## CorporatefetInvestor

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& \text { The business } \\
& \text { jet market in } \\
& \text { numbers }
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# The business jet 

## market in

## numbers

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Corporate Jet Investor
Tranquil House
Old Reigate Road
Betchworth
RH3 7DR
United Kingdom

T: +44 1737844383

W: www.corporatejetinvestor.com
E: awhyte@corpjetinvestor.com

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### 1.0 Executive summary

At the end of 2011 the global business jet fleet consisted of around 17,721 (Source Various) aircraft with an average age of 15.9 years (Source Bombardier')

More than 70\% of the world's fleet is based in North America (Source Ascend Online ${ }^{\text {iii }}$ ) but this is changing and the market is becoming more global.

The customer base is very diverse. In 2009 75\% of US companies operate only one turbine-powered aircraft. In 1997, $37 \%$ had more than one in their fleet (Source: Harris Interactive ${ }^{\text {iii) }}$.

Dassault, for example, has a fleet of 1,935 aircraft flown by 1,120 operatorsiv.
Bombardier estimates that more than $85 \%$ of new business jet orders originate from existing owners.

Some 672 business jets were delivered in 2012 down from 2011 when 696 were delivered and down from the high point of 990 in 2008 (Source: GAMA ).

About 12\% of global business jet fleet is traded every year, although is it dependent on the business jet cycle (Source: Amstat ${ }^{\text {vi }}$ and JetNet ${ }^{\text {vii }}$ ).

Honeywell says that the market peaked in 2009, with $15 \%$ of the total fleet for sale ${ }^{\text {viii }}$.

### 2.0 About this report

Corporate Jet Investor's Business Jet Market in Numbers is a collection of the most recent statistics and data available on business aviation. The report is a one-stop source of information to help you find the data you need as quickly as possible.

Business Jet Market in Numbers uses a mixture of our own research combined with third party sources. We credit and acknowledge all sources with endnotes.

If you feel any of the data is inaccurate or not properly credited please email Alex Andrews, assocaite publisher or Terry Spruce, news and aircraft editor, on aandrews@corpjetinvestor.com or tspruce@corpjetinvestor.com or call +441737844383.

Please also email us if you are looking for data not covered in the report. If you want it, other members probably will too, so please let us find it for you.

Please note that we update this report regularly. Make sure you have the most current edition by going to http://www.corporatejetinvestor.com/articles/downloads

### 2.1 About Corporate Jet Investor

Corporate Jet Investor provides information, insight and intelligence on business jet and helicopter transactions. Our events bring the market together.

Over 18,000 professionals use the site each month making it one of the most visited specialist websites in the industry.

Our core membership includes: aircraft owners, corporate flight departments, flight departments, family offices, banks, funds, leasing companies, manufacturers, law firms, maintenance providers, consultants, aircraft operators and others in business aviation. More than one thousand people also subscribe to our weekly e-newsletter.

Members use the site to identify opportunities, find potential customers, meet recommended professionals and analyse risk. The site includes data on different aircraft, a list of upcoming deliveries, an interactive business jet finance finder, listings of recommended lawyers, expert articles and the Official Guide to Aircraft Registration.

Corporate Jet Investor also organises corporate jet and helicopter finance conferences and events around the world. Recent events have taken place in London, Beijing, Johannesburg and Hong Kong. We also organise specialist training courses focused on aircraft finance. So far in 2012, 100\% of delegates to our events have said the events were either good or very good.

We also manage the Corporate Jet Investor Awards which are chosen by a committee of aircraft manufacturers and leading brokers and are given to financial institutions and transactions.

For the last three years, our events and website have helped members learn, make better decisions, build business strategies, save time, find the best transaction partners, identify risks and accelerate their careers.

For a free trial and to find out how we can help you please contact:

Maria Bernard<br>Member and delegate manager<br>mbernard@corpjetinvestor.com<br>+441737844383

### 3.0 The global business jet fleet

In 2011, the global business jet fleet consisted of either 15,200 aircraft (Source: Bombardier - which does not include airliners); 17,400 aircraft (Source: Ascend ${ }^{\text {ix }}$ ) or 18,643 aircraft (Source: JetNet ${ }^{\text {² }}$ ).

Amstat ${ }^{\text {xi }}$ estimated that the global fleet consisted of 19,642 aircraft in October 2012.

| The growth of the global business jet fleet |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2011 |  |
| Global business jet fleet | 15 | 1205 | 3,920 | 6,492 | 9,895 | 16,870 | 17,394 |  |

(Source: Ascend ${ }^{1}$ )
The composition of the global business jet fleet in October 2012
All business jets 19,642

| Heavy jets | 4,915 |
| :--- | :--- |
| Medium jets | 6,987 |
| Light jets | 7,740 |

(Source: Amstat ${ }^{\text {xii }}$ )

### 3.1 Owners and operators

In 2009, in the US, $75 \%$ of companies in possession aircraft operated only one turbine-powered aircraft. In 1997, $37 \%$ had more than one in their fleet (Source: Harris Interactivexiii)

Dassault has a fleet of 1,935 aircraft flown by 1,120 operators ${ }^{\text {xiv }}$. Bombardier estimates that more than $85 \%$ of new business jet orders originate from existing owners.

