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JETNET iQ Snap! Report Q3 2016 Summary Report

[> BUSINESS AVIATION MARKET INTELLIGENCE](#) [> REPORTS](#) [> SUMMITS](#) [> CONSULTING](#)

Prepared for:
JETNET iQ Global Business Aviation Survey Respondents

September 30, 2016

JETNET iQ Snap!: 3rd Quarter 2016 - Private & Confidential

Thank You, Merci, Obrigado, Muchas Gracias, תודה, Danke, ありがとう, Grazie, شكرا, спасибо, 謝謝

Thank you for participating in our quarterly JETNET iQ Global Business Aviation Surveys. Your opinions and inputs are vital to the many people in the industry tasked with designing and developing aircraft, providing aviation services on the ground and in the air, financing / selling / and buying aircraft, and creating the operational framework for safe and efficient flight.

JETNET has been a trusted source of aviation market intelligence since 1988. From humble beginnings in Utica, NY, we have built one of the finest research teams and business aviation databases in the industry. Our people are professional and dedicated, and our data products and services are unique and innovative. We are committed to continuous improvement as

we provide our clients with unprecedented global coverage, data connectability, and market insights wherever they are.

We continue to focus on new products and services to keep our customers better informed. “Know More” – JETNET’s familiar tagline – is what we hope you will agree is amongst the primary benefits that we bring to the aviation community. Thank you again for participating in our quarterly survey - we hope this JETNET iQ *Snap!* Report is useful to you.

Navigating by JETNET iQ

JETNET iQ *Snap!* Reports are one of the ways we would like to say “thank you” for the time and opinions you provide us when participating in our quarterly JETNET iQ Global Business Aviation Surveys. With seemingly endless demands on your time, we appreciate your help and want to provide you useful information in return. In the attached pages you will find some of the latest market intelligence that we have collected and analyzed. Our goal is to be a resource to identify, analyze, and highlight issues that matter to the business aviation community. As an industry leader and aviation professional, you make a difference by participating in these surveys, providing us with objective and subjective perspectives into the state of the worldwide business aviation industry.

JETNET iQ *Snap!* Reports reflect the collaborative insights of you, our respondents, and our JETNET iQ research

team. Collectively, we have extensive experience in business aviation, from executive offices and boardrooms, to the cubicles, factory floors, design centers, situation rooms, cockpits, service hangars and flight lines of the industry. Much like a magnifying glass concentrates light and energy, JETNET iQ draws from a diverse set of intelligence sources to bring the power of this experience into sharp focus.

Since early 2011, our JETNET iQ research team has been reaching out to you – fixed-wing turbine aircraft owners and operators - with our quarterly JETNET iQ Global Business Aviation Surveys. As always, we hope that this latest issue of our JETNET iQ *Snap!* Report is insightful to you.

Rolland Vincent
JETNET iQ Creator / Director
rollie@jetnet.com

JETNET

- Founded in 1988
- Privately-owned family business
- Headquarters in Utica, NY
- 70+ employees (45+ in research)
- Daily contact with aircraft owners and operators globally



JETNET: Worldwide leader in aviation market intelligence

JETNET

- Solutions and services:
 - JETNET iQ
 - Evolution Marketplace
 - Evolution Aerodex
 - Marketplace Manager
 - Sales Price Index
 - Aviation Business Index
 - AvData Reports
 - Helidex
 - Rotodex
 - BigPlanes
- Data coverage:
 - 60,000 business aircraft (fixed and rotary wing)
 - 50,000 commercial aircraft



JETNET: Tracking more than 110,000 business and commercial aircraft worldwide



JETNET iQ

- *Intelligence....quarterly*
- Focus: Business aviation research & forecasting
- Main features
 - Surveys – of aircraft owners and operators
 - Reports – of current and forecast market conditions
 - Summits – of industry thought leaders

JETNET iQ Surveys

- Turbine business aircraft owners and operators
- Quarterly
- Global
- On-line
- Multilingual
- Password-protected
- Password-linked

JETNET iQ GLOBAL BUSINESS AVIATION SURVEY - Q2 2015 English

WELCOME




* Thank you for agreeing to participate in this survey sponsored by JETNET LLC, the world's leading provider of business aviation market intelligence. Your insights are critical to product and service development that will better meet your evolving needs.

Survey responses:

- 1) Will be strictly confidential
- 2) Will NOT be used in any way to directly market to you or your organization
- 3) Will take approximately 20-30 minutes to complete

PASSWORD:

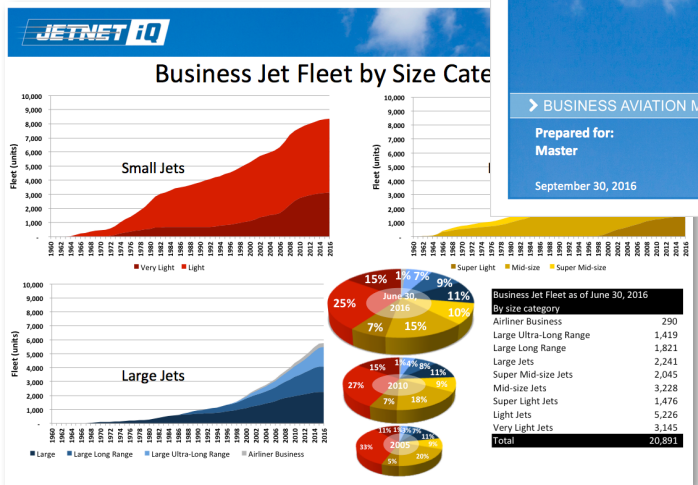
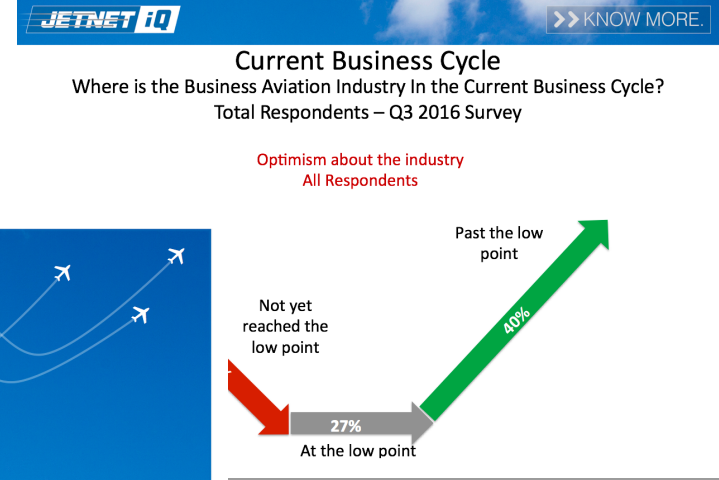
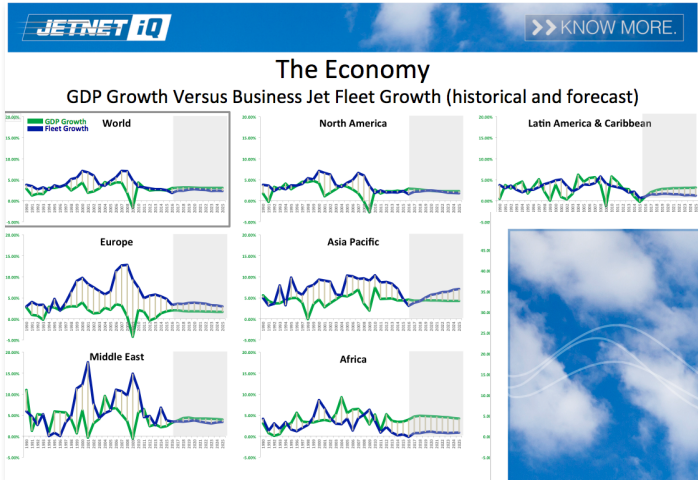


Global Business Aviation Survey

For questions about this survey, please contact:

ROLLAND VINCENT
JETNET iQ Creator / Director
Phone: 1-972-439-2069 (U.S. Central Time)
Email: rollie@jetnet.com

JETNET iQ Reports



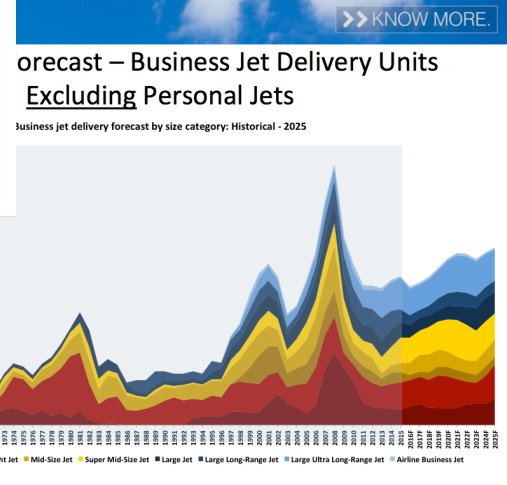
JETNET iQ
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Q3 2016 Report

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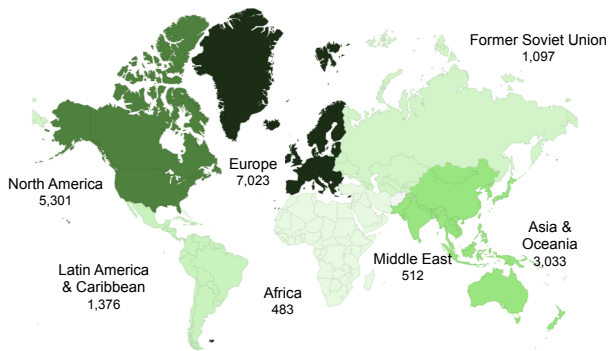
Prepared for:
Master

September 30, 2016 *JETNET iQ REPORT: 3rd Quarter 2016 - Private & Confidential*

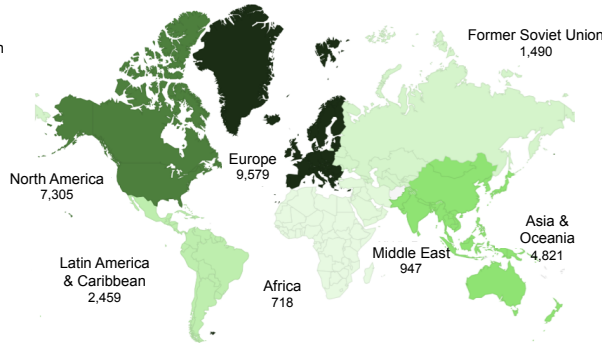


The Global Economy

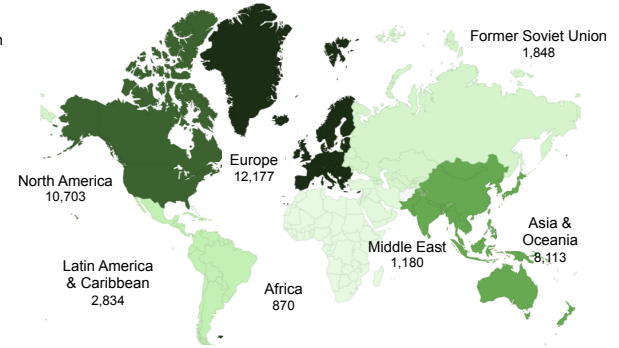
Regional GDP in 1970 (\$US 2010 Billion)



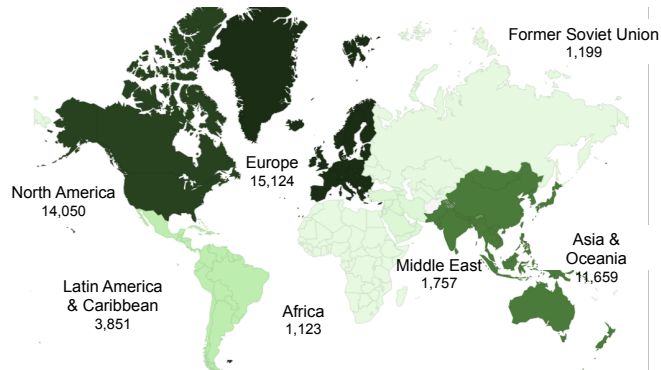
Regional GDP in 1980 (\$US 2010 Billion)



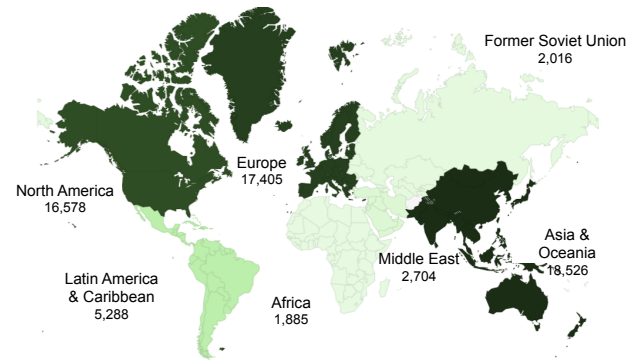
Regional GDP in 1990 (\$US 2010 Billion)



Regional GDP in 2000 (\$US 2010 Billion)



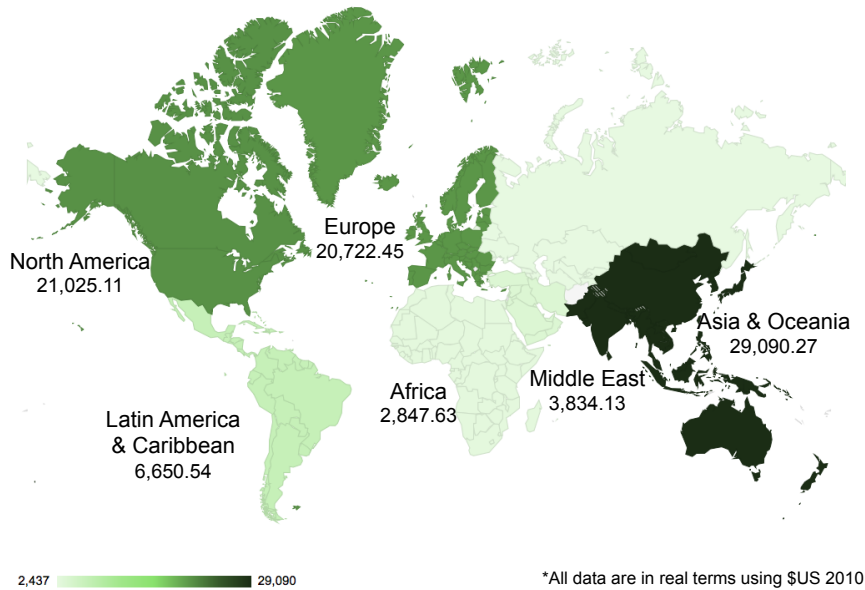
Regional GDP in 2010 (\$US 2010 Billion)



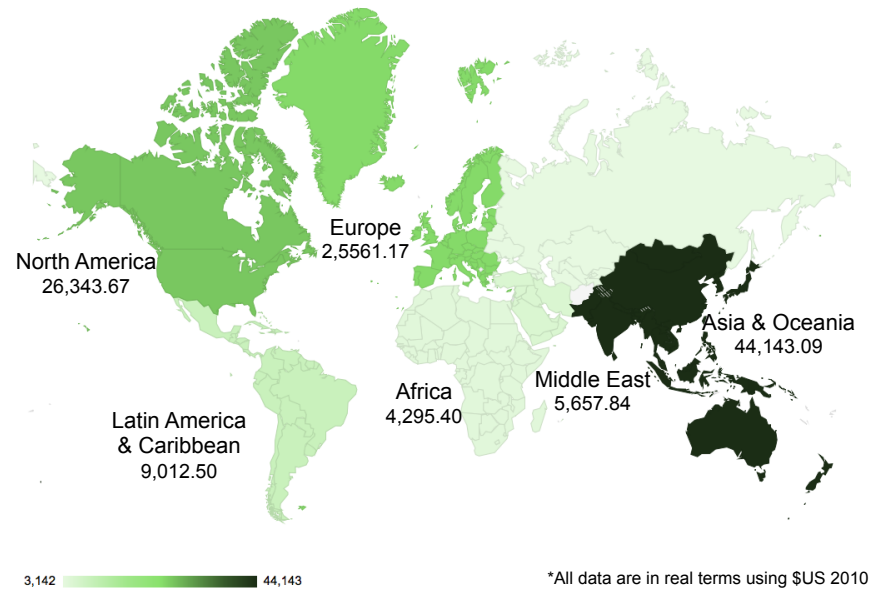
Sources: U.S. Economic Research Service

The Global Economy

Forecasted Regional GDP in 2020 (in \$US Billion*)



