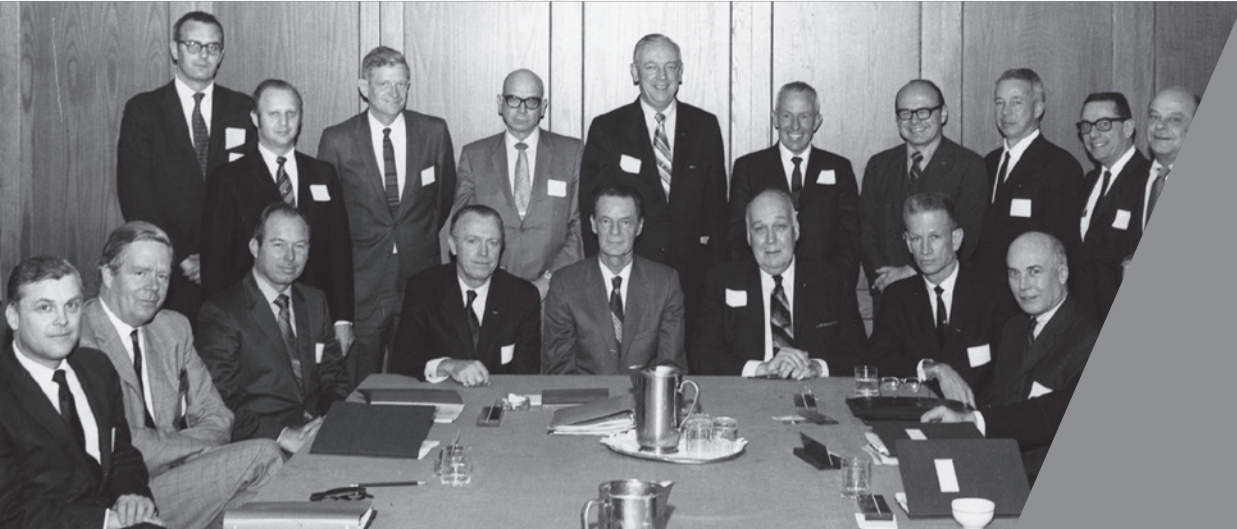
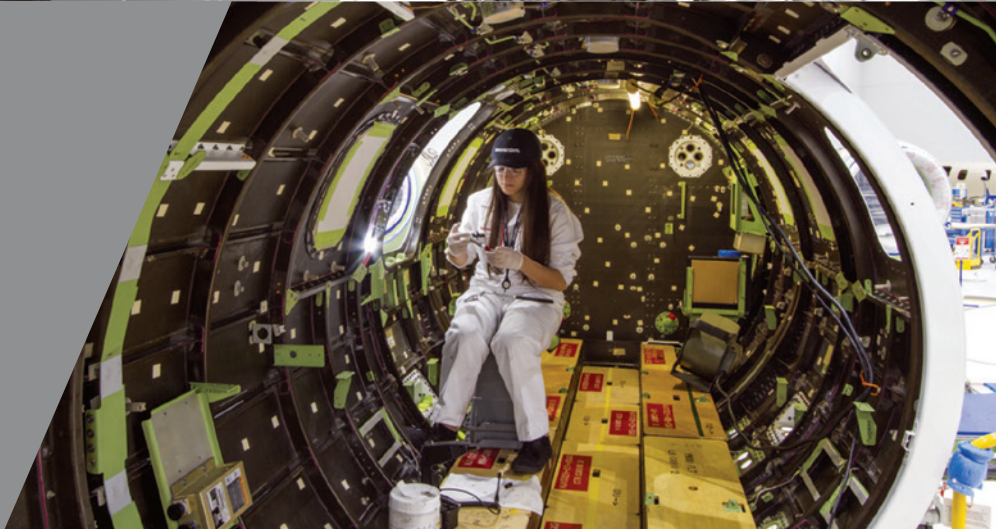


GENERAL AVIATION MANUFACTURERS ASSOCIATION



2019  
DATABOOK







General Aviation is defined as all aviation other than military and scheduled commercial airlines.

#### GENERAL AVIATION:

- Includes over 440,000 general aviation aircraft flying worldwide today, ranging from two-seat training aircraft and utility helicopters to intercontinental business jets, of which over 211,000 aircraft are based in the United States and over 133,000 aircraft are based in Europe.
- Supports \$247 billion in total economic output and 1.2 million total jobs in the United States.
- Flies over 25.5 million flight hours, of which two-thirds are for business purposes, in the U.S.
- Flies to more than 5,100 U.S. public airports, while scheduled airlines serve less than 400 airports. The European general aviation fleet can access over 4,000 airports.
- Is the primary training ground for most commercial airline pilots.

# GAMA Mission and Vision

## MISSION

The General Aviation Manufacturers Association (GAMA) exists to foster and advance the general welfare, safety, interests, and activities of the global business and general aviation industry. This includes promoting a better understanding of general aviation manufacturing, maintenance, repair, and overhaul and the important role these industry segments play in economic growth and opportunity, and in serving the critical transportation needs of communities, companies, and individuals worldwide.

## VISION

Our vision is to be recognized as the most effective trade association in business and general aviation, aerospace manufacturing, and in the maintenance, repair, and overhaul domain through:

- Enhancing safety through innovation and the promotion of quality training
- Facilitating improvements in certification, audit, and regulatory processes
- Fostering sustainable general and business aviation growth
- Promoting the economic impact and societal benefits of general and business aviation
- Achieving organizational excellence



## Welcome from GAMA's Chairman

In 1970, the General Aviation Manufacturers Association (GAMA) was formed to foster and advance the general welfare, safety, interests, and activities of general aviation. Today, 50 years later, GAMA is the premier advocate for general aviation manufacturers, their suppliers, and those who maintain, repair, and overhaul general aviation aircraft around the world. As Chairman for GAMA, I am proud of all the hard work this association has done on behalf of general aviation.

GAMA's annual report has become the industry resource for general aviation data. The 2019 report includes the latest general aviation shipments and billings, fleet data for the United States and Europe and several other regions, as well as pilot, airport, safety, and accident statistics.

This year, in coordination with additional general aviation associations, GAMA is releasing an updated report detailing the general aviation's contributions to the U.S. economy. This report indicates that our

industry continues to grow and plays an integral role in economic growth and opportunity.

Looking ahead, GAMA will continue to advance its contributions to the global general aviation industry, and advocate for the innovative products and services of the over 120 companies it represents, spanning 15 countries. Additionally, we are making headway in areas of significant importance to the industry, including workforce development and sustainability. While we celebrate and reflect on the past 50 years, GAMA is focused on what lies beyond the horizon and being Future Ready!

We are thankful for your continued support of GAMA and the general aviation industry.

Best wishes,

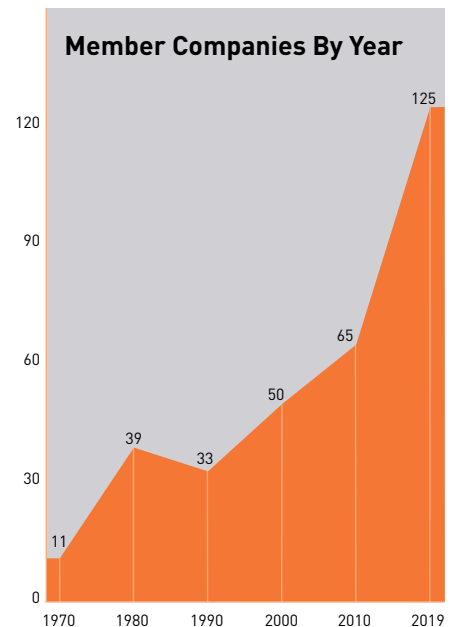
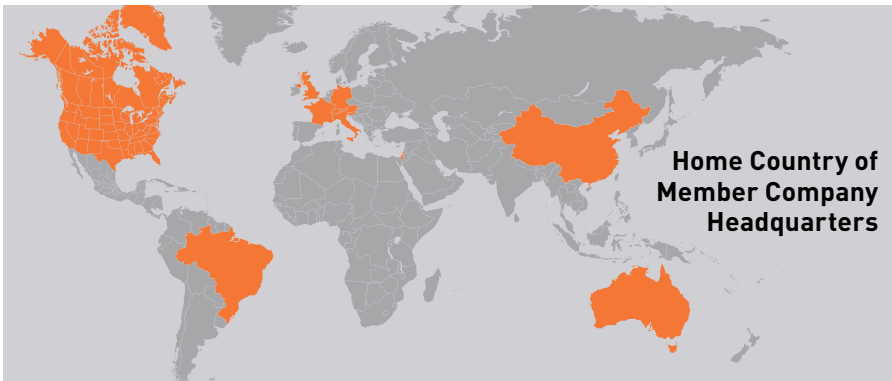
**David Paddock**  
2020 GAMA Chairman  
President, Jet Aviation



# CELEBRATING 50 YEARS



**1.** GAMA Chairman Frank E. Hendrick of Beech meets with President Gerald R Ford in 1976 to thank him for recognizing the significance of general aviation. **2.** Ed Stimpson led the association for 24 years as President & CEO, and later as Vice Chairman, shown here providing testimony on Capitol Hill. **3.** Stimpson, accompanied by his wife Dottie, is sworn in as Ambassador. Stimpson's leadership at ICAO shaped post-9/11 aviation policy. **4.** President Barack Obama signs the Small Airplane Revitalization Act into law. **5.** John Rosanvall of Dassault Falcon lead the association in 2011 as its first Chairman from a European-headquartered member company. **6.** The aircraft interior subcommittee meets in Washington, DC, to establish new airworthiness standards for business aircraft. **7.** Dwane L. Wallace, who led the industry to establish GAMA as an organization dedicated to general aviation, is awarded the inaugural distinguished service award in 1971.





**F**ounded in 1970 by 11 companies, GAMA has grown to over 120 member companies. During its first five decades, the association has remained focused on advancing aviation policy to foster and advance health and welfare, safety, and interests of general aviation worldwide.

**8.** Three-time GAMA chair, Russ W. Meyer, Jr., helped lead the passage of the General Aviation Revitalization Act (GARA) that helped transform the industry. **9.** Pete Bunce, GAMA President & CEO, meets with EASA's Founding Executive Director Patrick Goudou in Cologne, Germany. **10.** Industry joined together in the aftermath of 9/11 to advance aviation security. Shown here is GAMA's Ed Bolen, joined by other GA association, testifying on Capitol Hill about establishing new aviation security measures. **11.** Senator Nancy Kassebaum with President Bill Clinton following the signing of GARA into law.



**GAMA Chairman of the Board of Directors**

1970-71	Dwane L. Wallace	Cessna	1995	David L. Burner	BFGoodrich Aerospace
1972	John M. Ferris	AVCO	1996	Horst A. Bergmann	Jeppesen
1973	W.T. Piper, Jr.	Piper	1997	Fred A. Breidenbach	Gulfstream
1973	L.B. Young	Bendix	1998	Arthur E. Wegner	Raytheon Aircraft
1974	Russell W. Meyer, Jr.	Grumman American	1999	L. David Caplan	Pratt & Whitney Canada
1974	Edward J. King	King Radio	2000	Charles M. Suma	The New Piper Aircraft
1975	Ivan E. Speer	Garrett	2001	Michael A. Smith	Honeywell
1976	Frank E. Hedrick	Beech	2002	Ray H. Siegfried II	The NORDAM Group
1977	Charles Husick	NARCO	2003	Bill Boisture	Gulfstream Aerospace
1978	Harry J. Combs	Gates Learjet	2003-04	Clayton M. Jones	Rockwell Collins
1979	Clare I. Rice	Collins	2005	James E. Schuster	Raytheon Aircraft Company
1980	J. Lynn Helms	Piper Aircraft	2006	Jack Pelton	Cessna Aircraft
1981	Edward B. Moore	EDO	2007	John Grisik	Goodrich
1982	Russell W. Meyer, Jr.	Cessna Aircraft Company	2008	Alan Klapmeier	Cirrus Design
1983	Donald Bigler	Teledyne	2009	Mark Van Tine	Jeppesen
1984	Allen E. Paulson	Gulfstream	2010	Rob Wilson	Honeywell
1985	Frank M. Adams	Bendix Aerospace	2011	John Rosanvallon	Dassault Falcon
1986	Thomas J. Smith	Fairchild	2012	Caroline Daniels	Aircraft Technical Publishers
1987	James L. Churchill	Collins	2013	Brad Mottier	GE Aviation
1988	James S. Walsh	Wyman Gordon	2014	Steve Taylor	Boeing Business Jets
1989	Max E. Bleck	Beech	2015	Joe Brown	Hartzell Propeller
1990	D. Larry Moore	Honeywell	2016	Aaron Hilkemann	Duncan Aviation
1991	Frederick B. Sontag	Unison	2017	Simon Caldecott	Piper Aircraft
1992	Brian E. Barents	Learjet	2018	Phil Straub	Garmin International
1993	Robert H. Rau	Rohr	2019	Mark Burns	Gulfstream Aerospace
1994	Russell W. Meyer, Jr.	Cessna Aircraft	2020	David Paddock	Jet Aviation

<b>GAMA President and CEO</b>	1970	Joseph Geuting, Jr.	1990-91	James Gormley	1996-2004	Edward M. Bolen
	1970-90	Edward W. Stimpson	1992-96	Edward W. Stimpson	2005-Present	Peter J. Bunce



# SUMMARY OF ECONOMIC IMPACT

## General Aviation's Impact on the Economy and Jobs

General aviation is an important economic driver and the source of jobs in the U.S. and worldwide. In 2019, GAMA, in coordination with the Aircraft Electronics Association (AEA), Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), Helicopter Association International (HAI), National Air Transportation Association (NATA) and National Business Aviation Association (NBAA), sponsored a study to quantify general aviation's impact on the U.S. economy. The study also received support from JETNET LLC and Conklin & de Decker.

The study (at right), conducted by PricewaterhouseCoopers, *Contribution of General Aviation to the US Economy in 2018*, was released at GAMA's State of the Industry press conference on February 19, 2020.



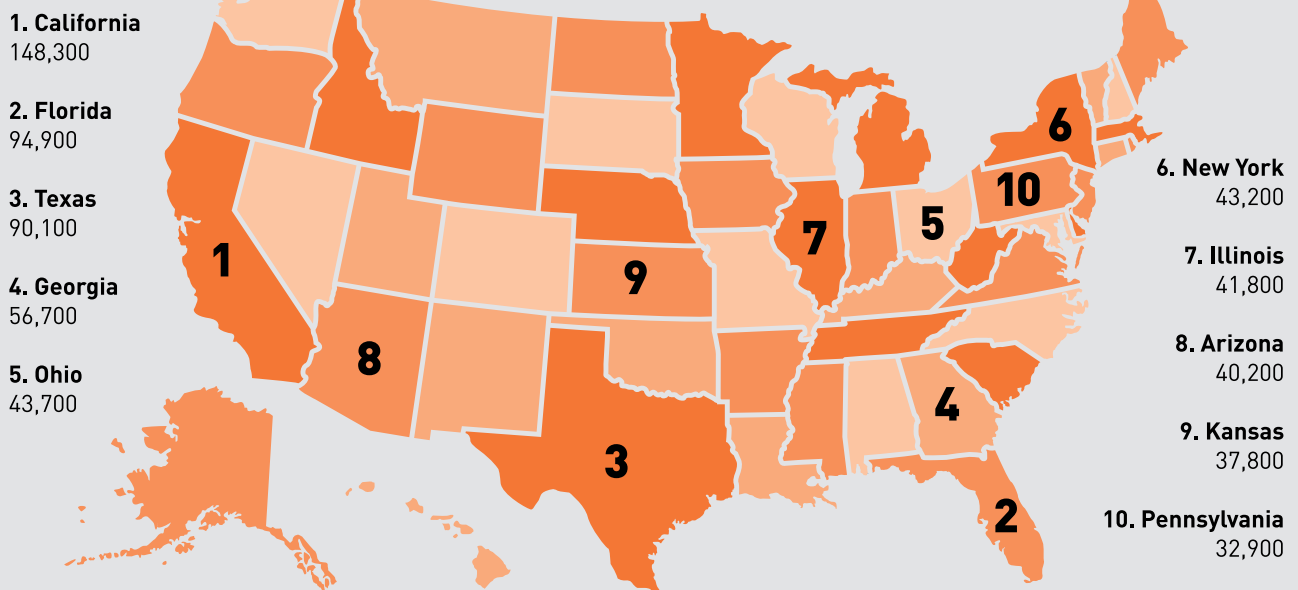
"U.S. economic growth and opportunity coming from the general aviation industry is increasing, and this trend will only accelerate as supersonic and electrically propelled business aircraft drive deeper into their development phases," said Pete Bunce, GAMA President and CEO. "This study confirms that general aviation continues to have a very significant impact on the

U.S. economy. As an industry, we must continue to keep pace with innovation to improve safety and focus intently on workforce development by promoting the amazing career potential available to young people through general aviation."

### STUDY HIGHLIGHTS:

“Nationwide 273,500 full- and part-time workers were directly employed in general aviation in 2018. Including indirect, induced, and enabled impacts, general aviation, in total, supported 1.2 million jobs and \$247 billion in output. General aviation also generated \$77 billion in labor income (including wages and salaries and benefits as well as proprietors' income) and contributed \$128 billion to US gross domestic product (GDP). Overall, total GDP impact attributable to general aviation amounted to approximately \$393 per person in the United States in 2018. At the national level, each direct job in the general aviation industry supported 3.3 jobs elsewhere in the economy.”

### TOP 10 STATES ranked by TOTAL JOBS SUPPORTED by general aviation, 2018



Total Jobs is defined as the number of payroll and self-employed jobs, including part-time jobs.

Source: PwC calculations using the IMPLAN modeling system.

## 2019 Policy and Regulatory Year in Review

The year started off with an unprecedented 35-day U.S. government shut down. The effects of the shutdown were felt throughout the industry, from certifying and modifying products, maintaining and repairing aircraft and systems, keeping the training and approval system for new and existing pilots on schedule, and the ability of operators to put new aircraft into service. This latest shutdown weakened the health and vitality of aviation manufacturing and the overall industry.

Throughout the shutdown, GAMA prioritized keeping its membership informed, addressing issues where possible, and helped companies with their post-shutdown planning. GAMA urged the President and Congress to act in a bipartisan manner to fund the federal government and end the shutdown.

Following the shutdown, a bipartisan bill was introduced to enable the Federal Aviation Administration (FAA) to leverage and temporarily draw from the Airport and Airway Trust fund in the event of a future government shutdown. The Aviation Funding and Stability Act of 2019 (H.R. 1108) is supported by GAMA and numerous other aviation stakeholders. This bill would provide targeted stability for the aviation system to function, including air traffic and critical elements of aviation safety. GAMA President and CEO testified before the U.S. House of Representatives Transportation and Infrastructure Aviation Subcommittee about the impacts of the shutdown on the general aviation manufacturing, aircraft maintenance, and pilots training industries.

GAMA is committed to mitigating the consequences of any future government shutdown on the FAA and general aviation industry.



GAMA Vice Chairman, Nicolas Chabbert demonstrated the Daher TBM to European Commission staff.

### General Aviation Overview for the European Commission

GAMA hosted the European Commission's Head of Unit for Aviation Safety, Joachim Luecking, and his team responsible for EU aviation safety regulation and oversight, for a "GA Info Day" near Brussels, Belgium, in September.

The day included visits to Luxaviation and their maintenance facility at Zaventem airport which was followed by a stop at the general aviation Aerodrome de Namur. The day also included the opportunity to enjoy a demonstration flight on board a new Sonaca 200 aircraft, as well as a tour of the company's new production facilities.

### A New EASA Basic Regulation

Industry began work on the implementation of the update to the common rules of civil aviation establishing the European Union Aviation Safety Agency (EASA), Regulation (EU) 2018/1139. This new safety framework contains many priorities for GAMA members and the broader aviation industry.

The new EASA Basic Regulation (BR) establishes a simpler and more appropriate pathway for the certification of certain general aviation aircraft by enabling the development of the lighter version of Part 21 now underway.

The BR also establishes a framework for sharing GA safety data among EU Member States and allows organizations to obtain EU-wide approvals in place of redundant approvals with each state, enabling more consistent and efficient implementation of European safety requirements.

### An Eye on Certification Reforms

In the wake of the tragic Boeing 737 MAX accidents, there have been several reviews initiated to look at various aspects of the FAA's aircraft certification process. While these investigations have focused on issues specific to the certification of the Boeing 737 MAX aircraft, they also have reviewed and made recommendations to improve the overall certification process.

Throughout this process, GAMA has acted as a resource to congressional members and staff to engage, encourage dialogue, and answer questions. Additionally, GAMA has conducted significant outreach to other key stakeholders. For example, GAMA has met with members and staff of the Special Committee charged with making recommendations to DOT Secretary Chao about the FAA Certification Process multiple times. GAMA has also worked with DOT, FAA, and NTSB to share information as well as answer any questions.

This outreach is being conducted to educate about the rationale and strength of the certification process, but also to suggest targeted ways to improve the certification system and avoid negative, unintended consequences. The association has also worked to provide policymakers with a better understanding of the certification process and to continue GAMA's standing as a credible and constructive resource.

Additionally, the year started with industry submitting recommendations of the Safety Oversight and Certification Aviation Rulemaking Committee (SOCARC) to the FAA. Co-chaired by GAMA member company Bell, the SOCARC provided a set of priorities to strengthen the product certification and validation process, including recommendations about FAA oversight and establishing a manufacturer compliance assurance system.

A key component of the ARC's input is the integration of the FAA Aircraft Certification and the Flight Standards offices' oversight of certification and operational evaluations through joint program management. Recommendation of specific importance is that the FAA—working with international partners—take steps to fully leverage bilateral agreements, type validation processes, and the recognition of each regulator's safety oversight.

## SAF Shifting from Demonstration to Common Use

The use of Sustainable Aviation Fuels (SAF) is key to the industry's Business Aviation Commitment on Climate Change, which, among other aims, seeks to achieve carbon neutral growth from 2020 forward.

SAF demonstration events were hosted during the year, including at Van Nuys, California, in January, European Business Aviation Convention & Exhibition (EBACE) in May, and the National Business Aviation Association's (NBAA) convention in October.

Manufacturers conducted flights to the EBACE convention in Geneva with SAF from Caen Carpiquet Airport in France, Stockholm Arlanda Airport in Sweden, and Republic Airport in the United States. The objective is to bring SAF into common use by demonstrating its use as a drop-in alternative.

The use of SAF builds on the industry having delivered a 40 percent fuel efficiency improvement over the last 40 years through improved aircraft and component designs, new materials, and manufacturing processes.



Students from Hayesville High School at Glasair in Arlington, Washington.

## 7th Annual Aviation Design Challenge

Over 130 schools registered to participate and learn about the science of flight, airplane design, and career options in the 7th design challenge. Participating schools were provided with complementary "Fly to Learn" curriculum and X-Plane software. The first-place team from Hayesville High School in North Carolina spent two weeks at Glasair Aviation to experience aviation manufacturing first-hand. The second-place team from Erie I BOCES Harkness Career and Technical Center in Cheektowaga, New York won a two-day Redbird Flight Simulations STEM Lab Camp experience.

The 2019 competition was supported by generous sponsorship by Boeing Global Services, Bombardier Aviation, Cirrus Aircraft, Click Bond, Inc., Dassault Falcon, Embraer, ForeFlight, Garmin, GE Aviation, Glasair Aviation, Gulfstream Aerospace Corp., Hartzell Propeller, Jet Aviation, Jet Support Services Inc., Lycoming Engines, Pratt & Whitney Canada, Redbird Flight Simulations, Signature Aviation, Textron Aviation, Uber, and Wipaire.



## eVTOL and Simplified Vehicle Operations

Several initiatives advanced during the year to enable electric propulsion and urban air mobility (UAM) operations. A Simplified Vehicle Operations white paper that outlines one approach to increased autonomy was published by GAMA in May.

EASA publishing a Special Condition in July for electric Vertical Takeoff and Landing (eVTOL) aircraft was an important step toward establishing regulatory pathways for these vehicles. A separate Special Condition for electric and hybrid propulsion was published in December.

GAMA also developed plans for establishing means of compliance to both EASA and FAA regulations to meet the needs of the eVTOL community, specifically identifying tasks delegated to ASTM, EUROCAE, RTCA, and SAE, important standards groups working in the aviation space.

GAMA, in coordination with NBAA, also assessed UAM against Part 135 and 91 operating regulations, and to the current EASA and FAA pilot licensing/certification and training requirements.

## Advancing Safety in Partnership with EU and US Regulators

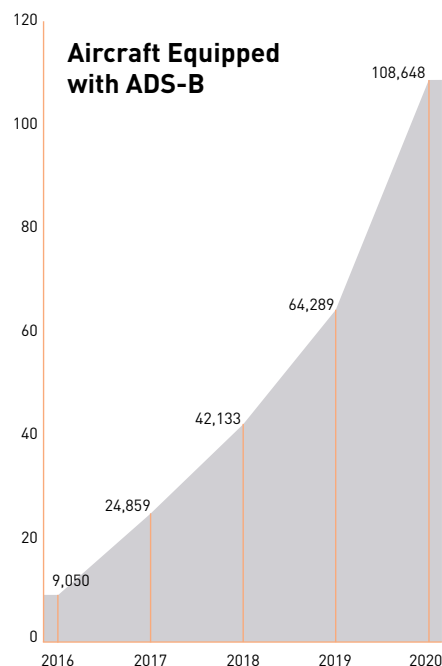
GAMA, in partnership with International AOPA, conducted a General Aviation Survey in Europe which covered over 6,000 aircraft in 32 countries. The survey results were jointly analyzed with EASA and improved the accuracy of the accident rates published in EASA's Annual Safety Review, helping to inform safety priorities.

Preliminary U.S. accident data for 2019 points to an increase in the total number of fatal general aviation and on-demand Part 135 accidents by approximately 5.2% compared to 2018. Efforts to make

the product approval process more effective and efficient, and working cooperatively to determine common accident causes under the General Aviation Joint Steering Committee and U.S. Helicopter Safety Team have resulted in long-term improvements in safety. The safety focus remains on addressing loss-of-control in flight, controlled flight into terrain, unintended flight into IMC, and mitigating the risk of power plant failures. The data from 2019, however, calls for doubling-down on these joint industry and government activities.

## Air Traffic Modernization Milestones

An important milestone was reached for Air Traffic Control modernization. The U.S. mandate for automatic dependent surveillance—broadcast (ADS-B) enabled transponder and surveillance equipment entered into effect at the end of the year. Significant work between stakeholders and the FAA helped support reaching the compliance date. Over 108,000 aircraft were equipped with ADS-B when the mandate entered into force on January 1, 2020.