### 3.2 The age of the global jet fleet

In December 2012, the average age of the worldwide business jet fleet was 15.9 years, with $60 \%$ of the fleet at less than 15 years old (Source: Bombardier ${ }^{\text {xv }}$ and JETNET ${ }^{2}$ ).

Around 200 aircraft are more than 40 year's old (Source: Bombardier).

Only 7\% of all delivered business jets have been retired (Source: Bombardier). Light jets have the oldest average age ( 20.6 years) followed by mid-size jets (17.6 years) and small-mid-size jets (16.6 years).

### 3.3 Geographic spread

The US dominates the business jet market with more than $65 \%$ of the world's fleet. However, the fleet is getting more international -in 2000, the US counted for $75 \%$ (Source: Ascend Online).

Top 15 business aviation fleets by country

|  | Country | Number of business jets |
| :---: | :---: | :---: |
| 1 | USA | 11082 |
| 2 | Mexico | 695 |
| 3 | Brazil | 638 |
| 4 | Canada | 486 |
| 5 | Germany | 410 |
| 6 | United Kingdom | 408 |
| 7 | Austria | 239 |
| 8 | Portugal | 172 |
| 9 | Switzerland | 172 |
| 10 | France | 161 |
| 11 | South Africa | 161 |
| 12 | Venezuela | 156 |
| 13 | Australia | 155 |
| 14 | Italy | 139 |
| 15 | Argentina | 132 |

(Source: Ascend Online)

| Business jets to population | Number of people to every business jet |
| :--- | :--- |
| Country | 27,000 |
| US | 70,000 |
| Canada | 166,000 |
| Mexico | 200,000 |
| Germany | 300,000 |
| Brazil | 1.8 million |
| Malaysia | 3.7 million |
| Nigeria | 9.1 million |
| India | 11.8 million |
| China |  |

(Source: Ascend/Corporate Jet Investor)

### 4.0 Orders and deliveries

Bombardier estimates there were net orders for 180 business jets in 2010 and 423 in 2011. In 2008, fractional operators and branded charter operator orders represented between $20 \%-30 \%$ of all orders. However, many of these were cancelled in 2009.

Fractional operators are expected to account for approximately $10 \%$ of business jet deliveries over the next 20 years (Source: Bombardier).

(Source: Bombardier)

|  | 1980-1990 | 1990-2000 | 2000-2010 |
| :---: | :---: | :---: | :---: |
| North America | 2733 | 3199 | 5589 |
| Latin America and Caribbean | 190 | 343 | 697 |
| Africa | 76 | 82 | 160 |
| Middle East | 100 | 67 | 219 |
| India | 3 | 4 | 81 |
| China | 15 | 8 | 63 |
| Asia (including India and China) | 56 | 124 | 323 |
| Oceania / Australasia | 52 | 21 | 80 |
| Europe (including Russia and CIS) | 412 | 551 | 1817 |
| Russia | 0 | 4 | 33 |
| Unknown | - | 22 | 102 |


| 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9.6 | 7.8 | 9.8 | 12.3 | 14.9 | 17.6 | 20.1 | 15.2 | 15.9 | 15.5 |

(Source: Bombardier ${ }^{\text {xvii }}$ Excludes very light jets and corporate airliners)

Total number of business jets delivered

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Airbus | 12 | 9 | 11 | 13 | 9 | 9 |
| Boeing | 7 | 6 | 4 | 10 | 8 | 12 |
| Bombardier | 224 | 245 | 173 | 150 | 182 | 179 |
| Cessna | 388 | 466 | 289 | 178 | 183 | 181 |
| Dassault | 70 | 72 | 77 | 95 | 63 | 66 |
| Embraer | 36 | 38 | 122 | 145 | 99 | 99 |
| Gulfstream | 138 | 156 | 94 | 99 | 107 | 94 |
| Hawker | 182 | 160 | 98 | 73 | 30 | 32 |
| Total | 1037 | 1152 | 868 | 763 | 681 | 672 |
| (Source: GAMA ${ }^{\text {xviii }}$ ) |  |  |  |  |  |  |
| Market share by number of aircraft delivered |  |  |  |  |  |  |
|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Airbus | 1\% | 1\% | 1\% | 2\% | 1\% | 1\% |
| Boeing | 1\% | 1\% | 1\% | 1\% | 1\% | 1\% |
| Bombardier | 19\% | 21\% | 20\% | 20\% | 27\% | 27\% |
| Cessna | 41\% | 40\% | 33\% | 23\% | 27\% | 27\% |
| Dassault | 4\% | 6\% | 9\% | 12\% | 9\% | 10\% |
| Embraer | 4\% | 3\% | 14\% | 19\% | 15\% | 15\% |
| Gulfstream | 16\% | 14\% | 11\% | 13\% | 16\% | 14\% |
| Hawker | 14\% | 14\% | 11\% | 10\% | 4\% | 5\% |

