

Q3 2018

BUSINESS AVIATION INDEX



INTRODUCTION

The JSSI Business Aviation Index tracks and reports on the global flight activity and utilization of approximately 2,000 business aircraft, including jets, turboprops and helicopters. The report calculates the average flight hours flown per aircraft on a monthly basis and organizes this data into several key categories.

The JSSI Business Aviation Index is broken into four primary categories: Industry, Aircraft Type, Geographical Region and Aircraft Age. The data presented in this report is subject to the core variables in our business.

These variables include, but are not limited to: accurate and timely flight hour reporting; customer addition and attrition; fleet demographic changes, such as fleet size or aircraft class; and any geopolitical events that may inhibit timely or accurate data collection.

The JSSI Business Aviation Index has been further expanded to include financial ratings of the same segments in which flight hour activity is categorized. This financial rating methodology has been developed by JSSI and leverages a proprietary method of tracking, reporting and analyzing relevant data.

The data evaluates and determines both the Client Performance Score (CPS) and relevant trends. The *CPS* is a metric for each JSSI contract, derived from two components: 1) the average days to report flight hours, and 2) the average days to pay open invoices—both over a rolling 12-month period.

Trending using performance scores looks back by quarter over the last 12 months. A 12-month trend factor is assigned to indicate the number of aging categories in which a particular contract has either improved, or regressed, during the period.



ABOUT

For nearly 30 years, Jet Support Services, Inc. (JSSI), has been the leading independent provider o maintenance programs to the business aviation industry, covering virtually all makes and models of business aircraft, engines, and APUs.

JSSI provides customers with comprehensive, flexible and affordable financial programs and tools for managing the often unpredictable costs of operating and maintaining nearly all types of turbine-powered aircraft, including business and commercial jets, turboprops and helicopters. JSSI serves customers globally and manages maintenance services through its worldwide infrastructure of certified technical advisors.

JSSI has always been deeply committed to providing clients and the industry with the highest standard of service and excellence. The JSSI team adds further value by developing the most innovative products and services and expanding into new markets. JSSI publishes a quarterly Business Aviation Index to track flight hours and financial performance of business and commercial aircraft by region, industry and cabin type.

Flight hour activity provides powerful and unique insights into the state of the global economy. The information provided in this report could include technical or other mistakes or inaccuracies. JSSI makes no representations regarding the quality, accuracy, completeness or suitability of the materials on this or any other report, and disclaims any duty to keep this information current or accurate.



WELCOME MESSAGE

It is my pleasure to introduce the latest JSSI Business Aviation Index for 2018.

The third quarter includes some of the year's busiest travel months, with high levels of flight activity reported during this period. Following the exceptional surge in flight activity in the second quarter, flight activity levels still continued to trend upwards.

The steady increase is significant and inches ever closer to the record peaks we saw a decade ago. Average flight hours are now up 5.7% year over year and the sustained growth continues to be a strong indicator for the health of the business aviation industry and the global markets it supports.

The JSSI Business Aviation Index tracks and reports on the global flight activity and utilization of approximately 2,000 business aircraft. Each report summarizes the average flight hours flown per aircraft on a monthly basis and organizes this data into key categories and regions.

We hope that you find the report valuable as you analyze current market conditions and how they impact your business.

Regards,

If you would like to discuss any of the data points or results in more detail, or would like to use this data in your reports, please contact the corresponding JSSI employee:

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5	OVERALL
9	INDUSTRY
21	AIRCRAFT TYPE
24	REGIONAL
34	AIRCRAFT AGE
37	OPERATOR TYPE
40	CPS SCORE AND TRENDING



Quarter Over Quarter (QoQ) Change 0.9%

Year Over Year (YoY) Change 5.7%

Year to Date (YTD) Change 4.6%

Q3 2018 Flight Hour Highlights

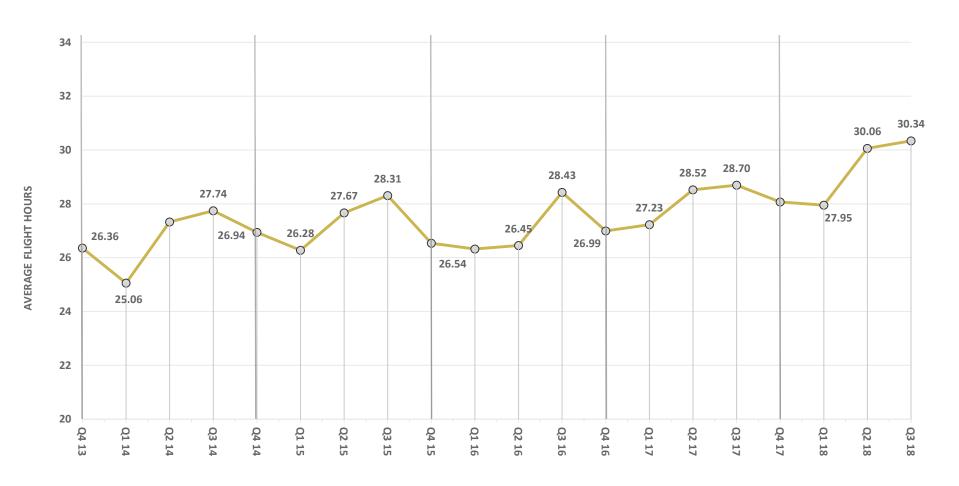




Q3 2018 Average Flight Hours QoQ



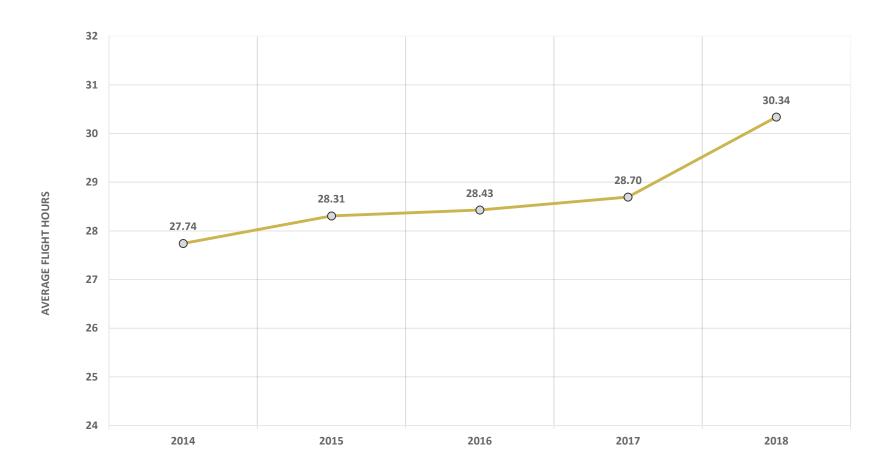
Since 2012, flight hours have consistently increased between Q2 and Q3 and this trend continued in 2018. Following a significant increase in activity earlier this year from Q1 into Q2, there was a more moderate increase in Q3. Flight hours for the quarter averaged 30.34 and reached levels close to the peak utilization levels observed in 2008.



Q3 2018 Average Flight Hours YoY



Flight activity continued to grow in Q3 in comparison to the same period in 2017. YoY growth from 2017 to 2018 was 5.7%.



Q3 2018 Flight Hour Activity by Industry



The JSSI Business Aviation Index tracks nine major industries. The report defines these industries as follows:

Aviation—Companies in this industry include those with a primary purpose to generate revenue through private charter or aviation-related services. It also includes companies with a core focus in aviation manufacturing, design or development.

Business Services—Companies in this industry include marketing and advertising, consulting, legal services, logistics and shipping, human resources, staffing, leasing, security, outsourcing, and facility management.

Construction—Companies in this industry include residential and commercial construction, bridge and roadway construction, excavations, demolitions, and large-scale services supporting the construction industry.