ATC modernization activities will continue into the new decade. February 5, 2020 is the compliance date for data link equipage for certain aircraft in European airspace, and June 6, 2020 for Mode S and ADS-B transponders upgrades. Other mandates, especially for ADS-B, are pending in Canada, Mexico, New Zealand, and South Africa.

## Aviation Security in the 21st Century

The aviation community continues to face an evolving threat environment. The Transportation Security Administration (TSA) Modernization Act was enacted as part of the FAA Reauthorization in 2018. The Act directs the TSA to work with industry to modernize existing security programs, including those applicable to general aviation and Part 135 operators. The TSA Aviation Security Advisory Committee continues to provide an important forum to address the priorities identified by the U.S. Congress.

Two important proposals to establish standards for aviation cybersecurity were introduced during summer 2019. EASA, building on cooperative activities in the Aircraft System Information Security / Protection (ASISP) working group, issued draft cybersecurity airworthiness standards for general aviation and transport category aircraft. EASA also presented a regulatory framework for security risk management. GAMA will continue to work with EASA and the FAA to ensure the general aviation industry maintains momentum in addressing cybersecurity threats through a risk-based framework.

GAMA gathers aircraft shipment data from 39 manufacturers. A detailed overview of these statistics is available in Chapter One of this data book. The report also contains detailed aircraft registry data from 47 countries, representing the vast majority of the market for general aviation aircraft deliveries.

## Aircraft Shipments and Billings

General aviation aircraft deliveries reached a value of \$27.3 billion in 2019, an increase compared to \$24.3 billion the prior year. Overall airplane deliveries increased while helicopter deliveries contracted.

The delivery of piston airplanes experienced the largest growth among the segments at 16.4% at 1,324 units delivered compared to 2018 at 1,137 units. Business jet shipments also increased from 703 to 809 units, the largest number of business jet deliveries since 2009. Turboprop shipments were down by approximately 11.3% in 2019.

The piston engine airplane market in North America accounted for 66.4% of overall shipments. The second largest market for piston airplanes for the fifth year in a row was the Asia-Pacific market at 12.8%. Turboprop airplane shipments to North American customer accounted for 50.3%. The second largest market for turboprop airplane deliveries was Latin America at 16.8% in 2019. The North American market accounted for 67.1% of business jet deliveries in 2019, a continued expansion of that market share compared to the past decade. The second largest market for business jet deliveries during the year was Europe at 14.3%.

Helicopter deliveries decreased in 2019 compared to the prior year. A total of 698 turbine civil/commercial certificated rotorcraft were delivered.



Additionally, 179 piston helicopters were delivered compared to 281 in 2018.

## Aircraft Fleet

The turbine business airplane fleet reached 38,448 airplanes according to JETNET LLC. This is an increase of over 8,800 airplanes compared to a decade earlier, an increase of 29%.

There were 31,839 rotorcraft worldwide at the end of 2019, including 22,236 turbine and 9,603 piston engine powered. The overall rotorcraft fleet expanded by 0.6% during the calendar year.

The fractional aircraft industry is in its third decade of operation and remains an important pathway to accessing general aviation aircraft. The fleet grew slightly in 2019 to 860 aircraft according to JETNET LLC.

## U.S. Pilot Population Growing

The aviation industry is going through a peak demand cycle for pilots. The bulk of primary pilot training takes place in general aviation aircraft. As seen in the statistics for piston airplane deliveries,

flight schools are expanding their fleets in response to the demand for training. FAA data also shows that more persons are seeking flight training and obtaining pilot certificates.

According to the FAA, 197,665 student certificates were active at the end of 2019, compared to 167,804 the year prior, a 17.8% increase. The number of commercial and air transport pilot certificates also increased to 100,863 and 164,947 respectively, whereas the number of private pilots dropped slightly from 163,695 in 2018 to 161,105 in 2019.

The population of females holding U.S. pilot certificates reached 7.9%, one of the highest ratios on record with a total of 52,740 certificates.

Additional data is available at [www.GAMA.aero](http://www.GAMA.aero). If you have questions about the data in this report, please contact GAMA staff by e-mail at [info@GAMA.aero](mailto:info@GAMA.aero).



## GENERAL AVIATION SHIPMENTS AND BILLINGS

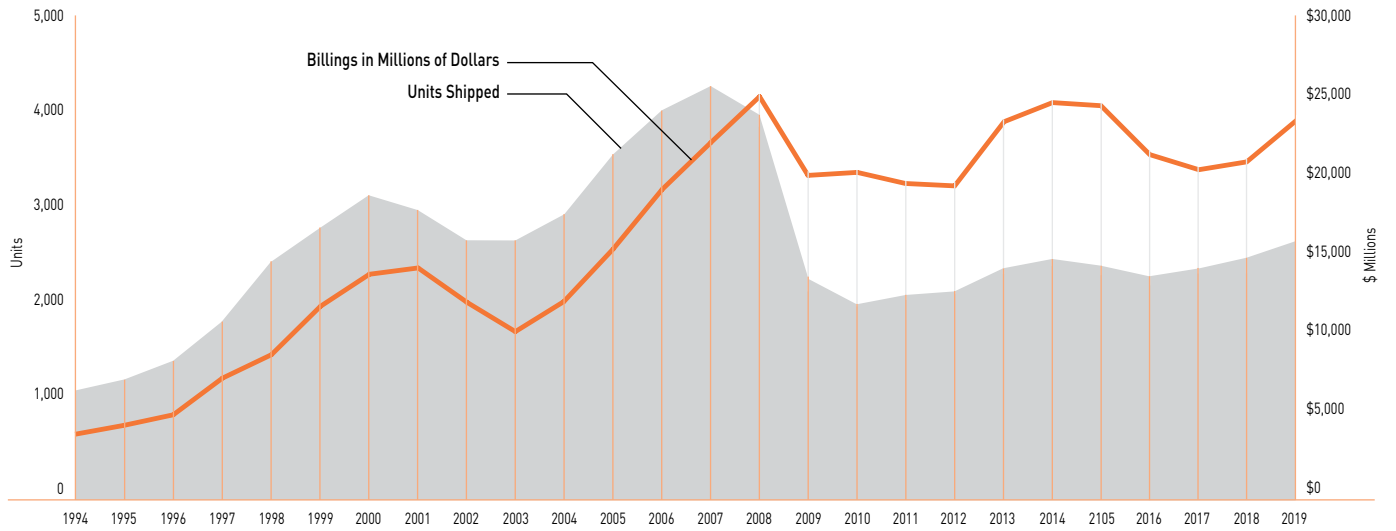
### 1.1 General Aviation Airplane Shipments and Billings (in Millions of Dollars) by Type of Airplane Manufactured Worldwide (1994–2019)

Year	Piston Airplanes				Turboprop		Business Jet		Total Turbine Units	Grand Total Units	Grand Total Billings
	Single-Engine	Multi-Engine	Total Units	Billings	Units	Billings	Units	Billings			
1994	544	77	621	\$ 111	233	\$ 714	278	\$ 2,924	511	1,132	\$ 3,749
1995	605	61	666	\$ 169	285	\$ 774	300	\$ 3,351	585	1,251	\$ 4,294
1996	731	70	801	\$ 191	320	\$ 864	316	\$ 3,881	636	1,437	\$ 4,936
1997	1,043	80	1,123	\$ 238	279	\$ 913	438	\$ 6,019	717	1,840	\$ 7,170
1998	1,508	98	1,606	\$ 377	336	\$ 1,011	515	\$ 7,216	851	2,457	\$ 8,604
1999	1,689	112	1,801	\$ 440	340	\$ 930	667	\$ 10,190	1,007	2,808	\$ 11,560
2000	1,877	103	1,980	\$ 512	415	\$ 1,323	752	\$ 11,661	1,167	3,147	\$ 13,496
2001	1,645	147	1,792	\$ 541	422	\$ 1,210	784	\$ 12,117	1,206	2,998	\$ 13,868
2002	1,591	130	1,721	\$ 483	280	\$ 868	676	\$ 10,427	956	2,677	\$ 11,778
2003	1,825	71	1,896	\$ 545	272	\$ 837	518	\$ 8,616	790	2,686	\$ 9,998
2004	1,999	52	2,051	\$ 692	319	\$ 997	592	\$ 10,405	911	2,962	\$ 12,093
2005	2,326	139	2,465	\$ 805	375	\$ 1,189	750	\$ 13,161	1,125	3,590	\$ 15,156
2006	2,513	242	2,755	\$ 857	412	\$ 1,389	887	\$ 16,555	1,299	4,054	\$ 18,815
2007	2,417	258	2,675	\$ 897	465	\$ 1,593	1,137	\$ 19,347	1,602	4,277	\$ 21,837
2008	1,943	176	2,119	\$ 945	538	\$ 1,953	1,317	\$ 21,948	1,855	3,974	\$ 24,846
2009	893	70	963	\$ 442	446	\$ 1,589	874	\$ 17,443	1,320	2,283	\$ 19,474
2010	781	108	889	\$ 415	368	\$ 1,300	767	\$ 18,000	1,135	2,024	\$ 19,715
2011	761	137	898	\$ 441	526	\$ 1,365	696	\$ 17,235	1,222	2,120	\$ 19,042
2012	817	91	908	\$ 428	584	\$ 1,359	672	\$ 17,108	1,256	2,164	\$ 18,895
2013	908	122	1,030	\$ 571	645	\$ 1,821	678	\$ 21,058	1,323	2,353	\$ 23,450
2014	986	143	1,129	\$ 635	603	\$ 1,849	722	\$ 22,015	1,325	2,454	\$ 24,499
2015	946	110	1,056	\$ 601	557	\$ 1,651	718	\$ 21,877	1,275	2,331	\$ 24,129
2016	890	129	1,019	\$ 631	582	\$ 1,949	666	\$ 18,480	1,248	2,267	\$ 21,059
2017	936	149	1,085	\$ 595	563	\$ 1,720	677	\$ 17,885	1,240	2,325	\$ 20,201
2018	952	185	1,137	\$ 642	601	\$ 1,869	703	\$ 18,054	1,304	2,441	\$ 20,564
2019	1,111	213	1,324	\$ 772	525	\$ 1,664	809	\$ 21,077	1,334	2,658	\$ 23,515

2016–2018 billing data has been updated for piston airplanes, turboprops, and business jets. Starting in 2011, the data includes the addition of agricultural airplanes and also new piston airplane manufacturers. The data cannot be directly compared to 2010 and earlier entries. Refer to Table 1.3b and 1.3c for make and model detail.

Source: GAMA

**FIGURE 1.1 General Aviation Airplane Shipments and Billings Worldwide (1994–2019)**



Source: GAMA

**1.2 Customer Delivery Region (in Percent of Total) for General Aviation Airplane Shipments by Type of Airplane Manufactured Worldwide (2007–2019)**

Year	Piston					Turboprop					Business Jet				
	North America	Europe	Asia-Pacific	Latin America	Middle East & Africa	North America	Europe	Asia-Pacific	Latin America	Middle East & Africa	North America	Europe	Asia-Pacific	Latin America	Middle East & Africa
2007	66.5	16.3	9.2	5.4	2.7	57.2	16.3	8.6	14.4	3.4	58.3	24.9	4.2	7.5	5.2
2008	68.1	15.2	7.5	7.3	2.0	57.3	21.9	6.0	7.4	7.4	53.8	25.9	4.7	9.4	6.3
2009	59.4	21.2	9.5	6.8	2.8	57.8	17.5	8.7	8.1	7.8	49.4	26.3	8.6	9.2	6.4
2010	53.4	18.6	13.7	8.8	5.5	43.2	15.2	16.8	14.7	10.1	42.1	22.8	11.8	14.3	9.0
2011	57.7	12.0	15.6	10.0	4.6	52.6	14.1	14.4	13.6	5.3	50.0	20.2	12.9	10.1	6.8
2012	50.4	19.6	16.3	9.7	4.1	48.6	12.6	17.4	14.5	6.9	49.7	20.8	11.8	11.6	6.1
2013	52.8	17.2	15.1	10.0	5.0	57.1	10.5	14.0	13.2	5.3	52.4	15.6	11.9	11.1	9.0
2014	55.1	19.7	12.1	8.9	4.3	51.3	7.7	19.4	15.3	6.3	52.2	19.5	10.9	9.4	7.9
2015	66.7	11.4	13.5	6.3	2.2	56.2	6.6	16.3	14.5	6.3	60.8	18.0	9.2	7.1	4.9
2016	69.6	10.1	10.2	5.8	4.3	57.8	10.6	13.2	9.9	8.4	62.0	18.8	7.7	6.2	5.3
2017	65.6	9.5	13.4	5.9	5.6	54.2	12.8	14.1	15.5	3.4	63.8	17.0	9.9	5.3	4.0
2018	61.5	10.8	18.5	5.0	4.1	49.8	12.9	15.1	14.9	7.2	65.1	15.4	10.0	5.8	3.7
2019	66.4	11.2	12.8	4.4	5.1	50.3	12.8	14.6	16.8	5.4	67.1	14.3	8.0	5.9	4.6

Source: GAMA





## 1.3a Worldwide Business Jet Shipments by Manufacturer (2006–2019)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Airbus</b>	<b>11</b>	<b>13</b>	<b>11</b>	<b>13</b>	<b>15</b>	<b>10</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>6</b>
Airbus Corporate Jet (all models)	10	12	9	11	-	-	-	-	-	-	-	-	-	-
ACJ318	-	-	-	-	2	2	2	1	0	1	0	0	0	0
ACJ319	-	-	-	-	8	6	6	4	1	1	0	0	0	0
ACJ319neo	-	-	-	-	-	-	-	-	-	-	-	-	-	2
ACJ320	-	-	-	-	3	1	0	0	4	1	0	0	1	0
ACJ320neo	-	-	-	-	-	-	-	-	-	-	-	-	-	4
ACJ321	-	-	-	-	-	-	-	1	0	0	0	0	0	0
ACJ330	-	1	1	1	1	1	1	0	0	1	1	0	0	0
ACJ340	1	0	1	1	1	0	0	0	0	0	0	0	0	0
<b>Boeing Business Jets</b>	<b>13</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>8</b>	<b>12</b>	<b>7</b>	<b>10</b>	<b>11</b>	<b>4</b>	<b>10</b>	<b>6</b>	<b>2</b>
Boeing Business Jet	12	7	3	3	4	8	2	5	3	4	1	0	2	0
Boeing Business Jet 2	1	0	1	0	2	0	2	1	2	1	0	0	0	0
Boeing Business Jet 3	-	-	2	1	4	0	0	0	0	1	0	0	0	0
Boeing Business Jet Max 7	-	-	-	-	-	-	-	-	-	-	-	-	0	0
Boeing Business Jet Max 8	-	-	-	-	-	-	-	-	-	-	-	-	2	0
Boeing Business Jet Max 9	-	-	-	-	-	-	-	-	-	-	-	-	0	0
Boeing 737-800	-	-	-	-	-	-	-	-	-	-	2	1	0	0
Boeing Business Jet 747	-	-	-	-	-	-	8	0	0	0	0	3	0	0
Boeing Business Jet 767	-	-	-	1	0	0	0	0	0	0	0	0	0	0
Boeing Business Jet 777	-	-	-	1	2	0	0	0	1	1	1	3	2	0
Boeing Business Jet 787	-	-	-	-	-	-	-	1	4	4	0	3	0	2
<b>Bombardier Business Aircraft</b>	<b>213</b>	<b>224</b>	<b>247</b>	<b>173</b>	<b>150</b>	<b>182</b>	<b>179</b>	<b>180</b>	<b>204</b>	<b>199</b>	<b>162</b>	<b>138</b>	<b>137</b>	<b>142</b>
Learjet 40/XR	26	57	48	33	16	24	24	1	-	-	-	-	-	-
Learjet 45/XR	30	-	-	-	-	-	-	-	-	-	-	-	-	-
Learjet 60/XR	15	23	26	13	12	19	15	10	1	-	-	-	-	-
Learjet 70/75	-	-	-	-	-	-	-	18	33	32	24	14	12	12
Challenger 300/350	55	51	60	33	29	37	48	55	54	68	62	56	60	76
Challenger 604/605/650	29	35	44	36	38	43	34	32	36	25	25	21	23	-
Global 5000/5500	18	46	52	51	49	53	54	62	80	73	51	45	41	54
Global 6000/6500/Express	22	-	-	-	-	-	-	-	-	-	-	-	-	-
Global 7500	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL 850/870/890	18	12	17	7	6	6	4	2	0	1	0	2	0	-
<b>Cirrus Aircraft</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>63</b>	<b>81</b>
SF50	-	-	-	-	-	-	-	-	-	-	3	22	63	81
<b>Dassault Aviation</b>	<b>61</b>	<b>70</b>	<b>72</b>	<b>77</b>	<b>95</b>	<b>63</b>	<b>66</b>	<b>77</b>	<b>66</b>	<b>55</b>	<b>49</b>	<b>49</b>	<b>41</b>	<b>40</b>
Falcon 50EX	5	2	1	-	-	-	-	-	-	-	-	-	-	-
Falcon 900DX	4	10	4	1	3	-	-	-	-	-	-	-	-	-
Falcon 900EX EASy	16	18	19	17	17	1	-	-	-	-	-	-	-	-
Falcon 900LX	-	-	-	-	4	11	7	11	8	-	-	-	-	-
Falcon 2000	6	1	-	-	-	-	-	-	-	-	-	-	-	-
Falcon 2000DX	-	-	3	1	-	-	-	-	-	-	-	-	-	-
Falcon 2000EX EASy	30	33	24	3	-	-	-	-	-	-	-	-	-	-
Falcon 2000LX	-	-	-	23	30	20	22	8	-	-	-	-	-	-
Falcon 2000LXS	-	-	-	-	-	-	-	3	18	-	-	-	-	-
Falcon 2000S	-	-	-	-	-	-	-	12	13	-	-	-	-	-
Falcon 7X	-	6	21	32	41	31	37	43	27	-	-	-	-	-
Falcon 2000S/2000LXS/900LX/7X/8X	-	-	-	-	-	-	-	-	-	55	49	49	41	40
<b>Embraer</b>	<b>27</b>	<b>36</b>	<b>38</b>	<b>122</b>	<b>145</b>	<b>99</b>	<b>99</b>	<b>119</b>	<b>116</b>	<b>120</b>	<b>117</b>	<b>109</b>	<b>91</b>	<b>109</b>
Phenom 100/EV	-	-	2	97	100	41	29	30	19	12	10	18	11	11
Phenom 300/E	-	-	-	1	26	42	48	60	73	70	63	54	53	51
Legacy 450	-	-	-	-	-	-	-	-	-	3	12	14	14	15
Legacy 500	-	-	-	-	-	-	-	-	3	20	21	15	9	11
Praetor 500	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Praetor 600	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Legacy 600/650E	27	36	36	18	11	13	17	21	18	12	9	7	4	5
Lineage 1000/E190 Head of State	-	-	-	5	5	3	2	4	3	3	2	1	0	0
Shuttles (ERJs and E-Jets)	-	-	-	1	3	0	3	4	0	0	0	0	0	0
<b>Emivest (prev. Sino Swearingen)</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
SJ30-2	1	1	0	2	0	0	0	0	0	0	0	0	0	0
<b>Gulfstream Aerospace Corporation</b>	<b>113</b>	<b>138</b>	<b>156</b>	<b>94</b>	<b>99</b>	<b>99</b>	<b>94</b>	<b>144</b>	<b>150</b>	<b>154</b>	<b>121</b>	<b>120</b>	<b>121</b>	<b>147</b>
G100/G150 (prev. IAI Astra)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G200 (prev. IAI Galaxy)	42	59	68	19	24	21	11	23	33	34	27	30	29	-
G280	-	-	-	-	-	-	-	-	-	-	-	-	-	33
G300/350/400/450 (prev. GIV/GIVSP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G500/G550 (prev. GV/GVSP), G650, G650ER	71	79	88	75	75	78	83	121	117	120	94	90	92	-
G500/G600/G650/G650/G650ER	-	-	-	-	-	-	-	-	-	-	-	-	-	114
<b>Honda Aircraft Company</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>23</b>	<b>43</b>	<b>37</b>	<b>36</b>
HA-420 HondaJet	-	-	-	-	-	-	-	-	-	2	23	43	37	36
<b>ONE Aviation Corp. (prev. Eclipse Aero)</b>	<b>1</b>	<b>98</b>	<b>161</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>7</b>	<b>8</b>	<b>6</b>	<b>0</b>	<b>0</b>
Eclipse 500	1	98	161	-	-	-	-	-	-	-	-	-	-	-
Eclipse 550	-	-	-	-	-	-	-	-	12	7	8	6	0	0
<b>Pilatus</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>40</b>
PC-24	-	-	-	-	-	-	-	-	-	-	-	-	18	40

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## 1.3a Worldwide Business Jet Shipments by Manufacturer (2006–2019) Continued

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Textron Aviation (Beechcraft/Hawker)</b>	<b>140</b>	<b>162</b>	<b>160</b>	<b>98</b>	<b>73</b>	<b>52</b>	<b>32</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Premier I/A	23	54	31	16	11	11	3	-	-	-	-	-	-	-
Hawker 400XP	53	41	35	11	12	1	-	-	-	-	-	-	-	-
Hawker 750	-	-	23	13	5	7	-	-	-	-	-	-	-	-
Hawker 800XP	8	-	-	-	-	1	-	-	-	-	-	-	-	-
Hawker 850XP	56	35	15	3	1	0	-	-	-	-	-	-	-	-
Hawker 900XP	-	32	50	35	28	22	17	-	-	-	-	-	-	-
Hawker 4000	-	-	6	20	16	10	12	6	-	-	-	-	-	-
<b>Textron Aviation (Cessna)</b>	<b>307</b>	<b>388</b>	<b>466</b>	<b>289</b>	<b>178</b>	<b>183</b>	<b>181</b>	<b>139</b>	<b>159</b>	<b>166</b>	<b>178</b>	<b>180</b>	<b>188</b>	<b>206</b>
CE-510 Citation Mustang	1	45	101	125	73	43	38	20	8	8	10	7	-	-
CE-525 Citation CJ1+	25	34	20	14	3	2	-	-	-	-	-	-	-	-
CE-525 Citation M2	-	-	-	-	-	-	-	12	46	41	38	39	34	34
CE-525A Citation CJ2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CE-525A Citation CJ2+	36	44	56	21	17	15	19	15	2	-	-	-	-	-
CE-525B Citation CJ3	72	78	88	40	20	22	21	15	6	-	-	-	-	-
CE-525B Citation CJ3+	-	-	-	-	-	-	-	-	10	23	25	26	37	37
CE-525C Citation CJ4	-	-	-	-	19	48	44	33	28	33	29	23	29	33
CE-550 Citation Bravo	18	-	-	-	-	-	-	-	-	-	-	-	-	-
CE-560 Citation Encore	12	-	-	-	-	-	-	-	-	-	-	-	-	-
CE-560 Citation Encore+	-	23	28	5	5	4	-	-	-	-	-	-	-	-
CE-560 Citation XLS	73	82	72	7	-	-	-	-	-	-	-	-	-	-
CE-560 Citation XLS+	-	-	8	37	22	27	31	31	22	21	19	18	21	22
CE-680 Citation Sovereign	57	65	77	33	16	19	22	5	-	-	-	-	-	-
CE-680 Citation Sovereign+	-	-	-	-	-	-	-	8	28	18	11	9	6	8
CE-680A Citation Latitude	-	-	-	-	-	-	-	-	-	16	42	54	57	58
CE-700 Citation Longitude	-	-	-	-	-	-	-	-	-	-	-	-	13	13
CE-750 Citation X	12	17	16	7	3	3	6	-	-	-	-	-	-	-
CE-750 Citation X+	-	-	-	-	-	-	-	-	9	6	4	4	4	1
<b>Total Number of Airplanes</b>	<b>887</b>	<b>1,137</b>	<b>1,317</b>	<b>874</b>	<b>767</b>	<b>696</b>	<b>672</b>	<b>678</b>	<b>722</b>	<b>718</b>	<b>666</b>	<b>677</b>	<b>703</b>	<b>809</b>
% Change	18.3%	28.2%	15.8%	-33.6%	-12.2%	-9.3%	-3.4%	0.9%	6.5%	-0.6%	-7.2%	1.7%	3.8%	15.1%
<b>Total Billings for Airplanes (\$M)</b>	<b>16,555</b>	<b>19,347</b>	<b>21,948</b>	<b>17,443</b>	<b>18,000</b>	<b>17,235</b>	<b>17,108</b>	<b>21,058</b>	<b>22,015</b>	<b>21,877</b>	<b>18,480</b>	<b>17,885</b>	<b>18,054</b>	<b>21,077</b>
% Change	25.8%	16.9%	13.4%	-20.5%	3.2%	-4.2%	-0.7%	23.1%	4.5%	-0.6%	-15.5%	-3.2%	-0.9%	16.7%

Source: GAMA

## 1.3b Worldwide Turboprop Airplane Shipments by Manufacturer (2006–2019)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Air Tractor</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>130</b>	<b>168</b>	<b>174</b>	<b>145</b>	<b>113</b>	<b>112</b>	<b>133</b>	<b>141</b>	<b>119</b>
AT-402A	n/a	n/a	n/a	n/a	n/a	0	1	0	0	0	0	5	8	4
AT-402B	n/a	n/a	n/a	n/a	n/a	9	21	33	20	11	10	15	25	16
AT-502A	n/a	n/a	n/a	n/a	n/a	3	1	2	1	0	8	17	25	22
AT-502B	n/a	n/a	n/a	n/a	n/a	57	81	70	61	36	22	32	29	27
AT-504	n/a	n/a	n/a	n/a	n/a	4	6	2	3	3	1	5	1	1
AT-602	n/a	n/a	n/a	n/a	n/a	10	10	18	14	14	16	7	8	10
AT-802	n/a	n/a	n/a	n/a	n/a	26	18	9	10	8	5	6	3	3
AT-802A	n/a	n/a	n/a	n/a	n/a	21	30	40	36	29	40	39	34	30
AT-802AF	-	-	-	-	-	-	-	-	-	10	3	6	5	5
AT-802F	-	-	-	-	-	-	-	-	-	2	3	1	3	1
<b>AVIC General</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>
Y12 Series	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6	2	0	0
<b>Daher</b>	<b>42</b>	<b>46</b>	<b>60</b>	<b>36</b>	<b>38</b>	<b>38</b>	<b>38</b>	<b>40</b>	<b>51</b>	<b>55</b>	<b>54</b>	<b>57</b>	<b>50</b>	<b>68</b>
Kodiak 100	-	-	-	-	-	-	-	-	-	-	-	-	-	20
TBM 850	42	46	60	36	38	38	38	40	-	-	-	-	-	-
TBM 900	-	-	-	-	-	-	-	-	51	55	8	-	-	-
TBM 910	-	-	-	-	-	-	-	-	-	-	-	29	29	11
TBM 930	-	-	-	-	-	-	-	-	-	-	46	28	21	2
TBM 940	-	-	-	-	-	-	-	-	-	-	-	-	-	35
<b>Extra Aircraft</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EA500	-	-	-	-	-	-	2	1	2	-	-	-	-	-
<b>Maule Air Incorporated</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
M-7-420AC	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<b>Pacific Aerospace Corporation</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>10</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>6</b>
PAC 750XL	5	10	15	12	11	10	10	6	4	5	8	7	11	6
<b>Piaggio Aerospace</b>	<b>19</b>	<b>21</b>	<b>30</b>	<b>24</b>	<b>11</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>3</b>
P.180 Avanti II	19	21	30	24	11	14	5	2	2	-	-	-	-	-
P.180 Avanti Evo	-	-	-	-	-	-	-	-	-	3	3	2	4	3
<b>Pilatus</b>	<b>90</b>	<b>98</b>	<b>100</b>	<b>105</b>	<b>84</b>	<b>69</b>	<b>67</b>	<b>69</b>	<b>76</b>	<b>74</b>	<b>100</b>	<b>86</b>	<b>83</b>	<b>83</b>
PC-6 Porter	n/a	6	3	5	5	6	5	4	10	4	9	1	3	0
PC-12	90	92	97	100	79	63	62	65	66	70	91	85	80	83
<b>Piper Aircraft, Inc.</b>	<b>49</b>	<b>53</b>	<b>52</b>	<b>29</b>	<b>25</b>	<b>32</b>	<b>32</b>	<b>34</b>	<b>36</b>	<b>27</b>	<b>34</b>	<b>47</b>	<b>56</b>	<b>44</b>
PA-46-500TP Meridian/M500	49	53	52	29	25	32	32	34	36	27	34	47	56	44
PA-46-600TP M600	-	-	-	-	-	-	-	-	-	-	22	35	38	24