(Source: Source: GAMA ${ }^{\text {xix }}$ and Corporate Jet Investor)

### 4.1 Deliveries by manufacturer

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ACJ318 Elite | 0 | 0 | 0 | 2 | 2 | 2 |
| ACJ319 | 0 | 0 | 0 | 8 | 6 | 6 |
| ACJ320 Prestige | 0 | 0 | 0 | 3 | 1 | 0 |
| ACJ | 12 | 9 | 11 | 0 | 0 | 1 |
| Total | 12 | 19 | 11 | 13 | 9 | 9 |
| (Source: GAMA ${ }^{\text {xx }}$ ) |  |  |  |  |  |  |
| Boeing |  |  |  |  |  |  |
|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| BBJ | 7 | 3 | 3 | 4 | 8 | 2 |
| BBJ2 | 0 | 1 | 0 | 2 | 0 | 2 |
| BBJ3 | 0 | 2 | 1 | 4 | 0 | 0 |
| 747-8 VIP | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 7 | 6 | 4 | 10 | 8 | 12 |

Bombardier
$\begin{array}{llllll}2007 & 2008 & 2009 & 2010 & 2011 & 2012\end{array}$

| Global 5000 | 46 | 51 | 51 | 49 | 53 | 54 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Challenger 300 | 51 | 59 | 33 | 29 | 37 | 48 |
| Challenger 604/605 | 35 | 44 | 36 | 38 | 43 | 34 |
| CL 850/870/890 | 12 | 17 | 7 | 6 | 6 | 4 |
| Learjet 40/45/XR | 12 | 17 | 7 | 6 | 6 | 24 |
| Learjet 60 | 23 | 26 | 13 | 12 | 19 | 15 |
| Total | $\mathbf{1 7 9}$ | $\mathbf{2 1 4}$ | $\mathbf{1 3 7}$ | $\mathbf{1 4 0}$ | $\mathbf{1 6 4}$ | $\mathbf{1 7 9}$ |

(Source: GAMA ${ }^{\text {xxii }}$ )

Cessna
200720082009201020112012

| 525 Citation CJ1+ | 34 | 20 | 14 | 3 | 2 | 0 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 525A Citation <br> CJ2/CJ2+ | 44 | 56 | 21 | 17 | 15 | 19 |
| 525B Citation CJ3 | 78 | 88 | 40 | 20 | 22 | 21 |
| 525C Citation CJ4 | 0 | 0 | 0 | 19 | 48 | 44 |
| 750 Citation X | 17 | 16 | 7 | 3 | 3 | 6 |
| 510 Citation Mustang | 45 | 101 | 125 | 73 | 43 | 38 |
| 680 Citation Sovereign | 65 | 77 | 33 | 16 | 19 | 22 |
| 560 Citation XLS/XLS+ | 82 | 80 | 44 | 22 | 27 | 31 |
| C560 Citation Encore+ | 12 | 28 | 5 | 5 | 4 | 0 |
| Total | 388 | 466 | 289 | 178 | 183 | 181 |

(Source: GAMA ${ }^{\text {xxiii }}$ )

Dassault
$2007 \quad 2008 \quad 2009 \quad 2010 \quad 2011 \quad 2012$

| Falcon 7X | 6 | 21 | 32 | 41 | 31 | 37 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Falcon 50EX | 2 | 1 | 0 | 0 | 0 | 0 |
| Falcon 2000/2000DX | 1 | 3 | 1 | 0 | 0 | 0 |
| Falcon 2000EX EASy | 33 | 24 | 3 | 0 | 0 | 0 |
| Falcon 2000LX | 0 | 0 | 23 | 30 | 20 | 22 |
| Falcon 900DX | 10 | 4 | 1 | 3 | 0 | 0 |
| Falcon 900EX EASy | 18 | 19 | 17 | 17 | 1 | 0 |
| Falcon 900LX | 0 | 0 | 0 | 4 | 11 | 7 |
| Total | 70 | 72 | 77 | 95 | 63 | 66 |
| (Source: GAMAxxiv |  |  |  |  |  |  |

(Source: GAMA ${ }^{\text {xxiv }}$ )

