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Fleet Report

BUSINESS JETS | ASIA-PACIFIC

YE 2022

Cover Feature

FALCON 6X

Data & Analysis

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COUNTRY/SUBREGION SNAPSHOTS
MARKET TRENDS
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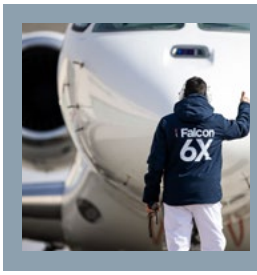

COVER IMAGE
Falcon 6X
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PUBLISHER'S NOTE

One year ago when I joined Global Sky Media it was called Asian Sky Media. The company had been producing a number of market intelligence reports not only for business jet fleets, but for helicopter fleets, infrastructure, training and charter, and a quarterly report to provide an up-to-date market overview and summary for business jets and helicopters. The geographical coverage of all of these reports was always Asia-Pacific.

Our name change from Asian Sky to Global Sky was our statement to our readers and to the aviation industry, that we are not only about Asia-Pacific anymore. We are going to be much more than that moving forward.

Since the summer of last year we have been writing daily news and delivering it through our upgraded and personalized website alongside our weekly newsletter sent to thousands of subscribers worldwide. Our research, such as the publication you are reading now, has taken significant steps forward in becoming truly world-class, by achieving higher levels of professionalism.

Our global news coverage now includes business aviation, general aviation, helicopters and advanced air mobility. For our reports, I am delighted to tell you that we have expanded our coverage to go beyond Asia-Pacific. The same insights and data that you have become accustomed to, are now available in our Middle East and North Africa (MENA) and Europe editions. We always obtain our data from multiple sources including, where possible, directly from the operators themselves. The criteria remain the same for fleet reports, where the aircraft must be in service, must be used only for civil purposes, and must be based in the region to be counted.

To our existing readers, supporters and clients, I hope our expanded coverage will give you even greater value than in the past. To our new readers around the world, I hope our intelligence brings you valuable knowledge to assist your businesses. You can look forward to more international research for other types of aircraft and aviation services throughout the year.

Sincerely,
Tan Rahman
Publisher
Global Sky Media

SPECIAL THANKS TO OUR CONTRIBUTORS

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EXECUTIVE SUMMARY

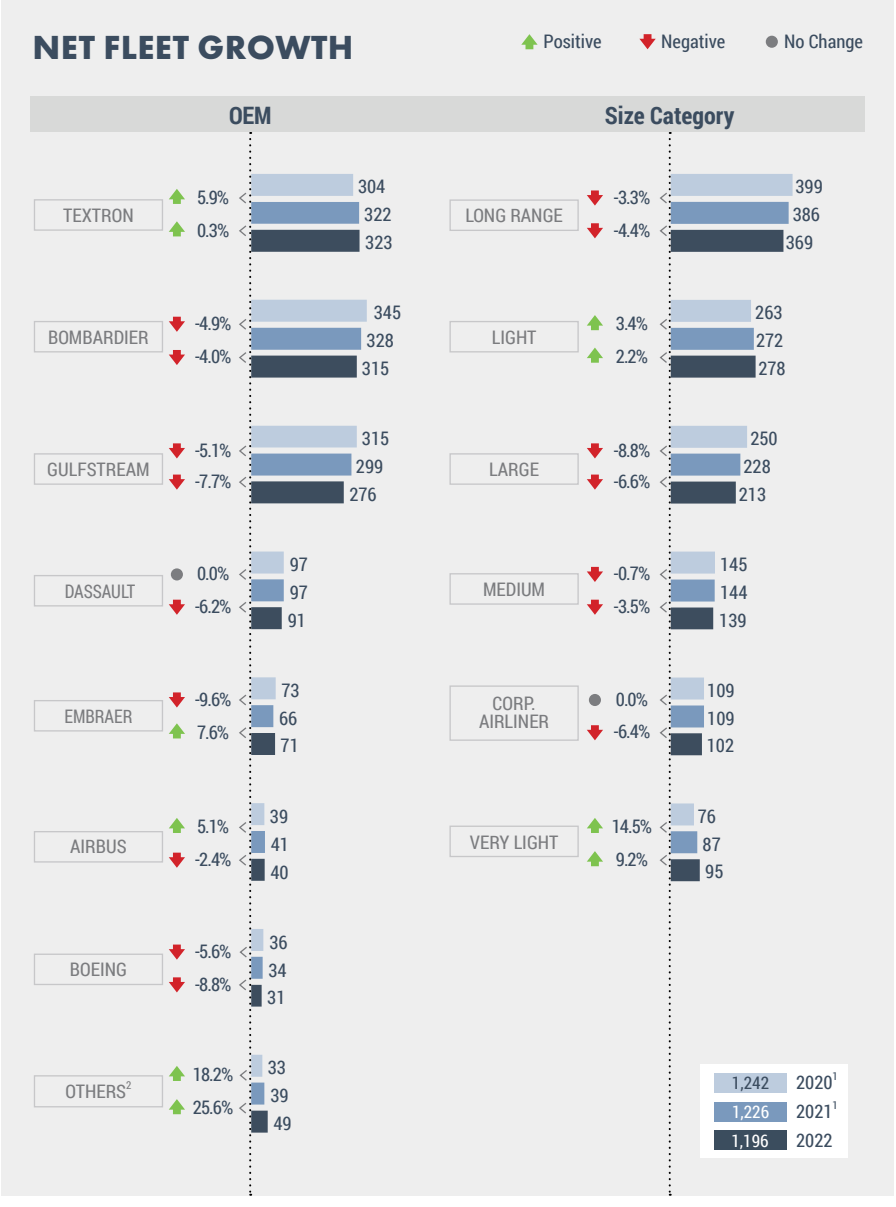
The Asia-Pacific region's business jet fleet declined by 2.4% in 2022, with 1,196 jets in service. Key market movements resulted in 31 new deliveries, 58 pre-owned aircraft additions, and 119 aircraft deductions, resulting in a net reduction of 30 jets from the fleet. The COVID-19 pandemic posed new challenges to the business jet market, which were exacerbated by disruptions to critical supply chains and manufacturing capabilities. These disruptions resulted in slowdowns with Original Equipment Manufacturers (OEM), who were also experiencing rising raw material, energy, and maintenance costs, which were being passed on to jet owners. The recovery of the scheduled airline industry has taken a long time to gain traction, contributing to a larger pilot shortage as a result of pilots retiring early during the pandemic.

Asia-Pacific has seen a further influx in the number of Light and Very Light jets introduced to its fleet. Models such as the Citation 510 (Mustang) fueled growth in the Very Light category, while the Pilatus PC-24 fueled growth in the Light category. However, whilst the business jet fleet has contracted for two years in a row, overall, the market remains positive, with Asia-Pacific recording a compounded growth rate of 1.2%. Four of the five Asia-Pacific subregions contributed to positive growth, with Oceania seeing the most net additions (16 jets).

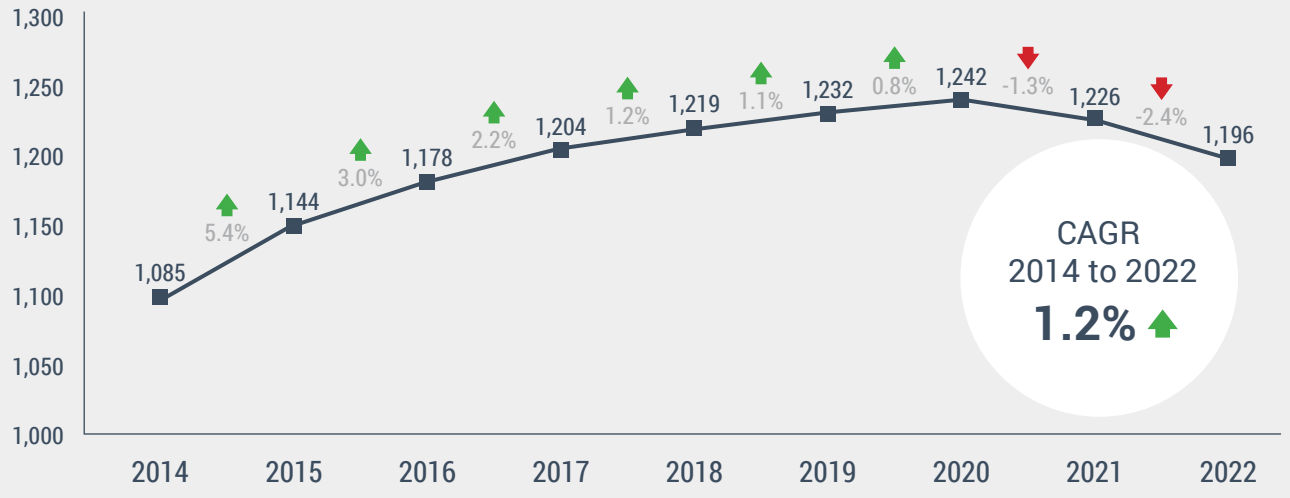
Textron is now leading OEM in the Asia-Pacific region, overtaking Bombardier with the greatest share of business jets with 323 jets that include popular models such as the Citation 525 (M2/CJ1/+), Citation 560XL (Excel/XLS/XLS+), and Citation 550 (II/IISP/SII/Bravo). Light sized jets account for 51% of all Textron jets operating in the region which are mostly powered by engines from Williams International and Pratt & Whitney. Bombardier is now the second largest OEM with a 26% overall market share after seeing a net reduction of 13 jets (including ten Large jets) from the region's fleet. 47% of jets from

Notes:
1. 2020 and 2021 data is based on Global Sky Media's adjusted and updated numbers.
2. Other OEMs include British Aerospace, Cirrus, Dornier, Eclipse, Fokker, Honda, IAI, Nextant, North American and Pilatus.

NET FLEET GROWTH



ASIA-PACIFIC BUSINESS JET FLEET GROWTH



NOTE: Historical fleet data is based on Global Sky Media's adjusted and updated fleet numbers.

Bombardier are Long Range Jets, with models such as the Global 6000 being the third most popular model in the region, with 50 jets operating in Asia-Pacific. Gulfstream is the third largest OEM in the region despite seeing a net reduction of 23 aircraft. Its most popular model, the G650ER, remained the most popular model in the region, with 91 jets in operation. The Long Range model also saw the most new deliveries, with seven aircraft introduced. Gulfstream's G550 is the second most popular model in Asia-Pacific, although the total number of aircraft operating in the region dropped from 76 to 66, a 13% decrease from 2021. In total, 67% of all Gulfstream jets in the region are in the Long Range category.

With a combined market share of 76%, the top three OEMs dominated Asia-Pacific. Embraer led all major OEMs in net additions to the region with two new deliveries, eight pre-owned additions, and five deductions. The Legacy 650, which has 19 jets, is its most popular model.

Despite a net loss of 17 business jets, the Long Range category remained the most popular in the region, accounting for 31% of the region's fleet. This proportion is higher than in the MENA and European business jet markets, where Long Range Jets account for 28% and 20% of fleets, respectively. Large Jets continued to decline sharply in 2022, with a drop of 15 units at a 6.6% rate.

Despite having seen a net reduction of 38 aircraft, mainland China remains the largest market for business jets in the region. The fleet saw a reduction rate of 11.2%, down to a total of 301 aircraft, although mainland China still saw the second highest number of new deliveries for the region with five newly introduced aircraft. Hong Kong saw the second largest reduction among the Asia-Pacific fleet, with 27 aircraft leaving the territory while it received two new deliveries and one pre-owned addition. Despite the fact that restrictions on travel and movement in and out of Hong Kong had been tentatively relaxed during 2022, many business jets continued to leave local operators, and relocating to other jurisdictions. This was made easy with the prevalence of offshore and foreign registrations on the majority of aircraft in Hong Kong. A similar story could be seen in the neighboring Special Administrative Region of Macao, which saw a net reduction of seven aircraft which was a drop of 70%.

Australia (221) and India (148) had the second and third largest business jet fleets at the end of 2022, with both seeing a net growth rate of 7%.

New business jet deliveries continued to fall at a 6% rate in 2022, though this could potentially recover as major OEMs seek to complete their delivery requests from a resultant backlog accumulated in the previous year. The secondary market was more active, with a total of 177 pre-owned aircraft movements; however, more than half of them had left the region, and the number of deductions had increased by 1.7% since 2021. As the global

pandemic moved into its third year, it was clear that the slowing economy and travel restrictions in the region were still having an effect on the business jet market.

More than half of the top 20 operators saw a net reduction in fleet size, while six operators still saw positive growth in their fleets. Sino Jet retained its position as Asia-Pacific's largest operator, whilst Asian Corporate Aviation Management (ACAM) saw the greatest number of net additions, introducing six jets into its operating fleet. India based operator VSR Ventures and Australia based Air Link both broke into the top 20 by doubling their respective operating fleets in 2022. Despite the growing popularity of offshore registries, 64% of the Asia-Pacific fleet is registered in the region. More than 70% of business jets in mainland China, Japan, and the Philippines were registered domestically, with over 80% registered in Australia, South Korea, and India. Aside from local registries, more than half of business jets registered in New Zealand and Macao SAR had US N-registries, and more than 40% of registered fleets in Singapore and Hong Kong have an offshore designation.

In keeping with the growing popularity of Light and Very Light aircraft, Williams' FJ44 engines saw continued growth to meet rising demand for models such as the Citation series. The Rolls-Royce BR700 remains the most popular engine in its size category, with a large proportion of Long Range aircraft still in service.

Following an overall compounded annual growth rate of 2.3% up to a regional fleet count of 1,242 jets in 2020, the business jet fleet steadily reduced over the next two years. Border closures and lengthy quarantine regulations imposed by pandemic countermeasures have undoubtedly forced travelers to reconsider their options. As a result of this preference to fly domestically to avoid these pandemic regulations across borders, demand for Light and Very Light sized jets has surpassed Long Range aircraft as preferred modes of travel. While Long Range Jets remain popular in the region, a sizable portion of those jets have relocated to alleviate the impact on foreign businesses, which are finding it increasingly difficult to stay put in the region's suffocating economic conditions.

As mentioned earlier, developed economies around the world are wrestling with soaring inflation, supply chain disruptions, and rising cost of living expenses. The geopolitical war in Eastern Europe set in motion a majorly disruptive energy and food crisis in greater Europe and beyond. Many of these factors look set to affect the production and delivery of business jets in the short term, if not dampen spending confidence and demand for business travel.

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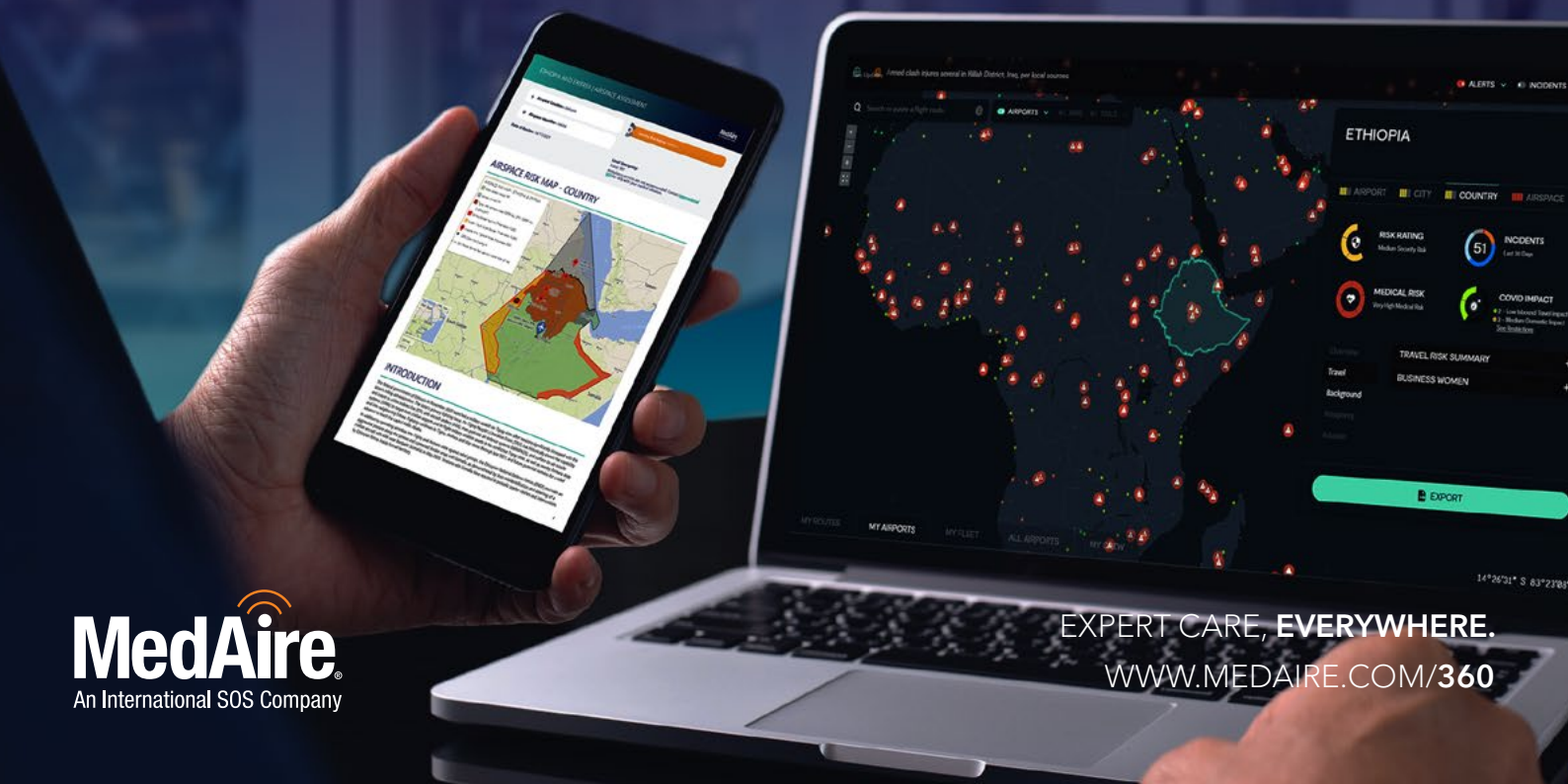

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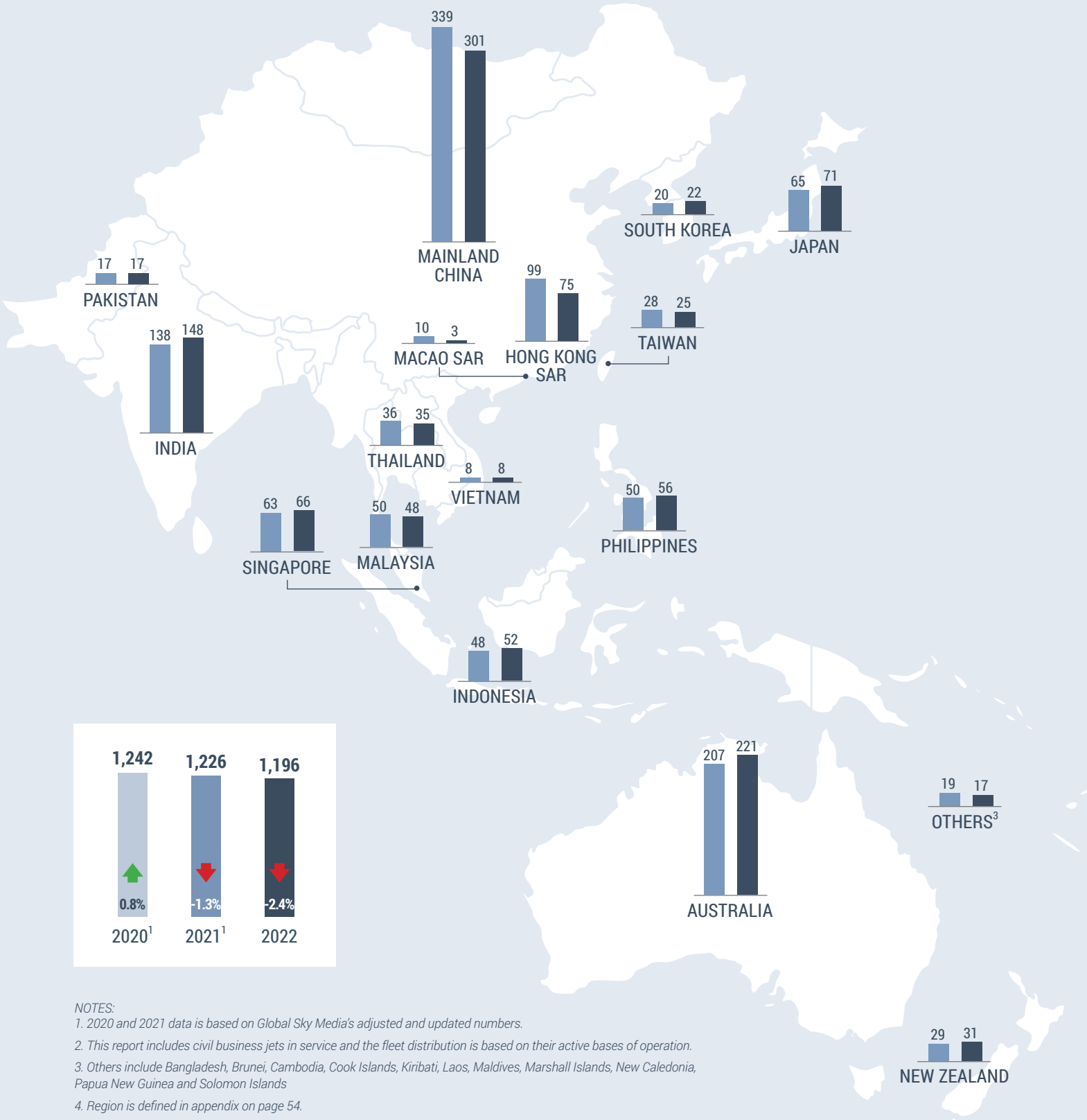
REGIONAL OVERVIEW



NOTES:

1. 2020 and 2021 data is based on Global Sky Media's adjusted and updated numbers.