Consumer Goods—Companies that relate to items purchased by individuals and includes companies involved with food production, packaged goods, clothing, beverages, automobiles and electronics.

20%

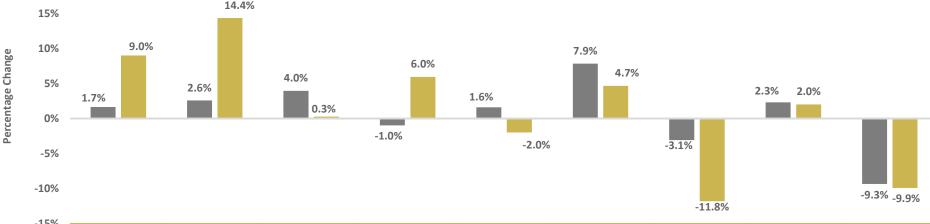
Financial Services—Companies that manage money, such as credit unions, banks, credit-card companies, insurance companies, accountancy companies, consumer-finance companies, stock brokerages, and investment funds.

Healthcare—Companies that provide goods and services that are used to treat patients, including hospitals, pharmaceutical companies, rehabilitation companies, or other service providers directly related to the medical system.

Manufacturing—Companies that engage in the mechanical, physical, or chemical transformation of materials, substances, or components that support the production of a final product.

Power & Energy—Companies that produce coal, oil, natural gas or electricity, as well as other service providers directly related to the creation or development of power and energy.

Real Estate—Companies that consist of land and building ownership and companies involved in the buying, selling, or leasing of retail or personal properties.

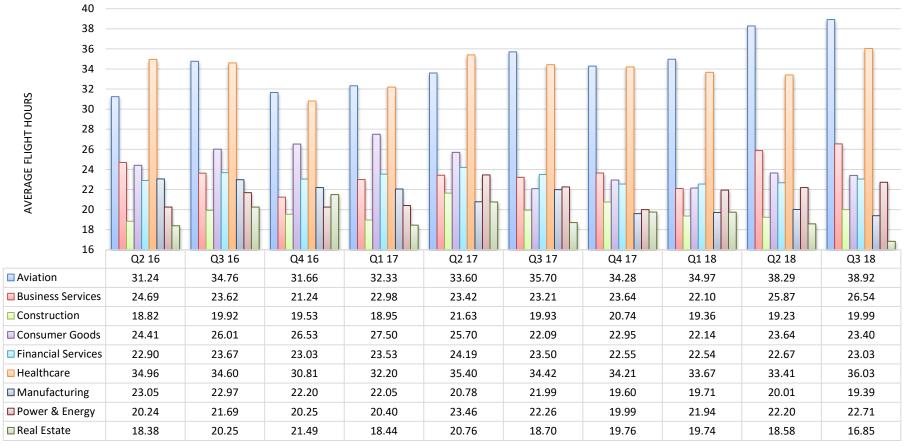


-13%	Aviation	Business Services	Construction	Consumer Goods	Financial Services	Healthcare	Manufacturing	Power & Energy	Real Estate
■ QoQ Change	1.7%	2.6%	4.0%	-1.0%	1.6%	7.9%	-3.1%	2.3%	-9.3%
■ YoY Change	9.0%	14.4%	0.3%	6.0%	-2.0%	4.7%	-11.8%	2.0%	-9.9%

Q3 2018 Flight Hour Activity by Industry QoQ



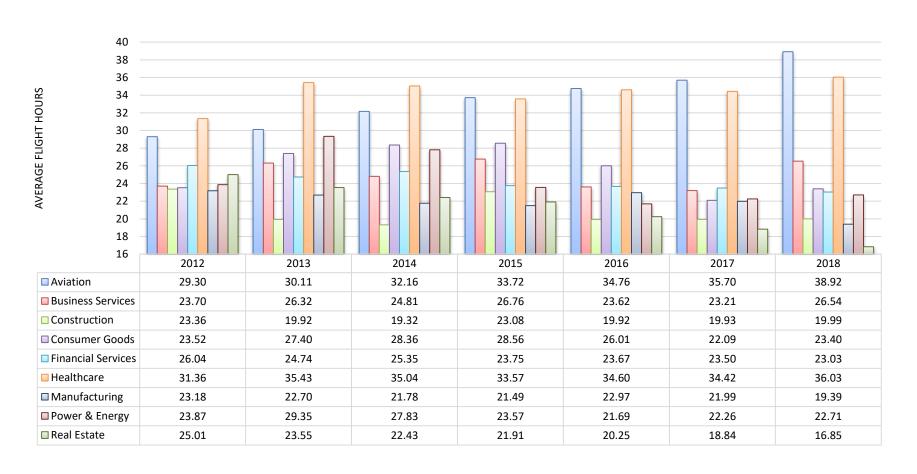
Of the nine industries analyzed within this report, six reported an increase in QoQ flight activity and three reported a decrease. Decreases were seen in the Real Estate sector, which reported a 9.3% reduction in flight hours; the Manufacturing sector, which reported a 3.1% reduction in flight hours; and the Consumer Goods sector, which reported a 1.0% reduction in flight activity. The Healthcare sector reported the strongest growth, with a 7.9% increase over Q2. Additional increases were seen in Aviation, with a 1.7% increase; Business Services with a 2.6% increase; Financial Services, with a 1.6% increase; Construction, with a 4.0% increase; and Power and Energy, with a 2.3% increase.



Q3 2018 Flight Hour Activity by Industry YoY



The 5.7% YoY increase was primarily driven by the Aviation sector, with a 14.4% increase, and the Business Services sector, with a 9.0% increase. The largest decreases in flight activity were seen in the Manufacturing and Real Estate sector, which reported YoY decreases of 11.8% and 9.9% respectively.



Q3 2018 Flight Hour Activity by Industry—Aviation



The Aviation sector continued to increase utilization from Q2 into Q3, with a flight hour increase of 1.7% QoQ. Flight activity was 9.0% higher than the same period in 2017 and 10.4% higher YTD. This sector has now surpassed the industry's peak levels of 2008 for the second consecutive guarter.



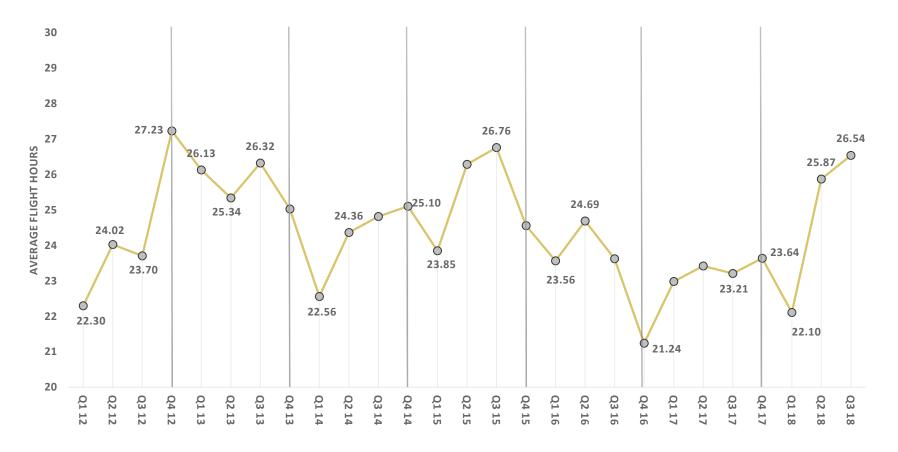


Q3 2018 Flight Hour Activity by Industry—Business Services



The Business Services sector rebounded from Q1 with an increase in average utilization of 15.8% QoQ. Additionally, there was an increase of 9.3% YoY. Flight hours returned to the historical average for this sector and YTD utilization was 2.8% greater than the same period in 2017.



