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ELECTRIC SHOCKS TO BUSINESS AVIATION IADA MARKET REPORT WINGX FLIGHT ACTIVITY IN APAC YE2021

Quarter **FEATURES** BAA **GLOBAL JET CAPITAL**

DASSAULT FALCON 6X

A LOOK BACK OVER 25 ISSUES:

ECONOMICS REVIEW QUARTERLY SURVEY: MOOD & INTENTIONS PRE-OWNED BUSINESS JET MARKET DYNAMICS **POPULAR BUSINESS JETS IN THE PRE-OWNED MARKET** THE WHO'S WHO OF ASQ







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EDITOR'S NOTE



In his publisher's note in the first issue of Asian Sky Quarterly, Jeffrey C. Lowe, then Managing Director of Asian Sky Group and Asian Sky Media but now CEO, spoke about listening to the feedback from readers of our annual reports, and launching the new magazine to provide "buyers and sellers with informed advice on purchase and sale decisions, as well as [reporting on] the state of the industry across the Asia-Pacific region."

At the time of launch in the fourth quarter of 2015, the industry was in a different, but no less interesting phase to the phase it is in at the moment, and nowhere was this more true than in the Asia-Pacific. In the years leading up to the launch, China's President, Xi Jinping, had introduced anti-corruption and austerity measures in the country, and as a result, the industry inside the country had scaled back significantly. Charter operators were particularly badly hit, some of which had survived for a long time on the revenue generated from shuttling officials around the country. Almost overnight that revenue stream was wiped out, and as a result, several operators went out of business. China's economy was also showing signs of slowing, and this was exacerbated during the summer of 2015 when the Shanghai stock market crashed, wiping a third of the value off of Chinese stocks.

It is often lamented that if China sneezes, the rest of the world catches a cold, and this was reflected in the first of our Mood and Intentions survey, which was answered by over 150 business aviation professionals across the Asia-Pacific region. Overall, 75% of respondents said that the economy was either at or still to reach,

its low point, with an even bigger 80% saying that they had used their aircraft less than the previous year.

That first Mood and Intentions survey really set the bar for ASQ, and justifiably went on to be the section that most readers turn to first. Whereas the rest of ASQ can tell you what happened during the previous quarter, our Mood and Intentions Survey is a glimpse into the future, allowing you to see where the Asia-Pacific market is heading in the next six or more months. As a special feature in this 25th-anniversary edition, we look back over the previous survey results. It has been fascinating to take a closer look into all of the peaks and troughs — all of which directly correlate to major events that have affected the region.

Although we were unsure if we should only focus on data in ASQ, the first issue included a brief interview with Wu Zhendong, founder and chairman of Shenzhen-based Avion Pacific, and current chairman of ASG and AsBAA. The feedback we received told us that readers enjoyed finding out more about the views and personalities that were helping to shape business aviation in the region, so the interview section has become a firm favorite for many. Since that first issue, there has been a total of 34 people interviewed, with some issues featuring more than just one. A summary of who they are and which issue they are in can be found on page 68.

But this issue is not only about the special edition features, it also includes all of the regular actionable data and intel that you have come to rely on. We have interviews with Patrick Yan of Global Jet Capital, and a feature on Business Aviation Asia (BAA). Dassault shares a fascinating piece about the cold weather tests that its new Falcon 6X has just been through, and our own Tiffany Tong speaks to Hani Bakr of MedAire about the company's travel safety services.

SPECIAL THANKS TO OUR CONTRIBUTORS (OVER THE 25 ISSUES):





































































The cover of Asian Sky Quarterly is often prized by companies, not just in Asia-Pacific, but also from around the world. It is the first thing that people see when they pick up the magazine, so a great cover image can really leave a lasting impression on people.

With that in mind, here are some interesting facts about the covers over the years:

- Helicopters have been on the cover on only four occasions
- The smallest business jet to ever be on the cover was the HondaJet
- Q3 2021 was the first cover shot in the Metaverse
- Dassault has had the most front covers Seven
- Only five covers have included images of aircraft on the ground
- Nine covers have included images of aircraft over water
- All business jets on the covers have been in 'house' colors
- Only Q4 2018 & Q2 2019 have had more than one aircraft on the cover

As always, we would like to thank all of the companies and individuals that have contributed data and commentary for this issue. Particular thanks must go to HFW for an excellent article on how eVTOLs might disrupt the business jet industry, and AMSTAT and WINGX Advance for their continuing support in supplying data and analysis.

We would also like to thank each and every company that has advertised in Asian Sky Quarterly over the years. Too many to thank individually, but each and every one has been a contributor to the continued success of ASQ, and, in a remarkable piece of symmetry, two of the advertisers in the first issue of ASQ are also advertisers in this issue of ASQ - Dassault, and Gulfstream.

It seems only fitting as we are celebrating the milestone edition of ASQ - a magazine launched to report on the state of the industry in Asia-Pacific, to announce the launch in February of Asian Sky News – a new service dedicated to bringing you all of the business & general aviation and AAM / UAM news from across the region. Our team of writers have been busy preparing for the launch of our new weekly newsletter, as well as a revamped website. Keep an eye out in February for the official launch, and in the meantime, if you have any news to share, then please do get in touch.

> Sincerely, **Alud Davies** Media & Communications Director Asian Sky Group | Asian Sky Media







































Morgan Stanley















TESTIMONIALS

As soon as it was first introduced in Q4 2015, Asian Sky Quarterly became the go-to source of information on the dynamic Asia-Pacific business aviation market.

But don't just take our word for it, here's what some of Asia-Pacific's business aviation leaders have to say about the magazine, and its impact on the market:



Jason LiaoChairman and CEO
China Business Aviation Group



Omar Hosari Co-Owner/Founder CEO UAS International Trip Support

Thank you, Asian Sky Media, for your very valuable work for the last 10 years. The Asia-Pacific Business Jet Fleet Report and Asian Sky Quarterly have been very useful for us and the industry.

Asian Sky Group, Asian Sky Media, and affiliated publications have been a source of stellar industry insight and knowledge for the past decade and I've no doubt that they will continue to prove themselves an asset to our industry for many more to come.



Gary Dolski Chief Executive Officer Metrojet Ltd



Paul Chang Asia Pacific CAMP Systems International, Inc

I have always enjoyed reading your publications and genuinely look forward to the annual fleet jet reports. The individual and special reports (infrastructure, MRO updates etc.) are always an interesting read and since my days in Jet Aviation Singapore I have used the reports as a base and foundation for some of the new business development projects that I have pursued over my time in Asia.

CAMP really values the publication and resources that ASG have produced, so please continue to provide the high quality publications and products to the aviation industry. Asian Sky Quarterly has been one of the primary resources we use to gain insight information to the corporate aviation trend in the Asia-Pacific region. It allows companies to develop and adjust strategies based on market trends.



Peter Lochhead Head of Sales MedAire Asia-Pacific



Vinna TsangFounder and Director
The V Executive Search Company Limited

The data received is reliable, credible and can be easily actioned. Additionally, ASG's recent virtual conference provided another great way of interacting with our customers in Asia. We look forward to our continued partnership with ASG.

I believe ASG has certainly made a significant impact to the business aviation industry. From aviation consulting to market intelligence, ASG continuously innovates its products and services to provide an all-rounded coverage to the industry.



Quentin BondDirector of Business Development - Hong Kong
Jet Support Services, Inc



Jan GrubeDirector Head of Asia Sales
VIP & Special Aircraft Services Lufthansa Technik AG

Asian Sky Quarterly continues to improve its content and I really like the year on year comparable data - it's very informative and a good reference point.

Indeed ASG has set the standards in terms of its market intel and quality of information in Asia. I can only congratulate what you and your team achieved!







QUARTERLY SURVEY: A 6-YEAR REVIEW By Bowen Zhang

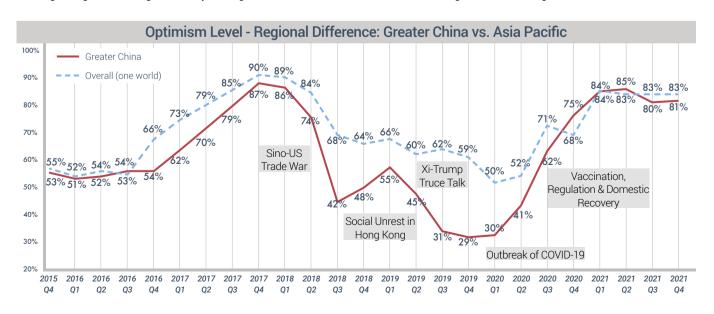
Very few people would believe that life would be so fundamentally different now, compared to six years ago when we first started our Quarterly Survey.

Ever since the first Quarterly Survey results were published, we have been capturing Asia-Pacific's market trends, optimism levels, intentions, and expectations. Over six years, and 25 issues, we have witnessed changes in the US presidency, a trade war between the US and China that is now finally nearing its end, political unrest in Hong Kong, and of course, the coronavirus.

We would like to thank each one of the thousands of respondents, without whom the survey would not be possible. Looking back through the survey results over the past 25 issues has been fascinating, with a clear correlation forming between major global events and dips and troughs in Asia-Pacific's optimism. Below we chart some of the major events and how they affected the survey results.

The graph above plots regional economic sentiment against that of respondents in Greater China. For the large part, the events that affected the mood in Greater China, also had an effect on the rest of Asia-Pacific as well, although in some cases this was less pronounced. The key take away is how important China, and its Special Administrative regions, are to the fortunes of the rest of Asia-Pacific.

Nowhere is this more evident than the China-US trade war. Many parts of Asia-Pacific supply materials that China use to manufacture goods that have since been subject to US tariffs. The knock-on effect, or at least the early perceived knock-on effect, was that the initial batch of tariffs would be just that – an initial batch, and that the trade war would escalate to the point to that it would cover many more products. This affected the economic optimism of both China and the rest of Asia-Pacific from the beginning of 2018, right the way through until the start of 2020, when a trade agreement was signed.



Early 2020 is the point that optimism showed the biggest difference between China the remainder of Asia-Pacific. This is most likely due to the differing phases that the region was in with the coronavirus pandemic. Having been first identified in Wuhan China right at the start of 2020, China moved swiftly to try and contain the virus, with various lockdowns implemented across the country in cities with high caseloads. These were largely confined to the first half of the year, with the remainder of seeing China's economy rebounding.

However, it wasn't until the second half of 2020 that the coronavirus really started to affect the rest of Asia-Pacific, and with it came a drop in optimism across the region.

Below we take a look at some of the major events that have affected optimism in the region since the first ASQ at the end of 2015.

The Sino-US Trade War

The US-China trade war began in July 2018 under the administration of then US President Donald Trump, and eventually led to tariffs being placed on some US\$550 billion of Chinese goods and US\$185 billion US goods.

The trade war had a direct effect on business aviation in the region, especially in China, where aircraft utilization dropped by half. This was very much noticeable in the number of business aircraft flights between the US and China. As the trade war escalated, we saw optimism from respondents drop off a cliff. This did temper momentarily in Q4 2018 when it looked like the two sides might be getting close to an agreement, however, optimism levels did not see any meaningful increase until the first quarter of 2020 when a phase one trade deal between the two sides was finally signed. However, before that, optimism levels in Greater China were a lowly 29%. This was partially caused by the protests that erupted in Hong Kong.



Hong Kong Protests

With optimism already low, an outbreak of protests in Hong Kong, commonly referred to as the Anti-Extradition Law Amendment Bill Movement, during 2019 caused another drop in optimism. The protests, which began in March 2019 became increasingly violent as more and more demonstrations happened. Shops and businesses closed early when scheduled protests were due to take place, with

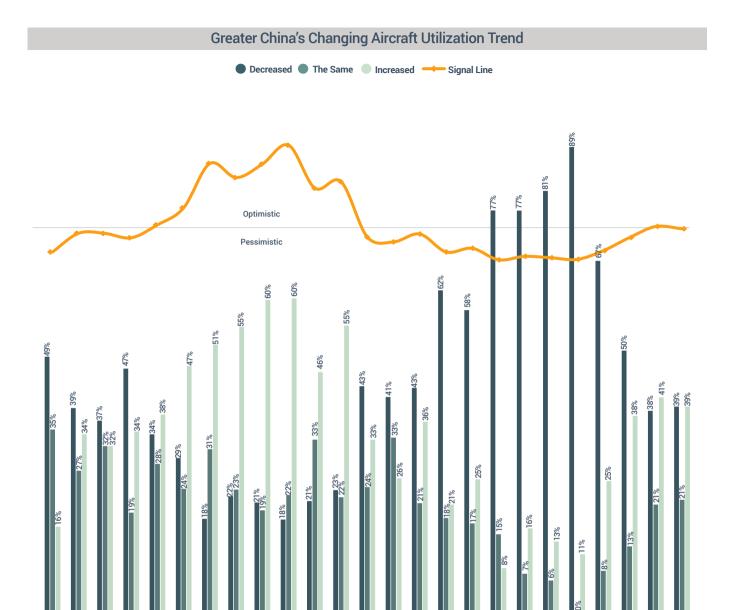
the Hong Kong economy taking a massive hit. Visitor numbers to Hong Kong also dropped significantly, and at one point Hong Kong's International airport was closed due to a protest taking place. The protests were due to continue into 2020, however, the outbreak of the Coronavirus curtailed these.



The Coronavirus

The first Coronavirus cases were recorded right at the beginning of 2020 in Wuhan, China. As a result, Wuhan, a city of 11 million residents, went into lockdown to contain the virus as much as possible. Unfortunately it had already begun to spread, and soon there were outbreaks in other Chinese cities, as well as in other parts of the world. However, economic optimism in Greater China showed no signs of dipping, in fact, it began to grow. This could be because of the low base it had to grow from, having reached a low point of

just 29% in the final guarter of 2019. Whilst the rest of the world was grappling with the virus and seeing lockdowns and border closures, China's economic optimism kept increasing. This was also seen in the country's GDP growth. During the first and second quarters, industrial output slowed, as firms in virus-hit areas had to temporarily close, but by Q3 China's GDP had begun its bounceback. This is very much reflected in the optimism graph below, with optimism increasing right the way through 2020 before plateauing in 2021.



2018 2018 2018 2019 2019

2019 2019

Q3

04

2020 2020 2020 2020

01

Since the start of the pandemic, international flights around Asia-Pacific were put on hold, as border closures and strict quarantines forced people to stay home. As a result, aircraft utilization decreased. In each quarter of 2020, our Greater China respondents said their fleet

01 02 03

2017 2017

2017

2018

01 02 03 04 01

2016 2016 2016 2016 2017

03

utilization level dropped by over 70%. However, we believe the actual numbers might be a lot higher after we examine the actual flight activity in the region.

03

Q2

2021

Q1

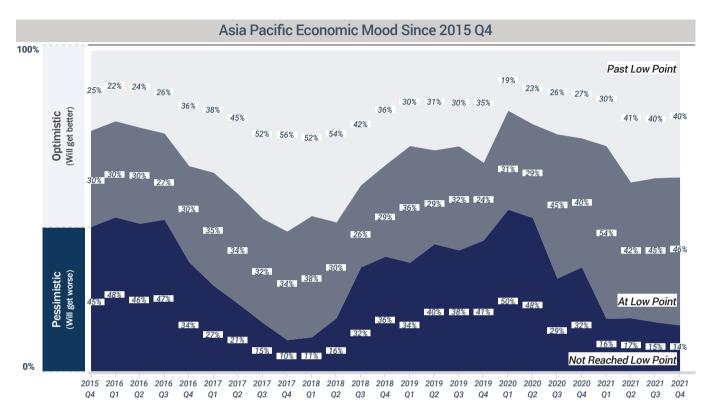
Asia-Pacific: Still Optimistic, Just More Realistic

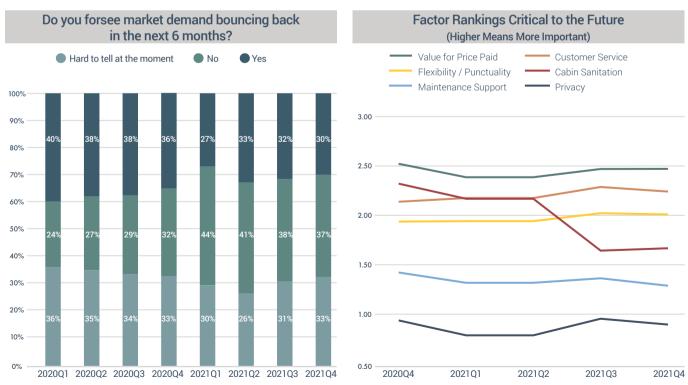
"Where are we in the current economic cycle?" When the question was first sent out to industry colleagues based in the Asia-Pacific region, the world had just come out of an economic crisis, and Donald Trump had been sworn in as the 45th US president and signed the biggest US tax transformation bill in history. Things were looking great and this was reflected in our survey - the pessimistic line representing APAC's economic mood has been low ever since the first issue.

In general, the market economic mood has been optimistic. The lowest optimism level we have seen was 50% and that was when the Covid-19 pandemic started. Through the graph, we can also see that pessimism levels began to rise again in 2018. Therefore, we believe that the Sino-US trade war and the pandemic had a big effect on the market, not only in Greater China but also in the rest of Asia-Pacific.

Despite being optimistic, the aviation industry is becoming more realistic as well. In the survey, although we categorized people who believed that we are at a "low point" regarding the economy to be "optimistic", there have also been more people recently choosing to

believe that "the economy will get better, but just not now." The number of people who chose "We are at a low point" has been increasing and in Q4 2021 reached 46%.

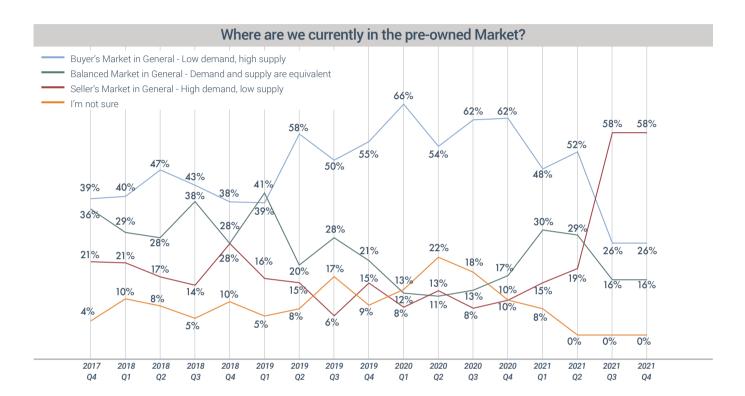


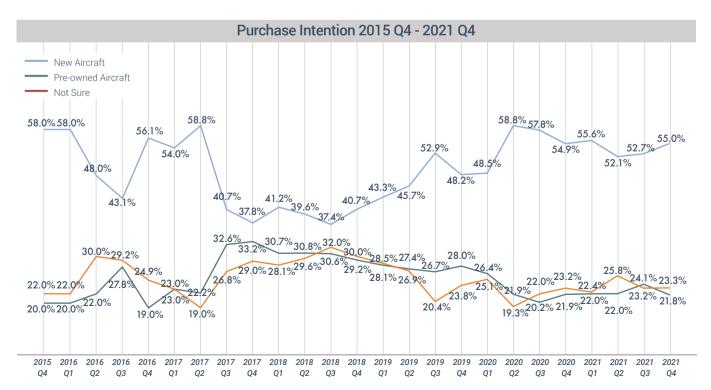


O Intentions: Finally Transitioning to a Seller's Market

Back in mid-2020, over 60% of people believed that we were in a buyer's market. Due to changes in transactions, inventory levels, and pricing, we told people that the trend of the pre-owned market has reversed and is instead moving towards a seller's market. Not many

people were prepared for that initially. However, there is no doubt that we are currently in a seller's market, with historically low market inventory and transactions.



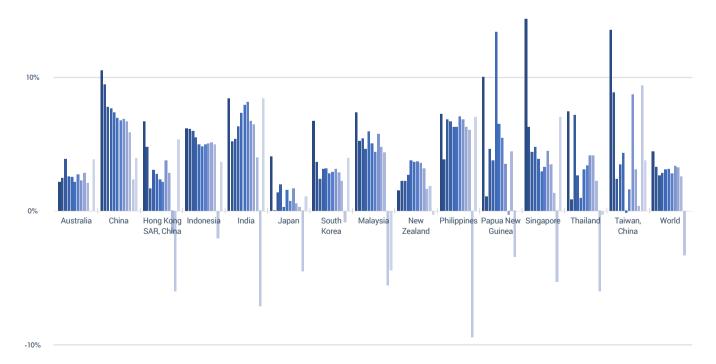




APAC GDP ANNUAL GROWTH RATE 2010 - Q3 2021*

2010 - Q3 2021

20%



^{*}Macau GDP omitted for better data presentation

Mainland China

China's economy has remained steady since the introduction of ASQ, with its annual GDP growth never dipping below 5.9% until the onset of the coronavirus. As the first country affected, China moved swiftly to try and contain the virus, with measures including full scale city-wide lockdowns. This had an impact on the country's industrial output, as many factories and business were shuttered during the early part of the year. China ended 2020 in positive territory, with GDP growth reaching 2.3%. Although sporadic cases and lockdowns continued into 2021, for the full year China's economy was fully back up and running, with GDP growth reaching 8.1%.

Macau, China

Macau's economy can best be described as erratic, truly demonstrating how a country that is largely dependent on one source of revenue can immediately become unstuck if that revenue source is taken away. Macau's economy relies heavily on tourism, so when the coronavirus struck, Macau, much like everywhere else in the world, sealed off its borders. This caused Macau's GDP to drop in 2020 by 54% across the year. Although the full year data for 2021 wasn't available at the time of going to press, in Q3 the economy had grown by 34.4% when compared to the same quarter in the previous year. This was thanks to Macau opening its borders to China, allowing tourists to once again visit the city.

Japan

As the third largest economy in the world, Japan's economy since the first issue of ASQ suffered in 2020 and 2021, as most other economies did, because of coronavirus related lockdowns. Growth between 2015 and 2019 had been steady, ranging from 0.3% in 2019 to 1.6% in 2015. Economic growth stalled during Japan's various states of emergency, partly due to lower economic output, but also due a decline in public spending, with 2020 full year GDP contracting by 4.6%. However, despite the challenges, Japan forecasts that its economy will expand by record levels in 2022.

India

India's economy has been slowing since 2016, although this has been exaggerated by the COVID-19 pandemic. From 8.3% growth in 2016, by 2019 India's growth had been cut in half to 4.0%. In 2020, due to the pandemic, India's economy had contracted by 7.3%. It's large population, which is the second highest in the world, remains 66% rural, and there are rising concerns about the gap between the rich and poor in the country. According to Business Insider, India has the third highest

billionaire population, after the US and China. This gap between the rich and poor is especially noticeable in the working class, with India seen as having many informal workers. India is however one of the largest pharmaceutical drug manufacturers in the world, and over 50% of the world's COVID-19 vaccines have been manufactured in the country.

Australia

Australia's economy had been steadily growing before COVID-19 reached the country, with growth of between 2.9% to 2.1% between 2015 and 2019. However, in 2020 the economy contracted by 1.1%. The decline came mostly because of lower hosehold spending, driven mainly by economic uncertainty as major global economies starting to slow. Australia was one of the first countries around the world to effectively shut itself off at the start of the COVID-19 pandemic. As a result, visitor numbers ground to a halt, with the tourism sector severely hit.