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## 1.3b Worldwide Turboprop Airplane Shipments by Manufacturer (2006–2019) Continued

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Quest Aircraft Company</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>24</b>	<b>14</b>	<b>13</b>	<b>15</b>	<b>28</b>	<b>30</b>	<b>32</b>	<b>36</b>	<b>31</b>	<b>23</b>	<b>-</b>
Kodiak 100	-	1	7	24	14	13	15	28	30	32	36	31	23	-
<b>Textron Aviation (Beechcraft/Hawker)</b>	<b>140</b>	<b>157</b>	<b>172</b>	<b>119</b>	<b>90</b>	<b>92</b>	<b>89</b>	<b>135</b>	<b>127</b>	<b>117</b>	<b>106</b>	<b>86</b>	<b>94</b>	<b>93</b>
King Air C90	52	46	66	44	28	29	27	27	21	15	11	13	12	13
King Air B200/B250	42	58	54	37	24	25	22	36	35	28	32	28	30	31
King Air 350	46	53	52	38	38	38	40	72	71	74	63	45	52	49
<b>Textron Aviation (Cessna)</b>	<b>67</b>	<b>79</b>	<b>101</b>	<b>97</b>	<b>95</b>	<b>93</b>	<b>107</b>	<b>105</b>	<b>94</b>	<b>102</b>	<b>84</b>	<b>69</b>	<b>92</b>	<b>83</b>
CE-208 Caravan 675	8	11	12	12	8	10	11	11	13	9	13	10	13	12
CE-208B Grand Caravan	59	68	89	85	87	83	96	94	81	93	71	59	79	71
<b>Thrus Aircraft, Inc.</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>35</b>	<b>51</b>	<b>51</b>	<b>36</b>	<b>29</b>	<b>39</b>	<b>43</b>	<b>38</b>	<b>26</b>
S2R-T34	n/a	n/a	n/a	n/a	n/a	30	39	20	10	8	10	15	16	16
S2RHG-T65	n/a	n/a	n/a	n/a	n/a	1	0	1	0	0	2	1	1	0
S2R-T660	n/a	n/a	n/a	n/a	n/a	1	0	1	1	7	17	6	6	4
S2R-G10	n/a	n/a	n/a	n/a	n/a	3	3	2	1	0	0	0	0	0
S2R-H80	n/a	n/a	n/a	n/a	n/a	0	9	27	24	14	10	21	15	6
<b>Viking Air Ltd.</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>9</b>	<b>n/a</b>
DHC-6 Series 400 Twin Otter	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9	n/a
<b>Total Number of Airplanes</b>	<b>412</b>	<b>465</b>	<b>538</b>	<b>446</b>	<b>368</b>	<b>526</b>	<b>584</b>	<b>645</b>	<b>603</b>	<b>557</b>	<b>582</b>	<b>563</b>	<b>601</b>	<b>525</b>
% Change	9.9%	12.9%	15.7%	-17.1%	-17.5%	n/a	11.0%	10.4%	-6.5%	-7.6%	3.4%	-3.3%	5.2%	-11.3%
<b>Total Billings for Airplanes (\$M)</b>	<b>1,389</b>	<b>1,593</b>	<b>1,953</b>	<b>1,589</b>	<b>1,300</b>	<b>1,365</b>	<b>1,359</b>	<b>1,821</b>	<b>1,849</b>	<b>1,651</b>	<b>1,949</b>	<b>1,720</b>	<b>1,869</b>	<b>1,644</b>
% Change	16.9%	14.6%	22.7%	-18.7%	-18.2%	n/a	-0.4%	33.9%	1.5%	-10.7%	18.0%	-11.7%	19.6%	19.6%

Source: GAMA

## 1.3c Worldwide Piston-Engine Airplane Shipments by Manufacturer (2006–2019)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Adam Aircraft</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
A500	4	3	-	-	-	-	-	-	-	-	-	-	-	-
<b>Air Tractor</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
AT-401B	-	-	-	-	-	-	1	0	1	1	0	1	0	0
<b>Alpha Aviation</b>	<b>5</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
120T	-	2	-	-	-	-	-	-	-	-	-	-	-	-
160A	5	9	1	-	-	-	-	-	-	-	-	-	-	-
160Ai	-	2	0	-	-	-	-	-	-	-	-	-	-	-
<b>American Champion</b>	<b>60</b>	<b>70</b>	<b>54</b>	<b>26</b>	<b>37</b>	<b>29</b>	<b>18</b>	<b>26</b>	<b>30</b>	<b>19</b>	<b>19</b>	<b>15</b>	<b>13</b>	<b>10</b>
7EC Champ	1	21	7	1	0	3	0	3	1	1	2	0	0	0
7ECA Citabria Aurora	2	4	3	2	2	1	0	0	2	1	0	0	2	0
7GCAA Citabria Adventurer	6	6	2	1	2	0	0	0	0	0	0	0	2	0
7GCBC Citabria Explorer	16	8	8	4	4	6	3	1	3	0	1	2	1	1
8GCBC Scout	14	8	10	8	15	13	7	6	7	6	10	8	5	6
8KCAB Super Decathlon	21	23	24	10	14	6	8	10	14	6	6	5	3	3
8KCAB Xtreme Decathlon	-	-	-	-	-	-	-	6	3	5	0	0	0	0
<b>AVIC General</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>22</b>	<b>14</b>	<b>12</b>
Y5B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4	5	4	2
LE500	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11	5	0	0
A2C	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11	12	10	10
<b>Columbia Aircraft (prev. Lancair)</b>	<b>185</b>	<b>152</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Columbia 350	39	34	-	-	-	-	-	-	-	-	-	-	-	-
Columbia 400	146	118	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cirrus Aircraft</b>	<b>721</b>	<b>710</b>	<b>549</b>	<b>266</b>	<b>264</b>	<b>255</b>	<b>253</b>	<b>276</b>	<b>308</b>	<b>301</b>	<b>317</b>	<b>355</b>	<b>380</b>	<b>384</b>
Cirrus SR20	150	112	115	28	42	48	84	32	31	31	35	46	65	53
Cirrus SR22	565	588	427	238	165	105	81	112	117	128	133	135	135	131
Cirrus SR22T	-	-	-	-	57	102	88	132	160	142	149	174	180	200
Cirrus SRV	6	10	7	-	-	-	-	-	-	-	-	-	-	-
<b>CubCrafters</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>47</b>	<b>58</b>	<b>63</b>	<b>60</b>	<b>52</b>	<b>34</b>	<b>27</b>	<b>19</b>	<b>16</b>
CC11-100 Sport Cub S2	n/a	n/a	n/a	n/a	n/a	2	0	2	0	0	0	1	0	0
CC11-160 Carbon Cub SS	n/a	n/a	n/a	n/a	n/a	38	57	52	53	47	24	6	3	3
CC18-180 Top Cub	n/a	n/a	n/a	n/a	n/a	7	1	9	7	5	2	6	7	5
CC19-180 XCub	-	-	-	-	-	-	-	-	-	-	8	14	9	8
<b>Diamond Aircraft</b>	<b>438</b>	<b>471</b>	<b>308</b>	<b>163</b>	<b>130</b>	<b>185</b>	<b>156</b>	<b>139</b>	<b>202</b>	<b>144</b>	<b>132</b>	<b>137</b>	<b>134</b>	<b>233</b>
HK-36	-	-	-	13	10	3	3	1	0	1	0	0	0	0
DA-20	55	58	69	14	31	40	32	14	16	22	20	8	3	0
DA-40	220	232	154	98	57	72	93	102	136	75	48	60	45	126
DA-42	163	181	85	38	32	70	28	22	50	44	34	36	50	77
DA-62	-	-	-	-	-	-	-	-	-	2	30	33	36	30
<b>Discovery Aviation (prev. Liberty)</b>	<b>29</b>	<b>38</b>	<b>33</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
XL2	29	38	33	13	14	3	0	0	0	0	0	0	0	0
<b>Extra Aircraft</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>27</b>	<b>29</b>	<b>31</b>	<b>27</b>	<b>27</b>	<b>25</b>	<b>24</b>	<b>25</b>
EA300	n/a	n/a	n/a	n/a	n/a	n/a	27	29	31	27	27	25	24	25
<b>Flight Design GmbH</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>89</b>	<b>76</b>	<b>89</b>	<b>88</b>	<b>59</b>	<b>23</b>	<b>32</b>	<b>43</b>	<b>63</b>
ASTM CT Series	n/a	n/a	n/a	n/a	n/a	89	76	89	88	59	23	32	43	63
<b>ICON Aircraft</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>44</b>	<b>41</b>
A5	-	-	-	-	-	-	-	-	-	-	5	10	44	41

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## 1.3c Worldwide Piston-Engine Airplane Shipments by Manufacturer (2006–2019) Continued

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Mahindra Aerospace (prev. GippsAero)</b>	<b>20</b>	<b>17</b>	<b>19</b>	<b>11</b>	<b>14</b>	<b>10</b>	<b>14</b>	<b>12</b>	<b>17</b>	<b>14</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>12</b>
Airvan 8	20	17	19	11	14	10	14	12	17	14	9	9	7	12
<b>Maule Air Incorporated</b>	<b>38</b>	<b>36</b>	<b>27</b>	<b>7</b>	<b>4</b>	<b>4</b>	<b>9</b>	<b>6</b>	<b>2</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
M-4-180A, V	7	5	-	-	-	-	-	-	1	-	-	-	-	-
M-7-235, A, B, C	8	6	7	1	3	-	1	-	1	-	1	n/a	n/a	n/a
M-7-260, C	2	4	4	4	-	1	3	4	-	-	1	n/a	n/a	n/a
MT-7-235	9	2	6	2	-	-	1	-	-	-	-	-	-	-
MT-7-260	4	-	-	-	-	-	-	-	-	-	-	-	-	-
MX-7-180, A, B, C, AC	4	6	4	-	1	1	1	1	-	12	1	n/a	n/a	n/a
MXT-7-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MXT-7-180, A, AC	4	12	6	-	-	2	3	-	-	-	-	-	-	-
M-8-235	-	1	-	-	-	-	-	-	-	-	-	-	-	-
M-9-235	-	-	-	-	-	-	-	1	-	1	-	n/a	n/a	n/a
<b>Mooney International Corporation</b>	<b>75</b>	<b>79</b>	<b>65</b>	<b>19</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>11</b>	<b>7</b>	<b>7</b>	<b>14</b>	<b>9</b>
M20M Bravo	5	1	-	-	-	-	-	-	-	-	-	-	-	-
M20R Ovation 2	63	20	21	4	0	0	0	0	0	3	1	2	-	-
M20U Ovation Ultra	-	-	-	-	-	-	-	-	-	-	-	1	7	2
M20TN Acclaim	7	58	44	15	2	0	0	0	1	0	6	1	-	-
M20V Acclaim Ultra	-	-	-	-	-	-	-	-	-	-	-	3	7	7
<b>Piper Aircraft, Inc.</b>	<b>189</b>	<b>168</b>	<b>216</b>	<b>61</b>	<b>135</b>	<b>104</b>	<b>126</b>	<b>154</b>	<b>136</b>	<b>111</b>	<b>93</b>	<b>108</b>	<b>173</b>	<b>246</b>
PA-28-161 Warrior III	19	27	23	8	23	15	20	2	3	20	5	0	0	0
PA-28-181 Archer III	29	16	7	1	21	2	4	48	45	25	42	72	107	182
PA-28R-201 Arrow IV	5	8	1	0	4	0	2	1	8	5	7	9	7	0
PA-32-301FT Piper 6X	10	12	0	-	-	-	-	-	-	-	-	-	-	-
PA-32-301XTC Piper 6XT	11	-	-	-	-	-	-	-	-	-	-	-	-	-
PA-32R-301 Saratoga II HP	10	-	-	-	-	-	-	-	-	-	-	-	-	-
PA-32-301T Saratoga II TC	37	39	12	-	-	-	-	-	-	-	-	-	-	-
PA-34-220T Seneca V	26	22	27	7	22	21	17	22	10	8	3	1	2	3
PA-44-180 Seminole	11	14	24	5	16	16	22	23	22	17	10	17	37	40
PA-46-350P Malibu Mirage/M350	31	30	21	7	26	33	49	42	37	34	26	9	20	21
PA-46R-350T Matrix	-	-	101	33	23	17	12	16	11	2	-	-	-	-
<b>Pipistrel</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>22</b>	<b>24</b>
SW 121 Virus	-	-	-	-	-	-	-	-	-	-	-	19	22	24
<b>Quartz Mountain Aerospace</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
QMA 11E	-	-	11	-	-	-	-	-	-	-	-	-	-	-
<b>SONACA Aircraft</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>8</b>
Sonaca 200	-	-	-	-	-	-	-	-	-	-	-	-	2	8
<b>Symphony Aircraft (prev. OMF)</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Symphony 160	5	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TECNAM Aircraft</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>197</b>	<b>190</b>	<b>191</b>	<b>191</b>	<b>171</b>	<b>180</b>	<b>205</b>
ASTM - LSA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	108	108	102	73	72	63	60
P2002JF	n/a	n/a	n/a	n/a	n/a	n/a	n/a	33	18	20	33	20	18	21
P92JS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	7	4	7	3	3	3
P2002JR	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	0	0	0	0	0	0
P2008JC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	19	36	24	24	19	35	39
P2006T	n/a	n/a	n/a	n/a	n/a	n/a	n/a	20	21	21	32	39	41	40
P2010P Twenty Ten	-	-	-	-	-	-	-	-	-	20	22	18	20	34
P2012 Traveller	-	-	-	-	-	-	-	-	-	-	-	-	-	8
<b>Textron Aviation (Beechcraft/Hawker)</b>	<b>118</b>	<b>111</b>	<b>103</b>	<b>56</b>	<b>51</b>	<b>54</b>	<b>36</b>	<b>70</b>	<b>72</b>	<b>41</b>	<b>45</b>	<b>36</b>	<b>34</b>	<b>22</b>
Beechcraft Bonanza A/G36	80	73	63	36	22	24	12	35	32	23	25	13	15	7
Beechcraft Baron B/G58	38	38	40	20	29	30	24	35	40	18	20	23	19	15
<b>Textron Aviation (Cessna)</b>	<b>865</b>	<b>807</b>	<b>733</b>	<b>355</b>	<b>261</b>	<b>413</b>	<b>283</b>	<b>206</b>	<b>220</b>	<b>271</b>	<b>217</b>	<b>238</b>	<b>193</b>	<b>196</b>
CE-162 SkyCatcher	-	-	-	1	22	168	19	-	-	-	-	-	-	-
CE-172R Skyhawk	87	133	55	16	8	26	27	0	0	-	-	-	-	-
CE-172S Skyhawk SP	322	240	228	110	77	77	113	106	155	143	100	129	129	126
CE-182T Skylane	140	161	109	58	64	40	48	13	0	33	50	46	31	33
CE-T182T Turbo Skylane	187	140	105	75	36	37	19	26	0	-	-	-	-	-
CE-206H Stationair	25	20	17	3	4	11	16	3	0	-	-	-	-	-
CE-T206H Turbo Stationair	104	111	95	46	42	53	40	37	43	51	36	40	32	37
CE-350 Corvalis	-	1	14	5	1	0	1	0	0	-	-	-	-	-
CE-240 TTx (prev. CE-400 Corvalis TTx)	-	1	110	41	7	1	0	21	22	44	31	23	1	-
<b>Tiger Aircraft</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
AG-5B Tiger	3	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>WACO Classic Aircraft</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>3</b>
2T-1A-2	-	-	-	-	-	-	-	1	6	6	3	1	1	1
YMF-5D	n/a	n/a	n/a	n/a	n/a	5	6	6	5	4	4	5	5	2
<b>XtremeAir GmbH</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>9</b>	<b>9</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
XA41	n/a	n/a	n/a	n/a	n/a	4	2	2	0	n/a	n/a	n/a	n/a	n/a
XA42	n/a	n/a	n/a	n/a	n/a	5	7	6	9	n/a	n/a	n/a	n/a	n/a
<b>Total Number of Airplanes</b>	<b>2,755</b>	<b>2,675</b>	<b>2,119</b>	<b>977</b>	<b>912</b>	<b>1,207</b>	<b>1,072</b>	<b>1,282</b>	<b>1,378</b>	<b>1,265</b>	<b>1,155</b>	<b>1,218</b>	<b>1,302</b>	<b>1,509</b>
% Change	11.8%	-2.9%	-20.8%	-53.9%	-6.7%	n/a	-11.2%	n/a	7.5%	-8.2%	-8.7%	5.5%	6.9%	15.9%
<b>Total Billings for Airplanes (\$M)</b>	<b>857</b>	<b>897</b>	<b>945</b>	<b>442</b>	<b>415</b>	<b>441</b>	<b>428</b>	<b>571</b>	<b>635</b>	<b>601</b>	<b>631</b>	<b>596</b>	<b>642</b>	<b>772</b>
% Change	6.5%	4.7%	5.3%	-53.1%	-7.7%	n/a	-3.0%	n/a	11.1%	-5.3%	5.0%	-5.6%	7.7%	20.3%

Source: GAMA



### 1.3d Worldwide Rotorcraft Shipments by Manufacturer (2006–2019) Civil-Commercial and Military-Government Combined

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Airbus Helicopters</b>	n/a	n/a	n/a	n/a	n/a	507	440	451	418	360	380	369	323	300
HC120 (prev. EC120)	n/a	n/a	n/a	n/a	n/a	10	11	12	7	2	5	5	0	0
AS350 B2	n/a	n/a	n/a	n/a	n/a	59	36	32	23	9	7	0	0	0
H125/H125M (prev. EC125/AS350 B3e/AS550 C3e)	n/a	n/a	n/a	n/a	n/a	150	130	187	134	95	104	125	136	159
H130 (prev. EC130)	n/a	n/a	n/a	n/a	n/a	42	43	35	58	69	54	35	23	
AS355 NP/AS555 AP	n/a	n/a	n/a	n/a	n/a	7	8	5	3	3	7	1	0	0
H135/H135M (prev. EC135/EC635)	n/a	n/a	n/a	n/a	n/a	74	67	48	42	35	40	55	43	29
H145/H145M (prev. EC145/EC645/UH-72A)	n/a	n/a	n/a	n/a	n/a	89	82	69	73	68	107	93	79	84
AS365 N3/AS565 Mbe	n/a	n/a	n/a	n/a	n/a	14	11	8	4	7	11	16	2	0
H155 (prev. EC155)	n/a	n/a	n/a	n/a	n/a	12	7	10	10	10	3	3	2	5
H175 (prev. EC175)	-	-	-	-	-	-	-	-	3	4	4	11	11	4
H215/H215M (prev. AS332/AS532)	n/a	n/a	n/a	n/a	n/a	4	3	4	6	7	10	3	7	
H225/H225M (prev. EC225/EC725)	n/a	n/a	n/a	n/a	n/a	26	32	30	43	35	9	5	11	15
TIGER	n/a	n/a	n/a	n/a	n/a	20	10	11	12	16	19	17	9	4
<b>Bell Helicopter</b>	<b>159</b>	<b>181</b>	<b>175</b>	<b>165</b>	<b>139</b>	<b>188</b>	<b>247</b>	<b>279</b>	<b>239</b>	<b>223</b>	<b>171</b>	<b>192</b>	<b>245</b>	<b>242</b>
505	-	-	-	-	-	-	-	-	-	-	-	27	116	101
206B	20	28	18	22	5	-	-	-	-	-	-	-	-	-
206L/LT	21	24	21	16	15	14	9	11	13	12	10	4	2	2
407/GX/GXi/GXP	67	73	79	81	62	55	85	110	86	99	57	44	43	59
412/EP/EPI	35	39	36	28	28	20	39	36	26	12	10	13	11	11
427	7	10	7	4	1	4	4	-	-	-	-	-	-	-
429/WLG	-	-	-	2	21	28	43	56	53	52	28	36	20	28
430	9	7	3	-	-	-	-	-	-	-	-	-	-	-
Huey II	-	-	11	12	7	4	8	-	-	-	9	8	0	0
H-1	n/a	n/a	n/a	n/a	n/a	28	21	25	24	24	35	38	34	26
V22	n/a	n/a	n/a	n/a	n/a	35	38	41	37	24	22	22	19	15
<b>Enstrom Helicopter Corp.</b>	<b>23</b>	<b>19</b>	<b>10</b>	<b>6</b>	<b>4</b>	<b>n/a</b>	<b>16</b>	<b>27</b>	<b>26</b>	<b>20</b>	<b>12</b>	<b>5</b>	<b>22</b>	<b>16</b>
F-28/280	10	6	1	1	1	n/a	2	4	2	5	3	1	14	11
480	13	13	9	5	3	n/a	14	23	24	15	9	4	8	5
<b>Hélicoptères Guimbal</b>	<b>0</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>27</b>	<b>44</b>	<b>50</b>	<b>35</b>	<b>25</b>	<b>26</b>
Cabri G2	-	-	n/a	n/a	n/a	n/a	n/a	n/a	27	44	50	35	25	26
<b>Leonardo Helicopters (prev. AgustaWestland)</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>214</b>	<b>180</b>	<b>160</b>	<b>172</b>	<b>148</b>	<b>181</b>	<b>157</b>
AW119Kx	n/a	n/a	n/a	n/a	n/a	n/a	n/a	22	17	16	22	25	19	8
AW109 Power	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9	7	8	0	8	2	6
AW109 Trekker	-	-	-	-	-	-	-	-	-	-	-	-	20	5
AW109 GrandNew	n/a	n/a	n/a	n/a	n/a	n/a	n/a	35	14	14	17	14	15	15
AW139	n/a	n/a	n/a	n/a	n/a	n/a	n/a	118	101	72	63	45	69	69
AW169	-	-	-	-	-	-	-	-	-	1	22	26	21	30
AW149/AW189	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	10	16	7	14	15	4
AW159	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	11	13	19	0	0	2
SUPER LYNX	-	-	-	-	-	-	-	-	-	4	1	1	0	0
T129	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	5	4	10	8	15	12
AW101	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	5	5	3	3	4	6
CH47F	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	5	3	5	2	1	0
SW4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	3	0	0	0
W3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	5	4	0	0	0	0
<b>MD Helicopters</b>	<b>13</b>	<b>18</b>	<b>52</b>	<b>40</b>	<b>12</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
500	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
520N	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
530	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
600	n/a	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
900	n/a	7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>NH Industries</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>33</b>	<b>35</b>	<b>43</b>	<b>53</b>	<b>35</b>	<b>38</b>	<b>40</b>	<b>36</b>	<b>32</b>
NH90	n/a	n/a	n/a	n/a	n/a	33	35	43	53	35	38	40	36	32
<b>Robinson Helicopter Company</b>	<b>749</b>	<b>823</b>	<b>893</b>	<b>433</b>	<b>162</b>	<b>356</b>	<b>517</b>	<b>523</b>	<b>329</b>	<b>347</b>	<b>234</b>	<b>305</b>	<b>316</b>	<b>196</b>
R22	97	159	164	25	40	56	40	42	42	34	19	34	33	19
R44 Cadet	-	-	-	-	-	-	-	-	-	-	-	20	18	12
R44 Raven I / II	652	664	729	408	112	212	286	289	186	196	152	174	191	111
R66	-	-	-	-	10	88	191	192	101	117	63	77	74	54
<b>Schweizer Aircraft</b>	<b>61</b>	<b>70</b>	<b>51</b>	<b>27</b>	<b>29</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
300C	12	11	16	10	14	n/a	n/a	-	-	-	-	-	-	-
300CB/300CBi	44	51	27	13	6	n/a	n/a	-	-	-	-	-	-	-
330/333	5	8	8	4	9	n/a	n/a	-	-	-	-	-	-	-
<b>Sikorsky Aircraft Corp.</b>	<b>52</b>	<b>79</b>	<b>78</b>	<b>58</b>	<b>42</b>	<b>249</b>	<b>227</b>	<b>231</b>	<b>231</b>	<b>178</b>	<b>181</b>	<b>172</b>	<b>122</b>	<b>99</b>
S-76	36	50	53	34	21	16	5	26	17	13	5	4	1	1
S-92	16	29	25	24	21	20	30	37	42	16	7	3	4	4
Blackhawk	n/a	n/a	n/a	n/a	n/a	n/a	n/a	125	123	106	133	134	107	94
Seahawk	n/a	n/a	n/a	n/a	n/a	213	192	43	49	43	36	31	10	0
CH-53K	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<b>Total Number of Rotorcraft</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>1,768</b>	<b>1,503</b>	<b>1,367</b>	<b>1,238</b>	<b>1,266</b>	<b>1,270</b>	<b>1,068</b>
% Change	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-15.1%	-8.9%	-9.4%	2.3%	0.3%	-15.9%