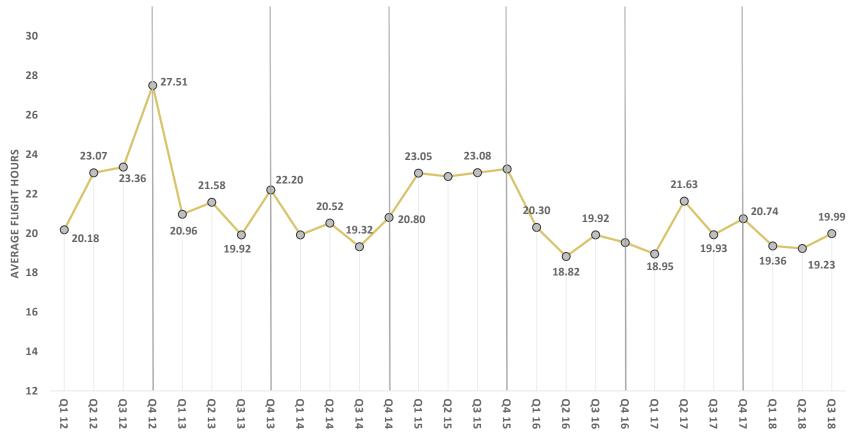


Q3 2018 Flight Hour Activity by Industry—Construction



The Construction industry reported a 4.0% QoQ increase. Utilization increased 0.3% YoY but decreased 3.2% YTD. With only minimal changes in flight activity this year, utilization has remained close to the industry's historical average.





Q3 2018 Flight Hour Activity by Industry—Consumer Goods



The Consumer Goods industry reported a 1.0% QoQ decrease in utilization in Q3. Flight activity in this sector has increased 6.0% YoY but has decreased 8.1% in comparison to the first three quarters of the previous year. With minimal changes in flight utilization, flight hours in this sector continue their downward trend.



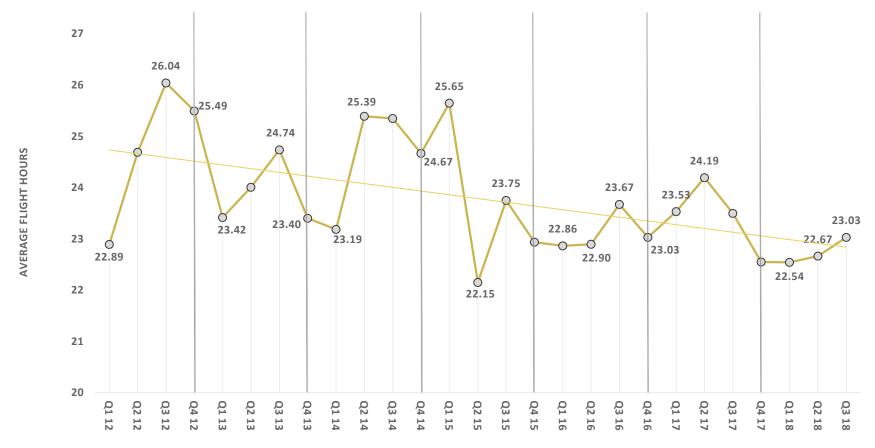


Q3 2018 Flight Hour Activity by Industry—Financial Services



The Financial Services sector reported a minimal increase in flight hours for the second consecutive period. Flight hours increased 1.6% in comparison to Q2 of 2018 but have decreased 2.0% YoY and 4.2% YTD.



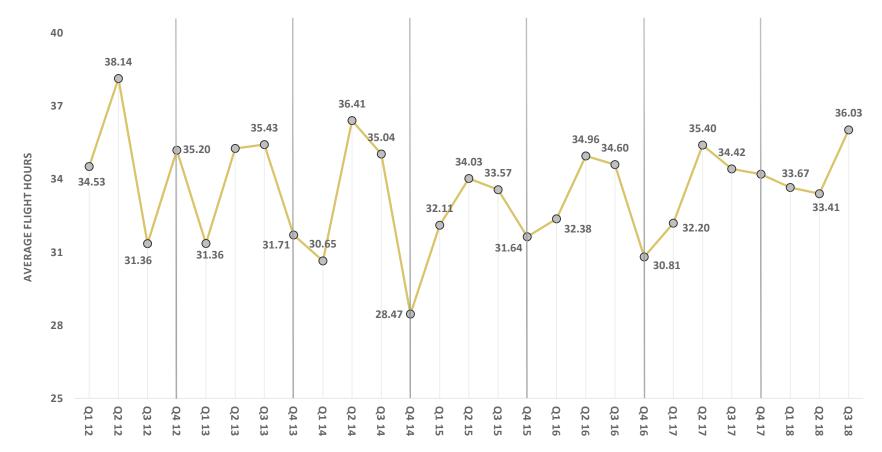


Q3 2018 Flight Hour Activity by Industry—Healthcare



The Healthcare industry reported the largest QoQ increase in utilization, with flight hours up 7.9%. For the first time in four years, flight activity increased between Q2 and Q3 in this industry. In addition to the large QoQ increase, YoY activity increased 4.7%. Flight hours were 1.1% higher in 2018 compared to the same period in 2017.





Q3 2018 Flight Hour Activity by Industry—Manufacturing



The Manufacturing sector has reported decreased utilization levels since the drop in flight hours in Q4 of 2017. Q3 of 2018 reported a decrease in flight hours of 3.1% QoQ, 11.8% YoY and 8.8% YTD.

24.05

22.70

24.41

22.59

Q4 13

23.45

21.78

Q4 14

Q2 15

Q3 15

Q4 15

Q2 16

Q3 14

27

25

23

21

19

17

15

Q1 12

Q2 12

Q4 12

AVERAGE FLIGHT HOURS

25.86

23.18



Q3 2018 Flight Hour Activity by Industry—Power & Energy

29.35

27.16

27.83

24.97

22.92

Q3 15

2

2

25.53

Q2 14

g



The Power & Energy sector has consistently reported strong numbers in 2018, which continued in Q3. With a 2.3% QoQ increase in flight hours and a 2.0% YoY increase, flight hours have continued to increase since the lows of Q4 2017.

27.92

26.57

24.69

Q1 13

22

Q4 12

31

29

27

25

23

21

19

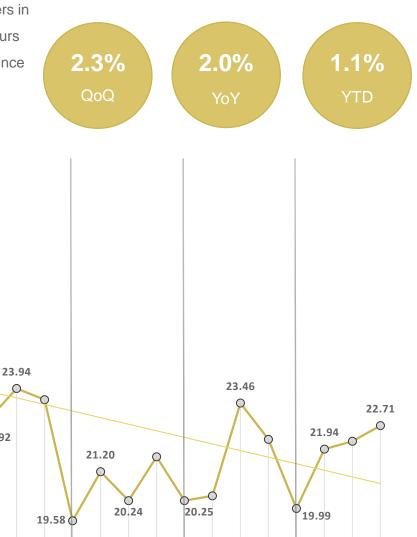
24.67

23.10

Q2 12

23.87

AVERAGE FLIGHT HOURS

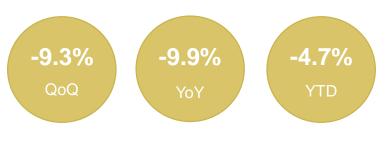


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Q3 2018 Flight Hour Activity by Industry—Real Estate



The Real Estate sector reported a large decrease in flight hour activity for the third consecutive quarter. Flight hours decreased 9.3% QoQ and 9.9% YoY. Flight hours have reached the lowest level on record and have decreased 4.7% YTD.