Embraer

|  | 2007 | 2008 | 2009 | 2010 | 2010 | 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Phenom 100 | 0 | 2 | 97 | 100 | 41 | 29 |
| Phenom 300 | 0 | 0 | 1 | 26 | 42 | 48 |
| Lineage 1000 /E190 Head of State | 0 | 0 | 5 | 5 | 3 | 2 |
| Legacy 600/650 | 36 | 36 | 18 | 11 | 13 | 17 |
| Shuttles (ERJs and E-Jets) | 0 | 0 | 1 | 3 | 0 | 3 |
| Total | 36 | 38 | 122 | 145 | 99 | 99 |
| (Source: GAMA ${ }^{\text {xxv }}$ ) |  |  |  |  |  |  |
| Gulfstream |  |  |  |  |  |  |
|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Gulfstream 150/200/280 | 59 | 68 | 19 | 24 | 17 | 11 |
| Gulfstream 350/450/500/550 | 79 | 88 | 75 | 75 | 78 | 77 |
| Gulfstream 650 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 138 | 156 | 94 | 99 | 95 | 94 |
| (Source: GAMA ${ }^{\text {xxvi }}$ ) |  |  |  |  |  |  |
| Hawker Beechcraft |  |  |  |  |  |  |
|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Premier I/IA | 54 | 31 | 16 | 11 | 5 | 3 |
| Hawker 400XP | 41 | 35 | 11 | 12 | 1 | 0 |
| Hawker 750 | 0 | 23 | 13 | 5 | 5 | 0 |
| Hawker 800XP/850XP | 35 | 15 | 3 | 1 | 1 | 0 |
| Hawker 900XP | 32 | 50 | 3 | 28 | 11 | 17 |
| Hawker 4000 | 0 | 0 | 20 | 16 | 7 | 12 |
| Total | 162 | 160 | 98 | 73 | 30 | 3 |

### 5.0 The pre-owned market

On average, the $11.6 \%$ of the global business jet fleet is traded every year, although is it dependent on the business jet cycle (Source: Amstat ${ }^{\text {xxviii }}$ ).

JetNet estimates on average some $12.6 \%$ of the fleet is for sale at one time and that $13 \%$ of the world business jet fleet was for sale in October 2012. Honeywell says that the market peaked in 2009 , with $15 \%$ of the total fleet for sale ${ }^{\text {xxix }}$.

Aircraft transactions

|  |  | Q3 2012 |  | 20 year average | Difference |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Global fleet | No of transactions | \% of fleet | \% of fleet changing per quarter |  |
| Business jets |  | 473 | 2.4\% | 2.9\% | -0.5\% |
| Heavy jets |  | 105 | 2.1\% | 2.3\% | -0.2\% |
| Medium jets |  | 171 | 2.4\% | 2.8\% | -0.3\% |
| Light jets |  | 197 | 2.5\% | 3.3\% | 0.7\% |
| (Source: Amstat ${ }^{\text {xxx }}$ ) |  |  |  |  |  |
| Aircraft for sale |  |  |  |  |  |
|  |  | Q3 2012 |  | 20 year average | Difference |
|  | Global fleet | No of aircraft for sale | \% of fleet for sale | \% of fleet for sale |  |
| Business jets | 19,642 | 2,632 | 13.4\% | 12.6\% | 0.8\% |
| Heavy jets | 4,915 | 584 | 11.9\% | 10.1\% | 1.8\% |
| Medium jets | 6,987 | 876 | 12.5\% | 12.2\% | 0.3\% |
| Light jets | 7,740 | 1,172 | 15.2\% | 14.2\% | 1.0\% |

(Source: Amstat ${ }^{\text {xxxi }}$ )

Asking prices (\$)
Oct 2012 July 2012 Oct 2011

| Heavy jets | $13,397,899$ | $13,155,904$ | $13,397,899$ |
| :--- | :--- | :--- | :--- |
| Medium jets | $4,345,294$ | $4,286,808$ | $4,222,984$ |
| Light jets | $1,732,989$ | $1,730,129$ | $1,793,052$ |

(Source: Amstat ${ }^{\text {xxxii }}$ )