South Korea

South Korea's economy saw yearly GDP growth between 2.2% and 3.6% between 2015 and 2019, however, growing global tensions of the trade war between the US and China saw South Korea's GDP growth slowing to 1.3% in 2019. South Korea was one of the earliest countries to suffer from a coronavirus outbreak, with the government imposing strict lockdowns early in 2020. This caused the economy to go into negative growth territory for the first time in more than 20 years. For 2020, the economy contracted by 1%, with many jobs in the service industry being axed, and consumer spending dropping off a cliff. However, South Korea's resilience saw the economy bounce back in 2021, despite ongoing pandemic related lockdowns. Although full year data for 2021 is not yet available, in Q3 the economy expanded by 0.3%, largely due to an increase in exports of consumer electronic goods.

Indonesia

Indonesia's economy grew by an average of around 4.9% each year between 2015 and 2019, the growth only being tempered by COVID-19, which was behind the economy's contraction in 2020. The early growth in GDP came largely after the country relaxed its rules around foreign direct investment. However, in 2020 the country's economy contracted by 2.1% - the first full year contraction since 1998. As with other Asia-Pacific countries, Indonesia's decline was a result of the COVID-19 pandemic, which was behind a drop in domestic consumption and slowing government spending.

Taiwan, China

Having bounced around between 1.3% to 3.3% growth between 2015 and 2019, Taiwan's economy expanded by 3.1% in 2020, and in doing so became one of the only Asia-Pacific countries to grow during the year. This was largely due to strong export figures, with Taiwan being one of only three countries or regions that did not see a drop in merchandise exports. The other two countries, mainland China and Vietnam, were also amongst the small group that saw their economies grow in 2020.

Thailand

With Thailand becoming an increasingly popular tourist destination in recent years, its economy began to rely more heavily on tourism income. In 2019 tourism accounted for 18% of the country's GDP, which helped the economy expand by 2.3% across the year. However, with the coronavirus came border closures and quarantines, and the economy slumped by 6.1% in 2020 - with tourism's share of GDP dropping from 18% to just 6%. Although 2021 full year figures were not available at the time of going to press, Thailand's economy was expected to grow by 1%, thanks in part to a return of strong export data.

Malaysia

GDP growth in Malaysia had been slowing since 2017, with growth declining to 4.4% in 2019. During the period Malaysia's political scene was in turmoil, with scandals rocking both the government and its sovereign wealth fund. This was further hampered by the arrival of the Coronavirus, which saw the country closing its borders early and managing to escape from major lockdowns until in late 2020. However, GDP dropped into negative territory anyway, with a decline of 5.7% for the full year. This was largely due to lower public spending and a fall in exports. Lockdowns continued into 2021, with the middle part of the year being badly affected. However, for the full year Malaysia is expected to have grown by 3 – 4%.

Philippines

The Philippines economy had been expanding by at least 6% every year between 2015 and 2019. At the same time, the country managed to reduce the percent of its population in poverty from 23.3% in 2015 to 16.6% by 2018. In 2020, the coronavirus abruptly stopped the country's economic growth, with strict lockdowns put in place, especially in Manila. This led the economy to contract by 9.6%, although it is expected to bounce back to between 5-5.5% growth in 2021.

Singapore

GDP growth in Singapore has been slowing since 2017, although this was hastened in 2020 by the arrival of the COVID-19 pandemic. The decline is largely attributed to the China – US trade war, which has had several indirect effects on the Singapore economy. Although Singapore is not widely seen as a manufacturing country, it does export electronics and chemicals to both the US and China. The market uncertainty around the trade war contributed Singapore's economic growth drop to just 1.4% in 2019, less than half of the 3.5% growth seen in 2018. The arrival of COVID-19 and the associated lockdowns and drop in exports caused the economy to contract by 5.4% in 2020.

Hong Kong, China

Hong Kong's economy had contracted before the arrival of the coronavirus in 2020. The country ended 2017 with a growth of 3.8%, however global uncertainty around the China – US trade war cut Hong Kong's growth down to 2.9% in 2018. Worse was to come in 2019, when political unrest began to stir in the city, which gradually became more violent throughout the year. This caused businesses to close early during scheduled demonstration. In 2019, Hong Kong's economy contracted by 1.9%. Much like elsewhere in Asia, when the coronavirus arrived the government acted swiftly, enacting lockdowns and border closures. In 2020 the economy contracted by 6.1%, however growth is expected to return to positive territory in 2021.

Data Source: World Bank & Trading Economics



IADA MARKET REPORT

FOURTH QUARTER 2021

WAYNE STARLING

Executive Director, IADA

We are excited to present the fourth quarter 2021 IADA Market Report.

To say that 2021 was an extraordinary, unprecedented year is no overstatement. In the aviation field, there is red-hot global demand married to a lack of inventory; it's a seller's market. And our members believe that the market is likely to remain that way for the next six months.

Despite the constrained inventory, IADA members reported a remarkable 20 percent increase in closed deals from 2020 to 2021: 1,372 transactions for 2021, compared to 1,135 in 2020.

IADA Accredited Dealers buy and sell more aircraft by dollar volume than the rest of the world's dealers combined and bring an informed perspective on the state of the market. The IADA Market Report is an informative and reliable view of the state of the aviation industry. It combines two important factors: (1) IADA Accredited Dealers' perspective on the market taken from our survey of every IADA Member, and (2) actual sales data. The report presents the dealer perspective allied to actual supporting sales data. IADA Accredited Dealers submit monthly transaction and activity reports to our online sales organization, Aircr aftExchange. While AircraftExchange features only those aircraft listed by IADA Accredited Dealers, dealer activity reports include all of their transactions.

The sales success of IADA Accredited Dealers and their transaction reports in this unique year demonstrate the power of our collective. IADA dealers are able to locate and transact sales even when inventory is difficult to locate - and might never appear on the market.

Going forward, the IADA Perspective Survey will be conducted at the end of each quarter and presented at the beginning of the following quarter.

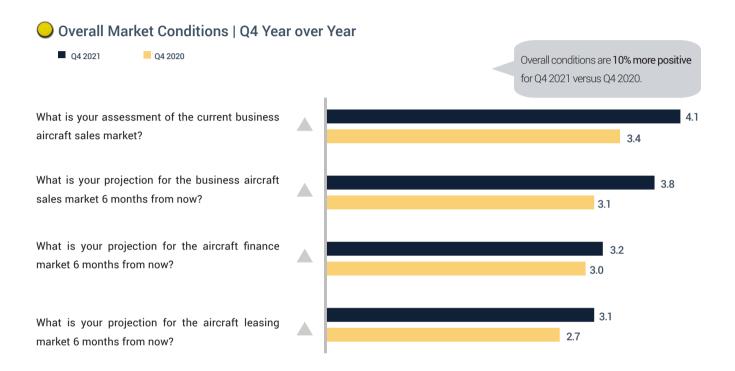
I wish you continued success in 2022.



GENERAL MARKET CONDITIONS

The following data is derived from questions that measure members' overall perspectives on the future of the used aircraft sales market over the next six months, including finance, leasing and commissions. Responses are reported on a 1-5 scale, with 1 meaning "worst ever" and 5 meaning "best ever."

Respondents report that current market conditions are "better than normal" for Q4. Current market conditions are driven by a near-total lack of inventory and high demand.



Overall Market Conditions for Sales, Finance, Leasing and Commissions

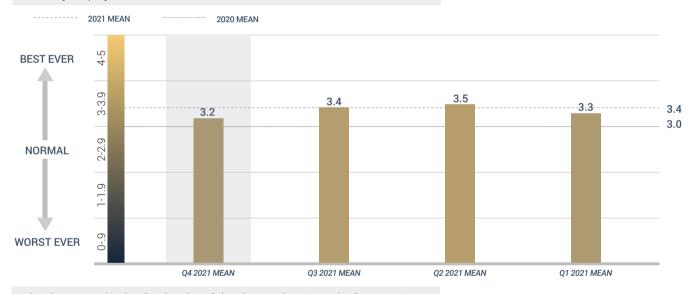
What is your assessment of the current business aircraft sales market?



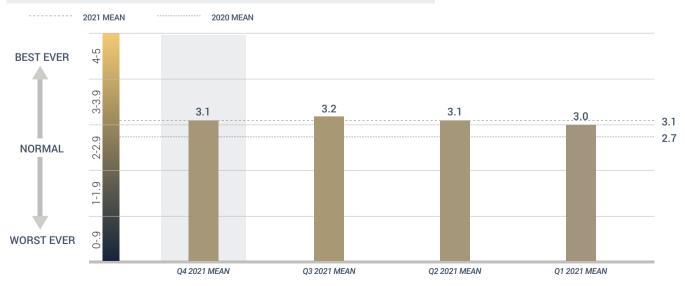
What is your projection for the business aircraft sales market 6 months from now?



What is your projection for the aircraft finance market 6 months from now?



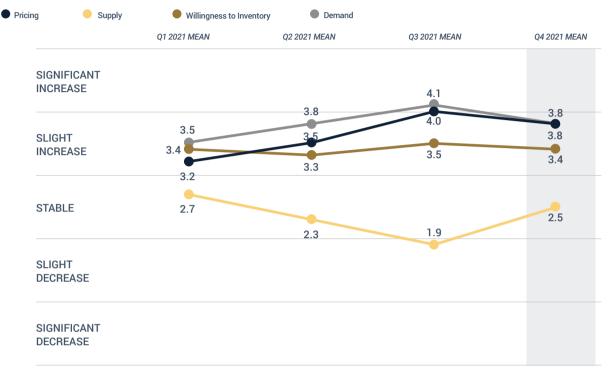
What is your projection for the aircraft leasing market 6 months from now?



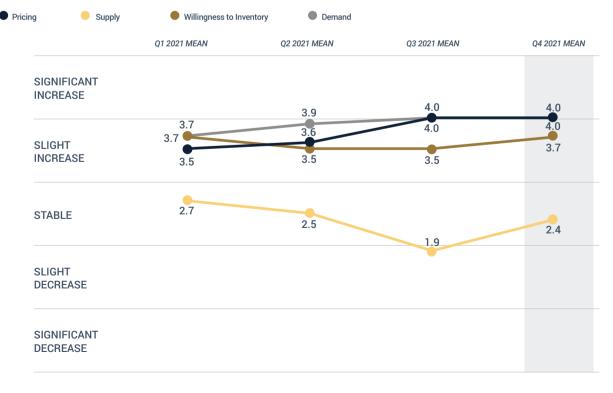
6-MONTH MARKET SECTOR OUTLOOK

The Q4 responses predict the next six months will continue to bring increases in demand for all sectors of the used aircraft sales market — turboprop, light, medium and large/ ULI — while inventory deficiencies (supply shortfalls) are projected to drive higher prices.

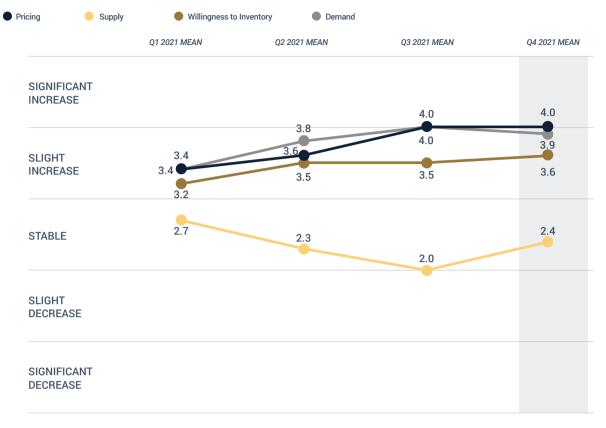
OProjections for the Pre-owned Turboprop Market for the Next 6 Months



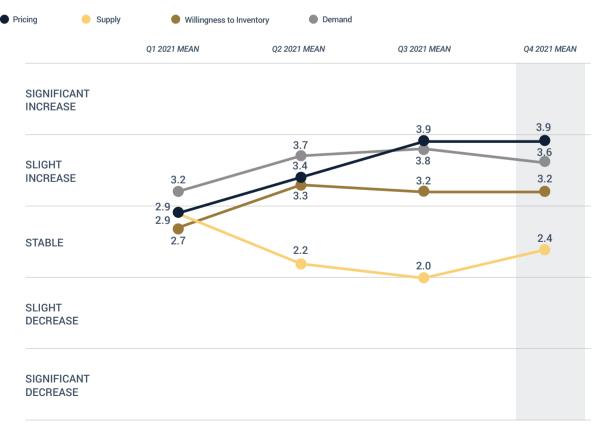
OProjections for the Pre-owned Light-jet Market for the Next 6 Months



O Projections for the Pre-owned Midsize Market for the Next 6 Months



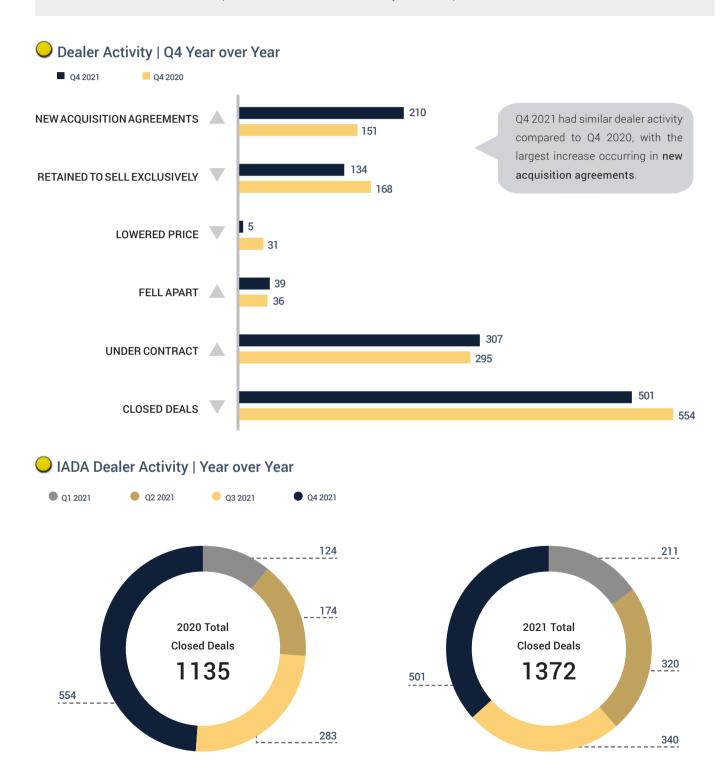
Projections for the Pre-owned Large and Ultra-long-range Jet Market for the Next 6 Months



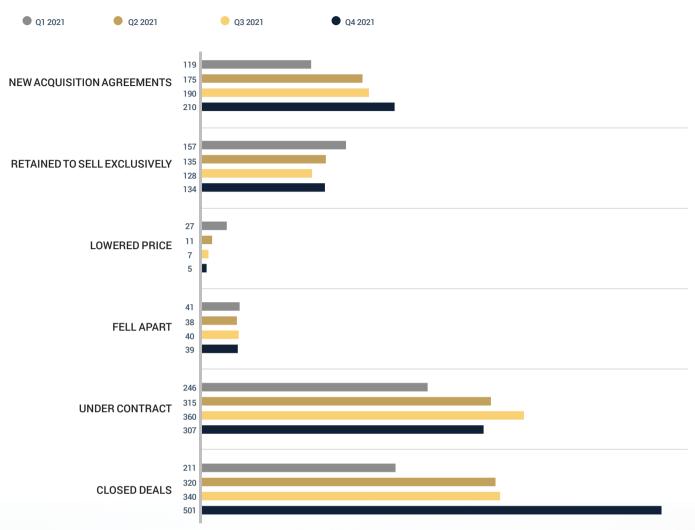
MONTHLY ACTIVITY REPORTS

The perspectives and projections from IADA Members for the IADA Market Report are supported by the monthly transaction/activity reports submitted by IADA Accredited Dealers through AircraftExchange.

Please note that, in addition to sales data from AircraftExchange listings, the IADA Market Report includes data from all IADA Accredited Dealer activities and transactions, reported in total. Herein is a summary of those reports.



O IADA Dealer Activity Report







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Hangzhou, Nanjing, Chongqing, Xiamen, Guangzhou, Jinbian and more.

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- · We have decades of premium operating experience.
- With 10,000 flight hours per person annually.

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ASIA-PACIFIC MACRO ECONOMICS

GREATER CHINA | MAINLAND CHINA, HONG KONG, MACAU & TAIWAN

Mainland China

China's economic growth slowed down to 4.9% in the third quarter of 2021, lower than the expected 5.2%. The decline is a steep drop from the 7.9% growth in the previous guarter, and is largely due to a slowdown in global trade.

Hong Kong, China

Hong Kong continued its economic recovery in the third quarter, with growth of 5.4%. Exports and local consumption were behind the rise, which is expected to continue into 04.

Taiwan, China

Taiwan's economy grew by 3.8% in Q3, driven by private investment and strong export figures. Taiwan's Q3 growth helped keeping it on track to meet its growth target of 6.01% for the full year.

GDP GROWTH (BILLION USD)



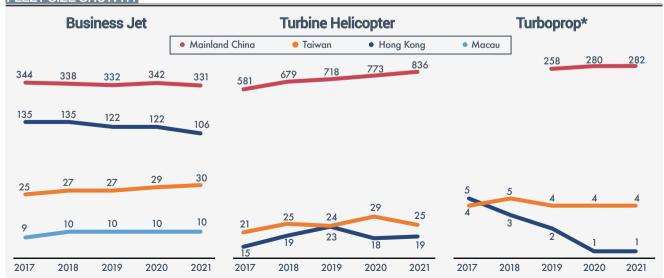
PURCHASING MANAGER'S INDEX



*Data Source: Trading Economics

A reading above 50 indicates an expansion of the manufacturing sector compared to the previous month; below 50 represents a contraction; while 50 indicates no change.

FLEET SIZE GROWTH



Data Source: The business jet and helicopter fleet: Asian Sky Group's Business Jet Fleet Report & Helicopter Fleet Report, Turboprop data provided by AMSTAT.

The current fleet data is preliminary, all fleet size data will be finalized in the upcoming Helicopter / Business Jet Fleet Report.

* Historical data under review

^{*}Macau's PMI is not available.

AUSTRALASIA | AUSTRALIA, NEW ZEALAND

Australia

Australia's economy declined by 1.9% in the third quarter, due to a drop in household consumption. This was largely due to the pandemic situation in the country, which saw various parts of the country enter lockdowns.

New Zealand

New Zealand's economy saw a drop of 3.7% in Q3 2021, its second largest recorded drop. The fall came after two strong quarters and can largely be blamed on lockdowns in Auckland - the largest city in New Zealand.

GDP GROWTH (BILLION USD)



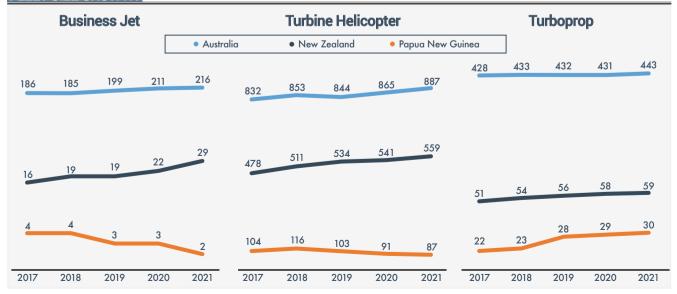
PURCHASING MANAGER'S INDEX



*Data Source: Trading Economics

*PNG's PMI is not available. A reading above 50 indicates an expansion of the manufacturing sector compared to the previous month; below 50 represents a contraction; while 50 indicates no change.

FLEET SIZE GROWTH



Data Source: The business jet and helicopter fleet: Asian Sky Group's Business Jet Fleet Report & Helicopter Fleet Report, Turboprop data provided by AMSTAT. The current fleet data is preliminary, all fleet size data will be finalized in the upcoming Helicopter / Business Jet Fleet Report.

SOUTHEAST ASIA | THAILAND, MALAYSIA & SINGAPORE

Thailand

Thailand's economy contracted by 0.3% in the third quarter of 2021. Private consumption dropped by 3.2%, as the country continued lockdowns to battle the pandemic, with the accommodation and food services particularly badly hit – with a drop of 18.7%.

Malaysia

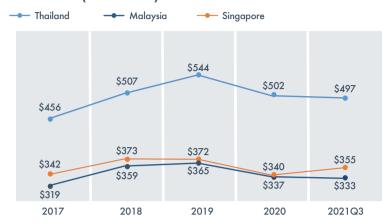
Malaysia's economy declined by 4.5% in Q3, wiping out the gains from the previous quarter. However, despite the drop, the economy is expected to rebound again in Q4 and finish the full year off in positive territory.

Singapore

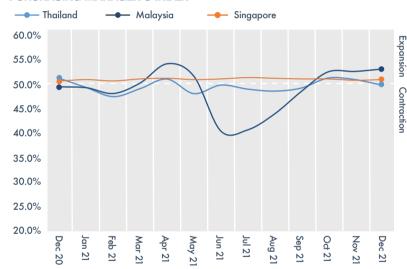
The economy in Singapore grew by 7.1% in Q3, beating analysts' estimates of 6.5%. Singapore's Ministry of Trade and Industry has now revised its full year growth estimate up to 7%.

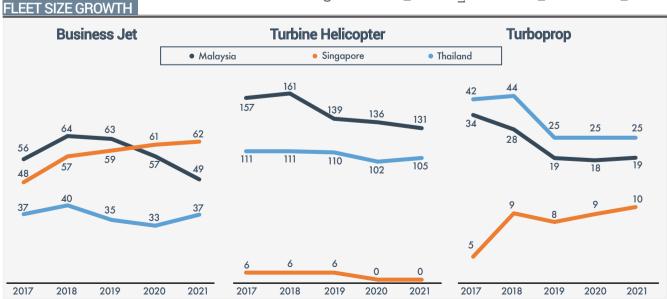
*Data Source: Trading Economics

GDP GROWTH (BILLION USD)



PURCHASING MANAGER'S INDEX





Data Source : The business jet and helicopter fleet: Asian Sky Group's Business Jet Fleet Report & Helicopter Fleet Report, Turboprop data provided by AMSTAT. The current fleet data is preliminary, all fleet size data will be finalized in the upcoming Helicopter / Business Jet Fleet Report.

^{*}A reading above 50 indicates an expansion of the manufacturing sector compared to the previous month; below 50 represents a contraction; while 50 indicates no change.

SOUTHEAST ASIA | INDONESIA & PHILIPPINES

Indonesia

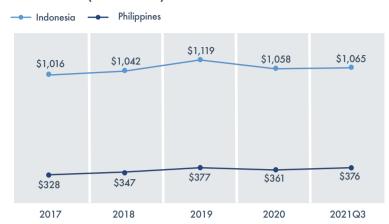
Indonesia's economy grew 3.5% in Q3, down from 7.1% in the previous quarter. The economy benefited from robust demand from external trade partners, which boosted exports during the quarter, and also saw an increase in household consumption.

Philippines

The economy in the Philippines jumped by 7.1% in Q3, down from the 12% seen in Q2. Growth was seen across almost all economic sectors, apart from agriculture and fishing, which declined by 1.7%.

*Data Source: Trading Economics

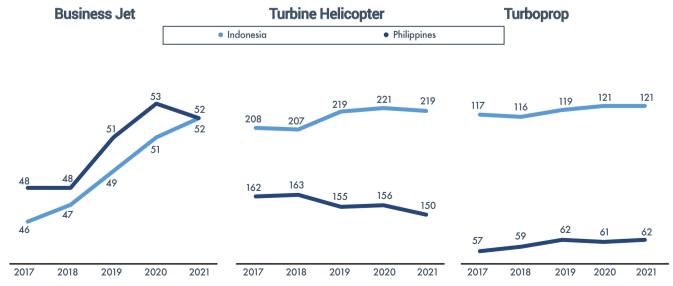
GDP GROWTH (BILLION USD)



PURCHASING MANAGER'S INDEX



FLEET SIZE GROWTH



Data Source: The business jet and helicopter fleet: Asian Sky Group's Business Jet Fleet Report & Helicopter Fleet Report, Turboprop data provided by AMSTAT. The current fleet data is preliminary, all fleet size data will be finalized in the upcoming Helicopter / Business Jet Fleet Report.