Q3 2018 Flight Hour Activity by Aircraft Type



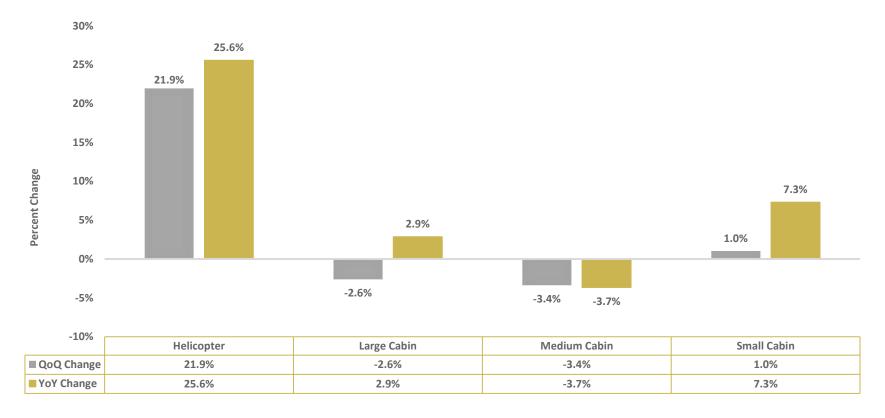
The JSSI Business Aviation Index tracks four major Aircraft Type categories. The report defines these types as follows:

Helicopter—This aircraft type leverages rotors to supply lift and can take off and land vertically. The aircraft's attributes allow it to hover, fly forward and laterally, and operate in areas and regions where fixed-wing aircraft cannot.

Large Cabin—This aircraft type is classified as any aircraft with a maximum take-off weight of 38,000 pounds or greater.

Medium Cabin—This aircraft type is classified as any aircraft with a maximum take-off weight between 20,000–38,000 pounds.

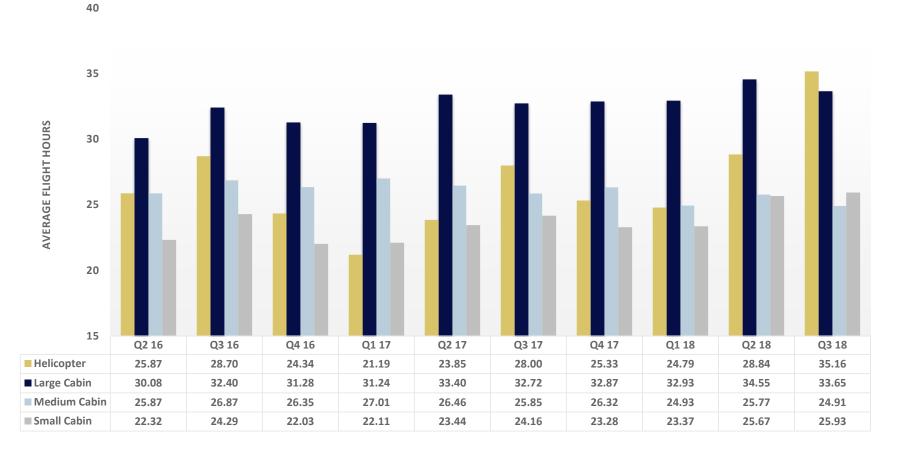
Small Cabin—This aircraft type is classified as any aircraft with a maximum take-off weight below 20,000 pounds.



Q3 2018 Flight Hour Activity by Aircraft Type QoQ

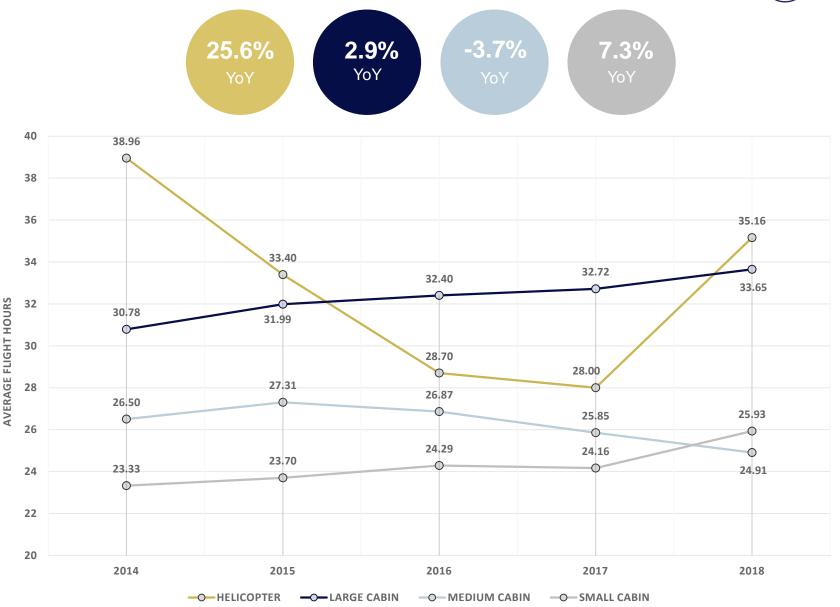






Q3 2018 Flight Hour Activity by Aircraft Type YoY





Q3 2018 Flight Hour Activity by Region



The JSSI Business Aviation Index tracks seven major regions. The report defines these regions in the following manner:

Africa—This category includes all sub-regions of the African continent, including the Northern, Southern, Eastern and Western sub-regions and surrounding islands of the continent.

Asia-Pacific—This category includes all of the ASEAN countries, East Asia, the Pacific Islands, and the SAARC countries.

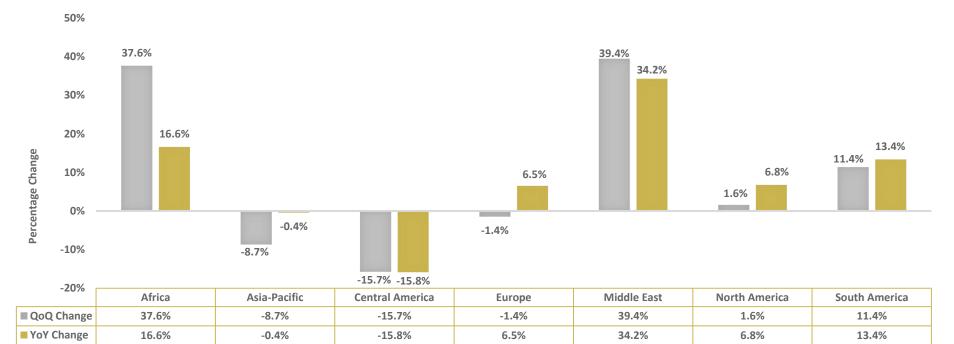
Central America—This category includes the countries of Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Mexico.

Europe—This category includes Eastern, Western, Northern and Southern regions of Europe.

Middle East—This category includes Iran, Asia Minor, Mesopotamia, the Levant and the Arabian Peninsula.

North America—This category includes the United States of America, Canada and surrounding islands and territories.

South America—This category includes Venezuela, Columbia, Ecuador, Peru, Bolivia, Paraguay, Brazil, Argentina, Chile, Uruguay and surrounding islands.

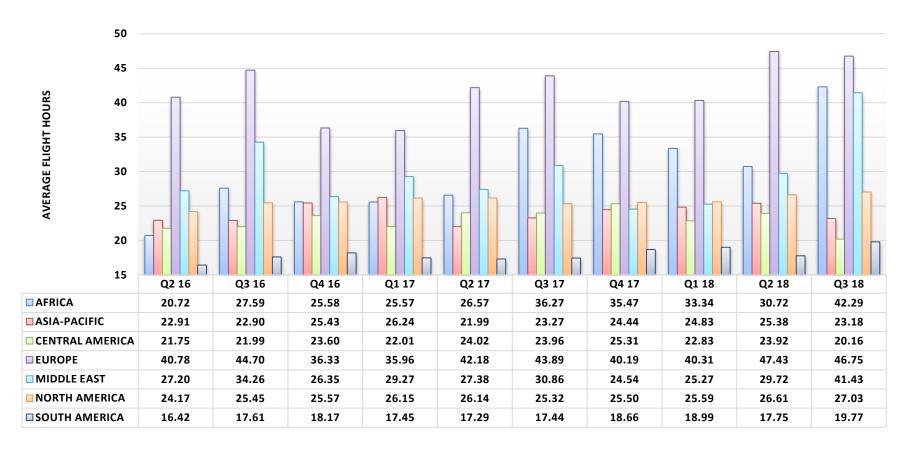


Q3 2018 Flight Hour Activity by Region QoQ



Of the seven regions sampled, three reported a QoQ decrease in utilization and four reported an increase.