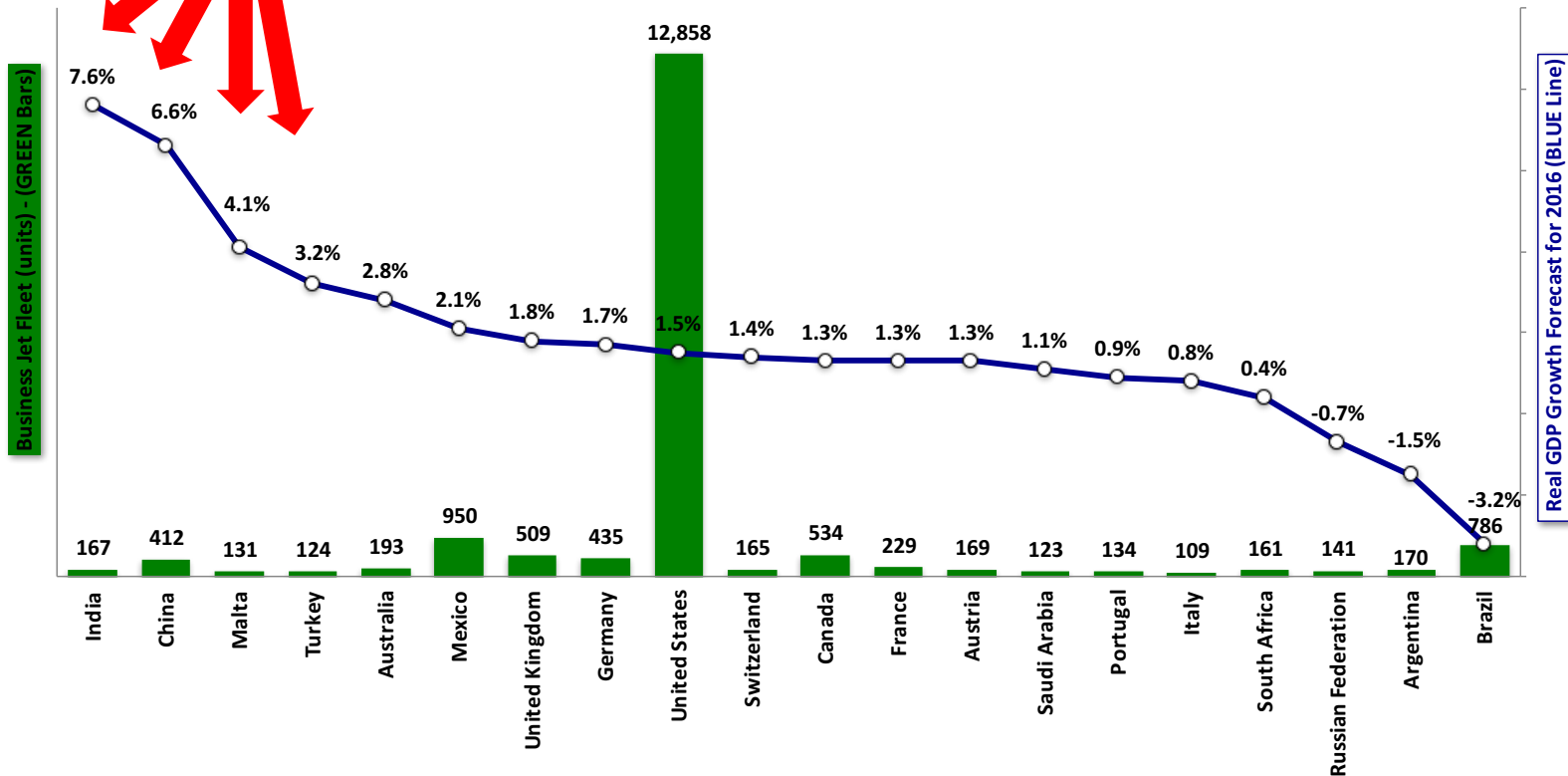
Forecasted Regional GDP in 2030 (in \$US Billion*)



The Economy

Key markets with 3%+ forecasted 2016 GDP growth represent just 4% of the world business jet fleet

2016 GDP Forecasts and "Top 20" Business Jet Fleets

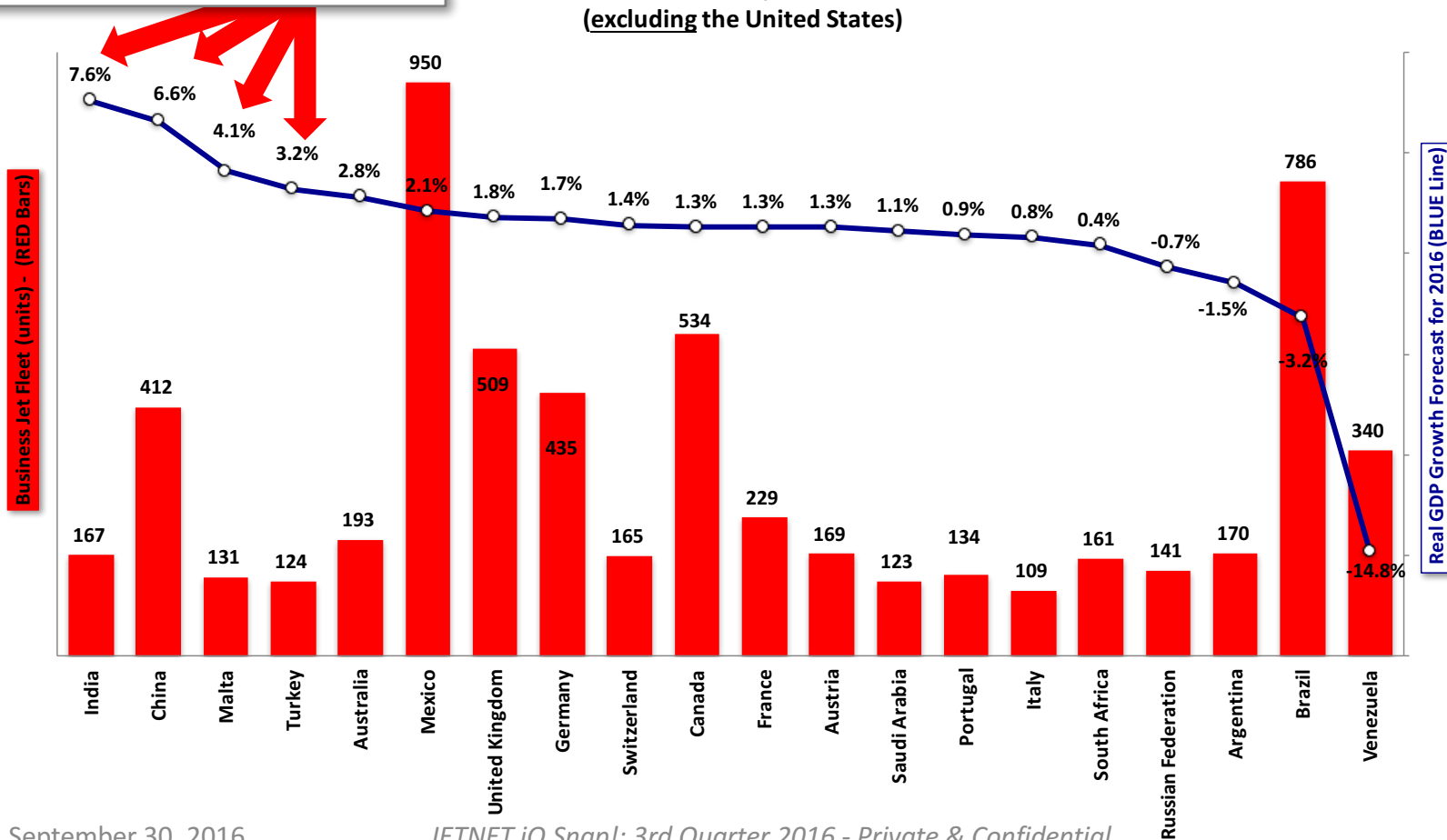


Economic growth forecasts for 2016 have been lowered; U.S. now at 1.5%

The Economy

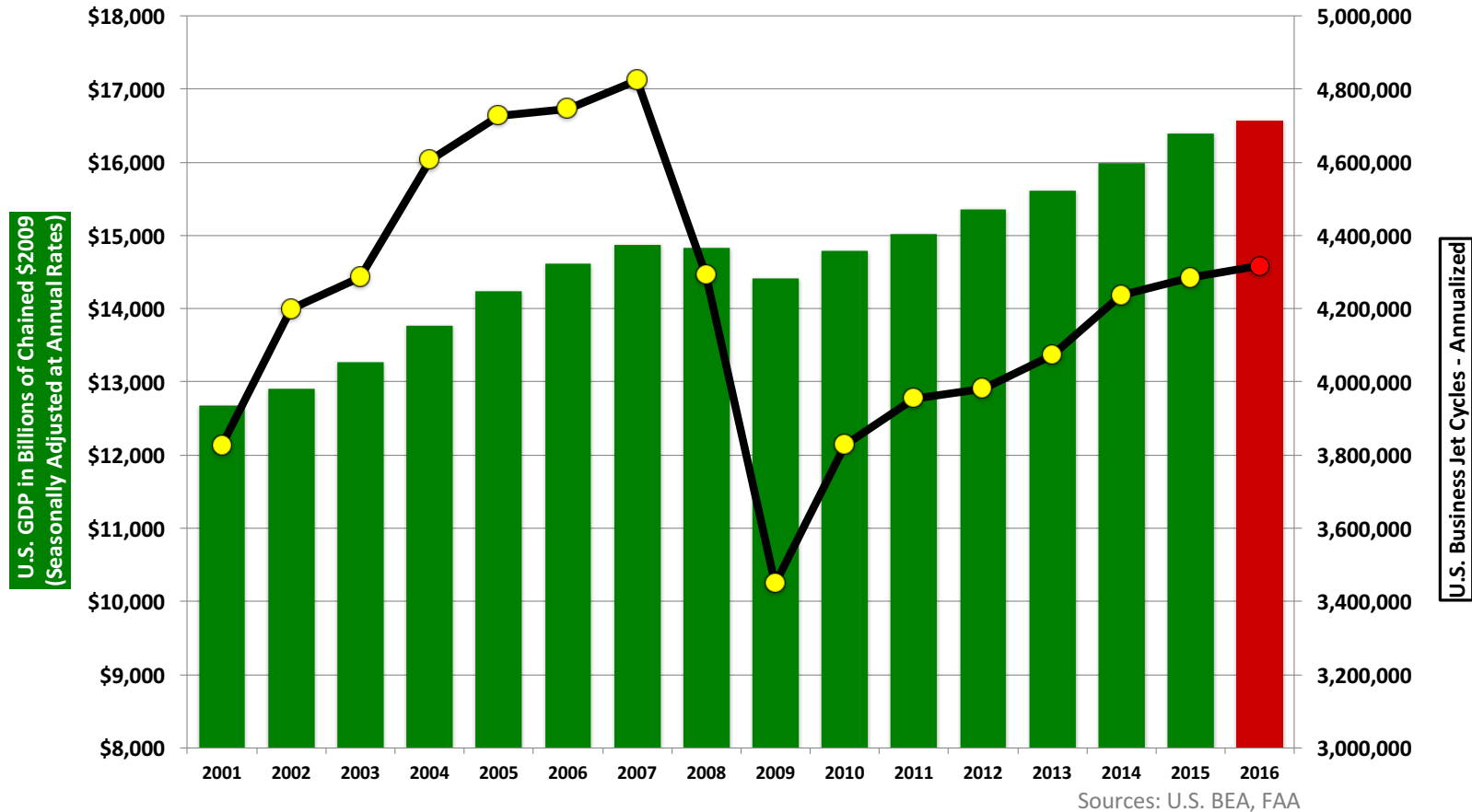
Key markets (excluding the United States) with 3%+ forecasted 2016 GDP growth represent just 4% of world business jet fleet; most 2016 growth forecasts have been lowered; sharp slowdown expected in Brazil

2016 GDP Forecasts and "Top 20" Business Jet Fleets (excluding the United States)



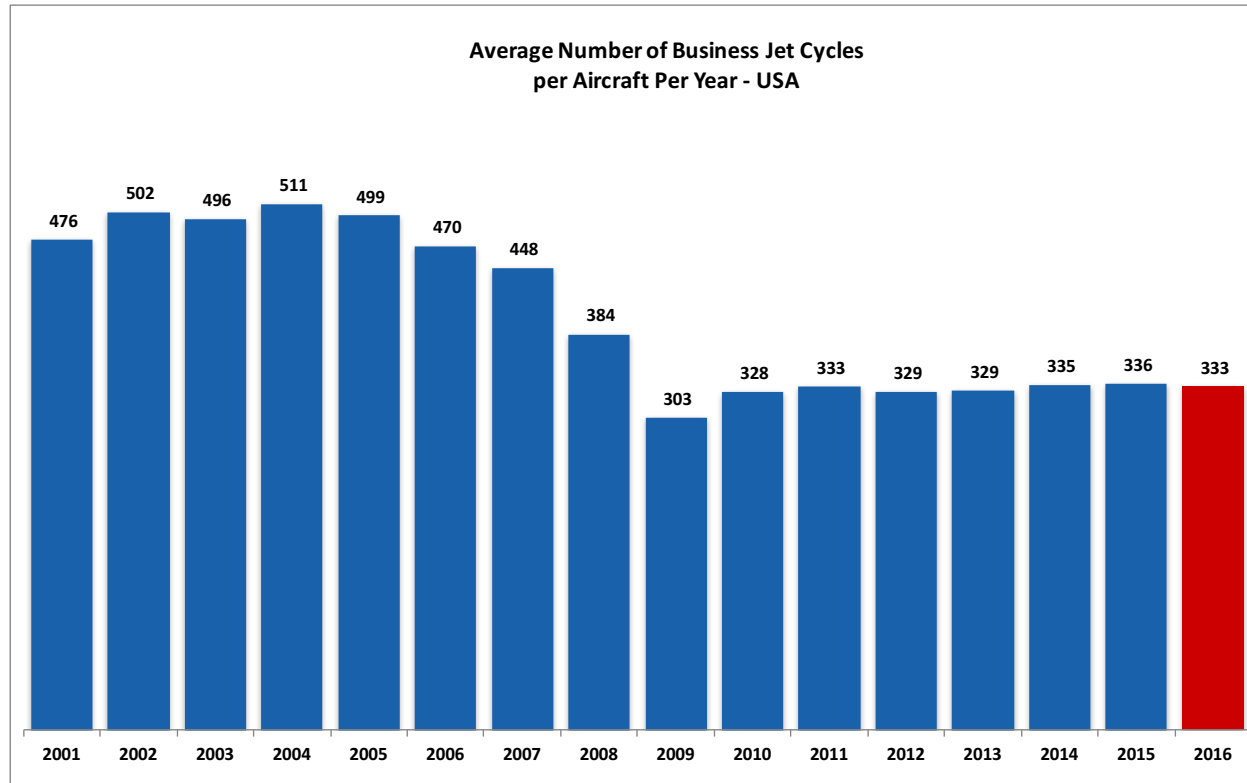
The Economy

U.S. GDP and U.S. Business Jet Cycles



U.S. business jet cycles have steadily increased but remain below 2003-2007 levels

The Economy



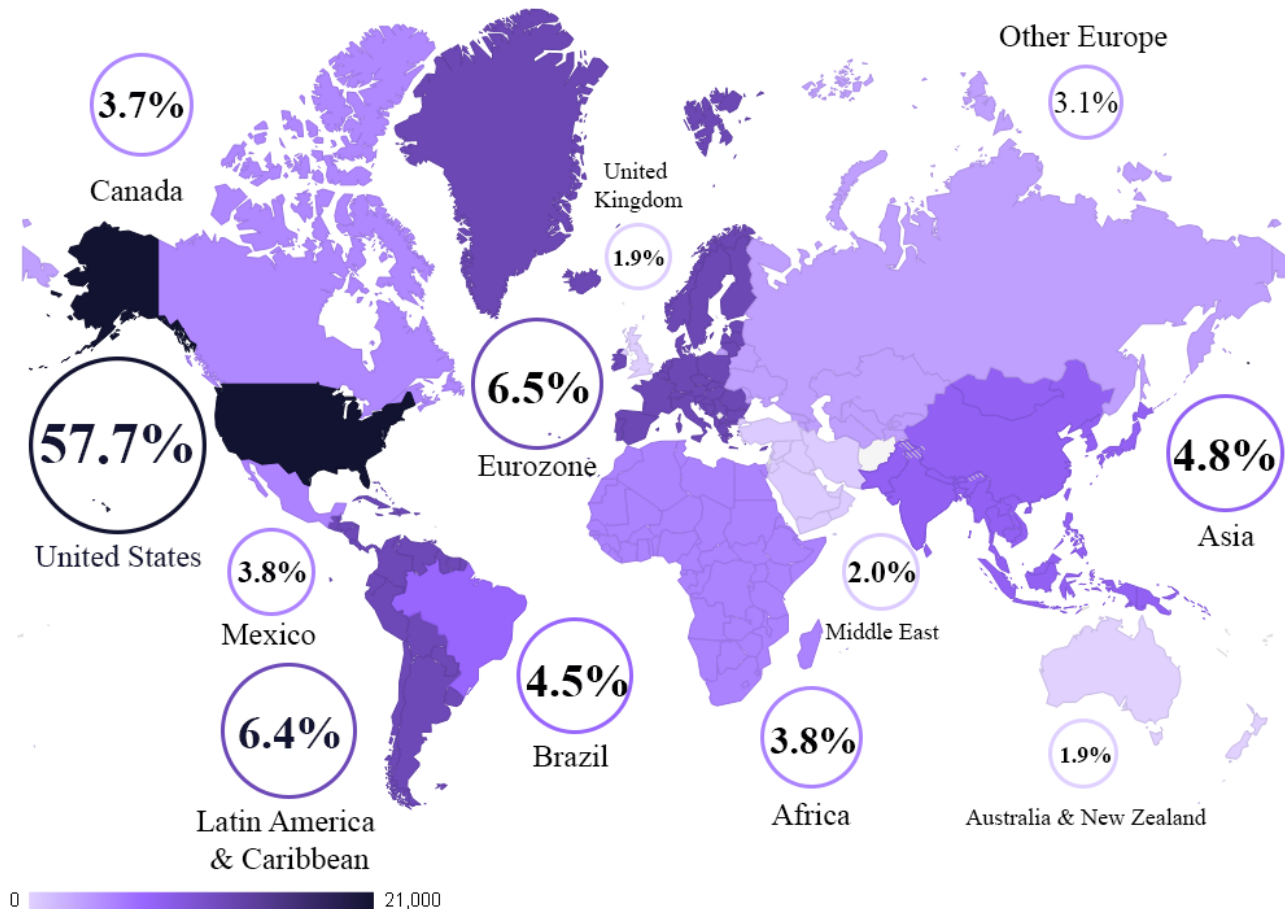
Sources: U.S. FAA, JETNET

Cycles per U.S.-based business jet have not recovered to pre-crisis levels

Business Aircraft Fleet by Region

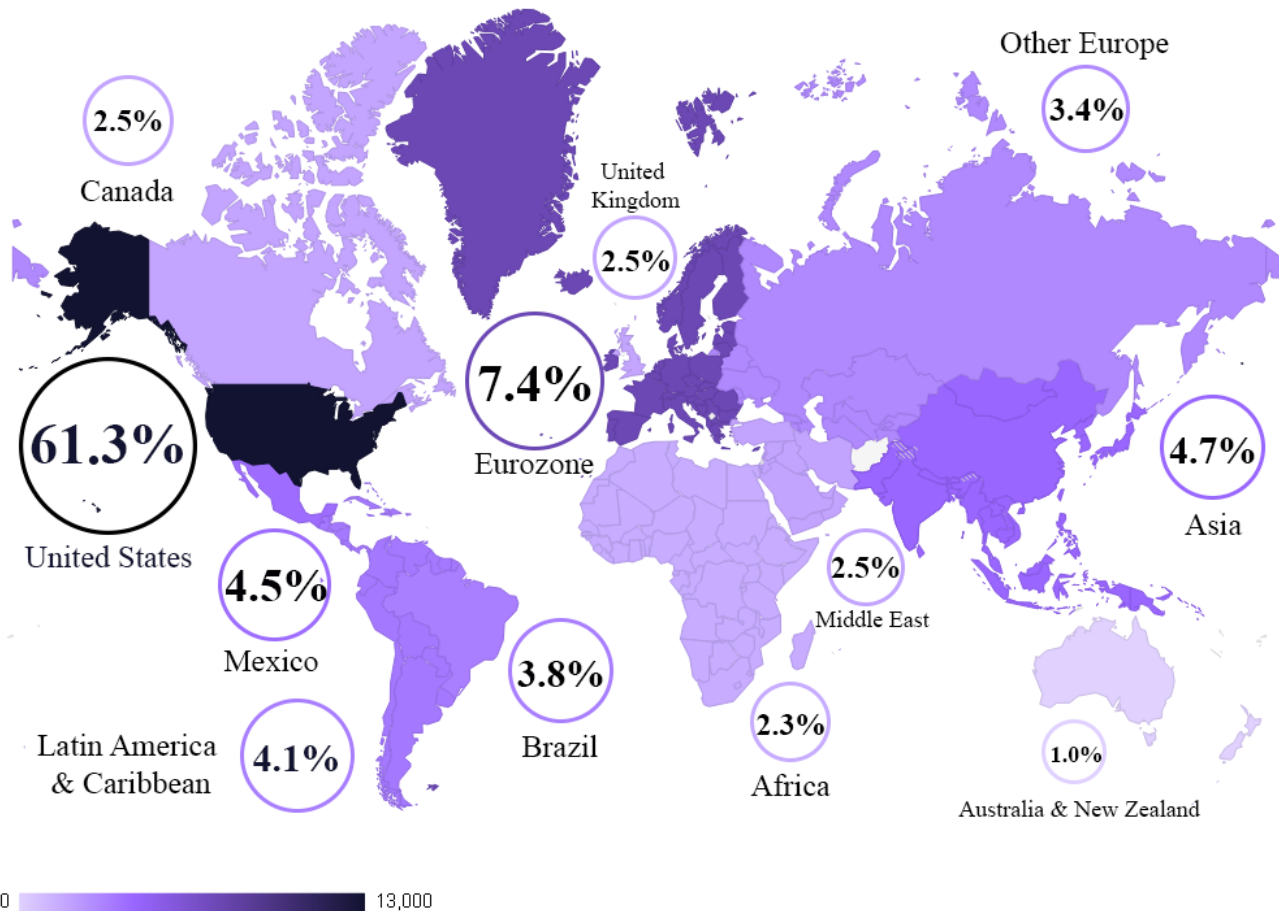
Share of Business Aircraft Fleet by Region

