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Rollie Vincent
JETNET iQ Creator/Director



It's Time to Come Together

It's palpable. For months now, the momentum has been building to get out and meet family, friends, customers and prospects, partners and suppliers, and other long-time-no-see warm-blooded humans. In our hyper-connected world, audio and video communications technologies have been amongst our most prized possessions during the COVID-19 era for the way they help us stay informed and connected. Despite their latest/greatest gadgetry and ultimate portability, personal electronic devices surely portend the future but also remind us of the way we were.

Just as the rates of viral infection and mortality are unevenly distributed, so too are expectations for recovery and acceleration out of the depths of the global COVID-19 crisis. New coronavirus variants notwithstanding, there is a growing sense that, with vaccine protections and on-going adherence to smart travel protocols, we can collectively begin to return to whatever our "new normal" will look like. This is an exceptionally welcome development for those in the travel, entertainment, and civil aviation industries.

“...there is a growing sense that... we can collectively begin to return to whatever our “new normal” will look like. ...”

In 1980, Kool & the Gang had their only #1 charting song on the U.S. Billboard "Hot 100" with *Celebration*. Released in 1980 and played at countless gatherings ever since – weddings,

sporting events, b'nai mitzvahs, graduation parties – the song and the reconstituted band somehow manage to continuously exude high-spirited energy more typical of that found at the back end of a turbine engine.

The acceleration of vaccination rates in many key business and general aviation (B&GA) markets is finally underway, helping to build confidence, mitigate fears, and restore a sense of lift to human spirits. Countries like the United States with large internal markets and an aviation-minded culture are probably best positioned to climb out of the COVID-induced doldrums most quickly over the next several months.

We recently celebrated our 10th anniversary of JETNET iQ. With this, our 26th bi-weekly issue, we celebrate our 1st anniversary of JETNET iQ PULSE. Launched to help fill a void that many of us were feeling to "stay connected" despite our inability to meet face-to-face, JETNET iQ PULSE has already become an important source of data-inspired need-to-know insights into key developments in the business aviation industry. While my face may appear on the front page, JETNET iQ PULSE exists because it is fueled by ideas and analytics of a team of passionate and engaged professionals, led by Jennifer Nice. While shying from the spotlight has become for her somewhat of a science, she is a brilliant analyst with a rare gift for superior ideation and creativity. With unmatched customer focus and productivity, she provides the glue that keeps our JETNET iQ research team together, aligned, and focused on our customers, our commitments, and our strategies for future growth.



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BY TEXTRON AVIATION

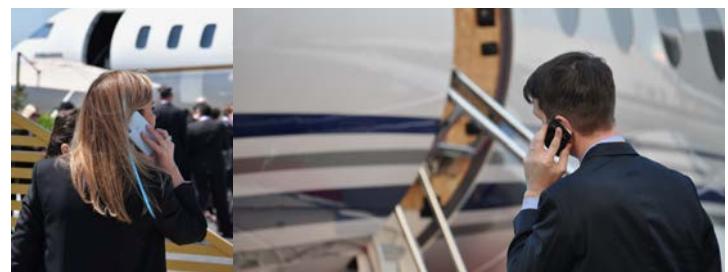
Outlook

After the economic shockwaves of 2020 (remember?), the world's economies have been on a recovery path, some considerably faster than others. Amongst the top 20 national economies where business jets are based worldwide, most all are projected to grow at a 3.0% rate or faster in 2021. Led by India and China, the world's most populous nations and amongst the world's fastest growing economies, the GDP growth outlook for 2021 is in sharp contrast to widespread recessions that plagued most nations last year. For example, the U.S. economy shrank by 3.5% in 2020 according to the U.S. Bureau of Economic Analysis, it's biggest peacetime contraction since the Great Depression in the early 1930s.