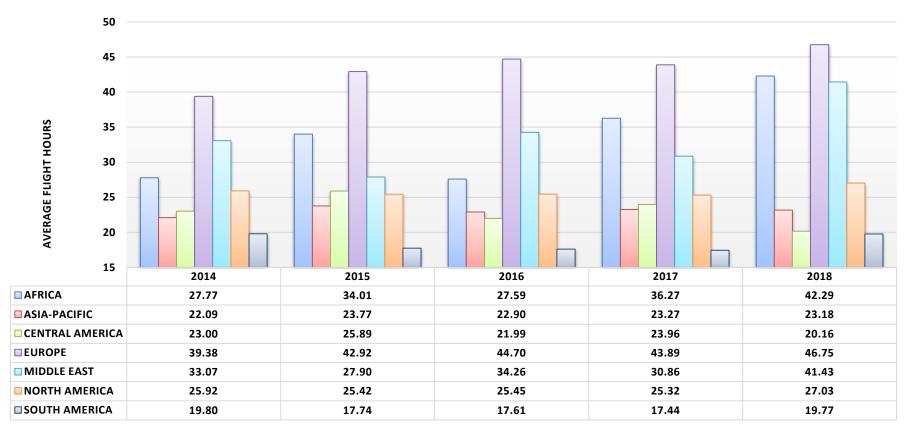
Decreases were reported in the Asia-Pacific region, Central America and Europe, with decreases of 8.7%, 15.7% and 1.4% respectively. The largest increases were seen in Africa and the Middle East, which reported increases of 37.6% and 39.4% respectively. Additional increases were seen in North America, with an increase of 1.6%; and South America, with an increase of 11.4%.



Q3 2018 Flight Hour Activity by Region YoY



Regional flight hours reported strong YoY utilization increases in Q3 2018. The largest increases were seen in the Middle East, with an increase of 34.2%; Africa, with an increase of 16.6%; and South America, with an increase of 13.4%. Additional increases were seen in Europe, with flight hours up 6.5%; and North America, up 6.8%. Asia-Pacific and Central America both reported reductions in utilization, with flight hours decreasing 0.4% and 15.8% respectively.

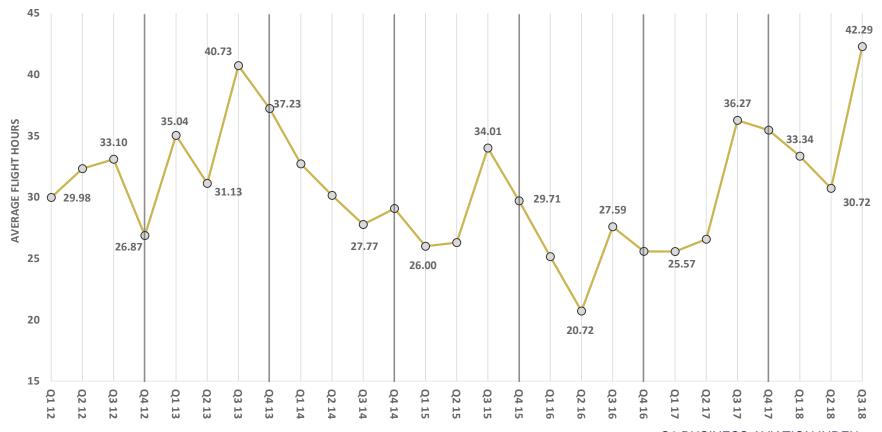


Q3 2018 Flight Hour Activity by Region—Africa



Following three consecutive quarters of decreased activity, the African region reported a 37.6% increase in QoQ activity. This large QoQ flight hour increase propelled an increase of 16.6% YoY and 20.3% YTD. The 42.29 average flight hours represents the first time flight hours have reached over 40 hours in this region since 2013.



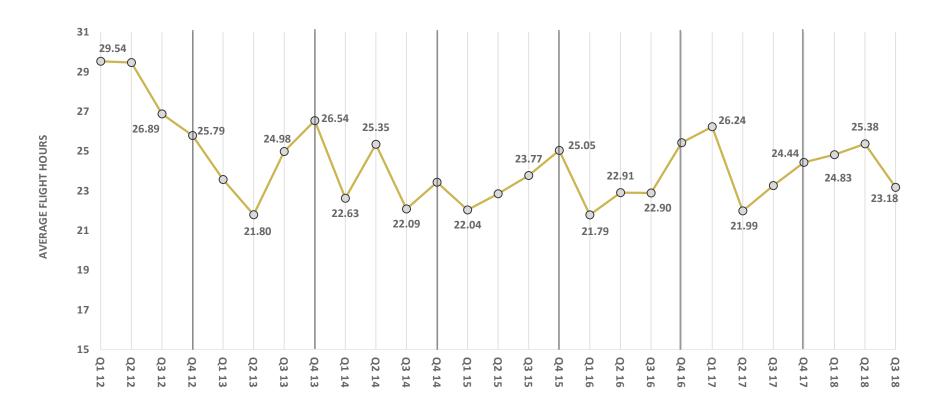


Q3 2018 Flight Hour Activity by Region—Asia-Pacific



The Asia-Pacific region reported a decrease in flight activity QoQ with average hours decreasing 8.7%. There was also a marginal YoY flight activity decrease of 0.4%. While both QoQ and YoY numbers decreased, average utilization increased 2.6% YTD in this region.



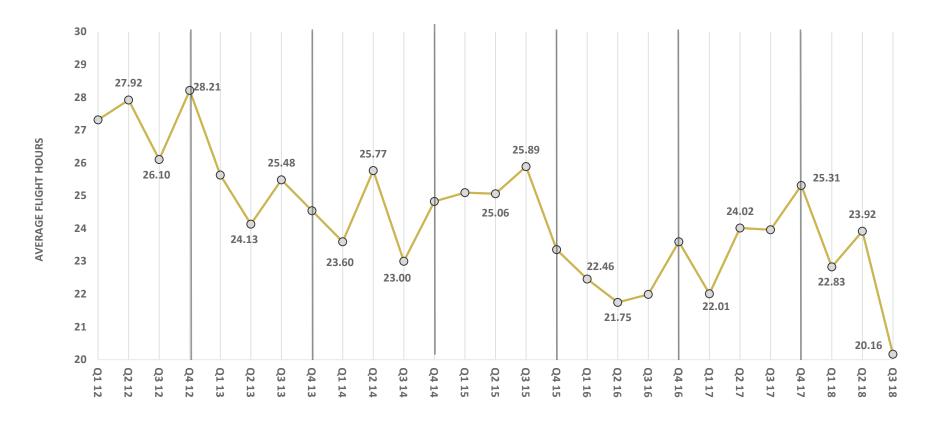


Q3 2018 Flight Hour Activity by Region—Central America



The Central American region reported a 15.7% decrease in flight activity from Q2 to Q3. This utilization drop has pushed flight hours down 15.8% in comparison to Q3 of 2017. Flight hours were also 4.4% lower when compared to the first three quarters of 2017.

