-and-markets
Stock Markets:
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Euronext Paris (CAC 40): https://live.euronext.com/en/product/indices/FR0003500008-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/empsit.pdf
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European Commission (Euro Area) – Economic Sentiment Indicator; https://ec.europa.eu/info/sites/info/files/full_bcs_2021_02_en.pdf
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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)
Photo credits: Page 1: The Atlantic; Page 2: West Palm Beach International Airport; All other photos / images: Rolland Vincent Associates, LLC / JETNET iQ

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 turbofan-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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