### 6.0 Aircraft utilisation and charter

6.1 The US

US Business jet traffic

|  | Total |  | Domestic |  | International |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Operations | Change | Operations | Change | Operations | Change |
| 2001 | $3,826,564$ |  | $3,432,176$ |  | 394,388 |  |
| 2002 | $4,198,012$ | $9.71 \%$ | $3,769,630$ | $9.83 \%$ | 428,382 | $8.62 \%$ |
| 2003 | $4,285,420$ | $2.08 \%$ | $3,804,224$ | $0.92 \%$ | 481,196 | $12.33 \%$ |
| 2004 | $4,606,122$ | $7.48 \%$ | $4,092,010$ | $7.56 \%$ | 514,112 | $6.84 \%$ |
| 2005 | $4,727,826$ | $2.64 \%$ | $4,191,692$ | $2.44 \%$ | 536,134 | $4.28 \%$ |
| 2006 | $4,745,746$ | $0.38 \%$ | $4,166,506$ | $-0.60 \%$ | 579,240 | $8.04 \%$ |
| 2007 | $4,824,960$ | $1.67 \%$ | $4,180,510$ | $0.34 \%$ | 644,450 | $11.26 \%$ |
| 2008 | $4,291,104$ | $-11.06 \%$ | $3,681,606$ | $-11.93 \%$ | 609,498 | $-5.42 \%$ |
| 2009 | $3,449,204$ | $-19.62 \%$ | $2,929,476$ | $-20.43 \%$ | 519,728 | $-14.73 \%$ |
| 2010 | $3,842,314$ | $11.40 \%$ | $3,212,132$ | $9.65 \%$ | 630,182 | $21.25 \%$ |
| 2011 | $3,955,400$ | $2.94 \%$ | $3,323,596$ | $3.47 \%$ | 631,804 | $0.26 \%$ |
| 2012 | $2,977,968 *$ |  | $2,480,290$ |  | 497,678 |  |

*Year to date (October 2012) (Source: FAA ${ }^{\text {xxxiii }}$ )

Flights by operator type

| Type of traffic | \% of flights |
| :--- | :--- |
| Part 135 | $27 \%$ |
| Part 91 | $49 \%$ |
| Part 91K | $25 \%$ |

(Source: Avinode ${ }^{\text {xxxiv }}$ )

The top 15 business airports in the US

| Rank | Airport | State |
| :---: | :---: | :---: |
| 1 | Van Nuys (VNY) | California |
| 2 | Daytona Beach International | Florida |
| 3 | Centennial (APA) | Colorado |
| 4 | Phoenix Deer Valley (DVT) | Arizona |
| 5 | Fort Lauderdale Executive (FXE) | Florida |
| 6 | Long Beach Daugherty Field (LGB) | California |
| 7 | DeKalb-Peachtree (PDK) | Georgia |
| 8 | Kendall-Tamiami Executive (TMB) | Florida |
| 9 | Montgomery Field (MYF) | California |
| 10 | Westchester County (HPN) | New York |
| 11 | Boeing Field/King County International (BFI) | Washington |
| 12 | Teterboro (TEB) | New Jersey |
| 13 | Falcon Field (FFZ) | Arizona |
| 14 | John Wayne Orange County (SNA) | California |
| 15 | Melbourne International (MLB) | Florida |

### 6.2 Europe

European business aviation departure by country

| Country | Business jet departures |
| :--- | :--- |
| Germany | $14.27 \%$ |
| France | $17.38 \%$ |
| Other | $33.32 \%$ |
| Spain | $5.4 \%$ |
| Switzerland | $6.68 \%$ |
| Italy | $10.10 \%$ |
| UK | $12.86 \%$ |

(Source: Eurocontrol)
Eurocontrol ${ }^{\mathrm{xxxv}}$ says that larger aircraft with 19 seats fly the most. The top three of these types are the Falcon 2000, Challenger 600 and Falcon 900 all with more than 70 departures every day. Gulfstream GVs has 60 departures every a day in 2011.

The fastest growing group was the 10 seater jets particularly the Cessna Citation Excel, the most used aircraft in Europe with 150 departures each day (Source Eurocontrol ${ }^{\text {xxxvi }}$ )

### 7.0 Market forecasts

### 7.1 Bombardier forecast ${ }^{\text {xxxvii }}$

Business jet deliveries for 2012 are expected to be comparable to 2011, just under 600 aircraft.
Deliveries are expected to accelerate in 2013 and we forecast that the industry will surpass the 2008 delivery peak, as early as 2016.

Aircraft and value 2012-2031

|  | $\mathbf{2 0 0 2 - 2 0 1 1}$ | $\mathbf{2 0 1 2 - 2 0 2 1}$ | $\mathbf{2 0 2 2 - 2 0 3 1}$ | $\mathbf{2 0 2 2 - 2 0 3 1}$ |
| :--- | :--- | :--- | :--- | :--- |
| Aircraft | 6,300 | 9,800 | 14,200 | $\mathbf{2 4 , 0 0 0}$ |
| Value (\$ billions) | 139 | 266 | 382 | 648 |

(Source: Bombardier Business Aircraft Market Forecast 2012-2022)