^{*}A reading above 50 indicates an expansion of the manufacturing sector compared to the previous month; below 50 represents a contraction; while 50 indicates no change.

EAST ASIA & CENTRAL ASIA | JAPAN, SOUTH KOREA & INDIA

Japan

Japan's economy contracted by 3.6% in Q3, worse than the estimated 3%. The drop is largely due to a decline in public spending, as a result of a resurgence of COVID-19 in the country, leading to many lockdowns.

South Korea

Following a quarter of record growth, South Korea's economy grew by 4% in Q3, 2% slower than in Q2. A decline in consumer spending due to a tightening of social distancing measures was largely to blame for the slowdown.

India

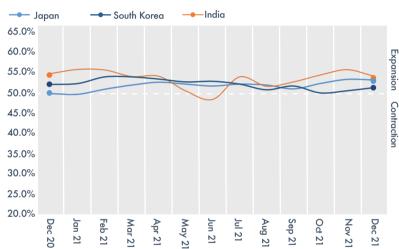
GDP bounced back in India during Q3. Having dropped by 11.6% in Q2, Q3 saw a 12.7% increase. During the quarter the country saw an increase in fixed investments, as well as a rise in private consumption.

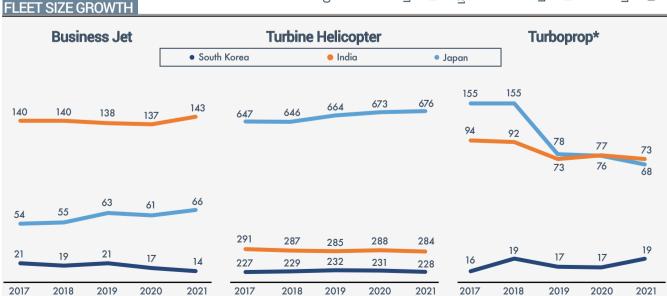
*Data Source: Trading Economics

GDP GROWTH (BILLION USD)



PURCHASING MANAGER'S INDEX





Data Source: The business jet and helicopter fleet: Asian Sky Group's Business Jet Fleet Report & Helicopter Fleet Report, Turboprop data provided by AMSTAT.
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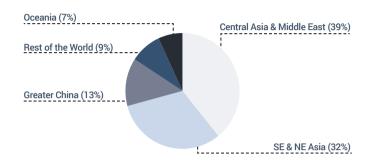
^{*}A reading above 50 indicates an expansion of the manufacturing sector compared to the previous month; below 50 represents a contraction; while 50 indicates no change.



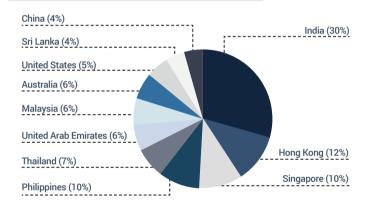
ASIA-PACIFIC MOOD & INTENTIONS

RESPONDENT BREAKDOWN

RESPONDENTS LOCATIONS



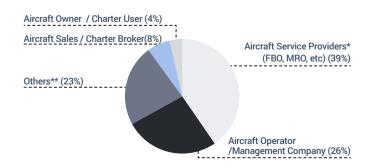
TOP 10 RESPONDENT'S LOCATIONS



RESPONDENT'S RELATED AIRCRAFT TYPE



RESPONDENTS CATEGORY



Highlights in 2021 Q4 survey

- Total market optimism remains high, with more respondents believing that the economy is now at low point.
- 2. Greater China market optimism remains high, but still lower than regional average.
- 3. Aircraft utilization in the region remains lukewarm
- Fewer respondents each quarter believe that market demand will bounce back in the next six months.

In Q4 2021 more than 290 business aviation professionals responded to ASG's latest quarterly survey about the mood and intentions in the industry.

The regions with the most respondents include:

1. Greater China (13%) 2. Southeast and Northeast Asia (32%) 3. Central Asia & Middle East (39%, incl. India, Pakistan, UAE etc.) 4. Oceania (7%)

The majority (62%) of the respondents are related to business jets operations.

In total, 65% of the respondents from this quarter's survey are from aircraft services providers (FBO, MRO, etc.) and aircraft operators. This was followed by a smaller percentages of aircraft brokers (8%), and aircraft end users (4%). The remainder of the respondents are from other associated areas.

COVID-19 Pandemic in the Asia-Pacific

In the fourth quarter, a new low of 30% of respondents reported that market demand will not be back in the next six months, and 66% of respondents reported that COVID-19 has seriously affected their business – a slight 1% increase when compared to last quarter's results.

^{*} Aircraft Service Providers include: financial services, training, FBO, ground handlers, Service, MRO, parts, etc.

^{**} Others include law firms, research facilities and government officials

Domestic business is still acting as the main driver of the recovery, however, there has been no significant increase in aircraft utilization when compared to the same period in 2020 – this is verified later in ASQ in the WingX section, which saw a minor drop in flight activity in Q4 2021 vs. Q4 2020.

When it comes to the economy and asking people's understanding of the current economic cycle, optimism reached 86%, which is a minor 1% increase over the previous quarter. But we have also seen an increasing trend of more people believing that the economy is at its low point. (46% this quarter) rather than past its low point.

Greater China respondents reported a minor 1% increase in optimism vs. the previous quarter, but this was lower than the regional average once again. This might be been related to the recent COVID-19 leak in mainland China, as well as the delay of the Hong Kong - mainland border opening, which has affected domestic flight connectivity.

Aircraft Utilization

In Q4 2021, according to WingX Advance, a German business aviation consultancy firm, flight activity in Asia-Pacific was lukewarm and did not enjoy an increase over same quarter last year. China's main regional hubs, including Beijing, Shanghai and Hong Kong saw decreases in flight activity.

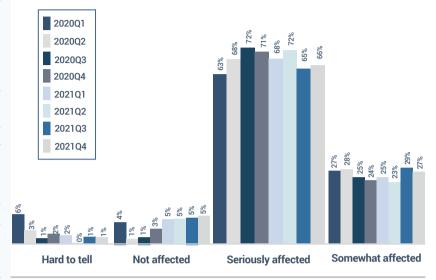
Purchase Intentions

There was an uptick in people selecting "Not Sure" in the purchase intentions section, when compared to the previous quarter. However, no significant rise has been seen.

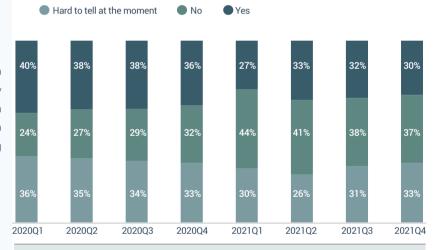
For factors influencing purchase decisions in this quarter's survey, "Government / Public Opinion" and "Price", are becoming the top limiting factors for purchase decision making.

COVID-19 IMPACT IN ASIA-PACIFIC

Has the COVID-19 outbreak affected you or your organization's business so far?



O Do you foresee market demand bouncing back in the 2nd half-year of 2020/1st half year of 2021?



Rank the following factors that you think are critical to the future of business aviation / general aviation (the lower the better):

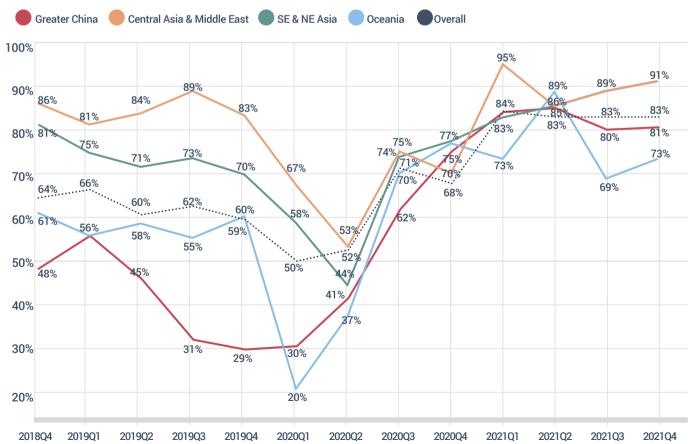


In terms of your current level of business recovery, how does your domestic business volume compare to your international business volume:

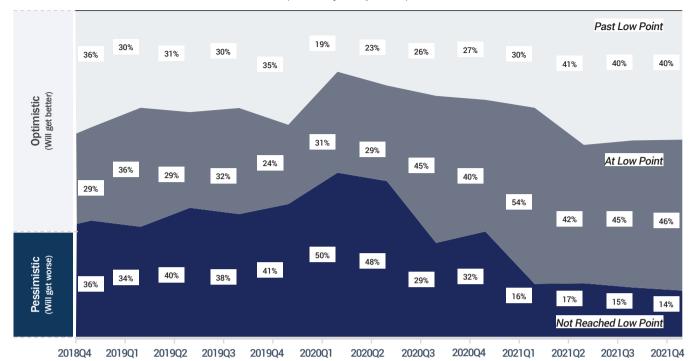


ECONOMIC STATUS

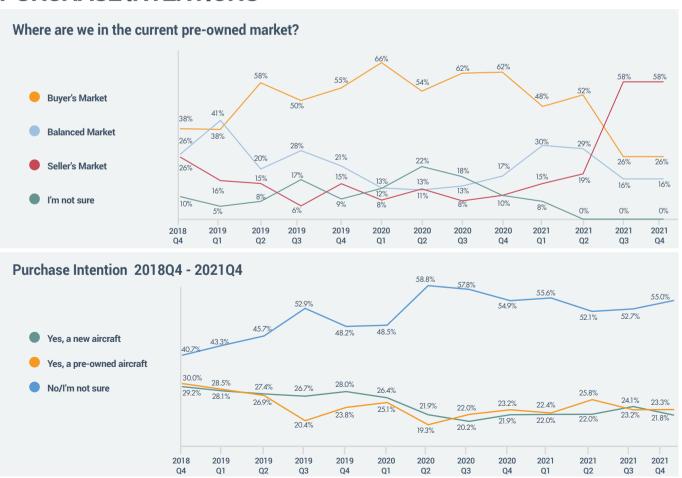




What is the current economic status? (Quarterly comparsion)



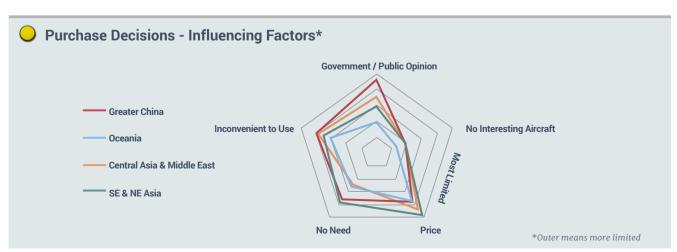
PURCHASE INTENTIONS



Regional Differences (Fixed Wing)

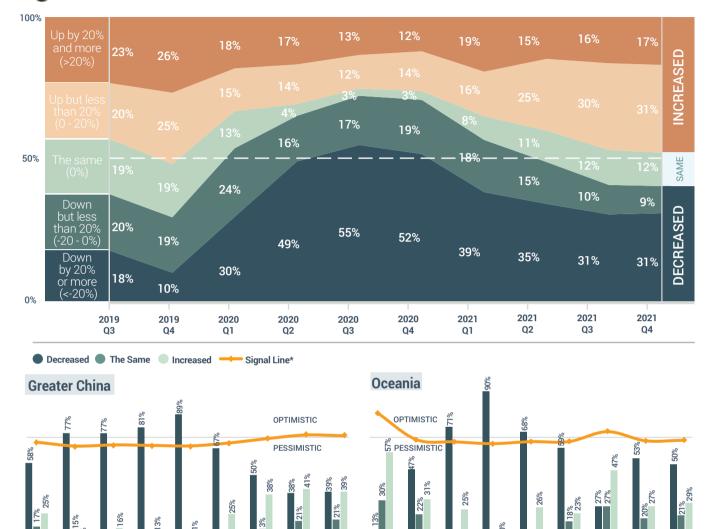


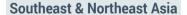




FLEET UTILIZATION

What is the current economic status? (Quarterly comparsion)





2020

Q2

2020

Q3

2020

Q4

2020

01

2021

02

2021

03

2021

04

2019

Q4

2020

Q1

2019

Q4

2020

Q1

Central Asia & Middle East

2020

Q2

2020

Q3

2020

Q4

2020

01

2021

02

2021

Q3

2021

Q4



^{*} An Optimistic-Pessimistic Signal Line has been added to regional usage trend analyses for Greater China, Oceania and South and East Asia regions. An optimistic mood is derived from more people indicating 'higher' aircraft utilization compared with 12 months ago, while a pessimistic mood is derived from more people indicating 'lower' aircraft utilization compared with 12 months ago.



SPECIAL FEATURE

ASIA-PACIFIC BUSINESS JET FLIGHT ACTIVITY 2021 ANNUAL REVIEW

Analysis By Liana Liu

WINGX is a data research and consulting company, which provides actionable market intelligence to the global business aviation industry. Our interactive web-hosted dashboards provide our customers with the data-visualization they need to stay alert to market trends, keep tabs on market share, identify competitive threats and spot new sales opportunities. WINGX customers include aircraft operators, airframe, engine and avionics OEMs, airlines, maintenance providers, airports, fixed-based operators, satcom providers, fuel providers, legal advisors, leasing companies, banks, regulators, investors and private jet users.

For further information and a free demo of our dashboards, please contact: Richard or Christoph at office@wingx-advance.com

WINGX Data Source: ADSB and ATC

DATA BY WINGX

FLIGHTS DEPARTING APAC



During 2021 the number of monthly business jet departures in the Asia-Pacific region was between 6,000 and 9,000. The fourth quarter saw steady year-on-year growth of around 20%.

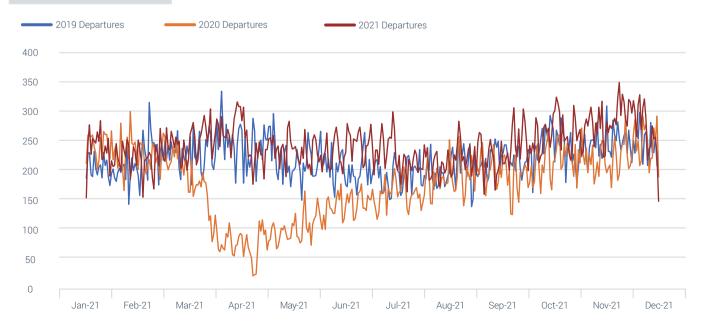
Significant year-on-year growth of 228.70% was seen in April 2021. This was due to the impact of the COVID-19 pandemic, which saw a significant decline in Asia-Pacific business aviation flights between January 2020 and April 2020. In April 2020 there were just 2,281 flights - the lowest for 2020. When compared with the total number of flights in April 2019, April 2021 saw growth of 3.86%. This increase, although modest, is a further indication that we are seeing a shift away from using business or first-class flights on commercial airlines for those that can afford to do so.

India reported a record rise in daily COVID-19 cases in April 2021, and as such, safety and hygiene became the top concern for travelers.

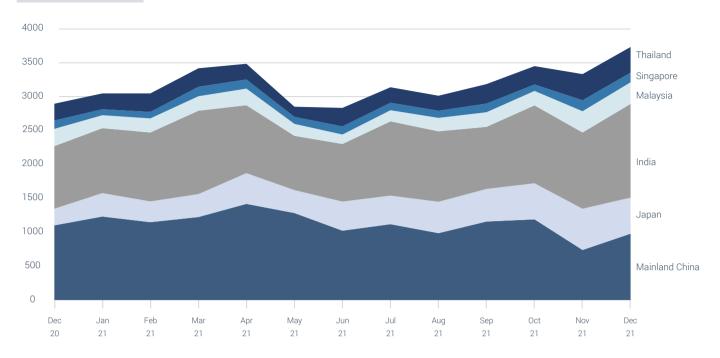
The country saw 1168% growth in April 2021 when compared to April 2020. This increase cannot only be attributed to the ultra-rich in India but also those who are pooling all their resources for the fear of not having access to medical treatment on time.

Since the number of flights departing in the Asia-Pacific region saw a gradual recovery in the second half of 2020, year-on-year growth for the second half of 2021 was lower than the first half. Several global events that were postponed in 2020 resumed in 2021, like the Tokyo 2020 Olympics and Expo 2020 Dubai. This contributed to the increase in the year-on-year growth rate in the third and the fourth quarters of 2021. October, November, and December, framed around when the Dubai Airshow was held, outperformed the other months in 2021.

DEPARTURES BY DATE



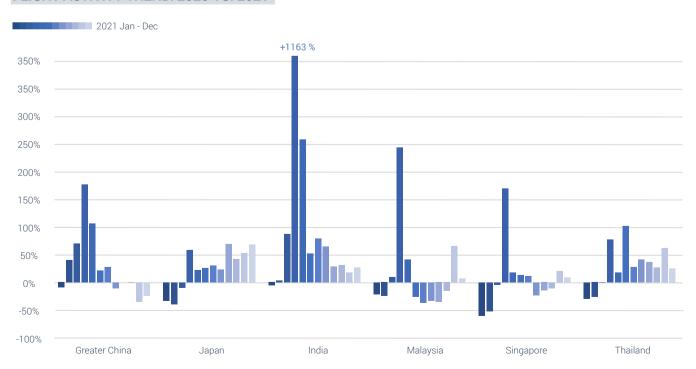
FLIGHT ACTIVITY



The fourth quarter of 2021 saw more business jets flight activity when compared to the previous quarter. Greater China is the only region that experienced negative year-on-year growth for the entire fourth quarter of 2021. This was due to strict COVID-19 travel

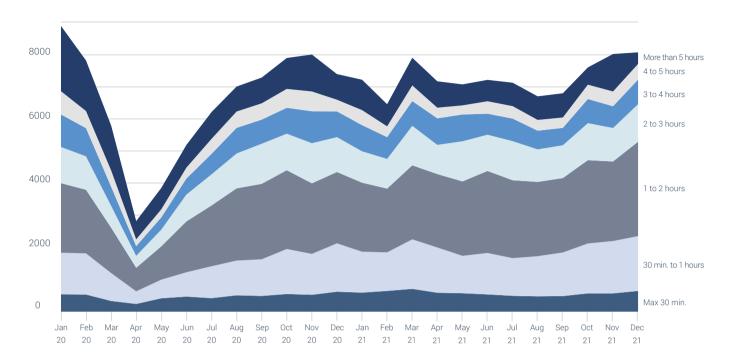
restrictions. The Chinese government advised citizens to avoid non-essential traveling when the Omicron variant was identified. India continued to grow, but at a slower pace.

FLIGHT ACTIVITY TREND: 2020 VS. 2021



FLIGHT DURATIONS

10000



Although the total number of departures has not yet bounced back to pre-pandemic levels, the number of flights lasting between 30 minutes to 2 hours increased in 2021 when compared to 2020 and 2019. Most Asia-Pacific countries have closed their borders; hence, flight activity is mostly domestic. The number of departures for flight durations between 30 minutes to 1 hour continued to dominate in the fourth quarter of 2021, followed by durations between 1 hour to 2 hours. In November 2021, the number of departures of flights of more than 5 hours reached an annual peak. Countries such as Thailand, Vietnam, Cambodia, Malaysia, Indonesia, the Philippines, and Australia announced that they would reopen their borders in late October or early November. This helped increase the number of flights departing Asia-Pacific lasting more than 5 hours from 531 to 1,148 monthly flights.

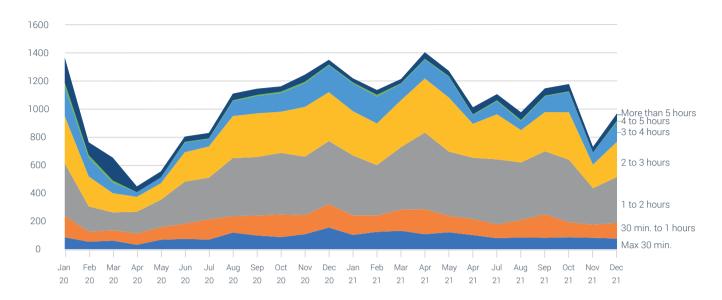
With the uncertainty brought by the pandemic, there has been a clear increase in the number of domestic flights, which have grown by 39.59%. The region with the busiest domestic flight activity is Mainland China. Within Mainland China, the most activity was seen with flights between Beijing and Shanghai and between Beijing and Shenzhen. These cities, areas where business activities are most engaged, are ranked the top three for their GDP in Mainland China.

INTERNATIONAL VS. DOMESTIC FLIGHTS



REGION	DEP. FLIGHTS	YOY TREND
Greater China	13637	36%
Japan	5307	31%
India	12682	161%
Malaysia	2633	17%
Singapore	1442	7%
Thailand	3232	36%

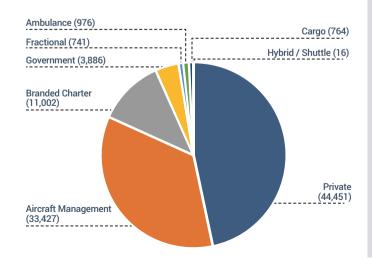
FLIGHT DURATIONS IN GREATER CHINA



GREATER CHINA DEPARTURES 2021



FLIGHTS BY OPERATOR TYPE



The overall number of departures for the Greater China region fluctuated over the year; nonetheless, the number of flight departures in Hong Kong, Taiwan and Macau were stable year-round. As the Omicron variant was identified in November 2021, the number of November departures had dropped 43.7% compared to October in Mainland China due to stricter COVID-19 prevention regulations.

Since most flights within Mainland China were domestic, flight durations between 1 to 2 hours dominated flights within the Greater China region - similar to the trend seen across Asia-Pacific. Taking flights from Beijing Capital International Airport to Shanghai Hongqiao International Airport and from Shenzhen Bao'an International to Beijing Capital International Airport as examples, the flight duration is 1.67 hours and 2.54 hours, respectively.

TOP OEM FLEET ACTIVITY YOY%

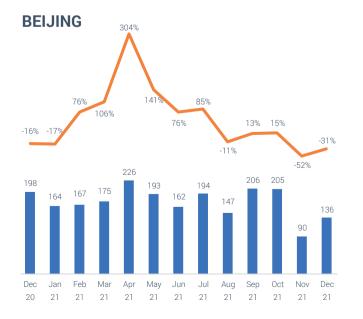


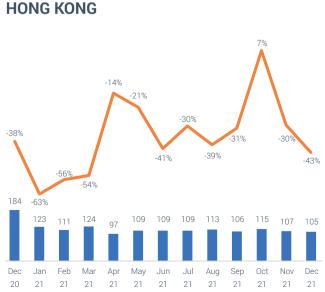
TOP CITY FLIGHT ACTIVITY TRENDS 2021

Departing Flights YoY %

Consistent with the monthly departures in the Asia-Pacific region, most cities in this region exhibit similar year-on-year growth trends, with significant growth in April and an overall steady, lower growth rate thereafter. As previously mentioned,

people in India with high disposable income have begun to skip commercial flights in favor of business aviation flights. New Delhi became one of the busiest airports in the Asia-Pacific region for business jet flights in the fourth quarter of 2021.