2. This report includes civil business jets in service and the fleet distribution is based on their active bases of operation.

3. Others include Bangladesh, Brunei, Cambodia, Cook Islands, Kiribati, Laos, Maldives, Marshall Islands, New Caledonia, Papua New Guinea and Solomon Islands

4. Region is defined in appendix on page 54.

There were 1,196 business jets in the region's total fleet at the end of 2022. Oceania had the highest growth as a sub-region, with a net addition of 16 aircraft, building on the previous year's addition of five aircraft. Northeast Asia maintained its highest sub-regional growth rate, achieving 9.4% growth in 2022 with the addition of eight aircraft, after recording 14.9% growth with eleven aircraft in 2021. Australia had the most net additions to its national fleet of any Asia-Pacific country, with 14 aircraft, including ten Very Light sized pre-owned jets. After a reduction of three aircraft the previous year, the Philippines increased its fleet by six aircraft, achieving the highest growth rate among Asia-Pacific countries with 12% growth. India and Japan significantly boosted their growth by adding six or more aircraft to their fleets.

With the addition of nine aircraft to its fleet, South Asia surpassed its fleet numbers for the first time since 2019, continuing its recovery from reductions suffered in 2020. The addition of ten aircraft to India's business jet fleet in 2022 aided the sub-region significantly. Northeast Asia has recovered strongly from a drop in aircraft in 2020, with South Korea (two) and Japan (six) introducing eight aircraft in 2022. Oceania's fleet continues to expand, with a growth rate of 6.6% in 2022 and consistent positive growth since figures were first recorded in 2014.

Southeast Asia recovered from a reduction of seven aircraft in 2021 to record 3.4% growth in 2022 thanks to a net addition of nine aircraft, allowing the sub-region to retain the region's second largest business jet fleet of 273 jets. Indonesia, the Philippines, and Singapore all saw net gains in their respective fleets. It is worth noting that Oceania's sub-regional fleet, which includes Australia and New Zealand, is only 14 jets short of Southeast Asia's total aircraft numbers.

Greater China retained the largest business jet fleet in the Asia-Pacific region with 404 jets in 2022, making up 33.8% of the Asia-Pacific fleet. In 2022, the sub-region incurred the greatest growth loss of aircraft at 15.1%, owing to a net reduction of 72 aircraft. Some 86% of aircraft that left Greater China were concentrated in mainland China and Hong Kong SAR.

The Asia-Pacific fleet has, for two consecutive years, seen a contraction in size. The unpredictability of the global economic and geopolitical climate looks set to have a sustained impact on the supply chain aspects of the business jet industry. However, as international borders are progressively opening up around the region, especially within Greater China, the deductions may potentially be reversed. This is demonstrated by current growth in four of Asia-Pacific's five sub-regions, despite slowing economic growth and weakening demand for material commodities in the macro-environment.

BUSINESS JET FLEET[2]

LARGEST MARKET

301

MAINLAND CHINA

MOST NET FLEET ADDITIONS

+14

AUSTRALIA

MOST NET FLEET DEDUCTIONS

-38

MAINLAND CHINA

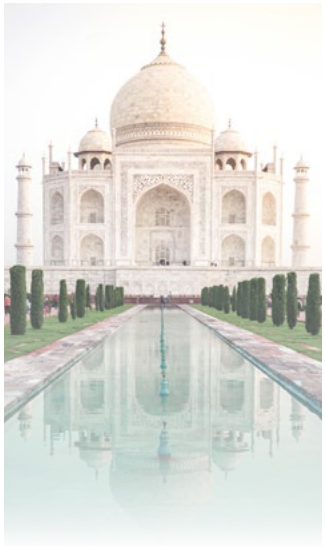
FLEET GROWTH IN MAJOR MARKETS

	Net Fleet Growth		Growth Rate	
SUBREGION[4]	**2021**	**2022**	**2021**	**2022**
Oceania	+5	+16	2.1% ↑	6.6% ↑
South Asia	+3	+9	1.9% ↑	5.7% ↑
Southeast Asia	-7	+9	-2.6% ↓	3.4% ↑
Northeast Asia	+11	+8	14.9% ↑	9.4% ↑
Greater China	-28	-72	-5.6% ↓	-15.1% ↓
TOTAL	**-16**	**-30**	**-1.3% ↓**	**-2.4% ↓**

	Net Fleet Growth		Growth Rate	
COUNTRY/REGION	**2021**	**2022**	**2021**	**2022**
Australia	-2	+14	-1.0% ↓	6.8% ↑
India	+1	+10	0.7% ↑	7.2% ↑
Japan	+8	+6	14.0% ↑	9.2% ↑
Philippines	-3	+6	-5.7% ↓	12.0% ↑
Indonesia	0	+4	0.0% ●	8.3% ↑
Singapore	-2	+3	-3.1% ↓	4.8% ↑
New Zealand	+7	+2	31.8% ↑	6.9% ↑
South Korea	+3	+2	17.6% ↑	10.0% ↑
Vietnam	+3	0	60.0% ↑	0.0% ●
Pakistan	+1	0	6.3% ↑	0.0% ●
Thailand	+2	-1	5.9% ↑	-2.8% ↓
Malaysia	-7	-2	-12.3% ↓	-4.0% ↓
Taiwan	-1	-3	-3.4% ↓	-10.7% ↓
Macao SAR	0	-7	0.0% ●	-70.0% ↓
Hong Kong SAR	-21	-24	-17.5% ↓	-24.2% ↓
Mainland China	-6	-38	-1.7% ↓	-11.2% ↓
Others	+1	-2	5.6% ↑	-10.5% ↓
TOTAL	**-16**	**-30**	**-1.3% ↓**	**-2.4% ↓**

Ranked by 2022 net fleet growth in descending order from the highest.






MAJOR COUNTRY/SUBREGION SNAPSHOTS

Greater China

Greater China, which includes mainland China, Hong Kong SAR, Macao SAR, and Taiwan, had 404 business jets in 2022. This sub-region accounted for 33% of the Asia-Pacific jet fleet but saw a decrease of 72 aircraft at the end of the year, owing to seven new deliveries, seven pre-owned additions, and 86 deductions. The reduction of Long Range type aircraft was the primary driver behind the deductions to mainland China and Hong Kong. Large Jets drove the deductions in Macaos jet fleet, while the Corporate Airliner and Light categories drove reductions in Taiwans jet fleet. Despite the decline, Greater China still accounts for 33.7% of Asia-Pacifics jet fleet. Nine of the top ten Asia-Pacific business jet operators have a base in Greater China, while six operators saw declines in their fleets. Gulfstream and Bombardier were the dominant OEMs in Greater China, with 40% and 29% of market share, respectively. The Long Range G650/ER was the most popular model, with 72 units. The Long Range category remained the most popular size category with 50% of the market share, followed by Large and Corporate Airliner with 17% and 13% of the market share, respectively. The average age of all business jets in Greater China is ten years, which was four years younger than the regional average.

Australia

Australia, the Asia-Pacific region's second-largest business jet market, had 221 business jets, accounting for 18% of the Asia-Pacific jet fleet at the end of 2022. Eight new deliveries and 20 pre-owned business jets were added to the fleet, while 14 aircraft left it. With 40% and 34% of the market share, respectively. Textron and Bombardier are the most dominant OEMs in Australia's business jet market. The Very Light and Light categories continue to dominate the business jet market in the country, with models such as the Learjet 35/36 (Australia's most popular model) and Textron's Cessna Citation 510 Mustang being the most commonplace. Light Jets continue to be the most popular aircraft category, accounting for 93 units. The Bombardier Challenger 604 is Australia's most popular Large business jet, accounting for 57% of all Large Jets with 16 units. The business jet fleet in Australia had an average age of 20.6 years, which was more than six years older than the regional average.

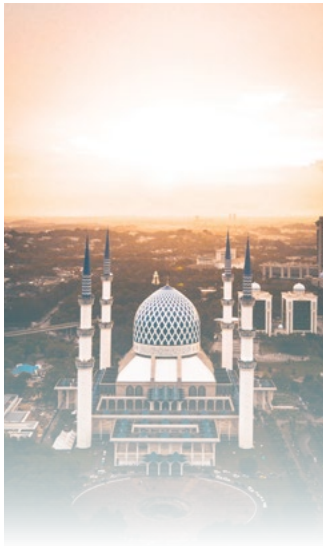
India

With 148 business jets, India ranked third in the Asia-Pacific region, accounting for 12% of the total Asia-Pacific jet fleet. During 2022, the country saw a net addition of ten aircraft with four new deliveries, 11 pre-owned additions, and five deductions. The additions included Medium, Large, and Long Range aircraft. Textron was the market leader, accounting for 39% of all business jets in India. The most popular aircraft models were Dassault's Falcon 2000 and Textron's Citation 560XL (Excel, XLS/XLS+). Only two Indian operators made the top 20 list of regional business jet operators: VRS Ventures and Club One Air. The Large and Light size categories proved to be the most dominant, accounting for 26% of the national fleet. Approximately 52% of all aircraft were in these two categories. The business jet fleet in India had an average age of 14.4 years, which was marginally older than the regional average.

Japan

At the end of 2022, Japan had 71 business jets, a 9.2% increase with a net addition of six aircraft. These additions were of a diverse range of aircraft sizes, including Light, Medium, Large, Long Range, and Corporate Airliner categories. Despite the departure of one business



jet, three new deliveries and four pre-owned aircraft were added to the fleet. Textron was the most popular OEM, accounting for 45% of the total fleet in the country. The Citation 525C (CJ4) was the most popular model, with eight jets, closely followed by the Dassault Falcon 2000 EX, which had seven jets. The Light Jets accounted for 41% of the fleet, with the Long Range fleet accounting for 26%. In Japan, the average age of the business jet fleet is ten years, which was more than four years younger than the regional average.

Singapore

Singapore's fleet increased by three aircraft in 2022, leaving the country with 66 business jets and a 6% share of the Asia-Pacific fleet. In total, one new delivery and 12 pre-owned aircraft were acquired, with ten aircraft departing the fleet. Bombardier and Gulfstream are the market's leading OEMs, accounting for 38% and 33% of the fleet, respectively. The Long Range category continued to dominate the market in 2022, with 48% market share, with the Global 5000 and G650ER being among the most popular models. The average age of the business jet fleet in Singapore is 12.4 years, which was nearly two years younger than the regional average.

The Philippines

The Philippines finished 2022 with 56 business jets, an increase of six from the end of 2021. It now accounts for 5% of the Asia-Pacific jet fleet. Gulfstream and Textron are the country's joint leading OEMs, accounting for 75% of all aircraft in the country. Among the most popular models in the fleet are Textron's Citation 560XL series (Excel, XLS, and XLS+), Gulfstream's G450, and the G100 and G150 models. The Light category accounts for 36% of the fleet, while the Medium and Large categories account for 18% and 21% of the fleet, respectively. The business jet fleet in the Philippines had an average age of 18.3 years, which was nearly four years older than the regional average.

Indonesia

Indonesia's overall fleet increased by four aircraft to 52 units as a result of 13 pre-owned additions and nine deductions. It now accounts for 4% of the total Asia-Pacific jet fleet. The leading OEMs, Textron and Embraer, accounted for 56% of the national fleet. The large Legacy 600 and 650 models contributed up to ten aircraft, while the light Hawker 400 was Textron's most popular model, accounting for five aircraft. Large Jets have increased by 21% in Indonesia, accounting for 32% of the total fleet. Long Range aircraft increased by 25% and now account for 19% of the market. There are no Very Light aircraft in the fleet, which is notable. The business jet fleet in Indonesia had an average age of 14.2 years, which was slightly older than the regional average.

Malaysia

Malaysia had 48 business jets at the end of 2022, two fewer than the previous year, which equates to a 4% decrease. It now represents 4% of the Asia-Pacific jet fleet. The Malaysian fleet received one new aircraft and two used aircraft, while five aircraft left the country in 2022. The leading OEMs are Bombardier and Gulfstream, with their models accounting for 54% of the fleet. The most popular size categories were Long Range and Large, which accounted for more than half of the market share. The G550, G650ER, and Global 5000 are among the most popular models in the fleet. Malaysia has the second largest fleet of Airbus Corporate Airliners, with the ACJ319 being the most popular model (three). Malaysian business jets have an average age of 18.6 years, which was more than four years older than the regional average.

Thailand

Thailand had 35 business jets at the end of 2022, down by one aircraft, accounted for by one new delivery, one pre-owned addition, and a reduction of three aircraft. It now represents 3% of the Asia-Pacific jet fleet. Gulfstream and Textron are the leading OEMs in Thailand, accounting for 54% of the fleet. Long Range aircraft remained the most popular size category, led by the G550 and G650. This was followed by the Light Jets, which had a 20% market share, with the most popular models being the Citation 550 (II/IISP/SII/Bravo) and the HondaJet Elite. The Corporate Airliner and Medium size categories each had a 17% market share, with the ACJ320 being one of the most popular Corporate Airliner models. The average age of the business jet fleet in Thailand is 12.9 years, which was about two years younger than the regional average.

New Zealand

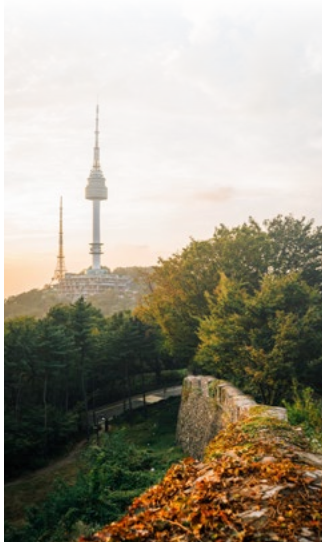
New Zealand had 31 business jets, up two from the previous year, as a result of three pre-owned additions and one departure from the fleet. New Zealand accounted for 3% share of Asia-Pacific's jet fleet. The Citation 510 (Mustang) was Textron's most popular model in New Zealand. Bombardier was the second most popular OEM in New Zealand, with a 23% market share, with its most popular model was the large sized Challenger 604. Light aircraft were the most common, with a 31% market share, indicating a strong preference for domestic routes within the Pacific region. Long Range and Large jets have a combined market share of 35%. The business jet fleet in New Zealand had an average age of 17.5 years, which was more than three years above the regional average.

South Korea

South Korea's business jet fleet increased by two aircraft in 2022, with the addition of one new delivery and one pre-owned aircraft. South Korea now has a total of 22 business jets, with the two additions accounting for a 10% increase. Textron was the leading OEM with its most popular model being the Very Light Citation 525 (M2/CJ1/+). Boeing was the leading Corporate Airliner OEM, with four models including the BBJ1 and 787 BBJ. Long Range aircraft account for 27% of the fleet, with the G650ER being the leading model. The fleet's most popular categories are Long Range and Very Light, followed by Corporate Airliners (five units). South Korean business jets have an average age of 12.5 years, which was nearly two years younger than the regional average.

Vietnam

Vietnam had one of the smallest fleets of business jets in the Asia-Pacific at the end of 2022, with a total of only eight jets, which was unchanged for 2022 and less than 1% share of the Asia-Pacific jet fleet. This was attributed to three new deliveries, one pre-owned addition, and four deductions. Dassault is the leading OEM in the fleet, which consists of the Falcon 2000 EX and Falcon 8X models. Embraer makes up 25% of the fleet with the Legacy 600 and Legacy 650, while Gulfstream also had the same market share with two Long Range G650ER jets. The fleet consists of an equal share of Large and Long Range aircraft. The average age of the fleet in Vietnam is five years, making it the youngest overall in the Asia-Pacific region and over nine years younger than the regional average.



TOTAL FLEET BY COUNTRY/REGION AND OEM

1,196 in Total

	TEXTRON	BOMBARDIER	GULFSTREAM	DASSAULT	EMBRAER	AIRBUS	BOEING	OTHERS	TOTAL	% OF TOTAL
MAINLAND CHINA	50	87	106	23	8	16	9	2	301	25%
AUSTRALIA	89	76	9	10	14	3		20	221	18%
INDIA	57	37	8	21	23	1	1		148	12%
HONG KONG SAR	2	19	44	5		4	1		75	6%
JAPAN	32	7	13	7			2	10	71	6%
SINGAPORE	7	25	22	4	3	1	2	2	66	6%
PHILIPPINES	21	8	21	2		1	1	2	56	5%
INDONESIA	15	9	9		14		3	2	52	4%
MALAYSIA	7	14	12	3	2	5	3	2	48	4%
THAILAND	8	2	11	2	2	4	2	4	35	3%
NEW ZEALAND	13	7	2	6	1			2	31	3%
TAIWAN	2	9	9	1		4			25	2%
SOUTH KOREA	8	2	4	1	1	1	4	1	22	2%
PAKISTAN	8	8	1						17	1%
VIETNAM			2	4	2				8	1%
MACAO SAR		1	1		1				3	<1%
OTHERS	4	4	2	2			3	2	17	1%
TOTAL	**323**	**315**	**276**	**91**	**71**	**40**	**31**	**49**	1,196	100%

NEW, BIG FALCONS *SUIT ASIA-PACIFIC*

It is a big world out there, especially when business takes you from the Asia-Pacific region to the major cities of Europe and North America.

From Tokyo, it is 9,700 km to Paris. From Sydney, it is 12,100 kilometers to Los Angeles. These are 12 – 15 hour nonstop trips. Dassault engineers and executives wondered how they could deliver a better passenger experience over those vast ranges.

Their conclusion: make occupants feel more as if they were in their own homes rather than in a business jet.

The flying penthouse

Accordingly, Dassault Aviation has introduced two new airplanes that are the biggest among purpose-built business jets (not converted airliners). The Falcon 6X, which is 1.98m tall by 2.58m wide, is eclipsed in size only by the Falcon 10X and its 2.03m by 2.77m cabin. Competitors are as much as 28 cm narrower.