Source: GAMA, Aerospace Industries Association, and company reports

## 1.4 U.S.-Manufactured General Aviation Airplane Shipments by Type (1970–2019)

Year	Grand Total	Single-Engine Piston	Multi-Engine Piston	Total Piston	Turboprop	Business Jet	Total Turbine	Companies Reporting	Factory Net Billings (\$ Millions)
1970	7,292	5,942	1,159	7,101	135	56	191	13	\$337
1971	7,466	6,287	1,043	7,330	89	47	136	11	\$322
1972	9,774	7,898	1,548	9,446	179	149	328	12	\$558
1973	13,646	10,780	2,413	13,193	247	206	453	12	\$828
1974	14,166	11,562	2,135	13,697	250	219	469	12	\$909
1975	14,056	11,439	2,116	13,555	305	196	501	12	\$1,033
1976	15,449	12,783	2,120	14,903	359	187	546	12	\$1,226
1977	16,907	14,057	2,195	16,252	428	227	655	12	\$1,488
1978	17,811	14,398	2,634	17,032	548	231	779	12	\$1,781
1979	17,050	13,286	2,843	16,129	639	282	921	12	\$2,165
1980	11,860	8,640	2,116	10,756	778	326	1,104	12	\$2,486
1981	9,457	6,608	1,542	8,150	918	389	1,307	12	\$2,920
1982	4,266	2,871	678	3,549	458	259	717	11	\$2,000
1983	2,691	1,811	417	2,228	321	142	463	10	\$1,470
1984	2,431	1,620	371	1,991	271	169	440	9	\$1,681
1985	2,029	1,370	193	1,563	321	145	466	9	\$1,431
1986	1,495	985	138	1,123	250	122	372	9	\$1,262
1987	1,085	613	87	700	263	122	385	9	\$1,364
1988	1,143	628	67	695	291	157	448	11	\$1,923
1989	1,535	1,023	87	1,110	268	157	425	11	\$1,804
1990	1,144	608	87	695	281	168	449	14	\$2,008
1991	1,021	564	49	613	222	186	408	14	\$1,968
1992	941	552	41	593	177	171	348	16	\$1,840
1993	964	516	39	555	211	198	409	16	\$2,144
1994	929	444	55	499	208	222	430	13	\$2,357
1995	1,077	515	61	576	255	246	501	13	\$2,842
1996	1,171	607	42	649	289	233	522	13	\$3,048
1997	1,562	898	86	984	236	342	578	12	\$4,593
1998	2,212	1,434	94	1,528	271	413	684	12	\$5,761
1999	2,530	1,634	114	1,748	265	517	782	13	\$7,843
2000	2,816	1,810	103	1,913	315	588	903	15	\$8,558
2001	2,631	1,581	147	1,728	303	600	903	14	\$8,641
2002	2,207	1,366	130	1,496	187	524	711	12	\$7,719
2003	2,137	1,519	71	1,590	163	384	547	13	\$6,434
2004	2,355	1,706	52	1,758	194	403	597	13	\$6,816
2005	2,857	2,024	71	2,095	240	522	762	13	\$8,667
2006	3,147	2,208	79	2,287	256	604	860	16	\$10,367
2007	3,279	2,097	77	2,174	290	815	1,105	16	\$11,941
2008	3,079	1,700	91	1,791	333	955	1,288	15	\$13,348
2009	1,585	770	32	802	269	514	783	13	\$9,082
2010	1,334	679	67	746	224	364	588	12	\$7,875
2011	1,465	639	67	706	395	364	759	16	\$8,266
2012	1,518	645	63	708	463	347	810	17	\$8,017
2013	1,615	674	80	754	527	334	861	17	\$11,069
2014	1,631	716	72	788	468	375	843	16	\$11,688
2015	1,592	740	43	783	420	389	809	17	\$11,982
2016	1,531	685	33	718	411	402	813	18	\$11,560
2017	1,599	745	41	786	409	404	813	18	\$10,641
2018	1,746	771	58	829	444	473	917	18	\$11,598
2019	1,771	825	58	883	385	503	888	18	\$13,972

Source: GAMA



### 1.5 U.S.-Manufactured General Aviation Airplane Billings (in Millions of Dollars) by Type (2000–2019)

Year	Grand Total	Single-Engine Piston	Multi-Engine Piston	Total Piston	Turboprop	Business Jet	Total Turbine
2000	8,558	n/a	n/a	446	934	7,178	8,112
2001	8,641	n/a	n/a	471	742	7,428	8,170
2002	7,719	n/a	n/a	389	487	6,843	7,330
2003	6,434	n/a	n/a	440	411	5,583	5,994
2004	6,816	n/a	n/a	568	555	5,693	6,248
2005	8,667	n/a	n/a	712	749	7,205	7,954
2006	10,367	n/a	n/a	722	853	8,792	9,645
2007	11,941	n/a	n/a	712	1,001	10,227	11,228
2008	13,348	n/a	n/a	836	1,172	11,340	12,513
2009	9,082	n/a	n/a	389	872	7,821	8,693
2010	7,875	n/a	n/a	368	724	6,782	7,506
2011	8,266	n/a	n/a	368	831	7,068	7,898
2012	8,017	n/a	n/a	374	867	6,776	7,643
2013	11,069	n/a	n/a	456	1,358	9,255	10,613
2014	11,688	n/a	n/a	484	1,316	9,888	11,204
2015	11,982	n/a	n/a	477	1,282	10,224	11,506
2016	11,560	n/a	n/a	505	1,180	9,875	11,055
2017	10,641	n/a	n/a	434	1,032	9,175	10,207
2018	11,598	n/a	n/a	466	1,151	9,981	11,132
2019	13,972	n/a	n/a	513	\$1,006	12,453	13,459

Source: GAMA



## 1.6 U.S.-Manufactured General Aviation Airplane Exports by Type and Billings (2000–2019)

Year	Single-Engine Piston	Multi-Engine Piston	Turboprop	Business Jet	Total Airplanes Exported		Billings Exported	
					Units	% of Shipments	(in \$ Millions)	% of Total Billings
2000	285	24	112	148	569	20.2%	\$1,957.5	22.9%
2001	175	42	118	170	505	19.2%	\$2,380.6	27.5%
2002	135	23	79	136	372	16.8%	\$1,980.9	25.4%
2003	168	22	52	94	336	15.7%	\$1,218.2	18.9%
2004	181	9	55	88	333	14.1%	\$1,419.6	20.8%
2005	301	18	66	172	557	19.5%	\$2,585.9	29.8%
2006	535	30	74	252	891	28.3%	\$4,395.5	42.4%
2007	665	33	131	313	1,142	34.8%	\$4,587.0	38.4%
2008	556	40	175	410	1,181	37.7%	\$5,863.8	43.9%
2009	341	15	121	255	732	46.2%	\$4,612.7	50.8%
2010	299	45	151	194	689	51.6%	\$4,867.8	61.8%
2011	249	50	121	112	532	36.3%	\$4,585.8	55.5%
2012	263	40	243	174	720	47.7%	\$4,791.1	59.8%
2013	255	49	245	142	691	42.8%	\$5,616.9	50.7%
2014	273	37	248	138	696	42.7%	\$5,419.2	46.4%
2015	170	23	203	128	524	32.9%	\$5,431.2	45.3%
2016	161	12	156	124	453	29.6%	\$4,451.3	38.5%
2017	193	11	210	127	541	33.8%	\$4,347.9	40.9%
2018	269	27	244	140	680	38.9%	\$4,896.3	42.2%
2019	188	21	182	147	538	30.4%	\$4,853.2	34.7%

Source: GAMA

## 1.7 European-Manufactured General Aviation Airplane Shipments by Type (2008–2019)

Year	Grand Total	Single-Engine Piston	Multi-Engine Piston	Total Piston	Turboprop	Business Jet	Total Turbine	Companies Reporting	Factory Net Billings (€ Millions)
2008	<b>579</b>	223	85	<b>308</b>	190	81	<b>271</b>	6	€ 2,698.35
2009	<b>416</b>	125	38	<b>163</b>	165	88	<b>253</b>	6	€ 3,275.17
2010	<b>380</b>	98	41	<b>139</b>	133	108	<b>241</b>	6	€ 4,177.41
2011	<b>468</b>	204	70	<b>274</b>	121	73	<b>194</b>	7	€ 2,869.01
2012	<b>446</b>	231	28	<b>259</b>	112	75	<b>187</b>	8	€ 3,174.46
2013	<b>657</b>	420	42	<b>462</b>	112	83	<b>195</b>	10	€ 3,408.92
2014	<b>722</b>	449	71	<b>520</b>	131	71	<b>202</b>	10	€ 2,876.14
2015	<b>612</b>	354	67	<b>421</b>	132	59	<b>191</b>	9	€ 3,365.93
2016	<b>580</b>	277	96	<b>373</b>	157	50	<b>207</b>	9	€ 2,710.46
2017	<b>578</b>	276	108	<b>384</b>	145	49	<b>194</b>	9	€ 2,862.20
2018	<b>602</b>	278	127	<b>403</b>	137	60	<b>197</b>	10	€ 2,578.18
2019	<b>778</b>	403	155	<b>558</b>	134	86	<b>220</b>	10	€ 2,918.98

An aircraft is considered manufactured in Europe when produced under an EASA production approval. EASA rules require production approvals for all aircraft including CS-VLA and CS-SLSA models.

Source: GAMA

## CANADA AND U.S. GENERAL AVIATION FLEET, FLIGHT ACTIVITY AND FORECAST

### 2.1 Canada—Registered Aircraft by Type and Weight Group (1990–2019)

Year	Number of Registered Aircraft by Type									By Weight Group		Total Aircraft
	Aeroplanes	Ultralights	Amateur-Builts	Helicopters	Gliders	Balloons	Gyroplanes	Airships	Ornithopters	↔ 12,500 lbs	12,500 → lbs	
1990	22,278	3,363	n/a	1,416	609	361	128	n/a	n/a	27,173	982	28,155
1991	21,973	3,477	n/a	1,433	601	384	135	n/a	n/a	23,553	981	28,003
1992	21,795	3,607	n/a	1,502	602	405	155	n/a	n/a	27,070	996	28,066
1993	21,452	3,744	n/a	1,533	597	424	162	n/a	n/a	26,977	935	27,912
1994	21,212	3,840	n/a	1,582	601	444	169	n/a	n/a	26,885	963	27,848
1995	21,169	3,956	n/a	1,605	601	440	166	n/a	n/a	26,914	1,023	27,937
1996	21,089	4,070	n/a	1,643	592	440	168	n/a	n/a	26,919	1,084	28,002
1997	20,985	4,208	n/a	1,655	587	450	169	n/a	n/a	26,862	1,192	28,054
1998	20,830	4,305	2,457	1,676	592	440	174	n/a	n/a	26,809	1,208	28,017
1999	20,768	4,346	2,540	1,711	596	442	181	2	1	26,783	1,264	28,047
2000	25,256	4,467	2,621	1,753	600	444	186	2	1	26,922	1,320	28,242
2001	25,435	4,584	2,709	1,798	613	453	190	3	1	27,171	1,322	28,493
2002	25,650	4,746	2,778	1,831	617	453	189	3	1	27,374	1,370	28,744
2003	25,902	4,922	2,895	1,894	674	450	188	3	1	27,752	1,360	29,112
2004	26,335	5,123	2,996	1,940	686	459	189	4	1	28,166	1,448	29,614
2005	26,870	5,339	3,124	2,019	683	475	192	4	1	28,745	1,499	30,244
2006	27,512	5,568	3,255	2,145	687	478	191	4	1	29,422	1,596	31,018
2007	28,195	5,745	3,380	2,317	695	481	192	5	1	30,223	1,663	31,886
2008	29,043	5,985	3,514	2,504	703	486	191	5	1	31,154	1,779	32,933
2009	29,567	6,184	3,639	2,576	715	479	190	5	1	31,709	1,824	33,533
2010	30,118	6,396	3,748	2,658	713	486	194	5	1	32,330	1,845	34,175
2011	30,805	6,585	3,885	2,728	720	490	198	5	1	32,986	1,961	34,947
2012	31,341	6,803	3,984	2,776	722	500	195	5	1	33,563	1,977	35,540
2013	31,780	6,973	4,074	2,849	726	511	206	5	1	34,050	2,028	36,078
2014	32,045	7,125	4,141	2,871	725	517	214	1	1	34,310	2,064	36,374
2015	32,127	7,246	4,185	2,853	721	516	222	0	1	34,359	2,081	36,440
2016	32,138	7,355	4,213	2,836	717	517	227	0	1	34,355	2,081	36,436
2017	32,279	7,459	4,248	2,830	723	523	232	0	1	34,473	2,115	36,588
2018	32,405	7,590	4,285	2,848	721	515	233	0	1	34,600	2,123	36,723
2019	32,563	7,683	4,350	2,859	720	509	235	0	1	34,686	2,201	36,887

Source: Transport Canada and Canadian Civil Aircraft Registry, [www.tc.gc.ca](http://www.tc.gc.ca)

2.2 Active U.S. General Aviation and On-Demand Part 135 Aircraft by Primary Use and Aircraft Type (2018)

Aircraft Type	Total Active (78.1% of 271,044)	General Aviation FAR Part 91 Use												On-Demand FAR Part 135 Use		
		Personal/ Recreational	Business (w/o crew)	Business (with crew)	Instruc- tional	Aerial Apps.	Aerial Obs.	Other Aerial App.	External Load	Other Work	Sight- seeing	Air Medical	Other	Air Taxi	Air Tours	Air Medical
<b>Total All Aircraft</b>	<b>211,749</b>	<b>143,178</b>	<b>15,499</b>	<b>10,997</b>	<b>16,976</b>	<b>3,335</b>	<b>4,787</b>	<b>982</b>	<b>208</b>	<b>985</b>	<b>974</b>	<b>295</b>	<b>4,775</b>	<b>6,315</b>	<b>609</b>	<b>1,834</b>
% Std. Error	1.3%	1.9%	1.6%	1.0%	1.6%	1.0%	1.0%	0.8%	0.7%	1.1%	1.1%	1.2%	1.2%	0.7%	0.6%	0.50%
<b>Piston Total</b>	<b>143,040</b>	<b>107,726</b>	<b>11,699</b>	<b>1,237</b>	<b>14,221</b>	<b>760</b>	<b>2,139</b>	<b>60</b>	<b>-</b>	<b>377</b>	<b>232</b>	<b>175</b>	<b>2,933</b>	<b>1,331</b>	<b>106</b>	<b>45</b>
One-Engine Piston	130,179	100,702	9,607	590	12,763	733	1,713	33	-	346	196	112	2,502	783	97	3
Two-Engine Piston	12,861	7,024	2,092	647	1,458	27	426	28	-	31	36	62	430	548	9	42
<b>Turboprop Total</b>	<b>9,925</b>	<b>1,608</b>	<b>1,230</b>	<b>1,945</b>	<b>136</b>	<b>1,787</b>	<b>353</b>	<b>339</b>	<b>-</b>	<b>249</b>	<b>3</b>	<b>19</b>	<b>342</b>	<b>1,570</b>	<b>96</b>	<b>248</b>
One-Engine Turboprop	4,919	746	657	364	32	1,765	47	159	-	69	3	4	247	669	73	84
Two-Engine Turboprop	5,005	862	573	1,581	103	22	307	179	-	181	-	14	95	901	23	164
<b>Business Jet</b>	<b>14,596</b>	<b>2,091</b>	<b>1,376</b>	<b>7,541</b>	<b>96</b>	<b>-</b>	<b>28</b>	<b>133</b>	<b>-</b>	<b>99</b>	<b>13</b>	<b>45</b>	<b>185</b>	<b>2,807</b>	<b>-</b>	<b>181</b>
<b>Rotorcraft Total</b>	<b>9,990</b>	<b>1,271</b>	<b>252</b>	<b>235</b>	<b>1,363</b>	<b>745</b>	<b>2,177</b>	<b>434</b>	<b>208</b>	<b>95</b>	<b>270</b>	<b>53</b>	<b>544</b>	<b>596</b>	<b>386</b>	<b>1,361</b>
Piston Total	3,082	938	148	24	970	349	257	23	10	15	213	-	32	52	52	-
Turbine Total	6,907	333	105	211	393	396	1,920	411	199	80	57	53	512	543	334	1,361
- One-Engine Turbine	5,210	313	94	93	319	365	1,788	363	107	74	50	17	154	338	323	809
- Two-Engine Turbine	1,697	20	11	118	74	31	132	48	91	6	6	36	357	205	11	552
<b>Gliders</b>	<b>1,772</b>	<b>1,401</b>	<b>20</b>	<b>-</b>	<b>297</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>32</b>	<b>17</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Lighter-Than-Air</b>	<b>2,343</b>	<b>1,798</b>	<b>39</b>	<b>12</b>	<b>31</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>48</b>	<b>390</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>17</b>	<b>-</b>
<b>Experimental Total</b>	<b>27,531</b>	<b>25,168</b>	<b>835</b>	<b>26</b>	<b>517</b>	<b>43</b>	<b>73</b>	<b>16</b>	<b>-</b>	<b>82</b>	<b>39</b>	<b>3</b>	<b>714</b>	<b>11</b>	<b>3</b>	<b>-</b>
Amateur-Built	21,216	19,760	743	9	264	-	9	-	-	5	28	3	396	-	-	-
Exhibition	1,979	1,627	32	4	63	6	12	6	-	44	6	-	179	-	-	-
Exp. Light-Sport	3,580	3,302	5	-	162	-	24	-	-	26	5	-	55	-	-	-
Other Experimental	755	479	55	14	28	37	27	10	-	7	-	-	84	11	3	-
<b>Special Light-Sport</b>	<b>2,554</b>	<b>2,115</b>	<b>48</b>	<b>-</b>	<b>315</b>	<b>-</b>	<b>12</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>9</b>	<b>-</b>	<b>53</b>	<b>-</b>	<b>-</b>	<b>-</b>

Source: FAA Survey

2.3 U.S. General Aviation and On-Demand Part 135 Total Hours Flown by Use and Aircraft Type (2018)

Aircraft Type	Total Hours	General Aviation FAR Part 91 Use												On-Demand FAR Part 135 Use		
		Personal/ Recreational	Business (w/o crew)	Business (with crew)	Instruc- tional	Aerial Apps.	Aerial Obs.	Other Aerial App.	External Load	Other Work	Sight- seeing	Air Medical	Other	Air Taxi	Air Tours	Air Medical
<b>Total All Aircraft</b>	<b>25,505,932</b>	<b>7,721,390</b>	<b>1,694,727</b>	<b>2,626,480</b>	<b>5,681,845</b>	<b>914,586</b>	<b>1,278,985</b>	<b>233,306</b>	<b>90,736</b>	<b>296,916</b>	<b>195,200</b>	<b>78,883</b>	<b>850,313</b>	<b>2,725,640</b>	<b>382,139</b>	<b>734,787</b>
% Std. Error	1.0%	1.0%	2.4%	3.1%	2.9%	5.7%	5.4%	8.7%	13.2%	8.2%	10.7%	12.7%	3.2%	3.8%	13.0%	6.4%
<b>Piston Total</b>	<b>13,785,388</b>	<b>5,779,255</b>	<b>1,154,907</b>	<b>151,967</b>	<b>5,044,475</b>	<b>100,907</b>	<b>578,093</b>	<b>-</b>	<b>-</b>	<b>119,017</b>	<b>60,155</b>	<b>25,422</b>	<b>340,812</b>	<b>364,026</b>	<b>43,960</b>	<b>-</b>
One-Engine Piston	12,091,523	5,358,062	950,759	-	4,445,582	99,403	441,869	-	-	116,636	50,030	17,795	285,619	204,099	38,591	-
Two-Engine Piston	1,693,865	421,193	204,149	79,315	598,894	1,504	136,224	-	-	-	-	7,627	55,193	159,927	5,369	9,193
<b>Turboprop Total</b>	<b>2,736,105</b>	<b>224,228</b>	<b>195,564</b>	<b>387,534</b>	<b>74,093</b>	<b>589,711</b>	<b>145,004</b>	<b>73,335</b>	<b>5</b>	<b>111,327</b>	<b>890</b>	<b>5,194</b>	<b>100,407</b>	<b>670,573</b>	<b>42,613</b>	<b>115,626</b>
One-Engine Turboprop	1,395,306	107,066	102,392	111,585	15,038	573,450	15,448	30,117	-	24,149	839	-	59,034	281,774	25,150	47,343
Two-Engine Turboprop	1,340,799	117,162	93,172	275,948	59,056	16,261	129,556	43,218	5	87,179	51	3,272	41,374	388,799	17,463	68,283
<b>Business Jet</b>	<b>4,591,723</b>	<b>466,811</b>	<b>245,693</b>	<b>2,023,576</b>	<b>24,307</b>	<b>6</b>	<b>4,015</b>	<b>38,297</b>	<b>6</b>	<b>25,516</b>	<b>2,167</b>	<b>16,942</b>	<b>215,929</b>	<b>1,387,733</b>	<b>-</b>	<b>140,723</b>
<b>Rotorcraft Total</b>	<b>2,922,453</b>	<b>97,987</b>	<b>31,073</b>	<b>58,500</b>	<b>397,296</b>	<b>212,266</b>	<b>538,175</b>	<b>107,719</b>	<b>89,760</b>	<b>35,774</b>	<b>109,905</b>	<b>28,287</b>	<b>156,419</b>	<b>299,639</b>	<b>293,037</b>	<b>466,615</b>
Piston Total	600,768	55,711	12,148	5,178	247,267	77,165	67,706	-	-	-	87,221	-	9,949	14,351	16,250	-
Turbine Total	2,321,685	42,276	18,925	53,322	150,029	135,102	470,469	103,364	87,094	34,973	22,684	28,287	146,470	285,288	276,787	466,615
- One-Engine Turbine	1,752,608	37,059	16,471	26,134	113,282	120,515	418,883	85,068	54,767	30,208	20,885	14,908	90,877	180,408	272,349	270,793
- Two-Engine Turbine	569,077	5,218	2,454	27,189	36,747	14,587	51,586	18,295	32,326	4,765	1,799	13,379	55,593	104,879	4,439	195,823
<b>Gliders</b>	<b>72,758</b>	<b>45,592</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Lighter-Than-Air</b>	<b>58,082</b>	<b>31,173</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>18,070</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Experimental Total</b>	<b>1,152,549</b>	<b>963,017</b>	<b>62,603</b>	<b>-</b>	<b>52,030</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>30,982</b>	<b>-</b>	<b>-</b>	<b>-</b>
Amateur-Built	880,265	770,881	55,931	-	28,898	-	-	-	-	-	-	-	15,009	-	-	-
Exhibition	75,326	56,885	-	-	-	-	-	-	-	-	-	-	5,914	-	-	-
Exp. Light-Sport	122,294	110,430	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Experimental	74,663	24,821	5,109	-	-	-	10,247	8,860	-	-	-	-	8,223	-	-	-
<b>Special Light-Sport</b>	<b>186,874</b>	<b>113,327</b>	<b>4,109</b>	<b>-</b>	<b>62,588</b>	<b>-</b>	<b>840</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>536</b>	<b>-</b>	<b>4,836</b>	<b>-</b>	<b>-</b>	<b>-</b>

Source: FAA Survey





## 2.4 Active U.S. General Aviation and On-Demand Part 135 Aircraft by Type (2000–2018) and Forecast (2019–2028)

Year	Total Aircraft	Airplane			Rotorcraft		Balloons, Dirigibles, Gliders	Experimental	Light-Sport Aircraft		
		Piston	Turboprop	Business Jet	Piston	Turbine			Total	Experimental	Special
2000	217,534	170,513	5,762	7,001	2,680	4,470	6,701	20,407	-	-	-
2001	211,446	163,314	6,596	7,787	2,292	4,491	6,545	20,421	-	-	-
2002	211,244	161,087	6,841	8,355	2,351	4,297	6,377	21,936	-	-	-
2003	209,708	160,938	7,689	7,997	2,123	4,403	6,008	20,550	-	-	-
2004	219,426	165,189	8,379	9,298	2,315	5,506	5,939	22,800	-	-	-
2005	224,352	167,608	7,942	9,823	3,039	5,689	6,454	23,627	170	-	-
2006	221,942	163,743	8,063	10,379	3,264	5,895	6,278	23,047	1,273	-	-
2007	231,607	166,907	9,514	10,385	2,769	6,798	5,940	23,228	6,066	-	-
2008	228,663	163,013	8,906	11,042	3,498	6,378	5,652	23,364	6,811	-	-
2009	223,877	157,123	9,055	11,268	3,499	6,485	5,480	24,419	6,547	5,077	1,470
2010	223,370	155,419	9,369	11,484	3,588	6,514	5,684	24,784	6,528	4,878	1,650
2011E	220,453	152,597	9,523	11,650	3,411	6,671	5,681	24,275	6,645	n/a	n/a
2012	209,034	143,160	10,304	11,793	3,292	6,763	5,006	26,715	-	4,631	2,001
2013	199,927	137,655	9,619	11,637	3,137	6,628	4,278	24,918	-	4,157	2,056
2014	204,408	139,182	9,777	12,362	3,154	6,812	4,699	26,191	-	4,204	2,231
2015	210,030	141,141	9,712	13,440	3,286	7,220	4,941	27,922	-	3,942	2,369
2016	211,793	142,638	9,779	13,751	3,344	7,232	4,986	27,585	-	4,464	2,478
2017	211,757	142,916	9,949	14,217	3,270	7,241	4,692	26,921	-	3,743	2,551
2018	212,885	143,040	9,925	14,596	3,082	6,907	4,114	27,531	-	3,580	2,554
Forecast											
2019	213,375	142,295	9,925	14,970	3,405	7,490	4,745	27,755	-	-	2,790
2020	213,495	141,215	9,940	15,385	3,475	7,610	4,765	28,190	-	-	2,915
2021	213,400	140,035	9,950	15,795	3,550	7,725	4,795	28,515	-	-	3,035
2022	213,225	138,735	9,995	16,205	3,625	7,840	4,815	28,845	-	-	3,165
2023	212,940	137,350	10,045	16,610	3,700	7,955	4,820	29,165	-	-	3,295
2024	212,665	135,950	10,135	17,025	3,775	8,075	4,820	29,465	-	-	3,420
2025	212,435	134,560	10,230	17,445	3,850	8,195	4,835	29,765	-	-	3,555
2026	212,205	133,160	10,350	17,865	3,925	8,315	4,845	30,055	-	-	3,690
2027	211,990	131,750	10,485	18,280	4,000	8,440	4,860	30,350	-	-	3,825
2028	211,745	130,340	10,620	18,695	4,075	8,570	4,865	30,620	-	-	3,960
Average Annual Growth											
2019–28	-0.1%	-0.9%	0.7%	2.5%	2.8%	2.2%	1.7%	1.1%	-	-	4.5%

Key changes to survey methodology by year:

- 2003: Aircraft operating in commuter operations were excluded.
- 2004: The survey coverage was expanded for turbine airplanes and rotorcraft, accounting for part of the increase in hours.
- 2007: The estimate of Light-Sport Aircraft increased significantly due to mandatory registration.