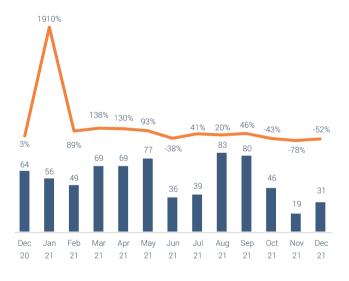
SHANGHAI



TOKYO



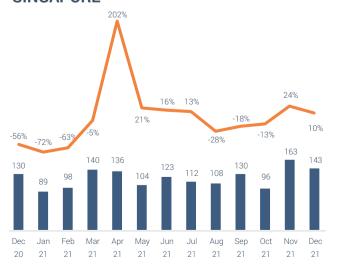
GUANGZHOU



BANGKOK



SINGAPORE



TAIPEI



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LCI)



A LOOK BACK

Pre-owned Business Jet Market Dynamics

By Bowen Zhang

In 2019 we published a five-year overview of the pre-owned business jet market in which we stated the market would shift towards a sellers' market. Over the next two years that happened quicker than we expected, partly due to the effects that both Trump and COVID-19 had on the market. Now that we have reached the 25th ASQ issue, we look back over the past six-years and see what, if anything, has changed.

MARKET DEMAND

When the Trump Administration launched its tax reforms, the US stock market reacted very favorably, reaching record highs shortly after its introduction. But it also created a 'cheap-money' environment, which helped stimulate international companies to invest in the US and was behind an increase in spending of High-Net-Worth Individuals (HNWIs). Consequently, the demand for business aviation increased, especially in the US.

However, the main driver for the switch to a seller's market has been COVID-19. With airlines cutting schedules and downgrading service levels, business aviation began to pick up new customers. Although this was partly due to a decrease in airline schedules, it is also due to the relative safety that travelling on your own aircraft can bring. This not only applies in the air, but on the ground as well - flying privately reduces potential infections from crowded airport terminals.

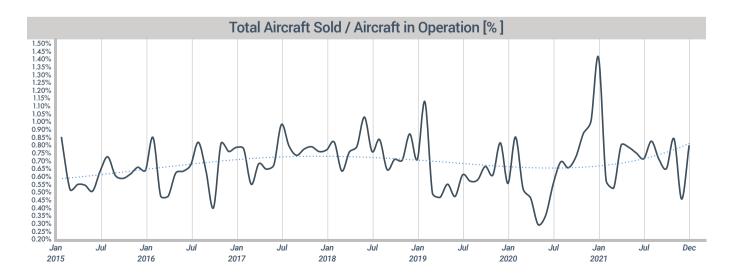
The US has seen a huge increase in first time clients chartering private jets in 2021, and this trend looks to be continuing into 2022.

We have also seen very noticeable evidence of being in a seller's market in our aircraft brokerage business, which is as busy as it has ever been, with enquiries flooding in seconds after we list an aircraft for sale.



With market demand so high, it is no wonder that 2020 and 2021 saw record levels of transactions in the pre-owned business jet market. This comes against the backdrop of COVID-19 making face-to-face negotiations a lot harder, and in some cases impossible due to boarder restrictions and guarantines. In December 2020, the market closed deals on 114 business jets* in a single month, with the majority being large cabin, long-range models.

*Stats are from ASG's Market Dynamics research by taking a selection of 39 popular business jet models on pre-owned market.

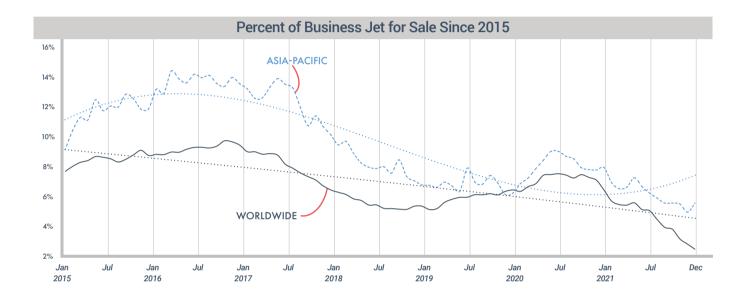


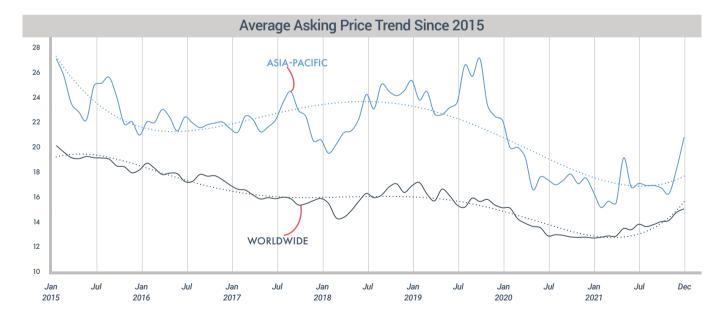
HISTORICALLY LOW INVENTORY

As of publication we are seeing all time low inventory levels. (i.e., the percentage of number of aircraft for sale vs. total aircraft in operation). At the end of Q4 2021 that figure was just 2%, whilst in Asia-Pacific that number is higher at 5%. Since the first issue of ASQ in Q4 2015 the highest percentage of inventory we have seen has been around mid-2016, when the Asia-Pacific figure was around 14% and the global figure around 9%. To put that in terms of actual numbers of aircraft available, in 2015 there were around 600 aircraft on the market, whilst

today there are around 200. Many of the aircraft that are on the market are older aircraft that have already clocked up a lot of hours. We have also seen the average asking price for pre-owned models steadily increase since mid-2020, which has helped counter the aircraft's depreciation due to usage and natural aging.

*Stats are from ASG's Market Dynamics research by taking a selection of 39 popular business jet models on pre-owned market.

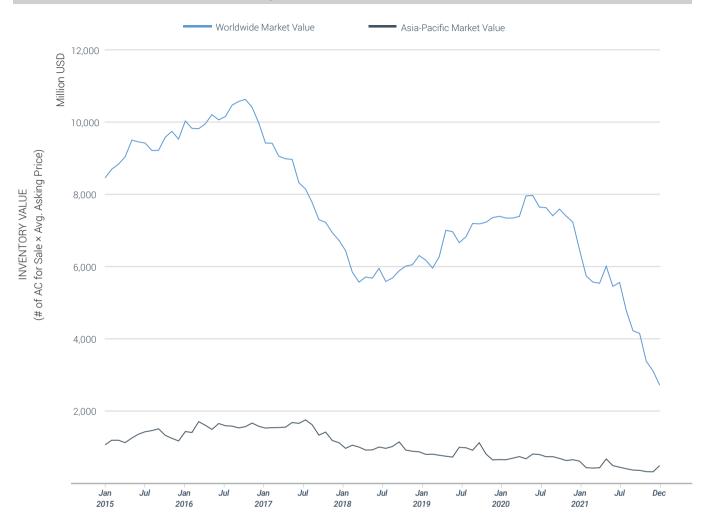




Today's worldwide market inventory value (number of aircraft for sale x average asking price) stands at US\$3.0 billion , which is 70% lower than the \$10 billion that it was back in Q3 2016. In Asia-Pacific, the

current market inventory value is US\$724 million while at its peak in Q2 2016 it was US\$1.8 billion.

Inventory Value: Worldwide vs. Asia-Pacific



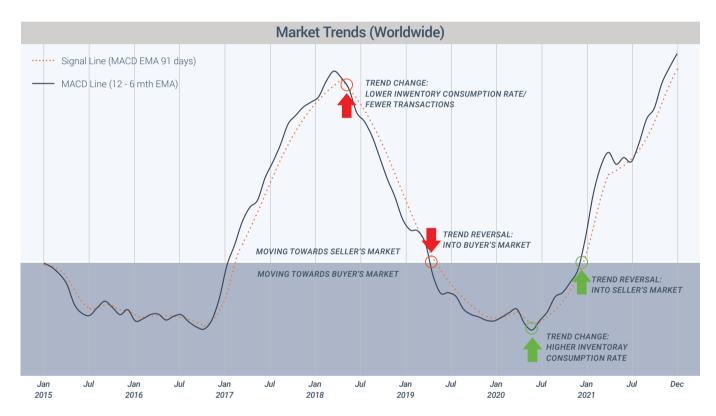


MARKET FORECAST: WHAT TO EXPECT?

Unfortunately, COVID-19 will be with us for at least the near future, and unless something else comes along, we believe that the market will stay strong for at least another year. We also believe that pre-owned market supply will not be eased in the meantime, at least not until OEM production increases have reduced new delivery lead times. Therefore, we believe that market conditions going into 2022 are unsustainable.

This can also be seen in our Market Trends chart shown below. The market trend began to shift to the seller's benefit in early 2020, and as the market consumption continued to speed up, it officially entered

the seller's market in early 2021 - partly due to a record number of transactions in December 2020. In 2021 we did not see any signs of transaction levels slowing down, and the market momentum has been brought up to a historically high level as we enter 2022. The momentum is so strong that it has peaked more than at any other time that we have witnessed. However, we believe that it is not sustainable, and that we will see a minor shift in the market trend during 2022.



Data Source: AMSTAT & ASG





The artistry' behind the art of flight

¹Artistry - a dedication to the details that shape flight in its smoothest form. Aircraft Management, Charter, Completions, FBO, Maintenance, Staffing.





A LOOK BACK

Popular Business Jets in Pre-owned Market

By Bowen Zhang

ver since the first issue of Asian Sky Quarterly we have had a section that looks at the pre-owned market performance of an individual aircraft type. We called this the 'Pre-owned Aircraft Spotlight', and our intention was to advise potential buyers and sellers of the market for that type.

Over the issues, we have reviewed the pre-owned market for many types, and in some cases for the more popular models, have reviewed the market again several years later. The business jets we have looked at include the G550, Falcon 7X, Global and Challenger series, and smaller aircraft like the Citations, Phenoms and many more. It is not only brokers, buyers and sellers that, we have also seen people print it on A4 paper to show their clients. Many readers have asked questions and made suggestions about what we could add to the section, and for that, we wish to thank you all.

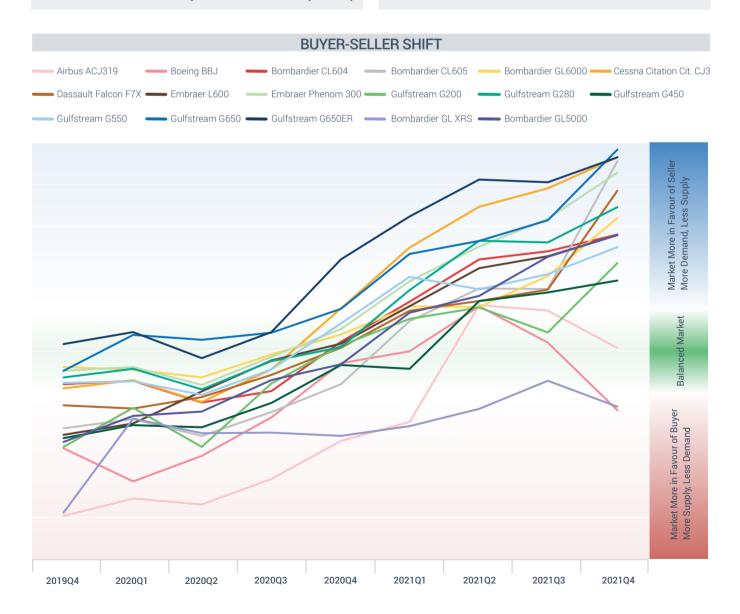
DEMAND / SUPPLY SHIFT

In our regular Market Dynamics section we have a positioning chart that shows what the demand/supply level and current market position is for each type. This is based on each model's inventory level, as well as the number of transactions that have taken place. We turned our historical data into trendlines which showcases the buyer-seller shift of the major pre-owned business jet models on market.

Now that we have entered a "Seller's Market" and are faced with historically low inventory levels, in general most models are enjoying more market demand. We see relatively newer model groups being more in demand, like the G650 and its ER variant, as well as the Falcon 7X and G550. In the US market, light jets, as well as medium sized models including the Phenoms, Citation Jets, and the G200/G280 family are in demand recently, as they

are ideal for domestic travel within the country. In general, except for the corporate airliner models (which are not listed here), most models enjoyed a shift from higher supply to higher demand.

When it comes to market values, it has always been the long range, and large cabin models that command the most, as they have higher values and have seen a greater portion of transactions. The G550 for example, with more than 600 deliveries over the past six years has seen around 300 transactions (50% of the fleet) which helped form the multi-billion-dollar brokerage market that we are seeing today.



PILLARS OF PRE-OWNED MARKET: G550, G650, FALCON 7X, GLOBAL 6000

Market supply has been at its historically lowest level, which has been mainly driven by the G550, G650, Falcon 7X and the Global 6000. Currently, these four models make up to 30% of the total market value, which is 70% of the total large cabin and long-range model segment combined, based on total 39 business jet models that we are monitoring.

This segment's on-market value has been shrinking, driven by high demand: back in 2016 when at its highest level, these four models' total inventory value was over US\$3 Billion and as of today, it is US\$1.4 Billion – a decrease of more than 50%. For relatively newer models like the G650 and its ER variants, supply levels have fallen below 1.5%.

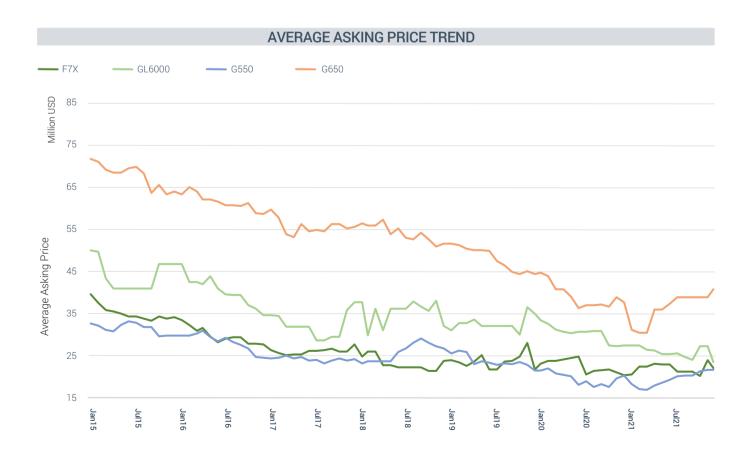
Pricing-wise, as most of the fleet ages, market prices go down due to depreciation. This has been the case for several years with these main players. We have however noticed a recent shift, in that pricing for older models of the more popular types has been increasing.

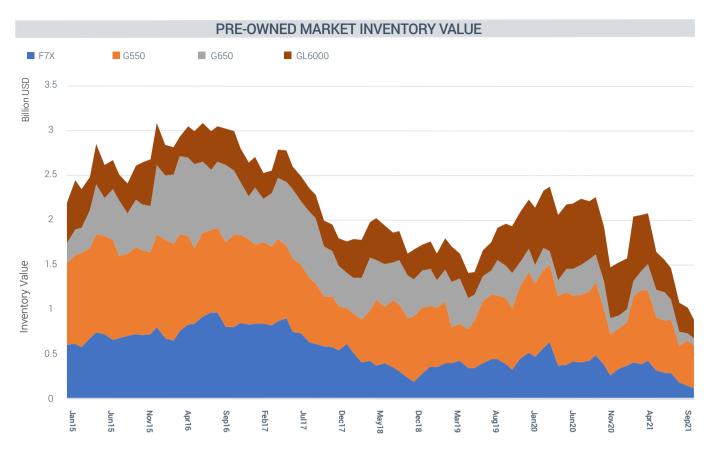
All these reasons have combined to create bubbles in the market, with seller's expectations of having higher final sale prices for

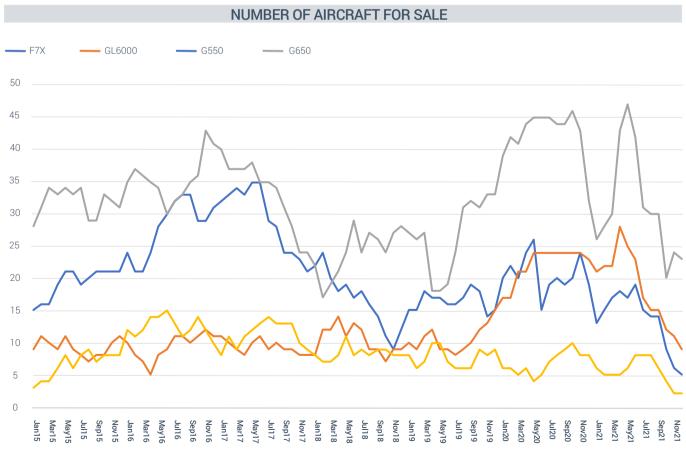
their aircraft. Unusually, the pre-owned Gulfstream G550 market might be benefiting from the shift to a seller's market. Since 2019 as Gulfstream delivered more and more G650s, more G550s came onto the market, which were often young aircraft that their owners sold once their G650 was delivered. At the height there were 45 G550s for sale, with asking prices slowly going down. This worked in favor of potential buyers, as not only could they have many different G550s to choose from, but they also had a strong negotiating position when it came to pricing and delivery terms.

The G550 market quickly become the most popular market, with more than ten transactions frequently closing in a single month (more if we include off-market transactions). Many buyers failed to secure their deal as the demand has been driving up pricing – even with an older fleet listed on the market.

This trend continued into Q4 2021, especially in December which saw a big surge in transactions.







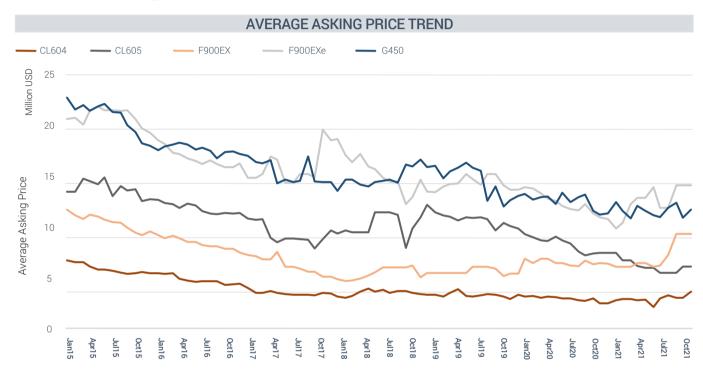
LARGE CABIN: G450, CHALLENGER 604/605 AND FALCON 900 SERIES*

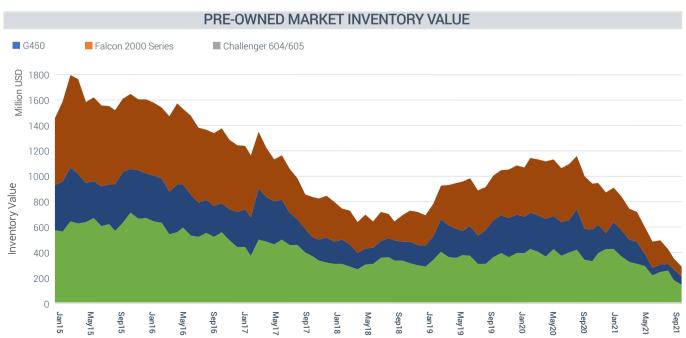
The large cabin inventory shares a similar consumption rate as the long range group. At the beginning of 2015 the market inventory value together for these models was near US\$1.8 billion, but since then this has dropped to around US\$300 million. The number of aircraft for sale has been dropping as well, with around 10-20 for sale now.

The Challenger 604/605 market has been spectacular. At its peak there were around 70 aircraft on the market, but this has now dropped to less than 15. Since 2015 there have been more than 500 aircraft transactions – remarkable given that there are 614 Challenger 604/605s currently in operation.

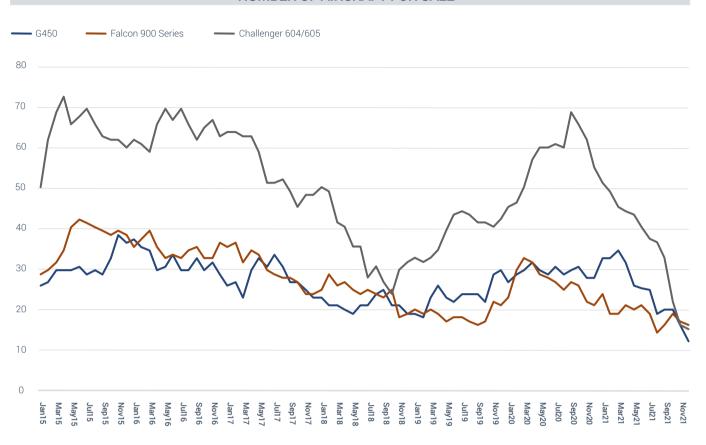
With demand increasing, asking prices also increased

^{*} Falcon 900 series includes LX, EX Easy, EX and DX model.





NUMBER OF AIRCRAFT FOR SALE



FUTURE EXPECTATIONS

The heated market condition has thus created vacuum – as many buyers may fail to secure a pre-owned aircraft, and supply hasn't actually been increasing. The time frame that buyers will need to make up their minds about purchasing a particular aircraft will continue to shrink, and buyers will quickly learn that to acquire favoured aircraft they will need to act faster. Eventually, this will benefit the OEM, and their backlogs.

Data Source: AMSTAT & ASG

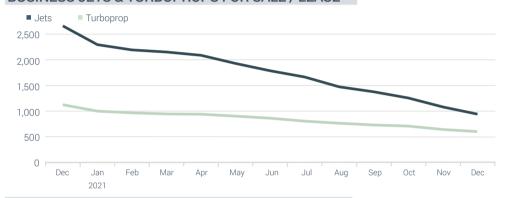


GLOBAL PRE-OWNED MARKET UPDATE

"As a percentage of active fleet, business jet and turboprop pre-owned inventories are at another all-time low (3.4%) and pre-owned transaction activity for 2021 will significantly exceed 2020. The competition for pre-owned aircraft from return buyers, new entrants and fleet operators looking to satisfy demand has depleted the used inventory to such an extent that buyers and their agents are truly challenged to find that next aircraft."

Andrew Young, AMSTAT General Manager

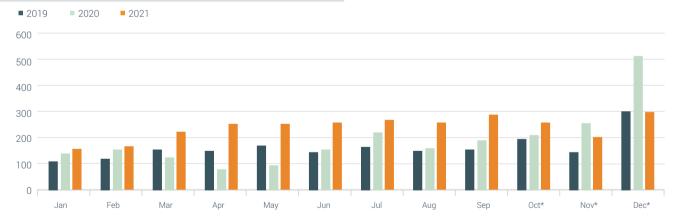
BUSINESS JETS & TURBOPROPS FOR SALE / LEASE



66

Pre-owned business aircraft values continue upwards as 2021 demand outpaces 2020 activity and used aircraft availability becomes even more scarce.