The best of contemporary home design—in a jet

Dassault's in-house Design Studio set a new standard for contemporary business jets, as recognized by honors such as the prestigious Red Dot and Good Design awards for industrial design. In the 6X, lines are less angular and more fluid; the furniture appears lighter and leaner. Open armrests, for example, accentuate

the impression of spaciousness. Aisle width is about 15 cm greater than competitors, easing movement about the cabin.

The typical cabin arrangement is a fourplace club seating arrangement forward, followed by a dining/conference table and opposite credenza, and then by an aft compartment with two divans for socializing or sleeping. Optionally, this space makes a comfortable private stateroom.

Cabin pressurization is a low 3,900 feet at a cruise altitude of 41,000 feet (on the 10X, it's even lower at 3,000 feet). A low cabin pressure altitude reduces fatigue. The 6X and 10X cabins are real fatigue reducers compared to airline cabins at 6,000 to 8,000 feet.

On the 6X, thirty-five square feet of window area leads the class for natural light. On the 10X, windows are even bigger to brighten a larger cabin. On both airplanes the windows are spaced closely for a uniform distribution of light in the cabin. LED lighting is passenger controlled to introduce new combinations from soft reading light to gradual sunrises that help adjust circadian rhythms.

The no-compromises, biggest business jet yet

The 10X cabin simply gives passengers more of everything. The cabin has an extended galley with a crew rest area as an option. The passenger area has four cabin zones of equal size, each with its own climate controls, but the design is flexible and each zone can be shortened or extended to customize the layout.

An owner could specify a shortened compartment as an entertainment center with a divan on one side and a big screen TV on the other. Or the aft zone could be lengthened into a private suite with a full queen size bed (which is not possible on other large business jets because of their lesser width). An en-suite bath can be equipped with the largest and nicest shower in business aviation. It's 1.88m tall with electro-chromatic dimmable windows and a generous 30-minute hot water supply.

A cabin that reflects modern art

The 10X cabin with its Modernist lines and decorative motifs has been enthusiastically embraced by customers and aviation journalists. One astute writer saw the influence of cubist painter Piet Mondrian, as well as other 20th century inspirations from French artists Georges Braque, Marc Chagall and Marcel Duchamp. For the 6X and 10X, Dassault designers moved away from traditional heavy-looking cabin furniture to reflect the latest in home design.

Dassault Falcon 10X


Dassault Falcon 6X

An emphasis on privacy and quietness

New on the 6X and 10X is the optional Falcon Privacy Suite, a first within the business jet industry. One or two of these could be ordered for the aft cabin compartment. The suite has aisle dividers for privacy and a seat that reclines electrically to fully flat.

The Falcon Privacy Suite is well suited for long flights for at least two reasons. It provides a refuge for passengers who wish to work or just have a little time to themselves. The suite also makes it easier to sleep, inasmuch as we all prefer a little more privacy for sleeping.

> *"Comfort factors have been prioritized in the 6X and 10X to give passengers the best experience over the longest distances."*

Falcons have long been known as quiet aircraft with sound levels below 50 dB—the equivalent of a suburban living room. Engineers report that the first Falcon 6X aircraft to receive full interiors are even quieter, with the 10X planned to be just as quiet. The low noise and vibration levels on these jets (in addition to low cabin altitudes) means that passengers feel much better at the end of a long flight.

Masters of the long haul

All of these comfort factors have been prioritized in the 6X and 10X to give passengers the best experience over the longest distances.

The 6X is the largest aircraft in what is known in the industry as the long-range class. Its maximum range of 10,186 km allows nonstops between Beijing and either Seattle or London. Typical cruise speed for the 6X is between .80 and .85 Mach and its top speed is .90 Mach.

The Falcon 10X offers even more range capability. It is classified as an ultra-long-range jet. The aircraft can fly 13,890 km and has a top speed of Mach 0.925, a whisker below the speed of sound. Shanghai to New York City is well within the aircraft's capability. On flight's of up to 14 hours or more, it's easy to see why cabin comfort has become so important.

Embodying the best of French Style and Technology

If all the discussion of cabin style seems to place the emphasis on a French aesthetic, the 6X and 10X are also tributes to Dassault's heritage as one of France's leading aerospace companies and one of the world's top builders of advanced fighter aircraft.

Dassault Aviation was one of the earliest developers of digital flight control (fly-by-wire) technology, giving its fighters maneuverability advantages. It was the first manufacturer to introduce digital flight controls on a business jet. That was in 2005 with the first flight of the Falcon 7X. Digital controls enhance safety, reduce workload and impart a smoother ride. The 6X and 10X have even more advanced digital flight controls.

For Dassault, style, comfort and technology are braided together into quintessentially French exports—ones that customers will soon be enjoying on the world's longest routes.

The 6X is nearing the end of its flight test certification program and will enter service this summer. Parts and major structures for the 10X are being built today, with final assembly of the first units beginning in 2023.

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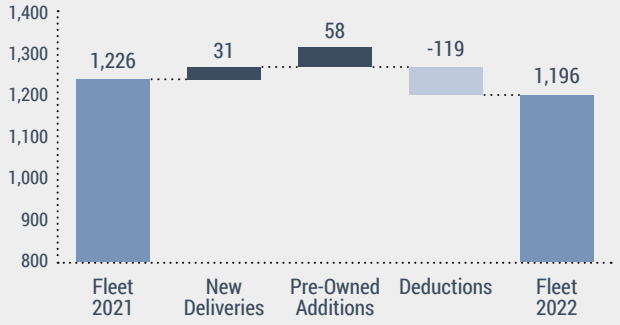
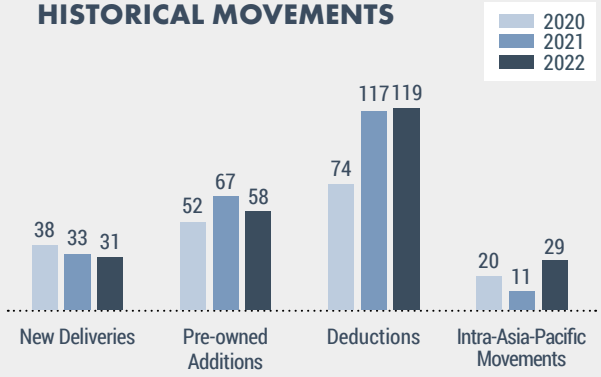
MARKET TRENDS

BUSINESS JET ADDITIONS & DEDUCTIONS



HISTORICAL MOVEMENTS



The overall growth trend of business jets in the Asia-Pacific region has been positive since we began recording data in 2014, with an annual compounded growth rate of 1.2% up to 2022. There had been continuous expansion in the regional fleet from 2014 to 2020, before major restrictions to aviation movements from the COVID-19 pandemic severely hampered growth from there onwards. The Asia-Pacific region had 1,196 operational business jets at the end of 2022, accounted Qfor by a net decrease of 30 jets with 31 new deliveries, 58 pre-owned additions, and 119 deductions.

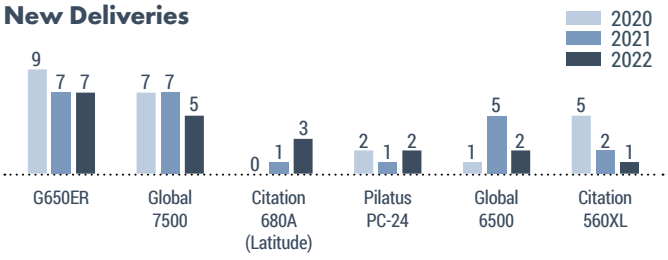
New deliveries fell by two units from the previous year, resulting in a 6.1% decline, while pre-owned additions totaled nine units decline. Deductions in the Asia-Pacific jet fleet continued to mount, and increased by 1.7% over the course of the year. In 2022, there were 29 intra-Asia-Pacific movements, a 163.6% increase over the previous year. The trend over the past two years implies that Asia-Pacific's business jet market slowed down further in 2022, with a decrease in demand for new aircraft and a decline in pre-owned aircraft movements.

New business jet deliveries during 2022 in the Asia-Pacific region contributed a total aircraft value of USD$1.37 billion. Gulfstream has reclaimed its position as the leading OEM for delivering new jets into the region, with eight new deliveries worth more than USD$562 million, accounting for more than 40% of value of all new deliveries. Bombardier failed to build on its strong performance in 2022, delivering only seven new jets as opposed to 12 the previous year. It's new deliveries accounted for 35% of total delivery value, a decrease of USD$318 million from the previous year. However, strong demand in recent years has contributed to a growing backlog of orders worth USD$15 billion, as well as a 23% increase in new orders being placed. Despite external pressures on the supply chain and soaring inflation, it is reasonable to expect that a significant portion of the backlog will be fulfilled within the next two years.

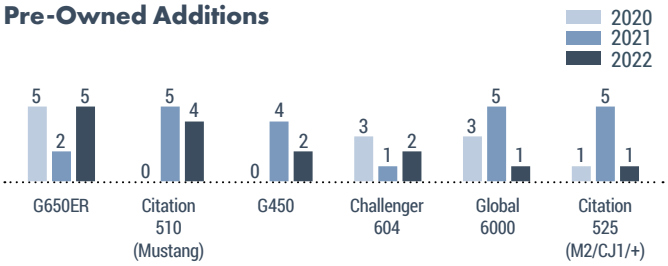
The G650ER continues to compete with the Global 7500 for market supremacy among Asia-Pacific clients looking for Long Range business jets and has edged it out this year with seven deliveries compared to five for

TOP MODELS IN 2022

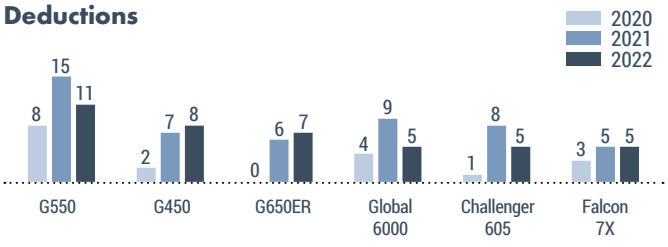
New Deliveries



Pre-Owned Additions



Deductions



BUSINESS JET MOVEMENTS[1,2]

FOR MORE INFORMATION ON JET MOVEMENTS, PLEASE REFER TO THE OEM OVERVIEW.

New Deliveries

NET CHANGE IN 2022	FLEET SIZE (UNITS)		AIRCRAFT VALUE (USD$M)[3]	NET CHANGE IN 2022 (USD$M)
-1 ↓	8	GULFSTREAM	$562.0	-$36.5 ↓
-5 ↓	7	BOMBARDIER	$487.0	-$318.0 ↓
-1 ↓	6	TEXTRON	$109.1	$30.8 ↑
3 ↑	3	DASSAULT	$156.6	$156.6 ↑
1 ↑	2	EMBRAER	$25.2	$20.8 ↑
1 ↑	2	HONDA	$10.9	$5.1 ↑
1 ↑	2	PILATUS	$23.2	$11.9 ↑
0 •	1	CIRRUS	$3.0	-$0.2 ↓
-1 ↓	0	AIRBUS	$0.0	-$103.5 ↓
-2 ↓	**31**	**TOTAL**	**$1,376.9**	**$-233.0 ↓**

Pre-owned Additions

NET CHANGE IN 2022	FLEET SIZE (UNITS)		AIRCRAFT VALUE (USD$M)[3]	NET CHANGE IN 2022 (USD$M)
-2 ↓	14	BOMBARDIER	$155.6	-$87.7 ↓
-11 ↓	13	TEXTRON	$45.0	-$29.4 ↓
2 ↑	11	GULFSTREAM	$350.3	$163.8 ↑
6 ↑	8	EMBRAER	$83.5	$74.5 ↑
2 ↑	3	IAI	$0.9	$0.5 ↑
2 ↑	2	BOEING	$111.7	$111.7 ↑
-6 ↓	2	DASSAULT	$54.2	-$131.8 ↓
-3 ↓	2	HONDA	$8.4	-$10.1 ↓
0 •	1	AIRBUS	$56.3	$45.6 ↑
1 ↑	1	ECLIPSE	$1.9	$1.9 ↑
1 ↑	1	PILATUS	$14.2	$14.2 ↑
-8 ↓	**58**	**TOTAL**	**$882.1**	**$153.4 ↑**

Deductions

NET CHANGE IN 2022	FLEET SIZE (UNITS)		AIRCRAFT VALUE (USD$M)[3]	NET CHANGE IN 2022 (USD$M)
7 ↑	42	GULFSTREAM	$1,255.2	$481.2 ↑
-11 ↓	34	BOMBARDIER	$475.1	-$56.5 ↓
4 ↑	18	TEXTRON	$98.5	$62.5 ↑
3 ↑	11	DASSAULT	$268.3	$125.0 ↑
-5 ↓	5	EMBRAER	$67.4	-$37.6 ↓
2 ↑	5	BOEING	$179.9	$153.6 ↑
2 ↑	2	AIRBUS	$133.0	$133.0 ↑
1 ↑	1	CIRRUS	$2.8	$2.8 ↑
1 ↑	1	HONDA	$5.1	$5.1 ↑
-1 ↓	0	IAI	$0.0	-$0.3 ↓
-1 ↓	0	NORTH AMERICAN	$0.0	-$0.4 ↓
2 ↑	**119**	**TOTAL**	**$2,485.1**	**$868.1 ↑**

NOTE : 1. Pre-owned Additions and Deductions do not necessary indicate aircraft transactions. They also include aircraft that have changed their base region, returned to use, or retired. Intra-Asia-Pacific movements are also excluded. 2. OEMs that had no business jet movement in 2021 and 2022 were not listed in the table. 3. Aircraft Value is sourced from third party valuation sources and Global Sky Media research, which are based on the aircraft's year of manufacture, with assumptions of standard equipment, configuration and average yearly utilization.

the Global 7500, although the Global 7500 achieved more deliveries in other regions, notably Europe.

Pre-owned aircraft additions to the Asia-Pacific fleet contributed a total aircraft value of USD$882.1 million, with Textron being surpassed by Bombardier, which is now the leading OEM, delivering 14 pre-owned aircraft to the region. Textron delivered 13 pre-owned aircraft to Asia-Pacific in 2022, 11 fewer than the previous year, and contributed USD$45 million in pre-owned aircraft value. Gulfstream completed 11 pre-owned aircraft transactions in the region, accounting for 40% of pre-owned aircraft value (USD$350.3 million). Corporate Airliners OEMs Boeing and Airbus added three pre-owned aircraft into the Asia-Pacific jet fleet, worth a total of USD$168 million and accounting for 19% of the pre-owned aircraft value.

Some 16 of the pre-owned additions were Light Jets that include models such as the Westwind 1/2 and Learjet 45 XR.

The G650ER was the most popular among pre-owned additions, ahead of the Citation 510 (Mustang) and Citation 525 (M2/CJ1/+) which had the highest number of pre-owned additions during the previous year. In addition, the Long Range Global 6000 saw a decrease in pre-owned transactions in 2022, with only one addition compared to five the previous year. The pre-owned additions have an average age of 15.2 years, which is about one year older than the regional average.

The number of departures from the Asia-Pacific region increased by 1.7% to 119 aircraft in 2022, with Long Range aircraft such as the G550 and G650ER accounting for 39%. The value of aircraft that have left the Asia-Pacific region amounted to USD$2.48 billion, increasing by USD$868.1 million from the previous year.

Gulfstream recorded the largest number of aircraft which left the region, with a total of 42 jets worth USD$1.25 billion, which was an increase of 62.2% from 2021. The G450, G550, and G650ER models accounted for 62% of all Gulfstream jets which left Asia-Pacific. For four years in a row, the G550 has seen the highest reduction among all aircraft models in Asia-Pacific.

Bombardier had the second highest number of aircraft withdrawals from the Asia-Pacific fleet, with 34 aircraft worth a total of USD$475.1 million leaving the region. The Global 6000 and the Challenger 605 are the most common models to leave the region; however, the rate of their departures has decreased since 2021.

Seven Corporate Airliners from Boeing and Airbus departed worth a total of USD$312.9 million departed from the region, while 11 Dassault aircraft totaling USD$268.3 million also left the Asia-Pacific fleet. A total of 18 Textron aircraft worth USD$98.5 million and five Embraer jets worth USD$ 67.4 million also headed for other regions during 2022. Two Very Light Jets from Cirrus and Honda departed with a combined value of USD$7.9 million.

Mainland China saw the largest number of net deductions with 38, followed by Hong Kong (24) and Macao (7). Excluding business jets that have been in storage or have retired, 53% of business jets that have relocated from the Asia-Pacific region went to the United States, while 11% went to countries in Europe. Six jets were relocated to the United Arab Emirates in the Middle East.

MARKET UPDATES

OPERATOR OVERVIEW

The top 20 operators accounted for 31% of the Asia-Pacific fleet in 2022, with a total of 368 business jets. Approximately two-thirds of the operators on the region's list are primarily based in Greater China. During the year, all of the top five operators reduced their fleet, by a total of 26 aircraft. Six of the top 20 operators increased their fleet size: ACAM, Phenix Jet, ExecuJet, Amber Aviation, VSR Ventures, and Air Link. ACAM received the most net additions with six aircraft, while Sino Jet remained the region's largest operator despite a five-aircraft reduction. Air Link's fleet experienced the most significant change in fleet size ranking, rising 20 spots to 17th place after doubling its fleet to eight aircraft in 2022.

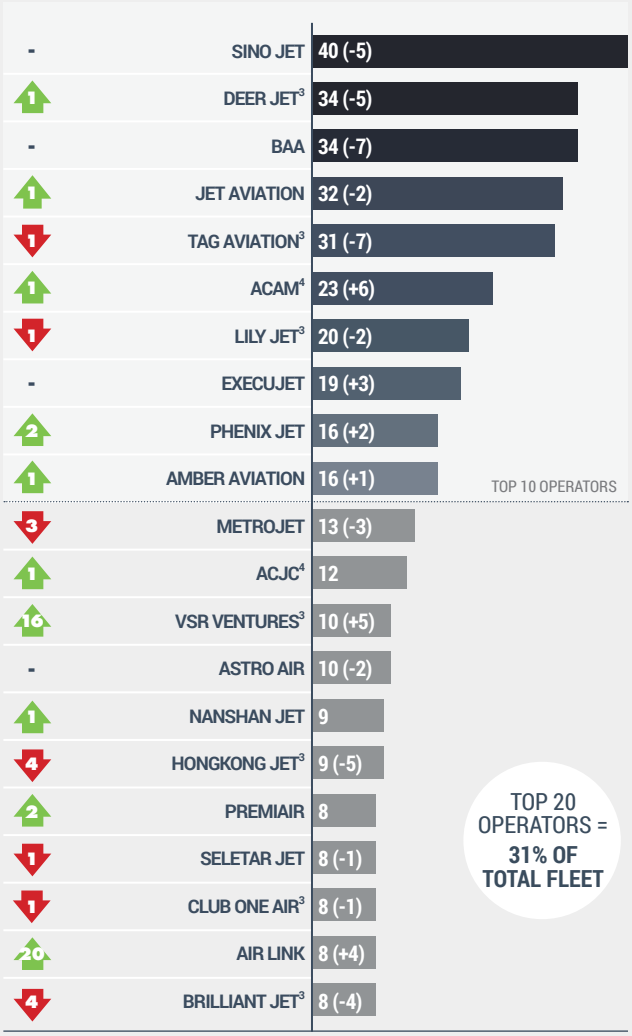
All the top five operators are based in the Greater China. As the region's largest operator, Sino Jet maintained its position as having the most Long Range business jets and the highest share of Gulfstream jets among operators. Sino Jet consolidated these results in 2022 by adding a G650 and a G650ER to the fleet. Deer Jet and BAA now have the same fleet size, with 34 aircraft following reductions of five and seven aircraft, respectively. Jet Aviation replaced TAG Aviation in fourth place, with the a reduction of just two aircraft.