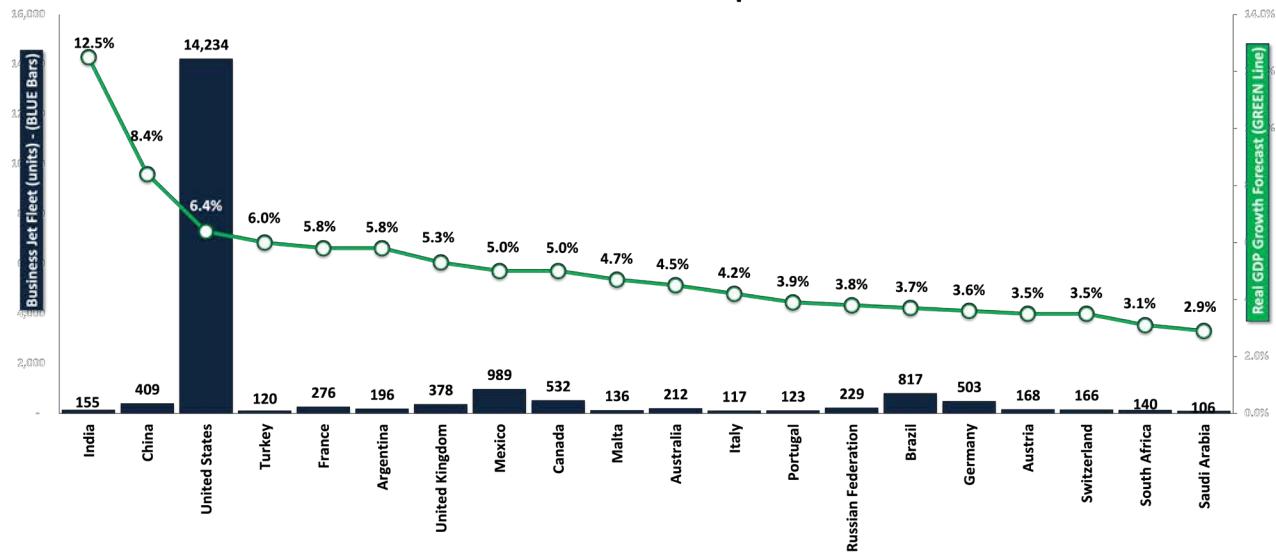
Global economic growth is accelerating, and as usual never in all places nor at the same rates. On April 6, the International Monetary Fund (IMF) upgraded its GDP growth forecasts for the 2nd time in 3 months, with growth now expected to come in at an impressive 6% worldwide after shrinking 3.3% in 2020. The IMF's 2021 growth forecast of 6% would represent the fastest rate of economic expansion in more than 40 years. The IMF just upgraded U.S. GDP growth in 2021 to a white-hot 6.4%, up from 5.1% in their January 2021 outlook. U.S. economic

expansion is on track to expunge the overall impact of the COVID-19 induced recession last year. The last time the U.S. economy expanded at this pace was in the 1970s.

GDP growth is generally acknowledged to be one of the underlying drivers of business aircraft sales and flight activity. Over the past 10-years, world GDP and business jet fleet growth were in virtual lockstep, growing at ~2.2% CAGR. Current IMF projections of GDP growth for 2022-2023 hover in the range of 4.2-4.4%, a rate of growth that should bode well for continued fleet expansion. Complicating the calculus, however, is the fact that almost a quarter of in-service business jets – about 5,400 in total – are already 25+ years old and will be approaching retirement. Owners of late 1970s-era Citation, Learjet, Hawker and Falcon jets may have to finally come to terms and bid *adieu* to their veteran – and now increasingly classic – business jet designs.



2021 GDP Growth Forecast and "Top 20" Business Jet Fleets



Sources: U.S. 2020 GDP growth rate: U.S. Bureau of Economic Analysis; 2021 GDP growth forecasts by country; International Monetary Fund; 2021 business jet fleets: JETNET

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**BLUE SKY
THINKING MEETS
UNCOMPROMISING
FOCUS.**

Business Conditions

GDP

The Economist's **GDP growth forecasts** for 2021 are: U.S. +4.5%, Euro Area +4.2%, U.K. +5.1%, Mexico +4.0%, Brazil +3.2%, Canada +4.8%, China +8.5%, Russia +2.5%, and Australia +2.8%



Business jet cycles (take-offs and landings) in March 2021 were *up* by 37% YOY for U.S. Part 91, *up* by 116% YOY for U.S. Part 91K, *up* by 95% YOY for U.S. Part 135, and *up* by 32% at European airports



Dow Jones Index (U.S.) was *up* 48%, **FTSE 100** (U.K.) was *up* 20%, **CAC 40** (France) was *up* 38%, and **DAX 30** (Germany) was *up* 47% YOY from Apr. 7, 2020 to Apr. 6, 2021



U.S. Index of **Consumer Sentiment** was 89.1 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 Feb. 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 327 units, down 8% YOY; days-on-market were up 17% YOY to 299 days (JETNET as of Apr. 6, 2021)



Business aircraft deliveries in 2021 YTD are 86 jets (including Cirrus, Boeing, Airbus) and 33 turboprops (JETNET as of Apr. 6, 2021)