As of Q2 2016



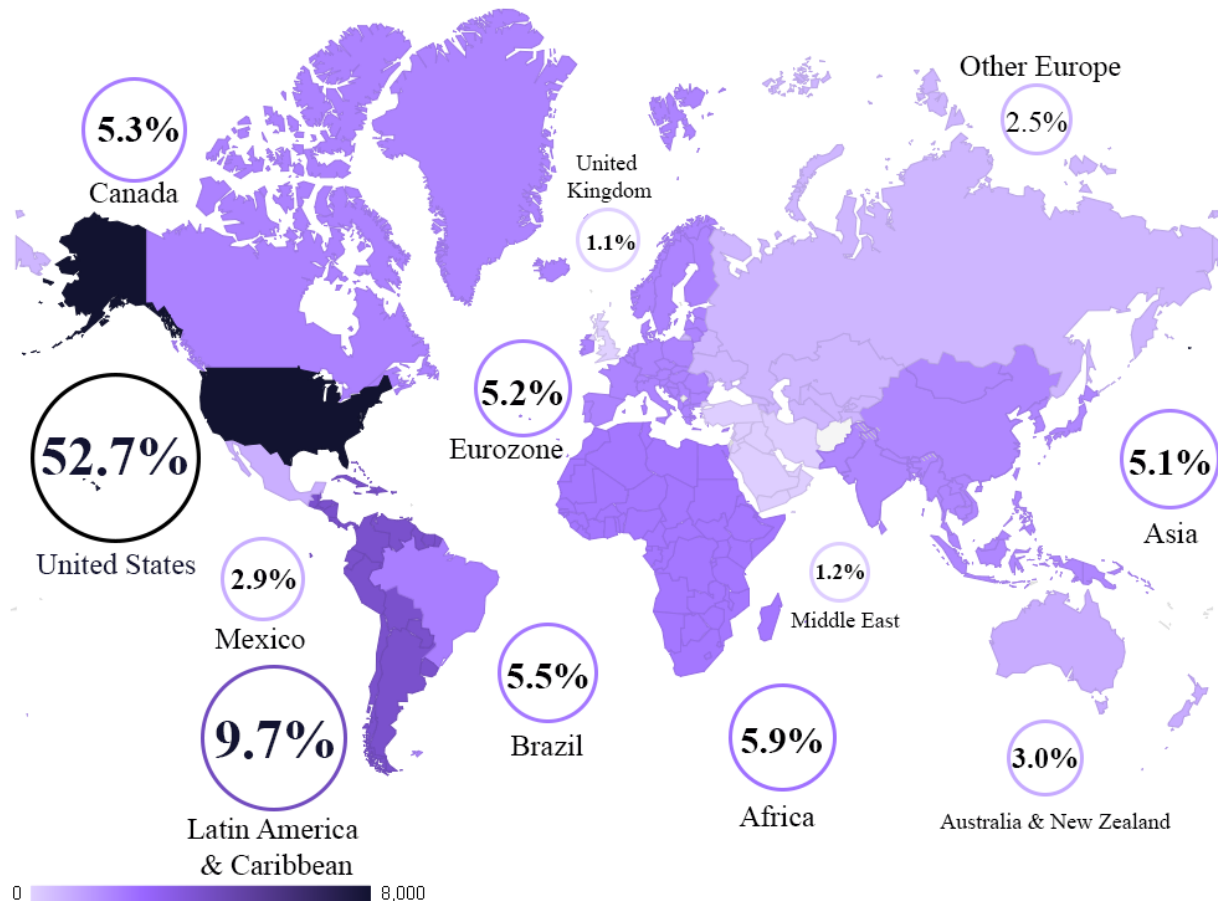
Business Jet Fleet by Region

Share of Business Jet Fleet by Region
As of Q2 2016



Turboprop Fleet by Region

Share of Turboprop Fleet by Region As of Q2 2016



Business Jet Fleet by Manufacturer

NORTH AMERICA OEM	Fleet as of Sep 30, 2016
Beechcraft	245
Bombardier	2,911
Cessna Citation	4,743
Dassault Falcon	1,347
Embraer	491
Gulfstream	1,790
Hawker	1,242
Other	623
Total	13,392

EUROPE OEM	Fleet as of Sep 30, 2016
Beechcraft	20
Bombardier	632
Cessna Citation	835
Dassault Falcon	448
Embraer	163
Gulfstream	198
Hawker	178
Other	95
Total	2,569

FORMER SOVIET UNION OEM	Fleet as of Sep 30, 2016
Beechcraft	-
Bombardier	69
Cessna Citation	25
Dassault Falcon	23
Embraer	22
Gulfstream	30
Hawker	36
Other	21
Total	226

MIDDLE EAST OEM	Fleet as of Sep 30, 2016
Beechcraft	3
Bombardier	115
Cessna Citation	58
Dassault Falcon	63
Embraer	43
Gulfstream	103
Hawker	63
Other	75
Total	523

LATIN AMERICA & CARIBBEAN OEM	Fleet as of Sep 30, 2016
Beechcraft	65
Bombardier	651
Cessna Citation	829
Dassault Falcon	136
Embraer	215
Gulfstream	215
Hawker	314
Other	171
Total	2,596

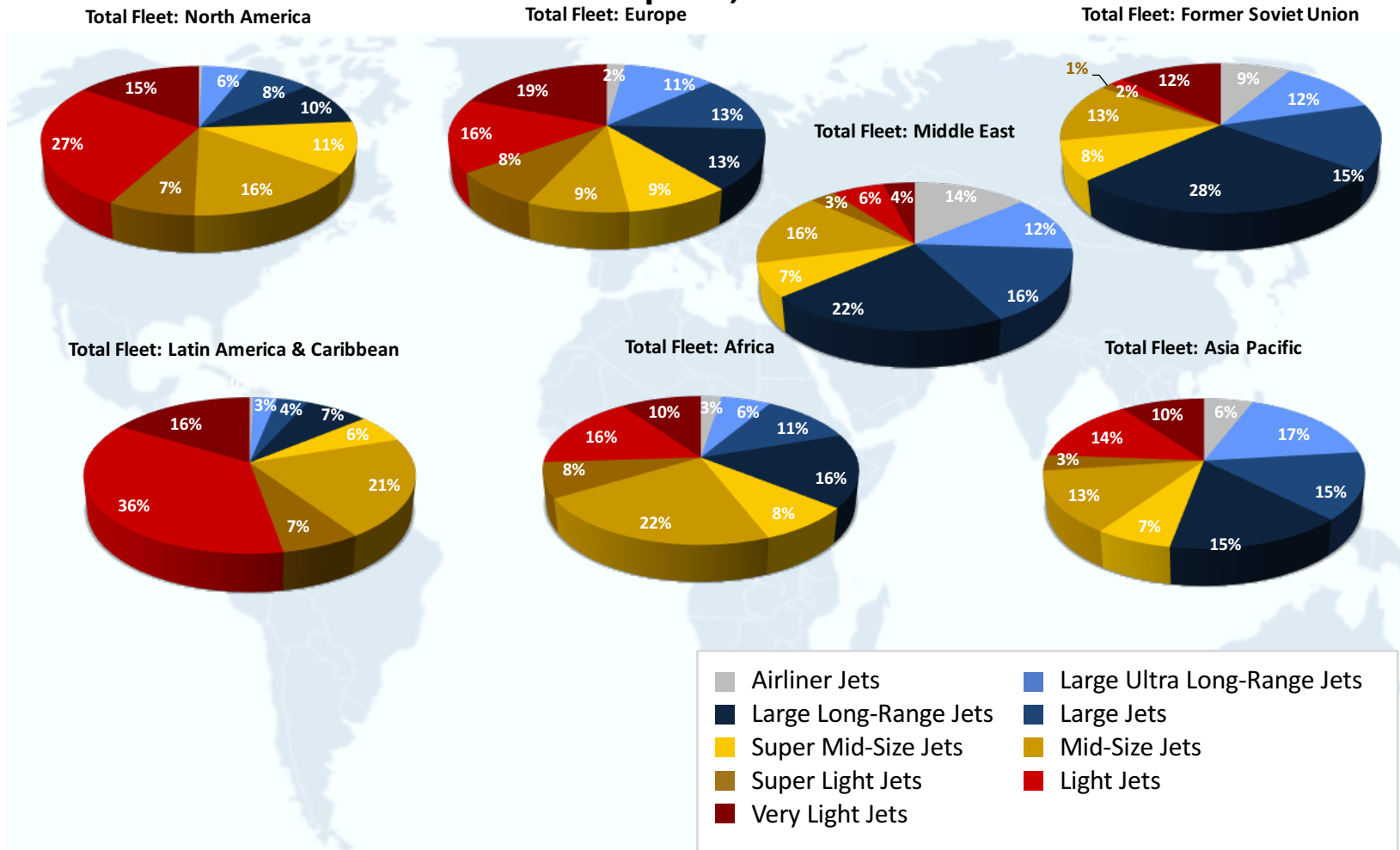
AFRICA OEM	Fleet as of Sep 30, 2016
Beechcraft	4
Bombardier	100
Cessna Citation	104
Dassault Falcon	69
Embraer	22
Gulfstream	61
Hawker	101
Other	20
Total	481

ASIA PACIFIC OEM	Fleet as of Sep 30, 2016
Beechcraft	10
Bombardier	281
Cessna Citation	227
Dassault Falcon	99
Embraer	80
Gulfstream	283
Hawker	130
Other	76
Total	1,186

World business jet fleet was 20,973 jets on September 30, 2016

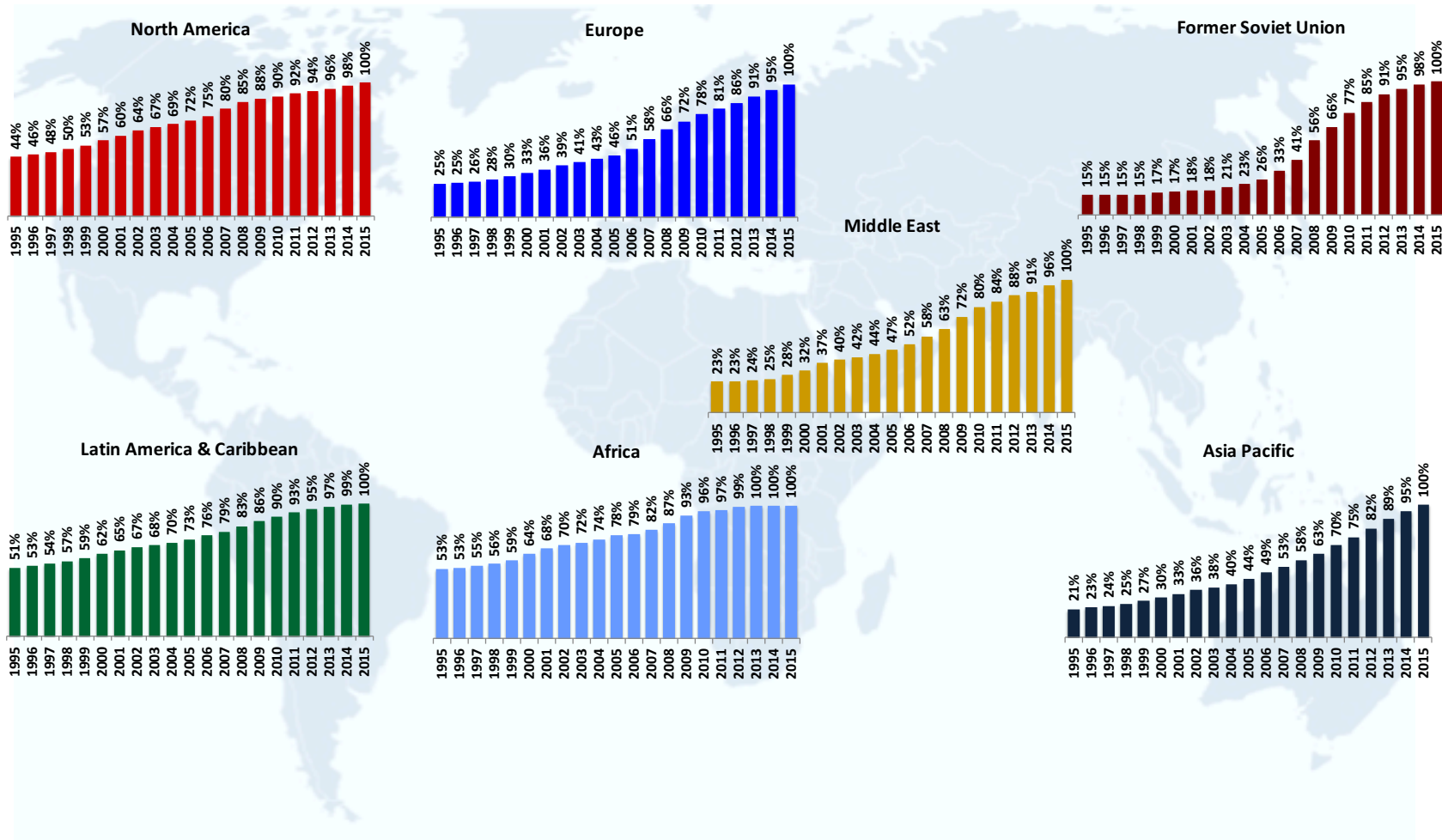
Business Jet Fleet by Size Category

Sept 30, 2016



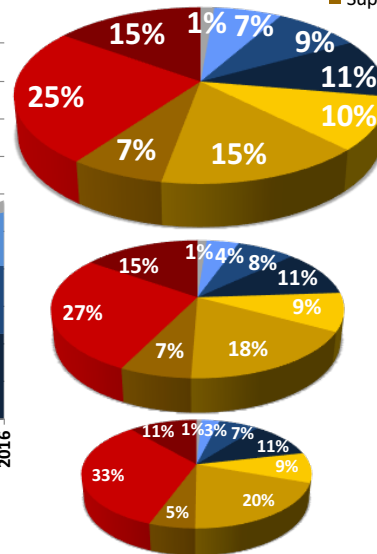
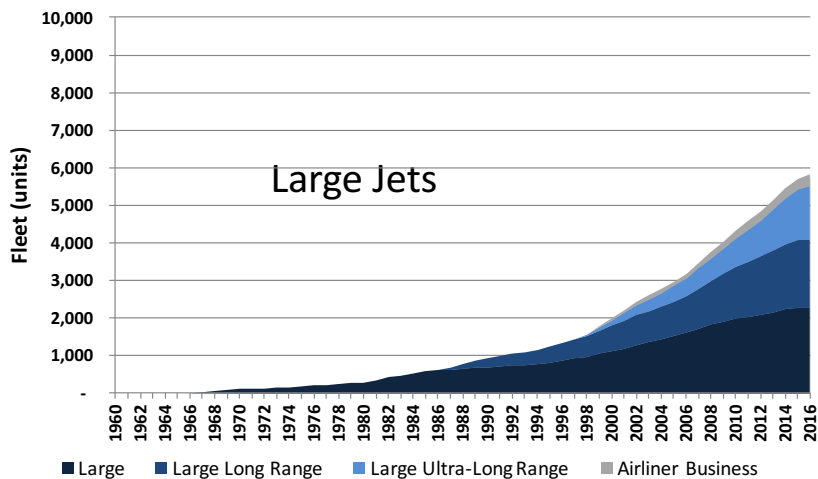
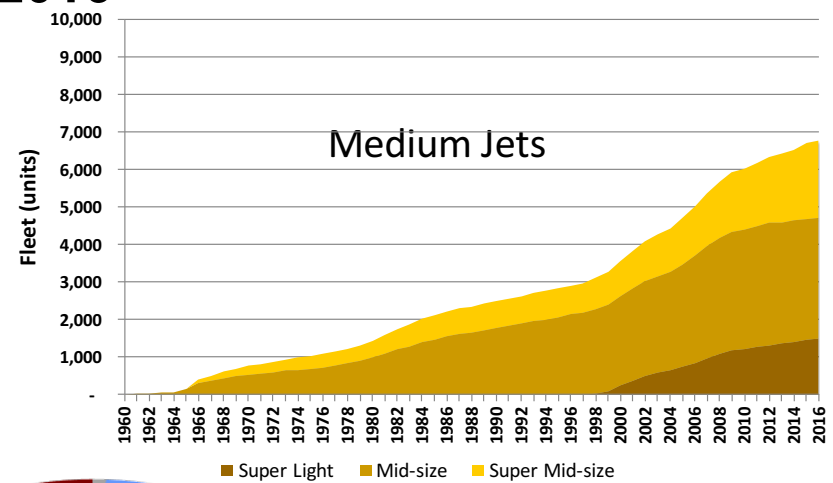
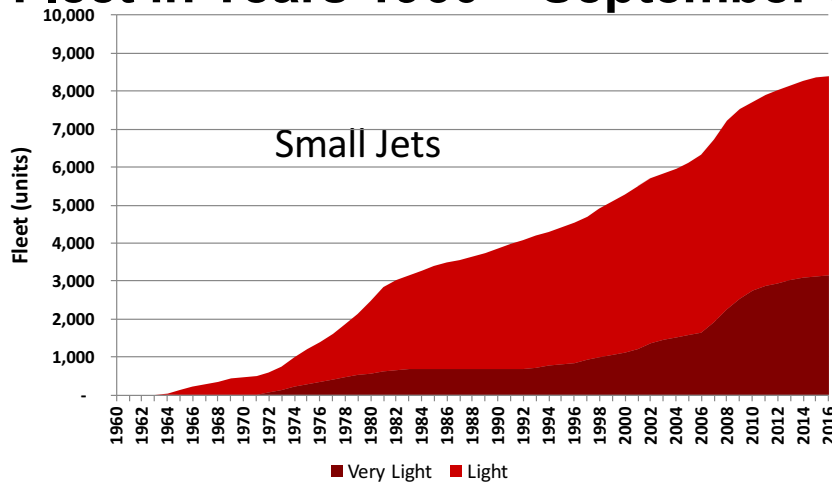
Business Jet Fleet Growth: 1996-2015