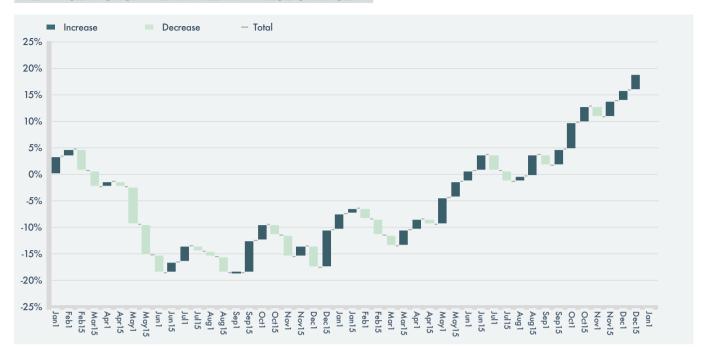
BUSINESS JETS - RESALE RETAIL TRANSACTIONS



BUSINESS TURBOPROPS - RESALE RETAIL TRANSACTIONS



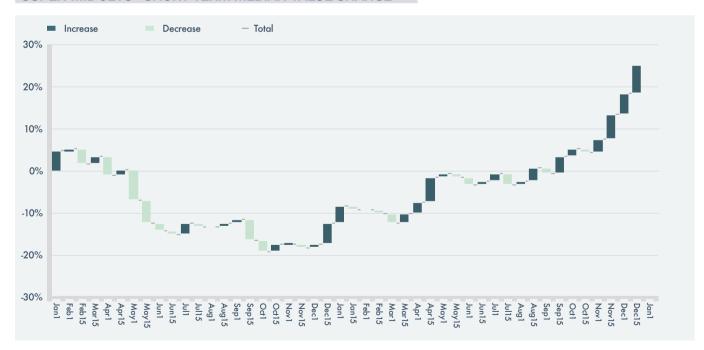
HEAVY JET - SHORT TERM MEDIAN VALUE CHANGE



The short-term median value of Heavy Jets has continued to rise, with this metric up 29% over the last 12 months. Over this period, the short-term median value metric for this segment recovered everything lost in the first half of 2020 and is now 19% above pre-covid levels. This trend has been driven by continued robust transaction

activity, up 51% in the first three quarters of 2021 compared to the same period in 2020 and up 35% over the same period in 2019. While fourth quarter data is still incomplete, the count of pre-owned transactions for 2021 is already 17% ahead of 2020. The Heavy Jet inventory continues to contract, down 53% year-over-year.

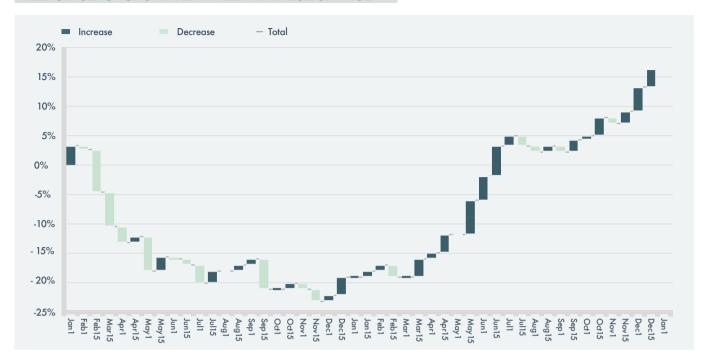
SUPER-MID JETS - SHORT TERM MEDIAN VALUE CHANGE



The short-term median value of Super-Mid Jets has risen 38% over the last 12 months, recovering everything lost in early 2020 and is now 26% above the same metric in January 2020. Like the Heavy Jet market, this upward trend in values has been driven by strength in resale transactions and a continued contraction in Super-Mid

availability. Inventory in this segment is down 65% year-over-year. Resale retail transactions in the first nine months of 2021 are up 50% over the same period in 2020. With an incomplete set of data for quarter four, full year 2021 is already up 30% over 2020.

MEDIUM JETS - SHORT TERM MEDIAN VALUE CHANGE



The short-term median value of Medium Jets has risen 35% over the last 12 months and is now 20% ahead of its start of 2020 levels. The positive direction of values is in large part due to continued strong resale retail transaction activity with the first nine months of 2021, which exceeds the same period in 2020 by 60%.

The 2021 full year is already 20% higher than 2020 with data from Q4 2021 still incomplete. Values have also been driven up by a contraction of supply, which is down 56% year-over-year in this market segment.

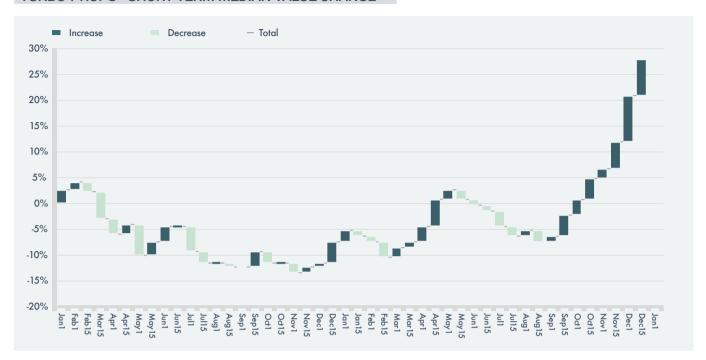
LIGHT JETS - SHORT TERM MEDIAN VALUE CHANGE



The short-term median value of Light jets has increased 34% over the last 12 months and is now 19% ahead of its January 2020 mark. As with other markets, this upward trend has been driven by increased

resale transaction activity, up 67% during the first 9 months of 2021. Even with incomplete 2021 data, 2021 is 23% ahead of 2020. The inventory in this segment has fallen 49% year-over-year.

TURBO-PROPS - SHORT TERM MEDIAN VALUE CHANGE



The short-term median value of Turboprops has risen a net 35% over the last 12 months and is now 30% ahead of January 2020 levels. Resale transaction activity remains strong in this segment, up 47% in the first nine months of 2021 compared to the same period in 2020. With incomplete Q4 data, 2021 is already ahead of 2020 by 19%. The Turboprop inventory has also contracted 43% year-over-year.

^{*} IMPORTANT NOTE: This chart represents aggregated data. The changes in values this year within individual make and model markets, and for specific serial numbers, may vary to a greater or lesser degree from these trends.



AsBAA and IADA Foster Regional Advances for More Ethical Airplane Deals

he International Aircraft Dealers Association (IADA) recently extended its global profile by joining the Asian Business Aviation Association (AsBAA), headquartered in Hong Kong. Membership in AsBAA expands IADA's organizational footprint across Asia.

AsBAA is a non-profit association representing business and general aviation entities based in Asia. Its members include major operators, aircraft manufacturers, aviation service providers, finance, and insurance providers.

"The IADA board extends its appreciation to Asian Sky Group, an IADA member, and its Chief Executive Officer Jeffrey C. Lowe, an IADA certified broker, who exercised terrific leadership and vision to encourage our organization's expanded involvement throughout Asia, furthering IADA's focus on developing standards, greater transparency and ethical aircraft transactions" Starling added.

Lowe serves in an advisory capacity on AsBAA's Board of Governors from his base in Hong Kong. Additionally, Wu Zhendong, Chairman and CEO of Shenzhen, China-based Avion Pacific Limited, which is one of Asian Sky Group's shareholders, is AsBAA's current elected Chairman, setting policy for the organization.



"AsBAA provides a platform for communication and action relating to key industry issues including airports, safety, professional development, and the industry's contribution to the Asian economy."

Wayne Starling, IADA Executive Director

Asian Aircraft Market in Transition

IADA is joining AsBAA as the Asian market for business aircraft is evolving. For example, recent political and economic constraints in China, along with pandemic operational restrictions throughout Asia, have cooled private aircraft demand. Simultaneously, the large North American business jet market is experiencing historically low aircraft inventories coupled with a much higher demand, due to more private flying brought about by weaker airline service, another consequence of the pandemic.

The result has been an unprecedented outflow of aircraft from Asia to North America. Consequently, Asian sellers, North American

buyers and their brokers need to work together to overcome cultural and language barriers and enact airplane deals as seamlessly as possible. Both AsBAA and IADA members have an opportunity to make current transactions and deals in the future smoother and more efficient with transparency and high ethical standards that can benefit both sellers and buyers.

AsBAA is a member of the International Business Aviation Council (IBAC) and affiliated with the U.S. based National Business Aviation Association (NBAA) and the Royal Aeronautical Society (RAeS) in the U.K. AsBAA's mission is to represent the needs of its members and the wider industry through its three core pillars: advocacy, representation, and community.



It actively advocates the benefits of business aviation to key stakeholders such as government, transport ministries, and the media. It represents the interests of all sectors of the business aviation industry across the region, and creates a community in which members can network, access B2B opportunities, and tackle common issues with greater collective influence.

"Joining AsBAA gives IADA a wonderful opportunity in many emerging Asia-Pacific markets to be a great influence and a guiding light for standardized documents, as well as more transparent and ethical aircraft transactions," said Asian Sky Group CEO Lowe.

"IADA can lead by example to help Asian resellers start off on the right path, especially during this period of high aircraft inventory migration to hot markets in North America, in order to avoid KYC issues later," Lowe said. He notes that IADA's business practices, rigorous ethical standards and more standardized documentation will be welcome in areas of Asia where reselling aircraft hasn't been occurring with regularity but represent emerging, high growth markets of interest.

AsBAA, IADA Working Towards Greater Synergy

IADA's leadership, consisting of dealers, views becoming active in the affairs of AsBAA as the first step in collaborating together. AsBAA can help IADA members by continuing to be very active on issues that shape business flying throughout Asia. These issues include illegal charter, safety training and awareness, access, infrastructure, and sustainability. IADA also certifies Products and Services members, meaning that AsBAA members will now have access to verified ancillary companies, all of which have been certified by IADA. IADA's members in exchange will benefit from access to AsBAA's regional chapters in China, Hong Kong, Malaysia, Singapore, the Philippines, and the Mekong Region, which are invaluable on the ground resources for local intelligence whilst doing business in the region.

The two associations also operate programs designed to bring more talent into the industry, which both promote business aviation as a career and help foster the next generation of business aviation professionals. IADA Foundation was formed to give scholarships to aspiring university students looking to get into business aviation, whilst AsBAA runs its own volunteer program called Discovery, which promotes careers in business aviation through a series of programs and events.

Ethical Codes

Both AsBAA's and IADA's members observe a strict set of ethical codes and standards. The Ethical Code covers every aspect of day-to-day business, and includes honesty, integrity, and transparency, as well as the strict adherence to local laws and regulations. Members of both associations must be accountable for their actions and must promptly report any illegal activity or violations of the code.

To become an IADA certified broker, a company needs to have been in business selling aircraft for more than five (5) years. It also needs to have a physical address and meet a certain volume of sales transactions. Each new prospective member needs to be sponsored by three existing IADA members, with the final application being reviewed by an independent law firm.

Whilst IADA's Ethical Code is longer, it deals more specifically with the steps taken during an aircraft transaction. It is designed to ensure that any persons or companies doing business with an IADA certified dealer can be assured of being treated fairly, as well as receiving the best service and impartial advice available.

Clearly, AsBAA and IADA have compatible goals and represent member groups that have a desire to work together for the benefit of the aviation industry at large. As an involved member of both organizations, Asian Sky Group deserves kudos for bringing the two together and looks forward to playing a key role in future progress.





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MedAire Security Solutions

By Tiffany Tong



sian Sky Media recently had the opportunity to talk with Hany Bakr, the Senior Vice President of Aviation and Maritime Security at MedAire. MedAire is an International SOS company that partners with airlines, business aviation, Government, and Defense entities, as well as other industry bodies to provide security intelligence,

assessments, consulting, and assistance. In particular, MedAire's Security Solutions focus on the aviation and maritime sectors. As Hany says, "We offer security health and medical risk management solutions that enable both sectors to operate safely and efficiently."

Aviation Security Alerts

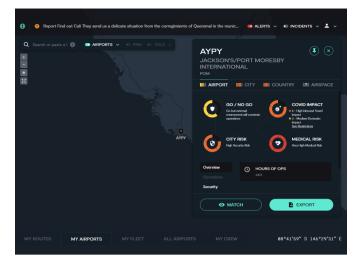
With its Security Solutions, MedAire mainly focuses on four categories. The first is its Aviation Security Alerts, which is a situational report that notifies subscribers when any incidents occur that could impact the safety or security of aviation operations. Such activities include, but are not limited to, military activity, missile testing, airspace closures, and more.

Aviation Travel Security Briefs (ATSB)

MedAire also offers Aviation Travel Security Briefs (ATSB). This is a specific airport security assessment that provides an overview of airport security, a summary of travel safety considerations such as crime or social unrest, certain airport security features as well as the availability of lodgings and medical facilities. For example, in MedAire's Security Brief on Jackson Field International Airport in Port Moresby, Papua New Guinea, the brief includes details regarding the airport security standard, places to avoid, types of transportation based nearby, recommended lodgings, emergency medical care locations and vaccination requirements.

Airspace Assessments

MedAire also offers Airspace Assessments, which provide an overview of potential threats to airspace over, or in a particular country. As well as including an evaluation of aviation risks, it advises air carriers on certain weaponry types that are prevalent, powerful players in the region, and if there has been a history of attacks against any aviation installations. Furthermore, the assessment also provides geopolitical information, as well as how to mitigate exposure to threats and manage risks. MedAire's Airspace Assessment on Afghanistan includes details on the Taliban takeover, history of attacks on airbases, weapons to look out for, and flight prohibitions over the region.



Go/No Go Flight Assessment

The final component features a Go/No Go Flight Assessment. Usually, these assessments are brief summary reports created with the intention for MedAire's clients to make a flight operation decision. As such, these independent assessments are essential when determining whether to conduct a flight to a medium, high or extreme-risk location. Moreover, all the above-mentioned services are available to MedAire's clients 24/7 and can be requested via phone, online portal, or email. Aside from the Security Solutions, MedAire also provides a tailored security advice to clients that need further support. According to Hany, "advice is itinerary specific and unique to each operators needs and requirements." Last but not least is MedAire's 24/7 security support. As Hany states, "we have over 2,000 vetted security service providers who can support clients globally in case they are in distress in any location across the world."

Global Service

One aspect that makes MedAire stand out is its personnel and experts. With the International SOS group boasting 10,000 employees globally, MedAire has experts in every continent around the world. "We have a global network team and resources that provides reporting around the clock," Hany explains. "We also have local network sources as well that we contract globally and we have association relationships with." Aside from access to opensource data collection that enables analysts to collect information, MedAire also has an editorial team that vets and checks the quality of all reportings in order to ensure that it meets the appropriate reporting rigor expected from clients.

Therefore, it comes as no surprise that Hany believes MedAire's people are the greatest asset of the organization. In his eyes, "our experts help drive our innovation through collaborative conversation with our clients, airlines, and others." He further says,

"together, between technology and human intelligence, we come up with solutions that are truly needed for the industry." All in all, MedAire believes in investing in people, just as much as investing in technology.

Much like the rest of the aviation industry, MedAire was affected by the COVID-19 pandemic as well. "Our call volumes dropped significantly so we went from 300 calls a day to a single-digit overnight," Hany recalls. Through it all, MedAire continued to support clients with repatriation flights, in addition to providing more consulting services to help clients navigate through the pandemic. The company also adapted its training solutions to provide remote training over Zoom. "There is a lot of focus on training and upskilling because we knew that once aviation and travel rebounded there would be a serious need for skilled workers to be able to bring the industry back to where it was before," Hany says. After borders started opening again, the company began to receive more 'Fit to Fly' assessments before departure. These assessments are mainly used to help airlines assess passengers in case there is any medical need prior to flight departures. "We noticed that increase, particularly from airlines that did not previously utilize that service," Hany highlights. "We also saw clients requesting information on routine destinations because nothing was the same anymore."

Aside from that, MedAire also took this time to design a completely new aviation security portal that digitizes its current static reporting along with new mapping capabilities. Other significant investments in digital innovation enables MedAire's analysts to advise clients more efficiently, to include visualization tools for enhanced user interface and experience. Moreover, the company has further enhanced its aviation security personnel - in fact, currently underway is a recruitment campaign in MedAire's Dubai Regional Security Center. Despite the challenges, Hany is incredibly proud of MedAire's achievements. "We've turned challenges into opportunities to ensure we are ready for the industry when it rebounds back. And that's what we're seeing."

When it comes to the future, Hany remains positive. As he puts it, "the future is just as strong and bright as it's ever been." With MedAire known as the proven health and security risk management leader in the aviation and maritime industries, its future holds investments, expansion, technological innovation, and collaboration with customers. Most importantly to Hany, " that ongoing dialogue is to ensure that we meet our customer's needs."

www.medaire.com



By Patrick Yan, Sales Director at Global Jet Capital

Asia-Pacific is a market characterized by enormous diversity and striking economic growth, which makes serving the business aviation market both challenging and rewarding. With a shifting geopolitical landscape and an ongoing global pandemic to consider, the picture becomes even more interesting. As we move into 2022, let's reflect on the state of the Asia-Pacific business aviation market in 2021 and consider what the future may hold.

A Uniquely Varied Region

Unlike North America and Europe, the Asia-Pacific region consists of countries with vastly different cultures, political regimes, and economic scales. Each country varies in its degree of openness to business aviation, which means different countries have markets in various stages of development. The attitude towards using business aircraft in the Asia-Pacific is also unique. It is not only used as a business tool for commuting within the region and among international cities around the world but also performs an important social function for high-net-worth individuals who wish to travel privately with extended family. For this reason, we see more of our Asia-Pacific clients desiring large-cabin aircraft than elsewhere in the world.

At its core, business aviation provides a fast commute between two places with a level of privacy and convenience that's unavailable in commercial aviation. The Asia-Pacific hosts about two-thirds of the world's population and a powerful middle class is emerging in India, Mainland China, and Indonesia. This grows the retail market for quality goods and makes the global supply chain even more dependent on manufacturing in China, Vietnam, and Southeast Asia. As more wealth is created and increasing numbers of high-networth individuals emerge, a need for increased interconnectedness with major cities in the US and Europe will emerge as well. Business aviation facilitates these connections, which is why we believe the market will continue to grow and evolve in the coming years.

A Look Back to 2021 and Predictions for 2022

2021 was a seller's year in the Asia-Pacific region, mainly defined by a high volume of transactions between Chinese sellers and US buyers. If quarantine restrictions in mainland China can be relaxed in 2022, we predict a significant demand spike for business aircraft-egardless of whether they're being used for business travel or personal leisure. As we move into a third calendar year of impacted travel due to the pandemic, everyone is eagerly awaiting stepping back into their planes and taking to the skies.

While Asia-Pacific-based fliers are eager to get back in the air, the emergence of the Omicron variant in late 2021 and the associated resurgence of travel restrictions have put a damper on 2022 plans. As of January 2022, Mainland China, Hong Kong, and Japan have instituted (or re-instituted) travel bans and strict quarantine policies to help prevent the spread of the new variant, while Vietnam and South Korea remain slightly more lenient despite increasing precautionary measures.

Whatever the end of the pandemic looks like, consumer habits, expectations, and needs have been reshaped by years of a "new normal." Initially, COVID-related hygiene concerns were a major reason why travelers worldwide began to pull away from commercial aviation and fly privately, but due to increasing numbers of canceled flights, discontinuation of once-popular international air routes, and more familiarity with the advantages of business aviation, these changes in behavior may be more permanent in a post-COVID world.

The Importance of Selecting an Expert Financing Partner

Pandemic-related restrictions are still subject to change as we move into 2022, adding an additional layer of uncertainty to an Asia-Pacific business aviation landscape that is already legally and economically complex. Finding a financing partner that has experience working within your jurisdiction is now more important than ever. There is no single financing product that works well for every business aviation user. Traditional financing has been a conventional choice for Asia-Pacific clients, but now we are seeing increased interest in the capital preservation made possible by the operating lease.

Choosing a partner that offers a wide variety of financing products and has expertise in structuring customized transactions is one way to protect your capital and minimize risk, even as the landscape changes. An experienced partner should be able to tailor your transaction to accommodate resident risk, expense predictability, capital conservation, tax treatment, privacy preferences, and more.

On a Personal Level

As a sales director for Global Jet Capital, I've been privileged to help high-net-worth individuals and corporations in the Asia-Pacific navigate the business aviation market during these unprecedented times. The most satisfying part of my job (besides allowing me to live in my native Hong Kong and enjoy world-class cuisine) is when I can work together with others in the industry (manufacturers, brokers, management companies, maintenance and repair organizations, etc.) to create business aviation financing solutions for clients that accommodate their finances and personal preferences. A major aspect of my role is sharing the advantages of financing vehicles that Asia Pacific customers may not be familiar with, including the operating lease. As a mechanical engineer by training, I'm also fascinated by how aviation technology is evolving and try to share that perspective with my clients.

Working with Global Jet Capital allows me to be an integral part of deals that help individuals and businesses better utilize business aircraft to fit their unique needs. We were able to close an operating lease transaction in 2021 that involved multiple jurisdictions, including securing EASA registration and FAA registration. This had to take place within a limited window of time when overseas citizens were allowed to go back to their own country without a quarantine requirement. We were able to get everything ready within three weeks, thanks in part to the collaborative spirit and deep experience of everyone at Global Jet Capital. Communication channels between our Asia-Pacific office and US headquarters are always open, helping us stay up to date and fully informed when navigating complex situations for our diverse client base.

You can find out more about Global Jet Capital and the services that it provides for clients in the Asia-Pacific and throughout the world by visiting the company's website at:

www.globaljetcapital.com



THE WHO'S WHO OF ASQ

ince the first issue of Asian Sky Quarterly in the fourth quarter of 2015, we have interviewed a total of 34 people, all of whom are experts in their respective fields. They come from general aviation companies, business aviation companies, aircraft manufacturers, fixed-based operators, and related professionals. Below is a breakdown of our interviewees.

General aviation and business aviation providers topped our interviewees list with 50%. These included VistaJet, TAG Aviation, Avion Pacific, Comlux, and Metrojet. It was impressive over the last year to see how business aviation was capable of recovering so quickly after the initial shock of COVID-19.

The second-largest group on the list is related professionals (25%). Unlike the other groups, the group of related professionals includes people from different industries, such as shipping companies, aviation financiers, recruitment companies, aircraft interior designers, and lawyers, which helps us understand the correlation between business aviation and other industries.

The next group on our list are aircraft manufacturers (16%), including Dassault Aviation, Boeing Business Jet, and Sikorsky. Interviews from manufacturers have allowed potential buyers to further understand the newest aircraft technologies to help them pick out the aircraft that will most suit their needs.

Last but not least, 9% of interviewees came from fixed-based operators including Avjet Asia, Aviation Services Management, and Universal Aviation. Fixed-based operators play a vital role, especially during the pandemic period. As entry requirements vary by country and are constantly changing, fixed-based operators must ensure their clients have received the most accurate and current information on COVID restrictions.

04 2015



Zhendong Wu

Founder, Chairman, and CEO of Avion Pacific Group, a leading General Aviation services provider in China since 1993.

PODCAST EP02 www.as

www.asianskymedia.com/multimedia/2019/6/24/asian-skycast-02-wuzhendong

Q2 2016



Doris Magsaysay Ho

President and CEO of Philippines-based Magsaysay Group of Companies. Its project has brought a solution to the labor shortage of the global shipping, cruising, and aviation industry by providing skilled manpower and Human Resources.

PODCAST EP64 www.asianskymedia.com/multimedia/asianskycast64

04 2016



George Chou

Chairman of Top Speed – a supercar insurance company that insured more than 65% of supercars in Taiwan. It purchased its first private jet in 2016, with the intent to provide clients with even more services such as private jet charters.



Christophe Nurit

Former Regional Director, Asia, Sikorsky – a world leader in military and commercial rotary-wing aircraft, which continues to evolve and push boundaries to achieve excellence.

Q1 2017



Seongbae Cho

Vice President of Korean Air Business Jet. The company was established in 2007 to fulfill growing demand from clients. Today the charter division of Korean Air has grown to become one of the largest operators in the country.

01 2016



Björn Näf

Former CEO of Metrojet Limited, which was Hong Kong's first business jet operator. It was awarded its Air Operators Certificate in 1997, making 2021 its 25th anniversary.