## Number of aircraft by region

|  | $\mathbf{2 0 1 2 - 2 0 2 1}$ | $\mathbf{2 0 2 2 - 2 0 3 1}$ |
| :--- | :--- | :--- |
| North America | 4,100 | 5,400 |
| Europe | 1,700 | 1,300 |
| China | 1000 | 1,420 |
| Latin America | 985 | 1,300 |
| Russia \& CIS | 525 | 1,025 |
| Middle East | 410 | 775 |
| India | 385 | 960 |
| Asia Pacific | 370 | 615 |
| Africa | 325 | 485 |

(Source: Bombardier Business Aircraft Market Forecast 2012-2022)

### 7.2 Honeywell forecastxxxviii

10,000 business jets are expected to be delivered over the next 10 years, worth approximately $\$ 250$ billion. Large jets will account for nearly $70 \%$ of all jet expenditures and $40 \%$ of all aircraft delivered. The BRIC countries will drive regional demand for aircraft, with $46 \%$ of operators planning to buy aircraft in the next two years. (Source: Honeywell)

### 7.3 JETNET Forecast ${ }^{\text {xxxix }}$

JetNet forecasts that manufacturers will deliver 10,424 aircraft between 2012 and 2021.
It says there the global fleet consisted of 18,643 aircraft at the end of 2011 and that 2,256 will be retired before 2021. That would leave a global fleet of 26,811 aircraft $-44 \%$ growth.

### 7.4 TEAL Group Forecast

Teal forecasts production of 13,879 aircraft worth some $\$ 310$ billion during the next 10 years. This
includes 10,249 traditional business jets worth $\$ 249$ billion, 568 corporate versions of jetliners and regional jets worth a combined total of $\$ 42$ billion, and 3,062 business turboprops worth a total of \$19 billion

### 7.5 FAA Business Traffic Forecast

The FAA estimates that the US business jet fleet will grow at 4\% each year between 2012 and $2032 .{ }^{\text {xl }}$ It expects the hours flown by business jets will increase by an average annual rate of $5.3 \%$ in the same period.

### 7.6 Avinode traffic forecast

Avinode forecasts a $0.1 \%$ decrease in business jet activity in 2013. Europe is expected to see a $3.2 \%$ overall decrease ${ }^{x l i}$.

Avinode traffic forecast

|  | US |
| :--- | :--- |
|  | Europe |
| Entry Level Jets | $+4.4 \%$ |
| Light Jets: | $+2.2 \%$ |
| Super Light Jets: | $+0.3 \%$ |
| Midsize Jets: | $+0.0 \%$ |
| Super Midsize Jets | $-1.7 \%$ |
| Heavy Jets | $+0.4 \%$ |
| Ultra Long Range Jets: | $+2.4 \%$ |

(Source: Avinode Business Intelligence ${ }^{\text {xlii }}$ )

### 7.7 Combined fleet forecast

Comparing all four fleet forecasts is difficult as they do not all cover exactly the same markets Bombardier only forecasts the market segments were it has aircraft so does not included corporate airliners or light jets). Despite this they are all similar.

Combined business jet forecasts

| 2012-2021 | Aircraft | Value <br> (\$ billion) |
| :--- | :--- | :--- |
| Bombardier | 9,800 | 266 |
| Honeywell | 10,000 | 250 |
| TEAL Group | 10,249 | 249 |
| JETNET | 10,424 | 253 |
| Corporate Jet Investor Forecast Average | $\mathbf{1 0 , 1 1 8}$ | $\mathbf{2 5 4 . 5}$ |

### 8.0 Safety and insurance

Although much general aviation insurance is placed through Lloyds of London, it is a very specialised market. Just 3\% of Lloyd's business is aviation and this includes airlines, airports and small aircraft. Cars account for $5 \%$ and marine for $7 \%$.

On average the industry suffers between 15 and 20 total losses - where aircraft are written off each year (source: Ascend Online). This includes losses caused by non-aviation activities such as natural disasters.

Annual number of total losses

|  | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 3}$ | $\mathbf{2 0 0 4}$ | $\mathbf{2 0 0 5}$ | $\mathbf{2 0 0 6}$ | $\mathbf{2 0 0 7}$ | $\mathbf{2 0 0 8}$ | $\mathbf{2 0 0 9}$ | $\mathbf{2 0 1 0}$ | 2011 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Jets | 14 | 18 | 19 | 23 | 20 | 24 | 22 | 9 | 22 | 11 |
| Turboprops | 17 | 26 | 28 | 27 | 26 | 27 | 31 | 30 | 25 | 34 |

(Source: Ascend Online)

### 8.1 Accidents in the US

The NBAA says one measure of the industry's safety record can be found in the accident data made available each year by the National Transportation Safety Board (NTSB).

The NBAA shows how the data is divided into two categories - "corporate" and "business" operations, which are designations that mostly relates to crew requirements and are not related to the type of business involved.