Fleet in Years 1996 to 2015 as a % of Year-End 2015 Fleet by Region



Business Jet Fleet by Size Category

Fleet in Years 1960 – September 30, 2016



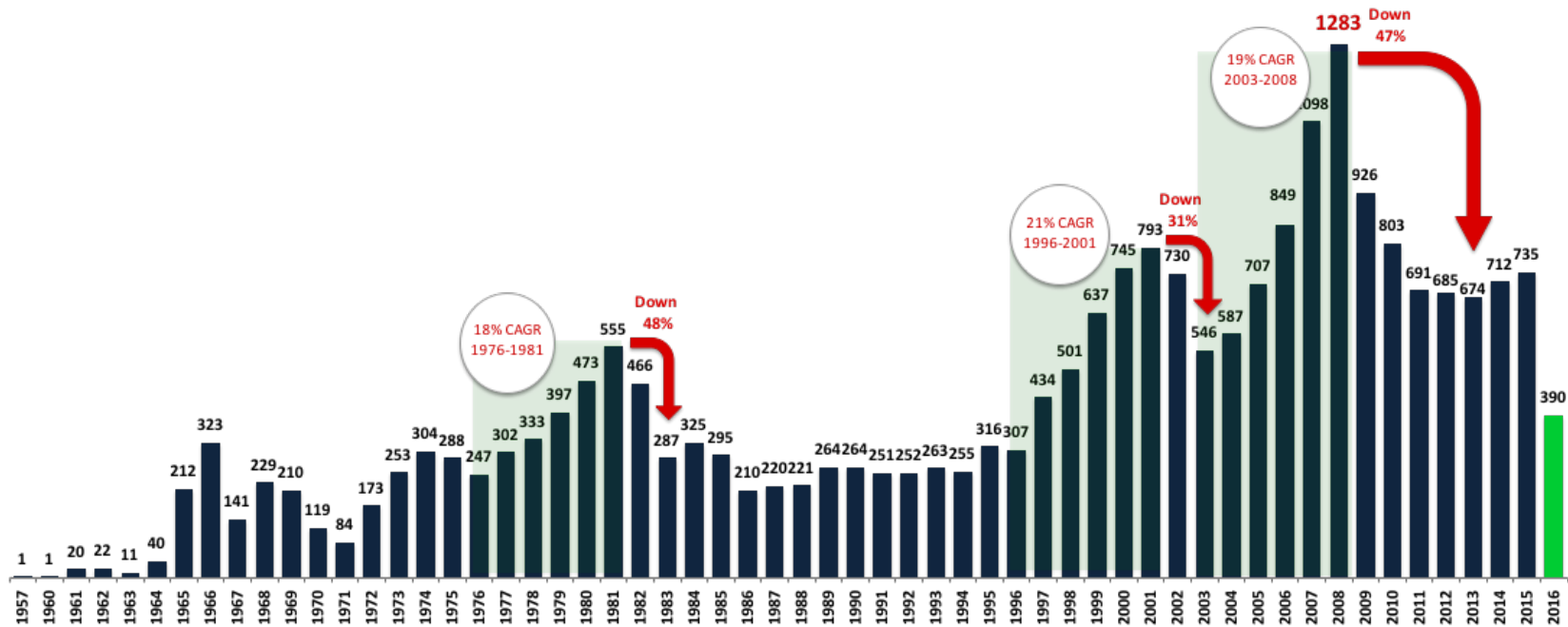
Business Jet Fleet as of Sept 30, 2016

By size category

Airliner Business	292
Large Ultra-Long Range	1,441
Large Long Range	1,827
Large Jets	2,248
Super Mid-size Jets	2,051
Mid-size Jets	3,232
Super Light Jets	1,486
Light Jets	5,236
Very Light Jets	3,160
Total	20,973

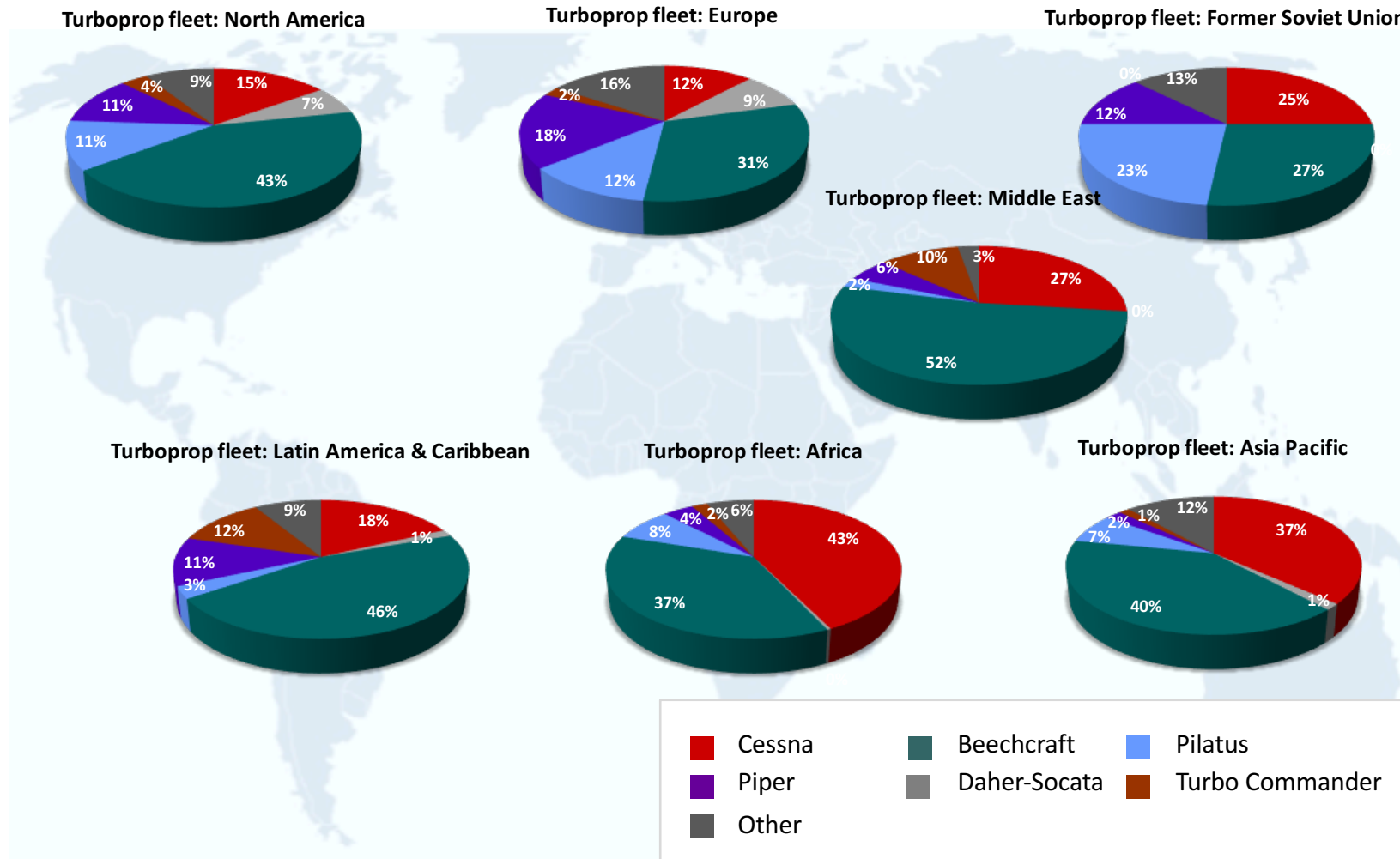
Business Jet Deliveries (units)

Business Jet Deliveries

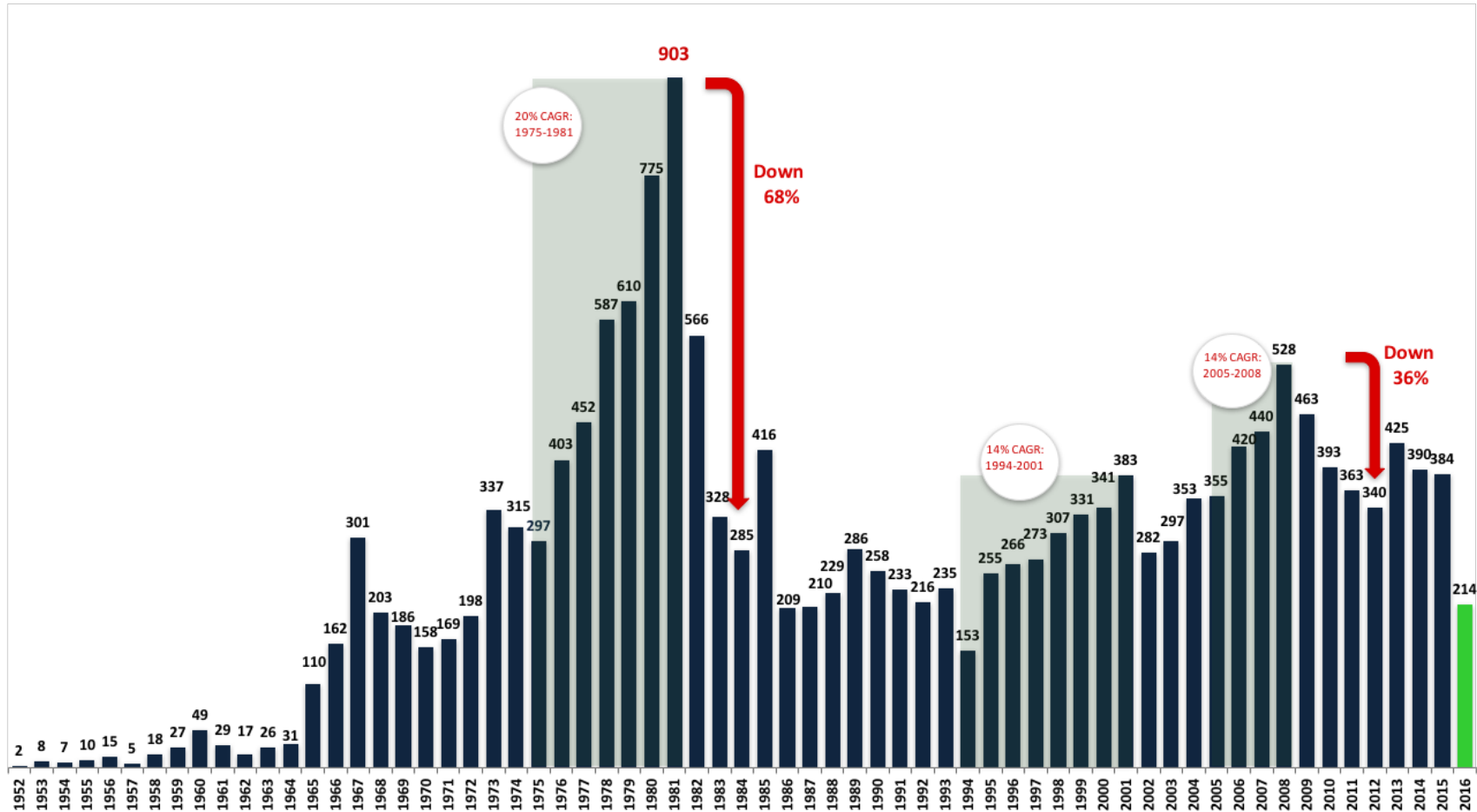


New business jet delivery units have remained relatively flat for 5 years;
 New business jet delivery value in 2015 was about \$22B based on equipped list prices

Business Turboprop Fleet by Manufacturer

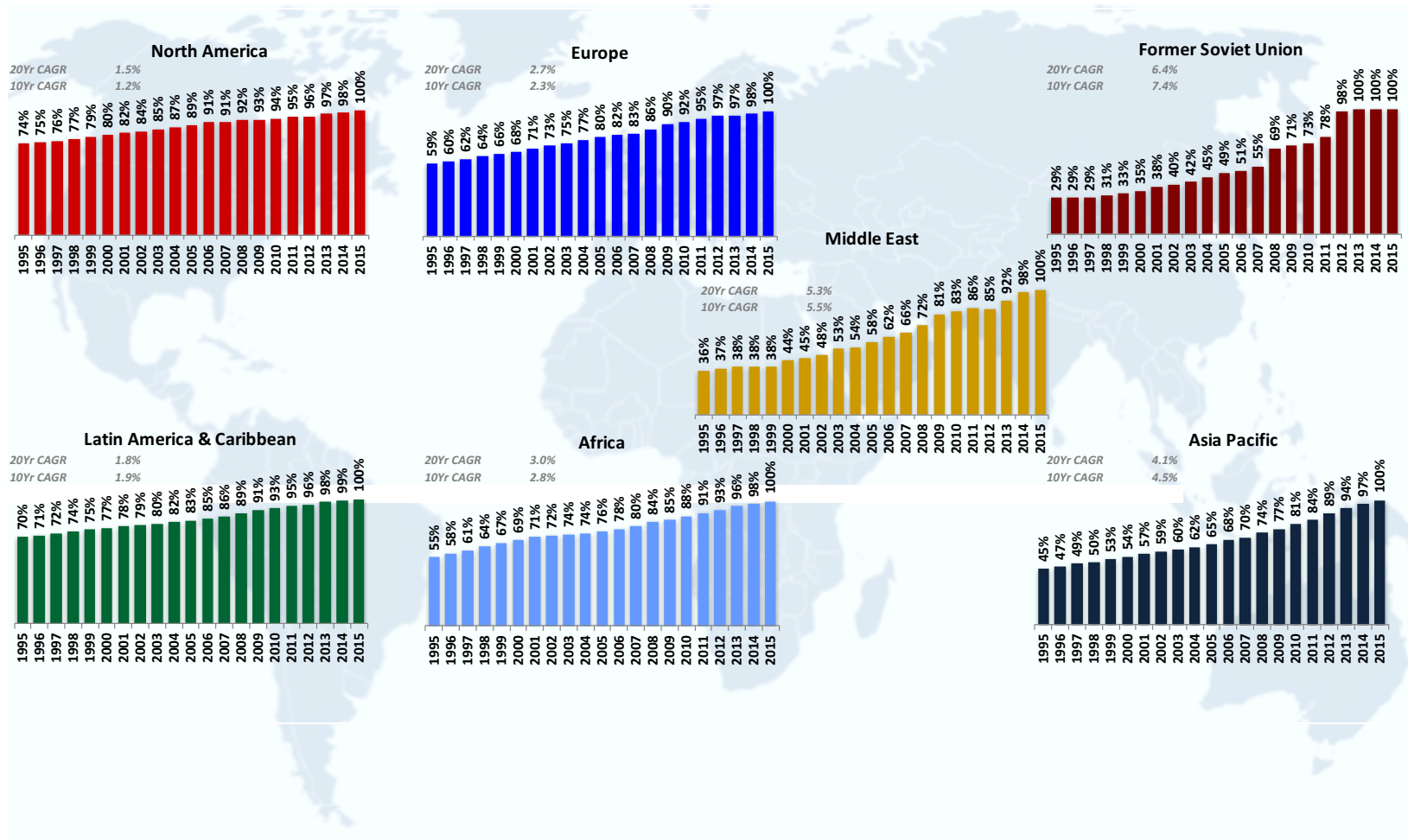


Business Turboprop Deliveries (units)