Q3 2016



Leona Qi

President of VistaJet US. One of the world's fastest-growing private aviation companies offering private jet services through its programs and On-Demand services.



David Longridge

Former President of Boeing Business Jets, which brings the best of commercial aviation into the realm of private air travel, offering customers a wide range of Boeing products that can be uniquely customized for the private, business, or government sectors.

01 2017



Chang Qiu Sheng

Chairman and President of Amber Aviation, which obtained the first air operator certificate (AOC) and established the first privately-owned aircraft management company in China through Business Aviation Asia (BAA).



Wooksang Cho

CEO and President of Avjet Asia. Avjet Asia remains a pioneer of business aviation and is the first and only FBO in South Korea.

Q1 2017



Paul Jebely

Former Managing Partner of Pillsbury Winthrop. Paul Jebely is a top business aviation lawyer who is qualified in both English and New York law, mainly focusing on Business Aviation legal practices.

www.asianskymedia.com/multimedia/2019/7/17/asian-skycast-03-pauliebely

Q4 2017



Gary Foster

Regional FBO manager of ExecuJet Indonesia. The FBO is a joint venture between ExecuJet Aviation Group and Indonesia-based Dimitri Utama Abadi operations at the Ngurah Rai International Airport in Bali.

Q1 2018



Hironori Abe

Vice President of Setouchi Holdings, the business is aiming to utilize seaplane services to revitalize tourism for Hiroshima.



Violet Kwek

Former Sales Director of Greater China & North Asia at Global Jet Capital. The company is a private aircraft financier that specializes in financial solutions for the business aircraft market.

Q1 2019



Jean-Michel Jacob

President of Dassault Aviation Asia.

Dassault understands how advanced military technologies can be applied to improve the performance and capabilities of business aircraft.

PODCAST EP22 www.asianskymedia.com/multimedia/asianskycast22

Q3 2017



Vicky Tsui

Vice President of Sales & Marketing/Customer Service at Amber Aviation. Amber Aviation is one of the fastest-growing business aviation management companies that provides flexible and personalized management to support customers needs.



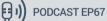
Michael Reichenecker

One of the industry's most prolific and innovative architects who has created interior designs for wide-body and narrow-body aircraft.



Severine Cosma

Executive Vice President of Comlux – a one-stop-shop in business aviation serving customers with their excellent Swiss competence.



www.asianskymedia.com/multimedia/asianskycast67

02 2018



Bei Zhuang

Vice President of Avion Pacific. Avion Pacific is a General Aviation quality solution provider that has been serving China for more than 25 years.



Vito Gomes

CEO and Founder of Aviation Services Management. A Dubai-based company that offers a wide range of flight support products and services that continually deliver value and unparalleled service to a growing portfolio of prestigious clients. Services include flight planning, ground handling, ASM Charter, and fueling.

Q2 2019



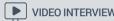
Yao Zhou

Beijing's office partner of Dentons. The law firm was named 'ALB China's Top 20 Largest Firm' that offers a full range of legal services to its clients including both aviation and aerospace. It also has an abundance of expertise and experience in areas including commercial aviation, general aviation, and business aviation.



Alex Jiao

CEO of Hongkong Jet, a Hong Kong-based business airline that provides aircraft management, charter, maintenance, sales, consultancy, and registry services.



VIDEO INTERVIEW www.asianskymedia.com/shortclips/2020/12/15/ virtual-infrastructure-week-hkjet



Brian Proctor

Former Chairman of the International Aircraft Dealers Association, which is the world's only accredited program for aircraft dealers and brokers.

Q3 2020



Andrea Zanetto

CEO of Comlux Aviation. One of the few operators in the world approved as a Stage 3 IS-BAO Operator known for its ability to seamlessly support operations from light and mid-sized jet to widebodies.



Yvonne Chan

Regional Director of Universal Aviation APAC. With the outbreak of COVID, Universal Aviation has been generous in donating feasibility and consulting services to general aviation operators wanting to support humanitarian missions delivering COVID-19 vaccines.

Q3 2019



Frederic Lefebvre

Marketing Vice President of Pratt and Whitney. With the ongoing popularity of the PT6A engine and the necessity for PWC's engine maintenance programs, the company continues to invest across its product line to bring cost savings and continuous innovations to customers.

PODCAST EP54 www.asianskymedia.com/multimedia/ asianskycast54



Jean Kayanakis

Senior Vice President of Dassault Aviation in worldwide Falcon Customer Service & Service Center Network. As the ambitious manufacturer has continued to outdo itself by acquiring maintenance repair and overhaul (MRO) businesses to strengthen the relationship with their remote customers, significant growth is on the horizon.

Q1 2020



Jacob Hoekstra

Global CEO of the Kilpatrick group. With a resilient spirited company as Kilpatrick, it has adopted a more sophisticated and flexible use of technologies to enhance and review workforce strategies under the influence of COVID.

Q4 2020



Simon Bambridge

Commercial director of TAG Aviation. Despite the COVID situation, TAG Aviation remains open to expansion as it expressed keen interest in further growing its Asia market in business aviation. Overall, the company believes Asia has great opportunities for development.

Q1 2021



Roselle Wong

Director of Service Delivery, Sino Jet. As COVID has caused a growth in business jet services, Sino Jet has been adding new blood to the industry by hosting courses and providing training to cultivate the next generation. With putting safety as its priority in the operation, they have continued to innovate new measurements and procedures to ensure customers and staff's safety.

VIDEO INTERVIEW www.asianskymedia.com/shortclips/sino-jet-roselle?rq=Roselle%20Wong



Daron Dryer

CEO of Comlux completion, the only completion and service/warranty center that holds both Airbus and Boeing approvals.

Q3 2021



Charles Fabrikant

From the helicopter industry to business aviation, Charles Fabrikant holds optimism in VR being the future for the business aviation industry due to its convenience and ability to reduce carbon footprint.

www.asianskymedia.com/multimedia/ PODCAST EP81 asianskycast81

Q2 2021



Walt Wakefield

Former President of IADA, Chairman of the board at AircraftExchange & Senior Vice President of Jeteffect.

AircraftExchange is the only site where every aircraft listed for sale is represented by an accredited dealer.

Jeteffect is an IADA-accredited Dealer that specializes in aircraft sales and brokerage, acquisitions, fleet analysis, and valuations.



JJ Chen

Founder, President, and CEO of Astro Air, a general aviation company with a creative model that allows them to integrate small business iet fleets on short notice to achieve economies of scale.



MICHAEL REICHENECKER





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ith the focus on the ever-increasing need to reduce emissions, in this article HFW examines the impact Urban Air Mobility (UAM) and Electric Vertical Takeoff and Landing vehicles (eVTOLs) will have on business aviation and whether this new technology provides a sustainable solution to some of the challenges faced by the sector.

Sustainability is under the spotlight for business aviation, with the pressure to reduce carbon emissions. In response, industry bodies such as the US National Business Aviation Association have pledged to achieve net-zero CO² emissions by 2050. Accreditation programs have also been established for sustainable flight operations, and operators are increasingly offering carbon offset programs and embracing Sustainable Aviation Fuel (SAF). Green initiatives are also extending into the world of finance for business jets.

Cutting carbon emissions is a priority for the business aviation sector, with both SAF and advances in aircraft design and engines seen as the best way to achieve this. However, the use of SAF has yet to overcome issues of cost, scale, and lack of infrastructure. In terms of other options, it will be some years before battery-powered aircraft make any serious inroads into the traditional business aviation market, despite the advances currently being made. A new form of technology, in the form of UAM and eVTOLs, is, however, being touted as a potential sustainability solution that can both complement and compete with existing forms of transport in the business aviation sector.



Where it's gone and where it's going?

Current investment

Despite the turmoil created by the pandemic, investment into UAM has not slowed, with a spate of high-profile multi-billion-dollar IPOs and an inpouring of funds from private equity. In 2020, UAM companies raised an estimated total of US\$1.3 billion in private investment, an increase of 80 percent from 2019. In 2021 reports suggested that the figure invested in UAM was in the region of US\$4.7 billion and maybe as high as US\$8billion. Skeptics argue that this investment is simply inflating a bubble, whereas advocates say that UAM will change the face of public transportation sooner than we think.

Future investment

Morgan Stanley anticipates that eVTOL aircraft could ultimately represent a US\$9 trillion global market, although caveats this statement by anticipating that it will likely take decades for the UAM sector to achieve its full potential. Nevertheless, predictions of this nature from a preeminent investment bank are difficult to ignore.

First commercial flight

Some of the main eVTOL players have pointed to 2024 for the first commercial flights (Volocopter suggested at the end of 2020 that they would launch a commercial service in Singapore within 3 years). What UAM may look like in the short term is uncertain as scale, adoption, and public acceptance are likely to take time. Point-to-point sightseeing and proof-of-concept flights that are open for public bookings are, however, likely to be on the horizon very soon.



How to regulate – questions remain?

Certification

eVTOLs are difficult to define due to the multitude of designs currently being proposed by the burgeoning sector. Some designs echo the features of conventional helicopters – albeit with multiple rotors - whereas others blend a fixed-wing design with varying forms of propulsion units. This makes the task of creating certification standards challenging.

In the US, for example, an eVTOL design is yet to be fully certified and a separate eVTOL certification standard is yet to be proposed by the regulator. To date, most new entrants to the sector have sought to have their designs certified in accordance with the preexisting standards for Small Airplanes (FAA Standard 14 Code of Federal Regulations). The FAA is, however, engaging with the industry and is currently liaising with

over 15 eVTOL manufacturers concerning certification, demonstrating that it has a willingness to engage and support the development of the industry. The lack of any form of bespoke certification requirements may, however, hinder development in the long run. In contrast, EASA has developed a complete set of dedicated technical specifications in the form of a Special Condition for VTOL aircraft.

Liability issues

Industry thinking on the applicable liability issues, and the laws which may regulate accidents and incidents, are yet to be advanced. As things stand, the liability regimes for the carriage of passengers on board traditional civil aircraft, such as the Montreal Convention 1999 (MC99), are likely to apply. While strictly speaking MC99 applies to international carriage only, most jurisdictions incorporate the relevant principles into national laws concerning domestic carriage.

Questions remain as to whether the existing liability framework is fit for purpose for the UAM industry. In an accident scenario, an operator's liability exposures could be significant in a busy urban environment, due to the potential to cause injury not just to passengers but also to individuals on the ground or in nearby buildings.

In a recent McKinsey survey, 60% of respondents said the safety of eVTOLs was their top concern making it the most important issue by far. When analyzing the respondents' comments, McKinsey also found significant concerns around autonomous flight—a development that most eVTOL manufacturers are planning down the road. In order to address these concerns and reduce barriers to adoption, national legislators will need to consider whether existing laws are fit for purpose or whether a new legal liability regime is needed to specifically deal with the unique risk exposures of high-volume low-altitude urban flight.



A sustainable solution?

The sustainability implications of eVTOLs and UAM are still unclear. A recent study by Ford and the University of Michigan suggests that eVTOLs may have a greater environmental impact than electric cars in a like-for-like comparison. That said, the study recognizes that eVTOL emissions are 35% lower than internal-combustion road vehicles over a 100km point-to-point journey.

The amount of investment UAM has attracted has also drawn concern from certain quarters with some suggesting that eVTOLs are not a way to decarbonize the aviation industry and the current influx of investment would be better spent on SAF and hydrogen. The UAM industry will likely need to work to become sustainable - as with all other industries - rather than being a solution to some of the sustainability challenges the broader aviation sector faces. The largest eVTOL manufactures are, however, committed to sustainability with several eVTOL companies having joined the new ICAO Global Coalition for Sustainable Aviation. That said, it does not mean that eVTOL technology cannot represent a sustainable option in the right environment, especially in cities that have significant traffic congestion problems. UAM may not, however, be a sustainable option for all cities of the future, and urban planners and city administrators will need to decide on a case-by-case basis as to whether this technology should complement existing transportation portfolios.





A replacement for business aviation?

Most analysts anticipate UAM could replace short to mid-range helicopter flights in urban centers but at the same time, many eVTOL business plans are formulated to enable better connections into business aviation hubs. In reality, eVTOLs are, therefore, more likely to replace conventional car and private hire services as opposed to current modes of aviation. Integrating eVTOLs into existing airspace around airfields will prove challenging but not an impossible task when weighed against the potential benefits. These include reduction in journey time as well as a way to avoid road congestion, with both factors being significant concerns for VIP customers.

Given the synergies between business aviation and eVTOLs, it is not surprising to see partnerships emerging between eVTOL companies, Fixed Base Operators (FBOs), and business jet operators. Ground infrastructure will be a key factor in the success of eVTOLs, with the need for 'vertiports' to be located in strategic locations and properly integrated with ground transportation, therefore enabling seamless passenger transfers for the first and last mile.

In the shorter term, eVTOLs are likely to link city centers, suburban areas, and airports. In due course, though, with advances in battery density, electric air taxis for short-range routes are likely.



When, not if - the future

The UAM industry has moved forward significantly in the last two years especially in terms of interest and the investment this is attracting. It now seems inevitable that eVTOLs will be coming to a city near us all very soon. That said, significant technological, regulatory, and legal questions remain unanswered and will need to be addressed in order to facilitate a smooth and steady takeoff. Rather than competing with business jets, if successfully integrated into FBOs or nearby vertiports, eVTOLs and electric air taxis could well prove a useful addition for both the business jet and commercial aviation markets alike.

ABOUT THE AUTHORS

HFW HONG KONG PARTNER GORDON GARDINER AND SINGAPORE SENIOR ASSOCIATE JAMES JORDAN ARE TRUSTED LEGAL ADVISERS TO THE BUSINESS AVIATION COMMUNITY. THEY REGULARLY ADVISE ON A DIVERSE RANGE OF BUSINESS AVIATION MATTERS AND ARE PART OF A GLOBAL TEAM THAT PROVIDES CLIENTS WITH SOLUTIONS ACROSS THE BROAD SPECTRUM OF FINANCING & LEASING, COMMERCIAL CONTRACTS, REGULATORY ISSUES, AND DISPUTES.



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HFW has more than 600 lawyers working across Asia Pacific, the Americas, Europe and the Middle East. HFW is committed to Asia Pacific, with six offices and two associations across the region.

HFW has been at the forefront of legal developments in the aerospace sector for more than four decades. With more than 80 specialist aviation lawyers in ten international hubs, HFW provides at the point of delivery the resources of a global team. HFW prides itself in knowing clients' business needs and delivers solutions 24 hours a day.

Recent examples of HFW's business aviation work include advising on:

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efore a new jet enters service, it is put through all kinds of demanding tests, including tests to ensure it will work in extreme environments. A case in point is "cold soak" testing for the Falcon 6X, wherein the airplane is placed in the deep freeze and then thawed out and flown.

The first step is to find the "ice box." Cold temperatures are not the norm at Dassault Aviation's Istres flight test center on the Mediterranean coast. So the Number three flight test aircraft (which has a full interior) was loaded with test gear and ten members of the test team plus two pilots, and flown in late December to the tiny town of Iqaluit in Canada, just below the Arctic Circle. Merry Christmas, flight test crew!



Cold Soak Trials

The 6X was exposed to temperatures between -20° C and -25° C. After two nights of cold soak, the aircraft followed a series of warm up procedures, engine starts and a test flight over northern Canada. The test team reported: "Very good behaviors were observed for all the systems and the airframe." A subsequent cold weather test will evaluate operation at around -40° C.



Very good behaviors were observed for all the systems and the airframe.

The 6X made the crossing from balmy Istres to St. Johns, Newfoundland (for customs) in six hours and 25 minutes, and the return flight from Iqaluit to Istres in six hours. Oceanic crossings will be routine for the 6X, which has a maximum range of 5,500 nm (10,200 km) and can fly up to 10-hour legs. It's a delightful environment over those long stretches with the largest cabin in the long-range segment.

The 6X is marching through a flight test campaign and receiving high marks from pilots for its excellent handling qualities thanks to the latest version of Dassault's digital flight control system. More than 150 flights and 500 hours have been flown on three flight test aircraft since March 2021. Certification is expected before the end of 2022.

Of critical importance, the 6X's new Pratt & Whitney Canada PW812D engines have been certified by Transport Canada. The engines are built in Montreal, which makes Canada the certifying authority. Approval follows more than 4,900 hours of testing, including more than 1,150 in the air. The 6X's 13,500-pound-thrust engine is the most efficient in its class and requires 40 percent less scheduled maintenance.



The workhorse 6X is proving itself in other real-world missions. Before the Canada jaunt, the aircraft was based for several days at Le Bourget Airport outside of Paris, where it was flown by flight crews from Dassault's Pilot Support Group and serviced by local maintenance technicians from Dassault Falcon Service. It was fueled with sustainable aviation fuel (SAF) from TotalEnergies. Like other Falcons, the 6X can operate on up to 50 percent SAF and will be regularly flown with this alternative fuel as part of Dassault's sustainability commitment.



► Sustainable aviation fuel (SAF)

Before certification, the fourth 6X, also with a full interior, will complete a world tour to further evaluate the aircraft under real-world conditions and expose the aircraft to the global service network.

To ensure a smooth service entry, Dassault has already requisitioned \$100 million in spares for the aircraft and has begun to distribute them

at its 16 parts bases worldwide. The company is preparing all factory service centers for the aircraft's arrival, including new locations in Asia. In fact, the company is expanding capacity in Asia, including an all new facility in Kuala Lumpur specifically designed around the space needed for the 6X and the even larger, ultra-long-range Falcon 10X that is now in development.

The 6X can perform an impressive list of missions at M .85 such as Paris to Beijing, Shanghai to Melbourne or London to Los Angeles. Its modern interior design (as seen in cabin mockups) has turned heads the last two years, winning the prestigious Red Dot design award and the International Yacht and Aviation Award.



Interior of Falcon 6X

Soon, interested parties will be able to see the real aircraft flying in Asia.

www.falcon6X.com

NEW AND RETIRED AIRCRAFT TYPES

ince the first issue of Asian Sky Quarterly in the fourth quarter of 2015, there have been a total of 23 different business jet models introduced to the global market, with their first deliveries occurring during the period. Although these have largely been minor upgrades to existing types, several new aircraft models were also introduced.

The HondaJet was perhaps the most anticipated. The aircraft can trace its history back to 1997 when Honda Aircraft's now CEO Michimasa Fujino first started sketching out designs for a very light business jet with engines mounted above the wing. Although there are certain aerodynamic advantages in doing this, in the case of the HondaJet, the engines are configured this way to increase space inside the cabin, as the structure and systems to support the engines are kept outside of the fuselage. Fujino's idea certainly worked - the cabin of the HondaJet feels much more spacious than other business jets of comparable size. The company originally stated that aircraft would be built to serve as a flying testbed for the new HF120 Turbofan engines that the company was designing, however, in 2006 Honda Aircraft changed its mind and began offering the plane to the market, with the first delivery expected in 2010. The maiden flight of the first production conforming HondaJet took place in 2014, with the US FAA handing the aircraft type certification over the following year. The first HondaJet was delivered to a customer at the end of 2015. The company then updated the HondaJet in 2018 and renamed it the HondaJet Elite. As well as performance increases, the HondaJet Elite features an updated Garmin G3000-based flight deck. Overall, the HondaJet has had relative success in Asia-Pacific, especially in Fujino's native Japan – at the end of 2020, there were seven HondaJets in Asia-Pacific, one each in Mainland China, Singapore, and Thailand, with the remaining four in Japan.

Bombardier's Global 7500, which was first announced in October 2010 as the Global 7000, was also highly anticipated. Although the aircraft was originally scheduled to enter service in 2016, a late-stage wing redesign moved back its first flight and entry into service by almost two years. The aircraft was renamed the Global 7500 in May 2018 to fit in with the change to Bombardier's naming system, with the first aircraft finally being handed over to the first customer in November 2018. A second model, the Global 8000, was also announced at the same time as the Global 7000. This was due to be smaller than the Global 7500, but with an increased range. There have been many questions regarding the Global 8000, and whether the program has been canceled, however, the aircraft still appears on the Bombardier website. Global 7500 deliveries have been slowly ramping up in recent years, and the aircraft has found some favor in Asia-Pacific, especially in Australia, where the aircraft's 7,700nm range is especially appreciated.

Another new aircraft type to enter service was the Dassault Falcon 8X. This was first announced in 2014 as a one-meter stretch of the Falcon 7X - a fact borne out by Dassault's internal project name, which was the Falcon 7X-M1000. As well as the fuselage stretch, the wingbox was strengthened, which also made room for additional fuel loading. The first Falcon 8X was delivered to a Greek operator in October 2016. The Falcon 8X is currently the largest business jet that Dassault builds, although this will be eclipsed in 2025 when the French manufacturer delivers the first of its new Falcon 10X business jets. The Falcon 8X has seen moderate success in the Asia-Pacific region, although it has been unable to match the success of the Falcon 7X. This could partly be due to a lack of certification in China - to date, China has not yet certificated the Falcon 8X. The first Falcon 8X to be delivered into Greater China was delivered to Hong Kong in the third guarter of 2017. It is registered on the Cayman Islands VP-C registry.





As well as delivering several updated, or 'plussed', aircraft models during the period, Textron delivered the first of its new Citation Longitude aircraft. The Longitude suffered some unfortunate incidents during its certification efforts, which pushed back its entry into service by almost a year. The first incident saw a part used in the manufacture of the aircraft becoming obsolete, whilst the second saw an additional set of paperwork being requested by the certification authorities. As well as being the largest Citation ever built, the Longitude is notable for having a very quiet cabin. Textron worked meticulously to eliminate as much noise as possible, with the result being that even during a max power takeoff, passengers in the cabin do not have to raise their voices to be heard. The first Longitude was delivered right at the end of 2019. So far, the Longitude hasn't made many inroads into the Asia-Pacific market, although one order was

announced by the Japanese Civil Aviation Bureau (JCAB), which will use the aircraft for runway calibration duties.

Bombardier announced its Global 5500 and Global 6500 during a special ceremony on the eve of the 2018 European Business Aviation Convention & Exhibition in Geneva, Switzerland. Essentially the aircraft are upgraded Global 6000s and Global 5000s with new engines, avionics, and interiors. The engines were swapped from the Rolls-Royce BR700 family to the newer, more fuel-efficient Rolls-Royce Pearl engines. Bombardier gave Rolls-Royce the task of building the new engines to fit inside the BR700's engine casings and mountings so that structurally the fuselage of the new models did not need to change to be able to accommodate them. During the announcement, held inside a hangar at Geneva Airport, Bombardier was able to introduce the first Global 6500, which flew unnoticed into Geneva from the US the night before. Following a short certification period, the world's first Global 6500 was delivered to Hong Kong in December 2019 to HK Bellawings, which had originally inked a Letter of Intent (LoI) in May 2018 for up to 18 Global 6500 and Global 7500 aircraft.

Production of the Global 5000 and Global 6000 effectively came to an end with the introduction of the new aircraft types. The last Global 5000 was delivered in 2019, with the final Global 6000 following in 2019.