ACAM had the highest number of Long Range aircraft in its fleet, with 39% in this size category. The Falcon 7X returned to the fleet after a one-year absence, while the G650ER and Global 6000 were introduced with two aircraft each. Phenix Jet expanded its Corporate Airliner offering with the addition of a Boeing 737, while also adding a Citation 525C (CJ4) to its Light Jet line-up. Amber Aviation increased it G450 fleet from one to five during the past two years through its partnership with NetJets on the AmberNet jet card program. Large Jets now account for nearly a third of its fleet.

Phenix Jet has seen four years of consecutive fleet growth, while Amber Aviation has not seen a fleet contraction since it began operations. Hongkong Jet and Brilliant Jet both fell four places in the rankings due to record reduction rates of 35.7% and 33.3%, respectively. Air Link, based in Australia, entered the top 20 rankings for the first time after doubling its fleet to eight jets in 2022.

TOP 20 OPERATORS BY FLEET SIZE[1,2]

RANK CHANGE 2022 VS 2021



NOTE: 1. Special mission and government operators are not included. 2. Operators under the same corporate group and using the same brand name are grouped together. 3. The fleet numbers of these operators are only based on Global Sky's internal research and not verified by the operators. 4. ACAM - Asian Corporate Aviation Management; ACJC - Australian Corporate Jet Centres.

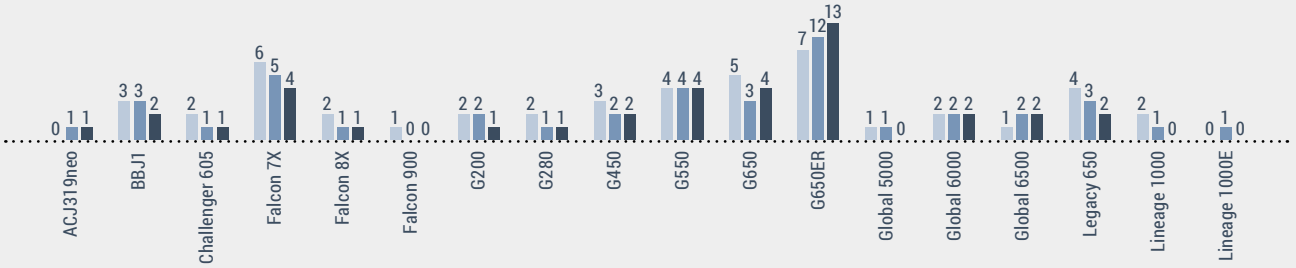
FLEET BY OPERATOR AND MODEL

Sino Jet

MAINLAND CHINA | HONG KONG SAR

NET GROWTH 5 ▼ 11.1% ▼

47 2020
45 2021
40 2022

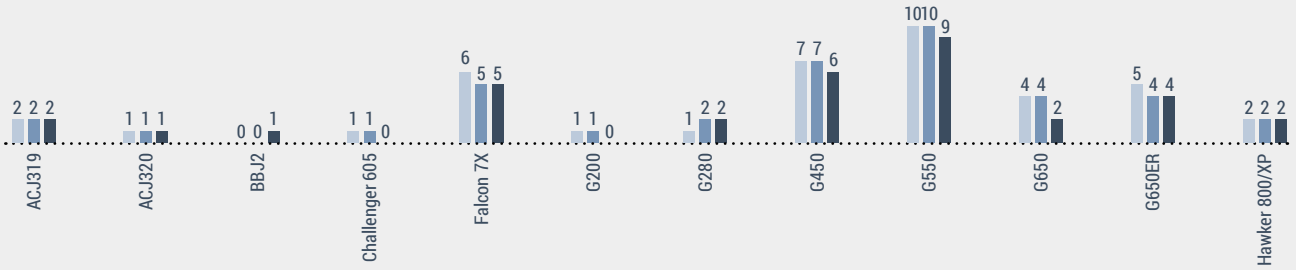


Deer Jet

MAINLAND CHINA

NET GROWTH 5 ▼ 12.8% ▼

40 2020
39 2021
34 2022

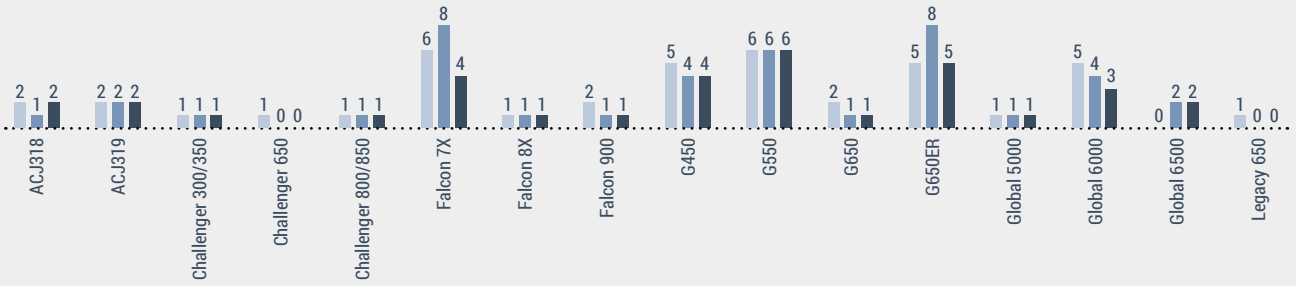


BAA

MAINLAND CHINA | HONG KONG SAR

NET GROWTH 7 ▼ 17.1% ▼

41 2020
41 2021
34 2022

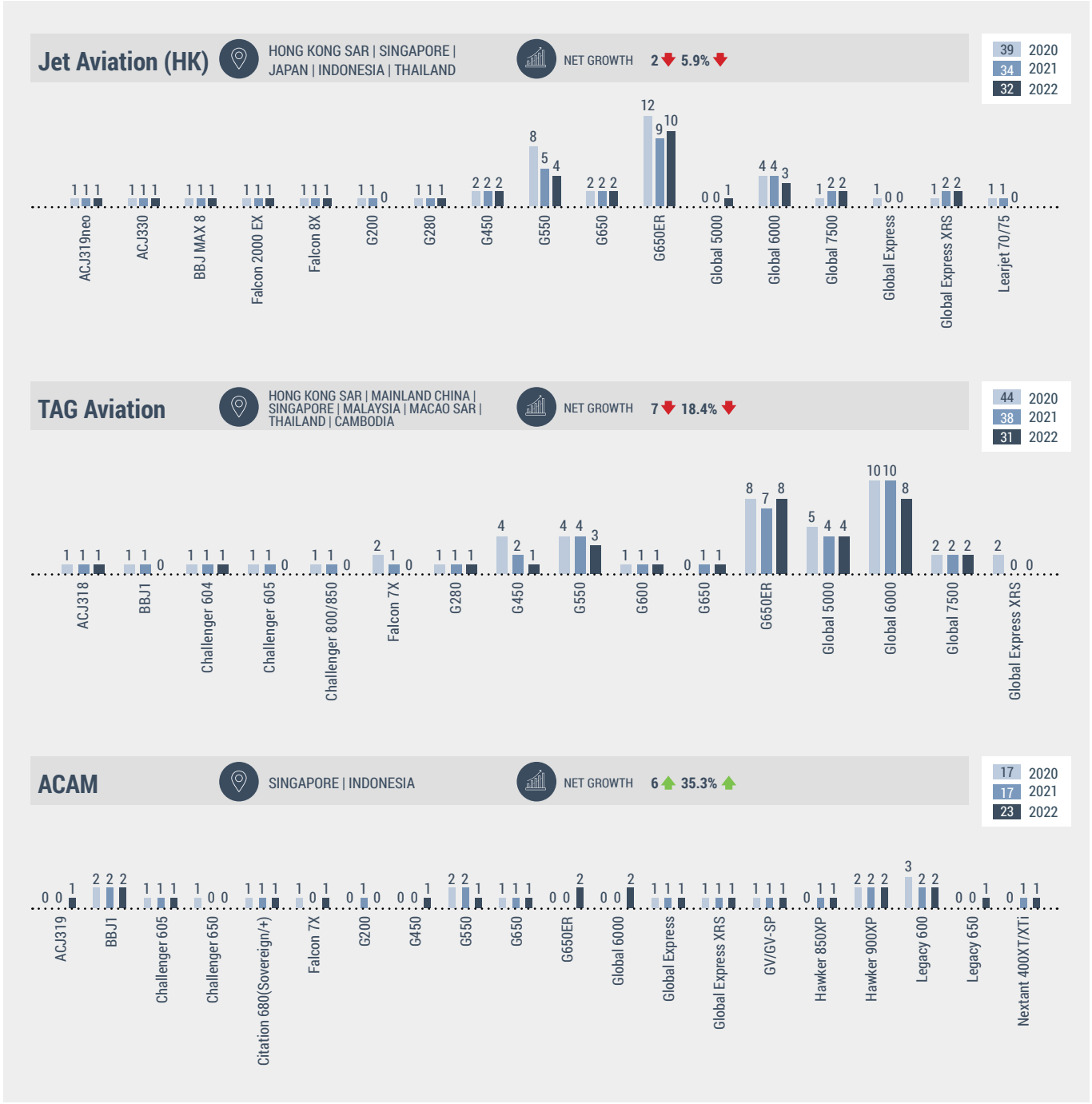


TOP OPERATORS IN EACH COUNTRY

Australia had the second-largest fleet in the Asia-Pacific region, with 221 business jets. Australian Corporate Jet Centers (ACJC) had the largest fleet in the country with 12 jets in 2022, unchanged from a year ago. ExecuJet maintains seven of its 19 aircraft based in Australia. Air Link, Navair Flight Operations (NFO), Pacific Flight Services, and Luft Aviation Charter were among the other notable operators. NFO is noted for taking delivery of one new and two pre-owned business jets in 2022.

VSR Ventures surpassed Club One Air as India's largest operator. With an expanded fleet of ten aircraft, it ascended a record 16 spots in the overall Asia-Pacific rankings, making it one of the region's top 20 operators. With a fleet of eight aircraft, Club One Air is now the second largest operator. Reliance Commercial Dealers had seven aircraft in its fleet, with one new delivery scheduled for 2022, and ranks third in India.

Singapore is home to a portion of four of the top ten operators' fleets. Asian Corporate Aviation Management (ACAM) has the country's largest fleet, with 17 of its 23 units based there. Despite a reduction of two aircraft, Jet Aviation came in second with eight jets in Singapore, moving up one spot to fourth place above TAG Aviation in the rankings. TAG Aviation has the fewest aircraft based in Singapore, with three, while ExecuJet has four currently operating from the country.



Japan saw a 9% fleet increase in 2022, with a net addition of six aircraft, and Phenix Jet has the largest fleet in the country with 13 business jets. The Philippines saw a 12% increase in its business jet fleet, with Asian Aerospace and Challenger Aero Air its leading operators, and each operating six jets. In 2022, Indonesia's fleet grew by 8%, while its top operators, Premiair and ACAM, maintained their position as the country's leading operators with each operating eight and six business jets, respectively.

Malaysia maintained its downward trend, with a reduction of two more business jets in 2022. Redland Aviation Services, the country's largest operator, added one jet to its fleet, bringing its total to five business jets. With four jets, ExecuJet is the second largest operator, followed by TAG Aviation, which operates three jets out of Malaysia. Thailand lost one business jet from its fleet, but the top operator, MJets, still has the largest fleet of six jets. South Korea's business jet fleet increased by 10% year on year, and its main operator, Korean Air, added one jet to its fleet, bringing the total to six. There were no changes in the Vietnam-based business jet fleet in 2022, where most operators in Vietnam only operate one to two aircraft.

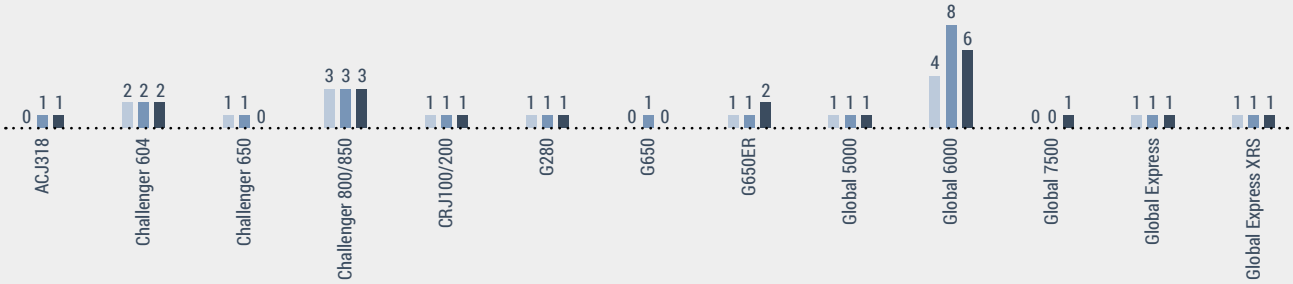
Among the top ten operators, Sino Jet has the youngest fleet with an average age of 6.3 years, and Amber Aviation has the oldest fleet with an average age of 11.4 years. These figures are both lower than the regional average for all aircraft in the region.

Lily Jet

MAINLAND CHINA

NET GROWTH 2 ▼ 9.1% ▼

16 2020
22 2021
20 2022

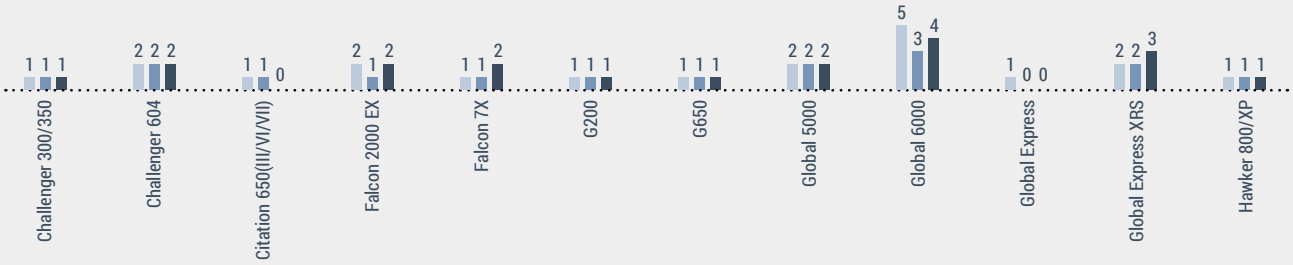


ExecuJet

AUSTRALIA | MALAYSIA | SINGAPORE | NEW ZEALAND | HONG KONG SAR | INDIA | MAINLAND CHINA

NET GROWTH 3 ▲ 18.8% ▲

20 2020
16 2021
19 2022

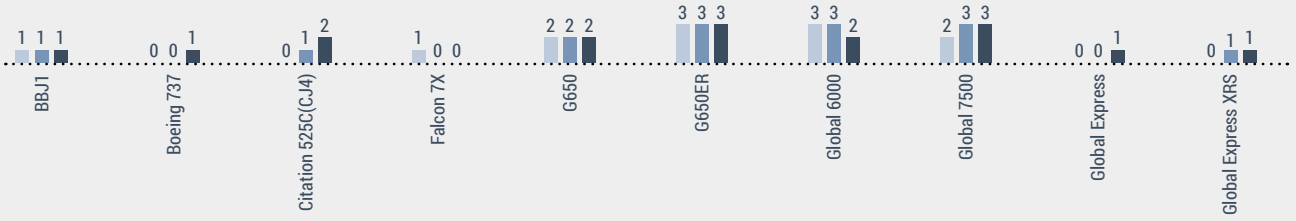


Phenix Jet

JAPAN | HONG KONG SAR

NET GROWTH 2 ▲ 14.3% ▲

12 2020
14 2021
16 2022

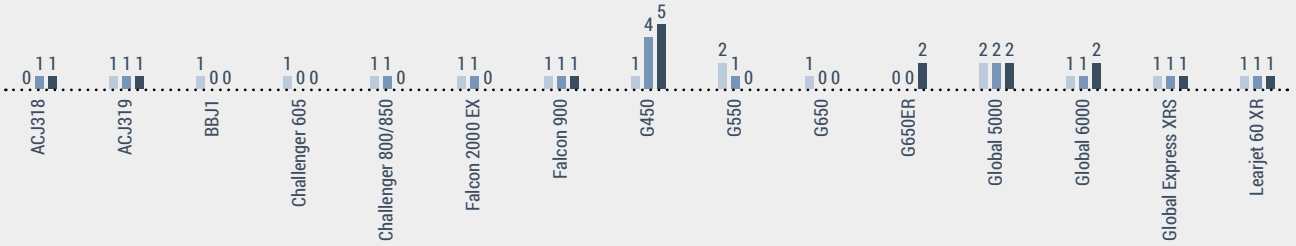


Amber Aviation

MAINLAND CHINA | HONG KONG SAR | MACAO SAR

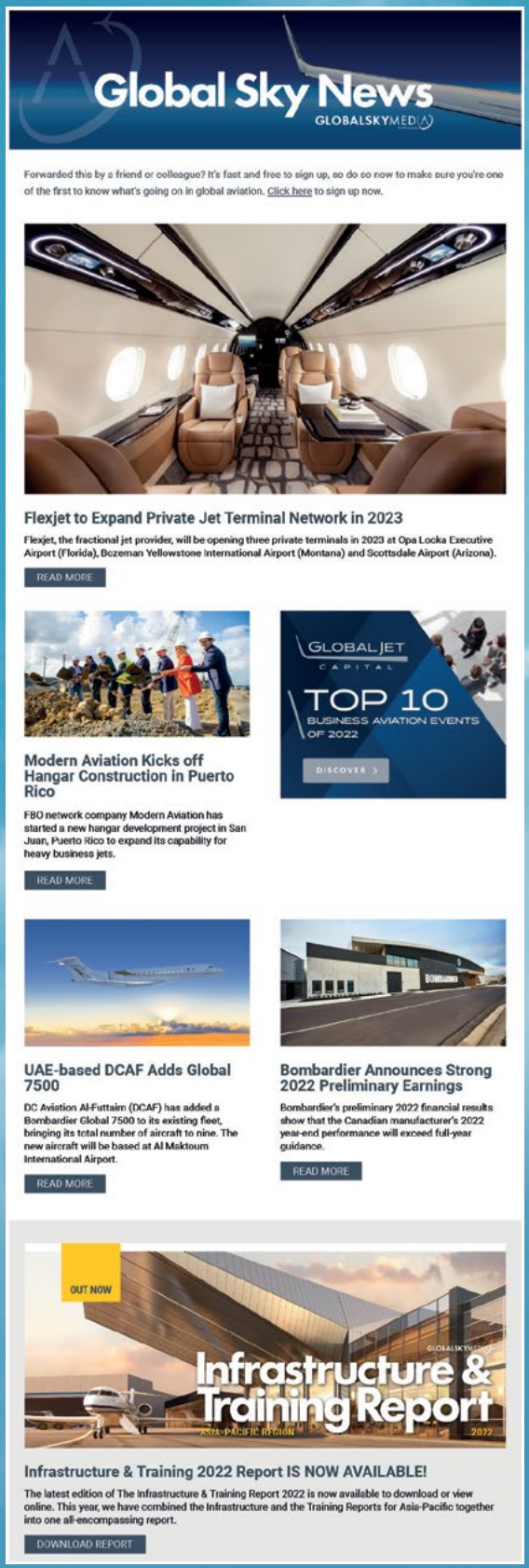
NET GROWTH 1 ▲ 6.7% ▲

15 2020
15 2021
16 2022



Global Sky News

GLOBALSKYMEDIA



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The effort behind *effortless*[1]

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SINO JET TOPS FLEET SIZE RANKINGS IN ASIA PACIFIC *FOR THE FOURTH YEAR*

In the three years since COVID-19, the number of business jets in Greater China has seen an overall 15.1% decline due to its economic impact, with a total net decrease of 62 business aircraft operating in mainland China and Hong Kong SAR, with all major business jet operators experiencing fleet reductions. However, Sino Jet still ranked first in fleet size in Asia-Pacific for the fourth consecutive year.