Business Turboprop Fleet Growth: 1996-2015

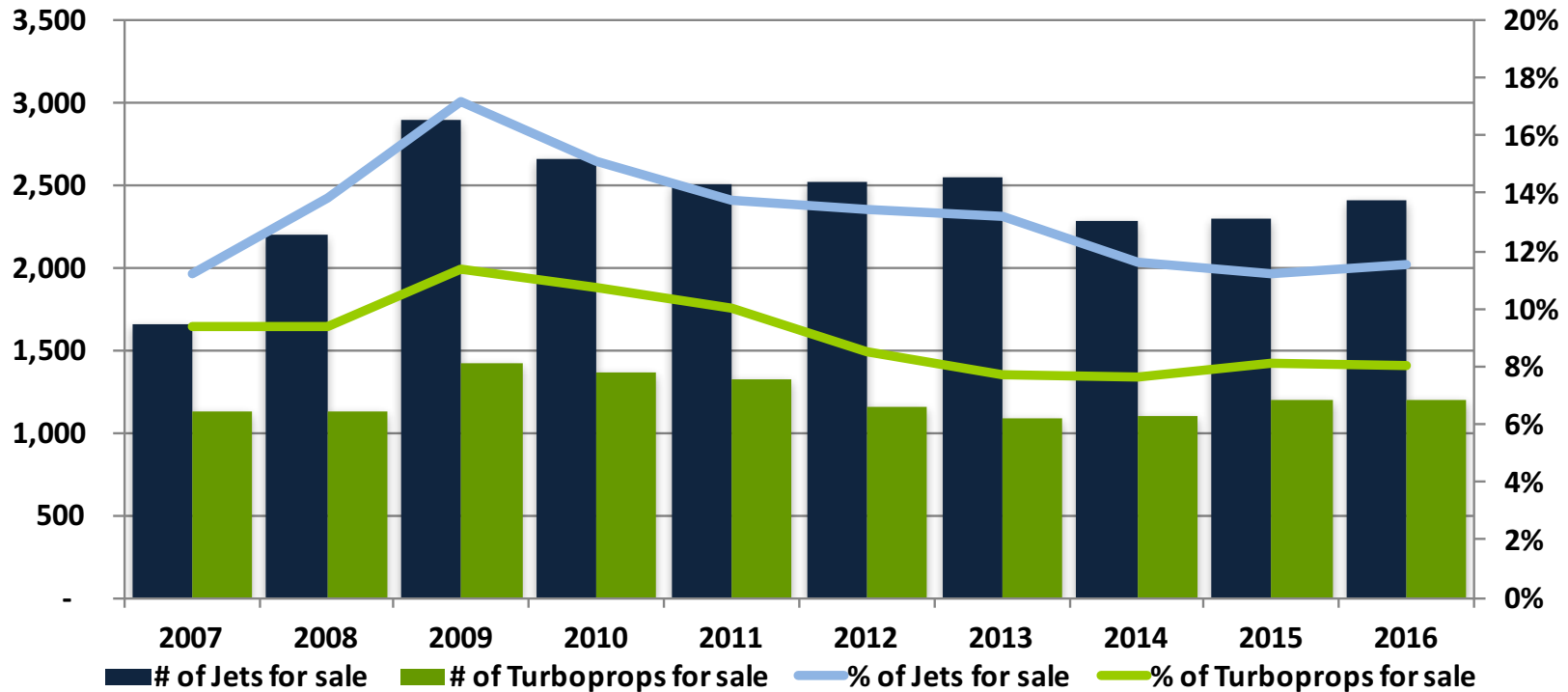
Fleet in Years 1996 to 2015 as a % of Year-End 2015 Fleet by Region



Pre-Owned Business Aircraft Inventory

Business Jets and Turboprops for sale

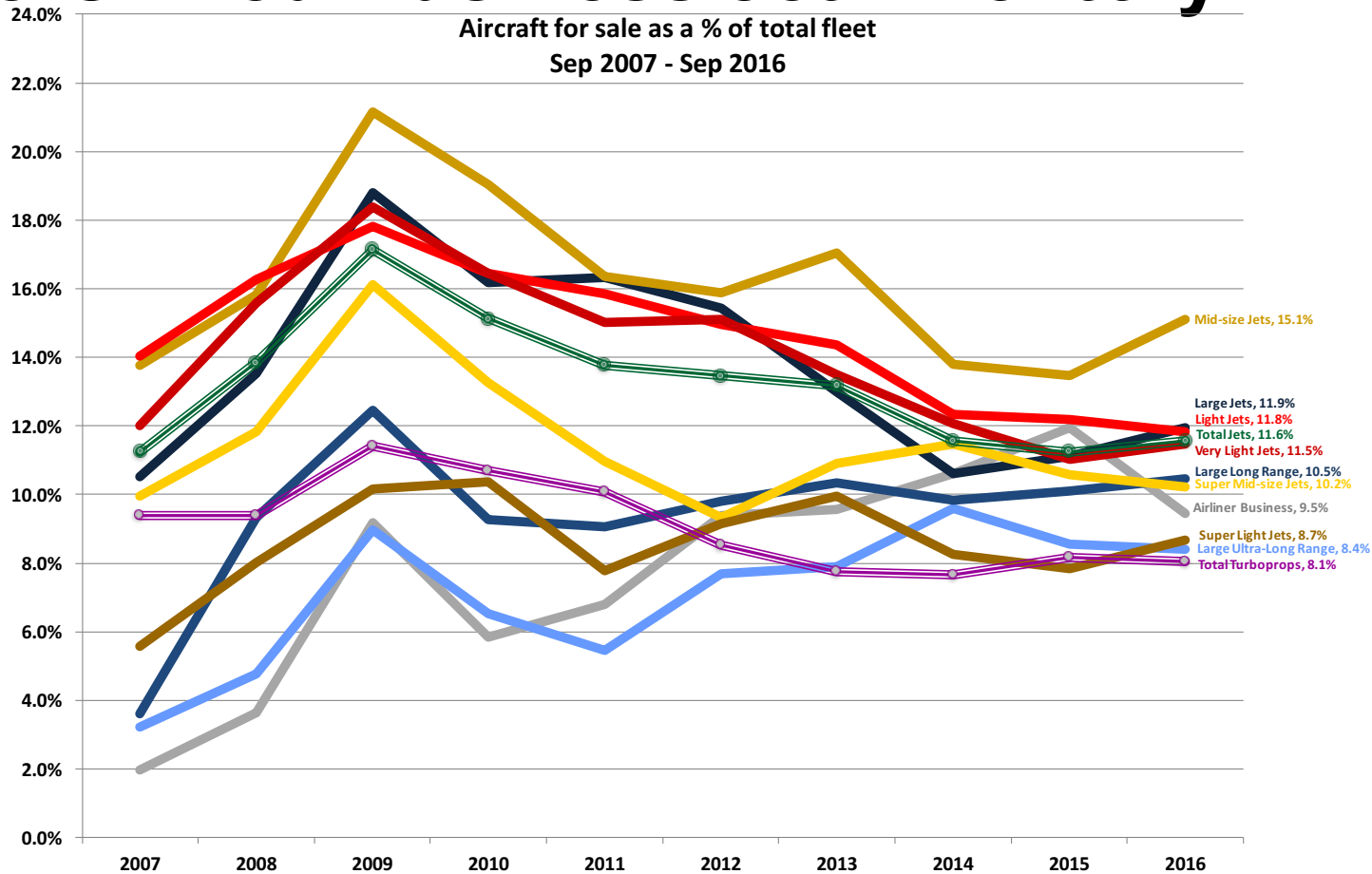
Sept 2007 - Sept 2016



		Aircraft Available for Sale as % of World Fleet (as of September 30)									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Business Jets		11.2%	13.8%	17.1%	15.1%	13.8%	13.5%	13.2%	11.6%	11.2%	11.6%
Turboprop		9.4%	9.4%	11.4%	10.7%	10.1%	8.5%	7.7%	7.7%	8.2%	8.3%

For-sale inventory of pre-owned business aircraft has increase over last year

Pre-Owned Business Jet Inventory

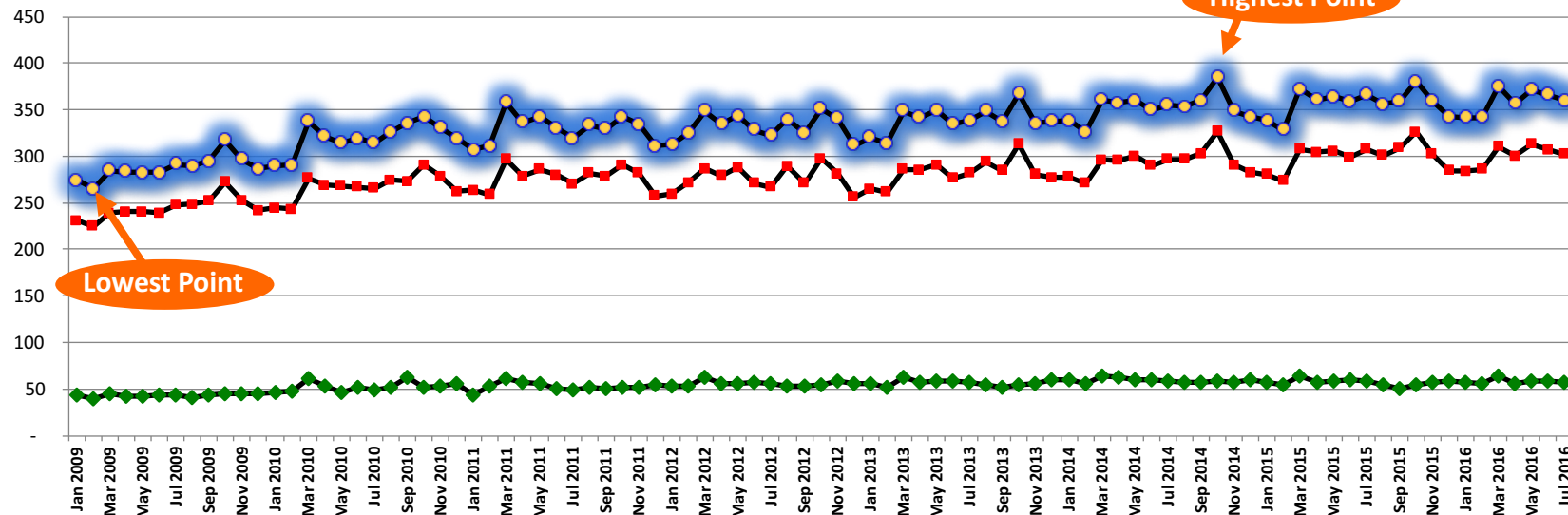


Pre-owned jet inventory levels in most size categories have mostly remained flat or begun to increase

U.S. Business Jet Utilization

FAA BUSINESS JET OPERATIONS - AUG 2016		Trailing 12 Months
TOTAL CYCLES		
Total Cycles	363,114	4,316,759
Change vs. prior month	0.9%	0.2%
Change vs. prior year	2.1%	0.9%
Change vs. 24 months ago	2.8%	3.3%
DOMESTIC CYCLES		
Total Domestic Cycles	309,590	3,633,784
Change vs. prior month	2.5%	0.2%
Change vs. prior year	2.8%	1.4%
Change vs. 24 months ago	4.4%	4.5%
INTERNATIONAL CYCLES		
Total International Cycles	53,524	682,976
Change vs. prior month	-7.2%	-0.2%
Change vs. prior year	-2.0%	-2.0%
Change vs. 24 months ago	-5.8%	-2.4%

Business Jet Operations recorded by FAA ('000 cycles/month)



Source: U.S. FAA

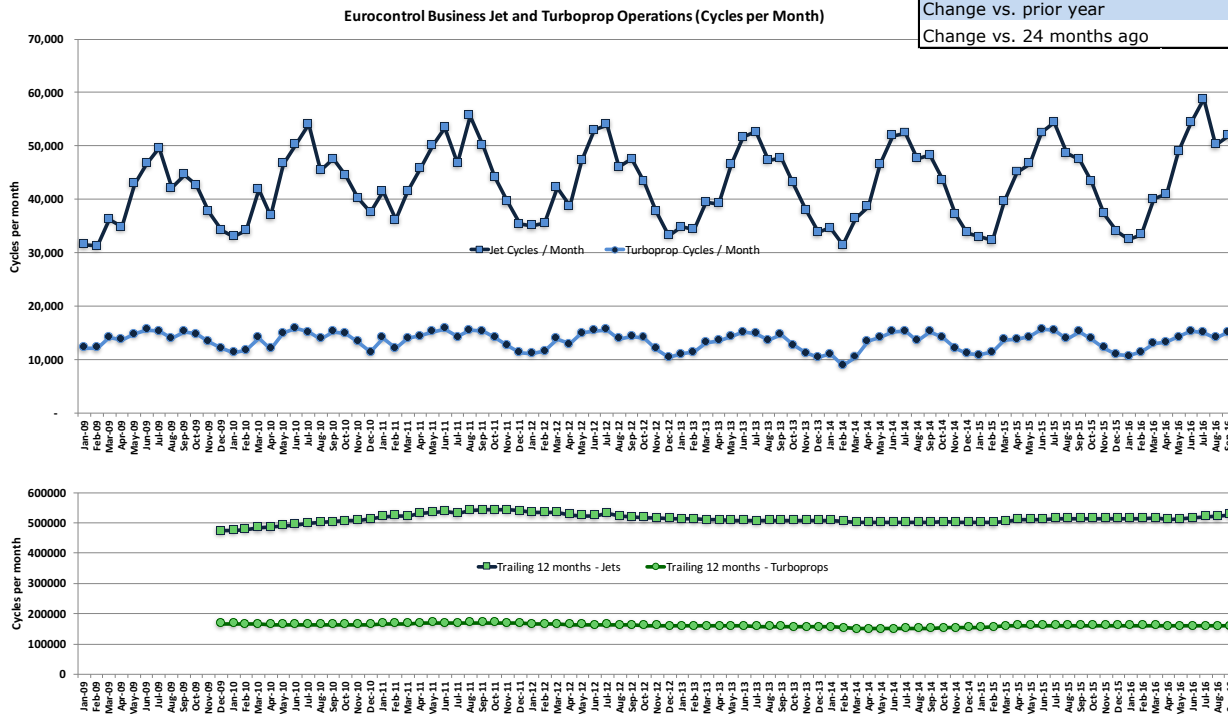
● Total
 ■ Domestic
 ◆ International

September 30, 2016

JETNET iQ Snap!: 3rd Quarter 2016 - Private & Confidential

European Business Aircraft Utilization

EUROCONTROL BUSINESS JET & TURBOPROP OPERATIONS - SEP 2016		Trailing 12 Months
BUSINESS JETS (EXCLUDING AIRLINERS)		
Total Cycles	51,908	525,698
Change vs. prior month	3.4%	0.9%
Change vs. prior year	9.3%	2.3%
Change vs. 24 months ago	7.7%	4.6%
TURBOPROPS		
Total Cycles	15,136	159,019
Change vs. prior month	8.0%	-0.1%
Change vs. prior year	-0.7%	-1.5%
Change vs. 24 months ago	-0.5%	4.9%

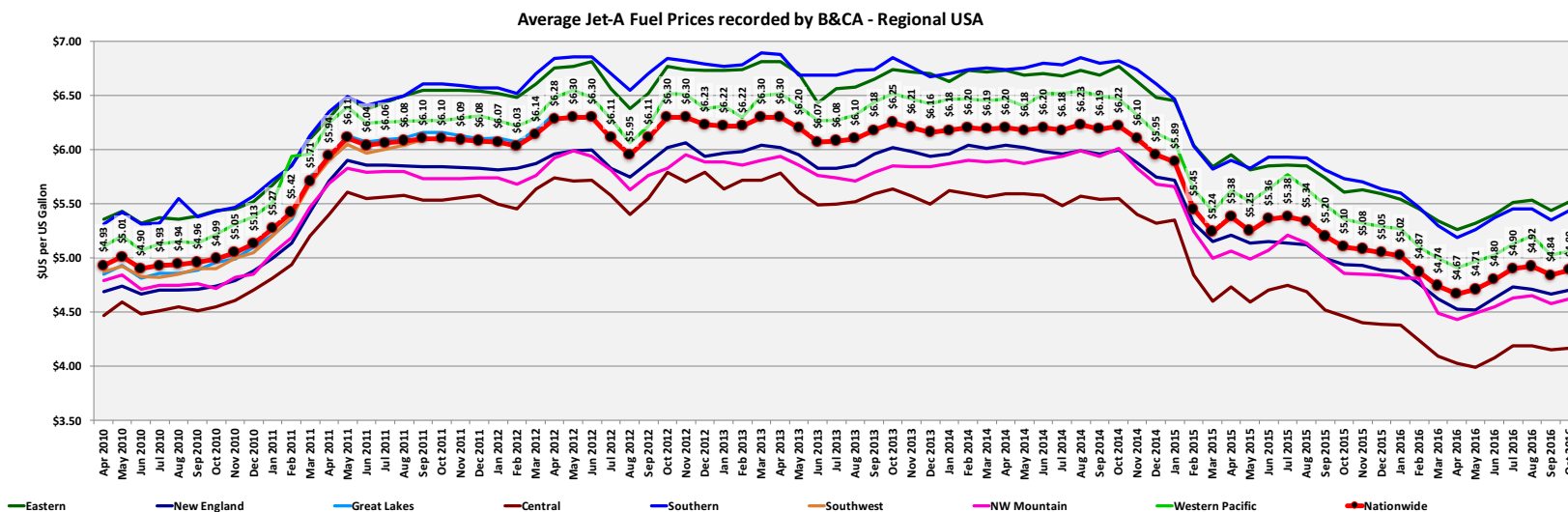


Source: Eurocontrol

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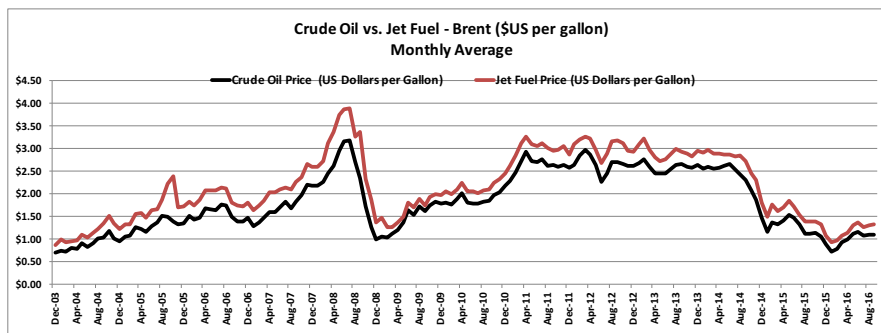
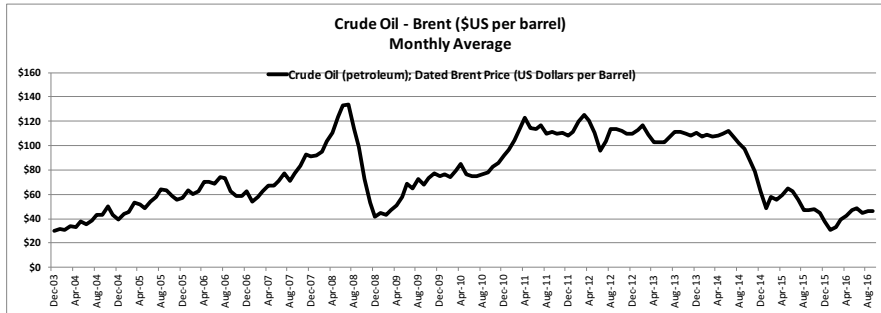
Jet-A Fuel Prices at U.S. FBOs