- 2009: The FAA began publishing data for Special Light-Sport Aircraft separately.
- 2011: Data is estimated, because no data was published by the FAA.
- 2012: The general aviation survey results includes "Experimental Light-Sport" data in the "Experimental" category.

Source: FAA Survey and Forecast

2.5 U.S. General Aviation and On-Demand Part 135 Estimated Hours Flown (in Thousands) by Type (2000–2018) and Forecast (2019–2028)

Year	Total Hours	Airplane			Rotorcraft		Balloons, Dirigibles, Gliders	Experimental	Light-Sport Aircraft		
		Piston	Turboprop	Business Jet	Piston	Turbine			Total	Experimental	Special
2000	29,960	21,493	1,986	2,648	530	1,661	362	1,280	-	-	-
2001	27,017	19,194	1,773	2,654	474	1,479	287	1,157	-	-	-
2002	27,040	18,891	1,850	2,745	454	1,422	333	1,345	-	-	-
2003	27,329	19,013	1,922	2,704	448	1,687	263	1,292	-	-	-
2004	28,126	18,142	2,161	3,718	514	2,020	249	1,322	-	-	-
2005	26,982	16,434	2,106	3,771	617	2,439	267	1,339	9	-	-
2006	27,705	16,525	2,162	4,077	918	2,528	211	1,218	66	-	-
2007	27,852	16,257	2,661	3,938	704	2,541	215	1,275	260	-	-
2008	26,009	15,074	2,457	3,600	751	2,470	209	1,155	293	-	-
2009	23,763	13,634	2,215	3,161	755	2,248	178	1,286	286	171	115
2010	24,802	13,979	2,325	3,375	794	2,611	181	1,226	311	173	138
2011E	24,569	13,626	2,463	3,407	757	2,654	181	1,203	278	n/a	n/a
2012	24,403	13,206	2,733	3,418	731	2,723	180	1,243	-	151	169
2013	22,876	12,352	2,587	3,488	636	2,312	135	1,191	-	135	173
2014	23,271	11,967	2,613	3,881	818	2,424	159	1,244	-	142	165
2015	24,142	12,825	2,538	3,837	798	2,496	162	1,295	-	132	191
2016	24,833	13,548	2,707	3,847	780	2,348	193	1,224	-	152	187
2017	25,212	13,583	2,625	4,065	782	2,538	168	1,241	-	139	209
2018	25,506	13,785	2,736	4,592	601	2,322	131	1,153	-	122	187
Forecast											
2019	25,943	13,472	2,713	4,528	832	2,688	170	1,305	-	-	233
2020	26,134	13,262	2,755	4,754	857	2,752	171	1,338	-	-	246
2021	26,306	13,049	2,793	4,972	881	2,814	172	1,365	-	-	259
2022	26,457	12,842	2,830	5,172	905	2,871	173	1,392	-	-	273
2023	26,613	12,650	2,861	5,371	926	2,927	173	1,419	-	-	287
2024	26,802	12,483	2,898	5,571	946	2,986	173	1,445	-	-	301
2025	26,983	12,320	2,934	5,757	965	3,046	174	1,471	-	-	316
2026	27,154	12,161	2,974	5,928	985	3,106	174	1,496	-	-	330
2027	27,340	12,017	3,017	6,092	1,005	3,168	175	1,521	-	-	344
2028	27,519	11,878	3,058	6,255	1,025	3,224	175	1,545	-	-	359
Average Annual Growth											
2019–28	0.8%	-1.5%	1.1%	3.1%	5.5%	3.3%	2.9%	3.0%	-	-	6.8%

Source: FAA Survey and Forecast



## 2.6 Active U.S. General Aviation and On-Demand FAR Part 135 Average Hours Flown Per Aircraft by Year (2000–2018)

Year	All Aircraft	Airplane			Rotorcraft		Balloons, Dirigibles, Giders	Experimental	Light-Sport Aircraft	
		Piston	Turboprop	Business Jet	Piston	Turbine			Total	Special
2000	142	130	353	393	198	398	56	64	-	-
2001	138	128	290	341	254	347	50	59	-	-
2002	128	117	270	329	193	331	53	61	-	-
2003	130	118	250	338	211	383	44	63	-	-
2004	128	110	258	400	222	367	42	58	-	-
2005	120	98	265	384	203	429	41	57	55	-
2006	125	101	268	393	281	429	34	53	52	-
2007	120	97	280	379	254	374	36	55	43	-
2008	114	93	276	326	215	387	37	50	43	-
2009	106	87	245	281	216	347	32	53	44	78
2010	111	90	248	294	221	401	32	50	48	84
2011E	111	89	259	292	222	398	32	50	42	n/a
2012	117	92	265	290	222	403	36	47	-	85
2013	114	90	269	300	203	349	32	48	-	84
2014	114	86	267	314	260	356	34	48	-	74
2015	115	91	261	286	243	346	33	46	-	81
2016	117	95	277	280	233	325	39	44	-	75
2017	119	95	264	286	239	351	36	46	-	82
2018	121	96	276	315	195	336	32	42	-	73

The 2011 data was estimated, because no survey data is available from the FAA.

Source: FAA Survey

## 2.7 U.S. Experimental Aircraft Fleet and Flight Hours (in Thousands) (2000–2018)

Year	Aircraft Fleet						Hours Flown					
	Amateur-Built	Exhibition	Experimental Light-Sport	Other	Total Experimental	% of GA Fleet	Amateur-Built	Exhibition	Experimental Light-Sport	Other	Total Experimental	% of GA Hours
2000	16,739	1,973	-	1,694	20,406	9.4%	887	113	-	279	1,279	4.3%
2001	16,736	2,052	-	1,633	20,421	9.7%	794	102	-	261	1,157	4.3%
2002	18,168	2,190	-	1,578	21,936	10.4%	976	127	-	242	1,345	5.0%
2003	17,028	2,031	-	1,491	20,550	9.8%	963	103	-	226	1,292	4.7%
2004	19,165	2,070	-	1,565	22,800	10.4%	990	116	-	216	1,322	4.7%
2005	19,817	2,120	-	1,691	23,628	10.5%	987	113	-	239	1,339	5.0%
2006	19,316	2,103	-	1,629	23,048	10.4%	899	103	-	216	1,218	4.4%
2007	19,538	2,101	-	1,589	23,228	10.0%	896	102	-	277	1,274	4.6%
2008	19,767	2,096	-	1,501	23,364	10.2%	872	92	-	192	1,155	4.4%
2009	20,794	2,063	5,077	1,562	29,496	13.2%	983	88	171	215	1,457	6.1%
2010	21,270	2,029	4,878	1,485	29,662	13.3%	911	98	173	217	1,399	5.6%
2011	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2012	18,843	1,923	4,631	1,317	26,715	12.8%	847	88	151	157	1,243	5.1%
2013	17,503	1,908	4,157	1,350	24,918	12.5%	785	78	135	193	1,191	5.2%
2014	18,873	1,893	4,204	1,221	26,191	12.8%	834	79	142	189	1,244	5.3%
2015	21,195	1,966	3,942	820	27,922	13.3%	1,000	76	132	87	1,295	5.4%
2016	20,490	2,015	4,264	816	27,585	13.0%	890	89	152	93	1,224	4.9%
2017	20,434	1,969	3,743	776	26,921	12.7%	950	88	139	65	1,241	4.9%
2018	21,216	1,979	3,580	755	27,531	13.0%	880	75	122	75	1,153	4.5%

Source: FAA Survey



## 2.8 U.S. General Aviation Fuel Consumption (in Millions of Gallons) (2000–2018)

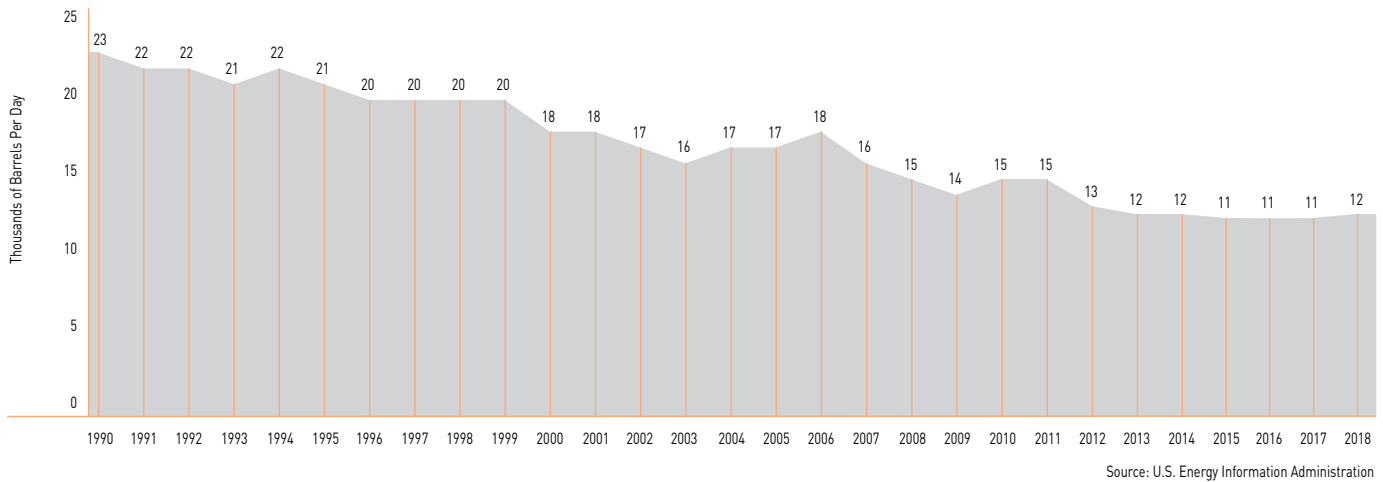
Year	Airplane				Rotorcraft		Experimental and Other Aircraft	Light-Sport	Total Fuel Consumed		
	Piston		Turbine		Piston	Turbine			Avgas	Jet Fuel	Total
	Single-Engine	Multi-Engine	Turboprop	Business Jet							
2000	200.8	108.4	176.3	736.7	8.4	59.0	15.2	-	332.8	972.0	<b>1,304.8</b>
2001	180.4	76.4	149.1	726.7	7.2	42.6	15.3	-	279.2	918.3	<b>1,197.6</b>
2002	177.9	74.2	152.3	745.5	6.8	40.5	17.8	-	276.7	938.3	<b>1,215.0</b>
2003	181.8	66.7	154.5	729.0	6.8	48.8	17.1	-	272.4	932.3	<b>1,204.7</b>
2004	167.5	80.1	167.0	1,004.9	7.9	59.0	17.5	-	272.9	1,230.9	<b>1,503.8</b>
2005	173.1	89.7	196.1	1,181.3	14.6	149.2	17.7	-	295.0	1,526.7	<b>1,821.7</b>
2006	164.9	79.9	190.1	1,303.9	16.7	148.6	21.6	0.3	283.4	1,642.6	<b>1,926.0</b>
2007	157.6	83.0	205.2	1,148.0	9.3	132.4	22.6	1.2	273.6	1,485.6	<b>1,759.2</b>
2008	143.0	69.5	230.4	1,313.2	10.7	162.1	23.3	1.5	248.1	1,705.7	<b>1,953.8</b>
2009	132.3	57.1	208.7	1,104.6	10.7	133.6	25.8	1.4	227.4	1,447.0	<b>1,674.4</b>
2010	133.1	53.9	187.1	1,122.9	10.7	124.8	21.6	1.5	220.7	1,434.8	<b>1,655.6</b>
2011E	129.9	52.9	195.3	1,124.6	10.3	136.4	21.5	1.4	216.0	1,456.3	<b>1,672.3</b>
2012	126.6	51.8	190.7	1,232.2	10.7	119.5	21.7	1.5	212.3	1,542.4	<b>1,754.7</b>
2013	117.2	53.9	188.6	945.0	8.8	126.0	16.5	0.9	197.3	1,259.6	<b>1,456.9</b>
2014	120.0	48.2	198.8	1,135.2	11.0	132.3	29.5	0.8	209.5	1,466.4	<b>1,676.0</b>
2015	128.4	40.4	191.4	1,062.9	10.2	128.3	15.4	1.2	195.6	1,382.6	<b>1,578.2</b>
2016	136.7	42.4	206.6	1,116.7	9.8	113.4	16.7	1.0	206.5	1,436.7	<b>1,643.2</b>
2017	138.5	40.5	198.4	1,203.7	10.0	138.8	16.2	1.2	206.4	1,541.0	<b>1,747.4</b>
2018	138.3	41.4	201.0	1,270.2	10.3	142.2	16.7	1.3	207.9	1,613.4	<b>1,821.3</b>

E = Estimated

Source: FAA Survey and Forecast



FIGURE 2.1 Refinery and Blender Net Production of Aviation Gasoline (1990–2018)



## 2.9 Average Age of Registered U.S. General Aviation Fleet (2011–2018)

Aircraft Type	Engine Type	Average Age in 2011 in Years	Average Age in 2012 in Years	Average Age in 2013 in Years	Average Age in 2014 in Years	Average Age in 2015 in Years	Average Age in 2016 in Years	Average Age in 2017 in Years	Average Age in 2018 in Years
<b>Single-Engine</b>	Piston	n/a	43.4	40.7	44.8	45.4	45.7	46.2	46.8
	Turboprop	n/a	14.9	12.5	13.5	13.2	13.2	14.2	14.6
	Jet	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Helicopter – Piston	n/a	20.8	17.1	21.4	21.5	21.0	21.3	22.6
	Helicopter – Turbine	n/a	22.9	22.3	22.1	22.4	22.4	22.9	23.2
<b>Multi-Engine</b>	Piston	n/a	40.2	38.5	41.9	42.5	43.2	44.0	44.7
	Turboprop	n/a	26.1	25.2	27.6	27.2	28.4	29.0	28.9
	Jet	n/a	15.3	14.7	15.8	15.8	15.3	16.0	16.4
	Helicopter – Turbine	-	17.5	14.7	17.6	18.1	18.9	17.9	19.2
<b>All Aircraft</b>		<b>n/a</b>	<b>35.1</b>	<b>33.2</b>	<b>36.7</b>	<b>36.9</b>	<b>37.2</b>	<b>37.5</b>	<b>38.1</b>

Source: GAMA

The Federal Aviation Administration’s (FAA) annual general aviation survey categorizes the **uses of general aviation aircraft** as follows:

- personal (and recreational) flying;
- business transportation without a paid crew (that is, an individual using an aircraft for business without a paid, professional crew); and
- business transportation with a paid, professional crew (previously called “corporate”).

In addition, the following forms of business operations are included in general aviation operations:

- instructional flying (operations under the supervision of a flight instructor including solo flight);
- sight-seeing (commercial sight-seeing operations under FAR Part 91); and
- on-demand FAR Part 135 operations including air taxi (that is, charter), air tours, and airmedical operations.

2.10 U.S. General Aviation Operations (in Thousands) at FAA and Contract Towers, and En Route and TRACON Facilities (2000–2019)

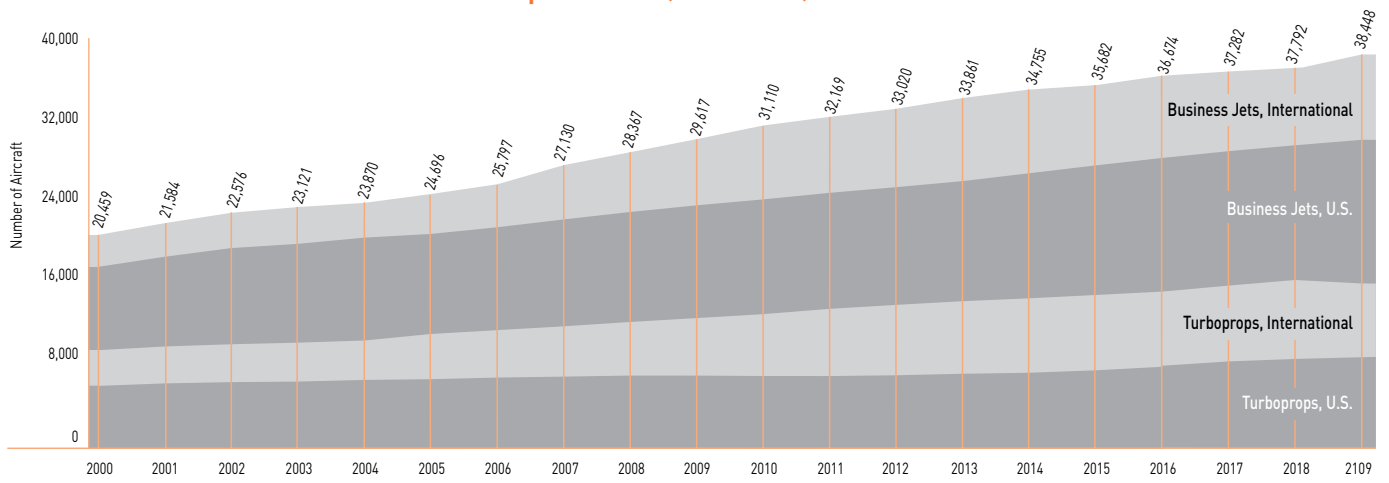
Year	Operations at Towers									IFR Aircraft Operations at En Route Centers	TRACON Operations
	FAA Control Towers				Contract Towers				Grand Total Tower Operations		
	Total	Itinerant & Overflight	Local	Number of Towers	Total	Itinerant & Overflight	Local	Number of Towers			
2000	27,002	16,286	10,717	n/a	12,876	6,558	6,318	n/a	39,879	8,744	20,799
2001	24,784	14,949	9,835	266	12,843	6,484	6,359	206	37,627	8,024	19,275
2002	24,092	14,553	9,539	n/a	13,562	6,898	6,634	n/a	37,653	8,181	19,213
2003	22,598	13,577	9,021	n/a	12,926	6,654	6,272	n/a	35,524	8,000	18,094
2004	21,762	13,190	8,572	n/a	13,205	6,817	6,388	n/a	34,968	9,350	18,007
2005	20,705	12,430	8,275	n/a	13,456	6,885	6,571	n/a	34,161	8,368	17,389
2006	19,728	11,897	7,830	n/a	13,392	6,844	6,549	n/a	33,120	8,197	17,005
2007	19,367	11,616	7,751	n/a	13,768	6,961	6,807	n/a	33,135	8,294	16,747
2008	18,336	10,828	7,509	264	12,953	6,540	6,413	239	31,289	7,671	15,763
2009	17,429	10,770	6,659	264	12,156	6,585	5,571	244	29,585	6,332	14,151
2010	16,741	10,430	6,310	264	11,837	6,517	5,319	244	28,577	6,550	13,864
2011	16,324	10,206	6,118	264	11,737	6,374	5,363	248	28,061	6,557	13,503
2012	16,265	10,111	6,154	264	11,878	6,479	5,399	250	28,143	6,472	13,424
2013	16,027	9,857	6,170	264	11,998	6,438	5,560	252	28,025	6,439	13,048
2014	15,791	9,707	6,084	264	11,951	6,356	5,595	252	27,742	6,741	13,018
2015	15,544	9,449	6,096	264	12,024	6,441	5,584	252	27,569	7,007	13,076
2016	15,554	9,380	6,174	264	11,990	6,535	5,455	252	27,544	7,301	13,090
2017	15,564	9,280	6,284	264	12,112	6,560	5,552	254	27,675	7,428	13,276
2018	15,674	9,188	6,486	264	12,759	6,735	6,024	256	28,433	7,407	13,513
2019P	16,037	9,142	6,895	264	13,429	7,031	6,397	256	29,465	7,468	13,575

P = Preliminary  
Location operations at FAA Control Towers captures all civil local operations.

Facilities includes Control Towers, TRACONS, CERAPs and RAPCONS.  
Traffic Count for GA Operation Data are provided by OPSNET.

Source: FAA Air Traffic Activity

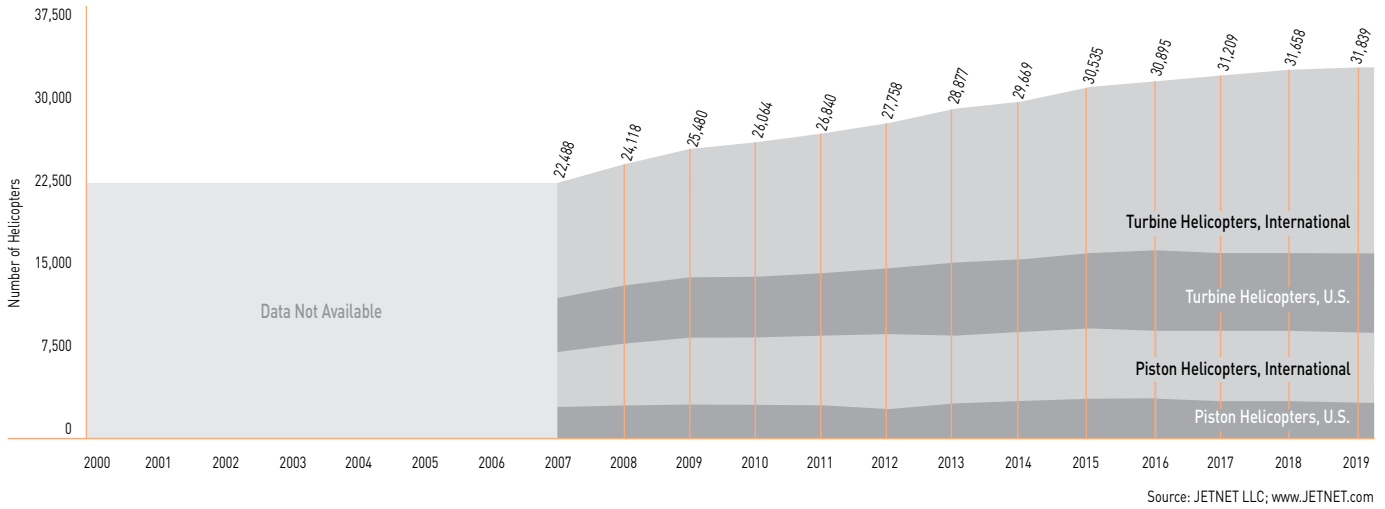
FIGURE 2.2 Worldwide Turbine Business Airplane Fleet (2000–2019)



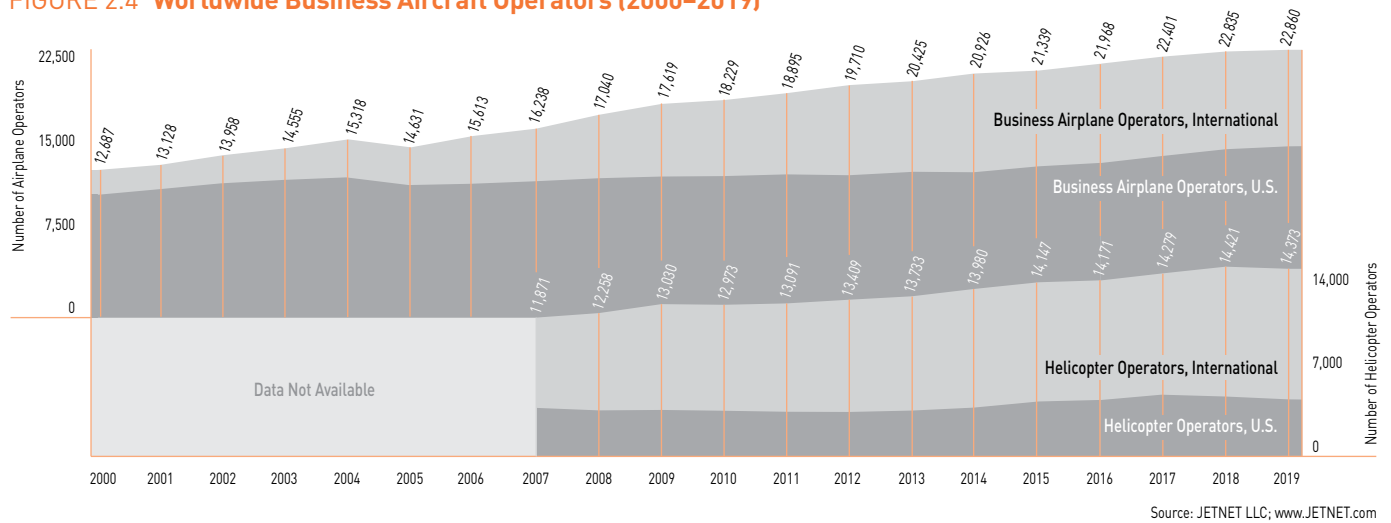
Source: JETNET LLC; www.JETNET.com



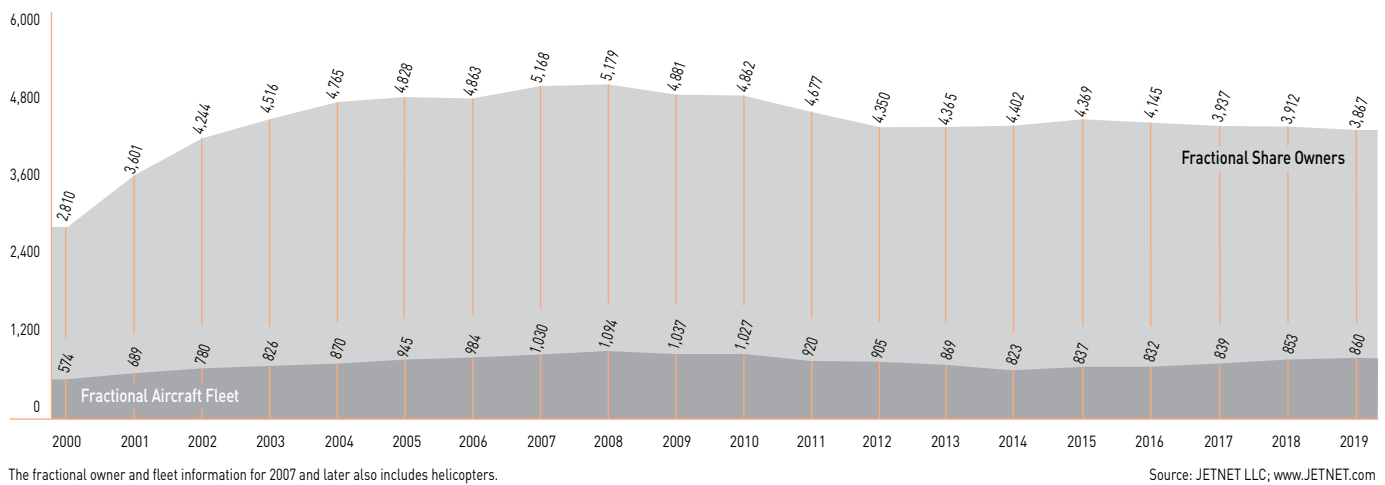
**FIGURE 2.3 Worldwide Turbine and Piston Helicopter Fleet (2007–2019)**



**FIGURE 2.4 Worldwide Business Aircraft Operators (2000–2019)**



**FIGURE 2.5 Fractional Aircraft and Share Owners (2000–2019)**





### 3.1 Austria—Number of Aircraft by Type (2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Glider and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2018	406	455	66	1	85	128	88	297	687	7	0	2,220

Source: Austrocontrol, [www.austrocontrol.at](http://www.austrocontrol.at) (Österreichisches Luftfahrzeugregister) and GAMA analysis

### 3.2 Bosnia-Herzegovina—Number of General Aviation Aircraft by Type (2016–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Glider and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2016	5	31	4	0	2	4	0	0	32	2	0	80
2107	6	31	4	0	2	4	0	0	34	3	0	84
2018	5	29	3	1	2	7	0	1	33	4	0	85

Source: Bosnia and Herzegovina Directorate of Civil Aviation (<http://www.bhdca.gov.ba>) and GAMA analysis

### 3.3 Bulgaria—Number of General Aviation Aircraft by Type (2017)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Glider and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2017	18	138	9	11	13	16	10	4	4	3	n/a	226

Source: Bulgarian Civil Aviation Administration (Гражданска въздухоплавателна администрация), <http://www.caa.bg/> and GAMA analysis

### 3.4 Finland—Number of Aircraft by Type (2014–2016)

Year	Fixed-wing Aeroplanes		Rotorcraft and Gyrocopters	Glider and Motor Gliders	Balloons and Airships	Microlights	Total Aircraft
	Aeroplanes	Airliners					
2014	552	109	111	390	54	318	1,534
2015	567	110	105	366	52	318	1,518
2016	578	84	99	359	52	324	1,496

TRAFI uses the term airliner. Airliners are defined as aeroplanes with a maximum take-off weight (MTOW) of more than 8,618kg.