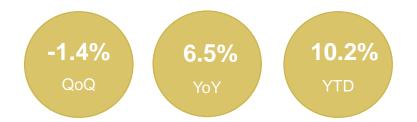


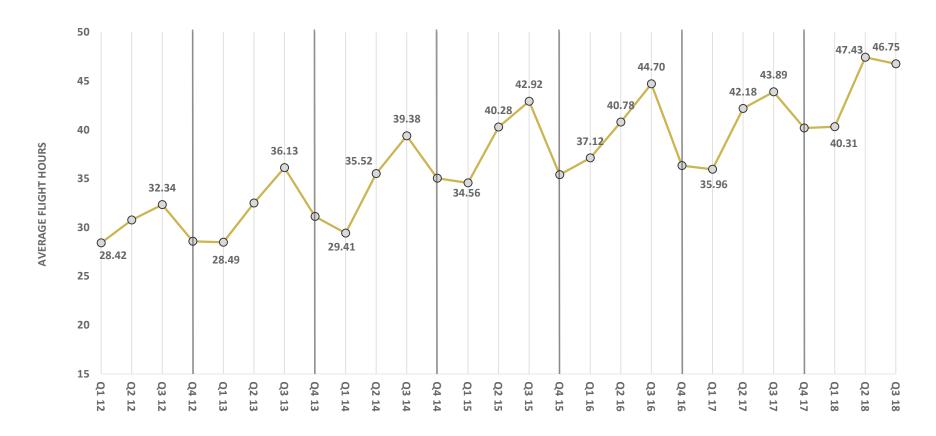


Q3 2018 Flight Hour Activity by Region—Europe



Europe reported a minimal change in QoQ activity, with flight hours decreasing 1.4% QoQ. While flight hours decreased QoQ, flight activity in Q3 was 6.5% higher than Q3 of 2017 and 10.2% higher YTD.



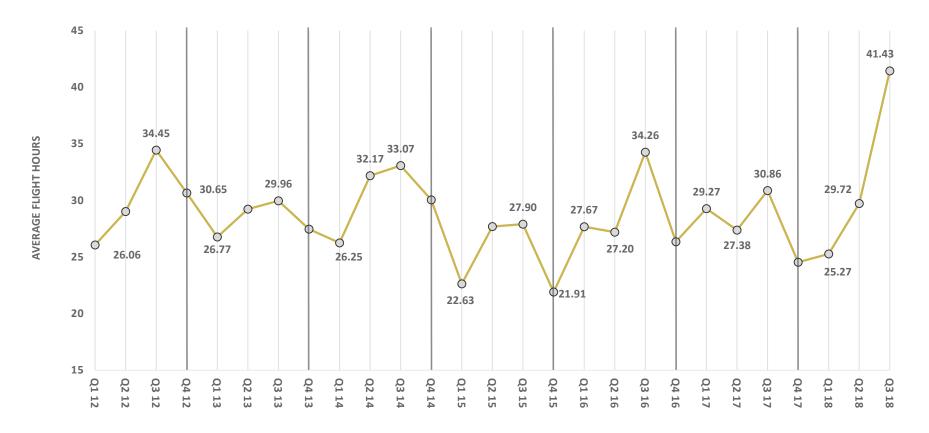


Q3 2018 Flight Hour Activity by Region—Middle East



The Middle East reported the largest growth in utilization QoQ, with flight hours increasing 39.4%. With this large increase in activity, flight hours are up 34.2% YoY and 10.2% YTD. The 41.43 average flight hours in Q3 represents the first time hours have surpassed 40 hours in this region since 2008.



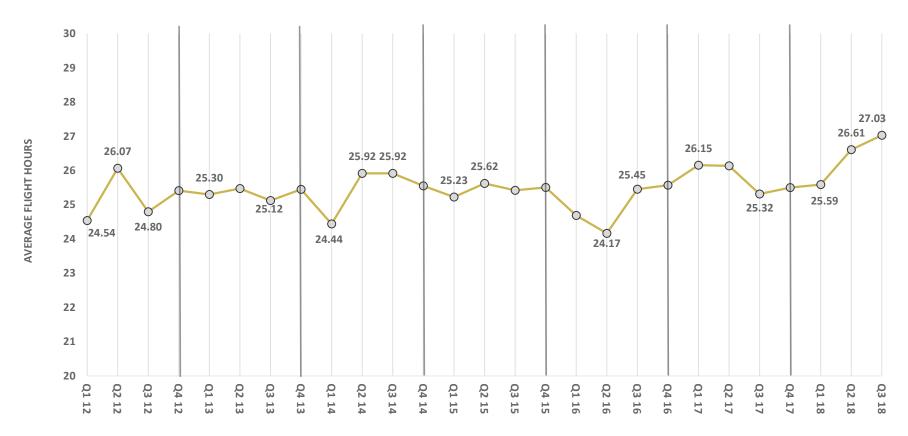


Q3 2018 Flight Hour Activity by Region—North America



Flight activity in North America increased 1.6% QoQ and 6.8% YoY. With a strong Q2 and Q3, average flight activity has increased 2.1% YTD. From Q3 2017 onwards, there has been a continuous upward trend in flight activity for this region and average hours have reached levels not seen since 2011.

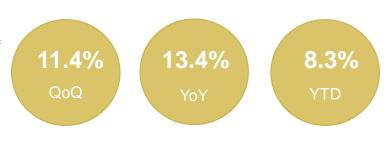


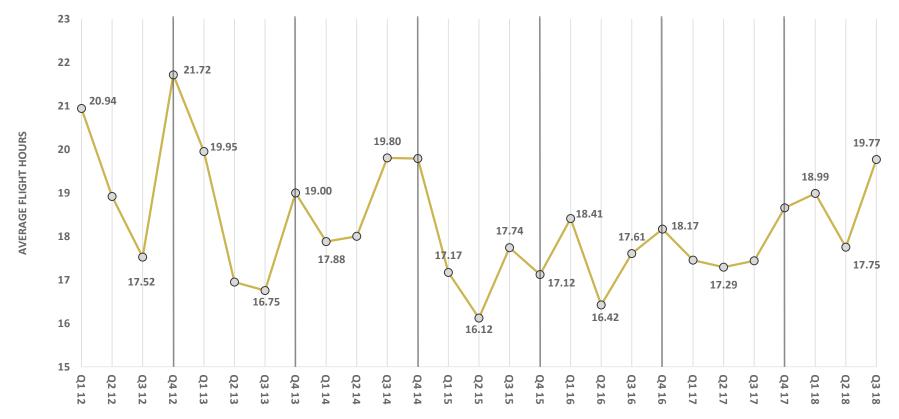


Q3 2018 Flight Hour Activity by Region—South America



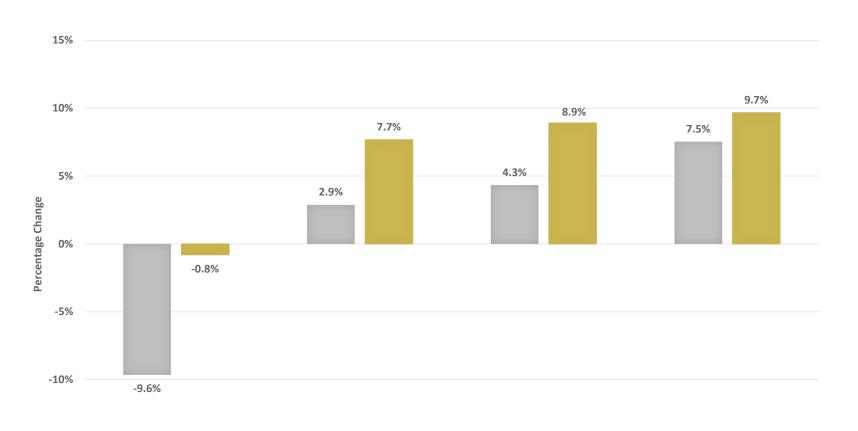
South America reported a strong Q3, with flight hours increasing 11.4% QoQ. In comparison to Q3 2017, flight activity was 13.4% higher in Q3 of 2018 and 8.3% higher YTD.