Source: [Business & Commercial Aviation](#)

Jet-A fuel prices in September 2016 are averaging about \$4.89 at U.S. FBOs, down from \$5.10 year-over-year

Crude Oil and Jet Fuel Prices



IATA Fuel Price Monitor	Share in	Index Value	vs. 1 week	vs. 1 month			
Oct 14 2016)	World Index	2000= 100	ago	ago	vs.1 yr ago		
	\$/US gallon	\$/barrel					
Jet Fuel Price	100%	\$ 1.471	\$ 61.80	168.90	-0.8%	12.5%	4.5%
Asia & Oceania	22%	\$ 1.486	\$ 62.40	178.30	0.2%	11.9%	6.0%
Europe & CIS	28%	\$ 1.459	\$ 61.30	165.10	-1.0%	12.2%	3.0%
Middle East & Africa	7%	\$ 1.434	\$ 60.20	179.90	-0.6%	12.3%	6.2%
North America	39%	\$ 1.471	\$ 61.80	164.30	-1.2%	12.8%	4.1%
Latin & Central America	4%	\$ 1.538	\$ 64.60	179.00	-1.6%	14.2%	6.6%

Global average price paid at the refinery for aviation jet fuel - IATA

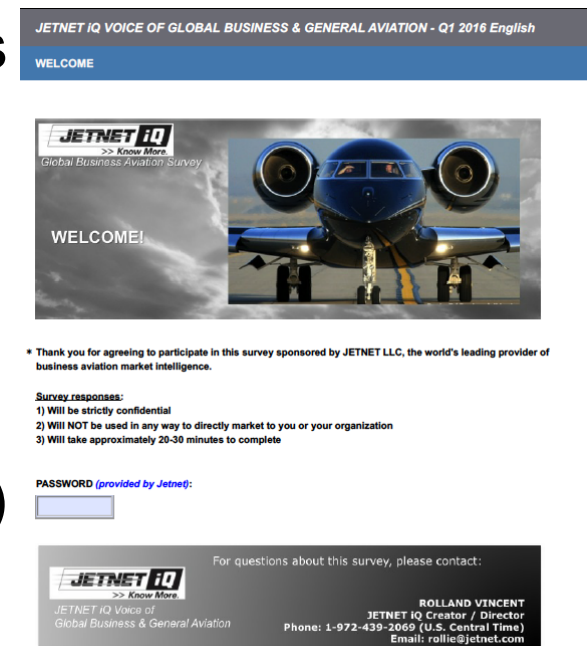
Source: IndexMundi; IATA from PLATTS

September 30, 2016

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JETNET iQ Quarterly Surveys

- Multilingual owner / operator surveys
 - Utilization patterns and expectations
 - Brand perceptions
 - Purchase criteria / inhibitors
 - Purchase / selling intentions
 - New product preferences
- Special topics of interest (examples)
 - New products
 - The environment
 - Mood of the market



JETNET iQ VOICE OF GLOBAL BUSINESS & GENERAL AVIATION - Q1 2016 English

WELCOME

WELCOME!

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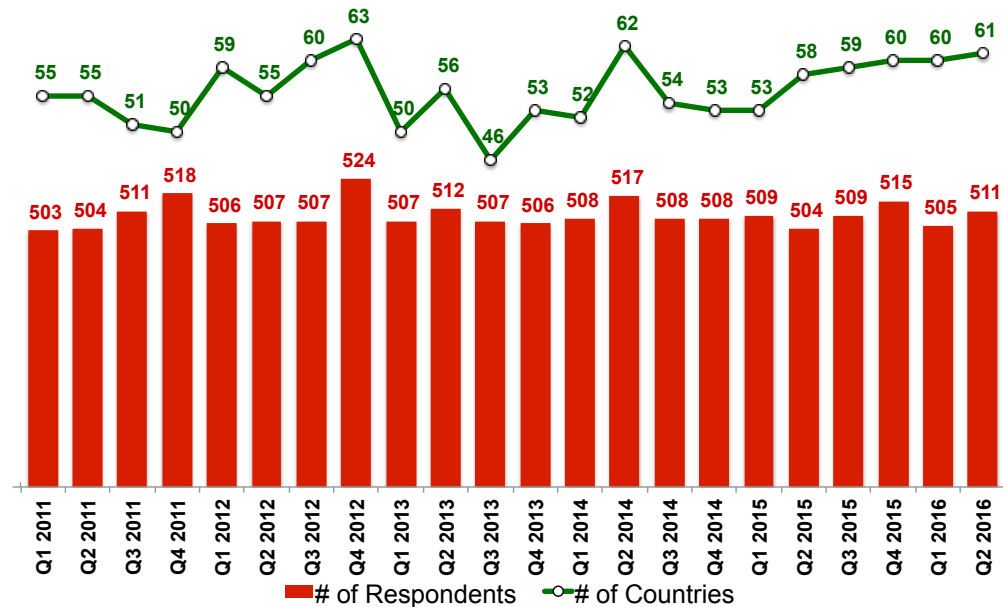
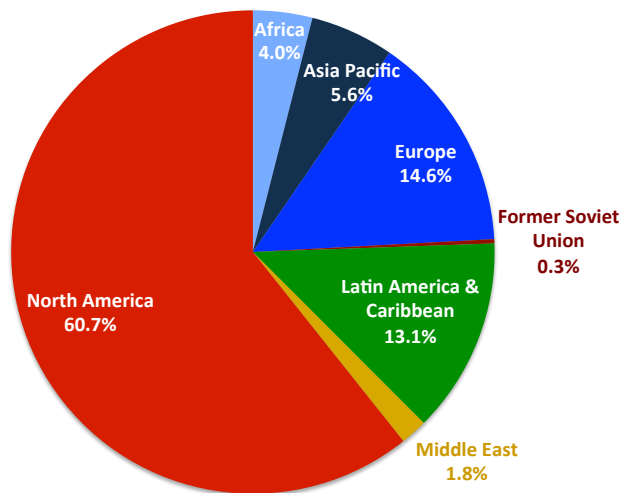
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JETNET iQ Creator / Director
Phone: 1-972-439-2069 (U.S. Central Time)
Email: rollie@jetnet.com

JETNET iQ Surveys: Quarterly, multilingual, worldwide

JETNET iQ Survey Respondents

Respondent Fleet Location Q1 2011 - Q2 2016



	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Total
# of Respondents	503	504	511	518	506	507	507	524	507	512	507	506	508	517	508	508	509	504	509	515	505	511	11,206
# of Countries	55	55	51	50	59	55	60	63	50	56	46	53	52	62	54	53	53	58	59	60	60	61	129

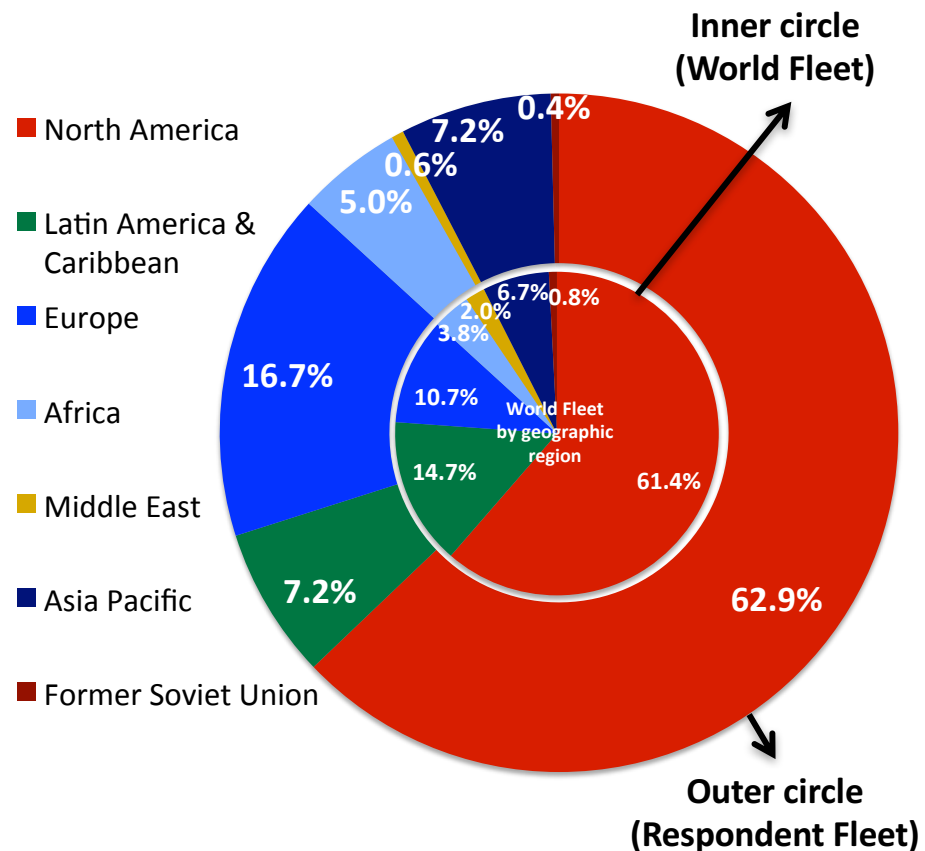
JETNET iQ Surveys: Since Q1 2011, >11,000 respondents from 129 countries

Survey Respondents' Location

By Aircraft Base Location

Q3 2016 Survey

RESPONDENT COUNTRIES FROM Q3 2016 SURVEY			
COUNTRIES/TERRITORIES	# of respondents		# of respondents
ARGENTINA	3	MEXICO	7
AUSTRALIA	10	MOROCCO	1
AUSTRIA	8	NAMIBIA	1
AZERBAIJAN	1	NETHERLANDS	3
BAHAMAS	1	NEW ZEALAND	1
BANGLADESH	1	PAKISTAN	1
BARBADOS	1	PAPUA NEW GUINEA	1
BELGIUM	3	POLAND	2
BOTSWANA	1	QATAR	1
BRAZIL	20	SAUDI ARABIA	1
CAMEROON	1	SINGAPORE	1
CANADA	14	SLOVENIA	1
COLOMBIA	2	SOUTH AFRICA	13
COSTA RICA	1	SWEDEN	2
CROATIA	1	SWITZERLAND	9
CYPRUS	1	TANZANIA	1
CZECH REPUBLIC	1	THAILAND	1
DENMARK	1	TURKEY	4
DOMINICAN REPUBLIC	1	UNITED ARAB EMIRATES	2
ECUADOR	1	UNITED KINGDOM	7
FINLAND	1	UNITED STATES	338
FRANCE	4	VENEZUELA	1
GERMANY	8	ZAMBIA	2
GUATEMALA	2	ZIMBABWE	2
HONG KONG	1		
INDIA	6	Total # of respondents	513
INDONESIA	2	Total # of countries	61
IRELAND	2		
ITALY	3	Africa	23
JAMAICA	1	Asia Pacific	27
JAPAN	1	Europe	59
JORDAN	1	Former Soviet Union	2
KAZAKHSTAN	1	Latin America & Caribbean	41
LIBYA	1	Middle East	9
MALDIVE ISLANDS	1	North America	352
MALTA	2	Total	513



Survey Respondents' Roles

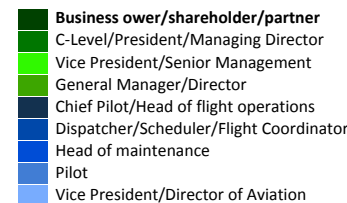
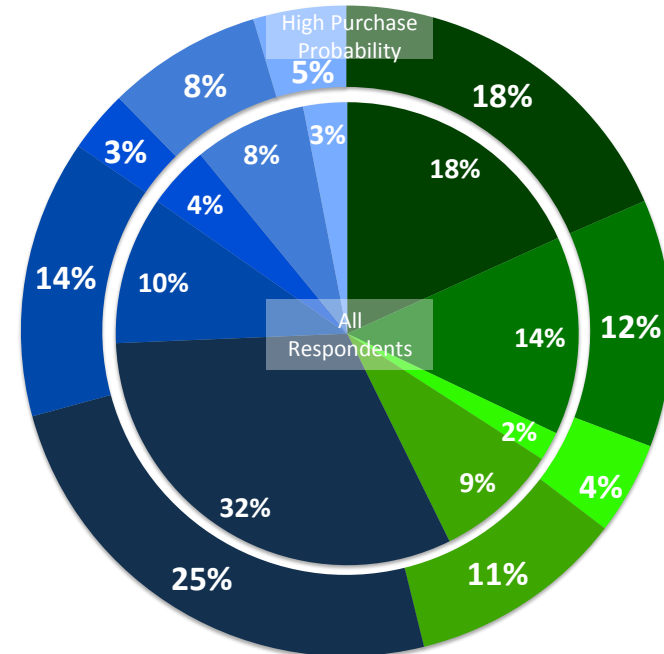
By Job Title

Q3 2016 Survey

Title of respondent	Completed
Business owner/shareholder/partner	125
C-Level/President/Managing Director	95
Vice President / Senior Management	14
General Manager / Director	59
Chief Pilot / head of flight operations	217
Dispatcher / Scheduler / Flight Coordinator	71
Head of maintenance	30
Pilot	54
Vice President / Director of Aviation	21
Total	686

Note: Respondent was able to chose whichever applied

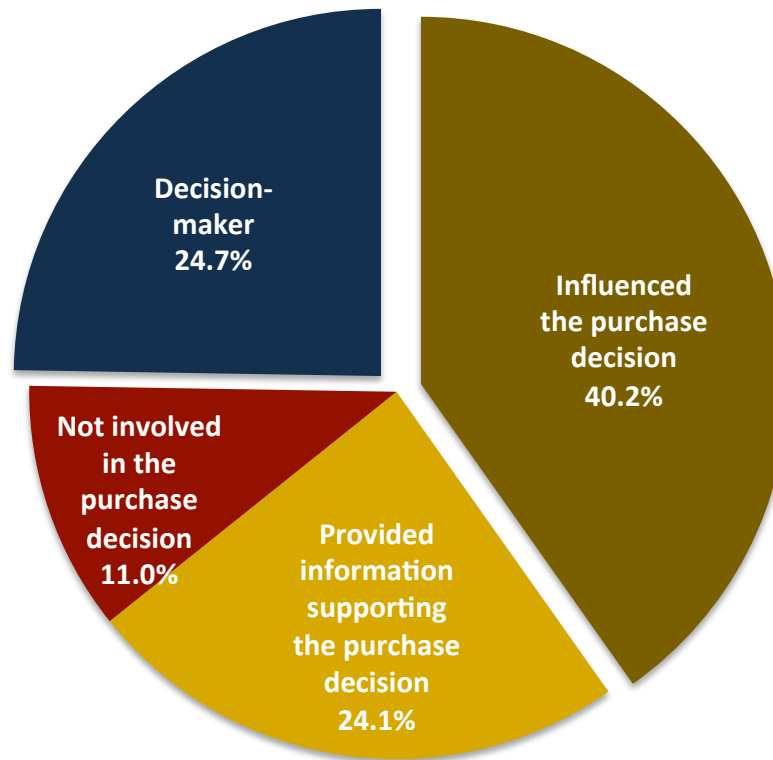
Aviation Professionals	393	57%
Senior Management / General Manager	293	43%