Business Confidence

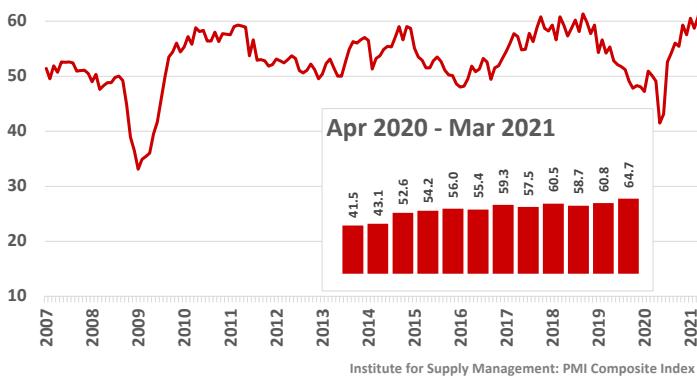
U.S. and Euro Area 2007 Through March 2021

Business confidence in both the U.S. and the Euro Area has been on rebound since the worst of the coronavirus impacts in April / May 2020. In fact, U.S. business confidence as measured by the ISM's Purchasing Manager Index monthly survey is now higher than at any time in the past 40 years. While the recovery of confidence in Europe has yet to return to pre-COVID levels, the trajectory of improvement recorded in March 2021

is encouraging. With economic growth and increasing business confidence, demand for business aviation aircraft and related services is positioned to bounce back, as is already evident in the U.S. and sooner than later in Europe. Forecasts, of course, are dependent upon continuing improvements in public health metrics and the removal of restrictions on air travel.



U.S. Business Confidence



Europe Business Confidence



Sources: U.S. Business Confidence: Institute for Supply Management - PMI Composite Index
Euro Area: European Commission – Business & Consumer Surveys

Expected Aircraft Utilization

JETNET iQ Survey Respondents 1st Half of 2021

Our quarterly surveys of business aircraft owners / operators provide a wide variety of insights on the state of the market, including customer perspectives on the trajectory of recovery from COVID-19 induced slowdowns in flying activity. Amongst U.S.-based survey respondents, an encouraging 56% indicate that their organization's business aircraft utilization (flight hours) will recover to pre-COVID levels by the middle of 2021. This is the fastest expected recovery in business aircraft flight activity of any of the major world regions that we systematically track. Outside the U.S., about 48% of survey respondents agree that their organization's flight hours will rebound to pre-COVID levels by the end of the 1st half of 2021.



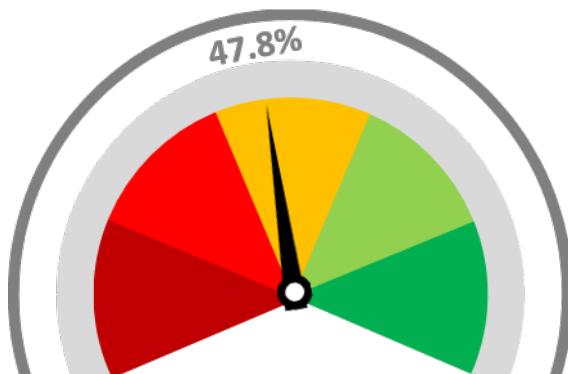
**Our organization's flying hours will rebound to pre-COVID-19 levels
by the end of the 1st Half of 2021**

United States



55.7% of U.S.-based respondents agree
or strongly agree with the statement

World Excluding United States



47.8% of non-U.S.-based respondents agree
or strongly agree with the statement

Source: Q1 2021 JETNET iQ Survey (in progress)

Expected Aircraft Utilization

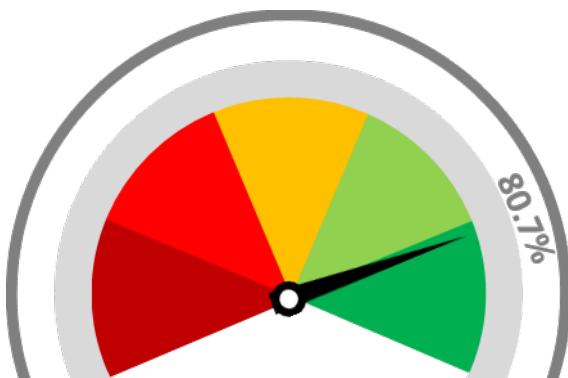
JETNET iQ Survey Respondents
2nd Half of 2021

A large majority of JETNET iQ Survey respondents believe that their organization's flight hours will recover to pre-COVID levels by the end of 2021. This includes 81% of U.S. respondents and 72% of non-U.S. respondents to the in-progress Q1 2021 JETNET iQ Survey. While these are encouraging results, the reality is that not all organizations are yet seeing the light at the end of the tunnel. This is consistent with our expectation that a full recovery to pre-COVID flight hour levels will occur sometime towards the latter half of 2022, once temporary quarantines and other cross-border air travel restrictions are eased or (hopefully) removed entirely.