Breaking out of the dramatic market fluctuations is a critical issue for business jet operators. In this issue, Sino Jet talks to Global Sky Media and shares the key to its success in staying at the forefront of the industry.

About Sino Jet

Sino Jet specializes in the management and operation of large business jets. Its business ranges from aircraft trading, aircraft maintenance, global charter services, ground handling, and fixed-based operators (FBO), to luxurious travel services, and more. Sino Jet is the first business jet company in mainland China to obtain the highest level of safety recognition for international business jet operations (the IS-BAO Stage 3 Certification), the first business jet company in China to set up a branch outside of China and has been named "The World's Leading Business Jet Company" at the World Travel Awards.

The business jet market in Greater China has seen significant fluctuations in the last year, owing to the disposal of aircraft assets by business aircraft owners for various reasons, as well as the adjustment of aircraft operating locations by business aircraft owners due to changes in their own business development. Sino Jet is a business jet company with a global operational network, and its overall fleet remains relatively stable, with 40 business aircraft operating in the Asia-Pacific region.

"Although the Greater China region has seen a decrease in the total number of business jets, the public's demand for safety and convenience remains high. "The irreplaceability of efficient and flexible business jets makes business jets the first choice for entrepreneurs." Sino Jet announced that while some business aircraft holding companies are disposing of assets, there are still a number of new business jet users entering the market, and it has introduced four business aircraft in 2022. In addition, Sino Jet further laid out its charter fleet, with its Hainan branch purchasing a jet for charter flights to bring the business jet travel experience to more business travel customers.

"Practice the internal strength and expand the external extension. Sino Jet views high safety standards and excellent service quality as the foundation for development and always adheres to the 'accompanying strategy.' We set up branches wherever our customers are, adjust the aircraft operation bases flexibly, and obtain the operation and maintenance license of wherever our customers' aircraft are registered accordingly to meet more customers' needs," said Sino Jet. At present, Sino Jet has 20 operating bases around the world and holds operation management and maintenance engineer licenses in China, the United States, Europe, Cayman, Bermuda, Aruba, the Isle of Man, Guernsey, San Marino, etc., providing strong conditions for global development.

At the same time, Sino Jet's fleet size brings incomparable advantages in market expansion. Sino Jet manages large business jets from Gulfstream, Dassault, Bombardier, Embraer, Airbus, Boeing, and other aircraft manufacturers and has obtained high-level qualifications for inspection of many mainstream aircraft

models. Its abundant professional aircraft-type talents and aviation material resources can fully guarantee safe operation and minimize the cost of use for business aircraft owners.

> *"We set up branches wherever our customers are, adjust the aircraft operation bases flexibly, and obtain the operation and maintenance license of wherever our customers' aircraft are registered accordingly to meet more customers' needs."*

As an important part of the business aircraft market in the Asia-Pacific region, Sino Jet has taken the lead in building a digital business aviation operation mode and made breakthroughs in safe and efficient operation. It has established an information technology development company, creating an integrated FOS operation platform that includes an aircraft operation system, a maintenance engineering management system, a safety management system, a flight quality monitoring system, a financial system, and other systems involved in all aspects of aircraft operation. The systems are highly interconnected to ensure traceability of the safety operation quality and management process, allowing aircraft assets to be preserved to the greatest extent possible and gaining the trust of business aircraft users.

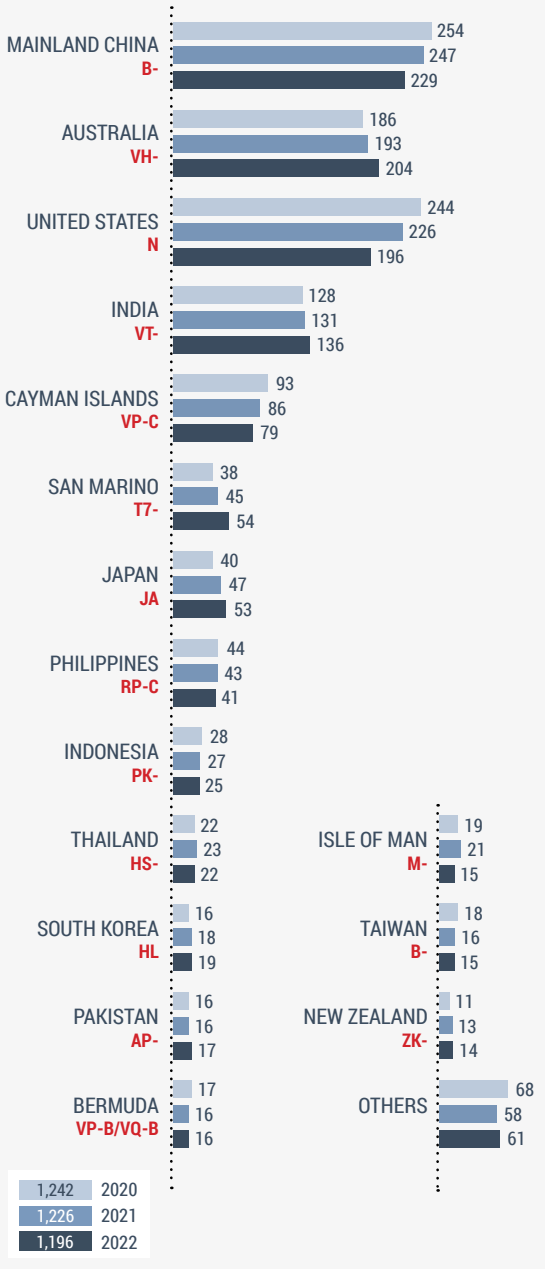
Sino Jet believes that the demand for business jet travel remains strong and that more business jets will return when the economy tends to grow. "As a business jet operator based in the Greater China region and facing global development, we will continue to stimulate the business jet market in the region with quality services and will continue to increase investment in the international market, so that we can provide better services to our existing business jet customers worldwide and look forward to building a leading Chinese business aircraft operator brand in the world market," Sino Jet said.

MARKET UPDATES

AIRCRAFT REGISTRY OVERVIEW

When an aircraft is registered in a certain jurisdiction, the local Civil Aviation Authority (CAA) sets the rules for how it can be used and what certifications it needs. It also sets the rules for how the asset should be managed and how the CAA can assist other aspects such as aircraft maintenance and the handling of asset transactions.

NET FLEET GROWTH BY REGISTRY



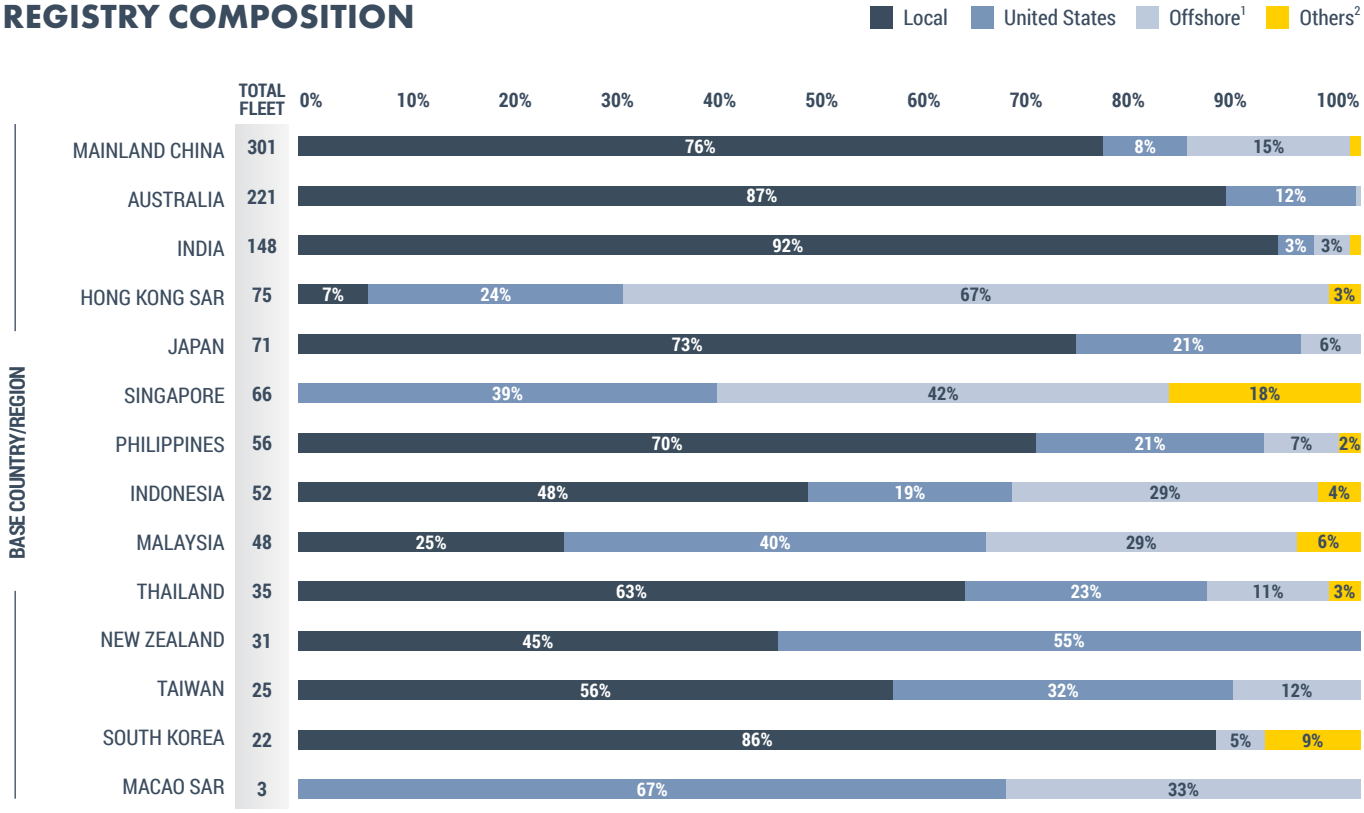
Some 66% of the business jets based in Asia-Pacific are registered locally. With 92% of aircraft bearing the local registration, India has the highest proportion of domestically registered aircraft.

Mainland China's position as the most popular aircraft registry was retained. The number of mainland China B-registered jets decreased by 7.3%, from 247 to 229, while maintaining a 76% share of all aircraft registrations in mainland China. The vast majority of domestically registered aircraft in mainland China are Large or Long Range aircraft. Registration in Australia (VH-) has continued to grow and has now surpassed US registration as the second most popular registry in Asia-Pacific. Some 87% of Australia's fleet are locally registered. One reason is that the majority of the fleet is made up of Light Jets, which fly almost entirely within Australia and the Pacific region.

The number of business jets operating in Asia-Pacific on the United States registry (N) has declined for the fifth consecutive year since the end of 2018, falling by 30 registrations in 2022 at a rate of 13.3%. The Long Range category is the most common type of aircraft registered with the N registration in the Asia-Pacific region, with 54% of the region's Long Range Jets under the US register.

Mainland China saw the most notable drop in N registered aircraft, with a decrease of 14 registrations at a rate of 36.8% in 2022. This correlates with business jets that have relocated away from the Asia-Pacific region, in particular the 63 jets that relocated to the United States. With the exception of registrations tied to owner trust agreements, the majority of aircraft with US registrations have connections with owners and operators tied to US citizenship and under Federal Law regulations. Since mainland China remained one of the last major economies to continue imposing severe restrictions on travel throughout 2022, its consequences disrupted business activity in a way that dissuaded many US based enterprises from remaining in the country. Subsequently, the relocation of N registered business

REGISTRY COMPOSITION



NOTE:
1. Offshore Registrations include: Aruba, Bermuda, Cayman Islands, Guernsey, Isle of Man, Malta and San Marino.
2. Others indicates any registration besides Local, US and Offshore.

jets that returned to the United States speaks volumes about the impact of pandemic restrictions, while also highlighting the effects that current geopolitical tensions have on trade and movements between these two global powerhouses.

With 55% of its jets bearing the N designation, New Zealand now has the highest proportion of US registrations among the Asia-Pacific fleet. The N registry continues to offer secure and efficient procedures for filing documents pertaining to security, registry transfer, and aircraft sales to owners, lenders, and operators outside of the United States. The registry's key stakeholders can rely on strong foundational legal support from experienced aviation attorneys who have overseen a long track record of legal precedents concerning aircraft ownership and asset transfers.

When combined, the registries of mainland China, the United States, and Australia account for 52% of the total Asia-Pacific fleet.

In 2022, India had 136 domestic registrations, but it has yet to surpass the 2014 figure of 137 registrations. India, like Australia, has a large number of Light and Very Light Jets in its fleet, which may explain the appeal of local registrations, which allow jets to fly domestic and regional routes. Unlike Australia and India, Hong Kong-based owners and operators prefer offshore registries, accounting for 67% of the total registered fleet. Only 7% of the 74 Hong Kong-based business jets were registered on the local B-H/B-K/B-L registry.

The Cayman Registration (VP-C) registry is the most popular for Hong Kong-based jets, with 34 aircraft registered, followed by the US N registry, which has 18 aircraft registered. The Cayman Islands and Bermuda (VP-B and VQ-B) have long been popular with Hong Kong's established financial hub. The Cayman Islands is a suitable jurisdiction for customers and financiers to secure favorable aircraft transactions due to its compromise jurisdiction and incorporation of special purpose vehicles as owning entities to lease or own aircraft. Long Range business jets account for 82% of all business jets based in Hong Kong.

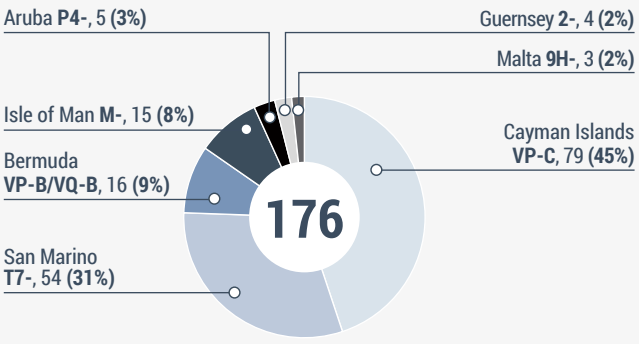
Japan has Asia's fifth-highest concentration of business jets. There are 71 jets in the country, with 73% of them registered

locally. The US registration is popular among Long Range Jets and Corporate Airliners, accounting for 29.6% of the total fleet. Singapore was ranked sixth with 66 business jets, 48.5% of which were Long Range. It is the only Asia-Pacific business jet market with no locally registered aircraft. Instead, 42% of total jets were registered offshore, including 16 with San Marino (T7-) registrations, with the remaining 39% N registered in the US. San Marino is not required to comply with the European Aviation Safety Agency (EASA), which provides greater flexibility in selecting pilots who are certified by aviation authorities other than EASA, such as the Federal Aviation Administration (FAA).

OFFSHORE REGISTRY

OFFSHORE REGISTRY MARKET SHARE

By Country/Region



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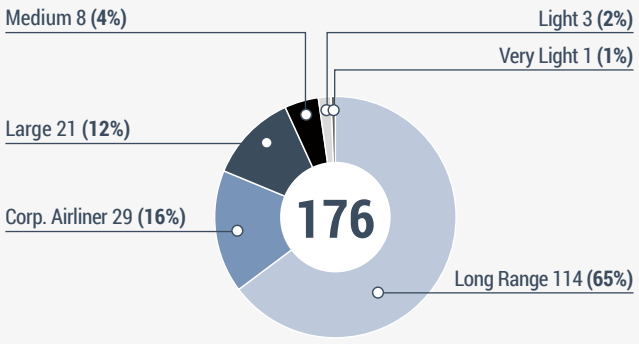


Offshore registrations in Asia-Pacific fell by another five aircraft in 2022, for a total of 176 in 2022. San Marino (T7-) was the only offshore registration that increased by 20%, with a total of 54 registrations. San Marino remains in second place, trailing the Cayman Islands, which has 79 registrations. Some 19% of the business jet registered in San Marino were Global 5000.

The Cayman Registry has decreased from a peak of 93 registrations in 2020 to 79 registrations in 2022, representing an 8% decrease from 2021. VP-C designated aircraft based in mainland China and Hong Kong SAR account for 73% of all Cayman Islands registered aircraft in the region. Some 68% of the Cayman Islands registered jets are Long Range, and the most popular OEM model range is the G650 / G650ER, with a total of 26 registries. Corporate Airliners account for 12.6% of registered jets, with VP-C registries provided on Airbus' ACJ318/ 319/ 319 neo and Boeing's BBJ1/ MAX 8.

Bermuda's registry (VP-B or VQ-B) saw no movement in 2022, but it is now the third most popular offshore registration in the Asia-Pacific region, with a total of 16 registrations. A newly delivered G650ER to operator Sino Jet is the most recent addition to the register. Half of the registrations are for Long Range Jets such as the Global 6000, which is the most popular model in Asia-Pacific on the Bermuda register. With 50% of designated aircraft, Bombardier is the most well-represented OEM with a Bermuda registry. Malaysia currently has the highest number of Bermuda registered jets among Asia-Pacific countries, with five. The Bermuda registry is well known for its supportive framework for transferring foreign registries for acceptance into Bermuda registration, particularly for transferring Cayman documentation and approvals that incur minimal charges, in order to easily obtain Continued Airworthiness Management Organization (CAMO) and operational approvals. Acceptance of type certificates from other major aviation jurisdictions, such as the ANAC (Brazil), EASA (Europe), FAA (United States), and Transport Canada, also contributes to this process.

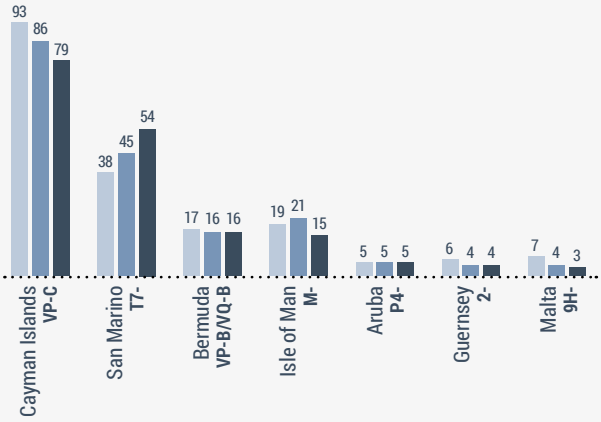
The Isle of Man's M- registry is the fourth most popular offshore registry, with a 28.5% decrease in Asia-Pacific registries in 2022, and fell just behind the Bermuda registry. Long Range Jets account for 60% of all Isle of Man, with Dassault's Falcon 7X being the most popular model. With five and four registrations, respectively, mainland China and Singapore have the highest proportion of M- registered jets.

Both mainland China and Hong Kong SAR saw a decrease in the number of offshore registries in their fleets, Hong Kong SAR now leads the Asia-Pacific region with 50 offshore registrations, followed by mainland China with 46 registrations. Singapore remains third in 2022, with 28 offshore registrations.

OFFSHORE REGISTERED FLEET

185 2020
181 2021
176 2022

By Country/Region



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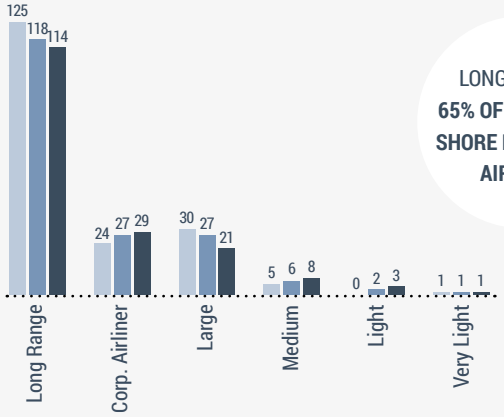


LONG RANGE = **65% OF TOTAL OFF-SHORE REGISTERED AIRCRAFT**

SUSTAINABLE BUSINESS AVIATION NEEDS SAF, *AND MORE*

By Mia Yao

Before electric aircraft or Harry Potter's flying broom becomes a reality, achieving net-zero targets in the aviation industry globally by 2050 still sounds like an ambitious goal – as long as people need to fly. With fewer transportation options when it comes to flying with fuel, the aviation sector is struggling to decarbonize.