For these types of operations, the accident rate in 2010 was 0.07 per 100,000 hours - which is better than that of the scheduled air carriers ( 0.016 per 100,000 hours). For flights conducted under the "business" category, in which a two-person professional crew is not required, the NTSB's accident rate was 0.79 per 100,000 hours.

| Aircraft Accident Rates, 1990-2011 (per 100,000 flight hours) ${ }^{\underline{1}}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | General Aviation ${ }^{1}$ Total/Fatal | Air Taxi ${ }^{3}$ Total/Fatal | Commuter <br> Air Carriers ${ }^{4}$ Total/Fatal | $\begin{gathered} \hline \text { Airlines }{ }^{5} \\ \text { Total/Fatal } \end{gathered}$ | Corporate/ Executive ${ }^{6}$ Total/Fatal | $\begin{aligned} & \text { Business }{ }^{7} \\ & \text { Total/Fatal } \end{aligned}$ |
| 1992 | 8.51/1.81 | 2.67/0.84 | 0.942/0.300 | 0.146/0.032 | 0.210/0.080 | 2.17/0.68 |
| 1993 | 9.03/1.74 | 2.97/0.82 | 0.606/0.152 | 0.181/0.008 | 0.230/0.070 | 2.02/0.52 |
| 1994 | 9.08/1.81 | 3.45/1.05 | 0.359/0.108 | 0.168/0.030 | 0.180/0.070 | 1.81/0.51 |
| 1995 | 8.21/1.63 | 3.02/0.97 | 0.457/0.076 | 0.267/0.022 | 0.250/0.110 | 2.04/0.67 |
| 1996 | 7.65/1.45 | 2.80/0.90 | 0.399/0.036 | 0.269/0.036 | 0.140/0.060 | 1.68/0.34 |
| 1997 | 7.17/1.36 | 2.65/0.48 | $1.628 / 0.509^{8}$ | 0.309/0.025 | 0.230/0.060 | 1.41/0.39 |
| 1998 | 7.43/1.41 | 2.03/0.45 | 2.262/0.000 | 0.297/0.006 | 0.091/0.000 | 1.14/0.30 |
| 1999 | 6.50/1.16 | 2.31/0.37 | 3.793/1.459 | 0.291/0.011 | 0.182/0.099 | 1.41/0.40 |
| 2000 | 6.57/1.21 | 2.04/0.56 | 3.247/0.271 | 0.306/0.016 | 0.125/0.060 | 1.28/0.37 |
| 2001 | 6.78/1.27 | 2.40/0.60 | 2.330/0.666 | 0.236/0.011 | 0.108/0.031 | 1.06/0.23 |
| 2002 | 6.69/1.33 | 2.06/0.62 | 2.559/0.000 | 0.237/0.000 | 0.116/0.029 | 1.08/0.36 |
| 2003 | 6.68/1.34 | 2.49/0.61 | 0.627/0.313 | 0.309/0.011 | 0.028/0.014 | 0.95/0.26 |
| 2004 | 6.49/1.26 | 2.04/0.71 | 1.324/0.000 | 0.159/0.011 | 0.093/0.013 | 0.91/0.23 |
| 2005 | 7.20/1.38 | 1.70/0.29 | 2.002/0.000 | 0.206/0.015 | 0.076/0.013 | 0.73/0.14 |
| 2006 | 6.35/1.28 | 1.39/0.27 | 0.995/0.332 | 0.171/0.010 | 0.141/0.011 | 0.80/0.29 |
| 2007 | 6.93/1.20 | 1.54/0.35 | 1.028/0.000 | 0.143/0.005 | 0.103/0.034 | 0.72/0.16 |
| 2008 | 6.86/1.21 | 1.81/0.62 | 2.385/0.000 | 0.147/0.010 | 0.075/0.000 | 1.27 /0.16 |
| 2009 | 7.08/1.32 | 1.63/0.07 | 0.685/0.000 | 0.170/0.011 | 0.070/0.014 | 0.56/0.21 |
| 2010 | 6.63/1.23 | 1.00/0.19 | 1.947/0.000 | 0.163/0.006 | 0.067/0.000 | 0.79/0.25 |
| 2011 | 6.51/1.17 | 1.50/0.48 | 1.303/0.000 | 0.175/0.000 | 0.061/0.000 | 0.73/0.22 |

(Source: NBAA compiled by Robert E. Breiling Associates ${ }^{\text {xliii }}$ )

### 9.0 Miscellaneous data

### 9.1 Business jets and the environment

General aviation aircraft, including those used for business aviation, account for just $0.6 \%$ of U.S. transportation carbon emissions and $0.2 \%$ of total global greenhouse gas emissions.