**Our organization's flying hours will rebound to pre-COVID-19 levels
by the end of the 2nd Half of 2021**

United States



80.7% of U.S.-based respondents agree
or strongly agree with the statement

World Excluding United States



72.3% of non-U.S.-based respondents agree
or strongly agree with the statement

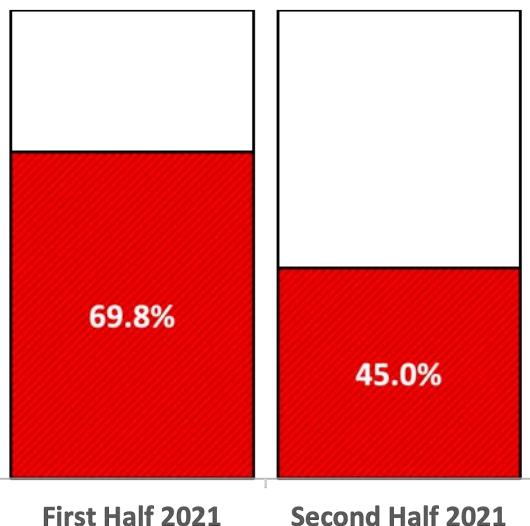
Source: Q1 2021 JETNET iQ Survey (in progress)

In-Person Events and COVID-19

U.S.-Based JETNET iQ Survey Respondents 1st Half Versus 2nd Half 2021

One of the sad realities of our COVID-19 world is the virtual elimination of in-person events like conventions, trade shows, industry summits and conferences. This has had deep commercial repercussions on the way business is conducted across the B&GA industry. While virtual product introductions (or announcement deferrals) have become the norm across the industry, there are few who would say that these fully replace the “tire-kicking” and close-up evaluation of the wide array of products and services on offer. The fact that only a few in-person events are still planned for H1 2021 reflects continuing concern regarding the coronavirus. About 70% of U.S.-based respondents to our Q1 2021 JETNET iQ Survey are hesitant to attend an in-person event in the 1st half of 2021. At this point in time, while the outlook improves considerably for events scheduled in H2 2020, 45% of respondents suggest that even these may be scheduled too early for them to feel confident to “get back in the saddle.”

Hesitant to Attend In-Person
U.S. Respondents



Source: Q1 2021 JETNET iQ Survey (in progress)

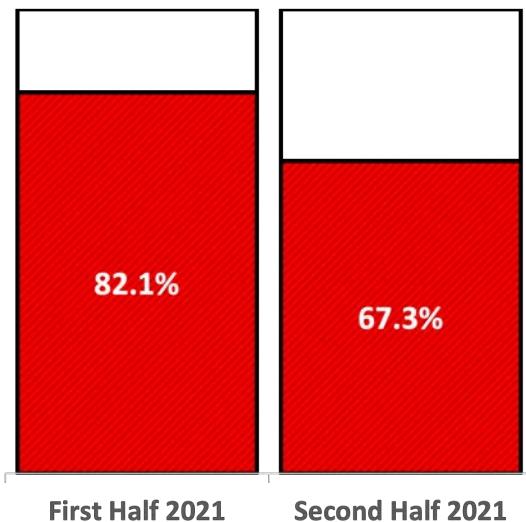
In-Person Events and COVID-19

Non-U.S.-Based JETNET iQ Survey Respondents 1st Half Versus 2nd Half 2021

Outside the U.S., customer hesitancy to attend in-person events is considerably higher and is expected to stay that way for events planned for the 2nd half of 2021. This may reflect lower economic growth and business confidence expectations, fears that new variants of the coronavirus will prove to be destabilizing, and the realities of today's corporate travel restrictions, which may be with us for some time yet.

Approximately 82% of non-U.S. respondents to the in-progress Q1 2021 JETNET iQ Survey strongly or somewhat agree that they are hesitant to attend in-person events in the 1st Half of 2021. Two-thirds of respondents feel that same way about events scheduled in the 2nd Half of 2021, suggesting that international attendance at industry events and conferences will remain well below prior years, at least for the time being.

Hesitant to Attend In-Person
All Excluding U.S. Respondents



Source: Q1 2021 JETNET iQ Survey (in progress)

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.

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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.

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: 315-797-4420, ext. 254

e-mail: paul@jetnet.com

Appendix

Data sources:

Real GDP growth forecasts (2021): The Economist – April 3, 2021

<https://www.economist.com/economic-and-financial-indicators/2021/04/03/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/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/empstat.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_02_en.pdf

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

<https://www.ismworld.org/globalassets/pub/research-and-surveys/rob/pmi/rob202103pmi.pdf>

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

https://ec.europa.eu/eurostat/browser/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)

COVID-19: Johns Hopkins University of Medicine - <https://coronavirus.jhu.edu/map.html>

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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 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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