Survey Respondents' Roles

By Involvement in Last Fixed-Wing Turbine Aircraft Purchase

Q3 2016 Survey

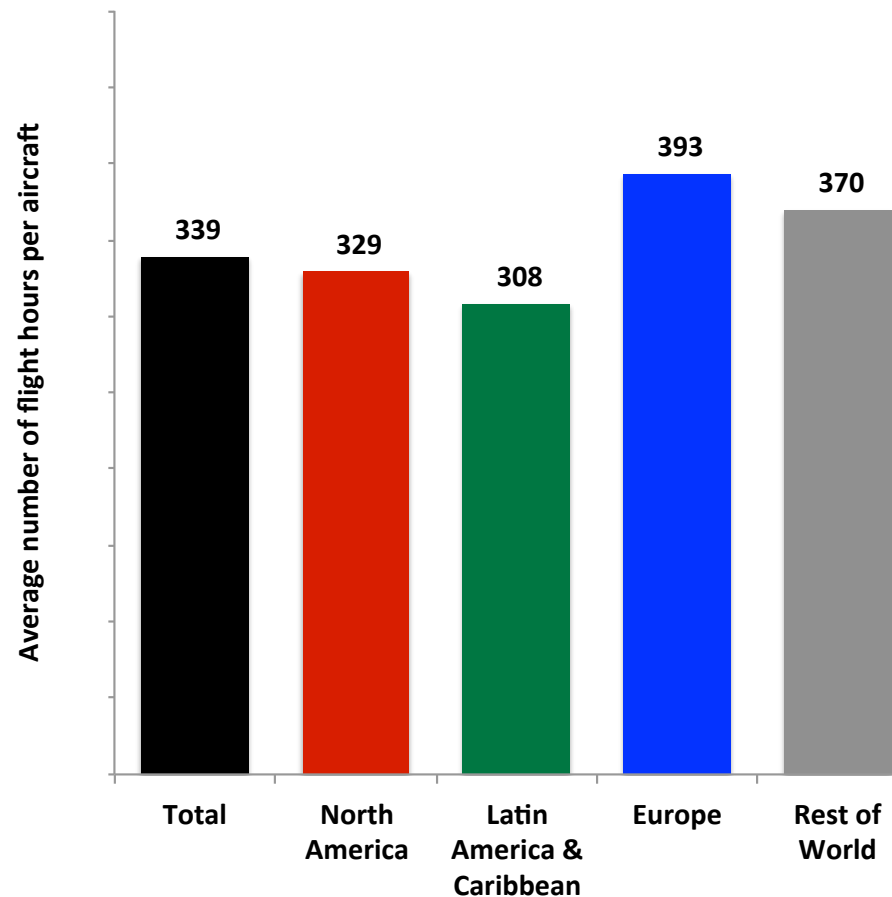


Survey Respondents' Flight Operations

Regional Average Utilization per Aircraft in Prior 12 Months

Average flight hours per year

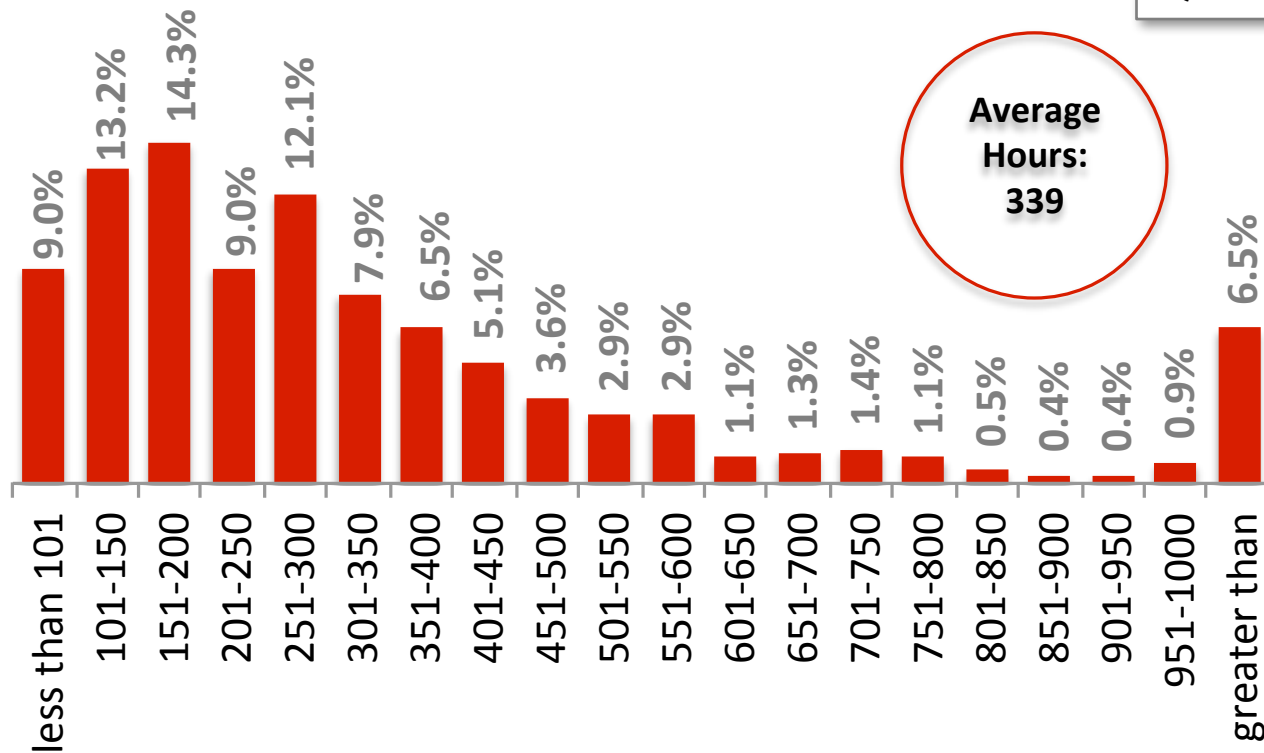
Q3 2016 Survey



Survey Respondents' Flight Operations

Last 12 Months – Worldwide (Fixed-Wing Business Jets and Turboprops Only)
Annual Flight Hours Per Aircraft

Q3 2016 Survey

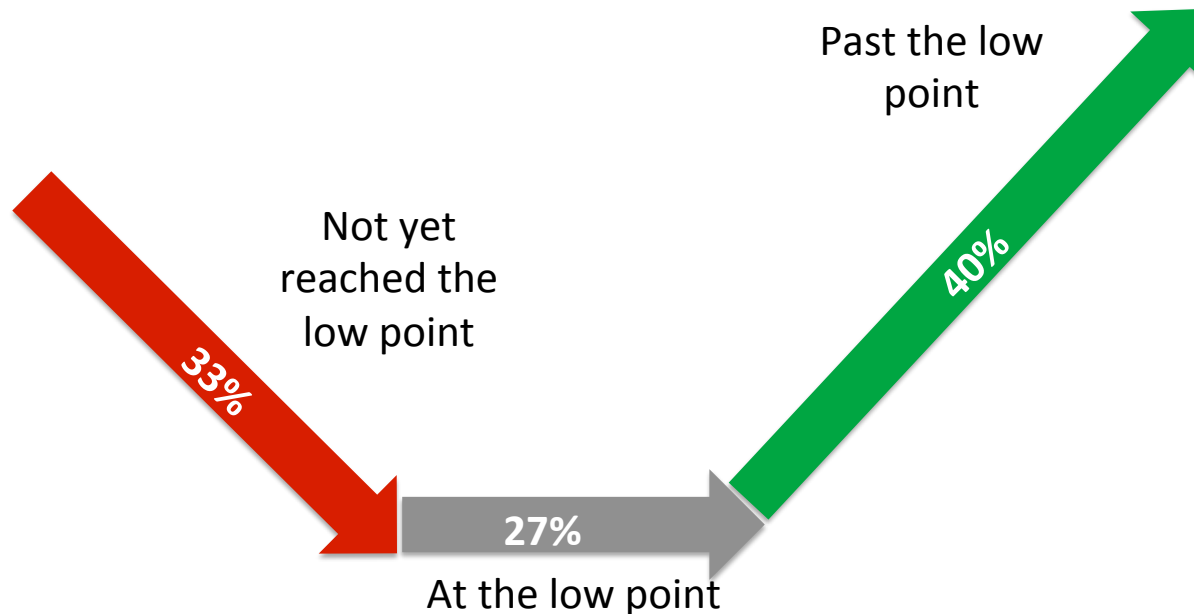


Survey Respondents' Sentiment

Current Market Sentiment

Q3 2016 Survey

Where is the Business Aviation Industry
In the Current Business Cycle?

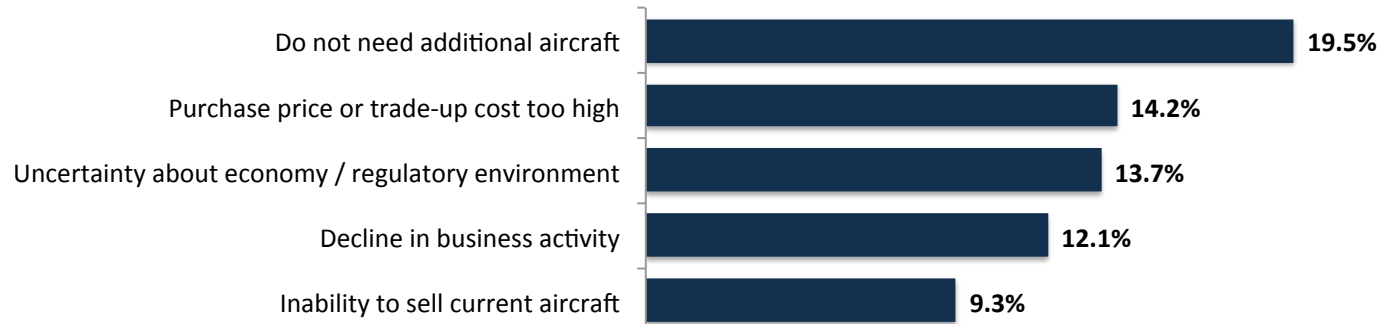


Aircraft Purchase Inhibitors

Top 5 Inhibitors – Weighted Average

Q3 2016 Survey

Purchase inhibitors

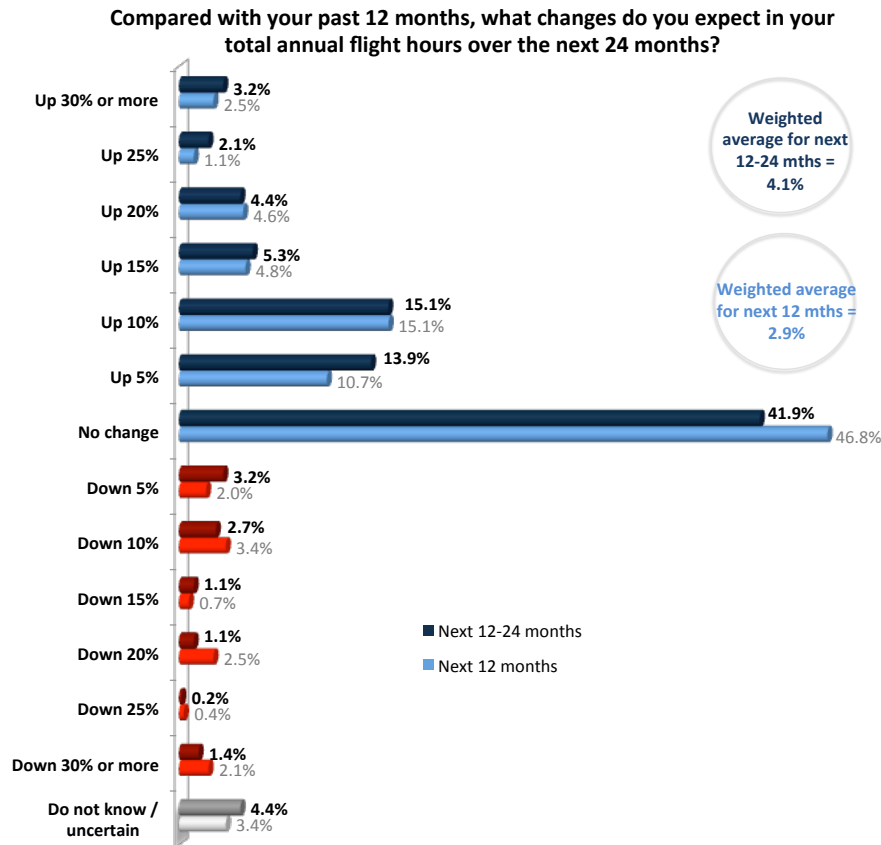


“Which of the following factors are most likely to prevent or delay your organization from purchasing a business aircraft over the next 12 months?”

Aircraft Utilization

Next 12 and 12-24 Months versus Prior 12 Months

Q3 2016 Survey



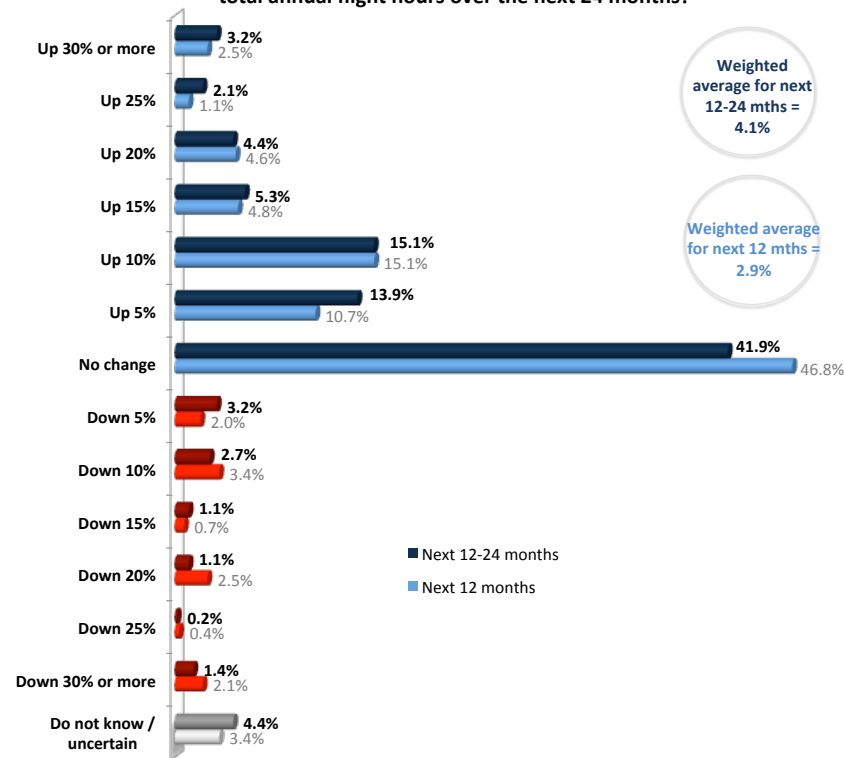
Respondents expect to fly 2.9% more hours in the next 12 months vs. prior 12 months and 4.1% in the next 24 months

Aircraft Utilization

Next 12 and 12-24 Months versus Prior 12 Months

Q3 2016 Survey

Compared with your past 12 months, what changes do you expect in your total annual flight hours over the next 24 months?

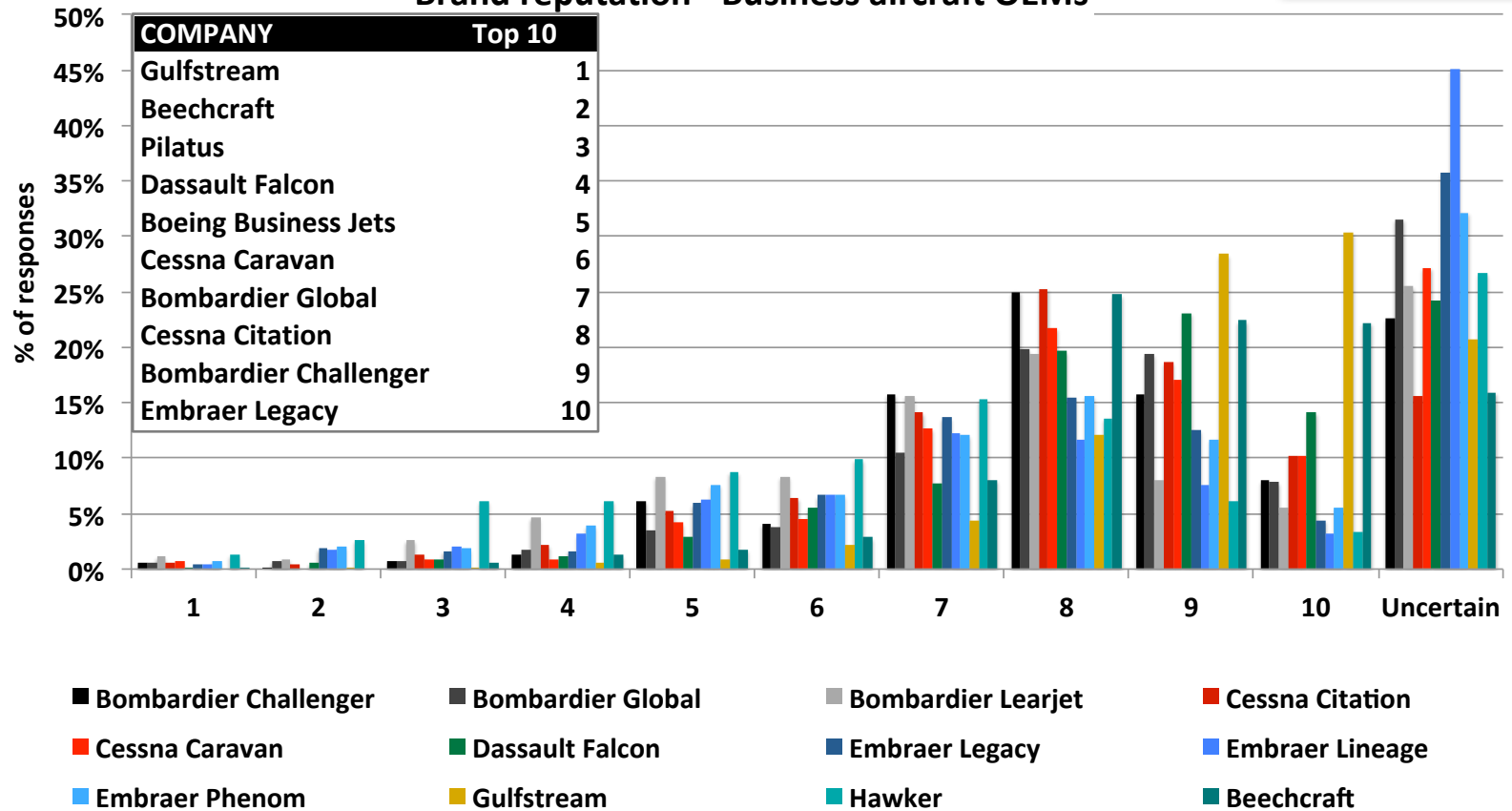


Respondents expect to fly 2.9% more hours in the next 12 months vs. prior 12 months

Brand Reputations

Aircraft Manufacturers on a 1-10 Scale, where “10” = Highest
Brand reputation - Business aircraft OEMs