Although business aviation represented $7.1 \%$ of all EU flights in 2011, their estimated contribution to carbon dioxide (CO2) emissions stands lower than $1 \%$, around $0.8 \%$, according to Eurocontrol ${ }^{x l i v}$ calculations.

EBAA says that in 2011 business aircraft represent 0.03-0.04 \% of all EU emissions ${ }^{\mathrm{xlv}}$.

### 9.2 Terms people use

The terms business jet, private jet and corporate jet are often used interchangeably.
Of this only business jet is recognised by the Oxford English Dictionary which only added it as subentry in March $2012^{\text {xvi }}$. It recorded the first use of the term as Canadian Aviation in October 1956.

Business jet is still the most commonly used on the internet.

| Term | Pages suggested by Google |
| :--- | :--- |
| Business jet | $169,000,000$ |
| Business aviation | $126,000,000$ |
| Private jet | $60,600,000$ |
| Corporate Jet | $24,100,000$ |

(Source: Google on October 2 2012)
However, the number of people searching for business jet or corporate jet is falling on Google whilst searches for private jet are rising

(Source: Google Trends on October 2 2012)
9.3 Trade show attendance

NBAA Convention attendance

|  | Attendees | Exhibitors | Aircraft on display | Location |
| :---: | :---: | :---: | :---: | :---: |
| 2012 | 25,150 | 1,073 | 105 | Orlando |
| $\underline{2011}$ | 26,007 | 1,106 | 101 | Las Vegas |
| $\underline{2010}$ | 24,206 | 1,083 | 93 | Atlanta |
| $\underline{2009}$ | 22,920 | 1,075 | 100 | Orlando |
| $\underline{2008}$ | 30,811 | 1,183 | 139 | Orlando |
| $\underline{2007}$ | 32,000 | 1,152 | 90 | Atlanta |
| $\underline{2006}$ | 33,088 | 1,140 | 115 | Orlando |
| 2005 | 28,456 | 1000 | 115 | Orlando |
| $\underline{2004}$ | 31,259 | 1,084 | 87 | Las Vegas |
| $\underline{2003}$ | 28,574 | 1,068 | 111 | Orlando |
| $\underline{2002}$ | 27,785 | 1,011 | 152 | Orlando |
| 2001 | Cancelled |  |  | New Orleans |
| $\underline{2000}$ | 29,421 | 965 | 150 | New Orleans |

EBACE attendance

|  | Attendees | Exhibitors | Aircraft on display | Location |
| :--- | :--- | :--- | :--- | :--- |
| $\underline{\mathbf{2 0 1 2}}$ | 12,638 | 491 | 60 | Geneva |
| $\underline{\underline{\mathbf{2 0 1 1}}}$ | 12,751 | 511 | 62 | Geneva |
| $\underline{\underline{\mathbf{2 0 1 0}}}$ | 11,186 | 465 | 65 | Geneva |
| $\underline{\underline{\mathbf{2 0 0 9}}}$ | 10,917 | 411 | 65 | Geneva |
| $\underline{\mathbf{2 0 0 8}}$ | 13,692 | 440 | 60 | Geneva |
| $\underline{\underline{\mathbf{2 0 0 7}}}$ | 11,267 | 354 | 61 | Geneva |

(Source: NBAA/EBACE)

ABACE attendance

|  | Attendees | Exhibitors | Aircraft on display | Location |
| :--- | :--- | :--- | :--- | :--- |
| 2013 | 7,714 | 180 | 34 | Shanghai |
| 2012 | 6,400 | 178 | 27 | Shanghai |
| 2009 | Cancelled | - | - | Hong Kong |
| 2004 | 282 | 12 | Hong Kong |  |
| Source: ABACE) |  |  |  |  |

9.4 First business jets

| Aircraft | First flight |
| :--- | :--- |
| Lockheed Jetstar | September 4, 1957 |
| Rockwell Sabreliner | September 16,1958 |
| McDonnell Douglas 220 | February 11 1959 |
| Hawker Sideley 125 | January 2 1963 1962 |
| AC1121 Jet Commander | May 4 1963 |
| Dassault Mystere (Falcon 20) | October 7 1963 |
| Learjet | October 21966 |
| Gulfstream II | September 15 1969 |
| Citation |  |
| Source: Corpora |  |

(Source: Corporate Jet Investor)
9.5 Facts about manufacturers

|  | Date of first aircraft <br> production | Total number of <br> aircraft they company <br> has built | Employees |
| :--- | :--- | :--- | :--- |
| Cessna $^{\text {xlvii }}$ | 1928 | 193,500 | 8,500 |
| Gulfstream |  |  |  |
| Hawviii | 1958 | $2,000+$ | 12,500 |

### 10.0 Acknowledgements

Corporate Jet Investor would like to thank all of the sources that have been referenced in the report. We appreciate their efforts to help us all understand the market better.

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