Source: Finnish Transport Safety Agency (Liikenteen turvallisuusvirasto), [www.trafi.fi](http://www.trafi.fi)

### 3.5 France—Number of General Aviation Aircraft by Type (2016–2018)

Year	Fixed-wing Aeroplanes							Rotorcraft			Glider	Balloons and Airships	Gyrocopters	Amphibian	Total Aircraft
	Ultralights including Powered Parachutes	450 kg–5,700 kg			Above 5,700 kg			Below 450 kg	Piston Engine	Turbine					
		Piston Engine	Turbo-prop	Business Jets	Piston Engine	Turbo-prop	Business Jets								
2016	14,142	5,066	84	36	23	16	44	122	224	174	1,449	796	779	3	22,958
2017	14,462	5,104	104	40	13	17	64	123	252	188	1,579	793	789	3	23,531
2018	14,593	5,520	117	44	14	9	46	122	244	158	1,675	3	838	n/a	23,383

Source: Direction de l'Aviation Civile, <https://www.ecologique-solidaire.gouv.fr/politiques/aviation-civile>

## 3.6 EU Fleet Overview Data—Select Countries (Standardised Survey for 2018–2019)

Country or State	Year(s)	Fixed-wing Aeroplanes						Rotorcraft			Other				Total
		Annex 1, Ultralights, and Non-EASA Certified	Piston		Turbine			Single-Engine Piston	Single-Engine Turbine	Multi-Engine Turbine	Balloons and Airships	Gliders, Sailplanes, and Motor Gliders	Gyroplane and Autogyro	UAS	
			Single	Multi	SE Turboprop	ME Turboprops	Business Jets								
Belgium	2018	769	331	28	11	17	32	113		32	208	249	-	2,233	<b>4,023</b>
	2019	867	327	23	11	15	39	68	24	27	214	204	-	2,932	<b>4,751</b>
Croatia	2018	122	81	8	-	17	12	10		6	11	59	3	n/a	<b>329</b>
	2019	12	75	6	-	5	7	7	4	6	12	62	3	n/a	<b>331</b>
Cyprus	2018	29	49	11	-	1	1	11	-	4	-	1	-	1	<b>108</b>
	2019	30	48	11	1	1	1	10	-	5	-	1	-	1	<b>109</b>
Czech Republic	2018	-	889	94	41	54	59	156		18	256	1,223	-	765	<b>3,555</b>
	2019	-	946	77	42	42	59	123	42	21	283	1,266	-	935	<b>3,836</b>
Denmark	2019	199	452	51	16	16	56	50	28	36	76	415	-	-	<b>1,395</b>
Estonia	2018	n/a	38	-	19	5	10	11		-	10	47	3	-	<b>143</b>
	2019	n/a	38	-	20	5	10	9		-	10	45	3	-	<b>140</b>
France	2019	15,127	5,392	163	91	36	92	392	147	24	900	1,741	871	-	<b>24,976</b>
Iceland	2018	180	148	12	26	12	78	9		4	-	28	2	218	<b>705</b>
	2019	201	138	26	8		61	9		5	-	27	-	535	<b>1,010</b>
Ireland	2019	n/a	402	11	3	1	1	14	9	23	10	44	21	n/a	<b>539</b>
Isle of Man	2019	-	6	2	18	37	273	-	-	47	-	-	-	-	<b>383</b>
Italy	2018	12,226	684	64	2	58	56	343		169	85	159	-	10,374	<b>24,220</b>
	2019	12,457	693	75	2	54	33	139	201	164	87	144	-	13,566	<b>27,615</b>
Latvia	2018	n/a	123	4	2	3	10	9		7	-	35	4	-	<b>197</b>
	2019	31	123	8	1	3	13	4	7	7	29	35	4	-	<b>234</b>
Lithuania	2018	307	112	1	-	9	35	-	10	4	124	151	2	-	<b>755</b>
	2019	370	125	3	-	7	53	-	8	2	129	130	2	-	<b>829</b>
Luxembourg	2018	32	70	2	-	13	93	2	-	11	44	7	-	-	<b>274</b>
	2019	31	69	2	-	11	108	1	-	13	41	8	-	-	<b>284</b>
Netherlands	2018	788	377	40	20	25	257	19	19	35	427	621	10	1,832	<b>4,470</b>
	2019	694	386	40	24	21	258	19	19	36	406	617	8	2,446	<b>4,974</b>
Poland	2018	541	863	62	-	11	19	131		91	225	980	52	37	<b>3,012</b>
	2019	615	918	65	15	19	36	96	58	72	236	1,018	70	357	<b>3,575</b>
Serbia	2018	140	140	13	-	10	15	29		1	6	53	-	310	<b>717</b>
	2019	130	145	13	-	5	13	7	16	1	5	41	-	388	<b>764</b>
Slovenia	2018	86	202	6	5	7	6	16		6	27	145	2	n/a	<b>508</b>
	2019	75	173	5	4	8	10	4	11	3	27	122	1	n/a	<b>443</b>
Spain	2018	3,262	1,459	294	110	76	69	132	189	271	606	250	n/a	n/a	<b>6,718</b>
	2019	3,298	1,225	247	103	64	89	102	175	261	559	226	n/a	n/a	<b>6,349</b>
Switzerland	2018	692	768	81	76	54	80	244		66	326	756	n/a	n/a	<b>3,144</b>

Iceland: The business jet column includes all jet airplanes including air transport.

GAMA updated its process for surveying EU Member States of general aviation fleet data in 2020. Table 3.6 contains aircraft registry data standardised for each country or state. The data was provided by:

Belgian Civil Aviation Authority (SPF Mobilité et Transport), [www.mobilit.belgium.be](http://www.mobilit.belgium.be); Croatia Civil Aviation Authority <http://www.ccaa.hr/>; Department of Civil Aviation Cyprus (Κυπριακή Δημοκρατία, Υπουργείο Συγκοινωνιών και Εργών), [www.mcw.gov.cy](http://www.mcw.gov.cy); Czech Civil Aviation Authority (Úrad Pro Civilní Letectví) <http://www.caa.cz/>; Danish Transport Authority (Trafikstyrelsen), [www.trafikstyrelsen.dk](http://www.trafikstyrelsen.dk); Republic of Estonia Civil Aviation Administration (Lennuamet), [www.ecaa.ee](http://www.ecaa.ee); Direction de l'Aviation Civile, <https://www.ecologique-solidaire.gouv.fr/politiques/aviation-civile>; Iceland Transport Authority (Samgongustofa), <http://www.icetra.is/aviation/aip-iceland/>; Irish Aviation Authority, [www.iaa.ie](http://www.iaa.ie); Isle of Man Aircraft Registry, [www.gom.im](http://www.gom.im); Ente Nazionale per l'Aviazione Civile (ENAC), [www.enac.gov.it](http://www.enac.gov.it); Latvian CAA (Civiāds

Aviācijas Aģentūra), [www.caa.lv](http://www.caa.lv); Lithuanian CAA (Civilinė's Aviacijos Administracija), [www.caa.lt](http://www.caa.lt); Luxembourg CAA (Direction de l'Aviation Civile), <https://dac.public.lu/>; Dutch Environment and Transport Inspectorate (Inspectie Leefomgeving en Transport), [www.ilent.nl](http://www.ilent.nl); Polish Civil Aviation Authority (Urząd Lotnictwa Cywilnego), [www.ulc.gov.pl](http://www.ulc.gov.pl); Civil Aviation Directorate of the Republic of Serbia (Директорат цивилног ваздухопловства Републике Србије), [www.cad.gov.rs](http://www.cad.gov.rs); Civil Aviation Agency, Slovenia (agencija za civilno letalstvo Republike Slovenije), [www.caa.si](http://www.caa.si); Spanish State Aviation Safety Agency (Agencia Estatal de Seguridad Aérea), [www.seguridadeaerea.gob.es](http://www.seguridadeaerea.gob.es); Swiss Federal Office of Civil Aviation (Bundesamt für Zivilluftfahrt), [www.bazl.admin.ch](http://www.bazl.admin.ch)

### 3.7 Georgia—Number of General Aviation Aircraft by Type (2017)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2017	9	7	2	2	1	3	9	6	0	0	0	39

Source: Georgia Civil Aviation Agency (<http://www.gcaa.ge>) and GAMA analysis

### 3.8 Germany—Number of Aircraft by Type (2011–2018)

Year	Fixed-wing Aeroplanes							Rotorcraft	Motor Gliders	Airships	Balloons	Gliders	Total Aircraft
	Single-Engine		Multi-Engine		5,701 kg–14,000 kg	14,001 kg–20,000 kg	Above 20,000 kg						
	2,000 kg and Below	2,000 kg–5,700 kg	2,000 kg and Below	2,000 kg–5,700 kg									
2011	6,744	155	243	428	236	38	770	773	3,122	3	1,257	7,834	21,603
2012	6,757	150	239	414	217	30	767	774	3,185	5	1,215	7,793	21,546
2013	6,733	155	240	403	199	34	758	769	3,263	3	1,201	7,704	21,462
2014	6,689	149	228	393	207	33	751	745	3,357	3	1,183	7,657	21,395
2015	6,596	147	229	371	191	34	751	757	3,403	3	1,164	7,567	21,213
2016	6,553	160	221	381	211	35	777	733	3,456	3	1,124	7,450	21,104
2017	6,527	174	219	391	219	37	753	729	3,528	3	1,102	7,383	21,065
2018	6,541	191	215	388	216	39	740	728	3,619	3	1,080	7,304	21,064

The data, especially Fixed-wing Aeroplanes above 20,000 kg, includes commercial airliners.

Source: German Civil Aviation Authority (Luftfahrt-Bundesamtes / Statistiken), [www.lba.de](http://www.lba.de)

### 3.9 Guernsey—Number of General Aviation Aircraft by Type (2013–2017)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2013	0	4	0	0	0	0	0	0	0	0	0	4
2014	0	17	1	0	6	0	1	0	0	0	0	25
2015	0	23	4	0	18	1	3	0	0	0	0	49
2016	0	25	16	3	39	1	4	0	0	0	0	88
2017	0	30	23	14	47	7	8	0	0	0	0	129

The turboprop and business jet data include aircraft not operated by an AOC holder, including lessor-owned aircraft in between leases.

Source: Guernsey Aircraft Registry 2-REG, [www.2-REG.com](http://www.2-REG.com)

### 3.10 Italy—Number of General Aviation Aircraft by Type (2017–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2017	13,181	668	99	21	56	335	168	76	157	0	6,334	21,095
2018	12,226	686	97	25	56	343	169	85	159	0	10,374	24,220

Source: Ente Nazionale per l'Aviazione Civile (ENAC), [www.enac.gov.it](http://www.enac.gov.it)

### 3.11 Macedonia—Number of General Aviation Aircraft by Type (2017–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2017	23	1	3	1	0	0	1	14	0	0	0	43
2018	34	10	3	3	1	0	0	1	5	0	84	141

Source: Republic of Macedonia Civil Aviation Agency, <http://www.caa.gov.mk> and GAMA analysis



### 3.12 Malta—Number of General Aviation Aircraft by Type (2011–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2011	30	17	9	10	34	2	0	0	0	0	0	102
2012	33	23	15	8	44	4	0	0	0	0	0	127
2013	33	24	18	9	66	4	0	0	0	0	0	154
2014	32	18	14	9	96	4	0	0	0	0	0	173
2015	32	18	11	8	139	4	0	0	0	0	0	212
2016	32	17	11	6	173	4	0	0	0	0	0	243
2017	32	17	13	6	194	3	0	0	0	0	0	265
2018	32	20	12	7	221	2	4	0	0	0	0	298

Source: Transport Malta, [www.transport.gov.mt](http://www.transport.gov.mt) & GAMA analysis

### 3.13 Montenegro—Number of General Aviation Aircraft by Type (2014–2017)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2014	n/a	19		2		7		1	2	n/a	n/a	31
2015	n/a	9		4		4		0	1	n/a	n/a	18
2016	n/a	10		5		5		1	2	n/a	n/a	23
2017	n/a	16	0	0	2	3	3	2	2	n/a	n/a	28

Source: Civil Aviation Agency of Montenegro (Agencija za civilno vazduhoplovstvo) Data, [www.caa.me](http://www.caa.me) and GAMA analysis

### 3.14 Norway—Number of Aircraft by Type (2016, 2018)

Year	Fixed-wing Aeroplanes			Rotorcraft		Gliders and Motor Gliders	Balloons and Airships	Total Aircraft
	5,700 kg and Below	Above 5,700 kg	Above 60,000 kg	5,700 kg and Below	Above 5,700 kg			
2016	454	208	131	192	75	151	20	1,231
2017	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2018	586	72	138	200	78	148	19	1,241

Source: Civil Aviation Authority of Norway (Luftfartstilsynet), <http://www.luftfartstilsynet.no/>

### 3.15 Poland—Number of General Aviation Aircraft by Type (2014–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2014	469	753	84	9	12	97	83	178	837	21	0	2,543
2015	501	759	79	15	13	104	90	196	885	26	0	2,668
2016	502	778	82	13	15	103	99	203	907	32	32	2,766
2017	532	785	75	10	19	125	86	212	948	38	32	2,862
2018	541	863	62	11	19	131	91	225	980	52	37	3,012

Annex II aircraft are also included in the total count of single-engine aeroplanes below 5,700 kg.

Source: Polish Civil Aviation Authority (Urząd Lotnictwa Cywilnego), [www.ulc.gov.pl](http://www.ulc.gov.pl)

### 3.16 Portugal—Number of General Aviation Aircraft by Type (2017)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gliders and Motor Gliders	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2017	309	420	47	7	133	22	61	50	20	1	0	1,227

Source: Portuguese Civil Aviation Authority (Instituto Nacional de Aviação Civil), [www.inac.pt](http://www.inac.pt) and GAMA analysis

### 3.17 Romania—Number of Aircraft by Type (2015)

Year	Fixed-wing Aeroplanes		Rotorcraft		Total Aircraft
	5,700 kg and Below	Above 5,700 kg	Single-Engine	Multi-Engine	
2015	97	5	17	25	144

Source: Romania Civil Aeronautical Authority (Autoritatea Aeronautica Civila Romana), www.caa.ro

### 3.18 Slovakia—Number of General Aviation Aircraft by Type (2017–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gyrocopters	UAS	Total Aircraft
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine				
		Single-Engine	Multi-Engine	Turboprops	Business Jets						
2017	50	258	27	5	5	28	27	42	266	0	265
2018	n/a	303	32	6	12	39	25	51	259	0	353

Source: Transport Authority Slovakia (Dopravný úrad), www.nsat.sk and GAMA analysis

### 3.19 Sweden—Number of Aircraft by Weight (2015)

Year	Aircraft Type							Total Aircraft
	Aeroplanes	Rotorcraft	Gliders	Motor Gliders	Balloons	Ultralights	Gyroplanes	
2015	1,650	261	330	155	107	475	68	3,046

The number of gliders, powered gliders, and balloons is based on the number of valid airworthiness certificates on December 31 of the year.

Source: Swedish Transport Ministry (Transportstyrelsen), www.transportstyrelsen.se

### 3.20 Switzerland—Number of General Aviation Aircraft by Type (2016–2018)

Year	Fixed-wing Aeroplanes					Rotorcraft		Balloons and Airships	Gyrocopters	UAS	Total Aircraft	
	Annex II (including Ultralights)	450 kg–5,700 kg		Above 5,700 kg		Single-Engine	Multi-Engine					
		Single-Engine	Multi-Engine	Turboprops	Business Jets							
2016	540	797	112	11	58	227	59	318	849	3	n/a	2,974
2017	542	824	109	11	65	247	62	336	862	8	n/a	3,066
2018	692	844	124	12	80	244	66	326	756	n/a	n/a	3,144

Source: Swiss Federal Office of Civil Aviation (Bundesamt für Zivilluftfahrt), www.bazl.admin.ch

### 3.21 Ukraine—Number of Aircraft by Type (2015)

Year	Fixed-wing Aeroplanes	Rotorcraft	Ultralights	Balloons	Gliders	Gyrocopters	Total Aircraft
2015	462	193	55	19	52	7	788

Source: State Aviation Administration (Державна авіаційна служба України), www.avia.gov.ua/

### 3.22 United Kingdom—Number of Aircraft by Type (2012–2019)

Year	Fixed-wing Aeroplanes								Micro-lights	Rotorcraft	Gliders	Hang Gliders	Balloons and Min. Lift	Airships	Gyrocopters	Total Aircraft
	Amphibian	750 kg and Below	751 kg–5,700 kg	5,701 kg–15,000 kg	15,001 kg–50,000 kg	Above 50,000 kg	SLMG	Sea-planes								
2012	21	3,245	5,564	219	293	755	296	2	4,045	1,260	2,248	9	1,639	21	322	19,939
2013	21	3,269	5,505	212	289	761	302	2	4,029	1,232	2,247	9	1,625	20	327	19,850
2014	20	3,300	5,484	200	272	791	314	3	3,998	1,231	2,267	9	1,607	21	329	19,846
2015	21	3,325	5,493	190	260	806	321	3	4,015	1,258	2,260	9	1,598	23	342	19,924
2016	22	3,346	5,503	179	274	833	328	3	4,028	1,290	2,265	9	1,591	20	336	20,027
2017	21	3,395	5,497	174	261	844	322	3	3,993	1,283	2,257	9	1,608	20	341	20,028
2018	21	3,385	5,484	176	242	770	320	3	3,918	1,256	2,265	9	1,592	17	352	19,810
2019	21	3,379	5,434	163	239	770	318	3	3,832	1,247	2,235	0	1,572	18	358	19,590

SLMG = Self-Launching Motor Glider

Does not differentiate if aeroplane is used for GA or commercial operations.

Data from December 31 of specified year (published first day of the following year).

Source: UK Civil Aviation Authority, Civil Registry Statistics, G-INFO Database, www.caa.co.uk

## SELECT OTHER AIRCRAFT FLEET DATA

### 4.1 Australia—Number of General Aviation and Regional Aircraft by Category (2005–2019)

Year	Amateur-Built Aircraft	Fixed-wing Aeroplanes				Rotorcraft	Balloons & Airships	Remote Piloted Aircraft	Total Aircraft
		Gliders	Motor Gliders	Single-Engine	Multi-Engine				
2005	896	-	-	6,908	1,733	1,292	351	-	11,180
2006	910	-	-	6,838	1,730	1,320	319	-	11,117
2007	968	-	-	6,955	1,804	1,481	333	-	11,541
2008	1,037	-	-	7,180	1,871	1,619	338	-	12,045
2009	1,071	-	-	7,230	1,885	1,703	340	-	12,229
2010	1,111	-	-	7,375	1,932	1,800	346	-	12,564
2011	1,176	-	-	7,410	1,930	1,855	354	-	12,725
2012	1,187	-	-	7,256	1,815	1,817	355	-	12,430
2013	1,278	-	-	7,798	2,053	2,077	379	-	13,585
2014	1,487	950	246	7,818	2,364	2,038	383	-	15,286
2015	1,516	953	250	7,789	2,361	2,038	382	-	15,289
2016	1,547	949	271	7,802	2,335	2,072	382	-	15,358
2017	1,570	944	280	7,805	2,320	2,107	397	1	15,424
2018	1,591	949	279	7,813	2,346	2,178	408	1	15,565
2019	1,621	998	290	7,840	2,370	2,313	441	1	15,874

Amateur-Built aircraft include powered-aeroplanes, gliders, balloons, and rotorcraft.

Source: Dept. of Transportation and Regional Services, Bureau of Transport and Regional Economics, [www.bitre.gov.au](http://www.bitre.gov.au) and Civil Aviation Safety Authority, [www.casa.gov.au](http://www.casa.gov.au)

### 4.2 Brazil—Number of Aircraft Registrations by Type (2009–2019)

Year	Aircraft by Type of Operation							Total Aircraft
	Private	Private Instruction	Air Taxi	Regular, Domestic, or Int. Air Transport	Other Categories	Total Certified Aircraft	Experimental Aircraft	
2009	7,228	1,386	1,515	571	1,805	12,505	3,764	16,269
2010	7,835	1,406	1,536	621	1,886	13,284	4,051	17,335
2011	8,491	1,494	1,566	666	2,019	14,236	4,474	18,710
2012	8,989	1,667	1,578	679	2,106	15,019	4,750	19,769
2013	9,453	1,805	1,574	685	2,187	15,704	4,958	20,662
2014	9,839	1,899	1,549	694	2,248	16,229	5,209	21,438
2015	9,971	1,934	1,543	700	2,483	16,631	5,158	21,789
2016	10,019	1,915	1,479	650	2,334	16,397	5,508	21,905
2017	10,164	1,880	1,395	643	2,339	16,421	5,588	22,009
2018	10,342	1,811	1,358	635	2,382	16,528	5,661	22,189
2019	10,360	1,812	1,358	640	2,384	16,554	5,665	22,219

Source: Agência Nacional de Aviação Civil (ANAC), Registro Aeronáutico Brasileiro (RAB), Brazil, [www.anac.gov.br](http://www.anac.gov.br)

### 4.3 China—Number of Aircraft by Type (2012–2013)

Year	Airplanes				Rotorcraft	Balloons	Airships	Other	Total Aircraft
	Piston-Engine		Turbine-Engine						
	Single	Twin	Turboprop	Turbojet					
2012	705	102	129	2,134	298	21	6	27	3,422
2013	794	96	151	2,371	385	24	6	30	3,857

The turbojet category includes air carrier data. The 2013 data included 202 business jets.

Source: Civil Aviation Administration of China (中国民用航空局), www.caac.gov.cn

### 4.4 Japan—Number of Aircraft by Type (2000–2019)

Year	Airplanes					Rotorcraft		Gliders	Airships	Total Aircraft
	Piston		Turboprop		Turbojet or Turbofan	Piston-Engine	Turbine-Engine			
	Single-Engine	Multi-Engine	Single-Engine	Multi-Engine						
2000	584	63	13	110	450	193	764	624	1	2,802
2001	577	62	16	113	455	183	747	644	1	2,798
2002	575	59	17	112	464	166	703	648	1	2,745
2003	570	53	18	112	474	160	661	649	1	2,698
2004	558	52	18	112	474	154	647	658	2	2,675
2005	543	51	18	110	485	160	630	659	2	2,658
2006	540	46	21	112	500	160	618	665	3	2,665
2007	542	45	23	111	509	169	604	666	3	2,672
2008	539	43	23	111	512	171	597	665	3	2,664
2009	545	46	23	109	523	177	600	670	2	2,695
2010	546	54	24	112	511	181	600	667	1	2,696
2011	511	54	23	101	498	184	593	668	1	2,633
2012	505	52	26	95	529	185	606	667	1	2,666
2013	504	53	28	100	563	180	623	663	1	2,715
2014	490	51	28	101	582	178	631	661	1	2,723
2015	489	55	30	102	602	173	628	654	1	2,734
2016	483	57	39	97	629	171	640	650	1	2,767
2017	490	56	47	101	641	169	643	648	1	2,796
2018	502	56	50	99	662	168	657	645	1	2,840
2019	507	60	41	94	681	160	673	649	1	2,866

Source: Civil Aviation Bureau (航空局), www.mlit.go.jp

### 4.5 New Zealand—Number of Aircraft by Type (2012–2019)

Year	Aircraft Type						Total Aircraft
	Aeroplanes	Microlight 1 & 2	Amateur-Built <sup>1</sup>	Gliders <sup>2</sup>	Other <sup>3</sup>	Rotorcraft	
2012	1,985	1,029	316	417	311	793	4,851
2013	1,976	1,026	291	443	307	831	4,874
2014	1,964	1,058	289	426	329	862	4,928
2015	1,970	1,082	292	430	335	869	4,978
2016	1,981	1,091	300	469	402	874	5,117
2017	2,001	1,105	323	453	470	869	5,221
2018	2,017	1,123	323	465	476	887	5,291
2019	2,043	1,151	328	495	478	896	5,391

The data does not differentiate if airplane is used for GA or commercial operations. In 2012, the CAA began publishing aircraft registry statistics by aircraft class.

1. Amateur-Built aircraft include amateur-built aeroplanes and helicopters.
2. Gliders include gliders, para-gliders, power gliders, amateur-built gliders, and hang gliders.
3. Other includes parachutes, gyroplanes, balloons, and jetpack.