Q3 2018 Flight Hour Activity by Age



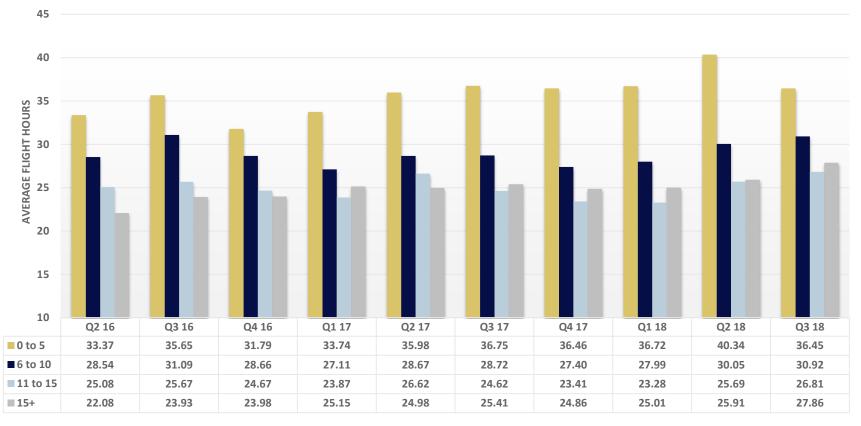


-15%	0 to 5	6 to 10	11 to 15	15+
■ QoQ Change	-9.6%	2.9%	4.3%	7.5%
YoY Change	-0.8%	7.7%	8.9%	9.7%

Q3 2018 Flight Hour Activity by Age QoQ



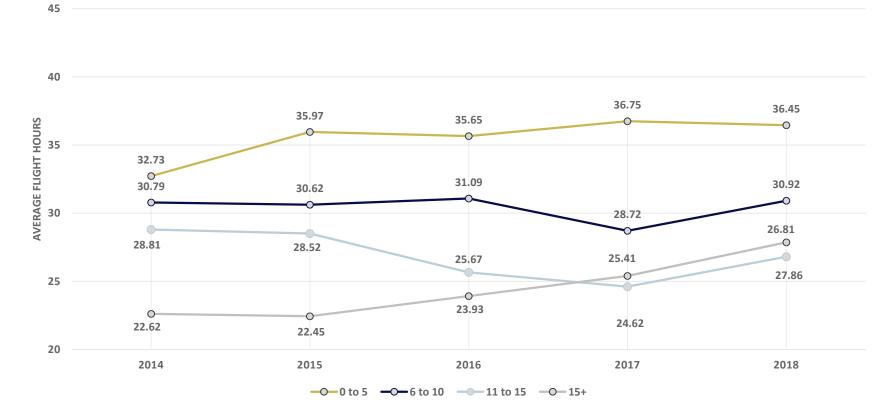




Q3 2018 Flight Hour Activity by Age YoY



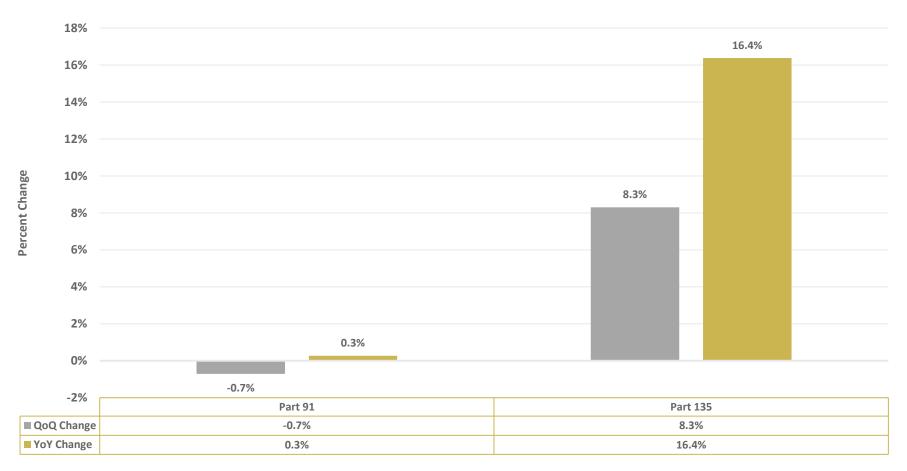




Q3 2018 Flight Hour Activity by Operator Type

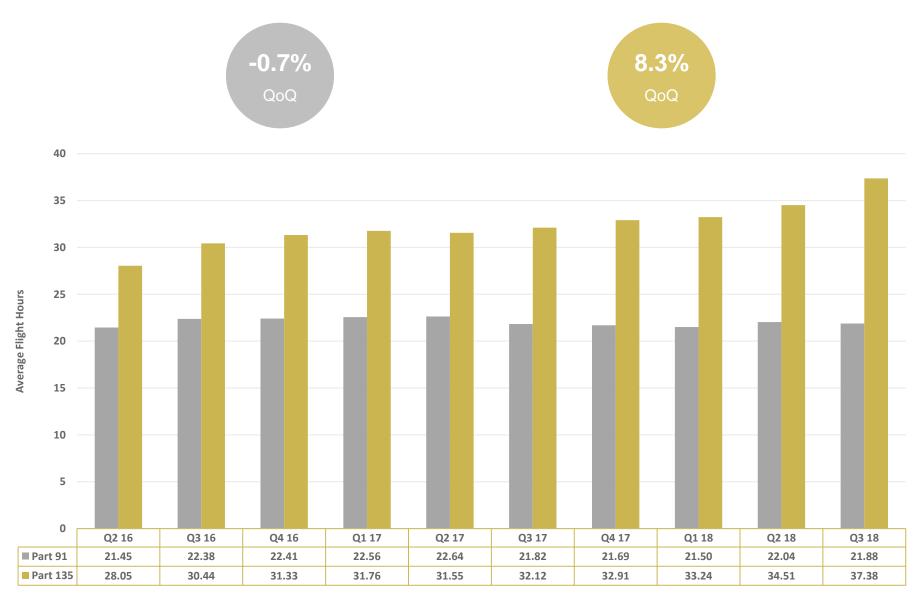


FAR Part 91 operators and FAR Part 135 operators follow regulations defined by the U.S. Federal Aviation Administration (FAA) for operation of aircraft. FAR Part 91 governs the operation of non-commercial aircraft. FAR Part 135 governs certain types of commercial aircraft, such as non-scheduled charter and air-taxi operations.



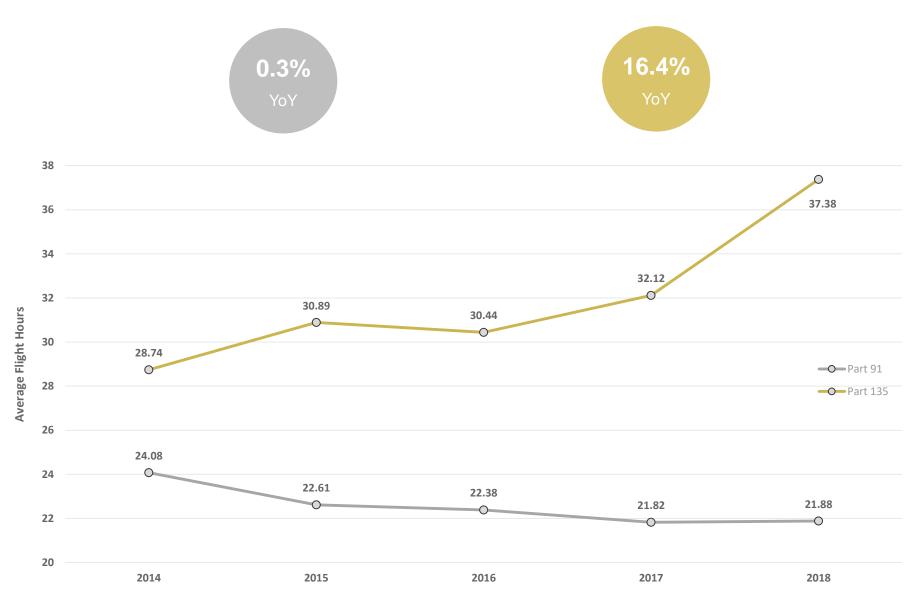
Q3 2018 Flight Hour Activity by Operator Type QoQ