Sustainable aviation fuel (SAF) as a drop-in replacement for conventional jet fuel is regarded as the most effective way in the next five to ten years to cut air transport emissions, says a World Bank report entitled *The Role of Sustainable Aviation Fuels in Decarbonizing Air Transport*. Global Sky Media talked with fuel producers, OEMs, operators, airport authorities and lawyers to try and find out if SAF is the way forward.

SAF as the most effective way

SAF is made from a range of feedstocks such as biomass, waste products, natural oils, fats and other carbon sources, which can reduce emissions by up to 80% over the fuel's life lifecycle compared with conventional jet fuel made from crude oil. It is a drop-in product that can be put into aircraft without the need to upgrade fueling facilities, engines or airframes.

"It (SAF) is central to the industry's commitment to achieve net zero emissions by 2050 particularly for long haul flights where emerging alternative technologies are currently limited," said Heidi Hauf, Regional Sustainability Lead APAC, Boeing.

The global aviation industry accounted for 2.1% of all human-generated carbon dioxide emissions in 2019, and was 12% of all transport related CO2 emissions according to the Air Transport Action Group. As the world returns to normal in the wake of COVID-19, aviation carbon emissions are expected to grow. The scale of SAF production in 2022 is also predicted to double the 2021 volume of 100 million liters.

While business aviation produces approximately 2% of all aviation emissions and 0.04% of global man-made emissions, a heated debate is also ongoing amongst politicians in various countries, who argue that private jets should be abandoned due to their oversized environmental footprint.

One of the countries already taking action is France, which has banned domestic flights on routes that provide alternative ground transport, and it is also considering raising taxes on private jets. This is despite opposing views on the social and economic benefits of business aviation, as well as the number of jobs it has created.

"Business aviation has the highest urgency to act and to show that the sector is taking meaningful steps to decarbonize, also to justify the role of business aviation," said Sami Jauhiainen, Vice President APAC, Renewable Aviation at Neste, a company producing SAF which can reduce up to 80% of greenhouse emissions over its lifecycle compared to using jet A1 fuel.

Jauhiainen noted a growing awareness of aviation's role in climate change around the world, which is expected to grow in the coming decades, saying that some business aviation companies have shown willingness to pay for SAF to reduce their emissions, regardless of its low supply and high cost.

Mission impossible?

Unlike conventional jet fuel, the SAF market is relatively new. The lack of infrastructure for producing and distributing the fuel available globally has contributed to the low supply and high cost of SAF, making net-zero in aviation a seemingly impossible mission to accomplish, at least in the short term.

One of the biggest challenges to overcome before SAF can be mass-produced is the availability of feedstocks that go into its production. These are currently scattered all around the world, making the sourcing process harder for fuel producers. Despite this, continued research and development is ongoing to try and bring the costs associated with SAF production down.

Believing that SAF is the "only substantial way" to reduce emissions, Boeing takes a holistic approach to decarbonization as SAF is central to their renewable energy transition strategy while supported by fleet renewal, operational efficiencies and advanced technologies. "We're working with commercial and government partners across six continents to research, develop, certify and commercialize new SAF pathways and better understand suitable feedstocks," said Hauf.

> *"The lack of infrastructure for producing and distributing the fuel available globally has contributed to the low supply and high cost of SAF, making net-zero in aviation a seemingly impossible mission to accomplish, at least in the short term."*

The costs associated with purchasing SAF are the biggest "hurdle" for operators according to Jauhiainen, although he says that demand for it has been increasing. His company, Neste, is expanding its SAF production facility beyond Finland to also include Singapore and the Netherlands, aiming to increase SAF production capacity to 1.5 million tons (around 1.875 billion liters) annually by the end of 2023.

When it comes to adopting the usage of SAF, the European Union (EU) and North America markets are a few years ahead of the rest of the world. The EU is considering requiring all member states to blend biofuels into their transportation fuels and to offer free carbon credits to help reduce the cost of SAF. In the US, several tax incentives and programs to increase domestic production of clean biofuels have been introduced as part of President Joe Biden's Inflation Reduction Act of 2022.

In Asia-Pacific, Japan, Singapore, and New Zealand have also started exploring means to expand production and use of SAF with government-backed initiatives. "Probably its role is only set to increase going forward," said Jauhiainen, highlighting the role of the Asia-Pacific as a large jet fuel consumer.

"Sustainable Aviation Fuel (SAF) usage in business aviation in Hong Kong, Greater China, and Asia is still in the early stages. The use of SAF in business aviation is still limited in the region, with a small number of operators experimenting with it on a limited basis," said Jenny Lau, President of Sino Jet and Chairwoman of the Asian Business Aviation Association (AsBAA).

"As all countries are now seeing the importance of (reducing) carbon emissions, there is a need for governments to provide incentives to support the required infrastructure needed to make SAF, reduce costs and promote a greener fuel supply," said Chris Barrow, Director of Flight Operations, Hong Kong Business Aviation Centre (HKBAC). "This is in the interest of all parties and removes the burden of higher costs for greener fuel supplies."

Over in Australia, Boeing, Virgin, QANTAS and others as members of the industry body Sustainable Aviation Fuel Australia and New Zealand Council (SAFAANZ), is supporting the government to establish a council to unite industry stakeholders and support the domestic SAF industry. The Hong Kong Airport Authority also expressed support for airlines at Hong Kong International Airport to transition to SAF.

From a technical aspect, current regulations only permit commercial aircraft to use up to a 50/50 mix of SAF and regular kerosene. Companies including Emirates, Airbus, Boeing and Rolls-Royce have conducted trial flights using 100% SAF.

However, more technical questions need to be answered as the industry moves towards adopting 100% SAF on an engine that was designed to consume conventional jet fuel, said a spokesperson from Rolls-Royce. The engine manufacturer plans to prove compatibility of all its current civil engines with 100% SAFs by the end of 2023.

The company, which provides business jets engines for Bombardier, Gulfstream and Dassault, said the compatibility of SAF with the seals of aircraft engines or fuel tanks needs to be assured and the benefits of the fuel with slightly lower density and higher calorific value have to be quantified.

SAF is not a silver bullet

While governments, investors, fuel companies, and operators are fully aware of the importance and potential of SAF, and expect its cost to decrease with more advanced production technology when a mature global SAF market takes shape. And whilst work is ongoing, industry leaders agree that the aviation industry needs collaborative efforts from all stakeholders in the sector and to look at novel ways to reduce emissions.

Patrick Hansen, Chief Executive Officer of Luxaviation is optimistic about the future of sustainable business aviation, he believes that companies need to set clear and achievable targets in a timely manner.

> *"SAF is a positive development for the industry, but it's not the silver bullet when it comes to climate change."*

"We have to decarbonize business aviation and it will be possible. It might not happen globally in the next few years by using SAF only because there is a shortage of it and we should not fool ourselves that SAF was the immediate remedy," said Hansen. "Full decarbonization in two years is a great marketing slogan but is far from possible reality. Having said that, we must and we will try hard," he said.

James Jordan, a partner at HFW who specializes in the aviation sector, commented on the risk of sustainability becoming merely an advertising slogan.

Stressing the risk of companies engaging in "greenwashing," Jordan said some fuel producers describe their fuels as sustainable even if they contain conventional jet fuel materials made using traditional processes. Operators and end users of SAF should understand the sustainable element of the SAF they purchase in order to avoid legal issues when making sustainability claims to their customers.

As the building of physical infrastructure to produce and distribute SAF globally is going to take time and a significant amount of capital investment, a combination of all the solutions are needed, for example government regulations, SAF book and claim systems, greener airport operation, as well as hydrogen powered and electric aircraft for short-haul flights.

"Jet-fuelled propulsion is probably never going to be truly 'green.' But there is a lot that can be done within the aviation ecosystem to make everything else sustainable," said Jordan. "SAF is a positive development for the industry, but it's not the silver bullet when it comes to climate change. SAF is still fuel. It still emits carbon when burned. SAF is a significant step forwards on the journey towards a carbon-neutral future for aviation, but it is not the end."

MARKET UPDATES

OEM OVERVIEW

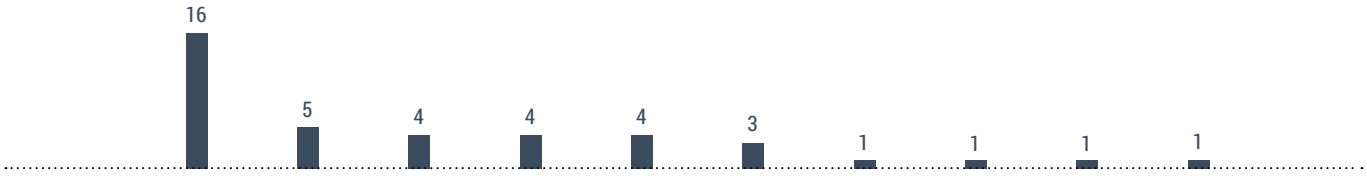
AIRBUS

NET GROWTH
1 ▼ 2.4% ▼

MOST POPULAR
ACJ319

LARGEST FLEET
Mainland China

	TOTAL FLEET	NEW DELIVERY	NET PRE-OWNED
2021	41	1	1
2022	40	0	-1

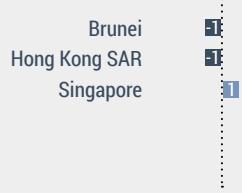


	MAINLAND CHINA	MALAYSIA	THAILAND	TAIWAN	HONG KONG SAR	AUSTRALIA	SOUTH KOREA	SINGAPORE	INDIA	PHILIPPINES	TOTAL
A319ER	3										3
A340			1								1
ACJ318	5	1		2						1	9
ACJ319	6	3	1	2	1	3	1	1	1		19
ACJ319neo	1				1						2
ACJ320	1	1	2								4
ACJ330					2						2
TOTAL	**16**	**5**	**4**	**4**	**4**	**3**	**1**	**1**	**1**	**1**	**40**

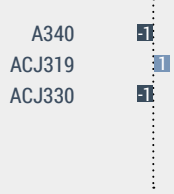
Additions and Deductions

-2 Deductions | +1 Pre-owned | - New Deliveries

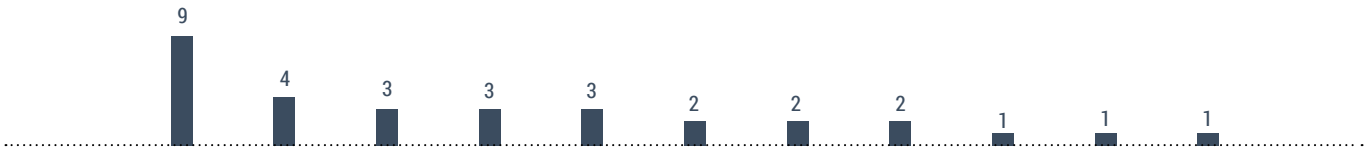
BY COUNTRY/ REGION



BY MODEL



NOTE: Excludes movements between countries in Asia-Pacific



	MAINLAND CHINA	SOUTH KOREA	MALAYSIA	INDONESIA	BRUNEI	SINGAPORE	THAILAND	JAPAN	INDIA	HONG KONG SAR	PHILIPPINES	TOTAL
BBJ 787-8		1			1	1						3
BBJ MAX 8										1		1
BBJ1	7	3		3		1	1	1	1		1	18
BBJ2	2		1									3
Boeing 737			1				1	1				3
Boeing 747					1							1
Boeing 767			1		1							2
TOTAL	**9**	**4**	**3**	**3**	**3**	**2**	**2**	**2**	**1**	**1**	**1**	**31**

Additions and Deductions

NOTE: Excludes movements between countries in Asia-Pacific

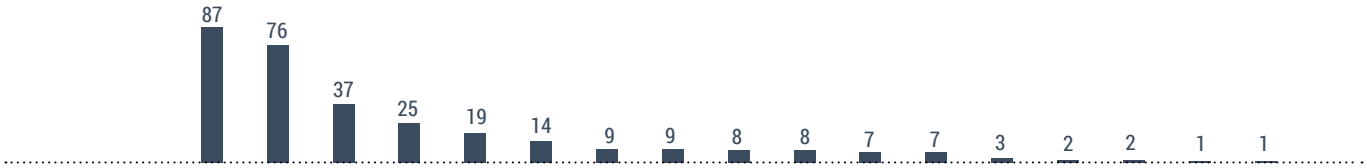
BOMBARDIER

NET GROWTH
13 ▼ 4.0% ▼

MOST POPULAR
Global 6000

LARGEST FLEET
Mainland China

	TOTAL FLEET	NEW DELIVERY	NET PRE-OWNED
2021	328	12	-29
2022	315	7	-20



	MAINLAND CHINA	AUSTRALIA	INDIA	SINGAPORE	HONG KONG SAR	MALAYSIA	TAIWAN	INDONESIA	PHILIPPINES	PAKISTAN	JAPAN	NEW ZEALAND	LAOS	THAILAND	SOUTH KOREA	MACAO SAR	MARSHALL ISLANDS	TOTAL
Challenger 300/350	1		2						2			1						6
Challenger 600/601		1		1		2			1						1			6
Challenger 604	2	16	1	1	1			1		1		2	1					26
Challenger 605	5		3	1	2	2	1			3								17
Challenger 650		1	1							1								3
Challenger 800/850	8		1					1										10
Challenger 870	12																	12
CRJ100/200	16		1						1									18
Global 5000	5		5	9	3	4	2	2		1			1			1		33
Global 6000	20	5	5	4	8	1	3	1			2			1				50
Global 6500	6		3															9
Global 7500	1	5	2	2	4	1	2	1			3							21
Global Express	1	4	1	1		1					1	1						10
Global Express XRS	3	8	3		1	1	1	2			1	2		1	1			24
Learjet 24				1														1
Learjet 31		3						1	3									7
Learjet 35/36	5	25		1														31
Learjet 40 XR			2						1									3
Learjet 45 XR		2	6	1						1								10
Learjet 60 XR	2	6	1	2		2				1		1	1				1	17
Learjet 70/75				1														1
TOTAL	**87**	**76**	**37**	**25**	**19**	**14**	**9**	**9**	**8**	**8**	**7**	**7**	**3**	**2**	**2**	**1**	**1**	**315**

Additions and Deductions

-34 Deductions +14 Pre-owned +7 New Deliveries

BY COUNTRY/ REGION

Australia	-6	4	1
Hong Kong SAR	-7		
India	-1	3	4
Indonesia	-3	2	
Japan		1	
Laos		1	
Macao SAR	-3		
Mainland China	-10		1
Malaysia	-1		
Marshall Islands		1	
New Zealand		1	
Singapore	-2	1	1
Taiwan	-1		

BY MODEL

Challenger 300/350	-2		
Challenger 600/601	-2		
Challenger 604		2	
Challenger 605	-5		
Challenger 650	-2		
Challenger 800/850	-3		
CRJ100/200	-1		
Global 5000	-4	1	
Global 6000	-5	1	
Global 6500		2	
Global 7500	-1		5
Global Express	-3	1	
Global Express XRS	-1	2	
Learjet 31	-2	1	
Learjet 35/36		1	
Learjet 40 XR		1	
Learjet 45 XR	-1	2	
Learjet 60 XR	-2	2	

NOTE: Excludes movements between countries in Asia-Pacific

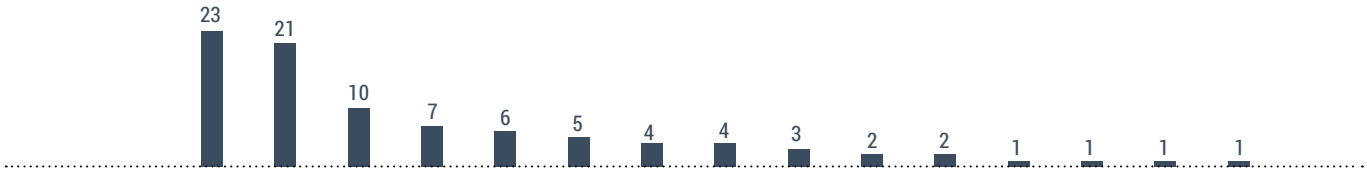
DASSAULT AVIATION

NET GROWTH 6 ↓ 6.2% ↓

MOST POPULAR Falcon 7X

LARGEST FLEET Mainland China

	TOTAL FLEET	NEW DELIVERY	NET PRE-OWNED
2021	97	0	0
2022	91	3	-9

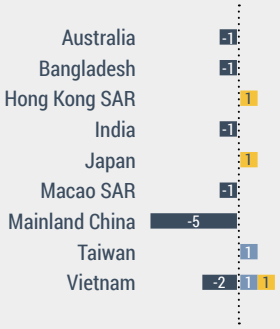


	MAINLAND CHINA	INDIA	AUSTRALIA	JAPAN	NEW ZEALAND	HONG KONG SAR	VIETNAM	SINGAPORE	MALAYSIA	THAILAND	PHILIPPINES	TAIWAN	MALDIVES	SOUTH KOREA	PNG	TOTAL
Falcon 20									1							1
Falcon 20 -5			1													1
Falcon 2000		12														12
Falcon 2000 EX	1	6	3	7	1		2	1	2	1	1					25
Falcon 50			1		2							1				4
Falcon 7X	19		1		2	1		2		1			1	1		28
Falcon 8X	1	1				4	2	1								9
Falcon 900	2	2	4		1						1				1	11
TOTAL	**23**	**21**	**10**	**7**	**6**	**5**	**4**	**4**	**3**	**2**	**2**	**1**	**1**	**1**	**1**	**91**

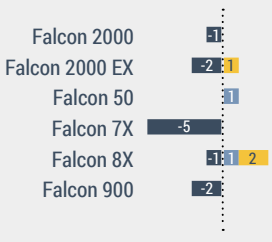
Additions and Deductions

-11 Deductions +2 Pre-owned +3 New Deliveries

BY COUNTRY/ REGION



BY MODEL



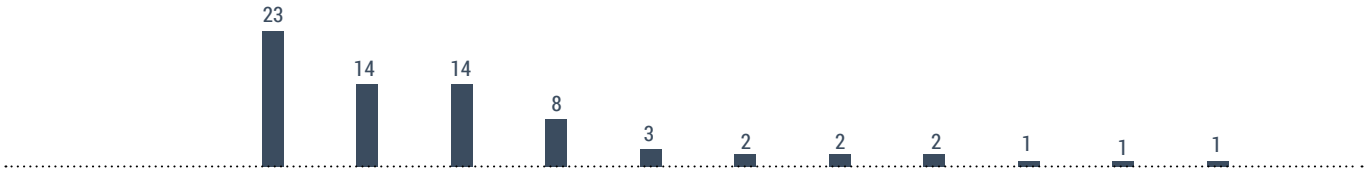
NOTE: Excludes movements between countries in Asia-Pacific

EMBRAER

NET GROWTH
5 ▲ 7.6% ▲

MOST POPULAR
Legacy 650

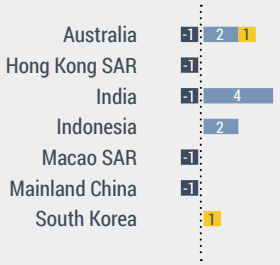
LARGEST FLEET
India



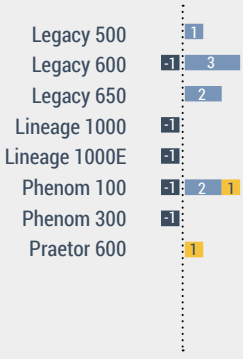
	INDIA	INDONESIA	AUSTRALIA	MAINLAND CHINA	SINGAPORE	THAILAND	VIETNAM	MALAYSIA	SOUTH KOREA	MACAO SAR	NEW ZEALAND	TOTAL
ERJ135	2											2
ERJ145		2	2									4
Legacy 500	1		1									2
Legacy 600	4	6	1		2	2	1	1				17
Legacy 650	9	4		4	1		1					19
Lineage 1000	2	1								1		4
Phenom 100	4		5								1	10
Phenom 300	1	1	3	4				1				10
Phenom 300E			2									2
Praetor 600									1			1
TOTAL	**23**	**14**	**14**	**8**	**3**	**2**	**2**	**2**	**1**	**1**	**1**	**71**