Source: Civil Aviation Authority of New Zealand, www.caa.govt.nz





#### 4.6 Singapore—Number of Aircraft by Type (2015–2019)

Year	General Aviation Airplanes		Rotorcraft	Airline	Total Aircraft
	Piston	Turbine			
2015	22	0	2	203	227
2016	15	0	1	203	219
2017	15	0	1	212	228
2018	15	0	1	228	244
2019	15	0	1	250	266

Source: Civil Aviation Authority of Singapore, [www.caas.gov.sg](http://www.caas.gov.sg)

#### 4.7 South Africa—Number of Registered by Type and Certification (2013–2019)

Year	Aircraft Type						Type Certified	Non Type Certified	Total Aircraft
	Piston-Engine Powered	Turboprop	Turbojet	Rotorcraft	Recreational	UAS			
2013	3,727	517	485	1,187	5,874	n/a	5,914	5,889	11,803
2014	3,779	516	492	1,207	5,992	n/a	5,994	5,992	11,986
2015	3,796	529	501	1,227	6,106	n/a	6,053	6,106	12,159
2016	3,805	532	511	1,268	6,198	252	6,126	6,203	12,589
2017	3,804	534	522	1,318	6,287	517	6,165	6,293	12,936
2018	3,823	552	521	1,357	6,332	796	6,253	7,128	13,381
2019	3,893	685	535	1,424	6,386	1,082	6,318	7,338	13,656

The data is updated on March 31 of the year listed.

Source: South African Civil Aviation Authority, [www.caa.co.za](http://www.caa.co.za)

#### 4.8 South Korea—Number of Registered by Type (2019)

Year	General Aviation Aircraft					Airline			Total Aircraft
	Airplane					Rotorcraft	Turboprop	Jet	
	Single-Engine Piston	Multi-Engine Piston	Turboprop	Business Jet	Glider				
2019	168	13	18	19	2	207	2	423	852

Source: Ministry of Land, Infrastructure, and Transport, [atis.koca.go.kr](http://atis.koca.go.kr)

# U.S. PILOT AND AIRMEN CERTIFICATE STATISTICS

## 5.1 Active FAA Certificated Pilots (1990–2019)

Year	Pilots		Students <sup>7</sup>	Rec. <sup>5</sup>	Sport <sup>6</sup>	Airplane <sup>1</sup>			Rotorcraft (Only) <sup>2</sup>	Glider (Only) <sup>2</sup>	Remote Pilot <sup>9</sup>	Flight Instructor <sup>3</sup>	Instrument Ratings <sup>3,4</sup>	
	Total	% Women				Private	Commercial	ATP					Total	% of Total
1990	702,659	5.77%	128,663	87	-	299,111	149,666	107,732	9,567	7,833	-	63,775	297,073	51.8%
1991	692,095	5.91%	120,203	161	-	293,306	148,385	112,167	9,860	8,033	-	69,209	303,193	53.0%
1992	682,959	5.95%	114,597	187	-	288,078	146,385	115,855	9,652	8,205	-	72,148	306,169	53.9%
1993	665,069	5.93%	103,583	206	-	283,700	143,014	117,070	9,168	8,328	-	75,021	305,517	54.4%
1994	654,088	5.99%	96,254	241	-	284,236	138,728	117,434	8,719	8,476	-	76,171	302,300	54.2%
1995	639,184	5.67%	101,279	232	-	261,399	133,980	123,877	7,183	11,234	-	77,613	298,798	55.6%
1996	622,261	5.57%	94,947	265	-	254,002	129,187	127,486	6,961	9,413	-	78,551	297,895	56.5%
1997	616,342	5.59%	96,101	284	-	247,604	125,300	130,858	6,801	9,394	-	78,102	297,409	57.2%
1998	618,298	5.72%	97,736	305	-	247,226	122,053	134,612	6,964	9,402	-	79,171	300,183	57.7%
1999	635,472	5.81%	97,359	343	-	258,749	124,261	137,642	7,728	9,390	-	79,694	308,951	57.5%
2000	625,581	6.11%	93,064	340	-	251,561	121,858	141,596	7,775	9,387	-	80,931	311,944	58.6%
2001	612,274	5.82%	86,731	316	-	243,823	120,502	144,702	7,727	8,473	-	82,875	315,276	60.0%
2002	631,762	5.49%	85,991	317	-	245,230	125,920	144,708	7,770	21,826	-	86,089	317,389	58.2%
2003	625,011	6.12%	87,296	310	-	241,045	123,990	143,504	7,916	20,950	-	87,816	315,413	58.7%
2004	618,633	6.09%	87,910	291	-	235,994	122,592	142,160	8,586	21,100	-	89,596	313,545	59.1%
2005	609,737	6.11%	87,213	276	134	228,619	120,614	141,992	9,518	21,369	-	90,555	311,828	59.7%
2006	597,109	6.13%	84,866	239	939	219,233	117,610	141,935	10,690	21,597	-	91,343	309,333	60.5%
2007	590,349	6.12%	84,339	239	2,031	211,096	115,127	143,953	12,290	21,274	-	92,175	309,865	61.5%
2008	613,746	5.83%	80,989	252	2,623	222,596	124,746	146,838	14,647	21,055	-	93,202	325,247	61.4%
2009	594,285	6.39%	72,280	234	3,248	211,619	125,738	144,600	15,298	21,268	-	94,863	323,495	62.4%
2010	627,588	5.86%	119,119	212	3,682	202,020	123,705	142,198	15,377	21,275	-	96,473	318,001	63.0%
2011	617,128	6.39%	118,657	227	4,066	194,441	120,865	142,511	15,220	21,141	-	97,409	314,122	63.6%
2012	610,576	6.77%	119,946	218	4,493	188,001	116,400	145,590	15,126	20,802	-	98,328	311,952	64.2%
2013	599,086	6.78%	120,285	238	4,824	180,214	108,206	149,824	15,114	20,381	-	98,842	307,120	64.8%
2014	593,499	6.63%	120,546	220	5,157	174,883	104,322	152,933	15,511	19,927	-	100,993	306,066	65.5%
2015	590,038	6.66%	122,729	190	5,482	170,718	101,164	154,730	15,566	19,460	-	102,628	304,329	71.3%
2016	584,362	6.71%	128,501	175	5,889	162,313	96,081	157,894	15,518	17,991	20,362	104,224	302,241	72.6%
2017	609,306	7.01%	149,121	153	6,097	162,455	98,161	159,825	15,355	18,139	69,166	106,692	306,652	72.9%
2018	633,318	7.34%	167,804	144	6,246	163,695	99,880	162,145	15,033	18,370	106,321	108,564	311,017	73.1%
2019	664,565	7.94%	197,665	127	6,467	161,105	100,863	164,947	14,248	19,143	160,302	113,445	314,168	73.6%

1. Includes pilots with an airplane-only certificate. Also includes those with an airplane and a helicopter and/or glider certificate. Prior to 1995, these pilots were categorized as private, commercial, or airline transport, based on their airplane certificate. Beginning in 1995, they are categorized based on their highest certificate. For example, if a pilot holds a private airplane certificate and a commercial helicopter certificate, prior to 1995, the pilot would be categorized as private; 1995 and after, as commercial.  
 2. Glider pilots are not required to have a medical examination; however, the totals represent pilots who received a medical examination within the last 25 months.  
 3. Not included in total.  
 4. The instrument rating is as shown on pilot certificates but does not indicate an additional certificate. The percent of total does not include student, sport, and recreational pilots.

5. Recreational certificate was first issued in 1990.  
 6. Sport pilot certificate was first issued in 2005.  
 7. The Federal Aviation Administration (FAA) changed the validity of student pilot certificates in 2010 through an amendment to 14 CFR 61.19(b)(1), resulting in the duration of validity for student pilot certificates for pilots under 40 years of age, increasing from 36 to 60 months. This created an increase in the active student pilot population to 119,119 active airmen at the end of 2010 compared to 72,280 the prior year.  
 8. 1994 counts based on medical certificates issued 27 or fewer months ago. All other years based on medical certificates issued 25 or fewer months ago.  
 9. The FAA created the Remote Pilot operator certificate in 2016. The Remote Pilot operator data is not part of the total number of pilots.

Source: FAA

## 5.2 Active FAA Certificated Pilots and Flight Instructors by State and Region (as of December 31, 2019)

FAA Region and State	Total Pilots	Students	Recreational	Sport	Airplane			Rotor, Glider, & Balloon	Remote Pilot	Flight Instructor <sup>1</sup>
					Private	Commercial	Airline Transport			
<b>Total<sup>2</sup></b>	<b>664,563</b>	<b>197,665</b>	<b>130</b>	<b>6,467</b>	<b>173,080</b>	<b>116,572</b>	<b>170,649</b>	<b>81,586</b>	<b>160,302</b>	<b>113,445</b>
<b>United States – Total<sup>3</sup></b>	<b>624,065</b>	<b>185,835</b>	<b>129</b>	<b>6,442</b>	<b>165,813</b>	<b>102,783</b>	<b>163,063</b>	<b>77,431</b>	<b>158,980</b>	<b>110,431</b>
<b>Non-U.S. Total<sup>5</sup></b>	<b>40,498</b>	<b>11,830</b>	<b>1</b>	<b>25</b>	<b>7,267</b>	<b>13,789</b>	<b>7,586</b>	<b>4,155</b>	<b>1,322</b>	<b>3,014</b>
Alabama	8,080	2,417	3	88	2,068	1,959	1,545	1,820	2,288	1,670
Alaska	8,583	1,986	1	56	2,589	1,679	2,272	1,000	1,190	1,464
American Samoa	2	0	0	0	0	0	2	0	1	0
Arizona	22,786	6,282	0	181	5,279	5,086	5,958	3,344	4,058	4,510
Arkansas	5,779	1,977	1	88	1,660	1,076	977	460	1,493	826
California	64,334	20,449	5	547	20,019	10,753	12,561	8,824	16,367	10,001
Colorado	19,956	5,222	1	154	4,612	3,136	6,831	2,863	5,360	4,072
Connecticut	4,848	1,271	0	30	1,453	739	1,355	648	1,434	859
Delaware	1,470	434	0	13	348	221	454	180	537	278
District of Columbia	657	244	1	5	195	71	141	75	214	106
Federated States of Micronesia	2	0	0	0	0	2	0	1	0	0
Florida	68,914	22,225	1	588	14,186	11,691	20,223	7,372	12,816	11,943
Georgia	20,555	5,397	5	162	4,643	2,691	7,657	2,248	4,861	3,863
Guam	190	39	0	0	26	20	105	29	43	50
Hawaii	3,701	1,011	0	17	579	722	1,372	774	1,023	797
Idaho	5,935	1,618	2	93	1,809	1,124	1,289	947	1,539	1,075
Illinois	17,721	5,048	6	314	4,840	2,545	4,968	1,708	5,271	3,591
Indiana	11,070	3,369	2	206	3,370	1,614	2,509	998	2,957	1,879
Iowa	5,394	1,637	5	103	1,942	909	798	580	1,872	850
Kansas	7,252	2,102	2	91	2,456	1,225	1,376	745	1,937	1,368
Kentucky	6,663	1,908	6	69	1,602	895	2,183	813	1,752	1,167
Louisiana	5,838	1,852	0	66	1,606	1,116	1,198	877	1,768	943
Maine	2,594	726	1	53	804	476	534	311	853	406
Marshall Islands	2	0	0	0	0	1	1	0	0	0
Maryland	8,673	3,247	2	94	2,199	1,321	1,810	1,096	2,749	1,421
Massachusetts	8,316	2,806	0	68	2,630	1,203	1,609	907	2,480	1,202
Michigan	14,884	4,239	7	226	4,572	2,278	3,562	1,457	3,980	2,701
Minnesota	13,352	3,274	1	112	3,930	2,073	3,962	1,018	3,158	2,763
Mississippi	4,707	1,700	2	32	1,123	867	983	474	1,301	658
Missouri	10,078	3,061	5	167	2,983	1,654	2,208	1,210	2,882	1,647
Montana	4,199	1,186	2	41	1,328	898	744	643	1,175	738
Nebraska	3,783	1,207	0	36	1,234	647	659	294	1,184	569
Nevada	8,331	1,974	1	64	1,760	1,446	3,086	1,550	1,838	1,774
New Hampshire	3,965	858	1	51	1,003	575	1,477	583	838	796
New Jersey	9,287	2,977	4	42	2,494	1,363	2,407	1,210	2,861	1,661
New Mexico	4,488	1,302	1	79	1,470	973	663	1,308	1,186	596
New York	17,158	6,221	16	136	4,888	2,654	3,243	2,081	5,494	2,726
North Carolina	16,417	4,464	3	175	4,436	2,493	4,846	2,039	5,518	2,973
North Dakota	3,716	1,292	0	29	1,092	1,003	300	198	899	496
Northern Mariana Islands	16	5	0	0	0	7	4	2	3	3
Ohio	16,251	4,700	15	256	4,891	2,386	4,003	1,746	4,534	3,033
Oklahoma	9,013	3,245	1	58	2,468	1,608	1,633	699	2,055	1,415
Oregon	9,997	2,876	1	111	3,224	2,116	1,669	1,815	2,965	1,728
Palau	1	0	0	0	1	0	0	1	0	0
Pennsylvania	16,370	4,757	7	198	4,530	2,420	4,458	2,302	4,577	2,937
Puerto Rico	1,790	838	0	48	311	227	366	147	357	229
Rhode Island	1,011	336	0	9	288	143	235	107	306	154
South Carolina	7,783	2,086	1	85	2,087	1,181	2,343	941	2,282	1,323
South Dakota	2,422	640	1	58	774	495	454	292	622	441
Tennessee	14,076	3,827	3	118	3,294	2,131	4,703	1,763	3,050	2,671
Texas	57,668	16,928	4	417	13,541	8,836	17,942	6,856	14,448	10,092
Utah	10,049	3,038	0	73	2,455	1,701	2,782	1,248	2,415	1,993
Vermont	1,293	364	0	10	432	248	239	249	346	198
Virgin Islands	197	87	0	1	39	25	45	19	15	23
Virginia	15,548	4,451	4	159	3,722	2,624	4,588	2,363	4,853	3,046
Washington	22,378	6,211	1	226	5,905	3,317	6,718	2,822	4,833	4,223
West Virginia	1,871	643	1	43	555	301	328	224	738	296
Wisconsin	9,930	2,807	2	270	3,251	1,363	2,237	788	2,752	1,714
Wyoming	2,010	622	1	22	681	334	350	254	599	315
AA – Americas <sup>4</sup>	14	1	0	0	5	2	6	5	2	7
AE – Europe and Canada <sup>4</sup>	274	100	0	3	71	50	50	51	26	84
AP – Pacific <sup>4</sup>	423	251	0	1	60	69	42	52	25	67

1. Not included in total.

2. Includes non-U.S. total.

3. Includes American Samoa, Federated States of Micronesia, Guam, Marshall Islands, Northern Mariana Islands, Palau, Puerto Rico, and Virgin Islands.

4. Military personnel holding civilian certificates and stationed in foreign country.

5. Non-U.S. are non-U.S. nationals who hold FAA certificates.

Source: FAA



### 5.3 Active FAA Pilot Certificates Held by Category and Age Group of Holder (as of December 31, 2019)

Age Group	Type of Pilot Certificate								
	Total Pilots	Student	Recreational	Sport Pilot	Private	Commercial	Airline Transport	Remote Pilot	CFI
<b>Total</b>	<b>664,563</b>	<b>197,665</b>	<b>130</b>	<b>6,467</b>	<b>173,080</b>	<b>116,572</b>	<b>170,649</b>	<b>160,302</b>	<b>113,445</b>
14-15	465	465	0	0	0	0	0	0	0
16-19	21,229	16,159	0	10	4,736	324	0	2,150	98
20-24	70,041	38,573	9	91	17,201	12,798	1,369	10,995	5,621
25-29	78,366	40,945	9	173	13,738	17,408	6,093	20,014	9,249
30-34	66,742	29,728	14	249	12,832	12,398	11,521	22,769	11,802
35-39	61,715	20,863	6	300	12,783	10,102	17,661	22,053	13,712
40-44	52,044	13,850	8	315	11,872	7,604	18,395	18,180	11,696
45-49	49,602	9,539	4	389	11,534	7,094	21,042	16,760	11,424
50-54	54,642	8,340	9	565	13,808	7,502	24,418	14,326	11,124
55-59	60,477	7,483	11	860	17,630	8,583	25,910	12,606	10,371
60-64	55,915	5,230	21	1,066	19,499	8,807	21,292	9,767	8,971
65-69	40,269	3,318	22	1,004	16,848	8,212	10,865	6,179	7,599
70-74	28,125	1,972	10	741	11,335	7,471	6,596	3,118	6,297
75-79	15,628	854	5	455	6,090	4,824	3,400	1,051	3,418
80 and over	9,303	346	2	249	3,174	3,445	2,087	334	2,063

Source: FAA

#### DEFINITIONS

**Active Pilot** — A pilot who holds a pilot certificate and a valid medical certificate (except for sport pilots).

**Airman** — A pilot, mechanic, or other licensed aviation technician. The term refers to men and women.

**Airman Certificate** — A document issued by the Administrator of the FAA. The Airman Certificate certifies that the holder complies with the regulations governing the capacity in which the certificate authorizes the holder to act as an airman in connection with an aircraft.



### 5.4 Average Age of Active FAA Pilots by Category (2000–2019)

Year	Average All Pilots	Type of Pilot Certificate					
		Student	Recreational	Sport Pilot	Private	Commercial	Airline Transport
2000	43.7	34.1	49.8	-	45.6	44.9	45.8
2001	44.0	33.3	50.8	-	46.0	45.0	46.0
2002	44.4	33.7	51.0	-	46.2	45.5	46.6
2003	44.7	34.0	51.5	-	46.5	45.6	47.0
2004	45.1	34.2	51.3	-	47.0	45.9	47.5
2005	45.5	34.6	50.9	53.2	47.4	46.0	47.8
2006	45.6	34.4	51.5	52.9	47.7	46.1	48.1
2007	45.7	34.0	52.4	52.9	48.0	46.1	48.3
2008	45.1	33.6	50.1	53.2	46.9	44.8	48.5
2009	45.3	33.5	50.4	53.5	47.1	44.2	48.9
2010	44.2	31.4	50.8	53.8	47.6	44.2	49.4
2011	44.4	31.4	48.8	54.4	47.9	44.4	49.7
2012	44.7	31.5	47.8	54.7	48.3	44.8	49.9
2013	44.8	31.5	44.8	55.2	48.5	45.4	49.7
2014	44.8	31.5	43.1	55.8	48.5	45.5	49.8
2015	44.8	31.4	44.6	56.2	48.5	45.6	49.9
2016	44.9	31.7	44.0	56.4	48.4	46.0	50.2
2017	44.9	32.5	49.0	57.1	48.9	46.2	50.6
2018	44.9	33.1	50.0	57.9	49.0	46.3	51.0
2019	44.2	33.5	52.0	58.5	48.3	45.9	50.8

Source: FAA

### 5.5 FAA Pilot Certificates Issued by Category (2000–2018)

Year	Student		Private		Commercial		Airline Transport		Helicopter (only)		Glider (only)	
	Original	Additional	Original	Additional	Original	Additional	Original	Additional	Original	Additional	Original	Additional
2000	58,042	1,070	27,223	17,223	11,813	11,652	7,715	20,558	1,776	234	455	62
2001	61,897	1,161	25,372	16,807	11,499	11,115	7,070	21,357	1,698	218	403	77
2002	65,421	1,317	28,659	18,607	12,299	11,628	4,718	18,502	2,073	275	336	38
2003	58,842	1,230	23,866	14,899	9,670	8,872	3,892	13,196	2,013	269	312	47
2004	59,202	1,302	23,031	14,234	9,836	9,635	4,255	15,328	2,736	366	309	43
2005	53,576	1,418	20,889	12,952	8,834	8,874	4,750	15,534	2,917	521	290	27
2006	61,448	1,551	20,217	13,079	8,687	9,603	4,748	15,942	3,569	816	298	42
2007	66,953	1,450	20,299	13,970	9,318	9,574	5,918	15,973	4,073	1,041	263	14
2008	61,194	1,507	19,052	14,409	10,595	10,202	5,204	15,658	3,639	930	204	11
2009	54,876	2,006	19,893	14,570	11,350	9,399	3,113	11,605	3,648	1,011	249	10
2010	54,064	1,057	14,977	10,260	8,056	7,778	3,072	10,890	2,686	670	222	8
2011	55,298	857	16,802	10,703	8,559	10,027	4,677	13,694	3,123	894	219	10
2012	54,370	694	16,571	10,720	8,651	9,341	6,396	12,768	2,892	900	180	0
2013	49,566	676	15,776	10,098	8,140	7,922	8,346	13,288	2,888	899	163	1
2014	49,261	698	17,795	11,396	9,803	8,840	7,749	19,481	3,754	1,072	195	5
2015	49,062	590	16,473	11,067	9,211	8,348	6,544	19,823	2,999	957	188	3
2016	36,712	174	17,082	11,900	10,191	9,564	9,520	20,747	2,759	782	170	1
2017	38,401	0	17,752	12,555	10,506	10,508	4,449	20,723	2,552	721	152	2
2018	45,354	1	20,730	13,989	12,198	13,089	5,795	22,122	2,367	636	171	3

An additional rating is added to an existing pilot certificate [e.g., instrument rating added to a private certificate].

Student certificates issued are estimated. They include those with a medical certification, as well as those that do not require a medical examination. Until April 2016, data displayed combined FAA Medical Certificate and Student Pilot Certificates issued, nearly all obtained through the Medical Certification System. As such,

the numbers included both first time applications and renewals. Student medical certifications remained valid for 24 calendar months for pilots age 40 or older, and for 60 months for pilots under the age of 40. As of April 2016, combined medical certificate and pilot certificates are no longer issued, and there will be no expiration date on the new student pilot certificates. Designated examiners, FAA inspectors, and Certified Flight Instructors (CFIs) process student pilot certificates, and FAA issues the certificate.

Source: FAA

## 5.6 FAA Non-Pilot Certificates (2000–2019)

Year	Mechanic	Repairman	Parachute Rigger	Ground Instructor	Dispatcher	Flight Navigator	Flight Engineer	Flight Attendant <sup>3</sup>
2000	344,434	38,208	10,477	72,326	16,340	570	65,098	n/a
2001	310,850	40,085	7,927	72,261	16,070	509	65,398	n/a
2002	315,928	37,114	8,063	73,658	16,695	431	63,681	n/a
2003	313,032	37,248	7,883	72,692	16,955	382	61,643	n/a
2004	317,111	39,231	8,011	73,735	17,493	336	59,376	n/a
2005	320,293	40,030	8,150	74,378	18,079	298	57,756	125,032
2006	323,097	40,329	8,252	74,849	18,610	264	55,952	134,874
2007	322,852	40,277	8,186	74,544	19,043	250	54,394	147,013
2008	326,276	41,056	8,248	74,983	19,590	222	53,135	154,671
2009	329,027	41,389	8,362	75,461	20,132	181	51,022	156,741
2010	308,367	41,196	8,009	70,560	16,576	171	48,569	156,368
2011	335,431	40,802	8,491	74,586	21,363	146	47,659	167,037
2012	337,775	40,444	8,474	73,599	21,862	141	46,639	172,357
2013	338,844	39,952	8,491	72,493	22,401	126	45,317	179,531
2014	341,409	39,566	8,702	71,755	23,113	115	43,803	188,936
2015	342,528	39,363	8,846	70,957	23,754	102	42,460	200,319
2016	279,435	34,411	5,851	65,053	19,758	67	35,761	212,607
2017	286,268	35,040	6,192	66,423	20,664	64	34,534	222,037
2018	292,002	35,382	6,430	67,784	21,465	58	33,526	231,355
2019	301,087	36,294	6,800	69,991	22,598	40	31,692	245,699

1. Number of non-pilot certificates represents all certificates on record since no medical examination is required.

2. Airmen without a plastic certificate are no longer considered active by the FAA starting with the 2016 data.

3. Flight attendant information was first available from FAA Registry in 2005.

Source: FAA

### PILOT CATEGORIES

**Student Pilot** — A student pilot must be 16 years old, medically certificated by an FAA medical examiner, and may only fly solo under the supervision of a flight instructor. A student pilot may not operate an aircraft that is carrying passengers or that is carrying property for compensation or hire.

**Recreational Pilot** — A recreational pilot may fly no more than one passenger in a light, single-engine aircraft with no more than four seats, during good weather and daylight hours, and unless otherwise authorized, not more than 50 miles from his or her home airport.

**Sport Pilot** — A sport pilot may operate a light-sport aircraft under a limited set of flight conditions. The certificate does not require an FAA medical examination, but the pilot can carry a driver's license as proof of medical competence. Holders of a sport pilot certificate may fly an aircraft with a standard airworthiness certificate if the aircraft meets the definition of a light-sport aircraft.

**Private Pilot** — A private pilot may carry passengers in any aircraft. The private pilot may not act as pilot-in-command of an aircraft that is carrying passengers for compensation or hire or act as pilot-in-command of an aircraft

that is being operated for compensation or hire (such as an aircraft hired to conduct pipeline patrol but carrying no passengers).

**Commercial Pilot** — A commercial pilot may act as pilot-in-command of an aircraft that is carrying passengers for compensation or hire, and as pilot-in-command of an aircraft that is being operated for compensation or hire, but not as pilot-in-command of an aircraft in air carrier service.

**Airline Transport Pilot** — An airline transport pilot may act as pilot-in-command of an aircraft in air carrier service.