Q3 2018 Flight Hour Activity by Operator Type YoY





Customer Payment Score (CPS) Trending Guide



SCORING LEGEND

Performance History	Score Range
Both Report & Pay W/I Terms	800
Report and/or Pay 1–30 Days Late	600–799
Report and/or Pay 31–60 Days Late	450–599
Report and/or Pay 61–90 Days Late	400–449
Report and/or Pay >90 Days Late	51–399
Too New or Incomplete Data	0–4

*12-MONTH TREND LEGEND

+4	Improved by four aging periods	-1	Worse by one aging period
+3	Improved by three aging periods	-2	Worse by two aging periods
+2	Improved by two aging periods	-3	Worse by three aging periods
+1	Improved by one aging period	-4	Worse by four aging periods
FLAT	No significant change	NEW	New rating (<12-month history)

CPS Trending by Industry



			CPS TF	REND BY IND	DUSTRY — C	3 2018		
	Q3 2018		Q3 2017	12-MONTH CHANGE				
Industry Average	Score	Trend*	Score	Points	%	Score	Points	%
Advertising	700	FLAT	650	50	7.7%	603	97	16.1%
Agriculture	619	FLAT	636	(17)	-2.6%	650	(31)	-4.8%
Automotive	651	FLAT	681	(30)	-4.3%	609	43	7.0%
Aviation	549	FLAT	588	(39)	-6.7%	594	(45)	-7.5%
Business Services	603	FLAT	648	(45)	-6.9%	660	(56)	-8.5%
Construction	626	FLAT	643	(17)	-2.6%	658	(32)	-4.9%
Consumer Goods	635	FLAT	656	(21)	-3.2%	669	(34)	-5.1%
Education	517	FLAT	483	34	7.0%	516	1	0.1%
Entertainment, Recreation, and Hobbies	607	FLAT	457	150	32.8%	645	(39)	-6.0%
Financial Services	619	FLAT	652	(34)	-5.2%	651	(32)	-4.9%
Food Manufacturing / Distribution / Services	665	FLAT	614	51	8.3%	638	27	4.3%
General	540	-1	603	(63)	-10.5%	608	(68)	-11.2%
Government	679	FLAT	700	(21)	-3.0%	697	(18)	-2.5%
Healthcare	637	FLAT	632	6	0.9%	639	(2)	-0.3%
Law	605	FLAT	578	26	4.6%	624	(19)	-3.1%
Manufacturing	647	FLAT	662	(16)	-2.4%	677	(30)	-4.5%
Membership and Non-Profit Organizations	659	FLAT	715	(56)	-7.8%	615	45	7.2%
Power & Energy	646	FLAT	722	(76)	-10.5%	661	(15)	-2.3%
Property Management and Administration	700	NEW	700	0	0.0%	500	200	40.0%
Real Estate	607	FLAT	633	(26)	-4.1%	657	(50)	-7.6%
Security, Investigative Services & Products	517	-1	574	(57)	-9.9%	601	(84)	-13.9%
Technology	652	FLAT	663	(11)	-1.7%	643	9	1.5%
Transportation	604	FLAT	606	(2)	-0.3%	686	(82)	-12.0%
Travel and Tourism	651	FLAT	608	43	7.1%	693	(42)	-6.0%
COMPANY Average	582	FLAT	616	(34)	-5.8%	625	(43)	-7.4%

CPS Trending by Selected Countries

	CPS TREND BY COUNTRY BY QUARTER – Q3 2018							
	Q3 2018	Trend*	Q2 2018	3-MONTH	I CHANGE	Q3 2017	12-MONTH	H CHANGE
Country Average	Score	rrena"	Score	Points	%	Score	Points	%
Argentina	596	-1	593	3	0.5%	606	(10)	-1.7%
Australia	687	+1	672	14	2.1%	576	110	19.1%
Austria	579	-1	637	(58)	-9.1%	619	(40)	-6.4%
Belgium	779	NEW	722	56	7.8%			
Brazil	547	FLAT	578	(31)	-5.4%	582	(35)	-6.0%
Canada	601	FLAT	576	25	4.3%	623	(23)	-3.6%
Chile	544	-1	620	(77)	-12.4%	622	(78)	-12.6%
China	583	-1	643	(60)	-9.4%	632	(49)	-7.8%
France	654	FLAT	614	40	6.6%	612	42	6.8%
Germany	631	FLAT	633	(2)	-0.3%	654	(22)	-3.4%
Greece	230	NLR	231	(1)	-0.4%	807	(578)	-71.6%
Guatemala	500	+2	600	(100)	-16.7%	399	101	25.3%
Hong Kong	621	FLAT	614	7	1.1%	657	(36)	-5.5%
Hungary	209	FLAT	402	(193)	-48.0%	389	(180)	-46.3%
India	515	FLAT	551	(37)	-6.7%	478	37	7.7%
Indonesia	505	+2	402	103	25.5%	292	213	72.8%
Italy	423	+1	496	(74)	-14.8%	376	47	12.4%
Luxembourg	700	+1	521	179	34.4%	571	129	22.7%
Mexico	544	FLAT	585	(41)	-7.0%	585	(41)	-7.0%
Morocco	707	FLAT	700	7	1.0%	700	7	1.0%
Netherlands	700	FLAT	767	(67)	-8.7%	700	0	0.0%
New Zealand	800	NEW	600	200	33.3%	252	548	217.5%
Poland	700	FLAT	700	0	0.0%	700	0	0.0%
Portugal	189	-2	571	(382)	-66.9%	451	(261)	-58.0%
Puerto Rico	702	NLR	750	(48)	-6.4%	600	102	17.1%
Qatar	4	-1	4	0	0.0%	250	(246)	-98.4%
South Africa	631	FLAT	568	63	11.2%	659	(28)	-4.3%
South Korea	733	FLAT	633	100	15.8%	750	(17)	-2.2%
Spain	555	-1	700	(146)	-20.8%	600	(46)	-7.6%
Switzerland	508	FLAT	534	(26)	-4.8%	550	(42)	-7.6%
Thailand	453	-1	484	(31)	-6.4%	654	(201)	-30.7%
Uganda	700	FLAT	700	0	0.0%	700	0	0.0%
Ukraine	350	-2	450	(100)	-22.2%	500	(150)	-30.0%
United Arab Emirates	557	-1	638	(80)	-12.6%	645	(87)	-13.6%
United Kingdom	640	FLAT	670	(30)	-4.4%	635	` ´ ´	0.8%
United States	600	FLAT	640	(40)	-6.3%	640	(40)	-6.2%
Venezuela	397	-2	471	(75)	-15.8%	523	(126)	-24.1%
COMPANY Average	582	FLAT	616	(34)	-5.8%	625	(43)	-7.4%

CPS Trending by Cabin Size



	CPS 12-MONTH TREND BY CABIN SIZE — Q3 2018								
	Q3 2018							I CHANGE	
Cabin Size Average	Score	Trend*	Score	Points %		Score	Points	%	
Large Cabin	567	-1	524	43	8.2%	608	(41)	-6.7%	
Medium Cabin	575	-1	602	(27)	-4.4%	629	(54)	-8.6%	
Small Cabin	590	-1	617	(27)	-4.4%	617	(27)	-4.4%	
Helicopter	607	+1	546	61	11.2%	578	29	5.0%	
COMPANY Average	582	FLAT	616	(34)	-5.8%	625	(43)	-7.4%	



FOR MORE INFORMATION

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