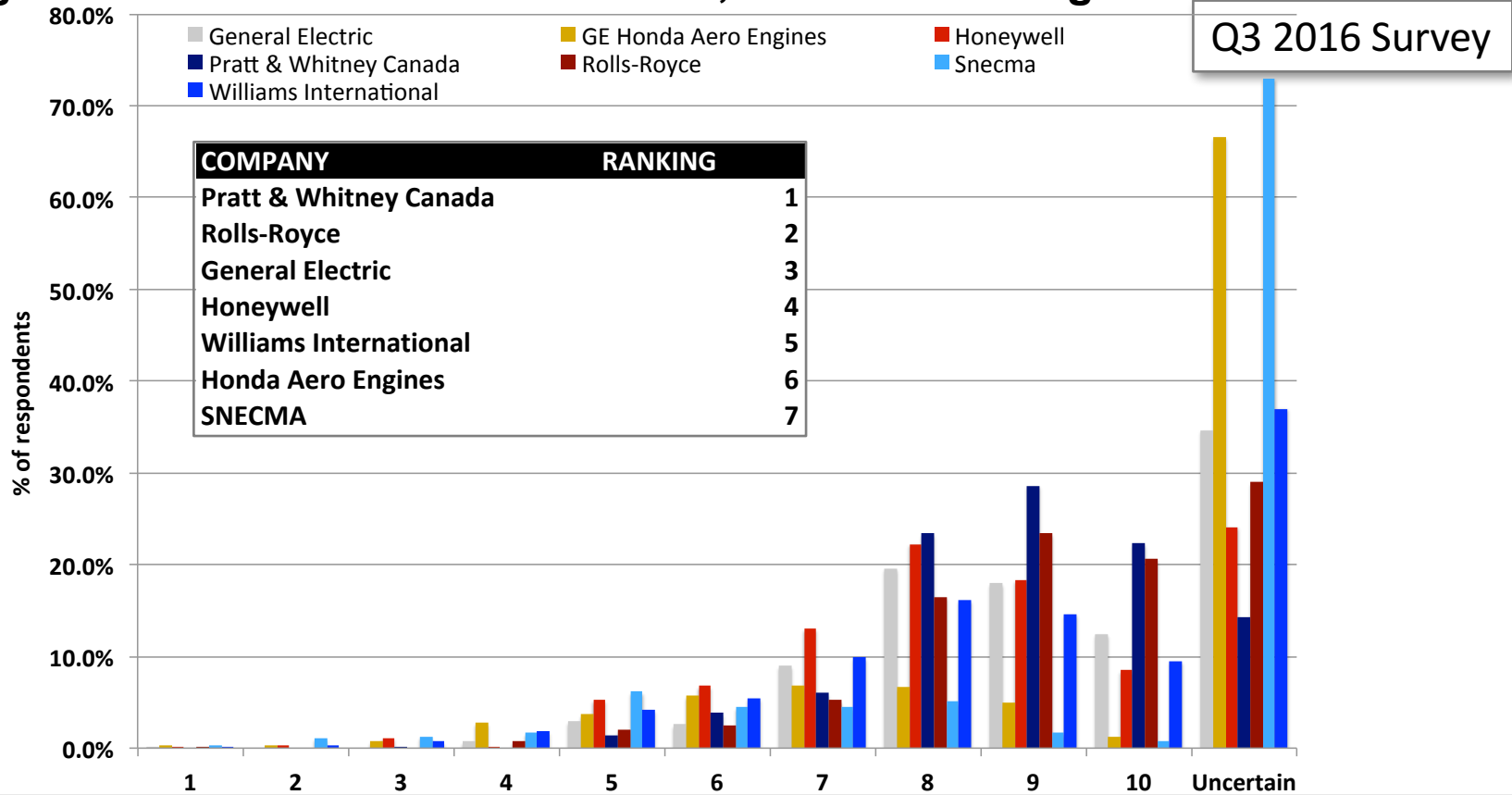
Q3 2016 Survey



Gulfstream, Beechcraft and Pilatus are the top rated business aircraft brands

Brand Reputations

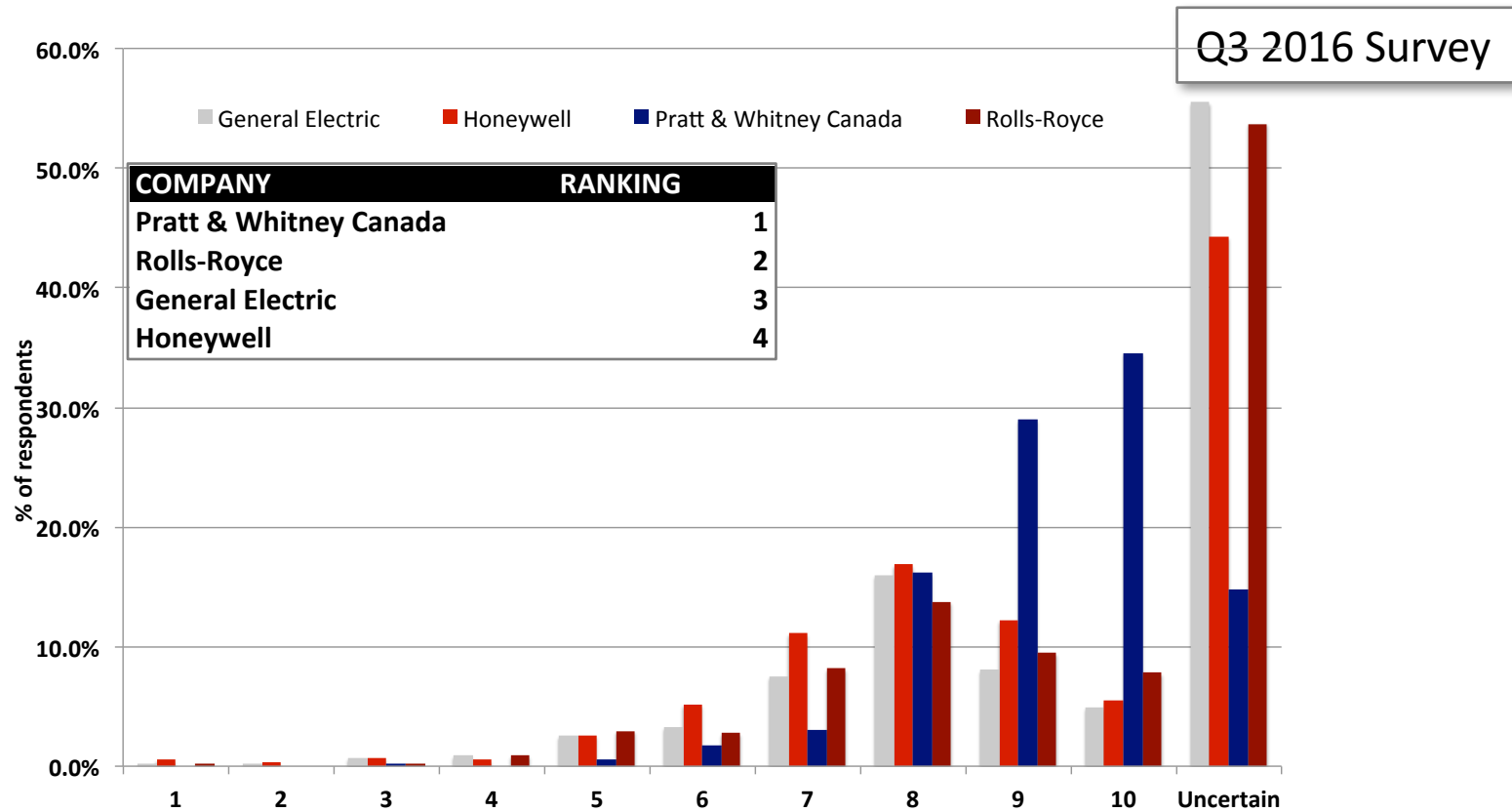
Jet Engine Manufacturers on a 1-10 Scale, where “10” = Highest



Pratt & Whitney Canada, Rolls-Royce, and General Electric are the top-rated jet engine manufacturer brands

Brand Reputations

Turboprop Engine Manufacturers on a 1-10 Scale, where “10” = Highest



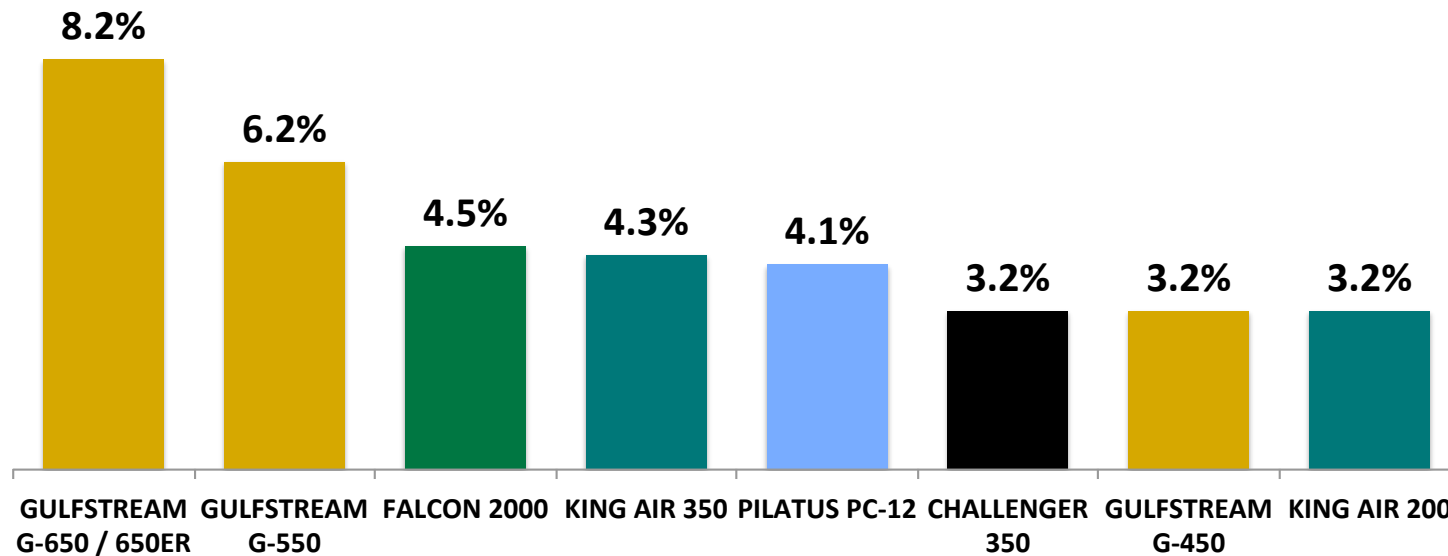
Pratt & Whitney Canada is the highest rated turboprop engine manufacturer brand, well ahead of Rolls-Royce and General Electric

Aircraft Brands

One brand chosen for hangar

Top 8 models - worldwide
If only one aircraft in your hangar, which brand would it be?
Q3 2016

Q3 2016 Survey



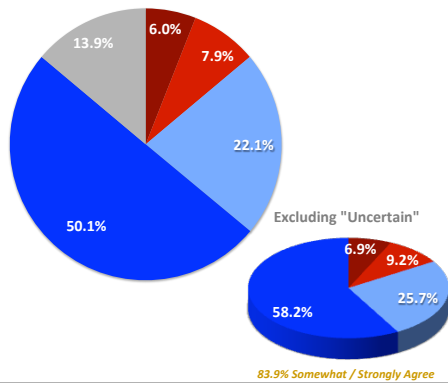
According to the Q3 2016 survey respondents, the top 2 models respondents would chose for their hangar are Gulfstream G-650 and Gulfstream G-550

Opinions

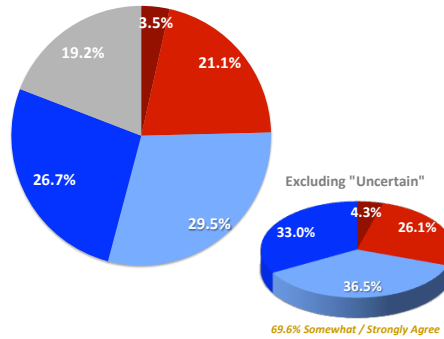
Please evaluate these statements and indicate the extent to which you agree or disagree:

■ Strongly Disagree
 ■ Somewhat Disagree
 ■ Somewhat Agree
 ■ Strongly Agree
 ■ Uncertain

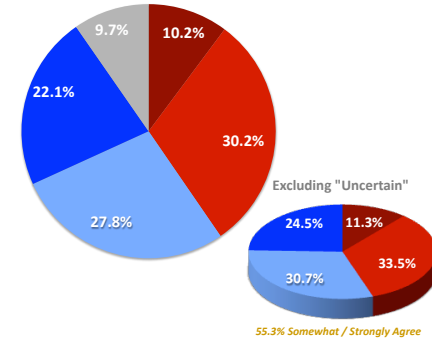
We prefer a two-engine configuration to a three-engine configuration



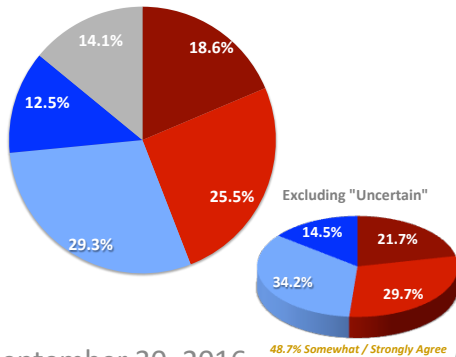
The current political uncertainty in Europe following the Brexit referendum will have little or no impact on business aviation



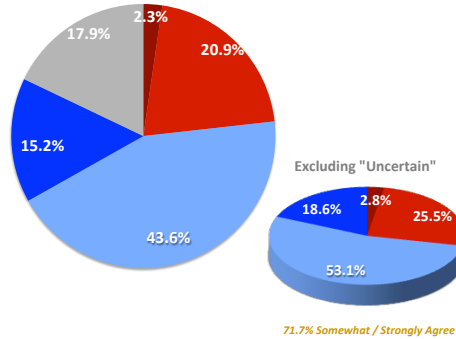
The uncertainty related to the upcoming US Presidential election has little or no impact on business aviation.



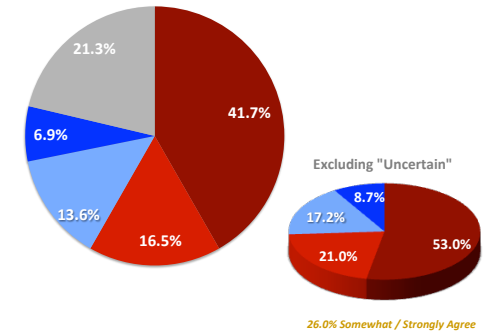
An Uber-style business model for business aviation travel is achievable within the next five years



New engine development programs will help re-energize the business and general aviation turboprop segment within the next five years.

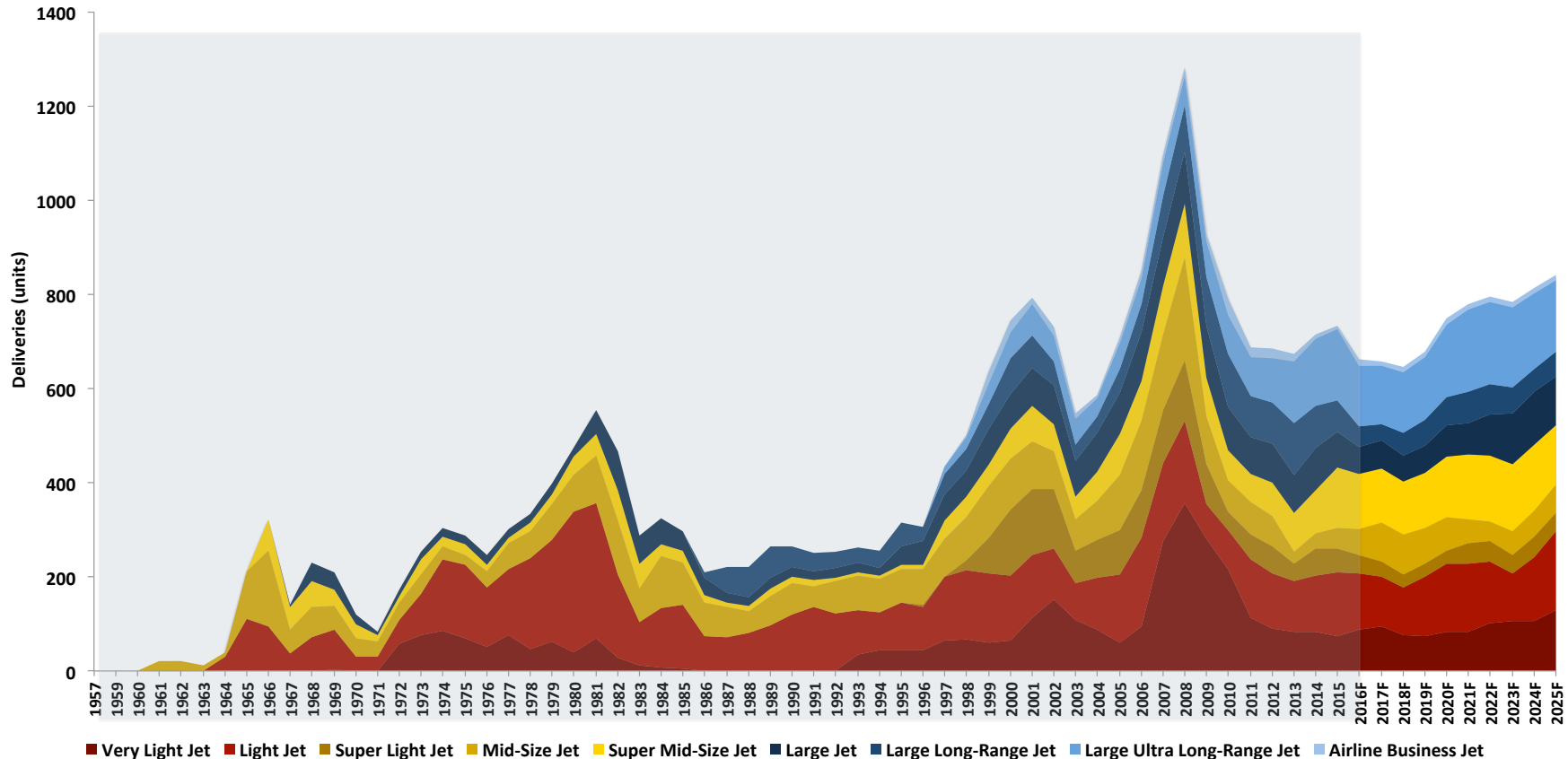


US air traffic control should be privatized / corporatized.



Business Jet Delivery History & Forecast

Business jet delivery forecast by size category: Historical - 2025



JETNET iQ 10-year forecast for 2016-2025 is for 7402 new business jet deliveries (excluding personal jets) valued at \$218 billion in \$2015

About JETNET iQ

Launched in January 2011, JETNET iQ is a forecasting and premium advisory service for the business aviation market, designed to help customers “Know More”. Available on an annual subscription basis, JETNET iQ has 3 main elements:

- 1) JETNET iQ REPORTS are the definitive analytical reference for the business aviation industry, incorporating state-of-the-industry analyses, proprietary aircraft owner/operator surveys, and detailed 10-year delivery and fleet forecasts, updated quarterly.
- 2) JETNET iQ SUMMITS provide fast-paced thought-provoking insights into the state of the industry, and unique networking opportunities.
- 3) JETNET iQ RESEARCH serves the needs of clients with customized research and analysis requirements on a project-by-project basis.

For more information on JETNET iQ, please log on to www.jetnetiq.com or contact Rolland Vincent, JETNET iQ Creator / Director at 1-972-439-2069 or rollie@jetnet.com.

About JETNET

Since 1988, JETNET has delivered the most comprehensive and reliable business aircraft research to its exclusive clientele of aviation professionals worldwide. JETNET is the ultimate source for information and intelligence on the worldwide business, commercial, and helicopter aircraft fleet and marketplace, comprised of more than 110,000 airframes. Headquartered in its state-of-the-art facility in Utica, NY, JETNET offers comprehensive user-friendly aircraft data via real-time internet access or regular updates.

For more information on JETNET LLC, please log on to jetnet.com or contact Paul Cardarelli, JETNET Vice President of Sales, at 800-553-8638 (USA) or paul@jetnet.com; for International inquiries, please contact Karim Derbala, JETNET Managing Director of Global Sales, at 41.0.43.243.7056 or karim@jetnet.com.