# CHAPTER 6

## AIRPORTS AND AERONAUTICAL FACILITIES

### 6.1 Airports by Country in Europe (2013–2019 Estimates)

Country	Airports with Paved Runways						Airports with Unpaved Runways						Heliports
	Total Airports	Over 10,000 ft	8,000 ft to 10,000 ft	5,000 ft to 8,000 ft	3,000 ft to 5,000 ft	Under 3,000 ft	Total Airports	Over 10,000 ft	8,000 ft to 10,000 ft	5,000 ft to 8,000 ft	3,000 ft to 5,000 ft	Under 3,000 ft	
Albania	4	-	3	1	-	-	1	-	-	-	1	-	1
Andorra	-	-	-	-	-	-	-	-	-	-	-	-	-
Armenia	10	2	2	4	2	-	1	-	-	-	1	-	-
Austria	24	1	5	1	4	13	28	-	-	1	3	24	1
Azerbaijan	30	5	5	13	4	3	7	-	-	-	-	7	1
Belarus	33	1	20	4	1	7	32	1	-	1	2	28	1
Belgium	26	6	9	2	1	8	15	-	-	-	-	15	1
Bosnia-Herz	7	-	4	1	-	2	17	-	-	1	5	11	6
Bulgaria	57	2	17	12	-	26	11	-	-	-	2	9	1
Croatia	24	2	6	3	3	10	45	-	-	1	6	38	1
Cyprus	13	-	7	2	3	1	2	-	-	-	-	2	9
Czechia	41	2	9	12	2	16	87	-	-	1	26	60	1
Denmark	28	2	7	5	12	2	52	-	-	-	5	47	-
Estonia	13	2	8	2	1	-	5	-	-	1	1	3	1
Finland	74	3	26	10	21	14	74	-	-	-	3	71	-
France	294	14	25	97	83	75	170	-	-	1	64	105	1
Georgia	18	1	7	3	5	2	4	-	-	1	2	1	2
Germany	318	14	49	60	70	125	221	-	-	1	35	185	23
Greece	68	6	15	19	18	10	9	-	-	-	2	7	9
Hungary	20	2	6	6	5	1	21	-	-	2	8	11	3
Iceland	7	1	-	3	3	-	89	-	-	3	26	60	-
Ireland	16	1	1	4	5	5	24	-	-	1	2	21	-
Italy	98	9	31	18	29	11	31	-	-	1	10	20	5
Latvia	19	1	3	5	3	7	23	-	-	-	-	23	1
Liechtenstein	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithuania	22	3	1	7	2	9	39	1	-	1	2	36	-
Luxembourg	1	1	-	-	-	-	1	-	-	-	-	1	1
Malta	1	1	-	-	-	-	-	-	-	-	-	-	2
Moldova	5	1	2	2	-	-	2	-	-	-	1	1	-
Monaco	-	-	-	-	-	-	-	-	-	-	-	-	1
Montenegro	5	-	2	1	1	1	-	-	-	-	-	-	1
Netherlands	20	2	10	2	5	1	7	-	-	-	3	4	1
Norway	67	1	12	11	19	24	31	-	-	-	6	25	1
N. Macedonia	10	-	2	-	-	8	2	-	-	-	1	1	-
Poland	87	5	30	36	10	6	39	-	-	1	17	21	6
Portugal	43	5	7	8	15	8	21	-	-	-	1	20	-
Romania	26	4	10	11	-	1	19	-	-	-	5	14	2
Serbia	10	2	3	3	2	-	16	-	-	1	10	5	2
Slovakia	19	2	2	3	3	9	15	-	-	-	10	5	1
Slovenia	7	1	1	1	3	1	9	-	-	1	3	5	-
Spain	99	18	14	19	24	24	51	-	-	2	13	36	10
Sweden	149	3	12	75	22	37	82	-	-	-	5	77	2
Switzerland	40	3	2	12	6	17	23	-	-	-	-	23	2
Turkey	91	16	38	17	16	4	7	-	-	1	4	2	20
Ukraine	108	13	42	22	3	28	79	-	-	5	5	69	9
United Kingdom	271	7	29	89	80	66	189	-	-	3	26	160	9
Europe Total	2,323	165	484	606	486	582	1,601	2	-	31	316	1,253	138

Source: CIA World Factbook

## 6.2 U.S. Civil and Joint Use Airports, Heliports, and Seaplane Bases (2010–2020)

State or Territory	State or Territory Total	Public Use		Civil Private Use Landing Facilities							Military-Only Use
		Total	Part 139	Total	Airports	Heliports	Seaplane Bases	Other			
								Gliderports	Balloon Ports	Ultralight Flightparks	
<b>Grand Total</b>	<b>19,750</b>	<b>5,178</b>	<b>522</b>	<b>14,120</b>	<b>8,405</b>	<b>5,425</b>	<b>290</b>	<b>31</b>	<b>13</b>	<b>134</b>	<b>274</b>
<b>U.S. – Total</b>	<b>19,729</b>	<b>5,168</b>	<b>514</b>	<b>14,111</b>	<b>8,403</b>	<b>5,418</b>	<b>290</b>	<b>31</b>	<b>13</b>	<b>134</b>	<b>272</b>
Alabama	281	98	9	172	87	81	4	-	-	-	11
Alaska	734	408	26	307	245	38	24	-	-	-	19
American Samoa	4	3	3	1	1	-	-	-	-	-	-
Arizona	314	79	13	219	107	112	-	2	-	6	8
Arkansas	307	99	6	199	118	81	-	2	-	4	3
California	960	257	30	671	263	404	4	3	-	1	28
Colorado	449	76	13	365	186	179	-	1	1	1	5
Connecticut	146	23	4	122	35	82	5	-	-	1	-
Delaware	42	11	2	30	21	9	-	-	-	-	1
District of Columbia	20	3	2	13	-	13	-	-	-	-	4
Florida	857	127	26	697	370	289	38	2	-	5	26
Georgia	461	110	9	339	227	110	2	1	-	1	10
Guam	3	1	1	1	-	1	-	-	-	-	1
Hawaii	50	14	8	30	14	16	-	-	-	-	6
Idaho	280	119	7	158	108	49	1	-	-	2	1
Illinois	788	115	17	665	413	247	5	2	-	5	1
Indiana	610	107	11	487	348	123	16	-	-	11	5
Iowa	289	121	7	162	79	83	-	-	-	3	3
Kansas	383	141	9	238	203	35	-	1	1	-	2
Kentucky	223	60	6	157	95	62	-	-	-	4	2
Louisiana	480	75	9	381	150	219	12	-	-	20	4
Maine	175	68	4	104	64	17	23	-	-	2	1
Maryland	226	37	3	182	111	67	4	-	-	-	7
Massachusetts	241	40	9	198	39	142	17	-	1	1	1
Michigan	467	228	20	236	142	89	5	-	-	2	1
Midway Atoll	2	1	1	1	1	-	-	-	-	-	-
Minnesota	469	154	9	313	203	59	51	-	-	1	1
Mississippi	244	80	11	157	107	50	-	-	-	1	6
Missouri	518	132	11	380	251	128	1	-	-	3	3
Montana	258	121	9	134	102	31	1	-	-	1	2
N. Mariana Islands	11	5	3	6	-	6	-	-	-	-	-
Nebraska	244	86	9	156	122	34	-	-	-	-	2
Nevada	125	49	4	69	43	26	-	1	-	1	5
New Hampshire	139	25	2	114	28	79	7	-	-	-	-
New Jersey	314	46	4	256	54	196	6	-	5	-	7
New Mexico	174	61	10	107	81	26	-	-	-	1	5
New York	603	148	24	448	263	175	10	2	1	3	1
North Carolina	429	112	14	300	212	88	-	1	1	4	11
North Dakota	281	89	8	190	175	15	-	-	-	-	2
Ohio	729	170	12	554	344	209	1	2	1	1	1
Oklahoma	390	140	4	240	160	80	-	-	-	4	6
Oregon	420	97	7	322	231	90	1	1	-	-	-
Pennsylvania	821	132	16	662	316	339	7	2	-	18	7
Puerto Rico	52	12	3	39	6	31	2	-	-	-	1
Rhode Island	31	8	1	22	3	17	2	-	1	-	-
South Carolina	196	68	8	119	86	31	2	1	-	3	5
South Dakota	178	74	5	103	70	33	-	-	-	-	1
Tennessee	311	81	7	226	124	101	1	-	-	2	2
Texas	2,006	391	30	1,578	1,050	528	-	6	-	9	22
Utah	142	46	9	93	44	49	-	-	-	-	3
Vermont	81	16	2	65	45	14	6	-	-	-	-
Virgin Islands	8	2	2	6	-	4	2	-	-	-	-
Virginia	427	66	7	340	213	125	2	1	1	1	18
Wake Island	1	-	-	-	-	-	-	-	-	-	1
Washington	552	137	11	403	240	157	6	-	-	3	9
West Virginia	120	35	7	83	38	35	10	-	-	1	1
Wisconsin	565	133	9	422	315	95	12	-	-	8	2
Wyoming	119	41	9	78	52	26	-	-	-	-	-



### 6.3 U.S. Airports Ranked by Number of General Aviation Operations at Tower (2019)

Rank 2018	Facility	Airport Name and State	General Aviation Operations					Total Airport Operations	Total GA Operations	GA as % of Total	Tower Operations
			IFR GA		VFR GA		Local Civil GA				
			Itinerant	Overflight	Itinerant	Overflight					
1	DVT	Phoenix Deer Valley, AZ	8,876	1,008	88,790	4,248	307,645	456,790	410,567	88.6%	463,469
2	APA	Centennial Airport, Denver, CO	40,987	96	104,448	4,208	166,795	349,949	316,534	88.9%	355,908
3	HWO	North Perry Airport, FL	6,699	1,653	82,687	11,701	194,340	284,311	297,080	99.0%	300,169
4	LGB	Long Beach, CA	24,721	441	75,132	16,500	162,539	304,357	279,333	86.8%	321,984
5	FFZ	Falcon Field, Mesa, AZ	4,710	46	52,283	7,688	206,741	339,344	271,468	77.8%	349,081
6	MYF	Montgomery Field Airport, San Diego, CA	24,418	48	75,683	7,957	148,187	253,199	256,293	97.5%	262,899
7	SEE	Gillespie Field, San Diego, CA	17,857	2,938	67,809	4,958	156,306	243,127	249,868	99.3%	251,746
8	TMB	Miami Executive Airport, FL	24,449	97	95,067	2,554	115,335	238,692	237,502	98.4%	241,461
9	CNO	Chino, CA	16,864	1,060	61,866	8,444	136,593	217,181	224,827	99.1%	226,940
10	IWA	Phoenix-Mesa Gateway Airport, AZ	17,125	151	49,709	4,196	147,934	278,860	219,115	77.0%	284,543
11	CHD	Chandler Municipal Airport, AZ	4,911	16	62,736	1,315	149,754	220,662	218,732	97.6%	224,111
12	SFB	Orlando Sanford International Airport, FL	7,291	30	13,111	754	197,184	356,090	218,370	61.2%	356,975
13	SNA	John Wayne-Orange County, CA	35,932	615	69,060	7,773	99,688	318,485	213,068	64.9%	328,416
14	RHV	Reid-Hillview, CA	2,389	73	82,886	3,729	122,376	208,200	211,453	99.5%	212,607
15	FRG	Republic Airport, Farmingdale, NY	13,472	194	81,058	3,220	109,685	219,672	207,629	88.3%	235,228
16	VNY	Van Nuys, CA	37,760	1,100	86,955	18,625	59,037	212,086	203,477	86.8%	234,384
17	PMP	Pompano Beach Airpark, FL	8,327	18,362	58,620	20,402	94,909	162,292	200,620	95.7%	209,722
18	PRC	Ernest A. Love Field, Prescott, AZ	7,636	22	37,179	349	155,369	232,592	200,555	85.9%	233,407
19	RVS	Richard Lloyd Jones, OK	15,822	34	54,153	946	115,427	187,730	186,382	98.1%	189,923
20	BJC	Rocky Mtn. Metro. Airport, Denver, CO	14,926	570	59,753	3,040	106,438	191,533	184,727	94.4%	195,762
21	GFK	Grand Forks Int., ND	4,870	4	5,790	204	172,620	295,280	183,488	62.1%	295,634
22	FIN	Flagler Executive Airport, FL	5,334	410	44,749	411	132,233	184,891	183,137	98.5%	185,866
23	EVB	New Smyrna Beach Municipal, FL	10,623	239	47,057	4,327	117,659	177,385	179,905	98.8%	182,007
24	VRB	Vero Beach Regional Airport, FL	16,413	112	42,661	2,189	116,567	250,425	177,942	70.4%	252,839
25	SDL	Scottsdale Airport, AZ	33,319	450	56,315	6,258	79,743	186,514	176,085	91.1%	193,371
26	FPR	Treasure Coast Int., Fort Pierce, FL	21,496	85	47,615	2,564	103,663	185,697	175,423	92.9%	188,744
27	VGJ	North Las Vegas Airport, NV	5,926	86	47,789	2,013	118,542	193,214	174,356	88.2%	197,764
28	DAB	Daytona Beach International Airport, FL	19,278	273	27,843	2,422	120,812	326,775	170,628	51.5%	331,301
29	BFI	Boeing Field, King County Airport, WA	30,307	2,015	63,219	15,029	55,790	186,228	166,360	78.1%	213,111
30	FTW	Fort Worth Meacham Int. Airport, TX	27,858	888	42,760	6,464	85,261	169,594	163,231	89.4%	182,627
31	FXE	Fort Lauderdale Executive Airport, FL	37,257	983	62,395	5,603	55,434	172,556	161,672	90.0%	179,629
32	LVK	Livermore Municipal Airport, CA	13,824	13	49,995	1,874	93,228	160,746	158,934	97.7%	162,716
33	OPF	Miami-Opa Locka Executive Airport, FL	44,856	12	44,067	8,392	59,882	170,067	157,209	88.0%	178,578
34	TKI	McKinney National Airport, Dallas, TX	9,648	11	38,419	2,629	106,149	160,133	156,856	96.0%	163,469
35	PAO	Palo Alto Airport, CA	4,434	2,192	49,394	4,367	95,305	150,266	155,692	96.7%	160,927
36	CMA	Camarillo Airport, CA	13,952	4,021	54,025	6,157	76,921	149,351	155,076	95.1%	163,058
37	HIO	Portland-Hillsboro Airport, OR	13,504	294	58,014	3,324	78,419	153,890	153,555	97.4%	157,649
38	ISM	Kissimmee Gateway Airport, FL	27,399	8	42,031	21,454	59,737	133,583	150,629	96.4%	156,289
39	CRG	Jacksonville Executive at Craig Airport, FL	24,931	276	44,402	1,034	77,050	157,997	147,693	87.1%	169,576
40	PDK	DeKalb-Peachtree Airport, GA	45,853	275	50,745	8,058	42,750	161,371	147,681	86.0%	171,690
41	MRI	Merrill Field, Anchorage, AK	1,962	182	61,753	3,468	74,893	152,394	142,258	89.3%	159,265
42	CRQ	McClellan-Palomar Airport, Carlsbad, CA	35,446	169	42,489	4,649	58,517	143,043	141,270	94.9%	148,813
43	JRF	Kaalaola Airport, Kapolei, HI	638	0	24,446	0	115,206	160,402	140,290	87.5%	160,402
44	SGJ	North Florida Regional Airport, FL	13,024	2	42,333	1,923	80,848	144,966	138,130	93.5%	147,700
45	DTO	Denton Enterprise Airport, TX	7,787	139	55,311	2,800	71,166	135,744	137,203	98.9%	138,752
46	TOA	Zamperini Field, Torrance, CA	8,233	222	51,057	9,738	65,156	125,174	134,406	99.2%	135,483
47	PTK	Oakland County Int. Airport, Waterford, MI	28,310	490	28,697	2,427	72,041	140,167	131,965	92.1%	143,354
48	DWH	David Wayne Hooks Memo. Airport, TX	14,693	43	46,990	1,784	68,390	134,032	131,900	96.8%	136,317
49	SAC	Sacramento International Airport, CA	17,495	444	60,615	8,895	44,108	124,522	131,557	93.4%	140,834
50	DPA	DuPage Airport, West Chicago, IL	16,151	201	34,205	2,842	77,275	133,156	130,674	95.9%	136,250

Source: FAA Operations Network (OPSNET)



#### 6.4 Airports by Type (2004–2016)

Year	2004	2005	2006	2007	2008	2009	2010	2011	2014	2015	2016
<b>Total Civil Public Use Airports</b>	<b>5,288</b>	<b>5,270</b>	<b>5,233</b>	<b>5,221</b>	<b>5,202</b>	<b>5,178</b>	<b>5,175</b>	<b>5,172</b>	<b>5,145</b>	<b>5,136</b>	<b>5,119</b>
Civil Public Use Part 139	599	575	604	565	560	559	551	547	537	531	529
Civil Public Use Non-Part 139	n/a	n/a	n/a	4,556	4,642	4,619	4,624	4,625	4,608	4,605	4,590
Civil Public Use Abandoned	10	14	27	18	16	18	14	20	15	14	20
Newly Established Public Use	n/a	n/a	n/a	9	3	5	16	6	10	8	4
<b>Total Civil Private Use Airports</b>	<b>14,532</b>	<b>14,584</b>	<b>14,757</b>	<b>14,839</b>	<b>14,451</b>	<b>14,298</b>	<b>14,353</b>	<b>14,339</b>	<b>13,863</b>	<b>14,096</b>	<b>14,168</b>
Civil Private Use Airports Abandoned	117	115	133	297	461	360	121	183	307	112	222
Newly Established Private Use	n/a	n/a	n/a	274	151	214	212	20	171	352	305
Military Airports	57	n/a	n/a	261	277	274	274	271	286	287	283
<b>Total Airports by Type</b>	<b>19,820</b>	<b>19,854</b>	<b>19,983</b>	<b>20,341</b>	<b>19,930</b>	<b>19,750</b>	<b>19,802</b>	<b>19,782</b>	<b>19,299</b>	<b>19,524</b>	<b>19,576</b>
Airports	n/a	n/a	n/a	13,822	13,589	13,494	13,473	13,450	13,089	13,156	13,154
Heliports	n/a	n/a	n/a	5,708	5,568	5,571	5,650	5,686	5,553	5,709	5,763
Seaplane Bases	n/a	n/a	n/a	527	503	497	496	497	488	493	497
Gliderports	n/a	n/a	n/a	35	35	35	35	35	36	35	35
Stolports	n/a	n/a	n/a	87	82	n/a	n/a	n/a	n/a	n/a	n/a
Balloon Ports	n/a	n/a	n/a	15	14	14	13	13	13	13	13
Ultralight Flightparks	n/a	n/a	n/a	147	139	139	135	131	120	118	114

The category "stolport" was eliminated in 2009.  
The data is as of December 31 for the years listed.

Source: FAA Administrator's Factbook



# CHAPTER 7

## SAFETY AND ACCIDENT STATISTICS

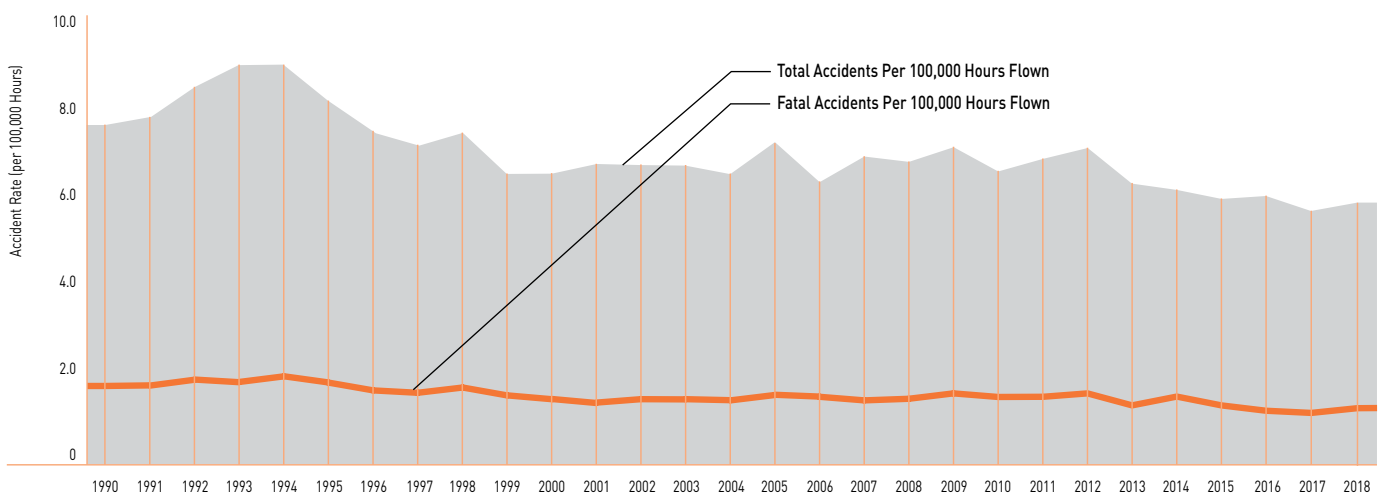
### 7.1 U.S. General Aviation Accidents, Fatal Accidents, and Fatalities (2010–2019)

Year	Accidents		Accidents		Fatalities		Flight Hours	Rate	
	All	Excluded	Fatal	Excluded	Total	Aboard		All	Fatal
2010	1,441	3	271	2	458	455	21,688,409	6.63	1.24
2011	1,471	3	270	1	458	447	21,488,000	6.84	1.24
2012	1,471	1	273	1	438	438	20,880,993	7.04	1.30
2013	1,223	3	221	3	390	386	19,492,356	6.26	1.12
2014	1,222	0	255	0	422	412	19,617,389	6.23	1.30
2015	1,211	7	230	4	378	375	20,576,072	5.85	1.10
2016	1,269	3	213	3	386	379	21,333,747	5.93	0.98
2017	1,233	2	203	0	331	331	21,702,719	5.67	0.94
2018	1,275	2	225	2	381	378	21,663,367	5.88	1.03
2019P	1,185	n/a	230	n/a	n/a	n/a	n/a	n/a	n/a

P = Preliminary  
 General aviation as defined by NTSB includes operations under Part 91, Part 91K, Part 125, Part 133, and Part 137 for the purpose of accident statistics. Excluded "Accidents" and "Fatalities" are suicide/sabotage and stolen/unauthorized events, which are not included in rates.

Source: NTSB, FAA, and GAMA

FIGURE 7.1 Accident Rates in U.S. General Aviation (1990–2018)



Source: NTSB, FAA, and GAMA

## 7.2 U.S. On-Demand FAR Part 135 Accidents, Fatal Accidents, and Fatalities (2010–2019)

Year	Accidents		Accidents		Fatalities		Flight Hours	Rate	
	All	Excluded	Fatal	Excluded	Total	Aboard		All	Fatal
2010	30	0	6	0	17	17	3,113,218	0.96	0.19
2011	50	0	16	0	41	41	3,082,000	1.62	0.52
2012	40	0	8	0	12	12	3,521,974	1.14	0.23
2013	45	0	10	0	25	25	3,384,502	1.33	0.30
2014	35	0	8	0	20	20	3,653,797	0.96	0.22
2015	38	0	7	0	27	27	3,566,000	1.07	0.20
2016	30	0	7	0	19	19	3,499,517	0.86	0.20
2017	44	0	7	0	16	16	3,509,451	1.25	0.23
2018	41	0	5	0	12	12	3,842,566	1.07	0.16
2019P	33	n/a	12	n/a	n/a	n/a	n/a	n/a	n/a

P = Preliminary

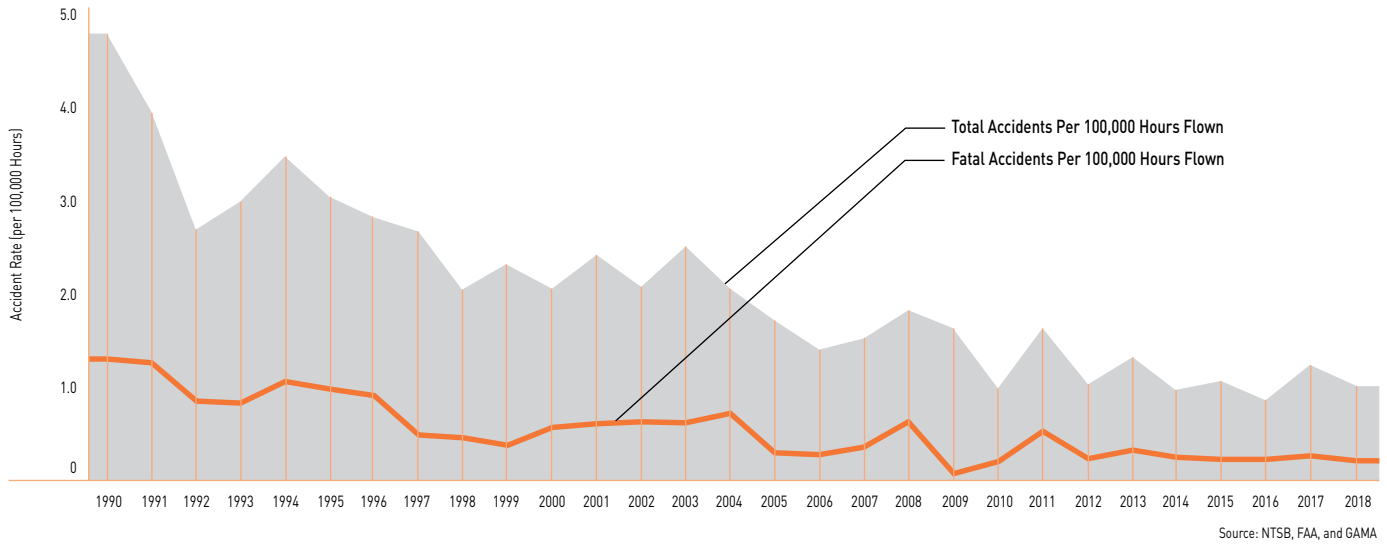
Source: NTSB

Excluded "Accidents" and "Fatalities" are suicide/sabotage and stolen/unauthorized events, which are not included in rates. U.S. air carriers operating under 14 CFR Part 135 were previously referred to as Scheduled and Nonscheduled Services. Current tables now refer to these same air carriers as Commuter Operations and On-Demand Operations, respectively, in order to be consistent with definitions in 14 CFR 119.3 and terminology used in 14 CFR 135.1. On-Demand Part 135 operations encompass charters, air taxis, air tours, or medical services (when a patient is on board).





**FIGURE 7.2 Accident Rates in U.S. On-Demand FAR Part 135 Operations (1990–2018)**



**7.3 European Union Aviation Accidents (2010–2018)**

Year	General Aviation Operations											Commercial Operations									All Aircraft Accidents		
	Aeroplane		Rotorcraft		Glider		Balloons		Bus. Aviation Aeroplane		Fatalities	Specialised Operations				Commercial Air Transport				Fatalities			
	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal		Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal		Total	Fatal	Fatalities
	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Fatalities
2010	430	48	56	6	219	25	14	0	2	0	137	33	9	22	6	20	0	8	2	31	804	96	168
2011	481	61	50	6	232	30	29	3	1	0	168	31	5	27	8	28	1	7	3	37	886	117	205
2012	400	45	36	4	232	30	25	3	1	1	139	31	7	23	6	35	1	7	1	29	790	98	168
2013	351	33	49	7	212	20	29	1	1	1	107	33	7	17	4	26	0	4	1	31	722	74	138
2014	410	44	45	8	207	18	19	2	4	1	125	36	9	11	0	31	2	5	1	150	768	85	275
2015	383	48	34	2	216	26	10	2	3	1	113	32	8	9	2	25	1	11	2	183	723	92	296
2016	330	47	28	4	195	20	13	1	2	0	106	18	4	14	1	16	1	9	4	34	625	82	140
2017	359	34	28	4	167	25	18	0	0	0	100	31	3	13	2	17	0	5	1	12	638	69	112
2018	353	49	30	6	92	16	13	0	4	1	128	19	6	12	2	14	0	11	2	17	548	82	145

The European Aviation Safety Agency (EASA) has updated the Business Aviation classification to include all Non-Commercial Complex (NCC). Data in prior publications may differ.

Source: EASA Annual Safety Review

Commercial Air Transport Rotorcraft includes both off-shore and other than off-shore operations as defined by EASA.

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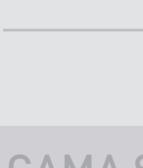
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