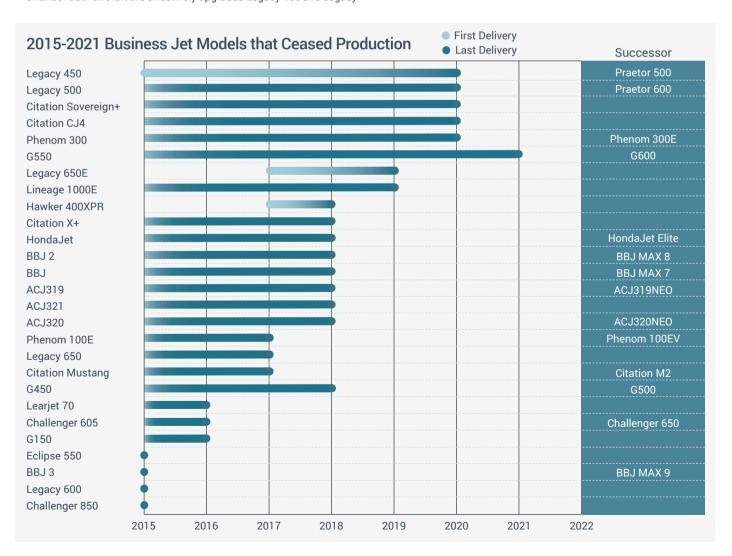
Not to be outdone, Gulfstream delivered the first of its G500 and G600 during the period. Both aircraft were announced in 2014, with Gulfstream wowing attendees during the announcement by having the first complete G500 taxi under its own power. Both announced aircraft were part of Gulfstream's mysterious-sounding P42 project, which had been rumored about for several years. Shortly before the summer of 2014, those rumors intensified when an engineer, working for one of Gulfstream's subcontractors, inadvertently updated his LinkedIn profile to say that he was working on the P42 project. The update also mentioned three different variants, P42-1, P42-2, P42-3. P42 effectively referred to the fuselage barrel, which Gulfstream had deliberately designed in such a way that it could be stretched, or shortened, depending on which way the market wanted. With the G500 and G600 being the first and second P42 aircraft, it wasn't until 2021 that the third aircraft, the Gulfstream G400 was announced. With G500 and G600 sales and deliveries picking up pace, Gulfstream announced that it had delivered the final G450 in January 2018. A similar announcement was made about the G550 in 2021, although this was just for the last civil G550. Several military-operated G550s are still due to be handed over, including several examples for the Royal Australian Air Force.



Embraer introduced the Praetor 500 and Praetor 600 in 2018 during a special ceremony the day before the start of that year's NBAA in Orlando. Both aircraft are effectively upgraded Legacy 450 and Legacy

500s, with improved engines, avionics, and interiors. Both aircraft are fairly unique, in that the fuselages are built in Brazil, the wings are built in Portugal and the aircraft are assembled in the US. The earlier Legacy 450 and Legacy 500 were built in Brazil, then flown to the US to be completed, which is a similar arrangement that Gulfstream has with IAI for the G280 - where the aircraft is built in Israel, then flown to the US to have its cabin completed. Both the Praetor 500 and Praetor 600 gained type certifications in 2019, with initial deliveries taking place later in the same year. Neither the Legacy 450 / 500 nor the Praetor 500 / 600 have found much success in Asia-Pacific.

Embraer also delivered the final Legacy 650E and Lineage 1000E during the period. The Lineage, based on Embraer's popular E190 family of commercial regional jets, had a short production run of just 25 aircraft. A good portion of those aircraft have been based in the Asia-Pacific region at some point. The Legacy 650E was an upgraded Legacy 650, which was itself based on Embraer's best-selling ERJ-135 regional jet. The Legacy 650 family sold well in Asia, especially in mainland China.







HAPPY ANNIVERSARY

To all our friends and colleagues at Metrojet, especially Gary, Denzil, Dave, Sarith, Justin, Kitty and the rest of the exceptional team, it is indeed an incredible achievement. You are in a class of your own and it is time to celebrate!

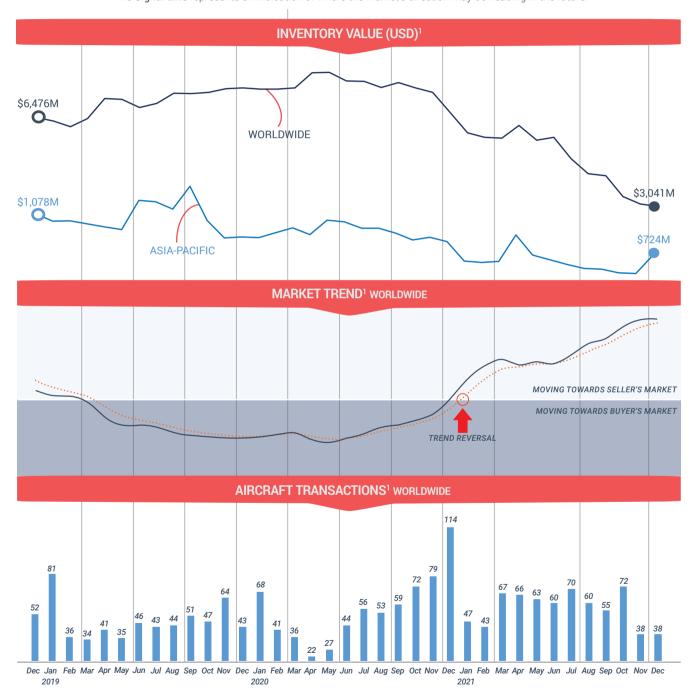
MARKET DYNAMICS

PRE-OWNED BUSINESS JET MARKET Q4 2021

Understanding the market dynamics graphs:

The Inventory Value Line represents the number of aircraft actively being marketed for sale in USD terms.²

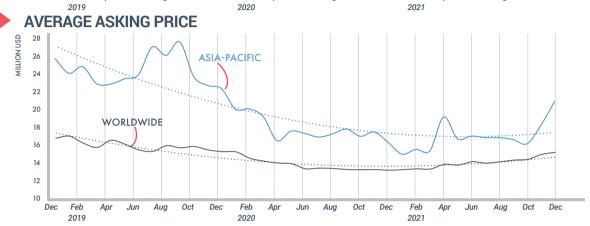
The Signal Line represents an indication of where the market's direction may be heading in the future.



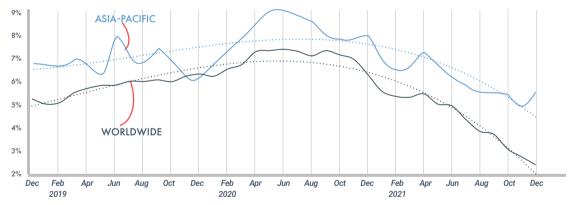
¹ The historical inventory value and transactions are subject to change based on latest market information updates.

 $^{2.} ASG's \ Inventory \ Value \ line \ is calculated \ by \ taking \ the \ total \ number \ of \ aircraft \ for \ sale \ from \ a \ selection \ of \ 39 \ different \ models, \ multiplied \ by \ their \ average \ asking \ prices.$

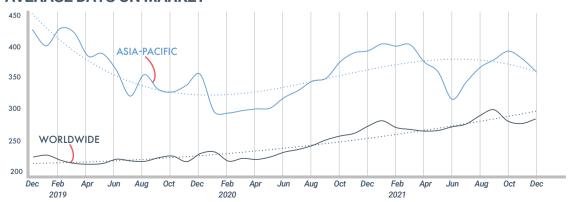








AVERAGE DAYS ON MARKET

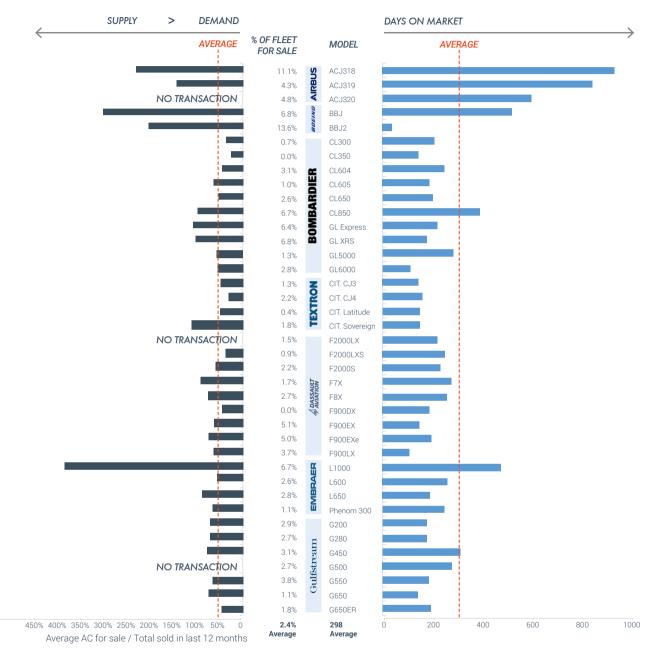


SUPPLY / DEMAND INDICATORS

BUSINESS JETS

SUPPLY VS. DEMAND RATIO

AVERAGE DAYS ON MARKET



The above chart reflects where certain aircraft models are positioned in terms of supply and demand (based on a ratio of completed transactions compared to the number of sellers and the average number of days on the market for a transaction to take place).

For some model types, given the market indicators shown on the previous page, the stabilization in pre-owned asking prices and decline in inventory level appear to have stimulated increased demand, leading to an increase in transactions and a more balanced state of supply and demand.

These indications do not necessarily mean that prices will be higher in the future, but it does indicate that sellers of these particular models are more likely to find willing buyers in a shorter period of time than the overall average.

This can be seen most with certain Gulfstream (G200, G450, G550, G650), Bombardier models (Challenger 604/605 & Global 5000) and Dassault Falcon models (2000 Series and 7X), where more transactions are occurring relative to the number for sale, and transactions are requiring less time on the market for sellers to complete.

MARKET POSITIONING



The above chart provides a visual representation of the Supply / Demand Ratio of each aircraft model relative to the overall market, and is based on a 'Marketability' calculation for each particular model including the following four market indicators:

- 1. The percentage of aircraft for sale relative to its fleet size.
- 2. The number of aircraft sold relative to the average number for sale.
- 3. The average days for sale relative to the overall market average.
- 4. The momentum of the marketplace (represented by the trend towards supply and demand market equilibrium portrayed earlier).

When taking into account these four factors, most of the the large and medium sized jets, such as Challenger 600, Falcon 2000 & 900 Series, as well as the various Gulfstream models, appear better positioned to find buyers available, compared to corporate airliner models.

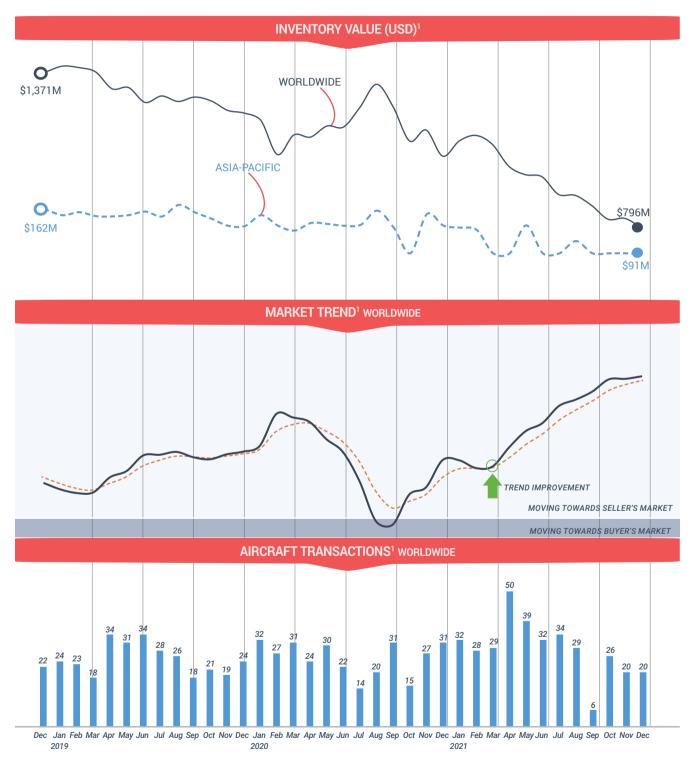
* Since 2019 Q3, ASG expanded its market research scope to include 39 business jet models including light jet models as described in the report.

PRE-OWNED HELICOPTERS MARKET Q4 2021

Understanding the market dynamics grpahs:

The Inventory Value Line represents the number of aircraft actively being marketed for sale in USD terms.²

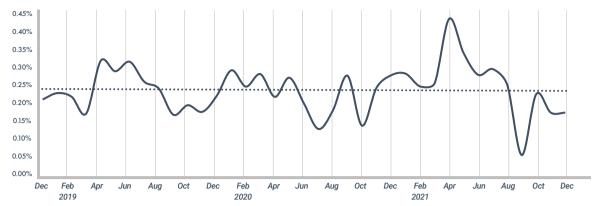
The Signal Line represents an indication of where the market's direction may be heading in the future.



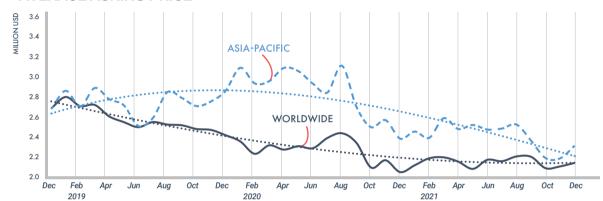
 $^{{\}tt 1}\, {\tt The}\, historical\, inventory\, value\, and\, transactions\, are\, subject\, to\, change\, based\, on\, latest\, market\, information\, updates.$

² ASG's Inventory Value line is calculated by taking the total number of aircraft for sale from a selection of 39 different models, multiplied by their average asking prices.

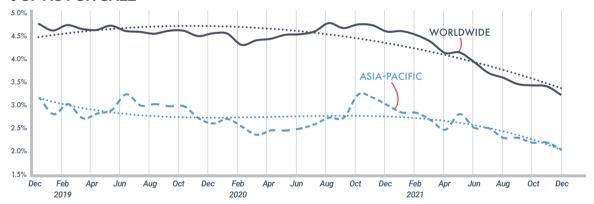
% OF AC SOLD / TOTAL AC IN OPERATION



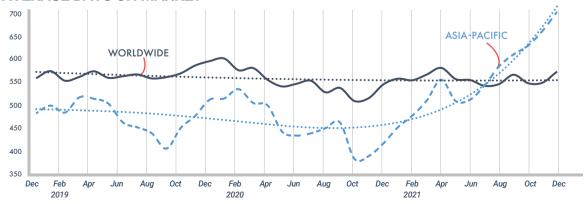
AVERAGE ASKING PRICE



% OF AC FOR SALE



AVERAGE DAYS ON MARKET

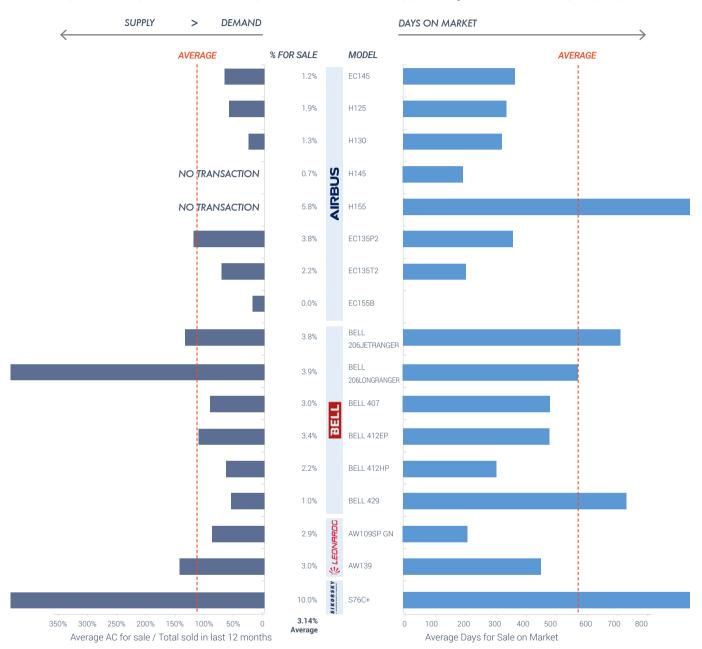


MARKET POSITIONING

HELICOPTERS

SUPPLY VS. DEMAND RATIO

SUPPLY / DEMAND INDICATORS



The above chart reflects where certain aircraft models are positioned in terms of supply and demand (based on a ration of completed transactions compared to the number of sellers, and average number of days on the market for a transaction to take place).

MARKET POSITIONING

HELICOPTERS Balanced MOVING TOWARDS MOVING TOWARDS Supply & Demand SELLER'S MARKET **BUYER'S MARKET** EC145 H125 H130 AIRBUS H145 H155 EC135P2 EC135T2 EC155B BELL 206JETRANGER BELL 206LONGRANGER **BELL 407** BELL 412EP BELL 412HP **BELL 429** AW109SP GN AW139 S76C+

The above chart provides a visual representation of the Supply / Demand Ratio of each aircraft model relative to the overall market, resulting in a 'Marketability' calculation of each particular model based on the following four market indicators:

- 1. The percentage of aircraft for sale relative to its fleet size.
- 2. The number of aircraft sold relative to the average number for sale.
- 3. The average days for sale relative to the overall market average.
- 4. The momentum of the marketplace (represented by the trend towards supply and demand market equilibrium portrayed earlier).

WINGX



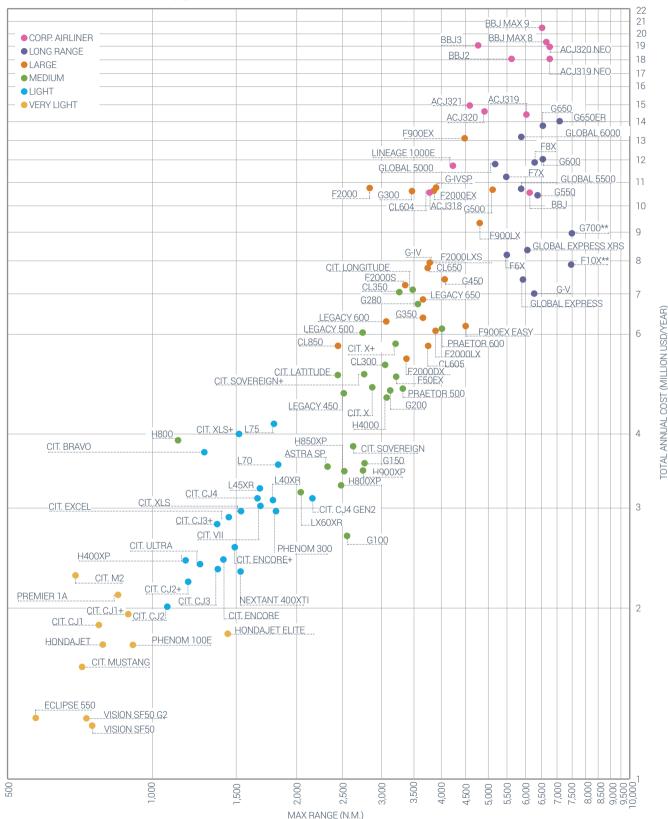
COMPETITIVE INSIGHTS FROM GLOBAL DYNAMIC FLIGHT ANALYSIS

WINGX provide best-in-class market and business analytics on the global corporate jet market. Our dashboards track activity from serial numbers upwards, aggregating analysis of traffic at airport, city, country, operator type, aircraft model. Our dashboards are available through subscription as digital portals, with full interactivity and datadownload capabilities.



AIRCRAFT POSITIONING - BUSINESS JET

AIRCRAFT ACQUISITION VS. MAX RANGE



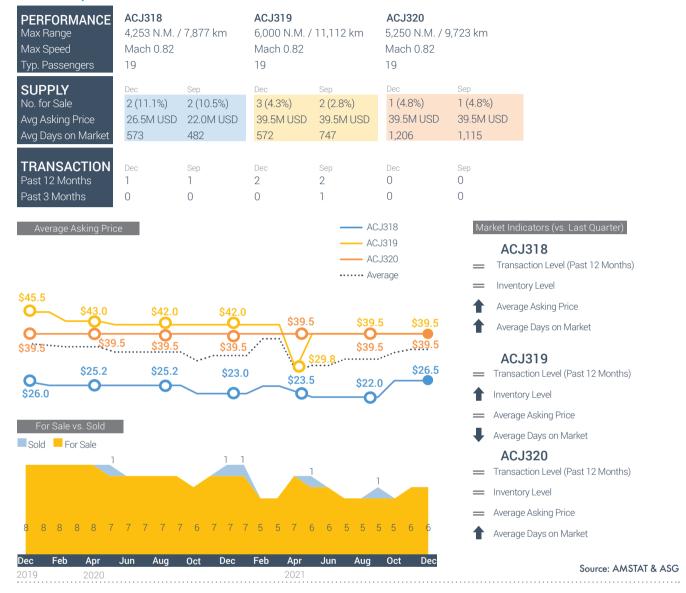
*Total Yearly Cost estimated using includes Conklin & de Decker industrial cost figures (2021) for aircraft acquisition cost on 10 years, plus yearly operating cost. **Under development, preliminary data provided by OEM.

('xx) - Year aircraft model ceased production.