Additions and Deductions

BY COUNTRY/ REGION



BY MODEL



NOTE: Excludes movements between countries in Asia-Pacific

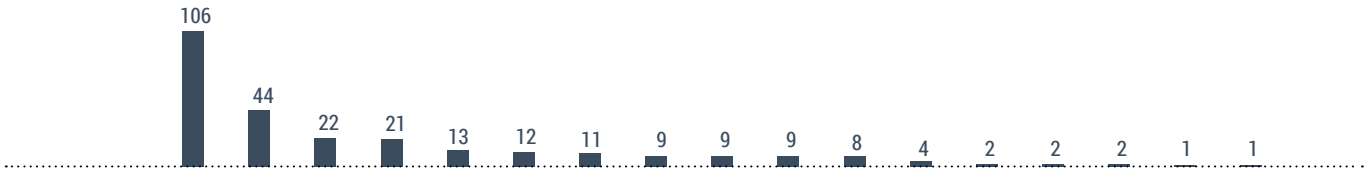
GULFSTREAM

NET GROWTH
23 ↓ 7.7% ↓

MOST POPULAR
G650ER

LARGEST FLEET
Mainland China

	TOTAL FLEET	NEW DELIVERY	NET PRE-OWNED
2021	299	9	-26
2022	276	8	-31

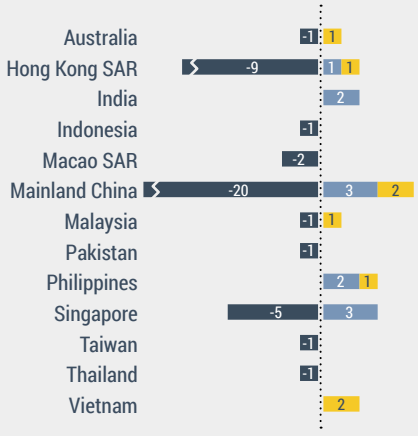


	MAINLAND CHINA	HONG KONG SAR	SINGAPORE	PHILIPPINES	JAPAN	MALAYSIA	THAILAND	TAIWAN	AUSTRALIA	INDONESIA	INDIA	SOUTH KOREA	NEW ZEALAND	CAMBODIA	VIETNAM	PAKISTAN	MACAO SAR	TOTAL
G III						2												2
G IV/GIV-SP/G400				3	1	1			2	1								8
G100/G150			2	4				1	1		2							10
G200	4		3	1		1	2				4			1		1		17
G280	5	1	1			1		2										10
G300/G350				1														1
G450	28	2	3	4				1		4				1				43
G500										1								1
G550	33	9	3	3	3	3	3	2	2	2	1	1	1					66
G600			1															1
G650	7	4	2	1	3		3											20
G650ER	29	28	5	3	4	4	2	3	4	1	1	3	1		2		1	91
GV/GV-SP			2	1	2		1											6
TOTAL	**106**	**44**	**22**	**21**	**13**	**12**	**11**	**9**	**9**	**9**	**8**	**4**	**2**	**2**	**2**	**1**	**1**	**276**

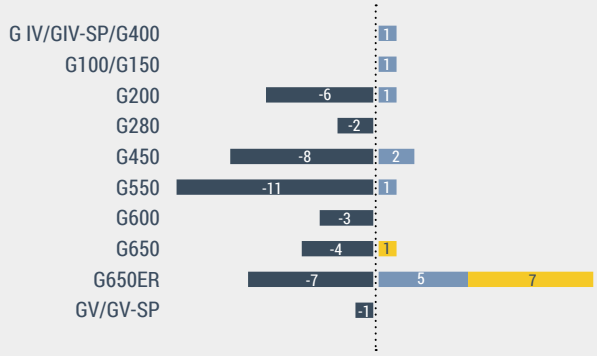
Additions and Deductions

-42 Deductions | +11 Pre-owned | +8 New Deliveries

BY COUNTRY/ REGION



BY MODEL



NOTE: Excludes movements between countries in Asia-Pacific

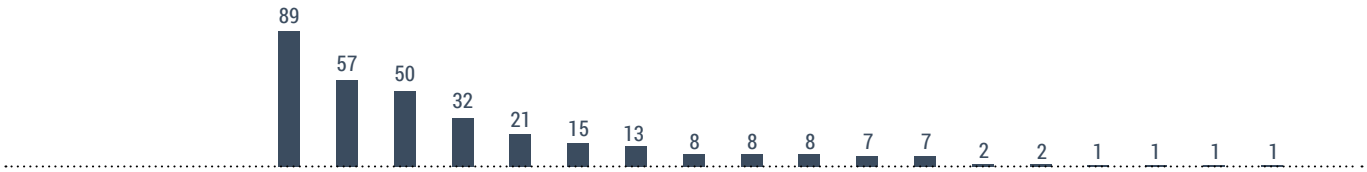
TEXTRON

NET GROWTH
1 ▲ 0.3% ▲

MOST POPULAR
Citation 525 (M2/CJ1/+)

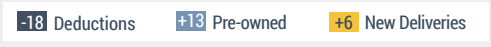
LARGEST FLEET
Australia

	TOTAL FLEET	NEW DELIVERY	NET PRE-OWNED
2021	322	7	10
2022	323	6	-5

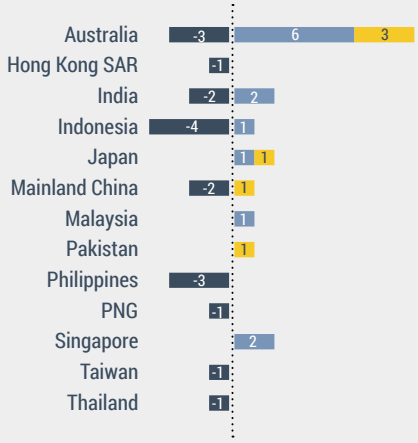


	AUSTRALIA	INDIA	MAINLAND CHINA	JAPAN	PHILIPPINES	INDONESIA	NEW ZEALAND	SOUTH KOREA	PAKISTAN	THAILAND	SINGAPORE	MALAYSIA	HONG KONG SAR	TAIWAN	BANGLADESH	PNG	COOK ISLANDS	NEW CALEDONIA	TOTAL
Citation 500/501(I/ISP)	6				1		1												8
Citation 510(Mustang)	18	1	1	2	1		4			1									28
Citation 525(M2/CJ1/+)	14	2	16	5	2			5											44
Citation 525A(CJ2/CJ2+)	7	8		6			1											1	23
Citation 525B(CJ3/CJ3+)	4						1		1							1			7
Citation 525C(CJ4)	1			8	3								2						14
Citation 550(II/IISP/SII/Bravo)	14	6	4		3		1	1	1	3		1					1		35
Citation 560(Encore/+)	2			2															4
Citation 560(V/Ultra)	5			2			2												9
Citation 560XL(Excel/XLS/XLS+)	1	12	21		4	2	1				1								42
Citation 650(III/VI/VII)	3	1					1					2							7
Citation 680(Sovereign/+)	4		3	4			1				2	2							16
Citation 680A(Latitude)	2			1	2				1										6
Citation 700(Longitude)				1															1
Citation 750(X/X+)	2		1							1									4
Hawker 400		1	1	1		5			5		1			2					16
Hawker 4000						1						1							2
Hawker 700/750		2			3			1				1							7
Hawker 800/XP	3	7	2		2	2		1		2	1				1				21
Hawker 850XP	3	4				2				1									10
Hawker 900XP		7	1			3					2								13
Premier I/IA		6																	6
TOTAL	**89**	**57**	**50**	**32**	**21**	**15**	**13**	**8**	**8**	**8**	**7**	**7**	**2**	**2**	**1**	**1**	**1**	**1**	**323**

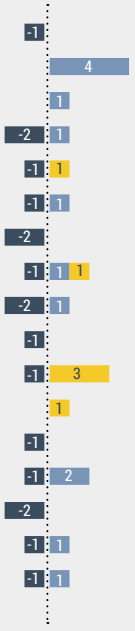
Additions and Deductions



BY COUNTRY/ REGION



BY MODEL



NOTE: Excludes movements between countries in Asia-Pacific

SUPPORTING MODERN TIME MACHINES

Business jets are often described by owners as today's time machines. Time is often at a premium for the influential customers that use the aircraft, so availability and reliability is essential.

With more than 3,600 Rolls-Royce powered business jets in service worldwide, the company is the leading engine supplier in business aviation. Its top priority is to provide an extraordinary level of service that exceeds their customers' expectations.

More than half of Rolls-Royce's Business Aviation clients have a fleet of one aircraft, which means they typically do not have a comprehensive department to perform maintenance on the engines themselves.

"One key differentiator for Rolls-Royce is that we have a separate and dedicated Business Aviation unit," says Megha Bhatia, VP Sales & Marketing, Business Aviation. "This unit includes its own services organization - purposely set up to assist the distinct needs of our clients, which differ from those in commercial aviation."

It goes without saying that all the moving parts within this services organization – from the Business Aviation Availability Centre, logistics and spare parts to On-Wing services - must work like a perfectly tuned machine.

Rolls-Royce's Business Aviation Availability Centre looks after over 8,000 engines in service worldwide, and it operates 24 hours a day 7 days a week. All Engine Health Monitoring data is assessed at the Availability Centre and from here the company deploys teams of service engineers, logistics specialists, fleet and maintenance planners and operations specialists to ensure the smooth operation of the worldwide fleet. In the rare case where an issue with the engine prevents the customer from flying, these experts aim to solve a routine issue anywhere in the world in under 24 hours.

While there is no problem for predictable, routine tasks, which can be managed at any of our 75 Authorized Service Centers globally, it gets more challenging if a customer needs help in a remote location. Fortunately, Rolls-Royce created the On-Wing Services team to resolve such problems for their unique cliental. These technicians, who rank among the best in their profession, travel to the respective aircraft to perform special and complex maintenance tasks, often to rescue customers from an aircraft-on-ground situation and ensure clients make their next planned flight.

The On-Wing Services team, which forms the spearhead of the organization for quick responses and special missions, is a vital part of Rolls-Royce's dedicated global service network. The team is composed of 65 highly qualified technicians, which are strategically placed around the globe This ensures faster response times and minimizes AOG downtime wherever our customers are in the world.

> *"Top priority is to provide an extraordinary level of service that exceeds their customers' expectations."*

And with Rolls-Royce's pioneering CorporateCare Enhanced service programme these activities are already covered at no additional cost. The programme offers substantial financial and operational value to customers, such as increased asset value and liquidity, mitigating maintenance cost risk and protection against unforeseen costs and unscheduled events anywhere in the world. Increased aircraft availability, reduced management burden, full risk transfer, direct priority access to the Rolls-Royce services infrastructure and remote site assistance are further benefits for the customers.

"This outstanding service is recognized by Rolls-Royce customers all over the world. We are really proud of having been ranked number one in AIN's Product Support Surveys for two consecutive years now. This is really important for us, as the feedback comes directly from our customers. We want to ensure we're continually striving to better our customers' experience and exceeding their expectations" Megha adds.

MARKET UPDATES

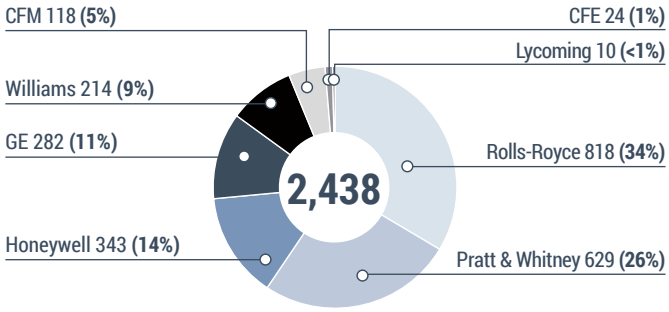
ENGINE OVERVIEW

In the Asia-Pacific region, there were 2,438 turbine engines were installed on 1,196 business jets at the end of 2022. The number of operational engines fell by 2.9%, from 2,510 units in 2021 to 2,438 units in 2022.

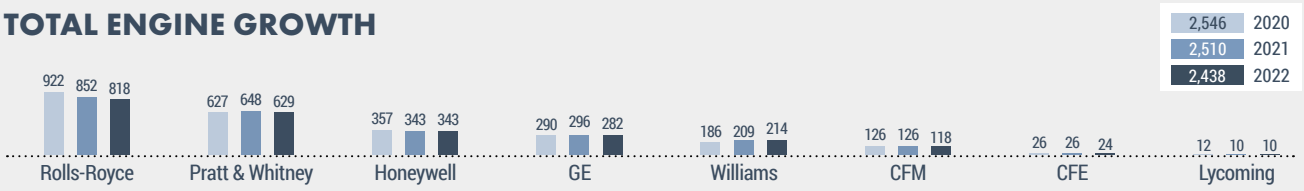
Despite a reduction of 34 operating engines in 2022, Rolls-Royce retained its position as the top engine OEM in the region, with 818 engines in operation on 409 aircraft, giving the engine manufacturer an overall market share of 34%. Pratt & Whitney is the second-largest manufacturer, with 629 engines on 296 aircraft and a 26% market share, while Honeywell accounted for 14% of the market with 343 engines on 167 aircraft. When combined, Rolls-Royce and Pratt & Whitney accounted for 60% of all engines operating in the Asia-Pacific business jet fleet.

For the second year in a row, Williams International saw some growth, with its operating engines increasing to 214 in 2022. The Citation series, powered by the FJ44, was largely responsible for this expansion, with 112 engines powering 56 Light Jets, including the Citation 525A (CJ2 / CJ2+) and Pilatus PC-24, and 100 engines powering 50 Very Light Jets, including the Citation 525 (M2 / CJ1/+) and Premier I/IA. The FJ44 engines are particularly popular in Australia, Japan, and South Korea.

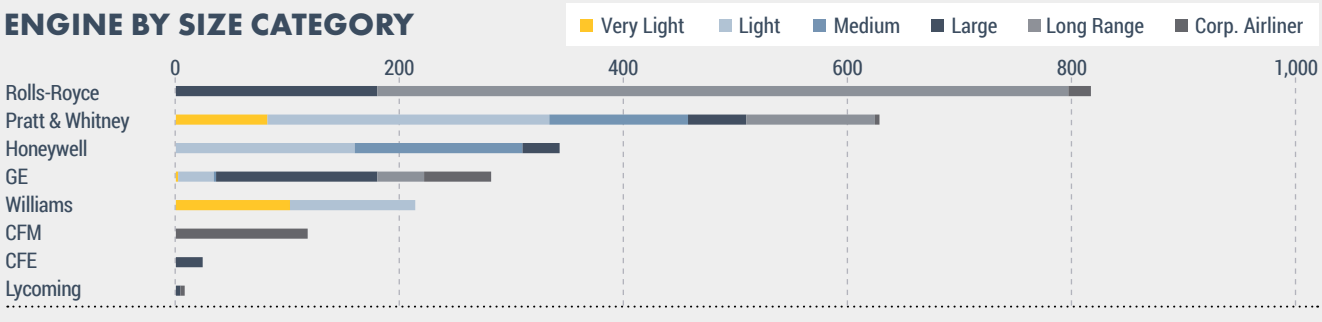
Over 97% of Rolls-Royce engines powered Long Range and Large jets. Some 618 BR700 series engines were installed on the Long Range business jet fleet. The BR700 powered 183 Gulfstream Long Range Jets, including the G550, G650, G650ER, and GV/



TOTAL ENGINE GROWTH



ENGINE BY SIZE CATEGORY



GV-SP. The series also powered 126 Bombardier jets, including the Global 5000 / 6000 / 6500 series, and the Global Express / Express XRS series. The Tay engine series powered the majority of Large Gulfstream jets, including the G450 (43) and GIV / GIV-SP / G400 series (8). Some 72 AE3007 engines powered 17 Legacy 600 and 19 Legacy 650. Among the top ten countries according to the number of engines in operation, Rolls-Royce was the dominant engine manufacturer in six of these. Mainland China has the greatest number of Rolls-Royce engines operating in its fleet, with 272 units.

Some 40% of Pratt & Whitney engines powered in Light Jets, with a total of 252 units in operation among the Asia-Pacific jet fleet. The PW300 engine series is the most widely used, with applications in Medium, Large, and Long Range jets. There were 279 engines powering models such as the Falcon 7X, Falcon 2000 EX, and Learjet 60 XR. Pratt & Whitney engines power a wide range of Textron's Citation family, accounting for half of all jets powered by Pratt & Whitney. The engines are particularly popular in the Oceania sub-region, being among the most popular engines operating in both Australia and New Zealand, where Light and Very Light jets are common. They are also popular in South Asian countries such as India and Pakistan. The JT15D series had 144 units powering 72 Light Jets, including the Citation 550 (II / IISP / SII / Bravo) and Hawker 400, while 116 PW500 engines powered 58 Light Jets, including the Citation 560XL (Excel / XLS / XLS+) and Phenom 300 / E series.

Honeywell is best known for its TFE731 engine, with variants that power jets in a range of size categories from Light, Medium, and up to Large Jets including the Falcon 900. With 305 units in operation, the most popular models powered by the TFE731 include the Learjet 35 / 36, Hawker 800 / XP, and Hawker 900XP. Currently installed on 147 jets, the TFE731 is popular in countries such as Australia, India, and the Philippines.

CFM has the largest share of the Corporate Airliner category in the region, with 118 units powering models such as the Airbus ACJ319 and Boeing's BBJ1. The CFM56 engine currently powers 59 Corporate Airliners in the region, ahead of GE's CF34, CF6, and Genx series engines, which power 29 jets. CFM and GE engines are both widely used in mainland China's Corporate Airliner fleet.

The GE CF34 engine family is best known for powering Bombardier's Challenger series, and the engine currently powers 72 Large Jets in Asia-Pacific.

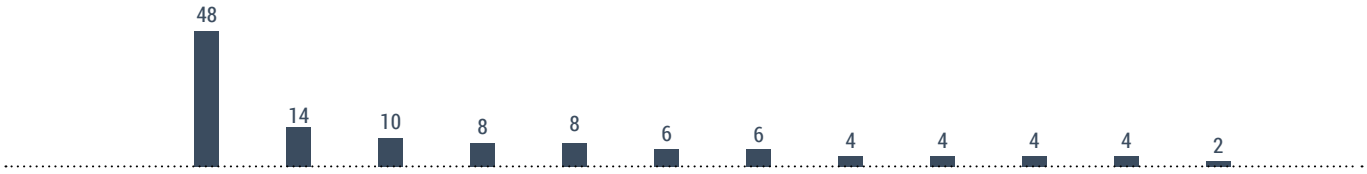
CFM

RANKING
No.6

NET GROWTH
8 ▼ 6.3% ▼

MOST POPULAR
CFM56

LARGEST FLEET
Mainland China

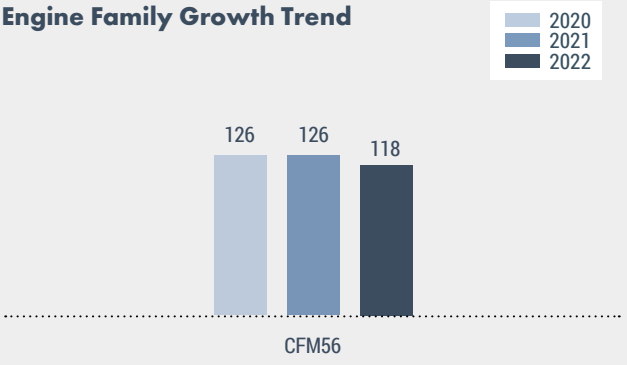


	MAINLAND CHINA	MALAYSIA	THAILAND	TAIWAN	SOUTH KOREA	INDONESIA	AUSTRALIA	PHILIPPINES	JAPAN	SINGAPORE	INDIA	HONG KONG SAR	TOTAL
CFM56	48	14	10	8	8	6	6	4	4	4	4	2	118
TOTAL	**48**	**14**	**10**	**8**	**8**	**6**	**6**	**4**	**4**	**4**	**4**	**2**	118

Engine Installed in Top Aircraft Models

MODEL	CFM56
ACJ319	38
BBJ1	36
ACJ318	18
ACJ320	8
A319ER	6
Boeing 737	6
BBJ2	6
TOTAL	118

Engine Family Growth Trend



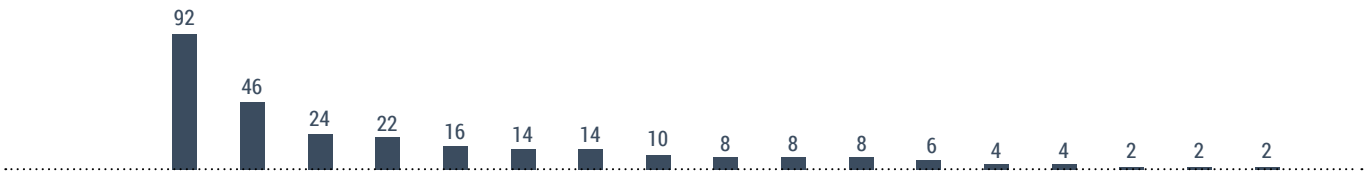
GE

RANKING
No.4

NET GROWTH
14 ▼ 4.7% ▼

MOST POPULAR
CF34

LARGEST FLEET
Mainland China

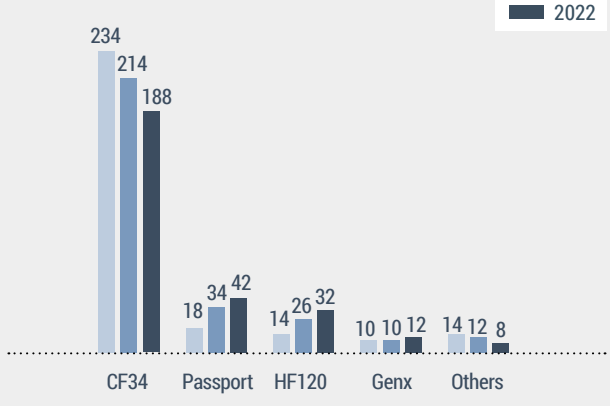


	MAINLAND CHINA	AUSTRALIA	JAPAN	INDIA	HONG KONG SAR	SINGAPORE	MALAYSIA	PAKISTAN	INDONESIA	BRUNEI	THAILAND	TAIWAN	SOUTH KOREA	NEW ZEALAND	LAOS	MACAO SAR	PHILIPPINES	TOTAL
CF34	86	36		18	6	4	8	10	6			2	2	4	2	2	2	188
CF6							2			2								4
CF700							2											2
CJ610						2												2
Genx					2	2				6			2					12
HF120	4		18			2					8							32
Passport	2	10	6	4	8	4	2		2			4						42
TOTAL	**92**	**46**	**24**	**22**	**16**	**14**	**14**	**10**	**8**	**8**	**8**	**6**	**4**	**4**	**2**	**2**	**2**	**282**

Engine Installed in Top Aircraft Models

MODEL	CF34	PASSPORT	HF120
Challenger 604	52		
Global 7500		42	
CRJ100/200	36		
Challenger 605	34		
Challenger 870	24		
HondaJet ELITE			22
Challenger 800/850	20		
HondaJet			10
Lineage 1000	8		
Challenger 600/601	8		
TOTAL	**182**	**42**	**32**

Engine Family Growth Trend



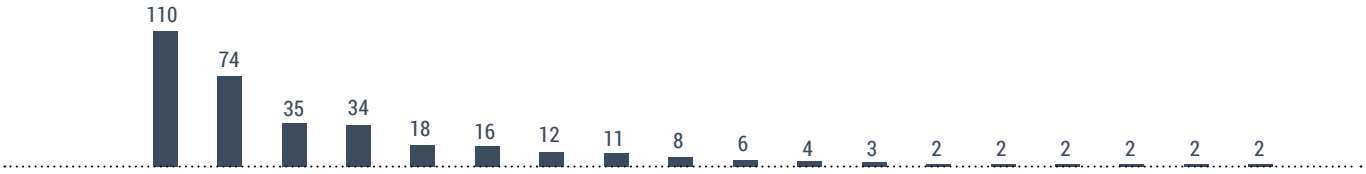
HONEYWELL

RANKING
No.3

NET GROWTH
0 • 0% •

MOST POPULAR
TFE731

LARGEST FLEET
Australia

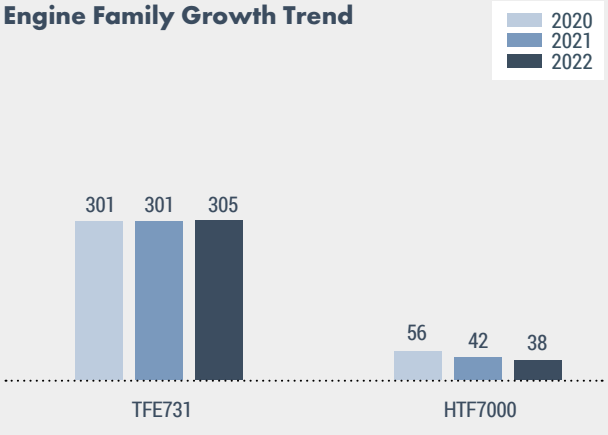


	AUSTRALIA	INDIA	PHILIPPINES	MAINLAND CHINA	SINGAPORE	INDONESIA	MALAYSIA	NEW ZEALAND	TAIWAN	THAILAND	SOUTH KOREA	PNG	HONG KONG SAR	JAPAN	PAKISTAN	KIRIBATI	BANGLADESH	SOLOMON ISLANDS	TOTAL
HTF7000	2	6	4	12	2		2	2	4				2	2					38
TFE731	108	68	31	22	16	16	10	9	4	6	4	3			2	2	2	2	305
TOTAL	**110**	**74**	**35**	**34**	**18**	**16**	**12**	**11**	**8**	**6**	**4**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**343**

Engine Installed in Top Aircraft Models

MODEL	TFE731	HTF7000
Learjet 35/36	62	
Hawker 800/XP	42	
Falcon 900	33	
Hawker 900XP	26	
Westwind 1/2	22	
Learjet 45 XR	20	
G280		20
G100/G150	20	
Hawker 850XP	20	
Citation 650(III/VI/VII)	14	
TOTAL	**259**	**20**

Engine Family Growth Trend



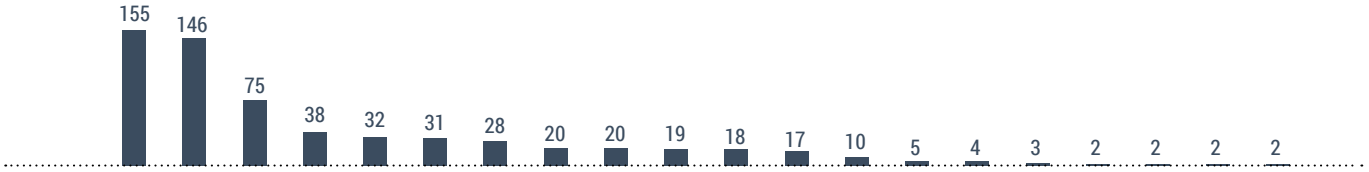
PRATT & WHITNEY

RANKING No.2

NET GROWTH 19 ▼ 2.9% ▼

MOST POPULAR PW300

LARGEST FLEET Australia

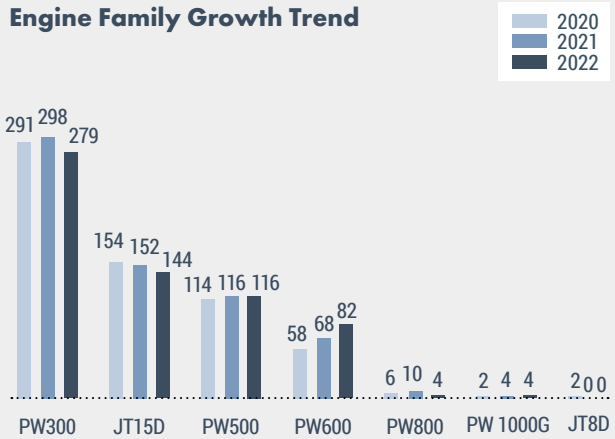


	AUSTRALIA	MAINLAND CHINA	INDIA	JAPAN	NEW ZEALAND	SINGAPORE	PHILIPPINES	INDONESIA	MALAYSIA	THAILAND	PAKISTAN	HONG KONG SAR	VIETNAM	SOUTH KOREA	TAIWAN	MALDIVES	CAMBODIA	MARSHALL ISLANDS	COOK ISLANDS	LAOS	TOTAL
JT15D	54	12	14	6	8	2	8	10	2	8	12			2	4				2		144
PW1000G		2										2									4
PW300	33	80	25	24	12	25	10	2	16	9	6	15	10	3		3	2	2		2	279
PW500	16	50	26	4	2	2	8	6	2												116
PW600	52	2	10	4	10		2			2											82
PW800						2		2													4
TOTAL	**155**	**146**	**75**	**38**	**32**	**31**	**28**	**20**	**20**	**19**	**18**	**17**	**10**	**5**	**4**	**3**	**2**	**2**	**2**	**2**	**629**

Engine Installed in Top Aircraft Models

MODEL	PW300	JT15D	PW500	PW600
Falcon 7X	84			
Citation 560XL(Excel/XLS/XLS+)			84	
Citation 550(II/IISP/SII/Bravo)		70		
Citation 510(Mustang)				56
Falcon 2000 EX	50			
Learjet 60 XR	34			
G200	34			
Citation 680(Sovereign/+)	32			
Hawker 400		32		
Phenom 100				20
TOTAL	**234**	**102**	**84**	**76**

Engine Family Growth Trend



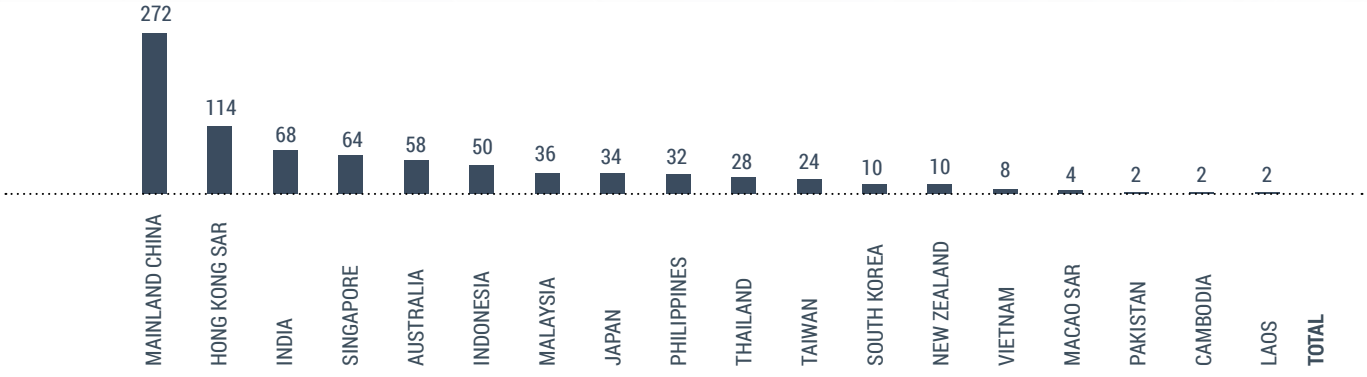
ROLLS-ROYCE

RANKING No.1

NET GROWTH 70 ▼ 7.6% ▼

MOST POPULAR BR700

LARGEST FLEET Mainland China

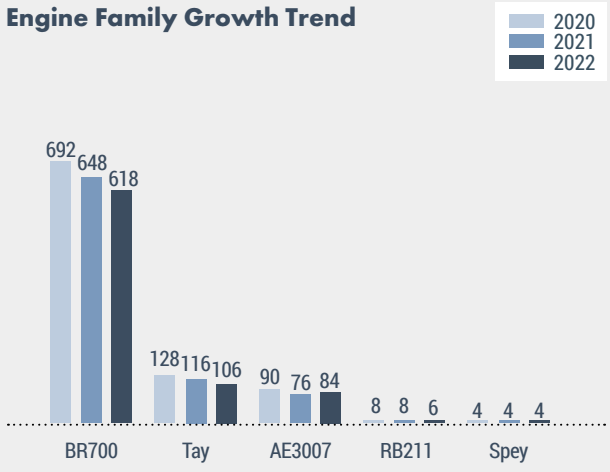


	MAINLAND CHINA	HONG KONG SAR	INDIA	SINGAPORE	AUSTRALIA	INDONESIA	MALAYSIA	JAPAN	PHILIPPINES	THAILAND	TAIWAN	SOUTH KOREA	NEW ZEALAND	VIETNAM	MACAO SAR	PAKISTAN	CAMBODIA	LAOS	TOTAL
AE3007	8		30	6	6	24	2			4				4					84
BR700	208	106	38	52	46	16	28	32	16	22	22	10	10	4	4	2		2	618
RB211		4								2									6
Spey							4												4
Tay	56	4		6	6	10	2	2	16		2						2		106
TOTAL	**272**	**114**	**68**	**64**	**58**	**50**	**36**	**34**	**32**	**28**	**24**	**10**	**10**	**8**	**4**	**2**	**2**	**2**	**818**

Engine Installed in Top Aircraft Models

MODEL	BR700	TAY	AE3007
G650ER	182		
G550	132		
Global 6000	100		
G450		86	
Global 5000	66		
Global Express XRS	48		
G650	40		
Legacy 650			38
Legacy 600			34
Global Express	20		
TOTAL	**588**	**86**	**72**

Engine Family Growth Trend



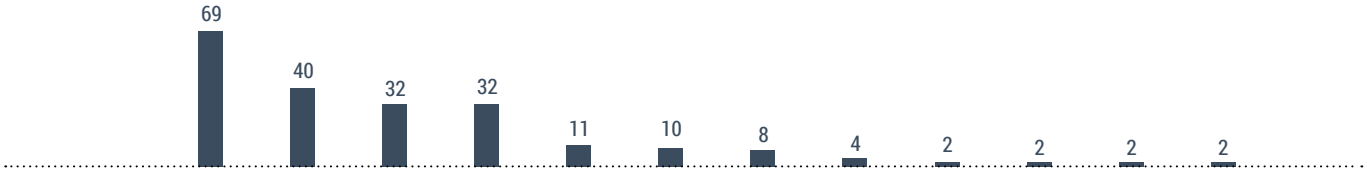
WILLIAMS

RANKING
No.5

NET GROWTH
5 ▲ 2.4% ▲

MOST POPULAR
FJ44

LARGEST FLEET
Australia

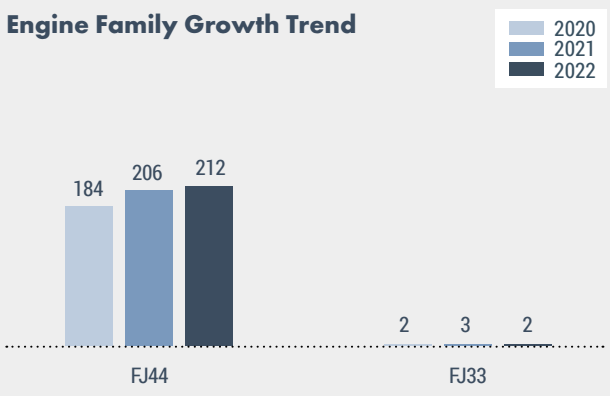


	AUSTRALIA	JAPAN	MAINLAND CHINA	INDIA	SOUTH KOREA	PHILIPPINES	NEW ZEALAND	HONG KONG SAR	PNG	SINGAPORE	PAKISTAN	NEW CALEDONIA	TOTAL
FJ33	1				1								2
FJ44	68	40	32	32	10	10	8	4	2	2	2	2	212
TOTAL	**69**	**40**	**32**	**32**	**11**	**10**	**8**	**4**	**2**	**2**	**2**	**2**	**214**

Engine Installed in Top Aircraft Models

MODEL	FJ44	FJ33
Citation 525(M2/CJ1/+)	88	
Citation 525A(CJ2/CJ2+)	46	
Citation 525C(CJ4)	28	
Pilatus PC-24	18	
Citation 525B(CJ3/CJ3+)	14	
Premier I/IA	12	
Nextant 400XT/XTi	6	
VISION SF50		2
TOTAL	**212**	**2**

Engine Family Growth Trend



APPENDIX

SUBREGION BREAKDOWN

GREATER CHINA

Mainland China
Hong Kong SAR
Macao SAR
Taiwan

OCEANIA

Australia
Cook Islands
Kiribati
Marshall Islands
New Caledonia
New Zealand
Papua New Guinea
Solomon Islands

SOUTH ASIA

Bangladesh
India
Maldives
Pakistan

SOUTHEAST ASIA

Brunei
Cambodia
Indonesia
Laos
Malaysia
Philippines
Singapore
Thailand
Vietnam

NORTHEAST ASIA

Japan
South Korea

SIZE CATEGORIES

CORP. AIRLINER

A319ER
A340
ACJ318
ACJ319
ACJ319neo
ACJ320
ACJ330
BAe 146
BBJ1
BBJ 787-8
BBJ MAX 8
BBJ2
Boeing 727
Boeing 737
Boeing 747
Boeing 767
CRJ100/200
ERJ135
ERJ145
Fokker 100
Lineage 1000
Lineage 1000E

LONG RANGE

Falcon 7X
Falcon 8X
G500
G550
G600
G650
G650ER
Global 5000
Global 6000
Global 6500
Global 7500
Global Express
Global Express XRS
GV/GV-SP

LARGE

Challenger 600/601
Challenger 604
Challenger 605
Challenger 650
Challenger 800/850
Challenger 870
Dornier 328JET
Falcon 2000
Falcon 2000 EX
Falcon 900
G II/IIB
G III
G IV/GIV-SP/G400
G300/G350
G450
Legacy 600
Legacy 650

MEDIUM

Challenger 300/350
Citation 680(Sovereign/+)
Citation 680A(Latitude)
Citation 750(X/X+)
Falcon 20
Falcon 20 -5
Falcon 50
G200
G280
Hawker 4000
Hawker 700/750
Hawker 800/XP
Hawker 850XP
Hawker 900XP
Learjet 60 XR
Legacy 500

LIGHT

Citation 500/501(I/ISP)
Citation 525A(CJ2/CJ2+)
Citation 525B(CJ3/CJ3+)
Citation 525C(CJ4)
Citation 550(II/IISP/SII/Bravo)
Citation 560(Encore/+)
Citation 560(V/Ultra)
Citation 560XL(Excel/XLS/XLS+)
Citation 650(III/VI/VII)
G100/G150
Hawker 400
HondaJet
HondaJet ELITE
Learjet 31
Learjet 35/36
Learjet 40 XR
Learjet 45 XR
Learjet 70/75
Nextant 400XT/XTi
Phenom 300
Phenom 300E
Pilatus PC-24
Sabreliner
Westwind 1/2

VERY LIGHT

Citation 510(Mustang)
Citation 525(M2/CJ1/+)
Eclipse 500
Learjet 24
Phenom 100
Premier I/IA
Vision SF50