Source: Conklin & de Decker

MARKET SUMMARY PER MODEL — BUSINESS JETS INVENTORY LEVEL, PRICE TREND & TRANSACTIONS

ACJ318, ACJ319 & ACJ320



FEATURED AIRCRAFT



BBJ 787-8 TOTAL HOURS: DELIVERY HOURS TOTAL CYCLES: DELIVERY CYCLES

- Interior Completed 2019
- Brand New Aircraft with Delivery Hours & Cycles Only
- One of the Longest Ranged Business Jet Capable of Flying 16 Hours Non-stop
- 39 Passenger VVIP Configuration, with 2,415 square feet (224 square meters) Living Space including: a Master Suite, VIP Lounge, Dining Lounge, Business Class, Fwd & Aft Galley, Crew Rest Area and a gym.
- · Aero H+ Satcom w/ Ku-Band High Speed Internet
- State-of-the-art avionics, including: New, Latest Generation FMC; SELCAL, ADS, FANS-1 & CPDLC; Dual Head-Up Displays; Weather Radar, TCAS & TAWS; Approved For GLS II Approaches

BBJ & BBJ2





CHALLENGER 300 & 350



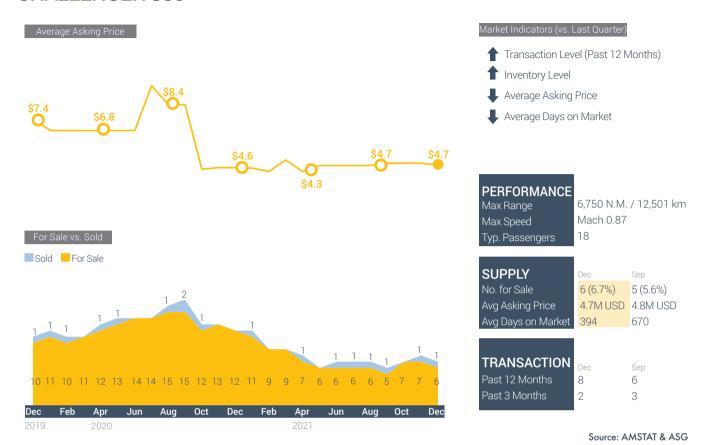


CHALLENGER 604, 605 & 650



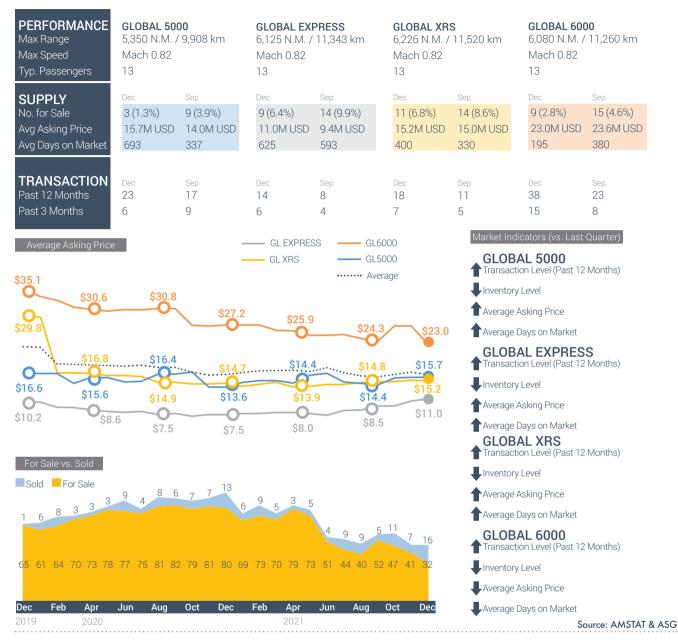


CHALLENGER 850



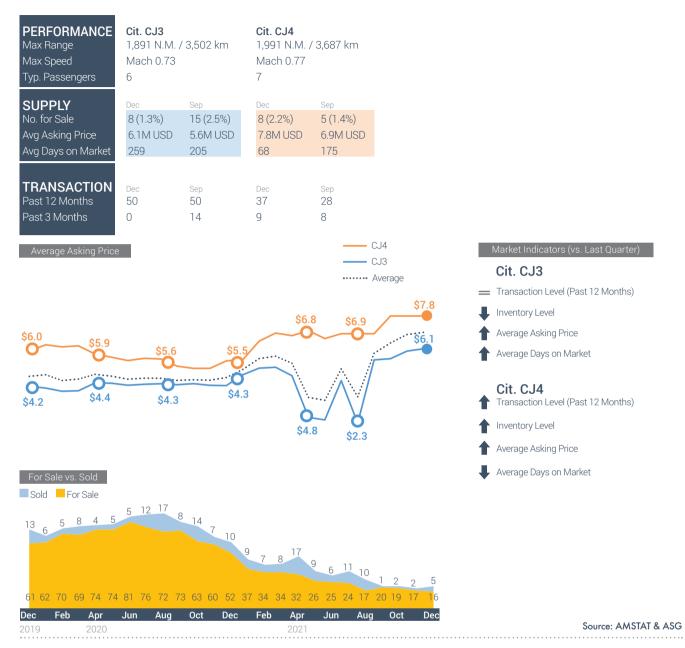


GLOBAL EXPRESS, 5000, XRS & 6000



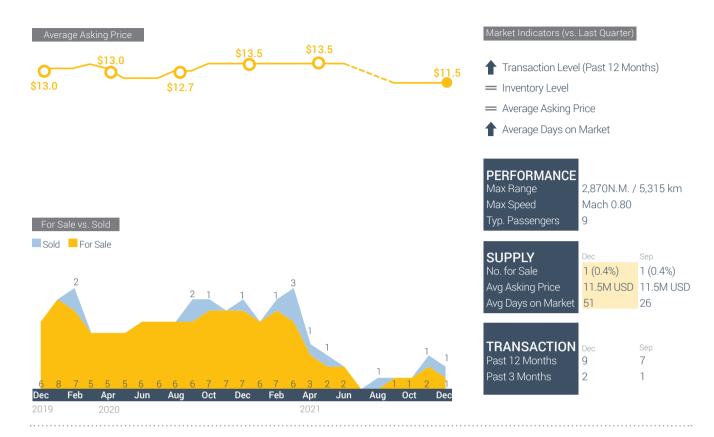


CITATION CJ3 & CJ4

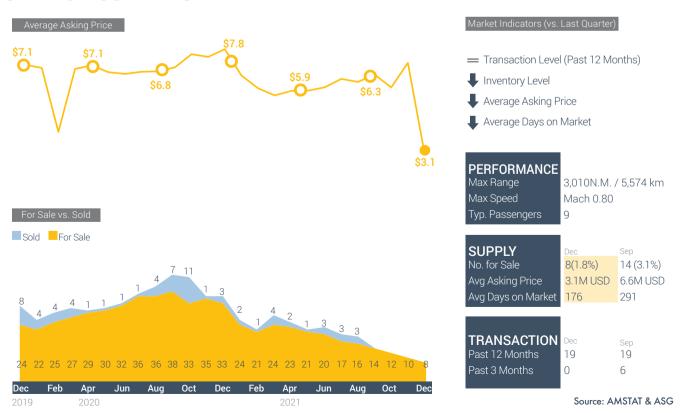




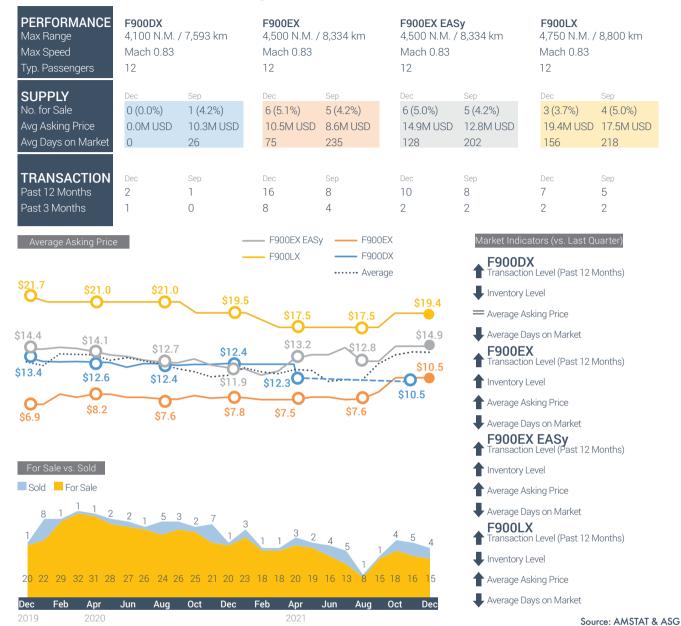
CITATION LATITUDE



CITATION SOVEREIGN

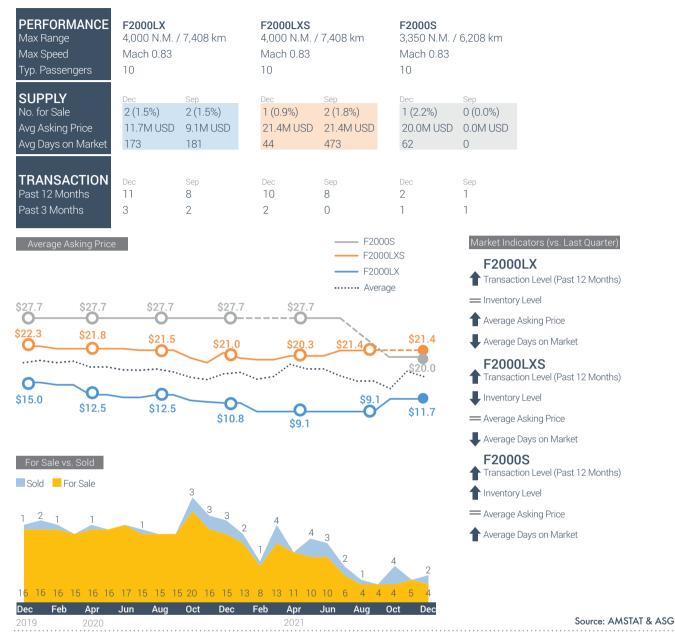


FALCON 900DX/EX/EX EASy/LX



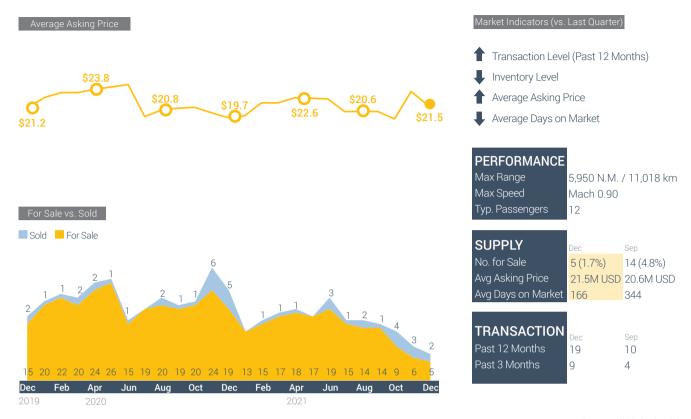


FALCON 2000LX/LXS/S





FALCON 7X



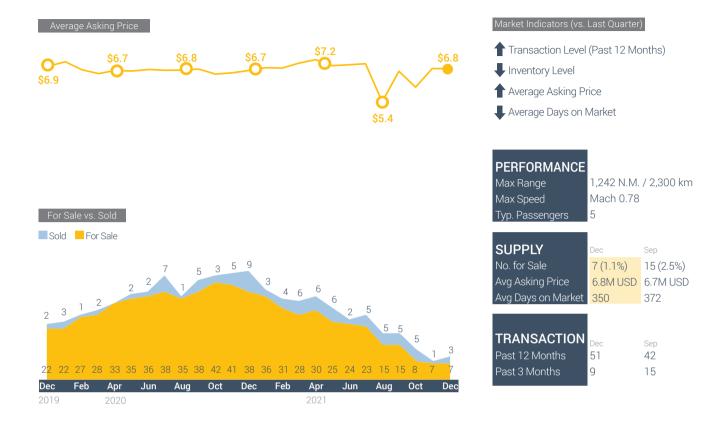
Source: AMSTAT & ASG

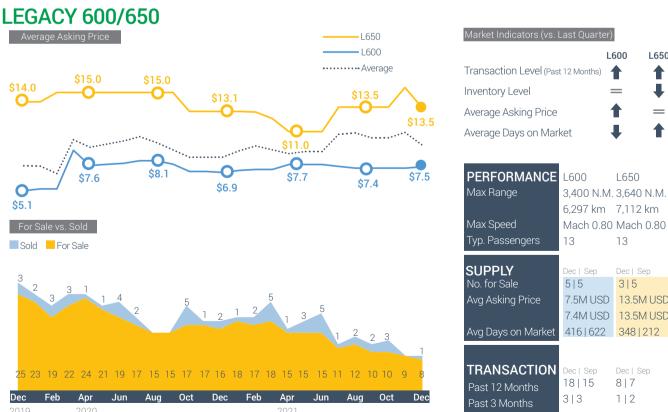


L650

L650

PHFNOM 300





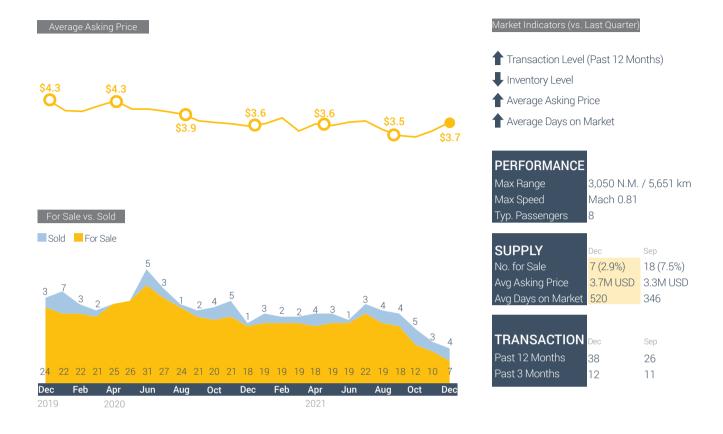
LINEAGE 1000/E



Source: AMSTAT & ASG



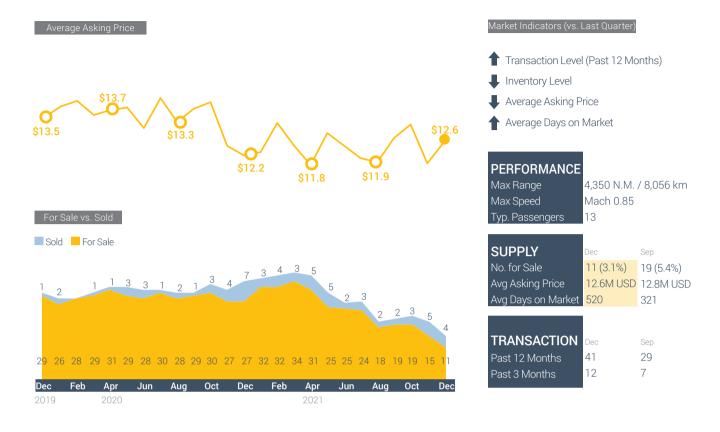
G200



G280

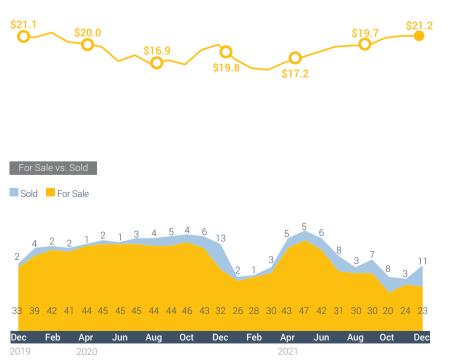


G450



G550

Average Asking Price



Market Indicators (vs. Last Quarter)

- Transaction Level (Past 12 Months)
- Inventory Level
- Average Asking Price
- Average Days on Market

PERFORMANCE

Max Range 6,750 N.M. / 12,501 km
Max Speed Mach 0.87
Typ. Passengers 18

SUPPLY	Dec	Sep
No. for Sale	23 (3.8%)	30 (5.0%)
Avg Asking Price	21.2M USD	19.8M USD
Avg Days on Market	133	296

TRANSACTIONDecSepPast 12 Months6240Past 3 Months2218

G650 & G650 FR





AIRCRAFT POSITIONING - CIVIL HELICOPTERS

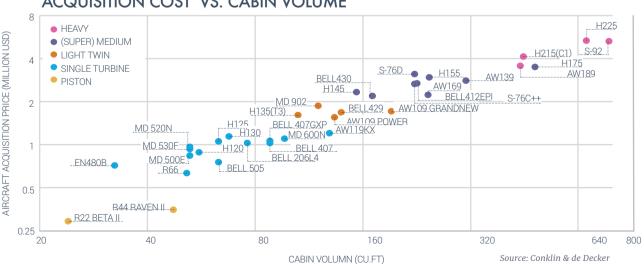
ACQUISITION COST VS. MAX RANGE



ACQUISITION COST VS. MAX TAKEOFF WEIGHT

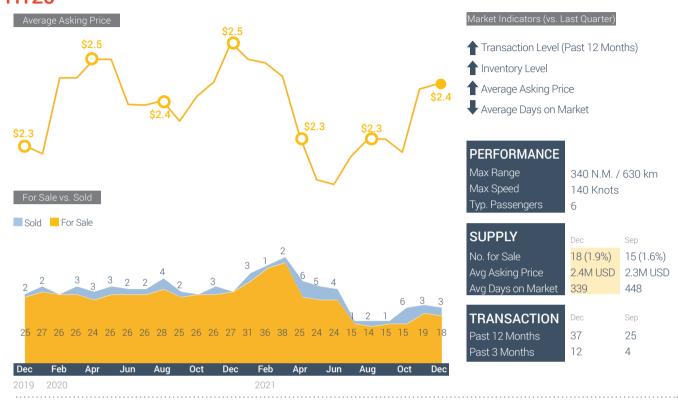


ACQUISITION COST VS. CABIN VOLUME

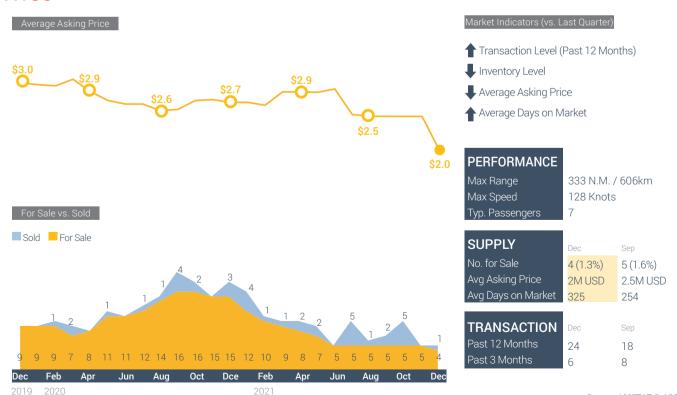


MARKET SUMMARY PER MODEL — CIVIL HELICOPTERS

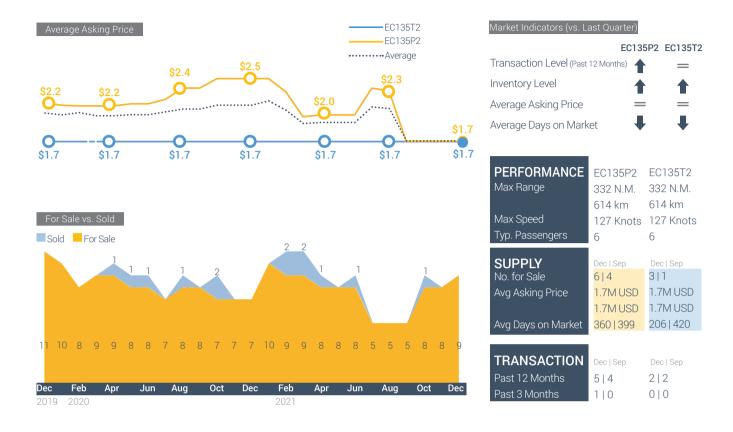
INVENTORY LEVEL, PRICE TREND & TRANSACTIONS H125



H130



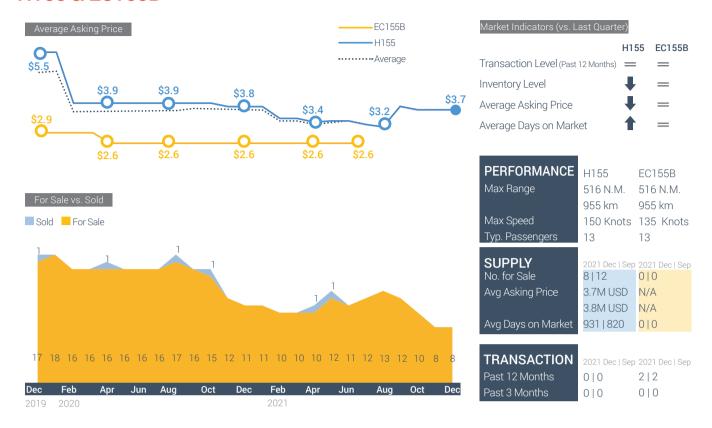
EC135P2 & T2



EC145



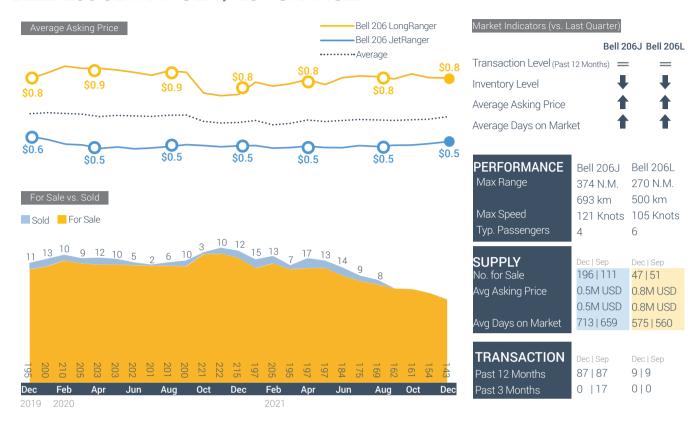
H155 & FC155B

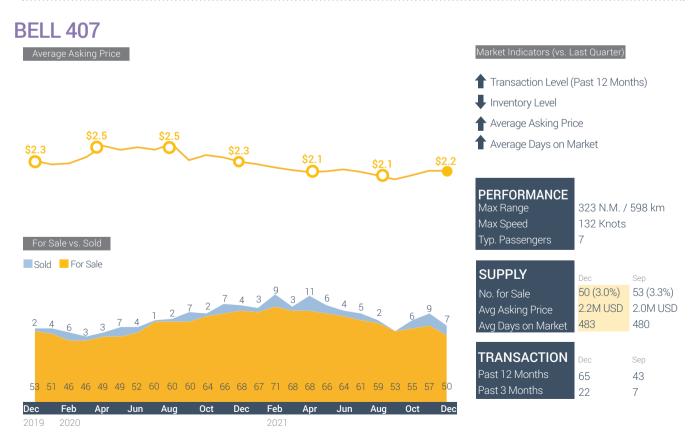


H225

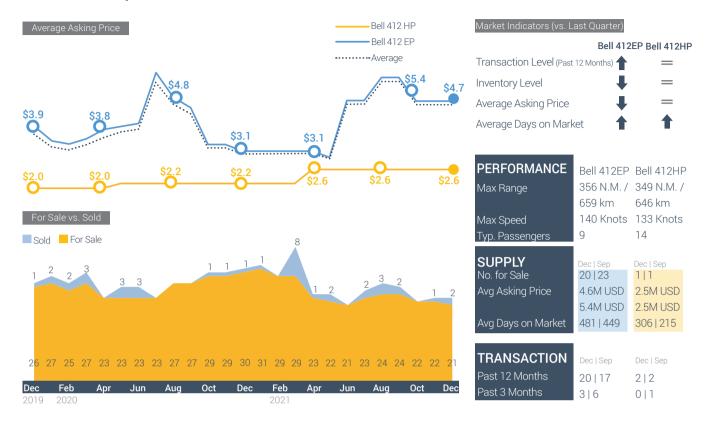


BELL 206 JETRANGER / LONGRANGER

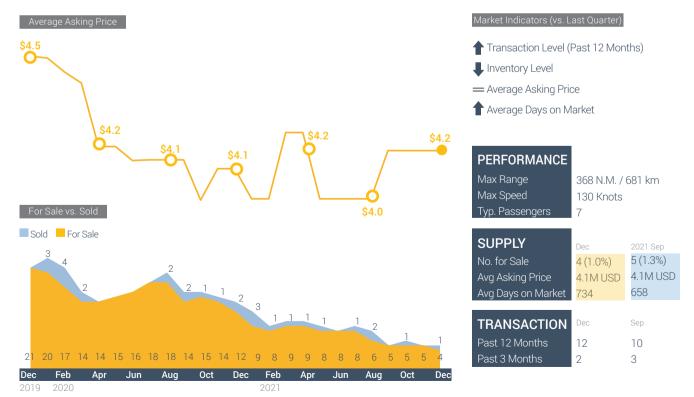




BELL 412EP/412HP



BELL 429



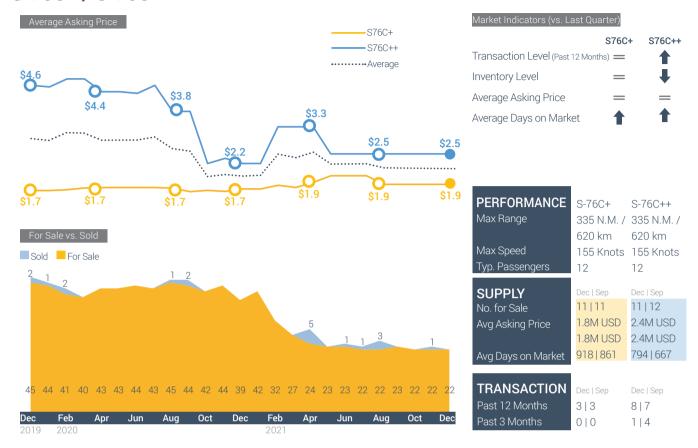
AW109SP GRANDNEW



AW139



S-76C+ / S-76C++



Source: AMSTAT & ASG

FEATURED AIRCRAFT



